COUNTY OF SANTA BARBARA

Planning and Development

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1. INTRODUCTION

This manual has been prepared to assist the public, applicants, environmental consulting firms, and County decision makers in understanding the use and application of various environmental impact thresholds as they relate to project proposals.

The Emergence of the Environmental Impact Assessment Process in California

At the height of the environmental movement, the California State legislature passed the Environmental Quality Act of 1970 (CEQA)[1]. The California law, closely patterned after the National Environmental Policy Act (NEPA), included a requirement that assessments be made of the environmental impact of all proposed, publicly sponsored projects. These assessments were to take the form of "environmental impact reports" (EIR) that were nearly identical to the "environmental impact statements" (EIS) of NEPA. Like the EIS, the EIR was intended to be a source of data which would better inform the decision maker of the implications of approving or disapproving a publicly undertaken or funded project.

The EIR, which environmentalists considered a rather limited document in 1970, became one of their principal tools when in 1972, the State Supreme Court handed down its "Friends of Mammoth" decision.[2] The court held that an EIR is required before state or local government may grant a permit authorizing the construction of privately undertaken projects which may have a significant effect on the environment.

Subsequently, the State Secretary for Resources devised procedures for the writing and processing of EIRs (the State CEQA Guidelines). Pursuant to State CEQA Guidelines Section 15022, the County adopted local Guidelines for the Implementation of CEQA in 1988 and has amended them several times over the years. The current County Guidelines are available for download on the Planning and Development (P&D) Department website http://countyofsb.org/plndev/permitting/environmentalreview.sbc or for review at P&D offices located at 123 East Anapamu Street, Santa Barbara, or 624 Foster Road, Suite C, Santa Maria.

Additionally, the State CEQA Guidelines set forth the decisions and tasks to be performed by local government in the processing of EIRs. Local governments are charged with the duty of determining if a proposed project has the potential to significantly affect the environment. The State CEQA Guidelines (Section 15382) define "significant effect on the environment" as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance."

First, local governments must determine if the proposed activity is a "project" as defined by the State. The State CEQA Guidelines define "project" as:

> The whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following:
>
> 1. *An activity directly undertaken by any public agency including but not limited to public works construction and related activities[,] clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100-65700.*

[1] California Public Resources Code §§21000-21151.
[2] *Friends of Mammoth v. Board of Supervisors of Mono County* (1972) 8 Cal.3d 247.

2. *An activity undertaken by a person which is supported in whole or in part through public agency contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.*

3. *An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies.* (CEQA Guidelines Section 15378(a))

Second, local governments must also determine if the proposed project calls for a discretionary decision or merely ministerial approval or non-approval. The State CEQA Guidelines (Section 15357) define a discretionary project as one:

> *…which requires the exercise of judgment or deliberation when the public agency or body decides to approve or disapprove a particular activity, as distinguished from situations where the public agency or body merely has to determine whether there has been conformity with applicable statutes, ordinances, regulations, or other fixed standards. The key question is whether the public agency can use its subjective judgment to decide whether and how to carry out or approve a project.*

Determining whether a proposed project is "categorically exempt" from CEQA is also a function of local governments. The State has listed a number of project types to which CEQA does not apply. In general, these "categorically exempt" projects include construction or replacement of single structures in environmentally non-crucial areas, minor alterations to the land, and governmental regulatory action intended to manage resources.

Determining whether a project will have a "significant effect" on the environment is an additional decision to be made by local government. This is the first important decision in that it involves the discretion of the agency. A positive finding commits the agency to request that the project description (i.e., plans/proposals) be substantially revised to avoid significant impact, or failing in that, to have prepared an EIR. If no possible significant effect is foreseen, a "negative declaration" is prepared and the proposed project is processed as it would have been prior to enactment of CEQA.

It is the responsibility of the local government to commission the drafting of an EIR. Most local agencies do not have the staff to prepare an EIR and, consequently, the task is normally contracted to a consulting firm.

Lastly, local government is charged with the duty of reviewing and finalizing the EIR. The State CEQA Guidelines require that all interested agencies have the opportunity to review and comment on the adequacy of a draft EIR. Before the agency can make a decision regarding the project at hand, the draft EIR has to be finalized by including and responding to, if necessary, the comments made during review. Once the EIR is finalized, it is considered an official document containing data for the decision-maker.

Several state and federal court decisions have defined the terms: "substantial," "potentially adverse," "adverse," and "significant." For example, the California Supreme Court has held that an EIR must be prepared whenever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact. Further, the interpretation of significant effect *"which will afford the fullest possible protection to the environment within the reasonable scope of the statutory language is one which will impose a low threshold requirement for preparation of an EIR."* (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d. 68.)

As a consequence, many California cities and counties use guidelines or thresholds of significance to determine whether or not a project proposal may have a significant effect on the environment.

In terms of addressing potentially significant adverse environmental impacts, the following thresholds are used as guidelines to determine the level of significance for any given impact. The discussions which follow are designed to provide an understanding of how thresholds of significance are applied to projects that are subject to environmental review. Should projects exceed these thresholds, an EIR may be warranted.

These environmental thresholds and guidelines are intended to supplement provisions in the State CEQA Guidelines for determination of significant environmental effect including Sections 15064, 15065, 15382, and Appendix G.

2. RULES FOR USE

The following rules for use are based on Santa Barbara County's *Guidelines for the Implementation of California Environmental Quality Act of 1970 As Amended* (County Guidelines) and describe how thresholds are to be used. Article V, Section F of the County Guidelines provide the procedures for amendments and additions to this threshold manual.

Rules for Use

The County's determination as to whether a project may have a significant effect on the environment shall be based in part on thresholds of significance. These thresholds are measures of environmental change, which are either quantitative or as specific as possible for topics that are not suited for quantification (e.g., aesthetics, cultural resources, and biology). A project that has no effect above threshold values individually or cumulatively shall be determined not to have any significant effect, and a negative declaration shall be prepared as provided by Article VI of the County Guidelines. Projects that have a potential effect above a threshold of significance will require an EIR.

> *Thresholds of significance, as defined in* [CEQA Guidelines] *Section 15064.7(a), may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant.* (CEQA Guidelines Section 15064(b)(2))

Thresholds of significance are intended to supplement provisions in the State CEQA Guidelines for determination of significant environmental effects including Sections 15064, 15065, and 15382, and Appendix G incorporated herein. If the County has not established a threshold or guideline in this manual, then the environmental document must: (1) set forth and present substantial evidence to support the use of a unique threshold; and (2) determine whether the project would result in a significant environmental effect (CEQA Guidelines Sections 15064.7(b) and 15064(b)). When establishing a unique threshold for a specific project, the lead agency may look to other similar jurisdictions for suggestions regarding an applicable threshold or guideline, or to professional organizations (e.g., the Association of Environmental Professionals, American Planning Association, or California Air Resources Board) to make an appropriate assessment of impacts. In addition, the guidance provided in CEQA Sections 15064, 15065, and 15382, and Appendix G shall provide a basis for determining significance.

3. RELATIONSHIP BETWEEN THRESHOLDS AND POLICIES; QUALITY OF LIFE CONSIDERATIONS

Relationship between Thresholds and Policies

Environmental thresholds are often but not always based on policies and standards from the Comprehensive Plan. For example, the agricultural resources guidelines, biological resources guidelines, and noise thresholds are partially derived from and consistent with policies from the Comprehensive Plan. Although consistency between thresholds and policies is a general goal, there are situations in which strict consistency is not desirable. For example, due to concerns about the severity of water-related problems (e.g., extended drought conditions and over-drafted groundwater basins), policies relating to water are in many cases more restrictive than the thresholds for this issue. Instead, the County designed its thresholds for water impacts to indicate cutoff points at which a project's contribution to cumulatively significant water problems become considerable.

Achieving planning goals through the use of strict policies that may differ from, but not conflict with, environmental thresholds is both justifiable and efficient and does not undermine the use of CEQA and environmental thresholds to move toward those same goals. Regardless of environmental impact thresholds, projects must conform to the applicable Comprehensive Plan policies, and decision-makers must make findings of consistency in order to approve required land use entitlements (e.g., zoning permits).

Quality of Life Considerations

A. State CEQA Guidelines and Intent of Quality of Life Analysis.

CEQA requires the analysis of the potential effects (or impacts) of a project on the physical environment. Economic and social changes resulting from a project can relate to, and inform this analysis of, a project's effects on the physical environment. The CEQA Guidelines Section 15064(e) state:

> *Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. … For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.*

In summary, economic and social changes resulting from a project are not treated as "significant effects on the environment" pursuant to CEQA if there is no resulting physical change to the environment. However, they may be considered when determining the significance of a physical change to the environment, and physical changes resulting from the economic and social changes should be evaluated in CEQA environmental documents.

Quality of life effects can be broadly defined as the aggregate effect of a project's impacts on individuals, families, communities, and other social groups, and on the ways in which those groups function. They are social changes that result from a project, rather than physical effects on the environment. Quality of life effects are typically subjective and not based on quantifiable measures. However, quality of life issues, while hard to quantify, are often of primary concern to the community affected by a project.

Given that they involve social – not physical – changes to the environment, quality of life impacts are not in themselves subject to environmental review pursuant to CEQA. (CEQA Guidelines Sections 15002(g) and 15382.) CEQA Guidelines Section 15064(f)(6) states:

> *Evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment.*

However, project-caused changes to quality of life are social changes that may be used: (1) to identify physical impacts caused by a change in quality of life; and (2) when related to a physical change, to determine whether the physical change is a significant effect on the environment. The nexus between the change to qualify of life and the physical impact is critical for the analysis.

B. Procedural Considerations.

Quality of life impacts should be addressed on a case-by-case basis, depending on the unique circumstances of a given project. Quality of life impacts may not be relevant to all projects and may not be applicable to all environmental analyses. However, when quality of life impacts are considered, the environmental document should clearly state the causal relationship between the change to quality of life and the corresponding physical impact, and the significance of the physical impact. Furthermore, if changes to quality of life are used to assess the significance of a physical impact to the environment, the environmental document should clearly identify the physical impact, the resulting change to quality of life, and the severity of the change to quality of life (ideally using a quantitative method, if available). In all cases, the analysis must be supported by substantial evidence set forth in the environmental document.

The thresholds provided in the following chapters of this manual include quality of life considerations consistent with the direction set forth in the State CEQA Guidelines cited above. For example, the noise thresholds set forth in Chapter 13 include maximum noise levels above which noise is considered to be unacceptable for certain uses (e.g., noise generated from outside of a single-family dwelling that exceeds 45 dB(A) as measured from within the single-family dwelling, is expected to be an annoyance or otherwise interfere with the residential use of the single-family dwelling). In many cases, project-generated noise may interfere with the use, but is not severe enough to cause hearing damage or structural damage due to vibration. In such cases, the noise threshold relies on quality of life considerations (i.e., noise levels that are considered to be annoying, but not physically harmful to human beings) to determine when noise experienced by a sensitive receptor is considered "significant." However, the thresholds in this manual are not intended to address all potential environmental impacts that may result from a project. If a project will make a change to quality of life that is related to an environmental issue that is not addressed in this manual, then the environmental document must: (1) set forth and present substantial evidence to support the use of a unique threshold; (2) incorporate the quality of life analysis; and (3) determine whether the project would result in a significant environmental effect (State CEQA Guidelines Sections 15064.7(b) and 15064(b)(2)).

C. Quality of Life and Policy Consistency.

Although changes to quality of life are not treated as significant effects on the environment pursuant to CEQA, many quality of life considerations are addressed in Comprehensive Plan policies. Projects must conform to the applicable Comprehensive Plan policies, and decision-makers must make findings of consistency in order to approve the land use entitlements required for a proposed project. For example, quality of life issues such as loss of privacy and neighborhood compatibility are often cited in Comprehensive Plan policies. In these situations, a project's effect on the quality of life of the surrounding community should be analyzed for consistency with the applicable policies.

4. AGRICULTURAL RESOURCE GUIDELINES *(Approved by the Board of Supervisors August 1993)*

A. Introduction.

The State: California's 36,000,000 acres of agricultural land produce important economic and environmental benefits to the people of the state, nation, and world. Covering one-third of the state, agricultural land supports one of California's major industries and is responsible for the production of an important portion of the nation's food and fiber. The state is also a major exporter of produce to the rest of the world. A unique combination of geography, climate and soils enables California agriculture to produce many crops that are produced nowhere else in the United States.

The state's agricultural land also plays a critical environmental role. Farmland is an important filter for rain and snowfall runoff, allowing groundwater basins to recharge themselves. Farms and ranches are wildlife habitats for many common game and endangered species. Agricultural land provides valuable open space, giving visual relief for urban dwellers, and protecting the rural way of life important to farmers, ranchers, and small-town residents. Because of these great public benefits, the unnecessary and/or premature conversion of agricultural lands to urban uses should be discouraged.

Achieving the goal of agricultural land conservation requires wise and efficient land use, and a strong commitment to that goal by local officials. A California appeals court in Cleary vs. County of Stanislaus (1981) 118 Section App. 3d 348, has indicated that the conversion of agricultural land to nonagricultural uses may in itself be considered a significant environmental impact. To assure that the impacts of agricultural land conversion are considered in project decisions, environmental documents should contain information about the impacts of projects on agricultural land. Government officials can make better decisions affecting agricultural land when they have complete data about the land and its relationship to the agricultural economy.

The County: Agriculture continues to be Santa Barbara County's major producing industry with a gross production value for 1991 of more than $500 million. This is an increase of nearly two hundred million dollars from the 1981 total. Santa Barbara County's agricultural industry includes vegetable, field, fruit and nut, and seed crops, nursery products, livestock, poultry, and aviary products. (Santa Barbara County 1991 Agricultural Report)

The diversity of our agriculture continues to provide a strong economic base through its multiplier effect on our local economy. With thirty-seven different commodities exceeding a million dollars in value, our local agricultural diversity provides stability against the cyclic nature of weather, pests, and especially market fluctuations which currently are plaguing agriculture in other parts of the nation. (Op cit)

Agricultural preservation in the County has been extremely successful to date in placing lands adjacent to urban areas, as well as more remote lands, under Williamson Act agreement which provides for taxation according to agricultural rather than market value of the land.

Qualifications for lands to be designated as agricultural preserves are found in "Criteria for Agricultural Preserves", adopted by the Santa Barbara County Board of Supervisors. The land must either be in a Class I or II Soil Capability classification, as prescribed by the U.S. Soil Conservation Service, or qualify for an 80 to 100 rating in the Storie Index System to be designated prime land, in which case the minimum size of a preserve is 40 acres. Land also can qualify as prime if it fulfills one of the following: it supports livestock at a density of one animal per acre; is in orchard use that can return at least $200 per acre; or is devoted to other agricultural production that generally would return $200 per acre. Farm land not meeting these qualifications is classified as non-prime, and the minimum size for an agricultural preserve is 100 acres. However, in certain instances, super prime land of at least 5 acres in a separate ownership may be combined with adjacent prime land to meet the 40 acre minimum requirements.

B. Determination of Significant Effect.

CEQA Section 15064 states that:

> *(b) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.*
>
> *(d) In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider both primary or direct and secondary or indirect consequences.*
>
> *(1) Primary consequences are immediately related to the project such as the dust, noise, and traffic of heavy equipment that would result from construction of a sewage treatment plant and possible odors from operation of the plant.*
>
> *(2) Secondary consequences are related more to effects of the primary consequences than the project itself and may be several steps removed from the project in a chain of cause and effect. For example, the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in air pollution.*

CEQA Appendix G states that a project will normally have a significant impact on the environment if it will:

> *1. Conflict with adopted environmental plans and goals of the community where it is located.*
>
> *2. Convert prime agricultural land to non-agricultural use or impair the agricultural productivity of prime agricultural land.*

C. Comprehensive Plan Policies and Goals.

The following agricultural goals and policies are taken from the County's Comprehensive Plan Land Use Element, the Environmental Resources Management Element (ERME), the Local Coastal Plan, the Agricultural Element, and adopted Community Plans.

Land Use Element

Agriculture: In the rural areas, cultivated agriculture shall be preserved and, where conditions allow, expansion and intensification should be supported. Lands with both prime and non-prime soil shall be reserved for agricultural uses.

Carpinteria - Summerland Area Goal: The agricultural economy and the semi-rural qualities of the area should be preserved. Every effort should be made to preserve fertile lands for agriculture.

Santa Ynez Valley Area Goal: Agriculture should be preserved and protected as one of the primary economic bases of the Valley.

Goleta Area Goal: Existing orchards and groves should be preserved, and expansion of agricultural land use, particularly orchards and grazing, should be encouraged.

Lompoc Area Goal: Prime agricultural lands should be preserved for agricultural use only. Preservation of lesser grades of presently producing or potential agricultural land should be actively encouraged.

Environmental Resource Management Element (ERME)

The Santa Barbara County Comprehensive Plan Environmental Resources Management Element (ERME) states that existing croplands on prime soils should be preserved. For agricultural lands on less than prime soil, is should be preserved insofar as possible.

Under Category A, Urbanization should be prohibited in:

- Existing croplands with a high agricultural suitability rating (within study areas) or a Class I or II soil capability classification. Modification to permit urban uses may be made, within Urban areas, on parcels of 10 acres or less.
- Agricultural preserves subject to Williamson Act agreements.

Under Category B, Urbanization should be prohibited except in a relatively few instances in:

- Existing croplands with a moderate or low agricultural suitability rating (in urban areas) or a Class III or IV soil capability classification.
- Lands highly suitable for expansion of cultivated agriculture.

It is noted that agricultural preserves, although not subject to environmental constraints, are included in Category A. The reason is that in entering into Williamson Act agreements, the County has made a legal commitment that the land will remain in agricultural use for a minimum of ten years, subject to automatic annual renewal.

Agricultural Element

The Agricultural Element Goals and Policies can be found on pages 7 - 14 of the document. These goals and policies are briefly summarized below:

Goal I speaks to the preservation, encouragement, and enhancement of agriculture. This is accomplished through policies which discourage incompatible uses, promote an agriculturalist's freedom for determining methods of operation, encouraging land improvement programs, supporting the Williamson Act, recognizing certain nuisances are part of agricultural operations, protecting the availability of resources for agriculture, and encouraging sustainable agricultural practices on agricultural land.

Goal II calls for agricultural land to be protected from adverse urban influence. This is accomplished through policies which prevent flooding and silting from urbanization, protect agricultural property from being illegally violated, discourage expansion of urban spheres of influence, and discouraging conversion of highly productive agricultural lands.

Goal III calls for the preservation of remaining agricultural lands in cases where it is necessary to convert agricultural lands to other uses. This accomplished through policies which discourage expansion of urban development into active agricultural lands, and to promote and retain productive agricultural land within urban boundaries.

Goal IV recognizes that agriculture can enhance and protect natural resources, and therefore these operations should be encouraged to incorporate resource protection techniques. This is accomplished through policies which encourage range improvement and fire reduction programs, the use of agriculture on certain slopes to prevent erosion, and preventing grading and brush clearing on hillsides which would cause excessive erosion.

Goal V calls for the County to allow for areas and installations of uses supportive to agriculture. It accomplishes this through policies allowing the installation of commercial support uses on-farm, and allowing areas for supportive agriculture services within a reasonable distance to the farm user.

Goal VI calls for making provisions to allow for effective access to agricultural areas. This includes a policy which encourages the County to design roads in agricultural areas with agricultural vehicles in mind.

Coastal Land Use Plan

Agricultural policies in the Coastal Land Use Plan (CLUP) are found on Pages 106 - 113 of that document, and are listed as Policies 8-1 through 8-10. Briefly, these policies speak to the following issues:

- Defining the criteria for assigning agricultural land use designations in rural areas.
- Defining the criteria for allowing conversion of agriculturally designated land not contiguous with an urban/rural boundary.
- Defining the criteria for allowing conversion of agriculturally designated land contiguous with an urban/rural boundary.
- Defining the finding which must be made for approving a land division of any land designated as Agriculture I or II.
- Setting the criteria and findings for environmental review of greenhouse projects of 20,000 or more square feet.
- Setting setback and maximum lot coverage requirements for greenhouses, hothouses, and accessory structures.
- Setting landscaping and screening requirements for greenhouses and/or accessory buildings.
- Setting the criteria for the protection of large, non-prime agricultural operations of 10,000 acres or more in the Gaviota Coast or North Coast planning areas or large, non-prime operations in the Channel Islands planning area, including the findings and conditions which must be made/required in order to approve any development/land division on such property.
- Setting the criteria for subdivision of legal parcels of non-prime agricultural land in excess of 2,000 acres which are designated as AG-II-320.

Goleta Community Plan

Policy LUA-GV-1: Land designated for agriculture within the urban boundary shall be preserved for agricultural use, unless the County makes findings that the land is no longer appropriate for agriculture or there is an overriding public need for conversion to other uses for which there is no other land available in the Goleta urban area.

Policy LUA-GV-2: New development adjacent to agriculturally zoned property shall include buffers to protect agricultural operations.

Policy LUS-GV-4: In consideration of conversion of any agricultural land within the urban boundary to urban uses, the County shall first consider smaller, more isolated parcels with greater urban/agricultural conflicts prior to larger blocks of agricultural land.

Summerland Community Plan

Policy LUA-S-1: Existing land designated for agriculture shall be preserved for agricultural use.

Policy LUA-S-2: New development adjacent to agricultural zoned property shall include buffers to protect the viability of agricultural operations adjacent to the community.

Montecito Community Plan

Policy LUG-M-2.1: Agricultural activities on residential parcel that are consistent with the provisions of the applicable residential zone district shall be supported and encouraged by the County.

D. Methodology in Determining Agricultural Suitability and Productivity.

The County Initial Study form contains two questions pertaining to impacts on agricultural resources. The first is as follows:

> *10.d. Will the proposal result in the conversion of prime agricultural land to non-agricultural use, impairment of agricultural land productivity (whether prime or non-prime), or conflict with agricultural preserve programs?*

The following weighting system is provided to perform a preliminary screening of a project's agricultural impacts during the initial study process. The initial study screening looks at the value of a site's agricultural suitability and productivity, to determine whether the project's impact on loss or impairment of agricultural resources would be a potentially significant impact. These are guidelines, to be used with flexibility in application to specific sites, taking into account specific circumstances and specific agricultural uses.

The weighted point system is utilized to assign relative values to particular characteristics of a site's agricultural productivity (e.g., soil type, water supply, etc.). Where the points from the following formula total 60 or more, the following types of projects will be considered to have a potentially significant impact:

- A division of land (including Parcel and Final Maps, etc.) which is currently considered viable but would result in parcels which would not be considered viable using the weighting system.
- A Development Plan, Conditional Use Permit, or other discretionary act which would result in the conversion from agricultural use of a parcel qualifying as viable using the weighting system.
- Discretionary projects which may result in substantial disruption of surrounding agricultural operations.

If a potentially significant impact is identified using these criteria, further more detailed, site-specific evaluation of agricultural impacts is completed in an EIR. This analysis should focus upon the factors and criteria, but not the points, in the weighting system of these guidelines, and any other relevant factors such as the history of agricultural use on the site, land use trends, etc. Final determination of the project's level of impact will be based on this analysis.

As a general guideline, an agricultural parcel of land should be considered to be viable if it is of sufficient size and capability to support an agricultural enterprise independent of any other parcel. To qualify as agriculturally viable, the area of land in question need only be of sufficient size and/or productive capability to be economically attractive to an agricultural lessee. This productivity standard should take into consideration the cultural practices and leasehold production units in the area, as well as soil type and water availability. For dry land farming and grazing operations the production or carrying capacity should be based upon normal rainfall years only, not periods of drought or heavy rainfall. It should be noted that the Santa Barbara County Cattlemen's Association has stated that an appropriate threshold for impacts to grazing land in the County is the displacement or division of land capable of sustaining between 25 to 30 animal units per year. This "threshold" utilizes a carrying capacity threshold similar to the weighting system below. Because of this, on grazing projects, detailed information of the number of animal units supportable on a particular parcel should also be considered in the project's environmental document.

The Agricultural Threshold is weighted toward physical environmental resources rather than economics. This emphasis is in keeping with CEQAs emphasis on physical environmental impacts and not social or economic impacts (State CEQA Guidelines Section 15131). Given high land values in the County and the subdivision and turnover of agricultural lands in some areas of the County, agricultural production on some lands may be economically marginal. Because of these factors, economics is considered primarily a planning issue and will not be addressed in environmental documents.

The following determination of agricultural land value is divided into nine components which are weighted according to their estimated resource value. These nine areas are:

Parcel size	Agricultural Suitability	Adjacent Land Uses
Soil Classification	Existing & Historic Land Use	Agricultural Preserve Potential
Water Availability	Comprehensive Plan Designation	Combined Farming Operations

1. **Parcel Size.** Large parcel size is, in general, an important indicator of potential agricultural suitability and productivity. However, because of the wide variability in the value of various agricultural products, suitable and productive parcel sizes also vary. Smaller parcels may be viable for high value crops, while significant acreage is necessary for viable grazing operations.

Project Parcel Size	Points Assigned
less than 5 acres	0 - 3
5 acres to less than 10 acres	4 - 6
10 acres to less than 40 acres	7 - 8
40 acres to less than 100 acres	9 - 10
100 acres to less than 500 acres	11 - 12
500 acres to less than 1000 acres	13 - 14
1000 acres or greater	15

2. **Soil Classification.** Points in this category are based primarily upon soil capability classes from the US Soil Conservation Services Soil Surveys.

   The Soil Conservation Service has defined eight soil capability classes. Classes I and II are considered to be prime agricultural soils because they impose few limitations on agricultural production, and almost all crops can be grown successfully on these soils. More limited agricultural soils are grouped into Classes III and IV either because fewer crops can be grown on these soils, special conservation and production measures are required, or both these conditions exist. Classes V, VI, and VII include soils that are suited primarily for rangeland. (Class V is not found in the County.) Finally, soils and landforms that are unsuited for agricultural use are placed in Class VIII.

   Where a variety of soil types are present on a site, weight should depend upon extent of useable prime/non-prime acreage. As appropriate, points may be assigned according to approximate percentages of site area containing various soil classifications.

   Application of points within the ranges should be based on area and site-specific considerations. For grazing land, the SCS survey should be checked for opinion on soil suitability, and site vegetation should be inspected for forage value. Sites with soils which can support good forage should be assigned higher points within the range. Similarly, sites with soils classified as non-prime, but which can support specialized high cash crops (e.g.,

strawberries, avocados and specialty crops) should be assigned higher points within the ranges.

In addition, initial studies should note whenever a site contains large, contiguous areas of prime soil, as this may constitute a separate significant impact.

Soil Classification	Points Assigned
Class I (prime)	14 - 15
Class II (prime)	11 - 13
Class III	8 - 10
Class IV	6 - 7
Class V	1 - 5
Class VI	1 - 5
Class VII	1 - 5
Class VIII	0

3. **Water Availability.** Availability of water of suitable quantity and quality is a critical component of agricultural suitability and productivity. Assignments of points within the ranges should take into account suitability of water resources for the type of agriculture practiced (i.e. crops or grazing).

Water Availability	Points Assigned
Land has an adequate water supply from on/offsite sources suitable for crops or grazing	12 - 15
Land has water, but may be marginal in quantity or quality suitable for crops or grazing	8 - 11
Land does not have developed water supply but an adequate supply is potentially available	3 - 7
Land does not have developed water and potential sources are of poor quality/quantity	0 - 2

4. **Agricultural Suitability.** Based upon the Conservation Element of the Comprehensive Plan (p. 195) County lands were assessed and mapped for agricultural suitability classifications based on a computer model which applied weighted factors, including soil classification, water availability, slope, and environmental constraints (flood hazard, local water resources, biological tolerance-intensity, and high groundwater).

   Because the Conservation Element does not fully account for the effects of weather on crop suitability, the assessment of suitability should account for the approximate frequency and intensity of frosts and other climactic factors in applying points within the ranges. Parcels which are relatively frost free and may accommodate multiple croppings may be considered more suitable than those which can support only a single crop or limited crop types due to climactic factors.

Agricultural Suitability	Points Assigned
CROPS	
Highly suitable for irrigated grain, truck and field, orchard, or vineyard crops	8 - 10
Highly suitable for irrigated ornamentals, pasture, alfalfa, or dry farming	6 - 8
Moderately suitable for irrigated crops, orchard, ornamentals or dry farming	4 - 5
Low suitability for irrigated crops, orchard, ornamentals or dry farming	1 - 3
Unsuitable for crop production because of soil capabilities, environmental constraints, etc.	0

Agricultural Suitability	Points Assigned
GRAZING	
Highly suitable for pasture or range	6 - 10
Moderately suitable for pasture or range	3 - 5
Low suitability for pasture or range	1 - 2
Unsuitable for pasture or range	0

5. Existing and Historic Land Use. Current or previous use of a property for agriculture can provide a practical measure of its suitability for agriculture, while urban development generally indicates a lack of suitability.

Existing and Historic Land Use	Points Assigned
In active agricultural production	5
In maintained range/pasture	5
Unmaintained, but productive within last ten years	3 - 5
Vacant land: fallow or never planted with range of suitabilities of agricultural potential	1 - 3
Substantial urban or agricultural industrial development onsite	0

6. Comprehensive Plan Designation. The County general plan land use maps designate property for long-range uses. Agricultural and open space designations generally provide an indicator of agricultural suitability. However, some older land use designations provide for smaller agricultural parcel sizes than are suitable or viable for sustaining agriculture today. Designations applied more recently by the County as part of community plan updates establish agricultural designations with more realistic parcel sizes. This should be taken into account in assessing suitability with this factor.

Comprehensive Plan Designation	Points Assigned
A - II	5
A-I	4
MA	3 - 4
Existing public/private open space or recreation	3 - 4
Proposed public/private open space or recreation	3 - 4
Open lands	3 - 4
Rural residential 40 - 100 acres	3 - 4
Residential Ranchette 5 - 20 acres	2
Residential less than 5 acres	0
Commercial, Industrial, Community Facility	0

7. Adjacent Land Uses (existing). Adjacent land uses can play an important role in the continuing suitability and productivity of a property for agricultural uses. In general, being surrounded by agricultural or open space is conducive to continued agricultural use, while encroachment of urban uses may be problematic. However, applying points within the ranges should be based on specific circumstances and uses, recognizing that some urban uses are more compatible with agricultural, (e.g., industrial, public facilities), while others conflict (e.g., residential). In addition, the existence or ability to create buffers between incompatible

uses should be considered in assessing agricultural suitability with this factor. The adequacy of agricultural support in the vicinity may be another factor affecting agricultural suitability.

Adjacent Land Uses	Points Assigned
Surrounded by agricultural operations or open space in a region with adequate support uses	9 - 10
Surrounded by agricultural operations or open space in a region without adequate agricultural support uses	7 - 8
Partially surrounded by agriculture/open space with some urban uses adjacent, in a region with adequate agricultural support uses [1, 2]	7 - 8
Partially surrounded by agriculture/open space with some urban uses adjacent, in a region without adequate agricultural support uses [1, 2]	3 - 6
Immediately surrounded by urban uses, no buffers	0 - 2

Notes:

1. Various types of urban uses create more potential conflicts than others (e.g., residential could create more spraying problems than light industrial).
2. If project is well buffered, it may be agriculturally viable even with adjacent urban uses (e.g., stream, roadway).

8. Agricultural Preserve Potential. Qualifying for agricultural preserve designation under State Williamson Act agreement for prime and non-prime preserves entails meeting criteria for soil type, parcel size [individually or jointly with adjacent parcel(s)], and/or productivity/value on return. Agricultural preserves have constituted one of the most successful means of sustaining and preserving land in agriculture in California.

Agricultural Preserve Potential	Points Assigned
Can qualify for prime agricultural preserve by itself, or is in a preserve	5 - 7
Can qualify for non-prime agricultural preserve by itself	2 - 4
Can qualify for prime agricultural preserve with adjacent parcels	3 - 4
Can qualify for non-prime agricultural preserve with adjacent parcels	1 - 3
Cannot qualify	0

9. Combined Farming Operations.[1] This section is designed to award bonus points to parcels which provide a component of a combined farming operation. The reason these points are assigned as a bonus is to address cumulative impacts and to recognize the importance of combined farming operations in Santa Barbara County.

Bonus Points for Combined Farming Operations	Points Assigned
Provides a significant component of a combined farming operation	5
Provides an important component of a combined farming operation	3
Provides a small component of a combined farming operation	1
No combined operation	0
Cannot qualify	0

[1] Combined farming operation refers to more than one separate parcel managed as a single agricultural operation.

E. Use of State Important Farmlands Map.

A second question on agricultural land resources is included in the Initial Study under Land Use:

e. Will the proposal result in any effect [potentially significant adverse effect] upon any unique or other farmland of State or Local Importance?

The State Important Farmlands Map is used in answering this question. The map is also considered in applying points under the "Agricultural Suitability" category.

The map identifies lands in the following categories:

Prime Farmland - (Land with the best combination of physical and chemical features for the production of agricultural crops)

Farmland of Statewide Importance - (Land with a good combination of physical and chemical features for the production of agricultural crops)

Unique Farmland - (Land of lesser quality soils used for the production of the State's leading agricultural cash crops)

Farmland of Local Importance - (All dry land farming area and permanent pasture)

Grazing Land - (Land on which the existing vegetation is suited to the grazing of livestock)

Urban and Built-up Land - (Land occupied by structures or infrastructure to accommodate a building density of at least one unit to one and one-half acres, or approximately six structures to ten acres)

Other Land - (Land which does not meet the criteria of any other category)

5. AIR QUALITY THRESHOLDS *(Approved by the Board of Supervisors April 19, 1994; Interim revisions to Section C.2.a and Section D of Chapter 5 approved by the Board of Supervisors October 3, 2006)*

A. Introduction.

Air quality thresholds of significance are intended to help local agencies determine whether a discretionary project will individually or cumulatively have a significant effect on air quality. Santa Barbara County does not meet the state clean air standards for ozone and the state standard for fine particulate matter. Unmitigated air pollution emissions from the operation of some development projects could impair the region's progress in meeting the ozone and fine particulate matter standards.

These thresholds are designed to be used by environmental professionals preparing documents under the California Environmental Quality Act (CEQA) and the land use decision makers who rely on these documents. The goal is to identify projects which may have a significant effect on air quality in Santa Barbara County, so that measures to reduce the impact can be incorporated into the project.

A separate implementation document, Air Quality Analysis for EIRs, explaining how to apply the air quality thresholds of significance is available from the County Planning and Development Department.

1. Resource Setting. The federal government and the state of California have established ambient air quality standards to protect public health. California's standards are more protective of public health than the federal standards. State and federal standards have been established for the following pollutants, known as "criteria pollutants":

- ozone (O_3)
- carbon monoxide (CO)
- nitrogen dioxide (NO_2)
- sulfur dioxide (SO_2)
- suspended particulate matter 10 microns or less in diameter (PM_{10})
- lead

In addition, California standards have been established for:

- sulfates (SO_4)
- hydrogen sulfide (H_2S)
- vinyl chloride
- visibility reducing particles.

Table 1 shows the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS) for ozone, CO, H_2S, NO_2, and PM_{10}. The table also shows whether the air in Santa Barbara County meets these standards (attainment) or violates them (non-attainment).

Sulfur dioxide, lead, sulfates, vinyl chloride, and visibility reducing particles are not generally a problem in this region and are not discussed further in this document. However, these and other pollutants are regulated by the APCD under their rules and regulations.

The entire County of Santa Barbara violates the federal and state standards for ozone and the state standard for PM_{10} (particulate matter with an aerodynamic diameter of less than 10 microns). Ozone air pollution is formed when reactive organic compounds (ROC) and nitrogen oxides (NO_x) react in the presence of sunlight. Ozone is a regional pollutant; ozone

concentrations throughout the county do not always correspond with the location of sources of the ozone precursors ROC and NO_x. The major sources of ozone precursor emissions in Santa Barbara County are motor vehicles, the petroleum industry and solvent usage (paints, consumer products and certain industrial processes). Sources of PM_{10} include mineral quarries, grading, demolition, agricultural tilling, road dust, and vehicle exhaust. Additional information on ozone, PM_{10}, and other pollutants of concern is provided in the 1991 Air Quality Attainment Plan.

Table 1 - Federal and State Ambient Air Quality Standards and Attainment Status of Selected Pollutants in Santa Barbara County

Pollutant & Averaging Time	Standard		Attainment Status	
	Federal	State	Federal	State
Ozone				
1 hour	0.12 ppm	0.09 ppm	Non-attainment[a]	Non-attainment[a]
NO_2				
Annual Average	0.053 ppm	---	Attainment	Attainment
1 hour	---	0.25 ppm		
CO				
1 hour	35 ppm	20 ppm	Attainment[b]	Attainment[b]
8 hours	9 ppm	9 ppm	Attainment	Attainment
H_2S				
1 hour	---	0.03 ppm	---	Attainment[c]
PM_{10}				
24 hours	150 ug/m^3	50 ug/m^3	Attainment	Non-attainment
AGM[d]	---	30 ug/m^3	---	Non-attainment
AAM[e]	50 ug/m^3	---	Attainment	

Notes:

a. Non-attainment for entire County. Based on monitoring data as of 1993, the County has achieved the Federal ozone standard and the APCD will be applying to the USEPA for re-designation to an "attainment area".
b. "Hot spots" at congested intersections may violate standards during the peak hour.
c. Recently designated as attainment.
d. Annual Geometric Mean.
e. Annual Arithmetic Mean.

2. Air Pollution Control District Rules and Regulations. The Santa Barbara County Air Pollution Control District (APCD) is the agency responsible for regulating stationary sources (businesses and industry) of air pollution in Santa Barbara County. Examples of businesses that emit air pollution include gasoline stations, auto body shops, dry cleaners, oil and gas facilities, and water treatment plants. The APCD regulates these and other businesses by issuing permits and adopting rules, as required by state and federal air pollution control laws.

The air quality thresholds are intended to provide guidance in evaluating the significance of adverse long-term air quality impacts from all sources, including businesses not regulated by the APCD and motor vehicles. These thresholds of significance are unrelated to the permitting requirements of the APCD and cannot be used to determine whether a project will need an APCD permit. For information on whether a project will require an APCD permit, please contact the Permitting Section Supervisor of the APCD. For assistance in applying the thresholds in this manual please contact the Supervisor of the Interagency Review Section of the APCD. Both section supervisors may be reached at (805) 961-8800.

3. **The California Environmental Quality Act (CEQA).** The air quality impact analysis in an environmental document required under CEQA should include the elements described in the APCD's Scope and Content of Air Quality Sections in Environmental Documents. This document is available upon request from the Interagency Review section of the APCD. Briefly, the air quality impact analysis in an Environmental Impact Report (EIR) should include:

   - existing environmental setting of the area affected by the project, in terms of climate and current air quality;
   - a discussion of all direct and indirect, long term and short term, air quality impacts of the proposed project and the classification of the significance of long-term impacts using established criteria;
   - significant cumulative air quality impacts of the project;
   - consistency of the project with local and regional plans, including the Air Quality Attainment Plan;
   - mitigation measures to reduce or avoid potentially significant air quality impacts, including effectiveness of mitigation measures and discussion of residual impacts;
   - feasible alternatives to the project which would reduce air quality impacts, including the air quality impacts of the "No Project" alternative and the environmentally superior alternative;
   - potential growth inducing effects of the project on air quality;
   - required air quality mitigation measures in the Mitigation Monitoring and Reporting Plan (MMRP).
   - appendices containing all calculations and assumptions used in assessing long-term air quality impacts.

   The air quality sections of Negative Declarations (NDs) should include a brief description of the air quality setting as it relates to project impacts, mitigation measures and inclusion of all air quality mitigation measures in the MMRP.

B. Determining Significance of Air Quality Impacts.

The two major criteria for determining if a project will have a potentially significant adverse air quality impact are listed below. These criteria are based on Appendix G of the State CEQA Guidelines. If the project meets either of the two listed criteria, the impacts must be discussed and analyzed in detail and appropriate mitigation measures must be identified. Section 3 provides the quantitative emission thresholds and screening tables to determine the significance of long-term (operational) impacts of the project. Sections 4 and 5 discuss cumulative impacts and consistency with the AQAP. Section 6 provides guidance on how other air quality considerations should be described.

A significant adverse air quality impact may occur when a project, individually or cumulatively, triggers any one of the following:

- interferes with progress toward the attainment of the ozone standard by releasing emissions which equal or exceed the established long-term quantitative thresholds for NO_x and ROC;
- equals or exceeds the state or federal ambient air quality standards for any criteria pollutant (as determined by modeling);

Cumulative air quality impacts and consistency with the policies and measures in the Air Quality Supplement of the Comprehensive Plan, other general plans, and the Air Quality Attainment Plan (AQAP) should be determined for all projects (i.e., whether the project exceeds the AQAP emission projections or growth assumptions).

The following issues should be discussed only if they are applicable to the project.

- Emissions which may affect sensitive receptors (e.g. children, elderly or acutely ill);
- Toxic or hazardous air pollutants in amounts which may increase cancer risk for the affected population; or
- Odor or another air quality nuisance problem impacting a considerable number of people.

C. Quantitative Emission Thresholds.

CEQA requires that the significance of a project's direct and indirect emissions be determined for both short-term (construction) and long-term (operational) impacts. If a project's air quality impacts are found to be significant, then mitigation measures will be required. Numeric emission thresholds of significance have been established for the ozone precursors NO_x and ROC. Criteria for triggering modeling have been established for carbon monoxide (CO). In order to determine if a project exceeds these quantitative thresholds, the expected emissions of these pollutants from the project must be calculated. Because calculations can be time consuming, the APCD has developed screening tools to identify projects not likely to exceed the thresholds. These sizes of projects are based on simple calculations that show the relationship between the size of a project and potential emissions.

If a project is smaller in size than the project sizes listed, project-specific emission calculations are generally not required. If the project is equal to or larger than any size listed, is not similar to any of the categories listed, or is subject to an APCD permit, then emission calculations may be required. Emission calculations in the environmental document must provide the methodology used to estimate the emissions, including input data, assumptions, and all calculations. Emission calculation methods or modeling inputs using URBEMIS, EMFAC, CALINE or other air quality analysis tools must be fully documented so that the calculations or modeling can be duplicated and confirmed by the APCD. In order to be given emission reduction credits for mitigation measures which can be quantified, emission calculations must be approved by the APCD.

1. **Short-term/Construction Emissions.** Short-term air quality impacts generally occur during project construction. CEQA requires a discussion of short-term impacts of a project in the environmental document. The reasoning for considering short-term impacts insignificant is provided below.

   No quantitative threshold has been established for short-term, construction related PM_{10} (which is 50 percent of total dust). However, this impact should be discussed in all environmental documents for projects involving ground disturbance. Dust control measures are required under the County of Santa Barbara's Grading Ordinance for most projects. Some projects have the potential for construction-related dust to cause a nuisance. Also, Santa Barbara County violates the state standard for PM_{10}. Therefore, dust mitigation measures are required for all discretionary construction activities. The standard dust mitigation measures are based on policies in the 1979 AQAP and are listed in a separate implementation document, Air Quality Analysis for EIRs, available from Planning and Development.

   The short-term thresholds for NO_x and ROC emissions from construction equipment were not established. Emissions of NO_x from construction equipment in the County are estimated at 1000 tons per year of NO_x. When compared to the total NO_x emission inventory for the

County of approximately 17,000 tons per year, construction emissions comprise approximately six percent of the 1990 county-wide emission inventory for NO_x (Santa Barbara County 1993 Rate-of Progress Plan). In general, this amount is considered insignificant.

2. Long-term/Operational Emission Thresholds. Long-term air quality impacts occur during project operation and include emissions from any equipment or process used in the project (e.g., residential water heaters, engines, boilers, operations using paints or solvents) and motor vehicle emissions associated with the project. These emissions must be summed in order to determine the significance of the project's long-term impact on air quality.

a. Ozone Precursors (NO_x and ROC). A proposed project will not have a significant air quality effect on the environment, if:

Operation of the project will:

- emit (from all project sources,[1] mobile and stationary), less than the daily trigger[2] for offsets set in the APCD New Source Review Rule, for any pollutant; and
- emit less than 25 pounds per day of oxides of nitrogen (NOx) or reactive organic compounds (ROC) from motor vehicle trips only; and
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and
- not exceed the APCD health risk public notification thresholds adopted by the APCD Board; and
- be consistent with the adopted federal and state Air Quality Plans.

Long-term project emissions primarily stem from motor vehicles associated with the land use project and stationary sources which may require permits from the APCD. Examples of stationary emission sources include: gas stations, auto body shops, dry cleaners, oil and gas production and processing facilities, and water treatment facilities. Some stationary sources such as residential heating and cooling equipment, wood burning stoves and fireplaces, or other individual appliances do not require permits from the APCD. Emissions from wood burning stoves may be significant for housing developments of 250 homes or more. Emissions from appliances may be significant for developments of about 1000 homes or for commercial projects. These emissions should be included in the operational phase emission evaluation. The APCD should be contacted for assistance with estimating direct emissions from stationary sources. Stationary source emissions must be added to transportation source emissions prior to applying the project-specific threshold of significance.

b. Carbon Monoxide (CO). A project will have a significant air quality impact if it causes, by adding to the existing background CO levels, a carbon monoxide "hot spot" where the California one-hour standard of 20 parts per million carbon monoxide is exceeded. This typically occurs at severely congested intersections.

[1] Portable equipment registered under the California Air Resources Board Statewide Portable Equipment Registration Program (PERP) shall not be included a proposed project's emission total. Emissions from these sources are in compliance with the ARB PERP program, and are exempt from APCD permits.

[2] Currently 55 pounds per day for NO_x and ROC, and 80 pounds per day for PM_{10}. Where projects exceed the offset trigger, the significant effect shall be considered mitigable to insignificance where APCD rules require offsets and net emissions after offsets are less than the trigger for offsets.

Project Screening for CO Impacts:

1) If a project contributes less than 800 peak hour trips, then CO modeling is not required.

2) Projects contributing more than 800 peak hour trips to an existing congested intersection at level of service (LOS) D or below, or will cause an intersection to reach LOS D or below, may be required to model for CO impacts. However, projects that will incorporate intersection modifications to ease traffic congestion, are not required to perform modeling to determine potential CO impacts.

CO concentrations at congested intersections can be estimated using air quality impact modeling such as CALINE4 or similar models. The CALINE4 model requires intersection-specific, operational data on vehicles per hour and hourly departure volumes obtained from a project-specific traffic study. The methodology is described in the Air Quality Analysis for EIRs, available from the Planning and Development Department.

D. Cumulative Impacts.

Cumulative air quality impacts are the effect of long-term emissions of the proposed project on the projected regional air quality or localized air pollution problems in the County. As discussed in the County's 1993 CEQA Guidelines (Guidelines for the Implementation of the California Environmental Quality Act of 1970, as amended (revised January 2008), the cumulative contribution of project emissions to regional levels should be compared with existing programs and plans, including the AQAP. To evaluate the cumulative impacts of localized pollutants, the contribution of the project's emissions to background levels should be considered. Due to the county's non-attainment status for ozone and the regional nature of the pollutant, if a project's total emissions of the ozone precursors, NO_x or ROC, exceed the long-term threshold, then the project's cumulative impacts will be considered significant. For projects that do not have significant ozone precursor emissions or localized pollutant impacts, emissions have been taken into account in the AQAP growth projections and therefore, cumulative impacts may be considered to be insignificant.

E. Consistency with the AQAP and Other Planning Documents.

Consistency with local and regional plans, such as the Air Quality Attainment Plan (AQAP), the Congestion Management Plan (CMP) and the Regional Transportation Plan (RTP) is required under CEQA. Under the Federal Clean Air Act, projects which receive federal funding or are subject to federal approval must show conformity with the State Implementation Plan, of which the AQAP is a part. Proposed projects subject to AQAP consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects. By definition, consistency with the AQAP, for the projects subject to these guidelines, means that stationary and vehicle emissions associated with the project are accounted for in the AQAP's emissions growth assumptions. The AQAP generally relies on the land use and population projections provided in the Santa Barbara County Association of Governments' Regional Growth Forecast. The current criteria for determining consistency of these projects are explained in the implementation document, Air Quality Analysis for EIRs.

Consistency with the Air Quality Supplement of the County's Land Use Element must also be analyzed. The air quality policies in the Comprehensive Plan encourage mixed use development and alternative transportation modes. Specifically, project alternatives for proposed housing projects should consider land development design policies aimed at reducing air pollutant emissions, such as pedestrian-oriented and transit-oriented development (TOD). The TOD concept involves a mixed-use community within a typical 2,000-foot walking distance of a transit stop and core commercial area. The design, configuration

and mix of uses emphasize a pedestrian-oriented environment and reinforce the use of alternative modes of transportation. TOD designs can help to reduce the number of auto trips and vehicle miles traveled by creating opportunities to walk and bike, while enhancing the area's quality of life and protecting affordable housing goals. The APCD may be contacted for reference material on these concepts. The APCD also encourages early consultation prior to the CEQA determination by the lead agency.

F. Other Air Quality Issues Which May Be Applicable

The following issues should be discussed if they are applicable to the project.

1. **Siting Criteria for Schools.** CEQA Section 21151.8 requires school districts to consider the impacts of siting a new school within one-quarter mile of existing facilities that emit toxic or hazardous air pollutants. The Interagency Review Section of the APCD should be contacted in writing for assistance in identifying the locations of such facilities within the proximity of proposed school sites. The APCD should also be contacted for assistance with health risk assessment methodology, if necessary.

2. **Toxic or Hazardous Air Pollutants.** Some classifications of projects are more likely than others to emit toxic pollutants. Table 2 lists examples of commercial or industrial activities that may be associated with toxic air pollutants. This list is not all inclusive.

TABLE 2 - Examples of Projects Which May Emit Toxic Air Pollutants

ACTIVITY	CHEMICAL
Gas Stations	Benzene
Dry Cleaning	Tetrachloroethylene (Perchloroethylene) Carbon Tetrachloride
Medical Sterilization	Ethylene Oxide
Rubber/ Plastic Fabrication	Xylene
Electronic and Parts Manufacturing	1,1,1 Trichloroethylene and other chlorinated hydrocarbon solvents
Landfills	Vinyl chloride, Benzene, etc.

If any of these or other projects which emit toxic air pollutants, such as auto body shops, funeral homes etc., are involved, the APCD should be contacted for information. For most of these projects an APCD permit will be required. Health risk management decisions regarding the project will be addressed during the APCD permitting process to ensure that toxic emissions from the project are reduced to the maximum extent feasible.

3. **Nuisance.** Construction projects have a high probability of creating objectionable dust impacts. Also fugitive dust from construction is roughly 50 percent particulate matter that is 10 microns (or less) in diameter (PM_{10}). PM_{10} is a criteria pollutant with adverse health impacts. Sensitive receptors may be affected because of their location downwind. Dust mitigation measures are required under the County's Grading Ordinance for all projects involving earth moving activities over 50 cubic yards regardless of location.

   If a project has the potential to cause an odor or other long-term air quality nuisance problem impacting a considerable number of people, the environmental document (Initial Study, ND or EIR) should describe the history of complaints from pre-existing conditions, the number of people affected and other relevant information so that the impacts can be mitigated where feasible. This information may be available in APCD files for certain areas. New projects that have a high probability of emitting objectionable odors or new developments that may be affected because of their location downwind should be identified early in the Initial Study. This may prevent nuisance problems after the project is built. Odor issues can sometimes be

resolved by changing the location of the equipment or the process. Nuisance impacts need not be quantified at the initial study stage and may be analyzed qualitatively on a case by case basis.

BIBLIOGRAPHY

1. Santa Barbara County Air Pollution Control District (SBCAPCD), December 1991. 1991 Air Quality Attainment Plan: State Ozone Standard Countywide.
2. SBCAPCD and Santa Barbara County Association of Governments, 1993. 1993 Rate-of-Progress Plan: Federal Ozone Standard Countywide.
3. SBCAPCD, 1979. 1979 Air Quality Attainment Plan.
4. SBCAPCD, May 1992. Rules and Regulations.
5. SBCAPCD, March 1992. 1990 Annual Air Quality Report.
6. SBCAPCD, June 1991. Particulate Matter Emission Reduction Study.
7. Santa Barbara County Association of Governments (SBCAG), 1991. Congestion Management Plan.
8. SBCAG, August 1989, Forecast '89: Santa Barbara County Regional Growth Forecast 1985-2005.
9. U.S. Environmental Protection Agency (EPA), September 1985, Compilation of Air Pollutant (AP-42) Emission Factors. Vol. II, Fourth edition.
10. Santa Barbara County Resource Management Department, Division of Environmental Review, September 1990. Environmental Thresholds and Guidelines Manual.
11. California Air Resources Board (CARB), 1990.Air Quality Analysis Tools (AQAT-3).
12. CARB, November 1986. Methodology To Calculate Emission Factors For On-Road Motor Vehicles.
13. California Department of Transportation (CalTrans), 1986. CALINE4- A Dispersion Model for Predicting Air Pollution Concentrations near Roadways.
14. Institute of Transportation Engineers (ITE), 1991. Trip Generation.
15. City of San Diego, 1992. Transit-Oriented Development Design Guidelines.

6. BIOLOGICAL RESOURCES *(Approved by the Board of Supervisors September 27, 1994)*

A. Introduction.

Federal and State laws and adopted County policies require the protection of natural habitats and associated wildlife and vegetation in recognition of their many values, including maintaining a healthy balance between urban built areas and supportive natural environment, nutrient recycling, providing for watershed protection, protection against erosion, cleansing of air and water, food chain support, scientific and medical research, education, recreation, aesthetics, and for the intrinsic value of wildlife and vegetation and their natural ecosystems.

Santa Barbara County has a wide diversity of habitat types, including chaparrals, oak woodlands, wetlands and beach dunes. Preservation of large contiguous habitat areas is the key to preserving biodiversity and avoiding additional species becoming rare, endangered or extinct.

Due to the complexities of ecosystems and the many factors involved in assessing the value of biological resources and project impacts, general qualitative guidelines rather than numerical thresholds are provided.

B. Legal Authority.

1. CEQA Guidance for Biological Impact Assessment. The following sections of the State CEQA Guidelines provide general direction for the evaluation of biological resource impacts as a part of the environmental review of proposed projects.

California Environmental Quality Act (CEQA) Section 15065 states that a Lead Agency shall find that a project may have a significant effect on the environment and thereby require an Environmental Impact Report (EIR) to be prepared for the project where the project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal.

CEQA Appendix G states that a project will normally have a significant effect on the environment if it will:

(a) Conflict with adopted environmental plans and goals of the community where it is located;

(c) Substantially affect a rare or endangered species of animal, plant or the habitat of the species;

(d) Interfere substantially with the movement of any resident or migratory fish or wildlife species; and

(e) Substantially diminish habitat for fish, wildlife or plants.

2. Federal and State Requirements for Protection of Biological Resources. Environmental impact analysis and mitigation needs to take into account Federal and State biological resource regulations. The Federal Endangered Species Act and California Endangered Species Act formally list plant and animal species determined to be rare, threatened or endangered, or candidate species, and establish regulations for protecting these species and their habitats. Additional information regarding these statutes is provided in a separate technical document (Planning and Development Department Biological Resources Technical References, 1994).

Other federal statutes include the National Environmental Policy Act (NEPA), the Clean Water Act Section 404 (for protection of wetlands), Bald Eagle Protection Act, Migratory Bird Treaty Act, Executive Order 11990 (wetlands protection), Rivers and Harbors Act Section 10, Marine Protection, Sanctuary and Research Act, Marine Mammal Protection Act, and Section 1601 and 1603 Stream Alteration Agreements.

3. **County Biological Resources Policies.** Requirements for the protection of biological resources in the unincorporated area of Santa Barbara County are provided by the Comprehensive Plan Conservation Element, Environmental Resource Management Element (ERME), Land Use Element, Community Plans, and the Coastal Land Use Plan. These documents identify sensitive habitats and species, and provide measures to direct project design and policies to protect biological resources.

C. Guidelines for Assessment of Biological Resources Impacts.

1. **Initial Study Review Process.** The term "biological resources" refers to plant and animal species and habitats that support plant and animal species.

   The value of a habitat and the resources present on the project site and potential project impacts are assessed preliminarily during the initial study review process. The first task in the assessment of biological impacts is an evaluation of the plant and animal resources on the project site and the second focuses on the project impact itself, using a series of assessment factors. The initial study evaluation determines whether an EIR or Mitigated Negative Declaration should be prepared based upon substantial evidence (not public controversy) that there is the potential for significant adverse biological impacts to occur as a result of a proposed project.

   Based on a preliminary site assessment and review of existing historical resource information (designated environmentally sensitive habitat (ESH) areas, biological resource maps, reports, surveys, and Natural Diversity Data Base maps, available in the Planning and Development Department), staff utilizes the methodologies described below to determine whether resources on a site are biologically valuable, and whether a project may result in a significant impact to biological resources. In some instances a biological consultant survey of the site is required to determine the presence or absence of sensitive species and the value of habitat on and surrounding the project site, and to identify potential project impacts and feasible measures which could be incorporated into the project design to avoid or minimize the potentially significant impacts. Guidelines for performance of biological studies and sensitive resource definitions are provided in a separate technical document.

   The determination of impact is done on a case-by-case basis. Because of the complexity of biological resource issues, substantial variation can occur between cases. The following sections identify questions and factors used in assessing the value of biological resources, and the significance of project impacts.

2. **Evaluation of Resources on the Project Site.**

   a. **Resources Inventory.**

      (1) What biological communities are on the site? What size area?

      (2) Is the habitat type relatively common? Is it rare and occurring in only a few places in the region, or significantly declining in extent and/or quality? Is the habitat designated as an ESH area on County planning documents, or designated as "critical habitat" for listed species by Federal or State agencies?

(3) Is the site in an urban, rural or outlying area? What are the uses surrounding the site? Is the habitat isolated or is it contiguous with adjacent habitat or close enough to provide a link between habitats?

(4) Does the habitat support resident species or migratory species? Are there protected species (e.g., endangered or threatened), or species of candidate, special, or local concern or healthy rare species?

b. Condition and Quality.

(1) Is the habitat pristine or disturbed? How much or to what degree?

(2) How biologically productive is it? Does it support an especially rich and diverse plant and/or wildlife population?

(3) Is the habitat resource (including the surrounding area if it is related) large enough to be viable?

3. Evaluation of Project Impacts. Assessment of impacts must account for both short-term and long-term impacts. Thus the assessment must account for items such as immediate tree removal and longer-term, more subtle impacts such as interruption of the natural fire regime or interference with plant or animal propagation.

a. Types of Impacts to Biological Resources. Disturbance to habitats or species may be significant, based on substantial evidence in the record (not public controversy or speculation), if they substantially impact significant resources in the following ways:

(1) Substantially reduce or eliminate species diversity or abundance

(2) Substantially reduce or eliminate quantity or quality of nesting areas

(3) Substantially limit reproductive capacity through losses of individuals or habitat

(4) Substantially fragment, eliminate, or otherwise disrupt foraging areas and/or access to food sources

(5) Substantially limit or fragment range and movement (geographic distribution or animals and/or seed dispersal routes)

(6) Substantially interfere with natural processes, such as fire or flooding, upon which the habitat depends.

b. Less Than Significant Impacts. There are many areas in the County where there is little or no importance to a given habitat and it is presumed that disruption would not create a significant impact. Examples of areas where impacts to habitat are presumed to be insignificant include:[1]

(1) Small acreages of non-native grassland if wildlife values are low.

(2) Individuals or stands of non-native trees if not used by important animal species such as raptors or monarch butterflies.

(3) Areas of historical disturbance such as intensive agriculture.

[1] Pursuant to CEQA, a presumption based upon County thresholds that a project's impact is insignificant is rebutted if there is substantial evidence in light of the whole record before the lead agency that the project may have a significant impact on the environment (Pub. Res. Code §21082.2).

(4) Small pockets of habitats already significantly fragmented or isolated, and degraded or disturbed.

(5) Areas of primarily rudural species resulting from pre-existing man-made disturbance.

c. Impact Assessment Factors. In addition to the criteria listed in a. "Types of Impacts to Biological Resources" above, the following questions and factors are used in assessing the significance of project impacts on biological resources.

(1) Size.

How much of the resource in question both on and off the project site would be impacted? (percentage of the whole area and square footage and/or acreage are both useful to know)

How does the area or species that would be impacted relate to the remaining populations off the project site? (percentage of total area or species population, either quantitatively or qualitatively.)

(2) Type of Impact.

Would it adversely indirectly affect wildlife (light, noise, barriers to movement, etc.)?

Would it remove the resource or cause an animal to abandon the area or a critical activity (e.g., nesting) in that area?

Would it fragment the area's resource?

(3) Timing.

Would the impact occur at a critical time in the life cycle of an important plant or animal (e.g., breeding, nesting, or flowering periods)?

Is the impact temporary or permanent? If it is temporary, how long would the resource take to recover?

Would the impact be periodic, of short duration, but recur again and again?

D. Habitat-Specific Impact Assessment Guidelines.

The following section provides additional impact assessment guidelines specific to several biological communities. These guidelines are to be used in conjunction with the general impact assessment guidelines described in Section III. (Note: Not all habitat types found in Santa Barbara County are addressed by these habitat-specific guidelines. Habitat types not addressed here are assessed with the general impact assessment guidelines in Section III.)

1. Wetlands.

a. Description. Wetlands are among the most biologically productive of habitats, and the County's wetlands have been diminished both in areal extent and quality from the historic condition. As a result, naturally-occurring wetlands are an important resource, and projects with potential impacts to wetlands must be carefully evaluated. Examples of wetlands include coastal salt and brackish marshes, fresh water marshes, and vernal pools. Special cases include seasonal wetlands, vegetated flats, inter-dunal swale wetlands, and vegetated river bars and flats (riparian areas).

b. Definition. For the purposes of determining potentially significant effect, Santa Barbara County uses the following wetland definition that has been adopted by most resource protection agencies (U.S. Fish and Wildlife Service, the California Coastal Commission, the California Fish and Game Commission and the California Department of Fish and Game).[2] This definition reads:

> *For purposes of this classification wetlands must have one or more of the following three attributes:*
>
> *a) At least periodically, the land supports predominantly hydrophytes, that is plants adapted to moist areas.*
>
> *b) The substrate is predominantly un-drained hydric soil, and*
>
> *c) The substrate is non soil and is saturated with water or covered by shallow water at some time during the growing season of each year. (Cowardin 1979)*

In order to ensure that wetland protection standards are applied equitably to affected property owners, wetlands which have only one of the defining three characteristics, especially those defined only by seasonal ponding, require careful review to ensure that highly disturbed areas with artificially compacted soils which do not have true wetland characteristics are not mistakenly identified as wetlands.

c. Wetland/Upland Boundary Definition. The same category used to delineate wetland is used to delineate the boundary between wetland and upland.[3] The upland limit of wetland is designated as 1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic (semi-dry) or xerophytic (dry) cover; or 2) the boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or 3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not.

d. Wetland Impact Assessment Guidelines. The following types of project-created impacts may be considered significant:

(1) Projects which result in a net loss of important wetland area or wetland habitat value, either through direct or indirect impacts to wetland vegetation, degradation of water quality, or would threaten the continuity of wetland-dependant animal or plant species are considered to have a potentially significant effect on the environment (California Environmental Quality Act: Guidelines, Appendix G; items c, d, and t).

(2) Wildlife access, use, and dispersal in wetland habitats are key components of their ecosystem value. For example, many upland species of wildlife could not persist without access to water. Movement between contiguous habitats through riparian areas (e.g.: from mountainous chaparral to valley grassland or coastal mesa) allows for many species to continue to persist and prevents genetic isolation. Projects which substantially interrupt wildlife access, use and dispersal in wetland areas would typically be considered to have potentially significant impacts.

[2] It is the goal of Santa Barbara County to maintain a definition of wetlands consistent with Federal and State resources agencies listed above.

[3] Methodologies used in delineating wetlands are consistent with those utilized by Federal and State resources agencies referenced above.

(3) The hydrology of wetlands systems must be maintained if their function and values are to be preserved. Therefore, maintenance of hydrological conditions, such as the quantity and quality of run-off, etc., must be assessed in project review.

e. Coastal Salt Marsh Impact Assessment Guidelines. Project-created impacts may be considered significant due to the potential to change species composition and habitat value as outlined below.

(1) Substantial alteration of tidal circulation or decrease of tidal prism.

(2) Adverse hydrologic changes (e.g., altered freshwater input), substantial increase of sedimentation, introduction of toxic elements or alteration of ambient water temperature.

(3) Construction activity which creates indirect impacts such as noise and turbidity on sensitive animal species, especially during critical periods such as breeding and nesting.

(4) Disruption of wildlife dispersal corridors.

(5) Disturbance or removal of substantial amounts of marsh habitats. Because of the high value and extremely limited extent of salt marsh habitat in the County, small areas of such habitat may be considered significant.

f. Vernal Pools Impact Assessment Guidelines: The following types of project-related impacts may be considered significant:

(1) Direct removal of vernal pool or vernal pools complex.

(2) Direct or indirect adverse hydrologic changes such as altered freshwater input, changes in the watershed area or run-off quantity and/ or quality, substantial increase in sedimentation, introduction of toxic elements or alteration of ambient water temperature.

(3) Disruption of larger plant community (e.g., grassland) within which vernal pool occurs, isolation or interruption of contiguous habitat which would disrupt animal movement patterns, seed dispersal routes or increase vulnerability of species to weed invasion or local extirpation. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.). These types of direct and indirect impacts are potentially significant.

2. Riparian Habitats.

a. Description. Riparian habitat is the terrestrial or upland area adjacent to freshwater bodies, such as the banks of creeks and streams, the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). A rich assemblage of wildlife series, including birds, mammals and amphibians are found in riparian habitats. In Santa Barbara County, riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can also occur along arroyos and barrancas, and other types of drainages throughout the County.

b. Riparian Impact Assessment Guidelines, The following types of project-related impacts may be considered significant:

(1) Direct removal of riparian vegetation.

(2) Disruption of riparian wildlife habitat, particularly animal dispersal corridors and or understory vegetation.

(3) Intrusion within the upland edge of the riparian canopy (generally within 50 feet in urban areas, within 100 feet in rural areas, and within 200 feet of major rivers listed in the previous section), leading to potential disruption of animal migration, breeding, etc. through increased noise, light and glare, and human or domestic animal intrusion

(4) Disruption of a substantial amount of adjacent upland vegetation where such vegetation plays a critical role in supporting riparian-dependent wildlife species (e. g., amphibians), or where such vegetation aids in stabilizing steep slopes adjacent to the riparian corridor, which reduces erosion and sedimentation potential.

(5) Construction activity which disrupts critical time periods (nesting, breeding) for fish and other wildlife species.

3. Native Grasslands.

a. Description: Native Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the county.

b. Native Grassland Habitat Impact Assessment Guidelines:

(1) For purposes of resource evaluation in Santa Barbara County, a native grassland is defined as an area where native grassland species comprise 10 percent or more of the total relative cove.[4,5]

(2) Removal or severe disturbance to a patch or patches of native grasses less than one-quarter acre, which is clearly isolated and is not a part of a significant native grassland or an integral component of a larger ecosystem, is usually considered insignificant.

4. Oak Woodlands and Forests.

a. Description. There are three primary types of oak woodlands in Santa Barbara County: Valley Oak, Coast Live Oak, and Blue Oak woodlands. The number, type, and density of oak trees, and the relationship between trees and understory are principal characteristics which define the various types of woodlands. Oak habitats support a diverse wildlife population, and offer abundant resources to wildlife including food

[4] The California Department of Fish and Game, Natural Heritage Division uses the 10 percent relative cover figure in determining acreages of remaining native grasslands (Keeler-Wolf, Natural Diversity Data Base, personal communication May 1992). (Relative cover is the cover of a particular species as a percentage of total plant cover of a given area. [Barbour, Burk & Pitts 1980].)

[5] Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Therefore, for example, where a high density of small patches occur in an area of one acre, the whole acre should be delineated if native grassland species comprise 10 percent or more of the total relative cover, rather than merely delineating the patches that would sum to less than one acre.

sources, shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites.

b. Impact Assessment Guidelines for Woodlands and Forest Habitat Areas.[6] Project-created impacts may be considered significant due to changes in habitat value and species composition such as the following:

(1) Habitat fragmentation.

(2) Removal of understory.

(3) Alteration to drainage patterns.

(4) Disruption of the canopy

(5) Removal of a significant number of trees that would cause a break in the canopy or disruption in animal movement in and through the woodland

5. Impact Assessment for Individual Native Trees.[6]

a. Description. Native specimen trees, regardless of size, are potentially significant, and rare native trees, which are very low in number or isolated in distribution (such as Island Oak) may be particularly significant. This significance evaluation is done on a case-by-case basis and considers tree size, numbers, location, relationship to habitat, etc.

b. Definition. Specimen trees are defined, for biological assessment purposes, as mature trees that are healthy and structurally sound and have grown into the natural stature particular to the species.

c. Native Tree Impact Assessment. In general, the loss of 10 percent or more of the trees of biological value on a project site is considered potentially significant.[7]

E. General Mitigation Guidelines for Biological Impacts.

1. Mitigation Hierarchy. The following general approaches to reducing biological impacts are presented in the order of their effectiveness.

a. Avoidance.

Avoid direct or indirect impacts to significant biological resources through project design.

Focus on maintaining large, contiguous habitat areas and animal movement corridors. A project design which clusters development on a relatively limited portion of the project site may reduce the habitat area disturbed by the project.

b. Onsite Mitigation.

Minimize or reduce impacts through on-site design and resource protection measures.

[6] The impact assessment guidelines for oak trees, woodlands and forest habitat do not apply to non-discretionary level oak tree removal of protected and unprotected size under the Grading Ordinance Guidelines for Native Oak Tree Removal that are incorporated as Appendix A in County Code, Chapter 14. Non-discretionary-level oak tree removal of protected and unprotected size that is subject to and in compliance with these Guidelines has been previously analyzed in the program EIR, 00-EIR-07 RV1.

[7] The number of trees present onsite form which the 10 percent is measured may be calculated either by counting individual trees or by measuring the area of the tree canopy with a planimeter.

Measures may include vegetative spatial buffer between project and habitat areas; revegetation; habitat enhancement; erosion and water quality protection; on-site replacement/compensation; maintenance and management measures such as fencing, weed control, use of building envelopes, and dedication of areas through open space or conservation easements or grant deed of development rights; short-term measures to protect against construction impacts (e.g., fencing, timing of construction to avoid nesting season).

c. Off-Site Mitigation.

Compensate for on-site impacts through off-site measures.

When avoidance or on-site mitigation is infeasible or inadequate to reduce impacts, measures such as those listed under on-site mitigation can be considered in off-site locations, or may be accomplished through in-lieu fees. Off-site approaches may be appropriate at times if a greater ecological value may be clearly gained than with on-site mitigation. (i.e., where on-site habitat is of low quality or highly fragmented).

2. Habitat Replacement/Compensation Guidelines. The mitigation approach of replacing habitat either on-site or off-site, to compensate for habitat loss, is generally not a preferred approach because it always results in some habitat loss (either short-term or long-term), and because prospects for successful habitat replacement are problematic.

Replacement mitigation should involve the same habitat type, location(s) within the same watershed and as close as possible to the site of impact, and should result in comparable and compensating size and habitat value.

Beneficial ecological restoration projects, where the purpose of the project is to enhance or restore biological or habitat resources, compensate replacement at a minimum ratio of 1:1. Refer to the County *Guidelines for the Implementation of the California Environmental Quality Act of 1970, As Amended*, revised January 8, 2008, for the definition and requirements for beneficial ecological restoration projects.

3. Consultation on Mitigation and Project Design.

a. Biological Information. County biological information available to project applicants, consulting biologists and the public by appointment includes resource and wetland maps, historical aerial photographs, and a library of previous biological surveys and reports. More specific mitigation guidance is provided in a separate technical document augmenting these Guidelines.

b. Consultants. County staff is available through consultations and pre-application meetings to advise project applicants on project design measures to minimize biological impacts. Project sponsors may consult informally with California Department of Fish and Game and/or area consulting biologists at the preliminary review or initial study stage to determine what wildlife and vegetation resource information is available or needed and how the necessary information can be obtained.

F. Technical Background Document.

A separate technical document (Appendix A) contains the following additional information:

A. Summary of Biological Resources Statutes
B. Biological Survey Guidelines
C. Detailed Biological Habitat Descriptions
D. Biological Mitigations
E. References

7. COASTAL RESOURCES (SEAWALL/COASTAL PROTECTION POLICY)

INTRODUCTION

On April 10, 1990 the Board of Supervisors unanimously approved a new policy which requires that EIRs be prepared for seawalls and other coastal protection structures. These documents would include extensive analysis of cumulative effects and regional issues for which a given project would be involved. Concern over a potential proliferation of seawalls along the south coast led to the adoption of this policy. Note that infill structures would not be subject to the EIR requirement unless warranted by site specific impacts.

A. Administrative Policy.

1. **Coastal Units.** For purposes of seawall review, it is proposed that the unincorporated portion of the South Coast be divided into 10 units as shown on the attached map and listed below:

Coastal Unit	Location
Point Conception	VAFB to Gaviota
Gaviota	Gaviota to Eagle Canyon
Ellwood	Eagle Canyon to Coal Oil Point
Isla Vista	Coal Oil Point to UCSB
Goleta	UCSB to More Mesa
Hope Ranch	More Mesa to the City of Santa Barbara
Montecito	City of Santa Barbara to Sheffield Drive
Summerland	Sheffield Drive to Loon Point
Sandyland	Loon Point to the City of Carpinteria
Rincon Point	City of Carpinteria to the Ventura County line

Note: No coastal units were defined north of the southern boundary of Vandenberg Air Force Base (VAFB) because the presence of VAFB, the State Park at Point Sal and the Guadalupe Dunes will preclude private coastal development under County jurisdiction for the foreseeable future. Additionally, no coastal unit was defined for UCSB because they are a separate state jurisdiction.

Each unit was chosen primarily on the basis of similar geologic/geomorphic character.

2. **Infill Structures.** The administrative policy requiring extensive analysis of cumulative effects and regional coastal issues would not apply to infill coastal protection structures. A limited infill seawall or coastal protection structure is one which is limited in length and would be connected to an existing similar structure on each end. Infill protective structures, due to the potential for environmental impacts, would still require preparation of a site specific environmental document.

3. **Scope of Review.** Cumulative impact analysis for the identified stretches of beach would address geologically similar areas, would contain consistent design criteria, and would analyze the full range of alternatives to the construction of seawalls and other coastal protection structures to address coastal process/bluff retreat issues. These options could include sand replenishment, coastal protection structures, phased relocation or abandonment of bluff top homes, etc. The goal of requiring extensive cumulative analysis would be to address the potential for regional impacts, insure the implementation of a consistent approach to coastal processes for each section of coast, and to implement standard mitigation measures.

An additional goal would be to integrate the policies and findings of all seawall EIR's in order to provide the most consistent approach possible for the County as a whole. In the ideal situation, an EIR addressing a given stretch of beach could be used as a base environmental document for the processing of future coastal process/bluff retreat measures required along that stretch of coast. Each seawall EIR should address the potential impacts for the full range of alternatives (sand replenishment, seawalls, home relocation/abandonment, etc.), cumulative impacts, and specifically discuss the following:

a. Geology of the rocks which underlie a 500 foot wide strip along the coast.

b. Sea bluff retreat rates.

c. Potential for large-scale landslides.

d. Effects of coastal protection structures on littoral sand supply.

e. Effects of sea level rise due to global warming.

f. Impacts on beach access.

g. Aesthetic impacts.

h. Biological Impacts (offshore, coastal strand and bluff, etc.).

i. Coastal protection alternatives.

j. General design criteria and standard mitigation measures for seawalls.

k. Available on and offshore sand sources.

Procedurally, seawall EIRs would provide general guidelines for implementation of the particular coastal process/bluff retreat program for a given section of coast. The findings of each seawall EIR would provide guidance to County decision-makers and coastal homeowners on the acceptable methods of addressing coastal process issues within a given coastal unit. Actions taken by homeowners or the County to address coastal process issues that are consistent with the findings of the EIR for a previously reviewed coastal unit would not require major additional environmental review. Alternatively, should an application for the alteration of coastal processes contain design features which are inconsistent with those provided in a seawall EIR previously prepared for that coastal unit, the application would be subject to additional environmental review through an Addendum or a Supplement to the previous EIR.

This process will allow the decision-makers to adequately evaluate the regional issue of coastal processes/bluff retreat from a long term and regional perspective.

B. Evaluation Criteria for Temporary Foundation Improvements on Seacliff Parcels in Isla Vista. *(Prepared by Brian R. Baca, Registered Geologist, December 1, 1992)*

These "Evaluation Criteria" (formerly named "Design Guidelines") have developed over the past several months during the review of several proposed projects located on Del Playa Drive in Isla Vista. Each of these projects involved the installation of underground foundation improvements with the primary feature being 35 - 40 foot long vertical caissons (a caisson is a cylindrical, steel-reinforced concrete piling). These criteria identify design parameters and mitigation measures which, if incorporated into the project description by the applicant, may allow for the preparation of a Negative Declaration for the project (i.e., the potential for significant impacts and the need for an EIR would be avoided). These criteria follow the intent of State CEQA Guidelines section 15070(b) which describes the Mitigated Negative Declaration process. Numerous applications

similar to the cases now under review are expected to be filed with the County within the next several years. The Evaluation Criteria are intended to be a standard under which each is to be reviewed. The permitting process would involve a discretionary Special Use Permit which would authorize installation and subsequent removal followed by implementing ministerial Coastal Development Permits at the time of construction and at the time of removal.

1. Introduction. These evaluation criteria address two distinct areas of County review of proposed temporary foundation improvements including:

a. Review of environmental impacts. The assessment (and avoidance) of environmental impacts on the bluff face and the beach upon the exposure of the improvements due to continuing retreat of the sea cliff.

b. Safety hazards. The removal of elements of the proposed improvements which are undermined by ongoing erosional processes such that they become unstable and hazards to public safety. The criteria (or guidelines) listed below are intended to allow an applicant to design a project such that significant environmental impacts could be avoided for the following issue areas in the absence of evidence of unique circumstances indicating a potential for project-specific or cumulative significant impacts:

(1) Aesthetics

(2) Increased erosion of adjacent properties

(3) Long-term loss of beach width (i.e. lateral access impacts)

(4) Erosion of the bluff face during construction and removal activities

The principles underlying these criteria is that the proposed foundation improvements (caissons and related structures) would be temporary and that they would not substantially alter the rate of seacliff retreat (i.e., at no time would they protect the cliff from erosion). These criteria also specify the regulatory process which would be followed in the event that the improvements are found to create a safety hazard after exposure on the seacliff. This process is considered to adequately address potential impacts on public safety.

2. Evaluation criteria.

a. Caisson spacing along the bluff face. The proposed caissons shall be at least five feet apart, measured edge to edge (e.g., caissons which are two feet in diameter would be seven feet apart measured from the center of the caissons).

Monitoring: The Planning and Development Department Geologist shall review and approve the final construction plans prior to the issuance of the Coastal Development Permit.

b. Caisson spacing perpendicular to the bluff face. Caissons or other foundation support structures constructed on or along a line approximately perpendicular to the general trend of the seacliff (e.g., at Isla Vista Beach this would be approximately perpendicular to Del Playa Drive) shall be constructed a minimum distance of five feet apart (seven feet on center for 24 inch diameter caissons) with the following exception: they may be constructed as close as three feet apart (five feet on center for 24 inch diameter caissons) if designed and approved by a Registered Engineer or Certified Engineering Geologist. In no case shall they be closer than three feet apart (five feet on center for 24 inch diameter caissons). This criteria applies, in general, to caissons located along the side

property lines on coastal parcels. This criteria is intended to prevent undermining or weakening of support of a caisson during removal of an adjacent caisson.

Monitoring: The Planning and Development Department Geologist shall review and approve the final construction plans prior to the issuance of the Coastal Development Permit.

c. Maximum coverage of the bluff face. The caisson support system shall be designed such that upon exposure due to continuing erosion, the bluff face shall at a minimum be composed 70 percent of native material (e.g., two foot diameter caissons constructed seven feet apart on center would cover a maximum of 30 percent of the area of the bluff face if the system were fully exposed).

Monitoring: The Planning and Development Department Geologist shall review and approve the final construction plans prior to the issuance of the Coastal Development Permit.

d. Setback from adjacent property. Foundation support structures shall be located at least three feet from a property boundary except as follows: the support structures may be located as close as one foot from a property boundary if designed and approved by a Registered Engineer or Certified Engineering Geologist. In no case shall any portion of a foundation support structure be closer than one foot from a property boundary. This setback provision is considered adequate to assure that an adjacent property is not encroached upon or subject to erosion during the installation of a caisson. Removal of caissons due to environmental impacts or safety hazards would occur only after they were no longer in contact with the bluff face. Thus, the bluff face on the adjacent property would not be affected by caisson removal activities. This criteria does not pertain to boundaries between two properties which are both part of the proposed project.

Monitoring: Prior to the issuance of the Coastal Development Permit, the following shall occur: 1) the Planning and Development Department Geologist shall review and approve the final construction plans and 2) the applicant shall submit a letter from a Registered Engineer or Certified Engineering Geologist that states that the location of the subject caisson meets the above setback and that the adjacent property will not be encroached upon or subject to erosion during the installation of the caisson(s).

e. Caisson setback from the bluff face. Caissons shall be constructed a minimum of 10 feet landward of all parts of the bluff face in order to avoid potential erosion of the bluff face during construction. This setback was established by the Planning and Development Department Geologist based on observations of the character of the weak rocks exposed on the bluff face at Isla Vista Beach. A lesser setback distance for one or more caissons may be used if the Planning and Development Department Geologist determines that substantial construction-related impacts are not reasonably foreseeable based on site-specific conditions. In no case shall any construction occur within five feet of the bluff face (ordinance required setback).

Monitoring: The Planning and Development Department Geologist shall review and approve the final construction plans prior to the issuance of the Coastal Development Permit. The applicant shall clearly mark the locations of the proposed caissons and Permit Compliance shall conduct a site inspection during the pre-construction meeting required under the Coastal Development Permit to assure that the locations of the caissons meet the setback requirement.

f. **Tieback design.** Angled tiebacks may be incorporated into the design of the foundation improvements if the proposed tieback design allows for removal in a manner which is safe for workers and unlikely to result in bluff face erosion or a public safety hazard in the opinion of the County Building Official and the Planning and Development Department Geologist. Tiebacks shall be removed at the time of caisson removal to the extent feasible without causing substantial erosion of the bluff face. (Note: DYWIDAG Systems International Threadbar Rock Anchors have been reviewed by the Planning and Development Department Geologist and County Building Official and are considered at this time acceptable for use as tiebacks.)

Angled tiebacks which do not meet the above criteria shall not be incorporated into the design. Lateral support for the caissons may be obtained through structures at the top of the bluff (e.g., caissons may be tied to patios and building foundations located on the elevated marine terrace landward of the top edge of the bluff face).

Monitoring: The Planning and Development Department Geologist and County Building Official shall review and approve the proposed tieback design and the proposed removal method prior to issuance of the Coastal Development Permit.

g. **Notification and removal to avoid environmental impacts.** The project description shall incorporate the following procedures regarding the removal of the caissons in order to prevent the occurrence of significant environmental impacts on beach width (lateral access) and increased (or accelerated) erosion of adjacent properties.

(1) **Advisory letter to property owner.** The property owner may receive an advisory letter from the Planning and Development Department or the County Building Official upon exposure of one or more caissons on the bluff face. This letter would inform the current owner of the apparent condition of the caissons (i.e., the level of caisson exposure on the bluff face) and the procedures outlined in the Evaluation Criteria (this document) which will be followed by the Planning and Development Department and the County Building Official as erosion of the bluff face continues. "Exposure" of a caisson is defined as the full width of the caisson(s) being visible over the lowermost three feet of the bluff face or the full width of the caisson(s) visible for a total of 10 feet (measured vertically) on the bluff face. This letter would not require any action but would provide early notification to the property owner of upcoming removal requirements.

(2) **Notice to remove to avoid environmental impacts.** A "Notice to Remove" letter may be provided by the Planning and Development Department to the property owner which calls for removal of one or more caissons to avoid impacts on beach width (lateral access) or increased erosion of adjacent properties. Removal shall be accomplished by the property owner within one year of the date of the Notice to Remove letter using the procedures specified in the Removal Plan prepared in accordance with the parameters listed in paragraph (3) below. The physical parameters which would result in the preparation of a Notice to Remove letter are listed below.

(a) **Beach width and lateral access impacts:** Significant impacts on beach width and lateral access will be considered to begin when seacliff retreat has proceeded to the point that the caisson(s) are located more than three feet seaward from the base of the bluff. At this point the caissons would not be in contact with the bluff face. According to studies incorporated into the

environmental impact report for the Del Playa Seawall, certified by the Santa Barbara County Board of Supervisors on July 28, 1992, the emplacement of seawall (i.e., a fixed structure similar to an exposed caisson) three to four feet seaward of the base of the bluff would result in an estimated loss of up to 24 percent of the remaining average daily lateral access time. The property owner shall receive a Notice to Remove letter from the Planning and Development Department that states that the caisson(s) are three feet or more from the bluff face and calls for removal. The caisson(s) shall be removed by the property owner within one year of the date of this notification.

(b) Erosion of adjacent properties impacts: Erosion of adjacent properties due the presence of caissons would occur if the caissons served to reduce the rate of seacliff retreat such that a promontory was formed. Wave reflection off a promontory could cause increased erosion of an adjacent property. This effect is not anticipated to occur due to the spacing between caissons specified in criteria a. and b., above. These criteria (if followed) result in at least 70 percent of the bluff face being exposed to wave energy. When a majority of the bluff face is protected from wave energy, the rate of seacliff retreat is reduced, as can be observed at the existing seawalls at Isla Vista Beach. Isolated obstructions such as the support timbers for the access stairways on Isla Vista Beach which are several feet apart (similar in geometry to caissons exposed in front of the bluff face) have not discernibly reduced the retreat rate of the bluff face. However, if increased erosion of an adjacent property occurred due to a caisson-related promontory effect, it would happen after the caissons were no longer in contact with the bluff face and could be readily observed during the annual site inspection by the Planning and Development Department Geologist or County Building Official. If this effect is observed during the annual inspections, the property owner shall receive a Notice to Remove letter from the Planning and Development Department that includes a description of the evidence of increased erosion. The caisson(s) shall be removed by the applicant or current property owner within one year of the date of this notification.

(3) Removal plan to avoid environmental impacts. A detailed description of the process by which the caissons would be removed shall be included in the project description submitted in the application for a Coastal Development Permit. This description should include a discussion of the following:

(a) The physical procedure for cutting and removing the caissons.

(b) Access to the property.

(c) Equipment to be used.

(d) The estimated duration of removal activities.

(e) Transport of the removed material from the beach to a disposal site.

(f) Worker safety.

(g) An estimate of the future cost of caisson removal.

(h) The project description shall include a proposed financial security adequate to assure implementation of the provisions for caisson removal. Security will be required prior to the issuance of the Coastal Development Permit for the installation of the caissons.

(i) In addition, the removal of structures (e.g., buildings, patios) supported by the caissons or other measures to assure structural stability should be similarly discussed. The feasibility associated with the described process will be evaluated by the Planning and Development Department including the Building and Safety Division.

(4) Removal process. Removal of a caisson refers to the caisson in its entirety including tiebacks and any other supported structures. The portion of a caisson which would extend below the surface of the bedrock terrace shall be removed and the resulting hole backfilled with erodible material (fragments of Sisquoc shale, if available, or gravel). A Coastal Development Permit issued by the Planning and Development Department will be required to conduct removal activities.

(5) Monitoring. The County Building Official or the Planning and Development Department Geologist shall conduct annual inspections of the properties along the seacliff at Isla Vista Beach to monitor the level of exposure of foundation structures (i.e., the visibility of the caissons and the distance that they extend seaward of the bluff face). The Planning and Development Department Geologist shall prepare a Notice to Remove letter to the property owner which calls for removal of the exposed structure if the caissons have become exposed such that they are located three feet or more seaward of the base of the bluff or are causing increased erosion on an adjacent property.

Funding for County staff time associated with the annual inspections and notification shall be provided from the accrued earnings from a interest-bearing account set up by the applicant to be reviewed and approved by the Planning and Development Department and County Counsel prior to issuance of the Coastal Development Permit for the construction of the caissons. Upon removal of the last foundation component associated with the current application, the principal and any remaining accrued interest shall be released to the applicant. The signature of the Director of Planning and Development Department or his designated representative will be required before release of this account.

In order to assure implementation of the removal provisions included in these evaluation criteria, the applicant shall provide a financial security to be reviewed and approved by the Planning and Development Department and County Counsel prior to issuance of the Coastal Development Permit for construction of the foundation improvements. Note that this financial security would be separate from the interest-bearing account discussed above.

h. Notification and removal for public safety hazards. The project description shall incorporate the following procedures regarding the removal of the caisson(s) and related structures which are undermined by ongoing erosional processes such that they become hazards to public safety.

(1) Advisory letter to property owner. The property owner may receive an advisory letter from the Planning and Development Department or the County Building

Official upon exposure of one or more caissons on the bluff face. This letter will inform the current owner of the apparent condition of the caissons (i.e., the level of caisson exposure on the bluff face) and the procedures outlined in the Evaluation Criteria (this document) which will be followed by the Planning and Development Department and the County Building Official as erosion of the bluff face continues. Exposure of a caisson is defined as the full width of the caisson(s) being visible over the lowermost three feet of the bluff face or the full width of the caisson(s) visible for a total of 10 feet (measured vertically) on the bluff face. This letter would not require any action but would provide early notification to the property owner of upcoming removal requirements.

(2) Notice to remove due to public safety hazards. Upon identification of a potential hazard, the County Building Official or the Planning and Development Department Geologist shall prepare a Notice to Remove letter to the applicant/property owner which identifies the potentially hazardous condition. Upon receipt of this notification, the applicant will have 45 days to submit a report by a Registered Engineer or a Certified Engineering Geologist which documents the condition of the structure with regards to safety. After 45 days from notification, the hazardous components of the project shall be subject to hazard abatement (e.g., removal) procedures established by the County Building Official if no report is submitted, the report indicates that a safety hazard exists or if the County Building Official determines that a hazard exists despite contrary opinion expressed in the submitted report.

(3) Removal process. The timing and method of removal shall be determined by the County Building Official during the hazard abatement process. The hazard abatement procedures are independent of these evaluation criteria and are based on standard engineering practice and applicable building regulations.

(4) Monitoring. The County Building Official or the Planning and Development Department Geologist shall regularly conduct annual inspections of the properties along the seacliff at Isla Vista Beach to monitor the level of exposure of foundation structures (i.e., the visibility of the caissons and related structures and the distance that they extend seaward of the bluff face). If the caissons (or other foundation improvements) are determined by the County Building Official to represent a potential safety hazard, the Planning and Development Department Geologist or the County Building Official shall prepare a Notice to Remove letter to the property owner which calls for removal of the exposed structure. The procedures discussed in Subsections h.(2) and h.(3) above would then be implemented.

Funding for County staff time associated with the annual inspections and notification shall be provided from the accrued earnings from a interest-bearing account set up by the applicant to be reviewed and approved by the Planning and Development Department and County Counsel prior to issuance of the Coastal Development Permit for the construction of the caissons. Upon removal of the last foundation component associated with the current application, the principal and any remaining accrued interest shall be released to the applicant. The signature of the Director of the Planning and Development Department or his designated representative will be required before release of this account. Note that this

account would be the same one as discussed in Subsection g.(5) of these evaluation criteria.

Note that the financial security to be provided by the applicant to assure implementation of removal for environmental effects (see Subsections g.(3) and g.(5)) is not intended to cover hazard abatement costs and would be available only to the Planning and Development Department. Funding of required hazard abatement work not performed by the property owner would be obtained by the County Building Official from the property owner through established legal procedures.

3. Impact analysis summary.

a. Aesthetics. Criteria a. and c., above would assure that no more than 30 percent of the bluff face would be covered with concrete. This design parameter would avoid significant visual impacts. The white vertical lines which would be formed by the caissons would, however, still be visually dominant when exposed. For the following reasons the aesthetic impact of the caissons (upon exposure) would be considered less than significant:

(1) Maximum 30 percent concrete coverage of the bluff face (as stated above).

(2) The temporary nature of the caissons and the variability in the time of exposure due to the non-linear trend of the bluff edge would generally preclude all of the caissons on a particular parcel from being exposed at the same time.

(3) The sea bluff at Isla Vista is not an undeveloped, pristine area. The caissons would only incrementally degrade the visual character of the area. Because of the existing densely-developed nature of the bluff top on the particular properties, exposure of the caissons, as designed pursuant to these evaluation criteria, would not constitute a significant visual effect.

b. Erosion of the adjacent unprotected properties. Evaluation Criteria a., c., g. and h., above, would be considered to avoid significant erosion impacts based on the following reasons:

(1) The caissons are not anticipated to substantially reduce the rate of landward erosion of the seacliff. Thus, a promontory would not develop with the exception of the caissons themselves. If a promontory did develop behind the caissons, the caissons would be removed pursuant to Criteria 7.

(2) Each caisson would be become separated from the bluff face within a short time after its initial exposure. Waves would wash behind the caissons and not be reflected onto the adjacent properties. Wave reflection and wave refraction effects which would occur with a free-standing caisson would not substantially change the wave energy impinging on the adjacent property.

(3) The setback from property lines (Criteria d.) would allow for the installation of the caissons without substantial erosion impacts to the adjacent property.

c. Long-term loss of beach width (lateral access impacts). Impacts would be less than significant due to the implementation of the procedures included in Criteria g. Removal of the caissons within a year of the time that potentially significant impacts could begin to occur would prevent a substantial long-term effect on beach width and lateral access.

d. Erosion of the bluff face during caisson removal activities. Erosion of the bluff face is not anticipated to occur during the removal of the caissons to avoid environmental impacts as specified in Criteria g. because removal would not be required until after the caissons had been separated by natural processes from the bluff face. Removal of caissons due to public safety hazards as specified in Criteria h. would also be anticipated to occur after separation from the bluff face. Loss of bluff material by accidental contact with the bluff face during the process of caisson removal would constitute a short-term impact and would not alter the long-term rate of seacliff retreat.

e. Erosion of the bluff during removal of the tiebacks. Criteria f. would prevent the potential of an ongoing erosion problem either by requiring a design which would not result in such impacts during tieback removal. Tieback components remaining after initial caisson removal would be periodically cut back as they became safety hazards (Criteria h.).

f. Near-term erosion due to caisson construction. Criteria e. would minimize the potential of erosion of the bluff during construction of foundation improvements. With this provision, substantial erosion due to construction activities is not anticipated.

8. GUIDELINES FOR DETERMINING THE SIGNIFICANCE OF AND IMPACTS TO CULTURAL RESOURCES – ARCHAEOLOGICAL, HISTORIC, AND TRIBAL CULTURAL RESOURCES

SIGNIFICANCE EVALUATION, IMPACT ASSESSMENT, AND MITIGATION

INTRODUCTION

This document provides thresholds and guidance for evaluating potential adverse environmental effects that a proposed project may have on cultural resources. Planning and Development (P&D) staff and County decision makers should use this document in the evaluation of potential impacts to cultural resources as part of the environmental review of discretionary permit project applications required by the California Environmental Quality Act (CEQA). Projects that require a Land Use Permit or Coastal Development Permit, which are usually exempt from CEQA review, are not exempt if the project for which the permit will be issued may have substantial adverse impacts to significant historical resources. This document also provides essential guidance to professional consultants who prepare detailed technical reports addressing cultural resources and sections on cultural resources in CEQA documents, such as Environmental Impact Reports. Finally, this document is an essential reference for stakeholders with interests in the proper treatment of cultural resources, including, but not limited to Native Americans, historical preservation organizations, and other community groups.

The following discussion of Thresholds and Guidelines is divided into three parts. The first part identifies those characteristics or criteria that qualify a resource as a significant archaeological, historic, or tribal cultural resource. The second part addresses how to evaluate the *severity* of potential impacts to those resources. This is key to evaluating if an adverse change to a resource is substantial and significant. The third part of the document provides a discussion of mitigation, including some examples of mitigation measures which may avoid or lessen a potentially substantial adverse change.

Unlike most resource classes that are required to be considered during environmental review pursuant to CEQA, the CEQA Statute and CEQA Guidelines themselves contain detailed regulations and guidance specific to cultural resources. This document mainly relies on that guidance and those regulations. Many of the criteria in CEQA that address the significance and appropriate treatment of cultural resources derive from Federal, State, and Local registers of historical resources, including the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and local registers of historical resources. This includes the use of the Historic Landmarks Advisory Commission (HLAC) local registers of County Historic Landmarks and County Places of Historic Merit for significance evaluation in certain circumstances.

Additional guidance and requirements are also provided by the numerous goals, policies, and standards contained in the County's Comprehensive Plan, Community Plans, and Zoning Ordinances that address the treatment of local cultural resources in the context of discretionary land use permit projects. Projects must be designed and/or mitigation measures included such that findings of consistency can be made for those goals, policies and standards. Planners should consult the appropriate documents for these goals, policies, and standards.

Cultural resources are the tangible or intangible remains or traces left by prehistoric or historic peoples who inhabited the Santa Barbara region. These typically include prehistoric and historic archaeological sites. Although most people think of Native Americans when they think about local archaeology,

archaeological sites may also be the material remains of past non-native behavior, such as historical ruins, old trash dumps, and even shipwrecks. Another type of cultural resource includes historic resources, the most common form of which is the existing built environment. Historic resources (not to be confused with *historical* resources as used in CEQA, and defined below), include old houses, buildings, structures, roads, walls, and other important historic features. Cultural resources also include areas such as traditional cultural places and landscapes, and may even include objects, records, and manuscripts. A recently defined type of cultural resource that was added to CEQA in 2015 is the tribal cultural resource, resources with cultural value to a California Native American Tribe. Tribal cultural resources may include Native American archaeological sites, but they may also include other types of resources such as cultural landscapes or sacred places. The identification and appropriate treatment of tribal cultural resources is determined through consultation with tribes.

Initial Study Questions

Specifically, this document addresses the threshold questions contained in the County's Initial Study section on cultural resources, which are based on CEQA Guidelines Appendix G (Environmental Checklist Form). If the Initial Study determination is that there are only insignificant impacts, a CEQA exemption or Negative Declaration may be the appropriate CEQA document from the perspective of cultural resources. If the Initial Study determines that there are significant but mitigable impacts, a Mitigated Negative Declaration may be the appropriate CEQA document from the perspective of cultural resources. If after redesign and/or mitigation, it is determined that the impact is a significant and unavoidable impact, preparation of an Environmental Impact Report is required. Please refer to the County's Initial Study form G:\GROUP\P&D\Digital Library\Protos & Templates\Planning Permit Processing\CEQA Documents\Initial Study) for additional guidance on the discussion of existing setting, impacts, mitigation, Native American Consultation, and the application of these thresholds.

1.0 EVALUATING THE SIGNIFICANCE (I.E., *IMPORTANCE)* OF CULTURAL RESOURCES

As discussed in more detail in Section 1.3.3, below, the first step in determining a project's impacts to cultural resources is to identify whether or not cultural resources are present. Assuming such resources are present, there are a number of different perspectives when evaluating the importance or significance of a cultural resource during CEQA review, all of them equally valid. From the perspective of a historian, for example, the importance of a historical resource, such as a building, structure, object, or historic district, is what it can tell us about history. Such a resource may be associated with important events that contributed significantly to California history, associated with persons who were important in our past, embody distinctive historic characteristics, or represent the work of an important individual, such as a famous architect. To an archaeologist, the significance of a cultural resource most commonly lies in the information that it can provide about the past, which is important for reconstructing past cultures and testing hypotheses and models that seek to understand culture change. And for a Native American, significance includes resources that have cultural significance to a tribe, including but not limited to sacred places and cultural landscapes. Keep in mind that a single resource may be significant from more than one perspective. For example, an archaeological site may be significant both to archaeologists and Native Americans, but for very different reasons.

What follows is a discussion of the significance evaluation for the various kinds of cultural resources, as contained in CEQA Statute and CEQA Guidelines, as well as federal, state, and local codes and guidance. Depending on the nature of the cultural resource that is the subject of environmental review, one or more of these significance evaluation procedures may be appropriate.

1.1 California Register of Historical Resources

During environmental review, one of the most commonly encountered cultural resource types is the *historical resource*. Historical resources are broadly defined as those cultural resources that are considered significant under CEQA and may include sites, objects, structures, buildings, etc. Historical resources may be prehistoric or historic in age and may be archaeological resources, part of the existing built environment, other important historic resources, or a tribal cultural resource, such as a sacred place. The CEQA Guidelines contain specific direction as to what qualifies as a significant historical resource. CEQA Guidelines Section 15064.5(a) of the State CEQA Guidelines provides a definition of "historical resources." Resources that meet this definition are significant. Public Resources Code Sections 5020-5029.5 also contain many important definitions of terms used in the code section below, including historical resources, the California Register of Historical Resources, the State Historical Resources Commission, the State Office of Historic Preservation, and others.

Historical Resources (CEQA Guidelines Section 15064.5 (a))

(a) For purposes of this section, the term "historical resources" shall include the following:

(1) A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14 CCR. Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code SS5024.1, Title 14, Section 4852) including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in, or determined eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resource Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code Section 5020.1(j) or 5024.1.

1.2 National Register of Historic Places Criteria as Referenced in CEQA

National Register eligibility is also relevant to listing in the California Register. National Register criteria may also be applied to determine if a resource may be listed in the California Register of Historical Resources, and therefore significant pursuant to CEQA. Public Resources Code Section 5024.1(c) lists the National Register of Historic Places criteria that would also qualify a resource to be listed in the California Register of Historical Resources. Normally, most evaluations are done with the California Register criteria themselves, which are similar; but if a resource has already been formally evaluated as meeting National Register criteria, it may simplify the significance evaluation process. Please note that the following section of the CEQA Guidelines references the National Register criteria, but the specific wording of the criteria has been altered in order to apply specifically to resources from California. For the exact wording of the National Register criteria, go to National Register Bulletin 15 *(*https://www.nps.gov/nr/publications/bulletins/nrb15/*)*.

National Register of Historic Places Criteria (CEQA Guidelines Section 5024.1(c))

(c) A resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

1.3 Archaeological Sites

Archaeological sites may be historic or prehistoric in age. As treated by CEQA, archaeological sites may qualify as historical resources or tribal cultural resources, or both. CEQA provides additional guidance specific to archaeological sites. The determination as to whether an archaeological site qualifies as an historical resource or a unique archaeological resource should be based on the evidence gathered and presented for each specific site and should be made by a trained professional archaeologist. CEQA Guidelines Section 15064.5(c)(2) makes it clear that if an archaeological site is determined to be an historical resource, the limitations on mitigation contained in CEQA Statute Section 21083.2 do not apply, and instead mitigation should be guided by CEQA Guidelines Section 15126.4. Additionally, CEQA Guidelines Section 15064.5 (c)(3) clarifies that if an archaeological site is not an historical resource, but does meet the definition of a unique archaeological resource, it should be treated according to CEQA Statute Section 21083.2 , but that the time and cost limitations for survey and evaluation activities contained in CEQA Statute Section 21083.2 (c-f) do not apply to surveys and site evaluation

activities. If an archaeological site is neither an historical resource nor a unique archaeological site, the effects of the project on that site shall not be considered a significant effect on the environment.

1.3.1 Archaeological Sites (CEQA Guidelines Section 15064.5 (c))

(C) CEQA applies to effects on archaeological sites.

(1) When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subsection (a).

(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.

(3) If an archaeological site does not meet the criteria defined in subsection (a), but does meet the definition of a unique archaeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources.

(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

1.3.2 Unique and Non-Unique Archaeological Sites

Prior to the adoption of CEQA Guidelines Section 15064.5 in 1998 that defined and addressed the definition and treatment of historical resources, archaeological resources were primarily addressed in Appendix K to the Guidelines, which no longer exists. Appendix K was developed partly in response to CEQA Section 21083.2 that defined "unique" and "non-unique" archaeological resources. It placed significant time and cost limitations on the evaluation and mitigation of unique archaeological resources, and required no mitigation for a non-unique archaeological resource (see Section 3.6 of this document). You will see references to the old Appendix K related to archaeological resources in old reports and publications, but it no longer exists and has been replaced by CEQA Section 15064.5 that addresses historical resources.

As discussed above, the time and cost limitations for significance evaluation and mitigation for unique and non-unique archaeological resources (i.e., sites) have largely been obviated by the statute and guideline sections that address historical resources, archaeological sites, and tribal cultural resources. So if that is the case, why even discuss them in this document? CEQA recognizes the possibility that an archaeological site may not meet the definition of an historical resource but may meet the definition of a unique archaeological resource. In that case, the site shall be treated in accordance with the provisions of Section 21083.2. It is also necessary to discuss unique archaeological resource because unique archaeological resources may qualify as either tribal cultural resources or historical resources, so the definitions for unique and non-unique archaeological sites are presented here.

Unique and Non-Unique Archaeological Sites (CEQA Statute Section 21083.2 (g))

(g) As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

(h) As used in this section, "nonunique archaeological resource" means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

1.3.3 Significance Determination Process for Archaeological and Historic Sites

A detailed discussion of the requirements for archaeological and historic resource investigations and the format and content of technical documents that are to be submitted to the County as part of the CEQA review process is included as Appendix B of this Environmental Thresholds and Guidelines Manual. A brief summary of the archaeological and historic fieldwork and analysis process is included here. These activities are carried out by professional consultants and the results incorporated into CEQA documents, including Initial Studies, Exemptions, Negative Declarations, Mitigated Negative Declarations, and Environmental Impact Reports. The County maintains a list of qualified professional consultants from which applicants may choose should a technical study be required. All reports, including those produced for Phase 1, 2, and 3 investigations, must be submitted to the Central Coast Information Center at UCSB as well as the County. An additional requirement for archaeological investigations involves the curation (See CEQA Guidelines Section 15126.4(b)(3)(C)) in perpetuity of excavated materials and associated documents from Extended Phase 1, Phase 2, and Phase 3 excavations, at a County-approved curation facility, at the applicant's cost. Please refer to Appendix B of this Environmental Thresholds and Guidelines Manual – Fieldwork and Reporting Guidelines for Cultural Resources and the discussion below of mitigation and design considerations for guidance and information on other requirements and possible mitigation measures. Note that all archaeological reports that disclose site locations will remain confidential (not distributed to the public).

Phase 1

Archaeological Resources

The first phase of the process, Phase 1, is an inventory to determine whether or not any archaeological sites exist within the project area. This most often begins with records search requests. One request is made to the Central Coast Information Center at UCSB, which maintains maps and records of all recorded sites, both historic and archaeological, as well as locations of past archaeological surveys. In addition, a Sacred Lands Search Request is submitted to the Native American Heritage Commission (NAHC) to find out if any sacred lands within or near the project site have been registered with the

NAHC.[1] Once records have been obtained, a pedestrian survey of the project site is conducted by a qualified archaeologist who examines the ground surface to check for cultural materials such as chipped stone, shellfish remains, bone, groundstone, dark organic-rich midden soil, or other tell-tale signs of the presence of an archaeological site.

Sometimes, an Extended Phase 1 is conducted if there is limited visibility due to dense vegetation cover, or the project is in an area likely to have buried remains due to the post-occupation deposition of soils by alluvial or other process. An Extended Phase 1 essentially extends the examination to beneath the ground surface, and usually involves the use of shovel test pits or, on occasion, controlled backhoe trenching, with screening of soils to make sure cultural materials are not missed. If no archaeological materials are discovered, the conclusion is that no archaeological sites exist within the project area. In that case, the Initial Study question on archaeological sites would indicate that there is no impact in the CEQA document for the project.

If an archaeological site is determined to be present, then a Phase 2 significance evaluation is usually conducted, unless project redesign can avoid the site, in which case Phase 2 test excavations would not be necessary. If a site is avoided through project redesign, there would be no impact. In rare cases an Extended Phase 1 investigation may generate enough information to establish that a site is significant and preclude the need for a Phase 2 investigation. If a site is determined not to be significant based on the results of an Extended Phase 1 investigation, the Initial Study question on archaeological sites would indicate that there is an insignificant impact in the CEQA document for the project. In some cases, monitoring of ground disturbance in or near to a less than significant site may be made a condition of project approval in order to ensure that undiscovered significant deposits are properly treated if found.

Historic Resources

Phase 1 investigations of historic resources (i.e., the built environment) include both an inventory and significance evaluation of the resources. The purpose of this investigation is to analyze and present the data relevant for determining if the resource is a significant historical resource based on the relevant criteria (e.g., CEQA Guidelines Section 15064.5 (a)(3)(A-D)), including a careful evaluation of the seven aspects of integrity. Phase 1 investigations of historic resources include historical research, an inspection of the property, and a preliminary evaluation of the potential presence of significant historic resources. Historical research includes review of all appropriate documents, including site records, maps, and other appropriate archival materials including pertinent grantor-grantee land ownership title record data for the period of historical significance. Institutions that may have pertinent maps and information include the Central Coast Information Center at UCSB, the Historical Resources Clearinghouse at the UCSB Department of History, the UCSB Map and Imagery Laboratory, the Santa Barbara Historical Society, the Santa Barbara County Hall of Records, the Santa Barbara Trust for Historic Preservation, and others. Institutions that may have pertinent archival materials, including written documents and photographs, include the UCSB Library Special Collections Department, the Santa Barbara Historical Society, the Santa Barbara County Hall of Records, Mission Santa Barbara, other local historical society archives, and others. If no significant historic resources are present, a report of that determination, supported by appropriate evidence, is prepared and submitted (Phase 1 report). If the Phase 1 work results in the identification of potentially significant historic resources, then a Phase 2 investigation is conducted to assess the impacts of the proposed project and formulate appropriate mitigation measures. It is sometimes appropriate to conduct a combined Phase 1/Phase 2 investigation and prepare a single report that presents the results of both phases.

[1] Note that in many cases, recorded cultural resources that have not been registered with the NAHC exist in any given area.

If no significant historic resources are identified, the Initial Study question on historic resources would indicate that there is no impact in the CEQA document for the project.

Phase 2

Archaeological Resources

The purpose of Phase 2 is twofold: (1) to evaluate the significance of any discovered archaeological resources that cannot be avoided by project design or redesign, and (2) to assess project impacts and formulate mitigation measures for resources that are evaluated as significant under CEQA (i.e., historical resources). Fieldwork usually includes controlled and limited archaeological excavation by a qualified archaeologist, referred to as site testing. There are however some circumstances where significance determination may be made without excavation, such as a deflated archaeological site. Site testing follows a plan reviewed and approved by the County to gather and analyze data as necessary to evaluate the significance of the site pursuant to CEQA. Although significance evaluation is generally made for the site as a whole, in some cases there may be specific areas of a significant site that may lack the characteristics that impart importance or confer significance to the site due to the loss of integrity from prior disturbance, extremely low density of deposits, or other reasons. For archaeological sites determined to be significant by Phase 2 test excavations and analysis, mitigation is likely required. Avoidance of significant sites through project redesign is always the first choice, and is required by County policy if avoidance is possible. Most archaeological sites which retain their integrity can be placed within a temporal framework, and have sufficient density of material to answer research questions, are considered significant, and as such the preferred mitigation is avoidance and preservation in place. In some cases, in addition to avoidance, capping the site with sterile chemically neutral soil, geofabric, and some form of shallow-rooted landscaping may also be appropriate mitigation. A sample of the archaeological deposit should be recovered prior to capping. Additional mitigation should include analysis of the recovered materials in an analytical report. In rare cases a Phase 2 investigation may generate enough information to qualify as adequate mitigation and preclude the need for a Phase 3 investigation.

If a significant archaeological site is avoided through project redesign, and possibly capped, based on the results of a Phase 2 investigation, the Initial Study question on archaeological sites would indicate that there is a less than significant impact with mitigation and would be identified as a significant but mitigable impact in the CEQA document for the project. Please note that if a project will affect a significant site (e.g., one that is eligible for inclusion on a federal, state or local list or register), then the project is not exempt from CEQA (CEQA Guidelines Section 15300.2(f); the "exception to the exemption"). This is the case even if the project only requires a Land Use Permit or Coastal Development Permit for construction or grading. In such instances, an Initial Study should be prepared.

Historic Resources

If a potentially significant historic resource is identified in Phase 1, a Phase 2 investigation is conducted to assess project impacts and formulate appropriate mitigation measures., Avoidance and preservation in place is always the preferred mitigation. CEQA (CEQA Guidelines Section 15064.5(b)(3)) recognizes that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Building or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource. In addition, Historic American Buildings Survey /Historic American Engineering Record (HABS/HAER) documentation, or documentation similar to

HABS/HAER may also be appropriate mitigation. See also the discussion of mitigation of impacts to significant historic structures in Section 2.3.3 of Appendix B.

If impacts to a significant historic resource are avoided through project redesign and preservation in place based on the results of a Phase 2 investigation, the Initial Study question on historic sites would indicate that there is a less than significant impact with mitigation and would be identified as a significant but mitigable impact in the CEQA document for the project. Please note that if a project will affect a significant historical (e.g., one that is eligible for inclusion on a federal, state or local list or register), then the project is not exempt from CEQA (CEQA Guidelines Section 15300.2(f); the "exception to the exemption"). This is the case even if the project only requires a ministerial permit, e.g. a Land Use Permit or Coastal Development Permit for demolition of a structure. In such instances, an Initial Study should be prepared.

Phase 3

Archaeological Resources

The purpose of a Phase 3 archaeological investigation is to carry out mitigation measures, including such measures as temporary fencing during construction, capping, or even dedication of a conservation easement over the site. The avoidance of significant archaeological sites is always the preferred mitigation and is required by County policy whenever possible (see Land Use Element, Historical and Archaeological Site Policy 2). For significant sites that cannot be avoided through redesign, additional excavations may be appropriate mitigation. This type of mitigation is often referred to as data recovery. While information is obtained from a data recovery project, the excavated portion of the site, as well as the entire area impacted by the project, is destroyed. The purpose of Phase 3 is to recover, analyze, interpret, report, curate, and preserve archaeological data that would otherwise be lost due to unavoidable impacts to a significant resource. The method usually involves an archaeologist excavating in a controlled manner part of the site that will be impacted using a County-approved data recovery plan that is informed by the results of the Phase 2 test excavations. The recovered materials are analyzed pursuant to specific research issues or questions and the results are included in an analytical report. If Phase 3 data recovery excavations are proposed, the Initial Study question on archaeological sites should indicate that there is a less than significant impact after mitigation and would be identified as a significant but mitigable impact in the CEQA document for the project, or that there is a potentially significant impact resulting in a significant and unavoidable impact. Conducting Phase 3 data recovery excavations may not reduce the impact to the resource to less than significant. The determination whether the impact is significant but mitigable or remains significant and unavoidable after data recovery depends on the nature of the site and the amount that is being destroyed. This determination should be based on careful consideration by professional archaeologists and consultation with the Native American community.

Historic Resources

Phase 3 work for historic resources which are not completely avoided involves carrying out the mitigation proposed in the Phase 2 report. Mitigation measures may include, but are not limited to, preservation in place, restoration, rehabilitation, reconstruction, relocation, and documentation through drawings, plans, and photographs. Phase 3 historic resource reports document the mitigation measures that were carried out and include the documentation produced.

If Phase 3 mitigation is proposed, the Initial Study question on historic resources should indicate that there is a less than significant impact after mitigation and would be identified as a significant but mitigable impact in the CEQA document for the project, or that there is a potentially significant impact resulting in a significant and unavoidable impact. The determination whether the impact is significant

but mitigable or significant and unavoidable depends on the condition of the resource after mitigation. For example, a historic house that is relocated offsite may or may not constitute a significant and unavoidable impact due to loss of integrity even though it is being preserved. Also, HABS/HAER documentation as mitigation may not fully mitigate the impact to a historic resource if, after such documentation, the resource is not preserved in place. This determination should be based on careful consideration by and consultation with professional historians and historical architects.

1.4 Tribal Cultural Resources (AB52)

A resource type recently added to CEQA is the *tribal cultural resource*. This resource type was added to CEQA as a result of the passage of Assembly Bill 52 (Gato) in 2014 that took effect in July 2015. CEQA Statute Section 21074 contains guidance for determining what constitutes a tribal cultural resource. If a resource meets the definition of a tribal cultural resource, then it is a significant historical resource pursuant to CEQA. In addition, the statute contains direction concerning meaningful consultation regarding tribal cultural resources that must take place with California Native American tribes, should they request such consultation, on a project-by-project basis (CEQA Statute Section 21080.3.1). It is the obligation of the County, not a professional consultant, to carry out the consultation process. Professional consultants may be involved in the process, but the County is obligated to take the lead. A County P&D staff person will be identified as having the responsibility to conduct consultation with tribes. This consultation, which is confidential, recognizes that the tribes have expertise in determining if a tribal cultural resource is present within a project area, as well as proposing and determining the adequacy of mitigation measures proposed to avoid or substantially lessen potential significant impacts to a tribal cultural resource (CEQA Statute Section 21080.3.2). Required AB 52 consultation is carried out with tribes, not individuals, that have been recognized by the Native American Heritage Commission and who have requested to have such consultation with the County.

1.4.1 Tribal Cultural Resource Definition

Tribal cultural resources may be sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe (CEQA Statute Section 21074). While CEQA contains guidance regarding the identification and determination of the significance of some of these resource types (e.g., CEQA Guidelines Sections 15064.5), CEQA contains little to no guidance regarding cultural landscapes or sacred places. CEQA recognizes the expertise of tribes in identifying all tribal cultural resources, but additional guidance may be provided by the Native American Heritage Commission, which keeps an inventory of sacred lands, to the extent that tribes wish such lands to be included in that inventory. Additional guidance may also be found in National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties. Although the National Register process uses evaluation criteria that are somewhat different than those used in CEQA, the general guidance provided in this bulletin is quite useful in the determination of significance of tribal cultural resources such as cultural landscapes.

Tribal Cultural Resources (CEQA Statute Section 21074)

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

1.4.2 Consultation with Tribes Regarding Tribal Cultural Resources

A critically important aspect of the evaluation and treatment of tribal cultural resources is consultation with tribes, who are recognized as experts for this type of resource. Once formally requested by a tribe, the County must offer that tribe the opportunity for consultation on any project for which a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report will constitute the CEQA document. Additional guidance documents, including a tribal consultation process timeline that details how and when a tribe must be given the opportunity to consult, and the Governor's Office of Planning and Research Tribal Consultation Guidelines (2005), can be accessed at the following link: G:\GROUP\P&D\Digital Library\Protos & Templates\Planning Permit Processing\CEQA Documents\CEQA Thresholds\Cultural Resources Thresholds and Guidelines. Three sections of the Public Resource Code discuss the requirements for consultation.

Tribal Consultation (CEQA Statute Section 21080.3.1)

(a) The Legislature finds and declares that California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources.

(b) Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. When responding to the lead agency, the California Native American tribe shall designate a lead contact person. If the California Native American tribe does not designate a lead contact person, or designates multiple lead contact people, the lead agency shall defer to the individual listed on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004. For purposes of this section and Section 21080.3.2,

"consultation" shall have the same meaning as provided in Section 65352.4 of the Government Code.

(c) To expedite the requirements of this section, the Native American Heritage Commission shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the project area.

(d) Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

(e) The lead agency shall begin the consultation process within 30 days of receiving a California Native American tribe's request for consultation.

Tribal Consultation (CEQA Statute Section 21080.3.2.)

(a) As a part of the consultation pursuant to Section 21080.3.1, the parties may propose mitigation measures, including, but not limited to, those recommended in Section 21084.3, capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource. If the California Native American tribe requests consultation regarding alternatives to the project, recommended mitigation measures, or significant effects, the consultation shall include those topics. The consultation may include discussion concerning the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and, if necessary, project alternatives or the appropriate measures for preservation or mitigation that the California Native American tribe may recommended to the lead agency.

(b) The consultation shall be considered concluded when either of the following occurs:

(1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource.

(2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

(c) (1) This section does not limit the ability of a California Native American tribe or the public to submit information to the lead agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact.

(2) This section does not limit the ability of the lead agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required.

(d) If the project proponent or its consultants participate in the consultation, those parties shall respect the principles set forth in this section.

Tribal Consultation (CEQA Statute Section 21082.3.)

(a) Any mitigation measures agreed upon in the consultation conducted pursuant to Section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to paragraph (2) of subdivision (b), and shall be fully enforceable.

(b) If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

(1) Whether the proposed project has a significant impact on an identified tribal cultural resource.

(2) Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.

(c) (1) Any Information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with subdivision (r) of Section 6254 of, and Section 6254.10 of, the Government Code, and subdivision (d) of Section 15120 of Title 14 of the California Code of Regulations, without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. This subdivision does not prohibit the confidential exchange of the submitted information between public agencies that have lawful jurisdiction over the preparation of the environmental document.

(2) (A) This subdivision does not prohibit the confidential exchange of information regarding tribal cultural resources submitted by a California Native American tribe during the consultation or environmental review process among the lead agency, the California Native American tribe, the project applicant, or the project applicant's agent. Except as provided in subparagraph (B) or unless the California Native American tribe providing the information consents, in writing, to public disclosure, the project applicant or the project applicant's legal advisers, using a reasonable degree of care, shall maintain the confidentiality of the information exchanged for the purposes of preventing looting, vandalism, or damage to tribal cultural resources and shall not disclose to a third party confidential information regarding tribal cultural resources.

(B) This paragraph does not apply to data or information that are or become publicly available, are already in the lawful possession of the project applicant before the provision of the information by the California Native American tribe, are independently developed by the project applicant or the project applicant's agents, or are lawfully obtained by the project applicant

from a third party that is not the lead agency, a California Native American tribe, or another public agency.

(3) This subdivision does not affect or alter the application of subdivision (r) of Section 6254 of the Government Code, Section 6254.10 of the Government Code, or subdivision (d) of Section 15120 of Title 14 of the California Code of Regulations.

(4) This subdivision does not prevent a lead agency or other public agency from describing the information in general terms in the environmental document so as to inform the public of the basis of the lead agency's or other public agency's decision without breaching the confidentiality required by this subdivision.

(d) In addition to other provisions of this division, the lead agency may certify an environmental impact report or adopt a mitigated negative declaration for a project with a significant impact on an identified tribal cultural resource only if one of the following occurs:

(1) The consultation process between the California Native American tribe and the lead agency has occurred as provided in Sections 21080.3.1 and 21080.3.2 and concluded pursuant to subdivision (b) of Section 21080.3.2.

(2) The California Native American tribe has requested consultation pursuant to Section 21080.3.1 and has failed to provide comments to the lead agency, or otherwise failed to engage, in the consultation process.

(3) The lead agency has complied with subdivision (d) of Section 21080.3.1 and the California Native American tribe has failed to request consultation within 30 days.

(e) If the mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of the consultation or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to subdivision (b) of Section 21084.3.

(f) Consistent with subdivision (c), the lead agency shall publish confidential information obtained from a California Native American tribe during the consultation process in a confidential appendix to the environmental document and shall include a general description of the information, as provided in paragraph (4) of subdivision (c) in the environmental document for public review during the public comment period provided pursuant to this division.

(g) This section is not intended, and may not be construed, to limit consultation between the state and tribal governments, existing confidentiality provisions, or the protection of religious exercise to the fullest extent permitted under state and federal law.

1.5 Historic Resources

Historic resources are typically structures and properties that make up the historically built environment. Most frequently, these include buildings constructed during the historic period, but historic resources may also include cultural landscapes, objects, places, linear features such as roads or walls, records, or even manuscripts that are historically significant. In general, a property or site must be at least 50 years

of age to be considered for an assessment of significance. There are exceptions for properties that are less than 50 years of age that are of exceptional significance.

Significant historic resources qualify as historical resources. In order for a resource to be a significant historical resource pursuant to CEQA, it must meet one of the four significance criteria listed in CEQA Guidelines Section 15064.5(a)(3)(A-D) and retain integrity. Integrity is the authenticity of the resource's physical identity and usually applies to historic resources. Resources must retain enough of their historic character or appearance to be recognizable as historical resources and convey the reasons for their significance. Districts, sites, buildings, structures and objects that retain integrity of location, design, setting, materials, workmanship, feeling, and association, and meet the one or more of the four significance criteria qualify as significant historical resources. Historic properties either retain integrity or they do not. To retain integrity, a historic property should have several of the seven elements of integrity listed above. Guidance for evaluating integrity may be found in National Register Bulletin 15 (https://www.nps.gov/nr/publications/bulletins/nrb15/).

Generally, a historic resource is significant if it meets the significance criteria for listing in the California Register of Historical Resources, whether the resource is formally listed or not. Additionally, historic resources are considered significant if they are listed in or eligible for listing in a local register of historical resources (CEQA Guidelines Section 15064.5(a)(2)). Also, please refer to Appendix B, Fieldwork and Reporting Guidelines for Cultural Resources for additional information.

1.5.1 Local Register of Historical Resources

In addition to the California Register of Historical Resources, a resource listed in or eligible for listing in a local register also qualifies as a significant historical resource. CEQA Statute Section 21074(a)(1)(B) and CEQA Guidelines Section 15064.5(a)(2)indicate that resources included in a local register of historical resources are presumed to be significant historical resources. Public Resources Code Section 5020.1(k) provides the following definition of local register of historical resources:

Local Register of Historical Resources (Public Resources Code Section 5020.1(k))

(k) "Local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

1.5.2 Historic Landmarks Advisory Commission

Santa Barbara County has two such a local registers: the Santa Barbara County Landmarks, and Places of Historic Merit, which are both maintained by the Historic Landmarks Advisory Commission (HLAC). Any resource listed in one of these registers is presumed to be a significant historical resource pursuant to CEQA. The statutory role of HLAC is distinct from the review of historic resources in the CEQA process done by Planning and Development staff. The review process for a property to become a County Landmark includes different criteria and reporting requirements for landmark designation than those used in CEQA review. Nevertheless, because inclusion on a local register also establishes CEQA significance, the County Landmark criteria are presented below. A Landmark is any place, site, building, structure, or object having historical, aesthetic or other special character or interest and designated as a *Landmark* under the provisions of County Code Chapter 18A. In considering a proposal to recommend to the Board of Supervisors any place, site, building, structure, or object for designation as a Landmark, the County Historic Landmarks Advisory Commission applies any or all of the following criteria as reasons for a decision:

County of Santa Barbara Historic Landmark Designation Criteria (County Code Section 18A-3):

A) It exemplifies or reflects special elements of the County's cultural, social, economic, political, archaeological, aesthetic, engineering, architectural or natural history;

B) It is identified with persons or events significant in local, state or national history;

C) It embodies distinctive characteristics of a style, type, period or method of construction or is a valuable example of the use of indigenous materials or craftsmanship;

D) It is representative of the work of a notable builder, designer, or architect;

E) It contributes to the significance of a historic area, being a geographically definable area possessing a concentration of historic, prehistoric, archaeological, or scenic properties, or thematically related grouping of properties, which contribute to each other and are unified aesthetically by plan or physical development;

F) It has a location with unique physical characteristics or is a view or vista representing an established and familiar visual feature of a neighborhood, community, or the County of Santa Barbara;

G) It embodies elements of architectural design, detail, materials, or craftsmanship that represent a significant structural or architectural achievement or innovation;

H) It reflects significant geographical patterns, including those associated with different eras of settlement and growth, particularly transportation modes or distinctive examples of park or community planning;

I) It is one of the few remaining examples in the County, region, state, or nation possessing distinguishing characteristics of an architectural or historical type or specimen.

A designated Landmark is preserved and protected by conditions restricting its demolition, removal, alteration, or use. The specific conditions for each landmarked property are spelled out in the Board Resolution which finalized the property's Landmark status. Plans for alterations to Landmarks are required to be reviewed by the Historic Landmarks Advisory Commission for approval. A benefit of obtaining County Landmark status is the applicability of the provisions of the Historic Building Code, which may waive certain requirements such as those for parking and ADA improvements.

Designation as a Place of Historic Merit officially recognizes the building or site as having historic, aesthetic or cultural value. A Place of Historic Merit, as opposed to a Landmark, is not protected by restrictions as to demolition, removal, alteration or use, but it would usually qualify as a historical resource in the context of CEQA environmental review. Designation as a Landmark recognizes the building or site at a higher level of historic, aesthetic, or cultural significance.

In addition to proposing landmark designation of historic properties to the Board of Supervisors, the Historic Landmarks Advisory Commission may also play an important advisory role in the treatment of historic resources in the review of development projects.

1.5.3 Local Historical Resource Surveys

Historical resources listed in or eligible for listing in the California Register of Historical Resources or included in a local register (such as a County Landmark or Place of Historic Merit) are significant. However, there are some circumstances where a resource identified in a local historical resource survey,

but not included in a register, may also be significant. Specifically, historical resources that were identified as significant in an historical resource survey meeting the requirements of 5024.1(g) are presumed to be significant. Local historical resource surveys are previously existing formal inventories and evaluations of multiple historic properties and buildings located in a defined geographic area such as a neighborhood or community. Such surveys must have been carried out pursuant to the criteria listed in Public Resources Code Section 5024.1(g). Although resources identified in such surveys are presumed to be significant historical resources, these criteria are not requirements for determining that a particular resource is significant. These guidelines discuss additional methods for significance determination.

Requirements for Historical Resource Surveys (Public Resources Code Section 5024.1(g))

(g) A resource identified as significant in an historical resource survey may be listed in the California Register if the survey meets all of the following criteria:

(1) The survey has been or will be included in the State Historic Resources Inventory.

(2) The survey and the survey documentation were prepared in accordance with office procedures and requirements.

(3) The resource is evaluated and determined by the office to have a significance rating of Category 1 to 5 on DPR Form 523.

(4) If the survey is five or more years old at the time of its nomination for inclusion in the California Register, the survey is updated to identify historical resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource.

1.5.4 Historic Districts and Landscapes

Although historic districts and historic landscapes are most commonly encountered in the context of nominations to and listing in the National Register of Historic Places, historical resources as defined by CEQA Guidelines Section 15064.5(a)(3) include "places" and "areas." Also, the definition of tribal cultural resource includes cultural landscapes. A cultural landscape is a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or esthetic values. There are four non-mutually exclusive types of cultural landscapes: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

Whether formally listed in the National Register of Historic Places or not, places and areas that may qualify as historical resources need to be evaluated and considered in the CEQA process. In the event that a place or area does qualify as a historical resource, CEQA provides little guidance as to their evaluation. Useful guidance may be found in the National Register Bulletins, including but not limited to:

- National Register Bulletin 15- How to apply National Register Criteria for Evaluation
- Bulletin 16- Guidelines for Completing National Register of Historic Places Form
- Bulletin 18- How to Evaluate and Nominate Designed Historic Landscapes
- Bulletin 30- Guidelines for Evaluating and Documenting Rural Historic Landscapes

2.0 DETERMINING THE SEVERITY OF IMPACTS TO CULTURAL RESOURCES

2.1 Typical Adverse Effects

Significant cultural resources are non-renewable; therefore, they cannot be replaced. The disturbance or alteration of a cultural resource causes an irreversible loss of significant information from the perspective of science and history, and also the loss sacred places, objects and traditional cultural properties from the perspective of Native Americans and other groups. Regionally, the loss of cultural resources results in the loss of our identity and our connection with the past. More specifically, these losses include the demolition, destruction, relocation, or the material alteration of a cultural resource or its immediate surroundings such that the significance of a cultural resource would be materially impaired. Typical impacts to cultural resources include:

- The non-scientific surface collection or subsurface excavation of an archaeological site, often called pot hunting.
- The destruction of cultural resources through project development (e.g., grading, clearing, demolition, trenching, road and utility construction, staging areas).
- The destruction of cultural resources through off-site improvements (e.g., road construction, utilities expansion, staging areas) associated with project development.
- An increase in development intensity which adversely affects cultural sites or landscapes (e.g., placement of a subdivision within a vacant parcel adjacent to/or surrounding a cultural resource where behavior patterns occur beyond the boundaries of a site).
- The introduction of visual, audible, or atmospheric effects that are out of character with the cultural resource or alter its setting when the setting contributes to the resources' significance (e.g. the construction of a large-scale building, structure, or object that has the potential to cast shadows patterns on a historic structure, intrude into its viewshed, generate substantial noise, or substantially increase air pollution or wind patterns).
- Damage to cultural resources or landscapes by human encroachment resulting in vandalism or site destruction (e.g., graffiti).
- The relocation of a historic structure such that its significance is reduced to a level whereby the resource no longer is considered significant.
- Modifications (e.g., remodeling, alteration, addition, demolition) to a historic resource that is not in conformance with the Secretary of Interior Standards .
- A change in use that is not compatible with the authenticity of a resource (e.g., the use of a historic house as a dollar retail store).
- Development that changes the significance of a historic structure or the surrounding historic landscape.
- Deterioration of a resource by neglect.

Two types (direct, indirect) of typical adverse effects occur in relation to cultural resources. Direct impacts are caused by and are immediately related to a project. Examples of direct impacts would be the disturbance of an archaeological site by grading, or the demolition of a historic building. Indirect impacts are not immediately related to the project, but they are caused indirectly by a project. An indirect impact is to be considered only if it is a reasonably foreseeable impact that may be caused by the project. An

example of an indirect impact would be the placement of trails in open space which has the potential to impact archaeological resources indirectly through the surface collection of artifacts by hikers.

2.2 Guidelines for Determining Impact Significance

CEQA Statute Section 21084.1 and CEQA Guidelines Section 15064.5(b)) define what constitutes substantial adverse change to the significance of an historical resource and that such adverse changes may constitute a significant effect on the environment.

2.2.1 Substantial Adverse Change to a Historical Resource (CEQA Statute Section 21084.1)

A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

2.2.2 Substantial Adverse Environmental Impact to an Historical Resource (CEQA Guidelines Section 15064.5(b))

(b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical

> *significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.*

CEQA Statute Section 21084.2 defines what constitutes substantial adverse changes to the significance of a tribal cultural resource and that such adverse changes may constitute a significant effect on the environment:

2.2.3 Substantial Adverse Change to a Tribal Cultural Resource (CEQA Statute Section 21084.2.)

> *A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.*

3.0 MITIGATION AND DESIGN CONSIDERATIONS

Cultural resource mitigation measures and design considerations used in the planning approval process depend on the specifics of a project and resources under consideration. A few examples of mitigation measures are provided in Table 1. The kinds of mitigation measures appropriate for archaeological sites are generally different than those appropriate for the historic built environment. This section will provide guidance contained in CEQA in addition to reference to policies and development standards regarding the treatment of cultural resources contained in the Santa Barbara County Comprehensive Plan and zoning ordinances. The County also has developed standard cultural resources conditions and mitigation measures (Planner's Guide to Conditions of Approval and Mitigation Measures – G:\GROUP\P&D\Digital Library\Protos & Templates\Planning Permit Processing\Findings & Conditions\Standard Conditions) that may be used as-is or amended to fit the individual circumstances of a project.

Table 1: Examples of Mitigation Measures/Conditions

Resource Type	Typical Measures Applied to Reduce Impacts to Below Significant
Archaeological Resources	Avoidance and Preservation in Place
	Archaeological Open Space Easement
	Data Recovery
	Temporary Fencing
	Site Capping
	Staging Area Limitation for Construction Activities
	Curation of Archaeological Collections[2]
	Agreement by Developer to Mitigation Conditions That Result From Consultation Between the County and a Tribe
	Public Displays/Media
Built Environment	Avoidance and Preservation in Place
	Historic Conservation Easement
	Historic Landscape Screening Plan
	Use, Maintenance, and Repair Easement
	Setback Easement for Lots Adjacent to a Historic Structure
	Historic Landscape Tree Preservation
	Historic Structure Rehabilitation Program
	Regulations of Uses in a Historic Structure
	Curation of Historic Collections
	Staging Area Limitation for Construction Activities
	Landmarking
	Public Displays/Media
	HABS/HAER Documentation, or Documentation Similar to HABS/HAER
	Secretary of Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings
	Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Weeks and Grimmer 1995)

The ideal treatment for cultural resources is avoidance of impacts to and preservation in place of the resource. CEQA and the Coastal Act do not require avoidance of cultural resources. However, the County's Comprehensive Plan, including the Coastal Land Use Plan and various community plans, contains policies that require avoidance of significant cultural resources if possible. Avoidance measures can be incorporated into project design. However, if a project has the potential to cause a significant adverse change in the significance of an historical or tribal cultural resource, then reasonable efforts must

[2] State guidance is provided by CEQA Guidelines Section 15126.4.

be made to mitigate the impact to a level below significant. Cultural resource mitigation may include data recovery, analysis, interpretation, reporting, and curation of collections and associated documents at a County-approved curation facility, at the applicant's cost, thereby preserving what would otherwise have been destroyed and lost due to construction and development activities. The primary guidance on mitigation in the context of a CEQA review of a development project is found in CEQA guidelines Section 15064.5 (see also CEQA Statute Sections 21082.3 and 21083.2):

3.1 Mitigation (CEQA Guidelines Section 15064.5(b))

(b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. …

(3) Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Building or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on the historical resource.

(4) A lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures.

(5) When a project will affect state-owned historical resources, as described in Public Resources Code Section 5024, and the lead agency is a state agency, the lead agency shall consult with the State Historic Preservation Officer as provided in Public Resources Code Section 5024.5. Consultation should be coordinated in a timely fashion with the preparation of environmental documents.

3.2 Mitigation (CEQA Guidelines Section 15126.4(b))

Further detail concerning mitigation measures for historical resources, including both Archaeological and Historic Resources, is provided by CEQA Guidelines Section 15126.4(b):

(b) Mitigation Measures Related to Impacts on Historical Resources.

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be

considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;

4. Incorporation of sites within parks, greenspace, or other open space;

3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.

4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), has recently been updated and may be found at https://www.nps.gov/tps/standards/treatment-guidelines-2017.htm.

3.3 Tribal Cultural Resource Mitigation

CEQA Statute Section 21084.3 identifies appropriate mitigation for a Tribal Cultural Resource:

3.3.1 Mitigation for Tribal Cultural Resources (CEQA Statute Section 21084.3)

(a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

(b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation

process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

(1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

3.4 Treatment of Native American Human Remains

CEQA Guidelines Section 15064.5(d) addresses development of an agreement between the applicant and the appropriate Native Americans regarding treatment of human remains with appropriate dignity in circumstances where an initial study identifies the existence or probable likelihood of Native American human remains within the project.

3.4.1 Human Remains (CEQA Guidelines Section 15064.5(d))

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code SS5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American heritage Commission. Action implementing such an agreement is exempt from:

(1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).

(2) The requirement of CEQA and the Coastal Act.

3.4.2 Accidental Discovery of Human Remains (CEQA Guidelines Section 15064.5(e))

CEQA Guidelines Section 15064.5 (e) specifically addresses what to do in the event that human remains are accidentally discovered in any location other than a dedicated cemetery:

> *(e) In the event of an accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:*
>
> *(1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:*
>
> *(A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and*
>
> *(B) If the coroner determines the remains to be Native American:*
>
> *1. The coroner shall contact the Native American Heritage Commission within 24 hours.*
>
> *2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.*
>
> *3. The most likely descendent may make recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or*
>
> *(2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.*
>
> *(A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission.*
>
> *(B) The descendent identified fails to make a recommendation; or*
>
> *(C) The landowner or his authorized representative reject the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.*

3.5 Accidental Discovery of Non-Human Remain Archaeological Materials During Construction

CEQA Guidelines Section 15064.5(f) specifically addresses provisions a lead agency should make regarding accidental discovery of historical or unique archaeological resources during construction.

3.5.1 Accidental Discovery of Historical or Unique Archaeological Resources (CEQA Guidelines Section 15064.5(f))

> *(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified*

archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue in other parts of the building site while historical or unique archaeological resource mitigation takes place.

3.6 Limitations on Mitigation for Unique Archaeological Resources

The following is the section of the CEQA Statute that establishes limitations on the time and money that can be spent evaluating and mitigating unique archaeological resources. These limitations are not applicable to historical resources and are rarely applied. See Section 1.3.2 of this document for additional discussion.

3.6.1 Archaeological Resources; Determination of effect of Project; EIR or Negative Declaration; Mitigation Measures (CEQA Statute Section 21083.2.)

(a) As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources. A negative declaration shall be issued with respect to a project if, but for the issue of nonunique archaeological resources, the negative declaration would be otherwise issued.

(b) If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:

(1) Planning construction to avoid archaeological sites.

(2) Deeding archaeological sites into permanent conservation easements.

(3) Capping or covering archaeological sites with a layer of soil before building on the sites.

(4) Planning parks, greenspace, or other open space to incorporate archaeological sites.

(c) To the extent that unique archaeological resources are not preserved in place or not left in an undisturbed state, mitigation measures shall be required as provided in this subdivision. The project applicant shall provide a guarantee to the lead agency to pay one-half the estimated cost of mitigating the significant effects of the project on unique archaeological resources. In determining payment, the lead agency shall give due consideration to the in-kind value of project design or expenditures that are intended to permit any or all archaeological resources or California Native American culturally significant sites to be preserved in place or left in an undisturbed state. When a final decision is made to carry out or approve the project, the lead agency shall, if necessary, reduce the specified mitigation measures to those which can be funded with the money guaranteed by the project applicant plus the money voluntarily guaranteed by any other person or persons for those mitigation purposes. In order to allow time for interested persons to provide the funding guarantee referred to in this subdivision, a final decision

to carry out or approve a project shall not occur sooner than 60 days after completion of the recommended special environmental impact report required by this section.

(d) Excavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report.

(e) In no event shall the amount paid by a project applicant for mitigation measures required pursuant to subdivision (c) exceed the following amounts:

(1) An amount equal to one-half of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a commercial or industrial project.

(2) An amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of a housing project consisting of a single unit.

(3) If a housing project consists of more than a single unit, an amount equal to three-fourths of 1 percent of the projected cost of the project for mitigation measures undertaken within the site boundaries of the project for the first unit plus the sum of the following:

(A) Two hundred dollars ($200) per unit for any of the next 99 units.

(B) One hundred fifty dollars ($150) per unit for any of the next 400 units.

(C) One hundred dollars ($100) per unit in excess of 500 units.

(f) Unless special or unusual circumstances warrant an exception, the field excavation phase of an approved mitigation plan shall be completed within 90 days after final approval necessary to implement the physical development of the project or, if a phased project, in connection with the phased portion to which the specific mitigation measures are applicable. However, the project applicant may extend that period if he or she so elects. Nothing in this section shall nullify protections for Indian cemeteries under any other provision of law.

(g) As used in this section, "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

(h) As used in this section, "nonunique archaeological resource" means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique

archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

(i) As part of the objectives, criteria, and procedures required by Section 21082 or as part of conditions imposed for mitigation, a lead agency may make provisions for archaeological sites accidentally discovered during construction. These provisions may include an immediate evaluation of the find. If the find is determined to be a unique archaeological resource, contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to employ one of the avoidance measures may be required under the provisions set forth in this section. Construction work may continue on other parts of the building site while archaeological mitigation takes place.

(j) This section does not apply to any project described in subdivision (a) or (b) of Section 21065 if the lead agency elects to comply with all other applicable provisions of this division. This section does not apply to any project described in subdivision (c) of Section 21065 if the applicant and the lead agency jointly elect to comply with all other applicable provisions of this division.

(k) Any additional costs to any local agency as a result of complying with this section with respect to a project of other than a public agency shall be borne by the project applicant.

(l) Nothing in this section is intended to affect or modify the requirements of Section 21084 or 21084.1.

9. ELECTROMAGNETIC FIELDS THRESHOLD

A. Introduction.

Due to the proliferation of sources of electrical energy with their associated electromagnetic fields (EMFs) and increasing public awareness over the potential health effects associated with these sources, the need to address these potential health effects through disclosure of potential environmental impacts has arisen. Although scientific evidence is inconclusive, this document briefly summarizes the information known regarding EMFs, identifies guidelines for evaluating impacts, sets a threshold to trigger project-level environmental review, and suggests mitigation approaches where possible to reduce exposure to electromagnetic fields.

B. Background.

Electromagnetic fields are composed of both electric fields and magnetic fields. Both types of fields occur in nature and in all living things. Electromagnetic energy occurs over a broad range of frequencies known as the electromagnetic energy spectrum (see figure 1). The frequency, or Hertz (Hz), that we are concerned with in this County, ranges from extremely low frequency (60 Hz) associated with power transmission facilities to 3×10^{10} Hz associated with microwaves. In between these frequencies are EMFs generated by radio, television, and radar transmissions. EMFs generated by these sources have similar properties in that they all contain electric and magnetic fields. However, the types of EMFs generated by extremely low frequency sources have different and distinct properties than those generated by higher frequency sources associated with communication facilities. These differences are discussed in more detail below.

Electric and magnetic fields are present wherever there is an electric current and voltage. Electric fields come from the amount of the charge, or voltage. They represent the forces that electric charges, which are either positive or negative, exert on each other. Electric fields are measured in volts per meter (V/m), or kilovolts per meter (kV/m). As electric charges move, they create additional forces on each other. These forces are carried through space by magnetic fields. Magnetic fields, therefore, result from the motion of an electric charge, or current. Magnetic fields are measured in milligauss (mG). When most people think of EMFs, they probably think of power transmission and distribution lines, however, they are present in household wiring and appliances and are propagated by communications facilities.

The physical characteristics of radiofrequency radiation (RFR) and extremely low frequency (ELF) EMFs from electric power differ in their function, frequency, wavelength, power levels and EMF characteristics. The function of communication facilities is to radiate energy away from an antenna outward over long distances, providing a broadcast signal for reception at another point. This is in direct contrast to electric power transmission, where the goal is to minimize any radiation away from the power cable itself (minimize power loss), while maximizing efficient energy movement along the power line. Thus, communications systems broadcast energy out through space, while power transmission attempts to minimize energy loss in space by sending energy along a cable (Wong, 1991).

Regarding the characteristics of frequency, wavelength, and power levels, ELFs differ from radio waves in that they are much lower in frequency, have extremely long wavelengths compared to very short wavelengths of radio waves, and the power levels are generally much higher in power transmission facilities than in communication facilities.

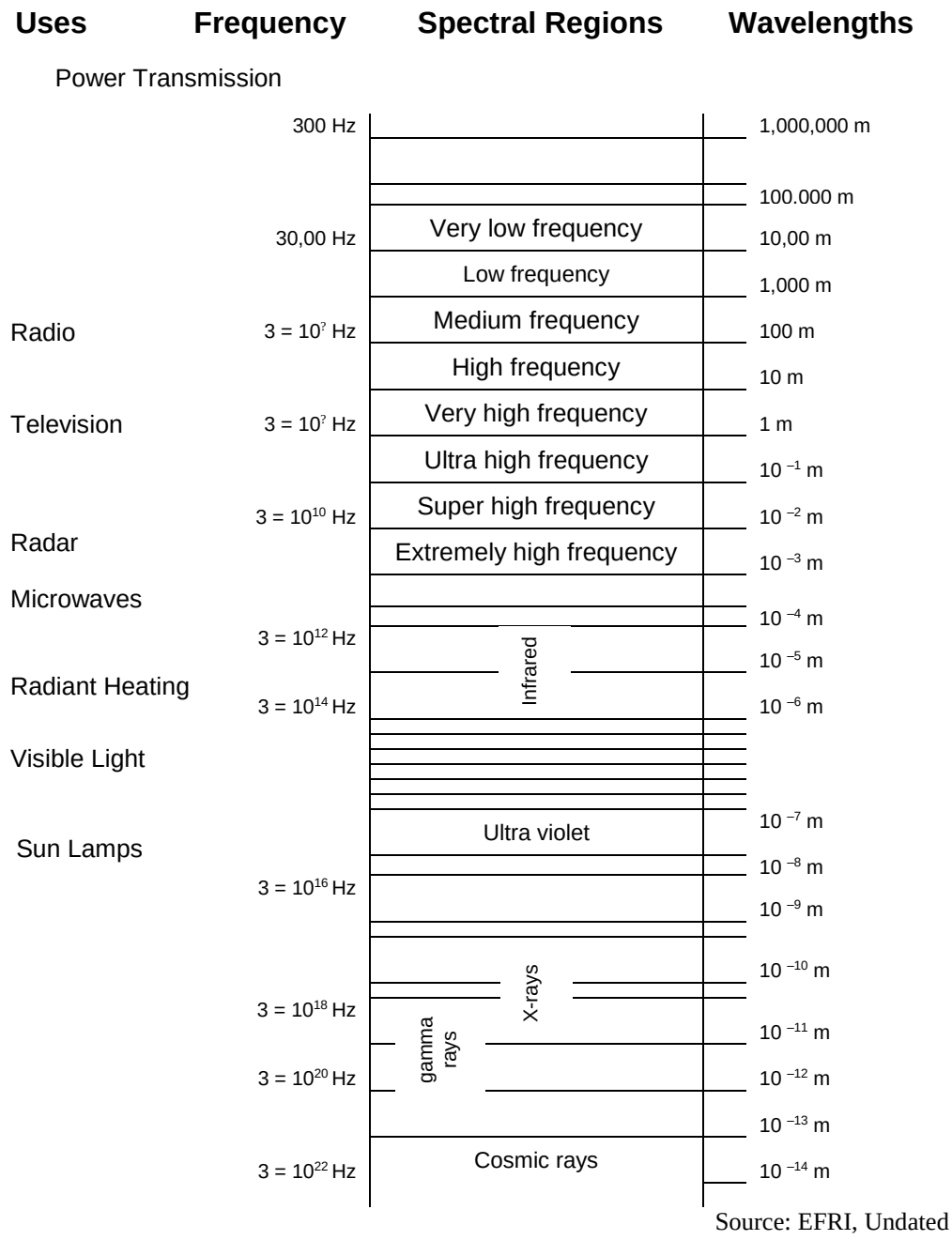


Figure 1. The electromagnetic spectrum shown by frequency and wavelength. At a frequency of 60 Hz and a wavelength of 5,000,000 meters power transmission is at the top of the figure. Frequencies less than 300 Hz are designated as the ELF (extremely-low-frequency) range.

In the case of EMF from communication facilities, the electric and magnetic fields travel, or propagate long distances from their sources. The electric and magnetic fields are linked and are considered together as a radiating electromagnetic field, thus creating what is known as radiofrequency radiation. In contrast, low frequency EMFs found in power lines project fields around the power line itself and do not propagate. In the case of electric power, the electric and magnetic portions are considered to be independent, and are not linked. Thus, when studying power-frequency fields, the separate electric and magnetic fields must be considered, not just the radiating electromagnetic fields or RFR which is typically studied in the case of radio waves (Tenforde and Kaune, 1987).

Radiation associated with EMFs is considered non-ionizing radiation. That is, the energy associated with these types of electromagnetic fields do not have the ability to ionize electrons and molecules. Ionization refers to the breakdown of chemical bonds between molecules, which results in tissue damage (Wong, 1991).

Common sources of EMFs (both low and higher frequency sources) and their field strength characteristics are discussed in Appendix A.

C. Health and Safety Issues.

In recent years, involuntary exposure of the general public to elevated EMFs has become a growing concern. This attention centers on a growing body of evidence, some of which suggests that 60-Hertz (Hz) magnetic fields at low intensities have been shown to produce adverse biological effects, in addition to factual proof that thermal heating of body tissue associated with RFR can have harmful effects.

Studies regarding ELFs to date have primarily been focused in three categories. These include cellular level studies, whole animal and human studies, and epidemiological studies. Cellular level studies have been focused on calcium efflux, cancer promotion, endocrine secretion and immune response. Animal and human studies have been focused on the nervous system, behavior patterns, reproduction and development; and cancer progression. Epidemiological studies have looked at the hypothetical relationship between human exposure to EMFs produced by power systems and human cancers occurring in children, adults and workers in occupations where extensive exposure to EMFs is an issue. Studies in each of these three categories indicates that there is evidence that 60-Hz magnetic fields can produce biological effects. A summary of these effects is included in Appendix A. What is not clear, however, is whether and how those biological effects can cause public health problems (Wong, 1991).

Effects of RFR have been primarily linked to thermal responses as a result of exposure to RF sources of energy. In general, exposure of humans and animals have the potential to interact with body tissue such that water molecules become excited, causing friction and concomitant rises in body temperature, albeit slight in most instances. This effect is similar to that which is experienced within a microwave oven, where the water molecules within the food substance are excited to create heat, thus resulting in the warming of food. Other effects, include RF burns, in which in the very near field, especially in the microwave frequencies, a person has the potential to receive a burn similar to a sunburn. The standards for RFR discussed below deal primarily with thermal effects, as many of the athermal effects are still unknown and are similar to those discussed above for ELF sources. Some of the potential ill-effects include behavior changes, abnormal hormone production, and ocular changes.

D. Thresholds.

1. **ELFs.** While some evidence supports the fact that there may be some biological effects which may result from low frequency EMFs, there are no standards or guidelines to govern the public's involuntary exposure to ELFs. Some jurisdictions throughout the nation and internationally have tried to address the problem by establishing setbacks based upon field strengths from high voltage power lines. However, none of the setbacks established are based on any causal relationship between field strengths and adverse health effects.

   Standards for ELFs are based upon the measurements of Kv/m for electric fields, and mG for magnetic fields. At the present time, most attempts at establishing standards or dosimetric relationships have focused on the limitation of magnetic fields since it is generally impossible to shield individuals from these fields. In general, it is relatively easy to shield individuals from electric fields as they do not readily penetrate buildings, structures, fencing, trees, etc.

   At this time, given the current information regarding potential health impacts and the uncertainty surrounding these impacts, the Board of Supervisors did not adopt a specific threshold for ELF

exposure. Instead, the Board of Supervisors directed staff to evaluate ELF exposure on a case by case basis, using the most current scientific data.

2. **RFR.** For RFR, standards have been established for effects resulting from thermal heating of body tissue. The most widely used conservative standards are the IEEE-ANSI C95.1-1992 Standards, which are based on power densities, as shown in Figures 2 and 3. Power density is the rate at which electromagnetic energy radiates through space in terms of watts per square meter (W/m^2) or milliwatts (1/1,000th of a watt) per square centimeter (mW/cm^2) and is customarily used in addition to the specification of the strengths of electric and magnetic fields by kV/m and mG when defining standards. It is important to note that the IEEE-ANSI standards are frequency dependent. That means that for sources of RF below and above the 30-300 MHz range, the standard is relaxed in accordance with the graph in Figure 2 and 3. The most stringent standard is for the 30-300 MHz range, and is represented by the power density level of 0.2 mW/cm^2 for general population exposure and 1.0 mW/cm^2 for occupational exposure. These standards do not address the athermal effects which are also associated with ELFs.

3. **RFR threshold.** "If humans would be exposed to radiofrequency radiation (RFR) in excess of the IEEE-ANSI C95.1-1992 standard, through the siting of new projects next to RFR sources or through the siting of new RFR sources adjacent to sensitive receptors , then a potentially significant impact would occur. (If the FCC rulemaking committee adopts a revised standard, said standard shall apply).

E. Mitigation Strategies.

In order to mitigate potential impacts from electromagnetic fields, mitigation should be designed to prevent exposure of individuals to elevated electromagnetic fields. For ELFs, this means that projects should be designed such that no living spaces are exposed to elevated magnetic fields. For RFR, individuals should not be exposed to levels exceeding the IEEE-ANSI Standards. Mitigation may take the form of setbacks, prohibitive/restrictive fencing, warning signs, disclosure statements, reconfiguration of power lines, reduction of power inputs to transmitting facilities, etc.

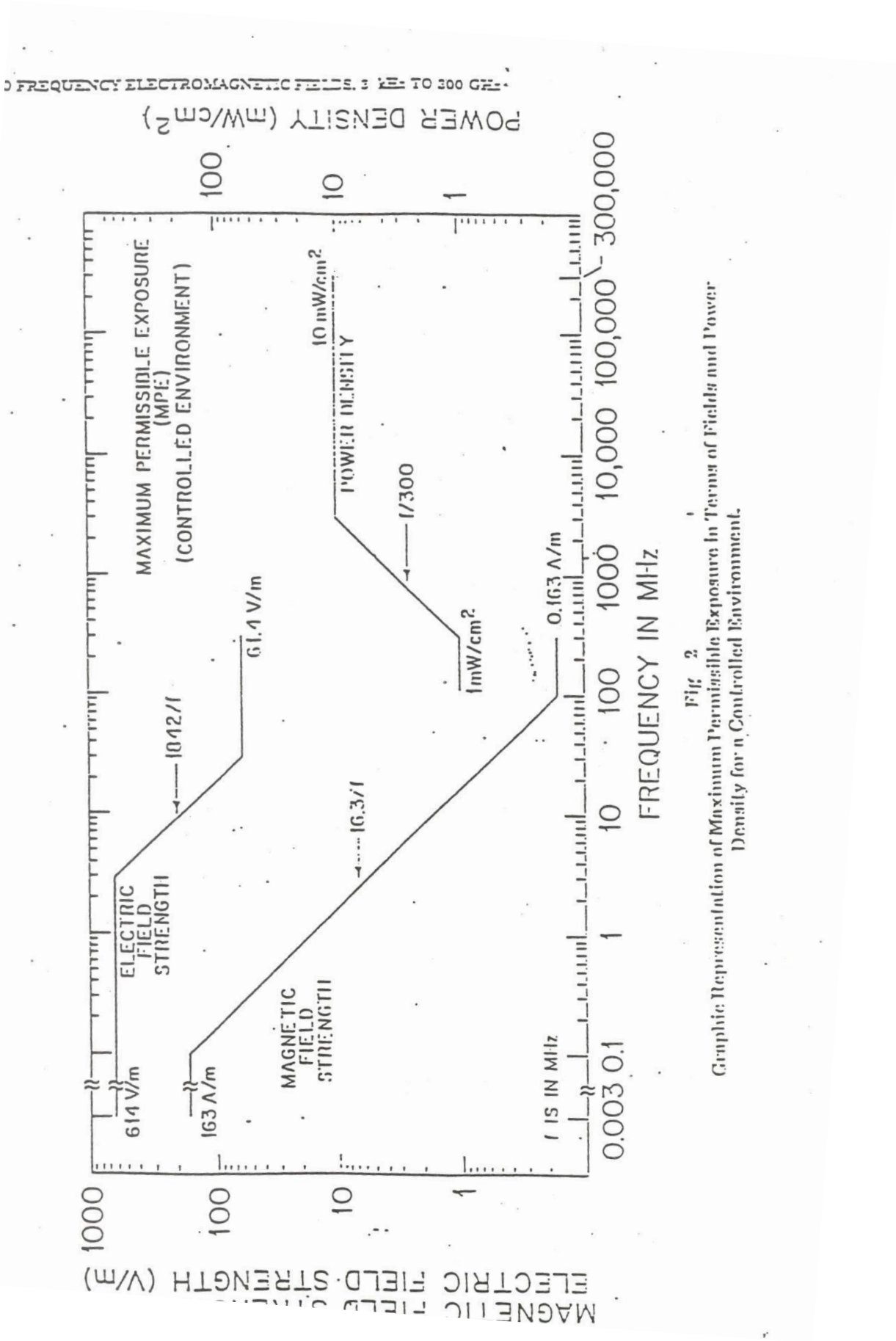


Fig 2

Graphic Representation of Maximum Permissible Exposure in Terms of Fields and Power Density for a Controlled Environment.

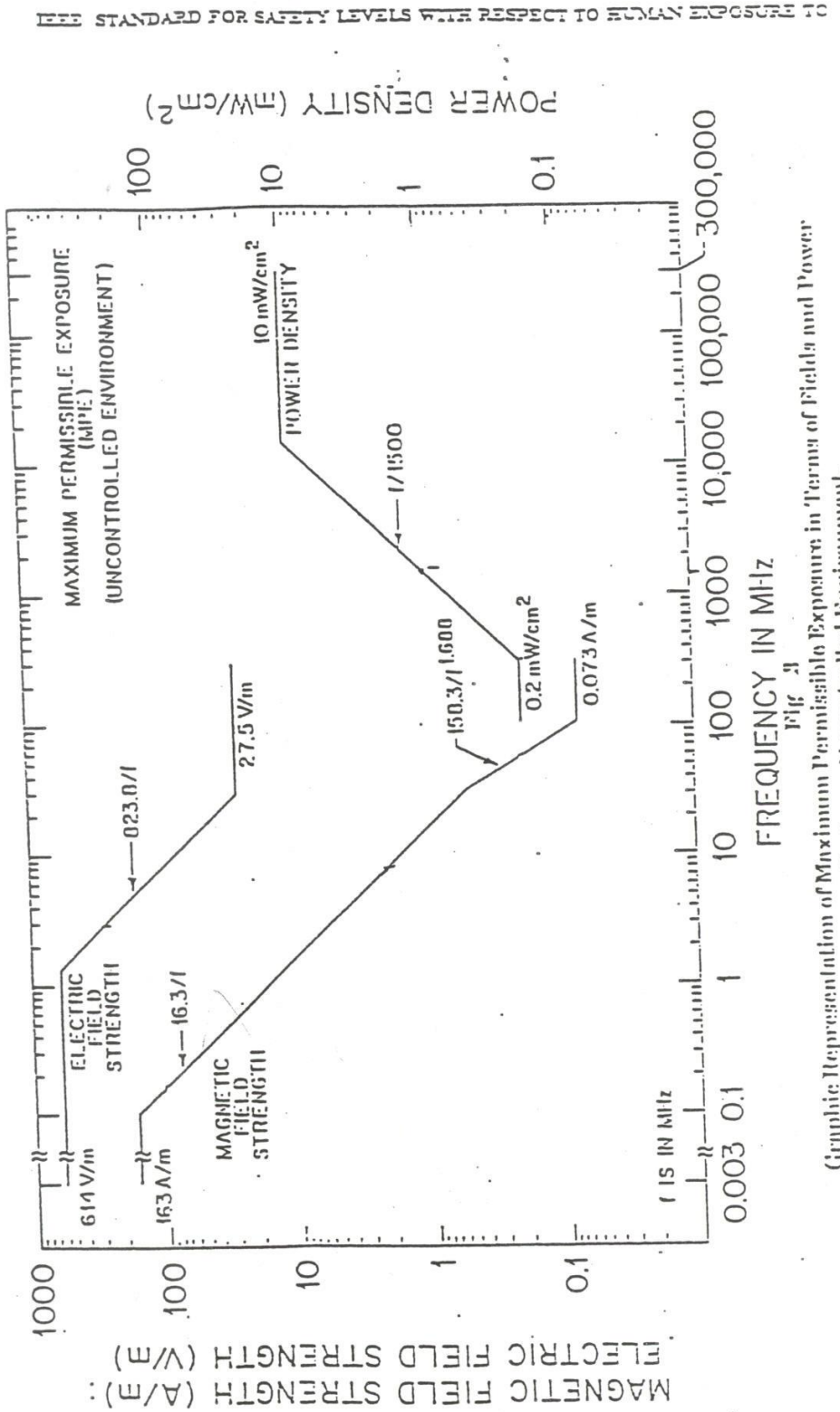


Fig. 1
Graphic Representation of Maximum Permissible Exposure in Terms of Fields and Power Density for an Uncontrolled Environment.

REFERENCES

Krieger, Roy. On the Line. American Bar Association Journal, January 1994.

Adey, W.R. Tissue Interactions With Nonionizing Electromagnetic Fields. Physiological Review, April 1981.

Banks, Roberts Associates. Electric and Magnetic Fields: Summary of Developments. (Edison Electric Institute Electric and Magnetic Fields Task Force, 1990.)

California Department of Health Services. An Evaluation of Alleged Cancer Clusters Among Teachers at Slater School Between 1973 and 1992. p. 11, 1993.

Electric Power Research Institute. Electric and Magnetic Field Fundamentals: An EMF Health Effects Resource Paper. Undated.

Environmental Protection Agency. Questions and Answers About Electric and Magnetic Fields (EMFs). December 1992

E.P.R.I. Survey of Residential Magnetic Field Sources, Volume 1, Goals, Results and Conclusions. L. E. Zaffanella, Principal Investigator, Sept. 1993.

Morgan, M. Granger. Electric and Magnetic Fields from 60 Hertz Electric Power: What do we know about possible health risk? (Pittsburgh: Carnegie Mellon University, Department of Engineering and Public Policy, 1989.)

National Council on Radiation Protection, Report No. 86, Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields. (NCRP Publications, 7910 Woodmont Avenue, Suite 1016, Bethesda, Maryland, 20814. 1986.)

Sage, Cindy. Consultations, January 1994.

Sykes, Thomas M. and Ping Li. Possible Health Effects of Electric and Magnetic Fields from Electric Power Lines: A Summary of Scientific Studies. (Olympia, WA: The Evergreen State College, Washington State Institute for Public Policy, 1990.)

Santa Barbara County Resource Management Department. Gibraltar Peak Communications Site EIR, 91-EIR-12. February 1992.

Tenford and Kuane. Health Physics 53:585-606. 1987.

U.S. Department of Energy. Contractors' Conference, EPRI Survey of Residential Magnetic Field Sources. L.E. Zaffanella and G.B. Johnson, November 1993.

Wong, John S., Staff Counsel, Division of Ratepayer Advocates, California Public Utilities Commission. Order Instituting Investigation on the Commission's own motion to develop policies and procedures for addressing the potential health effects of electric and magnetic fields of utility facilities. (Sacramento: California Public Utilities Commission, 1991.)

APPENDIX A - SOURCES OF EMF AND THEIR FIELD STRENGTH CHARACTERISTICS HEALTH EFFECTS SUMMARY SOURCES OF ELECTROMAGNETIC FIELDS

Sources of ELFs are found throughout our daily lives, in and around our homes. It is virtually impossible to live in modern society without exposing one's self to some of these sources of EMFs. Higher frequency EMF sources which generate potentially harmful effects are not as common in our day-to-day lives, and in general expose fewer people. The reason for this is that transmitting communications facilities, such as radio and microwave broadcast facilities, are generally sited in sparsely populated areas. It is also important to note, that in the case of both low and high frequency EMFs, the energy/fields or power density radiated (both electric and magnetic) will generally decrease sharply with distance from any radiating source in keeping with the inverse square law. That is, each time distance from the source is doubled, the power density will decrease by a factor of four (S.B. County Planning and Development Department, 1992). Figures 1 and 2 illustrate the decreasing electric and magnetic fields associated with transmission, distribution, and household appliances.

As mentioned previously, there are two types of EMFs that are of primary concern: 1) the non-linked electric and magnetic fields associated with extremely low frequencies (ELFs), and 2) the linked electric and magnetic fields constituting radiofrequency radiation (RFR) that is associated with the higher frequencies used for communications, radar, and microwave equipment.

Common sources of Extremely Low Frequency fields include the following:

Power lines
Motors & generators
Transformers, electrical distribution panels, switchgear
Electrical appliances
Electric blankets, heating pads, water bed heaters
Electric resistance heating
Florescent lighting
Electric (Analog) clocks
Home and commercial building wiring
Metal water pipes, gas line, cable TV, telephone cables (grounds)

Common sources of Radio Frequency emissions include the following:

Radio and television transmission facilities
Microwave and cellular facilities
Radios, TV's, computers & computer monitors, etc.
Microwave ovens, induction cook tops

HEALTH EFFECTS SUMMARY

Sykes and Li, 1990, have briefly summarized the four effects that are currently under discussion based upon scientific research currently available. These include:

Changes in cell activity. Exposure to ELF fields can cause changes in calcium flow through the cell membrane, changes in the immune response by cells, and changes in RNA transcription.

Interactions with the nervous system. Animal studies have shown a consistent effect of electric fields on the secretion of certain neurohormones which administer the circadian rhythms, but the effect is demonstrated only at certain field frequencies and intensities. Some studies have reported altered sensory response and stress response.

Variations in reproduction and development. ELF field exposure may be associated with abnormal embryo development for some specific circumstances and may affect brain development.

Effects on cancer promotion. No evidence of initiating cancer by exposure to ELF fields has been found. Laboratory studies on immune response, RNA transcription and circadian rhythms, and epidemiological surveys have suggested that ELF fields might play some role in promoting cancer, but the kind of cancer promotion is still inconclusive.

10. GEOLOGIC CONSTRAINTS GUIDELINES *(Approved by the Board of Supervisors August 1993)*

The purpose of these guidelines is to provide preliminary criteria for determining whether a particular activity could have a potentially significant impact on the environment as described in Section 15064 of the State CEQA Guidelines. Because geologic conditions are highly variable within Santa Barbara County, these guidelines are not fixed thresholds upon which a determination of significant impact would be made. They serve to point out when further study of site-specific conditions is required in order to assess geologic impacts. The level of project geologic impacts (i.e. potentially significant, potentially significant but subject to effective mitigation or not significant) is made by the Planning and Development Department staff (in consultation with licensed geologists and engineers as necessary) upon review of project plans, proposed mitigation measures and site-specific geologic information.

Impacts are considered potentially significant if the proposed development activity, including all proposed mitigation measures, could result in substantially increased erosion, landslides, soil creep, mudslides and unstable slopes (Appendix G(q), CEQA Guidelines). In addition, impacts are considered significant when people or structures would be exposed to major geologic hazards upon implementation of the project (Appendix G(r), CEQA Guidelines).

Impacts related to geology have the potential to be significant if the proposed project involves any of the following characteristics:

1. The project site or any part of the project is located on land having substantial geologic constraints, as determined by the Planning and Development Department or the Public Works Department. Areas constrained by geology include parcels located near active or potentially active faults and property underlain by rock types associated with compressible/collapsible soils or susceptible to landslides or severe erosion. Special Problem Areas designated by the Board of Supervisors have been established based on geologic constraints, flood hazards and other physical limitations to development.
2. The project results in potentially hazardous geologic conditions such as the construction of cut slopes exceeding a grade of 1.5 horizontal to one vertical.
3. The project proposes construction of a cut slope over 15 feet in height as measured from the lowest finished grade.
4. The project is located on slopes exceeding 20 percent grade.

Mitigation measures may reduce impacts to a less than significant level. These measures would include minor project redesign and engineering steps recommended by licensed geologists and engineers subsequent to detailed investigation of the site.

11. GREENHOUSE GAS EMISSIONS *(Approved by the Board of Supervisors May, 2015, Revised January 26, 2021)*

A. Introduction.

This chapter sets forth the procedure for determining the significance of impacts from greenhouse gas (GHG) emissions under CEQA. It describes how to interpret and apply the two GHG emissions threshold questions (i.e., "a" and "b") contained in the County's Initial Study Template, Section 4.3b, Air Quality – Greenhouse Gas Emissions. The screening criteria and thresholds of significance for GHG emissions in this chapter reflect two primary sources: the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines) and the Governor's Office of Planning and Research's (OPR) "CEQA and Climate Change Advisory, Discussion Draft" (OPR, 2018).

This chapter is the result of County efforts in 2015 and 2020 to develop GHG emission significance thresholds for land use projects and plans. The GHG emission thresholds comply with State CEQA Guidelines Section 15064.4, Determining the Significance of Impacts from Greenhouse Gas Emissions. The County adopted the following two thresholds that are described further in this chapter, below:

- **Industrial Stationary Source Threshold**: On May 19, 2015, the Board of Supervisors (Board) adopted a numerical threshold of significance for GHG emissions from industrial stationary source facilities. The numerical threshold applies to oil and gas production and surface mining projects, but may also apply to other industrial stationary sources of GHG emissions within the unincorporated County areas. Section D.1 of this chapter describes the industrial stationary source threshold and its application to discretionary projects.
- **Interim Thresholds for Non-Industrial Stationary Source Projects**: On January 26, 2021, the Board adopted interim GHG emissions thresholds of significance (interim thresholds). The interim thresholds apply to non-exempt discretionary land use projects and plans that do not contain industrial stationary sources of GHG emissions. Section D.2 of this chapter describes the interim thresholds and their application to non-industrial stationary source projects.

B. Background on CEQA Guidelines and Thresholds of Significance.

1. CEQA Guidelines.

Climate change under CEQA differs from most other types of impacts in that they are examined as a cumulative impact that results not from an individual project's GHG emissions, but rather from GHG emissions emitted on a global scale for many decades and from many different sources. Therefore, analysis of a project's GHG emissions under CEQA focuses solely on the incremental contribution of estimated project emissions to climate change. The CEQA Guidelines address GHG emissions as a cumulative impact given that climate change is a global phenomenon (CEQA Guidelines Section 15064.4.(b)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself" (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512.). A project's significant GHG impacts must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact (CEQA Guidelines Sections 15064.4.(b) and 15183.5). Therefore, GHG emissions impacts should be considered in a broader, cumulative context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions (CEQA Guidelines, Section 15064.4.(b)). The interim GHG emissions thresholds are designed to identify (1) a cumulatively considerable contribution to an existing adverse condition, and (2) a cumulatively significant impact in combination with other projects causing related impacts.

A CEQA lead agency may determine that a project's incremental contribution to an existing cumulatively significant issue, such as climate change, is not significant based on supporting facts and analysis (CEQA Guidelines Section 15130, Discussion of Cumulative Impacts, Subsection (a)(2)). The CEQA Guidelines direct that a project's contribution to a significant cumulative impact will be rendered insignificant if the project is required to implement or fund its fair share of a mitigation measure designed to alleviate the cumulative impact (CEQA Guidelines Section 15130(a)(3)). The lead agency must provide substantial evidence in the environmental document to demonstrate that mitigation required of a project represents the project's "fair-share" contribution towards alleviating the cumulative impact.

Consistent with CEQA Guidelines Section 15064.7, Thresholds of Significance, the County developed and adopted thresholds of significance for determining the significance of a project's GHG emissions. CEQA Guidelines Section 15064.7(a) states, "[a] threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect." Projects that comply with an applicable threshold will normally have an insignificant effect on the environment. Projects that exceed or otherwise do not comply with an applicable threshold may have a significant effect on the environment and, as a result, may require project modifications or mitigation measures to avoid or reduce those effects to insignificant levels. The following thresholds reflect this general guidance as well as the specific guidance set forth in CEQA Guidelines Section 15064.4 regarding the significance of impacts from GHG emissions.

Specifically, CEQA Guidelines Section 15064.4 states that lead agencies shall make a good faith effort to estimate or describe a project's GHG emissions. The section further states that in determining the significance of a project's GHG emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes.

Per CEQA Guidelines Section 15064.4, County staff should consider the following factors, among others, when determining the significance of impacts from GHG emissions on the environment: (1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (e.g., CEQA Guidelines Section 15183.5, Tiering and Streamlining the Analysis of Greenhouse Gas Emissions, Subsection (b)). The CEQA Guidelines also clarify that the County has the discretion to select a model or methodology that it considers most appropriate for estimating GHG emissions, but that it must "support its selection of a model or methodology with substantial evidence" and "explain the limitations of the particular model or methodology selected for use."

2. County and State GHG Emissions Goals.

The State has codified progressive GHG emissions reduction goals considering the evolving scientific data surrounding climate change. Executive Order S-3-05, Executive Order B-30-15, and Assembly Bill (AB) 32 (codified in California Health and Safety Code, Part 1, Chapter 2, Section 38501) established GHG emission reduction goals for the year 2020. To further those goals, the California legislature adopted Senate Bill (SB) 32 in 2016 to establish a statewide goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 (codified in the California Health and Safety Code, Division 25.5, Part 4, Section 38566). SB 32 is an extension of the State's original climate change goal under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. Further, SB 32 is a benchmark reduction goal for the State's pathway to 80 percent below 1990 levels of GHG emissions by 2050, as directed by

Executive Order S-3-05. Agencies and project proponents must do their fair share to reduce local GHG emissions, which may be evaluated during the environmental review process, to meet these goals. In addition, on December 14, 2017, the California Air Resources Board (CARB) adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), the strategy for achieving California's 2030 GHG target (CARB 2017).

In July 2020, the Board affirmed its target to reduce GHG emissions in unincorporated County areas by 50 percent below 2007 levels by 2030. This target is in line with the State's goal of reducing statewide emissions by 40 percent below 1990 levels by 2030.

The County developed the interim thresholds based on the County's 2030 GHG target, which are in line with the State's GHG emission reduction goals. The County developed the interim project-level threshold by determining the portion of the County's 2030 GHG target emissions level that may be attributed to new development. For additional details, please see Section D.2.

3. Estimating Project-Level GHG Emissions.

For applicable land use projects and plans, the County recommends that CEQA practitioners use the California Emissions Estimator Model (CalEEMod) to estimate operational and construction GHG emissions from projects. CalEEMod, developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts, estimates project emissions based on the types of proposed land uses, sizes, location within the state, and approximate start dates of construction and operations. It allows users to input project-specific details, such as construction schedules and land use types, but also provides default assumptions based on the available project inputs, where specific projects details are not yet known (e.g., construction phasing, construction equipment, energy use during operations, vehicle emission factors). To download the latest version of CalEEMod and view the model's user's guide and technical documentation, go to www.caleemod.com.

C. Initial Study Guidance.

As discussed above, CEQA Guidelines Appendix G, Section VIII, contains two questions to help assess a project's potential impacts from GHG emissions. The County uses these same questions in its Initial Study template, which include the following:

> *VIII. Greenhouse Gas Emissions: Would the project:*
>
> *a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*
>
> *b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

Sections D and E, below, describe each threshold question in further detail.

D. Initial Study Question "a" – GHG Emissions That May Have a Significant Impact.

Section D.1., below, describes the process County staff shall use to answer Initial Study question "a" for industrial stationary sources of GHG emissions. Section D.2., below, describes the process County staff shall use to answer Initial Study question "a" for land use projects and plans and all other sources of GHG emissions.

1. Threshold for Industrial Stationary Sources.

a) Applicability.

- The threshold applies to the following greenhouse gases, per the California Health and Safety Code §38505(g), and any other gas that the California Air Resources Board

recognizes as a greenhouse gas in the future: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF6), nitrogen trifluoride (NF3). The County recognizes that environmental documents will primarily focus on the first three chemicals, because the latter four are unlikely candidates to be associated with projects subject to this threshold.

- The threshold applies to industrial stationary sources subject to discretionary approvals by the County, where the County is the CEQA lead agency. The County shall request other CEQA lead agencies and NEPA lead agencies to use this threshold, where the County is a CEQA responsible agency for a project.
- The threshold applies to both direct and indirect emissions of greenhouse gases, where protocols to support calculation of such emissions are available.
    - Direct emissions encompass the project's complete operations, including GHG emitted from a location within California from all stationary and mobile sources, involved in the operation, including off-road equipment, as well as removal of trees and other vegetation.
    - Indirect emissions encompass GHG that are emitted to:
        - Provide the project with electricity, including generation and transmission;
        - Supply the project with water, including water treatment; and
        - Transport and treat solid and liquid waste produced from the project's operations and water to the project's operations and the emissions to transport and process solid.
- Construction-related emissions are to be accounted for in the year that they occur.
- The threshold does not apply to GHG that are emitted throughout the life cycle of products that a project may produce or consume, except as identified above as a project's indirect emissions.
- The threshold does not apply to residential or commercial development.

b) Quantification of Greenhouse Gas Emissions.

- The environmental document shall first quantify and disclose a project's GHG emissions by individual GHG and then convert the project's emissions to metric tons of carbon dioxide equivalent per year ($MTCO_2e$/year), based on the global warming potential of each gas.
- Renewable energy projects, such as solar and wind projects, may be credited for GHG emissions that would otherwise be emitted by natural gas-fueled electrical generation, based on consistency with California GHG reduction strategies to increase statewide reliance on renewable energy. The Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator may be a helpful starting point to understand potential GHG emission credits.

c) Numeric Bright-Line Threshold.

All industrial stationary-source projects shall be subject to a numeric, bright-line threshold of 1,000 $MTCO_2e$/year to determine if GHG emissions constitute a significant cumulative impact. Annual GHG emissions that are equivalent to or exceed the threshold are determined to have a significant cumulative impact on global climate change unless mitigated. For the purpose of

addressing the potential for unmitigated incremental growth, the combined GHG emissions from one or more previous discretionary permit project approvals after adoption of this threshold will be considered in the environmental review of all subsequent discretionary permit applications that, as determined by the County, constitute separate parts or phases of the previously approved projects, including but not limited to:

- Any series of oil and gas production projects under common ownership or control, including related processing and transport operations that are located within the same State-designated oil field, or represent an expansion of any State-designated oil field.
- Any series of surface mining projects under common ownership or control, including related processing and transport operations, that are located within the same individually designated Surface Mining and Reclamation Act (SMARA) operation, or represent an expansion of any individually designated SMARA operation.

d) Mitigation.

Projects found to result in a significant cumulative impact would be required to reduce their GHG emissions to the applicable threshold, where feasible, through onsite reductions and/or offsite reduction programs approved by the County.

e) Periodic Revisions.

The Director of Planning and Development shall re-examine this threshold as needed to ensure its consistency with evolving GHG reduction progress, plans, targets and regulations. As necessary, the Director will recommend amendments and updates to the Board for consideration.

f) Relation to County Energy and Climate Action Plan.

This threshold represents one of several cohesive efforts undertaken by Santa Barbara County to reduce GHG emissions. Those efforts include the Energy and Climate Action Plan (ECAP), which sought to reduce countywide emissions by 15 percent below the 2007 baseline emissions inventory by the year 2020. The ECAP constituted a local GHG reduction plan that, pursuant to CEQA Guidelines §15183.5(b), allowed a CEQA lead agency to determine whether a future project's incremental contribution to the cumulative effect of climate is significant or not, based upon compliance with requirements of the reduction plan.

This threshold and the ECAP were intended to complement one another during implementation. As part of the development of the 2030 CAP, which will replace the 2015 ECAP, the County will consider whether updates to the industrial stationary sources thresholds are warranted to achieve consistency with the 2030 CAP.

2. All Other Sources (Interim Thresholds).

a) Applicability.

- The interim thresholds apply to the following GHGs, per the California Health and Safety Code § 38505(g), and any other gas that the California Air Resources Board recognizes as a greenhouse gas in the future, including but not limited to: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3). The County recognizes that environmental documents will primarily focus on the first three chemicals because the latter four are unlikely candidates to be associated with projects subject to this threshold.
- The interim thresholds apply to all non-exempt projects and plans, other than industrial stationary source projects, subject to discretionary approvals by the County, where the

County is the CEQA lead agency. The County shall request other CEQA lead agencies and NEPA lead agencies to use the interim thresholds when the County is a CEQA responsible agency for a project.

- The interim thresholds apply to both direct and indirect emissions of GHGs, where protocols to support the calculation of such emissions are available.
    - Direct emissions encompass the project's complete operations, including GHGs emitted from all on-site (e.g., natural gas combustion in appliances) and mobile sources, involved in the operation, including off-road equipment, as well as the removal of trees and other vegetation.
    - Indirect emissions encompass GHGs that are emitted to:
        - Provide the project with electricity, including generation and transmission; and
        - Supply the project with water, including water treatment;
- The interim thresholds apply to the emissions from the (1) transportation and treatment of solid and liquid waste produced from the project's operations and water for the project's operations, and (2) transportation and processing of solid waste.
- Construction-related emissions are to be amortized across the lifetime of the project (i.e., dividing total construction emissions by the number of years the project is expected to be operated).
- The interim thresholds do not apply to GHGs that are emitted throughout the life cycle of products that a project may produce or consume, except as identified above as a project's indirect emissions.
- The interim thresholds do not apply to industrial stationary sources.

b) Interim Threshold Development and Methodology.

The County prepared interim thresholds for land use projects and plans and all other non-industrial stationary sources in accordance with the CEQA Guidelines (e.g., Section 15183.5), recent case law (e.g., *Center for Biological Diversity v. California Department of Fish and Wildlife*), and relevant guidance (e.g., OPR 2018).

The interim thresholds for land use projects and plans are based on the County's 2030 GHG emissions target (i.e., 50 percent below 2007 levels by 2030). The thresholds framework consists, first, of a numerical threshold (Screening Threshold) and, second, an efficiency threshold (Significance Threshold). The County based the Screening Threshold on the types of land uses that the County permitted over a 10-year period (2010 – 2019). The County set the Screening Threshold at a level that captures the "fair share" of emissions from new development consistent with its 2030 GHG emissions target. The County based the Significance Threshold on the targeted level of emissions from new development in 2030 and projected population and employment for the unincorporated county for the same year.

The County and its consultant, Ascent Environmental, Inc., (Ascent) prepared a memorandum titled "Santa Barbara County Interim Greenhouse Gas Thresholds Justification" (County of Santa Barbara, Planning and Development Department, October 2020). Please see this memorandum for additional information on the methodology that the County and Ascent used to develop the interim thresholds.

c) Assessment of Greenhouse Gas Emissions – Overview.

The Board adopted a stepped approach to assessing GHG emissions associated with projects and plans (other than for industrial stationary source projects), as shown in Figure 1, "Interim GHG Emissions Threshold Decision Tree for Project Analyses."

First, the practitioner will compare anticipated GHG emissions against a numeric Screening Threshold of 300 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year. The practitioner can use either a quantitative approach (by calculating project-specific emissions) or a qualitative approach (by comparing the project size to project screening criteria). If the practitioner selects the quantitative approach, then the practitioner shall use CalEEMod or another applicable GHG modeling program to estimate the proposed project's GHG emissions.

If a proposed project's estimated GHG emissions meet or exceed the Screening Threshold, staff will then compare project emissions to a Significance Threshold (efficiency threshold of 3.8 $MTCO_2e$ per service population, per year). The Significance Threshold is an efficiency threshold based on the project's estimated service population.

Subsection d) below provides a step-by-step approach to describing or quantifying GHG emissions from a project or plan and applying the interim thresholds.

d) Step-by-Step Method to Assess Significance of GHG Emissions.

Step 1: Determine Threshold Applicability.

As described in Section D.2.a. above, the interim thresholds apply to non-exempt discretionary projects under CEQA; specifically, land use development projects (residential and non-residential), as well as land use plans (e.g., specific plans, community plans, or master plans). The interim thresholds do not apply to industrial stationary sources of GHG emissions. The interim thresholds apply to the sum of a project's annual operational and amortized construction emissions (over the lifetime of the project, if known, or a default lifetime of 30 years).

Step 2: Apply the Numeric Screening Threshold.

Step 2 uses the terms "screening criteria" and "Screening Threshold." "Screening criteria" refer to a set of metrics (e.g., square footage of single-family homes) based on compliance with the Screening Threshold. "Screening Threshold" refers to a specific numeric value. Both terms refer to levels that, if exceeded, require projects or plans to further evaluate their GHG emissions in comparison to the Significance Threshold.

The Board adopted a numeric Screening Threshold of 300 $MTCO_2e$/year for non-industrial stationary source projects and plans. The recommended Screening Threshold results in approximately 15 percent of all applicable future projects, and 87 percent of all applicable future land use emissions, being subject to the Significance Threshold. Approximately 85 percent of future projects will fall below the Screening Threshold and, therefore, will not require further analysis.

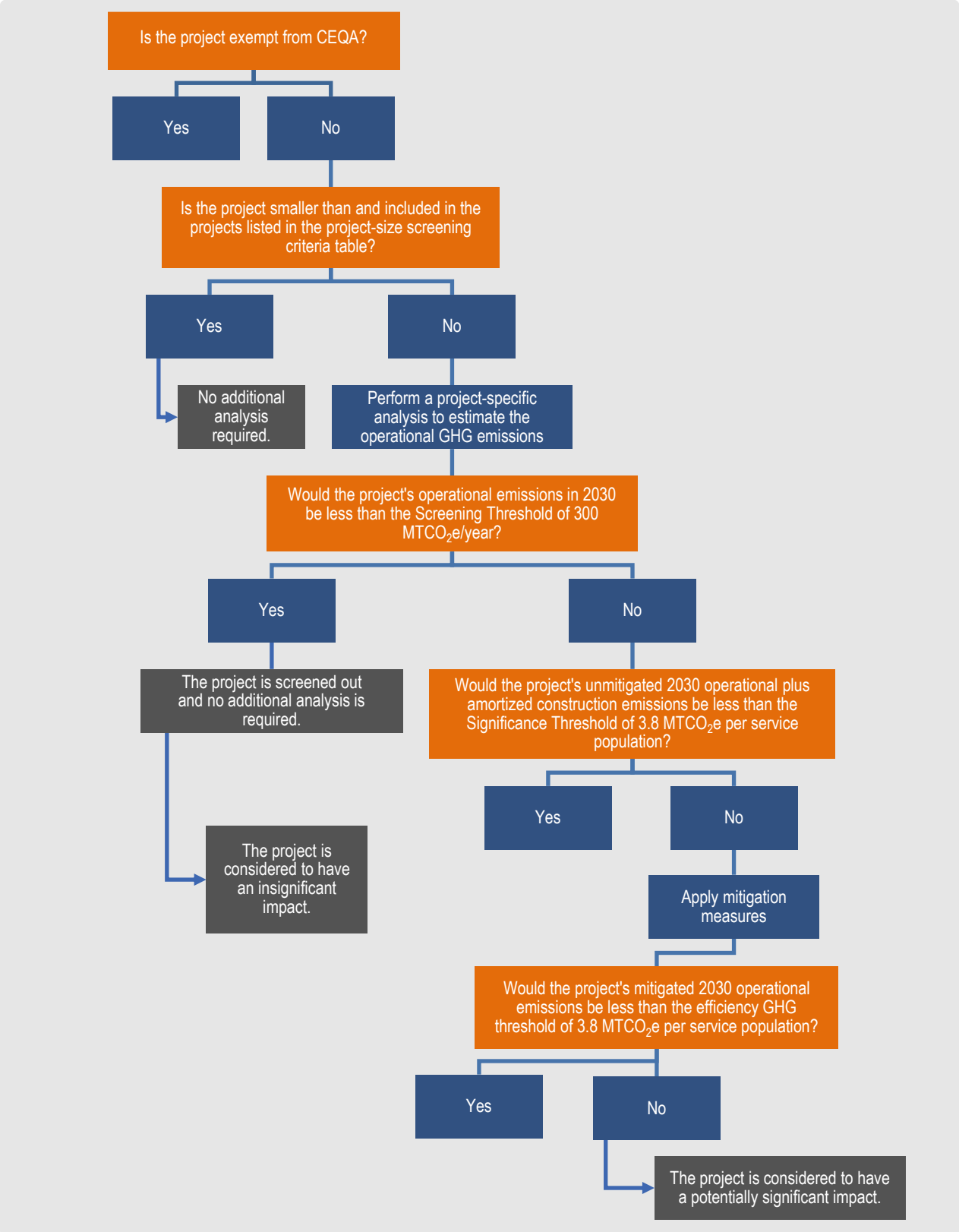


Figure 1. Interim GHG Emissions Threshold Decision Tree for Project Analyses.

The County will strictly apply the 300 $MTCO_2e$/year threshold as a screening threshold. The Screening Threshold is not a threshold of significance for projects that meet or exceed the threshold. In other words, projects that meet or exceed this emissions level may not propose mitigation measures to reduce emissions below 300 $MTCO_2e$/year; instead, County staff shall compare those projects against the proposed Significance Threshold.

Staff can apply the Screening Threshold either: (1) qualitatively, by comparing the project's land use and size to screening criteria that correspond to the numeric threshold, or (2) quantitatively, by comparing project- or plan-specific emissions directly to the numeric Screening Threshold. This section discusses both methods below.

Qualitative Approach

Lead agencies may adopt screening criteria to streamline project review for environmental impacts. Screening criteria identify classes of projects based on land use, size, and other factors that would have an insignificant impact. Agencies presume a project that meets any of the screening criteria, absent substantial evidence to the contrary, have an insignificant impact and will not require further impact analysis.

Based on the historical permit research and the recommended Screening Threshold of 300 $MTCO_2e$/year, the Board adopted a "Size-Based Project Screening Criteria Table" (Table 1). Table 1 lists types and sizes of projects that will typically emit less than 300 $MTCO_2e$/year, by the year 2030. The screening criteria represent the maximum project size at which a project is likely to emit 300 or fewer $MTCO_2e$ per year.

Table 1 reflects the average annual operational emissions typical of the land use types listed in the table, based on default modeling conducted in CalEEMod for new land uses operating in Santa Barbara County. CalEEMod accounts for typical operational emissions (e.g., energy use, mobile, waste, and water).

Staff or applicants with proposed projects that are smaller than these size-based criteria can qualitatively discuss anticipated GHG emissions during CEQA review of a project and do not need to quantify GHG emissions.

Plans that may include projects listed in Table 1 can also use the screening criteria. However, if plans include any land uses other than those shown in Table 1, the applicant must use the quantitative 300 $MTCO_2e$/year screening threshold process described below.

A single-component project (e.g., residence, office, or store) only needs to meet one of the screening criteria. However, each component of a multiple-component project (e.g., residential/retail mixed-use development) must either meet at least one applicable screening criterion that relates to each specific land use (shown in Table 1).

The County presumes a project that is smaller than the size-based screening criteria, absent substantial evidence to the contrary, will have an insignificant impact and will not require further impact analysis.

Table 1. Size-Based Project Screening Criteria

Project Type	Size-Based Screening Criteria
Single-Family Housing [1]	62,000 sf [2]
Multi-Family Housing [3]	55,000 sf [2]
Commercial Space [4]	26,000 sf
Regional Shopping Center	12,000 sf
General Office Building	28,000 sf

Notes: sf = square feet.

1 Single-family housing developments are defined as single-family detached homes on individual lots.

2 Residential square footage refers to all inhabited square footage on the lot, including any on-site accessory dwelling units (ADUs). Do not include accessory structures (as defined in the County's development codes). Measure residential square footage as the "gross floor area" per the County's development codes. Refer to pages 93-94 regarding ADUs.

3 Multi-family housing developments are defined as low-rise multi-family housing complexes, modeled as "Apartments-Low Rise" in CalEEMod.

4 Commercial space is modeled as "Office Park" in CalEEMod.

Source: Analysis conducted by Ascent Environmental in 2020.

Projects that do not meet the screening criteria in Table 1 for the following reasons must quantify GHG emissions for comparison with the Screening Threshold:

- Project types or land uses not listed in Table 1.
- Projects that meet or exceed the size-based screening criteria.
- Projects that meet one or more of the land use categories in Table 1, but has additional emissions sources that are not typical of the listed project type (e.g., schools, hotels).
- Projects that meet one or more of the land use categories in Table 1, but have GHG emissions sources that are not included in the emissions included in CalEEMod for the project type (e.g., commercial space with boilers).

Quantitative Approach

The quantitative approach involves the use of CalEEMod or another applicable GHG modeling program to model GHG emissions from the proposed project or plan. CalEEMod is the most typically used model for estimating project-level GHG emissions of land use projects. Refer to Section B.3. of this chapter for information on how to obtain and use CalEEMod. Contact the Santa Barbara County Air Pollution Control District for recommendations on how to calculate emissions for project land uses or types that are not included in CalEEMod.

Staff will compare the quantified GHG emissions against the 300 $MTCO_2e$/year Screening Threshold. If the estimated GHG emissions are less than the Screening Threshold, staff can conclude that project would have an insignificant environmental impact, and the project would require no further analysis.

The 300 $MTCO_2e$/year threshold must be strictly applied as a screening threshold. It is not intended to be a threshold of significance. In other words, projects that meet or exceed this emissions level may not propose mitigation measures to reduce emissions below 300 $MTCO_2e$/year.

The County considers projects or plans with annual GHG emissions less than this numeric Screening Threshold to have an insignificant cumulative impact on global climate change. As discussed above, GHG-related impacts are analyzed as cumulative impacts given that climate change is a global phenomenon. A screening threshold of 300 $MTCO_2e$/year captures an adequate amount of emissions from new development so as to not interfere with the County's 2030 GHG emissions reduction target as described above. Projects exceeding the screening threshold are required to further analyze and, if necessary, mitigate their emissions to achieve reductions consistent with the County's goals. Thus, the screening threshold ensures that emissions from new development projects consistent with the threshold would not result in a cumulatively considerable contribution to a significant cumulative impact related to GHG emissions.

If substantial evidence shows that a project has unique characteristics that warrant adjustments to the screening threshold approach, the preparer of the environmental document may do so, provided the document sets forth substantial evidence to support/explain the adjustments.

If a project's or plan's estimated GHG emissions meet or exceed the Screening Threshold, staff must analyze the GHG efficiency against the Significance Threshold for potential significant environmental impacts. If the project's estimated GHG emissions (measured in $MTCO_2e$/year) meet or exceed the Screening Threshold, then proceed to Step 3, Apply the Efficiency-Based Significance Threshold, below.

Projects that meet or exceed the Screening Threshold must compare their GHG emissions against the Significance Threshold for potential significant environmental impacts, as described in Step 3 below.

Step 3: Apply the Efficiency-Based Significance Threshold.

The Board adopted an "efficiency" type of threshold to assess the significance of GHG emissions from a land use project or plan. An efficiency threshold identifies a per-capita level of GHG emissions from new development that supports statewide reduction planning efforts (Association of Environmental Professionals 2016).

Projects that meet or exceed the Screening Threshold will apply the recommended efficiency-based Significance Threshold of 3.8 $MTCO_2e$ per service population, per year. Service population is the total number of residents and/or jobs anticipated to be generated by the project. The County based the Significance Threshold on the 2030 GHG emissions reduction target and demographics projections (i.e., population and employment) for the same year.

The County uses the Bay Area Air Quality Management District's (BAAQMD) definition of service population, where service population equals the sum of the number of residents and jobs anticipated to be generated by a project (BAAQMD 2017). The County interprets this definition of service population as the sum of full-time employees and full-time residents of a project. Therefore, projects or plans, regardless of type, should also use this definition in quantifying their GHG emissions efficiency. For example, a hotel project should divide the total annual emissions anticipated to occur in its first year of full operation by the total number of full-time employees and full-time residents (if any) to calculate the GHG emissions efficiency. Visitors and guests

should not be counted toward this project's service population, because they are residents of other locations. Similarly, an elementary school project, while it serves many students, would account for the full-time equivalent staff, but would not include students in its service population, unless they are living on campus.

The Significance Threshold shall apply the sum of the amortized construction emissions (i.e., dividing total construction emissions across all construction years by the number of years the project would operate or a default project lifespan of 30 years) and the estimated annual operational emissions.

Projects with GHG emissions less than the Significance Threshold would normally result in an insignificant impact and, therefore, would not require further analyses or studies. Nonetheless, CEQA Guidelines Section 15064(b)(2) states, "Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." The analyst must consider any substantial evidence as appropriate to the proposed project or plan.

Projects with GHG emissions above the Significance Threshold would normally result in a significant impact and, therefore, would require further analyses and studies, and, if necessary, project modifications or mitigation measures as discussed in Step 4, Apply Mitigation Measures.

Specific Project Considerations

This subsection describes how to assess potential impacts from two specific instances where analysts need to consider unique project circumstances.

1. *Projects or Plans That Do Not Meet the Efficiency-based Requirements or Definitions*.

   The interim thresholds of significance are for general use and should apply to most discretionary projects subject to environmental review that are not industrial stationary source projects. However, the interim thresholds may not be appropriate for unique projects. In such cases, CEQA Guidelines Section 15064.7(c) allows the County to use other thresholds "… on a case-by-case basis as provided in Section 15064(b)(2)." When using thresholds on a case-by-case basis, the practitioner must: (1) set forth substantial evidence in the administrative record for the project, to justify the use of different thresholds; and (2) explain how non-compliance or compliance with these thresholds means that a project would result in significant or insignificant impacts, respectively.

   Regarding projects that may not fit within the definitions used in the development of the thresholds and may require a project-specific analysis, the practitioner shall determine which threshold to use based on the project's specific attributes. The efficiency-based Significance Threshold may not apply to specific attributes of a unique or uncommon project or plan type. For example, projects that have a low service population due to limited employment, may have other users that are not included in the definition of service population (e.g., schools, hotels, and community centers) that should be considered in the evaluation of impacts. In such a case, the practitioner can consider using the numeric screening threshold of 300 $MTCO_2e$/year as a threshold of significance; however, the County shall make the determination on a case-by-case basis using substantial evidence set forth in the administrative record for the project.

2. *Accessory Dwelling Units as Part of a Proposed Subdivision or Discretionary Housing Project.*

   CEQA Guidelines Section 15268, Ministerial Projects, subsection (a), states that ministerial projects are exempt from the requirements of CEQA. However, CEQA Guidelines Section 15268(d) states, "Where a project involves an approval that contains elements of both a ministerial action and a discretionary action, the project will be deemed to be discretionary and will be subject to the requirements of CEQA."

   Government Code Section 65852.2(a)(3) requires jurisdictions to consider and approve a proposed ADU or a junior accessory dwelling unit [JADU] ministerially without discretionary review. Therefore, ADUs and JADUs not associated with a subdivision or other discretionary project are exempt from CEQA and the GHG analysis and thresholds in this chapter. In contrast, ADUs and JADUs that are part of a larger discretionary project are subject to CEQA. In these cases, the County will analyze the ADUs' and JADUs' potential environmental impacts in the environmental document for the discretionary project.

   If a discretionary housing project with ADUs as part of the project description exceeds the efficiency-based Significance Threshold, staff must seek additional guidance when applying or requiring mitigation measures. Mitigation measures must be applied to the primary residential use (e.g., single-family or multi-family dwelling units) only. ADU legislation limits the restrictions that can be imposed on ADUs, therefore, mitigation such as adding parking or requiring additional design standards would not be allowed by statute. Depending on the impact, it may need to be classified as significant and unmitigatable based on state law and the County must adopt a statement of overriding consideration.

   The *Environmental Thresholds and Guidelines Manual* amendment provides step-by-step approaches for two specific instances:

   (a) ADUs as Part of a Discretionary Housing Project

   If ADUs are proposed as part of a discretionary project, and the proposed number and size (square footage) of the ADUs are contained in the project description, then staff must include the ADUs when applying the Screening Threshold. Table 1 provides direction on how to include ADUs when applying the size-based project screening criteria. Specifically, staff must:

   - Select the appropriate project type (single-family housing or multi-family housing),
   - Include the total square footage of any ADUs in the total size of the proposed project, and
   - Measure residential square footage as the "gross floor area" per the County's development codes.

   (b) ADUs as Part of a Proposed Residential Subdivision

   If a proposed discretionary project does not include proposed housing development concurrently, then the County may make the following assumptions regarding future development of ADUs on the newly formed residential parcels for purposes of environmental review:

- Assume that 25 percent of the future residential parcels will contain ADUs.
- Assume that the average ADU will be 800 square feet in size.
- Assume that any future JADUs will be conversions of existing development, so there will be no additional square footage allotted to JADUs.

P&D staff based the above assumptions on (1) residential subdivisions permitted within the past 10 years in the unincorporated county areas that had subsequent ADU development, and (2) ADU/JADU permit applications since adoption of county and state ordinances allowing for ADUs/JADUs. P&D staff will recommend that the above approach regarding ADUs/JADUs be adjusted if the County experiences a dramatic change in actual ADU/JADU development in the future.

Step 4: Apply Mitigation Measures.

Projects and plans that meet or exceed the Significance Threshold require the implementation of feasible project modifications or mitigation measures. The modifications or mitigation avoid or reduce GHG emissions impacts to an insignificant level (i.e., below the applicable threshold of significance). Ascent prepared a list of potential GHG emission mitigation measures to aid County staff and CEQA practitioners. The list of potential mitigation measures will provide options for different types of land use projects. P&D staff will make the list available to the public. The list will be an informational resource, to be updated as needed during the 2030 CAP process.

Lead agencies should tailor mitigation measures to a project's characteristics and potential impacts. Mitigation measures should be prioritized to select on-site and then local mitigation options first, then allow for regional or state-wide mitigation measures if on-site and local options are exhausted. The project's administrative record must provide substantial evidence to support any conclusions regarding whether the mitigation measures would reduce the impacts to an insignificant level or whether the impacts would remain significant and unavoidable. If the project will rely on programmatic mitigation measures, the administrative record for the project must set forth substantial evidence to explain how participation in the program will mitigate project-generated GHG emissions.

Mitigation measures may not always reduce a project's GHG emissions impacts to an insignificant level. In such cases, CEQA Guidelines Section 15093 requires decision-makers to make a statement of overriding considerations in order to approve the project or plan.

The County recommends that applicants proposing mitigation measures follow the additional criteria below recommended by Santa Barbara County Air Pollution Control District (SBAPCD) (SBAPCD 2020):

- Proposed mitigation measures shall also have established funding mechanisms and be fully implementable.
- Because the proposed threshold relates to GHG emissions, the proposed mitigation measures should target actions that maximize the reduction of GHGs rather than other air pollutants. For example, a mitigation measure that promotes use of low-emissions diesel generators will most effectively reduce emissions of particulate matter and nitrogen oxides; GHG emissions would only be reduced if the equipment was also designed to be more fuel-efficient.
- Proposed mitigation measures should go beyond existing regulatory requirements.

  The County has developed a list of recommended mitigation measures for projects exceeding the thresholds of significance. This list is available to applicants upon request and will include

resources to help the applicant calculate the effectiveness of the mitigation measure(s). The applicant may also apply applicable mitigation measures recommended by the SBCAPCD, available at www.ourair.org/ghgmitigation-sbc.

e) Revisions and Relation to County Climate Action Plan.

The County will update the interim GHG emissions thresholds with revised GHG emissions thresholds after it completes the 2030 CAP. Until the County releases and adopts the updated GHG emissions thresholds, the County shall apply the interim GHG emissions thresholds. The County developed the interim thresholds based on the County's 2030 GHG emission reduction target to reduce the county's emissions to 50 percent below 2007 levels by 2030, which are in line with State GHG reduction goals. By ensuring that new development will not exceed its fair share of emissions by 2030, the thresholds help the County meet its 2030 GHG emissions target.

E. Initial Study Question "b".

Section 4.3.b (*Air Quality – Greenhouse Gas Emissions*) of the Initial Study Proto asks if the proposed project would "conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases[.]"

County GHG Emission Reduction Plans, Policies, and Regulations

The Board adopted the ECAP in 2015 as the County's GHG emission reduction plan. The County has been implementing the ECAP since 2016 but is not projected to meet the plan's 2020 GHG emission reduction goals, according to the 2016 GHG Emissions Inventory Update and Forecast and the 2017 ECAP Progress Report. The final ECAP progress report will be released in 2021, using data through 2020.

Until the 2030 CAP is adopted, the County considered projects or plans that have emissions below interim thresholds to be consistent with County GHG emission reduction plans. The interim thresholds are part of the County's GHG emissions reduction strategy and were informed by the County's 2030 target. The interim thresholds provide a pathway for projects and plans to show compliance with County goals.

State GHG Reduction Plans, Policies, and Regulations

The Board's 2030 GHG emission reduction goal (50 percent reduction from 2007 levels by the year 2030) is consistent with the State's direction under Senate Bill 32 as codified in the California Health and Safety Code, Division 25.5, Part 4, Section 38566 (40 percent reduction below 1990 levels by 2030). CARB's 2017 Scoping Plan (CARB, 2017) describes the State's strategy for achieving California's 2030 GHG emission reduction target. The 2017 Scoping Plan does not prescribe or require specific actions by local government agencies; rather, the Scoping Plan provides guidance to local agencies and CARB supports programs that assist local agencies. Local government efforts to reduce emissions within their jurisdiction are critical to achieving the State's long term GHG goals, and can also provide important co-benefits, such as improved air quality, local economic benefits, more sustainable communities, and an improved quality of life.

CARB recommends statewide targets of no more than six $MTCO_2e$ per capita by 2030, and no more than two $MTCO_2e$ per capita by 2050. The statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32 and the longer term State emissions reduction goal of 80 percent below 1990 levels by 2050. This limit represents California's and these other governments' recognition of their "fair share" to reduce GHG emissions to the scientifically based levels to limit global warming below two degrees Celsius.

CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals.

The County's interim GHG emission efficiency threshold is considerably lower than the State's 2030 per capita target. Therefore, analysts can apply the County's interim threshold with confidence that it aids the State in achieving its target, as well.

REFERENCES

Association of Environmental Professionals (AEP). 2016. "Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California, Final White Paper." 18 October. Available at https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf.

Bay Area Air Quality Management District. 2017. California Environmental Quality Act Air Quality Guidelines. Available at: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

California Air Resources Board (CARB). 2017. "California's 2017 Climate Change Scoping Plan." November. Available at: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf?utm_medium=email&utm_source=govdelivery.

County of Santa Barbara. 2015. Energy and Climate Action Plan. May. Available at: https://www.countyofsb.org/sustainability/ecap/.

California Natural Resources Agency. 2018. "Guidelines for Implementation of the California Environmental Quality Act." 2018. December. Available at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf.

Governor's Office of Planning and Research (OPR). 2018. "CEQA and Climate Change Advisory, Discussion Draft." December. Available at: http://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf.

Santa Barbara County Air Pollution Control District. 2020. Letter to Selena Evilsizor Whitney of the County of Santa Barbara. "Santa Barbara County Air Pollution Control District Initial Comments on Santa Barbara County Interim Greenhouse Gas Emissions CEQA Thresholds of Significance." 29 September.

12. GROUNDWATER THRESHOLDS MANUAL FOR ENVIRONMENTAL REVIEW OF WATER RESOURCES IN SANTA BARBARA COUNTY *(Prepared by Brian Baca, Registered Geologist, revised and updated August 20, 1992)*

A. Introduction.

1. Threshold of Significance. The Threshold of Significance is the point at which a project's estimated contribution to the overuse of groundwater in an alluvial basin or other aquifer is considered significantly adverse. This manual documents the methods used to establish the threshold values for groundwater extractions from the various alluvial basins and consolidated rock aquifers in Santa Barbara County. Note that the California Supreme Court has ruled that an EIR must be prepared whenever it can be fairly argued on the basis of substantial evidence that a project may have a significant environmental impact. Implementation of CEQA requires that a lead agency (such as the county) determine what constitutes a potentially significant effect.

In the past, thresholds for the alluvial basins have been determined based on a fixed number of acre-feet per year (AFY), a percentage of existing overdraft, or a percentage of safe yield. In the most recent editions of this manual, the threshold has been calculated from a standard formula which included factors of available storage and overdraft. In this update of the manual, a new methodology developed by the Planning and Development Department is used. A threshold was chosen for an idealized "Standard Reference Basin" based on a percentage loss of the remaining life of the available storage. Thresholds for the other basins are proportional to this value based on relative size and remaining life. This method was developed to simplify the calculations and more clearly link the various threshold levels to the environmental circumstances specific to each basin.

The Threshold of Significance for consolidated rock ("bedrock") aquifers is considered the amount of new pumpage by a proposed project which would place the aquifer in a state of overdraft. This criteria has remained the same since adoption of the first thresholds manual in 1983.

The groundwater Thresholds of Significance apply to all projects subject to discretionary review by the County of Santa Barbara.

2. Water resources in Santa Barbara County. Water supplies in Santa Barbara County come from two sources:

a. Surface water impounded behind dams on the Santa Ynez River augmented by infiltration into delivery tunnels drilled through the Santa Ynez Mountains.

b. Groundwater pumped primarily from the fourteen alluvial basins. Additional water is produced from bedrock aquifers in the hills which surround the alluvial basins.

These supplies are limited. Long-term average annual yields of the surface reservoirs, as currently constructed, are fixed values subject only to downward adjustment due to siltation or the occurrence of a new worst-case drought. Groundwater supplies are limited in terms of the annual amount of water which can be withdrawn without causing a long term drop in water levels ("Safe Yield") and in the amount of total storage of a basin which can be removed without significant environmental effects ("Available Storage"). These limits make conservative use of water a necessary policy in Santa Barbara County in order to avoid or minimize significant and lasting adverse environmental effects.

Figures 1a and 1b illustrate the location of the major alluvial basins in Santa Barbara County. Also shown are the Ellwood/Gaviota and Gaviota/Point Conception areas dominated by bedrock pumpage.

3. **Environmental concerns in alluvial basins.** Adverse environmental effects which can be caused by overdraft of an alluvial groundwater basin include:

   a. **Degradation of water quality.** Water quality varies considerably from one basin to another. In general, water quality in the groundwater basins of Santa Barbara County is declining with continued use of the resource, particularly in areas where the water table has been significantly lowered. Factors attributable to man which contribute to continuing degradation include pollution by agricultural runoff waters laden with fertilizers and pesticides, percolation of water from public and private sewage treatment systems, use of imported water which increases the salt load on a basin, percolation of polluted urban runoff, the reduction of the natural "flushing" effect of water through-flow caused by lowered water levels and the upward or lateral influx of connate brines by over-pumping of the freshwater aquifers. Preventive measures are the best way to address the ongoing deterioration. In general, the amount of pollutants placed in the ground, and the level of overdraft in the basins, should be minimized.

   b. **Saltwater intrusion.** Intrusion of marine salt water is a problem which could affect all of the coastal basins of Santa Barbara County. Unfortunately, few data are available on its occurrence in the past. Recent USGS studies have shown that salt water has intruded a few hundred feet onshore in Storage Unit No. 1 of the "Santa Barbara City Basin." Computer modeling conducted as part of this work indicated that the rate of salt water advance was four times greater than the rate at which the salt water could be flushed out by natural processes. Prevention of salt water intrusion is thus a key concern of projects supported by coastal pumpage.

   c. **Land subsidence.** Land subsidence can occur in alluvial basins where water levels have dropped due to pumpage. Substantial evidence has not been reported in Santa Barbara County. Subsidence in the overdrafted Goleta Basin has undoubtedly occurred but most of it probably took place many decades ago when the lower aquifers were first penetrated (according to the County Water Agency). Land subsidence can be a significant problem which can damage structures erected above a local cone-of-depression caused by extensive pumping.

   d. **Loss of well yield.** Dropping water levels in a basin due to overdraft will reduce the rate at which individual wells will be able to produce water. Drilling more wells or deeper wells are the two methods of maintaining groundwater production to service a particular municipal or agricultural demand. There are, however, technical, legal and economic limitations on the ability of individuals or public or private purveyors to use these methods. With these limitations, it is likely that continued drop in water levels due to overdraft will cause loss of agriculture and a reduction in the ability of water districts to serve existing demand.

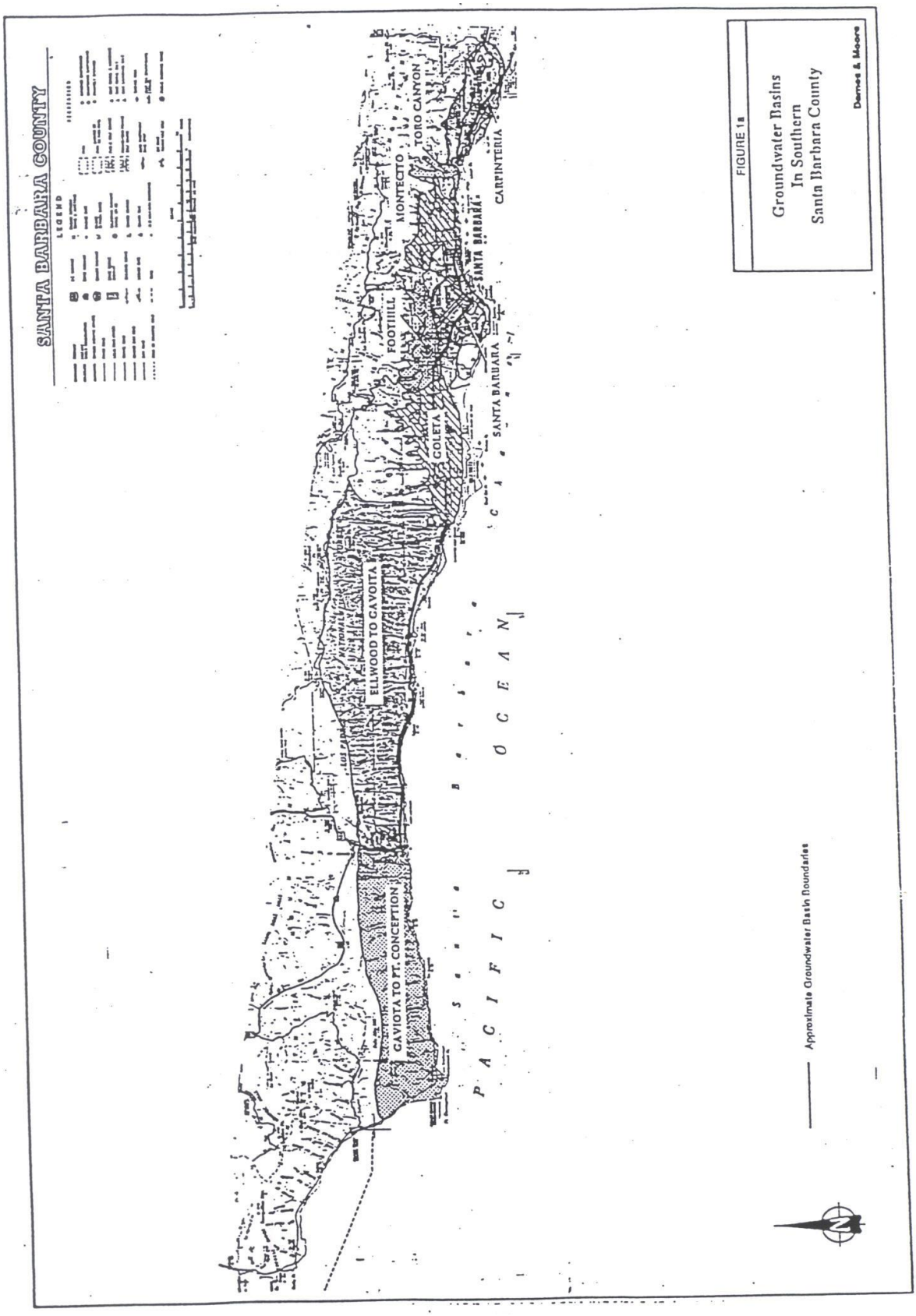
   e. **Well interference.** New pumpage as part of a proposed project may cause a loss of well yield in nearby wells due to 1) a drop in water level as a cone-of-depression develops, or 2) a drop in water level due to storage depletion in a small isolated area. This could result in the current use on adjacent parcels being no longer supportable by the existing well(s).

f. Reduction of surface water available to support biological resources. Pumpage of groundwater causes fluctuations over time in the elevation of the groundwater table. Lowering of the water table can effect biological resources on the land surface by reducing access to water by deep-rooted native vegetation or by reducing discharge of groundwater (baseflow) in streambeds. Even if a basin were pumped at a hydrologic "safe yield" rate (long-term water levels remain stable) a drop in water levels during a drought could adversely affect biologic resources.

In nearly all cases, an individual project's effect on biological resources would not have a discernable local effect as the new pumpage would add incrementally to the regional change in water levels. Thus, the thresholds of significance included herein would adequately address this impact. Under certain conditions, however, a local pumping depression could adversely affect a specific habitat area. In this case, the effects would need to be analyzed in the biologic resources section of the project environmental document.

4. Environmental concerns in consolidated rock aquifers. Consolidated rock aquifers are generally less extensive and have much smaller annual safe yield values than the alluvial basins. Environmental concerns associated with these aquifers include degradation of water quality, long-term loss of well yield, well interference and effects on biological resources. The discussion of these concerns presented above for alluvial basins applies to consolidated rock aquifers except for biological resources. Pumpage of consolidated rock aquifers has a direct effect on average annual flows downstream of the well site. This is because a pumpage-related drop in water levels (from native conditions) will lessen or eliminate baseflow out of the aquifer and induce groundwater recharge by stream flows. The reduction in flows represented by typical safe yield (potential average annual recharge) values estimated for hardrock aquifers is usually only a small proportion of the total average annual streamflows and would not likely result in substantial impacts on downstream riparian habitat. In certain cases where the proposed pumpage would cause a substantial reduction (as determined by the Planning and Development Department geologist) in streamflow and an environmentally sensitive habitat were present downstream, the effects on that habitat should be addressed in the biological resources section of the environmental document. The existence of a local critical habitat supported by aquifer baseflow and occupied by a rare or endangered species would also need to be addressed in the biologic resources section.

The basis for the assessment of impacts on groundwater resources due to pumpage of consolidated rock aquifers is the avoidance of overdraft (see discussion on Thresholds, this document).


SANTA BARBARA COUNTY
LEGEND
ELLWOOD TO GAVIOTA
GAVIOTA TO PT. CONCEPTION
FOOTHILL
MONTECITO
TORO CANYON
GOLETA
SANTA BARBARA
CARPINTERIA
P A C I F I C O C E A N
Approximate Groundwater Basin Boundaries
FIGURE 1a
Groundwater Basins
In Southern
Santa Barbara County
Dames & Moore

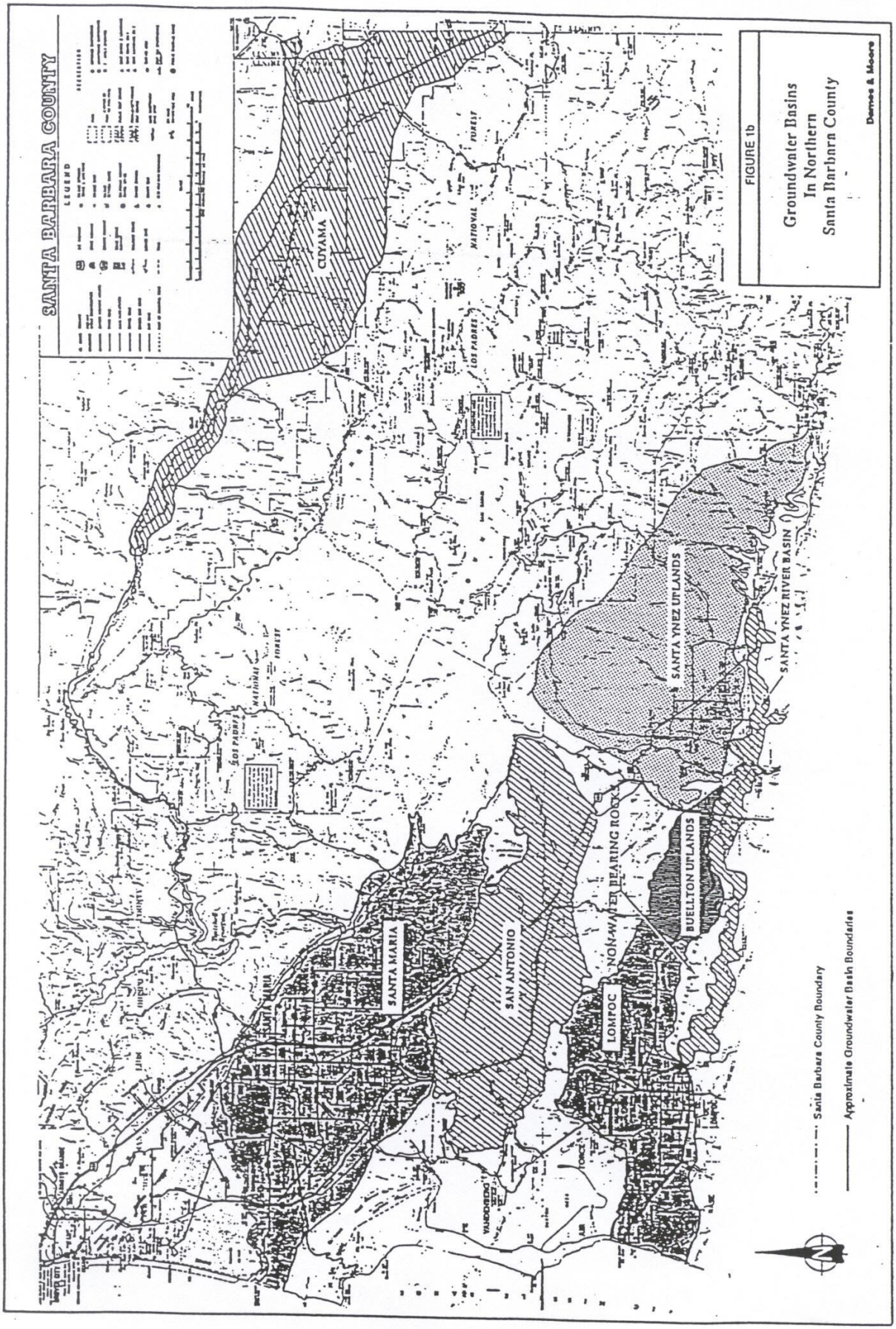

SANTA BARBARA COUNTY
LEGEND
CUYAMA
LOS PADRES
NATIONAL FOREST
SANTA MARIA
SAN ANTONIO
LOMPOC
NON-WATER BEARING ROCK
BUELLTON UPLANDS
SANTA YNEZ UPLANDS
SANTA YNEZ RIVER BASIN
Santa Barbara County Boundary
Approximate Groundwater Basin Boundaries
FIGURE 1b
Groundwater Basins
In Northern
Santa Barbara County
Dames & Moore

TABLE 1 – SUMMARY OF GROUNDWATER BASIN CONDITIONS

Data from County Water Agency and Division of Environmental Review as of March 1992
By Brian R. Baca, 6/92 (file thresh4.wk3) Revised 8/92

			Gross Pumpage (AFY)			Net Pumpage (AFY)		
Basin	**Return Flow Factor (Gross-To-Net)**	**Available Storage**	**Current Use**	**Estimated Safe Yield**	**Surplus (Overdraft*)**	**Current Use**	**Estimated Safe Yield**	**Surplus Overdraft**
Carpinteria	.90	50,000	4238	4294	56	3814	3865	51
Montecito	.90	16,000	1823	1350	473*	1641	1215	426 *
Toro Canyon	.90	650	242	300	58	218	270	52
Foothill	.95	5000	1095	953	142*	1040	905	135*
City of Santa Barbara	.95	10,000	619	847	228	588	805	217
Goleta North/Central	.95	18,000	5167	3600	1567*	4908	3420	1488*
Goleta West	.95	10,000	See note below					
More Ranch	.90	600	24	84	60	22	76	54
Buellton Uplands	.74	153,800	2898	1766	1132*	2133	1300	833*
Santa Inez Uplands	.78	900,000	14,100	11,500	2600*	10,998	8970	2028*
Lompoc	.67	170,000	31,087	28,537	2550*	23,386	21,468	1918*
San Antonio	.75	800,000	19,441	8667	10,774*	15,431	6500	8931*
Santa Maria	.70	1,100,000	149,300	118,500	30,800*	103,800	83,800	20,000*
Cuyama	.75	1,500,000	48,700	10,667	38,033*	36,525	8000	28,525*
S. Y. River Riparian	N/A	90,000	Not subject to overdraft*					

Note on the Goleta North/Central Basin: The overdraft status of the Goleta North/Central Basin is based on pumpage by various private and public entities over the last decade. Overdraft of this basin is not projected to continue as a result of the court judgment in the Wright vs. Goleta Water District lawsuit and the efforts of the GWD to comply with the judgment. The judgment requires that the GWD return the basin to a state of hydrologic balance by 1998. GWD actions to meet this mandate include:

1. Adoption of the Water Supply Management Plan.
2. Adoption of ordinance 91-2 ("WET" Initiative: Desalination Supply).
3. Voter approval of revenue bonds for the State Water Project.
4. construction of the GWD/GSD waste water reclamation plant.
5. permanent water conservation programs.

On July 14, 1992 the Board of Supervisors determined that water service to Wright litigants and other holders of can-and-will-serve letters from the Goleta Water District does not have the potential to cause overdraft. Projects fitting in this description are therefore exempt from environmental review as it pertains to questions of groundwater overdraft.

Note on the Goleta West Basin: The status of the Goleta West Basin (or Subbasin) has not yet been resolved. This is because of uncertainty associated with several well exchange/service agreements between Planning and Development Department and Goleta Water District staff and landowners in the West Basin. The issue is the subject of ongoing discussions between the Planning and Development Department and Goleta Water District staff and is anticipated to be resolved by late 1992.

TABLE 2 - GROUNDWATER THRESHOLDS 1992 UPDATE

Revised Methodology for Determining Threshold of Significance
By Brian R. Baca, 6/92 (File "thresh2b.wk3") Revised 8/20/92

METHODOLOGY

An idealized reference basin having overdraft and storage characteristics similar to the overdraft basin with the greatest remaining life (Santa Ynez uplands) was chosen as a standard. The Threshold of Significance for this reference basin was set at an amount (61.9 AFY) that if added to the assumed overdraft would result in the loss of three percent of the remaining life of the Available Storage. The Threshold values for the actual basins are proportional to the Threshold for the reference basin based on the relative length of remaining life and the relative size of the basin. Remaining life is weighted at 75 percent; size at 25 percent. Threshold values are rounded to the nearest 1 AFY for use in project environmental review.

STANDARD REFERENCE BASIN

Net Overdraft (AFY)	Available Storage (AF)	Remaining life of Av. Strg. (Years)	Threshold of Significance Based on 3.000% Loss of Remaining Life of Avail. Stor.	Formula for Calculation of Reference Basin Threshold of Significance (x) in AFY. (3% loss of remaining life)
2000.000	900000.000	450.000	61.856 AFY	$\frac{900000\ AF}{2000\ AFY + (x)}$ = 450 years* .97
a	b	c	d	

OVERDRAFTED/OVERCOMMITTTED BASINS

Basin	Net Overdraft (AFY)	Available Storage (AF)	Remaining Life of Av. Strg. (Years)	Ratio to Standard Reference Basin (1) Remaining Life (R.L./c)	Ratio to Standard Reference Basin (2) Available Storage (A.S./b)	Combined Ratio (1) @ 75% (2) @ 25%	Calculated Threshold of Significance (Combined Ratio x 61.856)	Applied Threshold of Significance (AFY)
Santa Ynez Uplands	2028.00	900000.000	443.787	0.986	1.000	0.990	61.215	61
Buellton Uplands	833.000	153,800.000	184.634	0.410	0.171	0.350	21.677	22
San Antonio	8931.000	800,000.000	89.576	0.199	0.889	0.372	22.980	23
Lompoc	1918.000	170,000.000	88.634	0.197	0.189	0.195	12.058	12
Santa Maria	20,000.000	1,100,000.000	55.000	0.122	1.222	0.397	24.570	25
Cuyama	28,525.000	1,500,000.000	52.585	0.117	1.667	0.504	31.194	31
Montecito	426.000	16,000.000	37.559	0.083	0.018	0.067	4.147	4
Foothill	135.000	5000.000	37.037	0.082	0.006	0.063	3.904	4
Goleta North/Central	1488.000	18,000.000	12.097	0.027	0.020	0.025	1.556	2

BASINS IN SURPLUS (No Threshold of Significance Applies)

Basin	Net Overdraft (AFY)	Available Storage (AF)
Carpinteria	0.000	50,000.000
City of Santa Barbara	0.000	10,000.000
Toro Canyon	0.000	650.000
More Ranch	0.000	1200.000

B. Environmental Review of Water Resources.

1. Alluvial basins. The relative significance of proposed new withdrawals from a groundwater basin must be assessed in the preparation of an environmental document (ND, EIR) pursuant to the California Environmental Quality Act. This is done through calculation of specific "Thresholds of Significance" for each of the overdrafted basins in Santa Barbara County. No threshold is established for a basin in a state of surplus. A project in such a basin would be subject to a threshold only if it would use more than the remaining surplus. In an overdrafted basin, projected net new consumptive water use of a project which exceeds the calculated threshold for that particular basin is deemed a significantly adverse environmental impact. This determination during the initial study would require the preparation of an Environmental Impact Report. If the estimated water use remains above the Threshold of Significance in the final analysis, the impact of the project on water resources, would, as stated above, be considered significant and unavoidable and the project would require a finding of Overriding Considerations by the decisionmakers for approval.

Thresholds of Significance are calculated from hydrologic parameters for each of the basins in a state of overdraft. The size of the basin and the level of net annual overdraft are the key factors upon which the threshold is based. Current status of the basins is summarized in Table 1. The method used to establish the appropriate values for each basin involves setting a threshold for an idealized "Reference Basin" having overdraft and storage characteristics similar to the overdrafted basin with the greatest remaining life (Santa Ynez Uplands) based on a percentage loss of the estimated remaining life of the available storage. Thresholds for the other basins are proportional to this value based on the relative size and remaining life. A detailed explanation and a worksheet illustrating all the figures used in the calculation and the results are included on Table 2. Threshold values of 2 AFY to 61 AFY are herein established for the eight overdrafted/overcommitted basins in Santa Barbara County.

Definitions of the key parameters are as follows:

Safe Yield - The maximum amount of water which can be withdrawn from a basin (or aquifer) on an average annual basis without inducing a long-term progressive drop in water level.

Available Storage - Available storage is the volume of water in a particular basin which can be withdrawn without substantial environmental effects. This storage reflects the amount of water in the basin on a long-term basis (a point on a long-term trend line) not the current storage level in the basin. The number will be periodically updated by the Planning and Development Department and the County Water Agency as new information becomes available.

Net Annual Overdraft - The amount by which average long term demand on a basin exceeds the safe yield of the basin after allowances have been made for return flows. The "demand" figure will generally include commitments of supply such as approved projects not yet constructed with the estimated current level of pumpage.

Portions of Santa Barbara County, especially the South Coast, are served by water districts which distribute both surface water from the Santa Ynez River watershed and groundwater pumped from local basins. For environmental review purposes, the surface supplies are considered to be the first element of supply committed to existing demand. Thus, the water use of a new development is assumed to come entirely from the groundwater basin.

New supplemental supplies of water in the process of development in Santa Barbara County include desalination of sea water, wastewater reclamation and importation of water through

the State Water Project. Upon determination that a new source is available over the long term, a project supported by that source would not be subject to the groundwater thresholds of significance. If water from a new source were to offset current pumpage on a long-term basis, the Threshold of Significance would be revised to reflect the lowered pumpage.

2. **Consolidated rock aquifers.** The methodology for determining the threshold of significance for water use in consolidated rock (bedrock) aquifers is based on whether the proposed usage would place the aquifer in a state of overdraft. In order to make this determination it is necessary to define the boundaries of the aquifer and to estimate the potential average annual recharge (i.e. Safe Yield) available within the defined boundary.

   a. **Aquifer boundaries.** Bedrock aquifers in Santa Barbara County generally extend for long distances along bedding strike. On the south flank of the Santa Ynez Mountains, the Miocene and Eocene bedrock formations crop out in a continuous band crossing the intermontane watersheds from the Santa Barbara area to near Point Conception. The sandstone (and sometimes fractured shale) aquifers in these formations are variable in their hydrologic characteristics but are generally far less permeable and productive than unconsolidated alluvial sediments. They are also interbedded with relatively impermeable marine and non-marine shales and mudstones. Clearly, a well pumping at any one point cannot access the water in storage and the potential recharge (i.e. safe yield) over the entire trend. Pumping effects extending further than a few thousand feet cannot be assumed. For purposes of analysis it is necessary to divide these aquifers into units in which the storage and potential recharge attributable to that unit can be presumed to be accessed from a single location. The watershed divides (ridgelines) are designated as aquifer boundaries for purposes of environmental review. Using watershed areas to define and analyze the bedrock aquifers have several advantages: 1) the boundaries are clearly delineated, 2) most wells are drilled in canyon bottoms and, thus, the topographic divide would occur at the approximate midpoint between pumping centers and 3) the watershed area is directly related to a major source of potential recharge, stream seepage. It must be recognized, however, that the watershed boundaries, a surface feature, do not represent barriers to subsurface groundwater flow. For this reason a well located near a watershed boundary could draw water from an adjacent watershed and access the yield attributable to that watershed. Based on observed well drawdown effects in the Vaqueros Formation at two locations in the Ellwood/Gaviota area, it will be assumed in the analysis of Vaqueros aquifers that a well located within 800 feet of a watershed boundary will access the yield attributable to the adjacent watershed. The combined safe yield of the affected watersheds (and the combined existing demands) will be used to assess a project's impact on groundwater resources. A "radius of influence" greater or less than 800 feet may be used if justified based on site-specific geologic or hydrologic data. In other formations, the ridgeline boundary criteria will be used unless site-specific data is available which better defines the aquifer limits.

      The boundary of the "aquifer" in the stratigraphic sense is also necessary to define. In a geologic formation or subunit predominated by sandstone (presumably fractured) a well in any part of that unit is assumed capable of accessing all of the potential recharge to that unit. Specific examples on the South Coast would be the Vaqueros and Coldwater Formations. Note that site specific geologic information could require that these formations be divided into subunits (as determined by the Planning and Development Department Geologist). In a unit comprised of interbedded permeable and

non-permeable units the aquifer is defined as the stratigraphic interval to which the well is hydrologically connected (i.e. the screened or gravel packed interval). The Sespe Formation is an example of the type of geologic unit which would be subject to this definition.

As a reasonable worst case, faults are considered to be barriers to groundwater flow. The aquifer boundaries used in environmental review would reflect this assumption.

b. Safe Yield.

(1) Introduction. In past Thresholds manuals, potential average annual recharge to an aquifer, or "safe yield", was estimated based on a percentage of total average annual precipitation in the watershed above the aquifer under study. A figure of 4.75 percent of the total precipitation was assigned to the aquifer as safe yield based on values obtained from the USGS study of the Ellwood to Gaviota area by Miller and Rapp (1968). The 4.75 percent figure was, however, taken out of context and used incorrectly. This figure is an estimate of field recharge (direct percolation of rainwater) over an entire watershed area and does not reflect the field recharge attributable to the outcrop area of a single aquifer (or group of aquifers) within the watershed. The field recharge of any single aquifer is generally far less than that for the entire watershed. This method also did not account for induced recharge (stream seepage and subsurface underflow) due to the drop in aquifer water level with pumpage. A new methodology which accounts for sources of direct recharge (field recharge and stream seepage) and indirect recharge (subsurface underflow) is described below. This methodology was jointly developed by the Division of Environmental Review and the County Water Agency. *(A program diskette including instructions is available from the Planning and Development Department.)*

(2) Direct recharge. Direct recharge refers to the infiltration of surface water into the aquifer. This can occur as either field recharge (the direct penetration of rainfall) or as seepage from flowing streams.

(3) Field recharge. Field recharge has been estimated by a variety of methods. Miller and Rapp (1968) made their estimate of 4.75 percent of total average annual rainfall based on groundwater discharge or baseflow out of the watersheds from Ellwood to Gaviota. Blaney (1933) measured actual recharge in an alluvial setting in Ventura County for several years and developed graphic curves ("Blaney curves") which relate annual rainfall to infiltration. Another method developed by the Soil Conservation Service (SCS) involves modeling of a "soil reservoir." When the inputs to the reservoir (rainfall) exceed output (evapo-transpiration of vegetation and runoff) and soil reservoir storage capacity deep penetration to groundwater is assumed to occur. This "Soil Moisture Balance" methodology involves the use of monthly rainfall data and allows for input of site specific parameters such as vegetation type, soil type and the amount of irrigation water applied to the surface outcrop. The Blaney Curve method uses only annual rainfall data and does not allow for input of site specific data. Miller and Rapp's figure is very general and averages together aquifers and non-aquifers with different vegetation, soil types and average rainfall. Given these comparisons, Soil Moisture Balance analysis is considered the best method for estimating field recharge and will be applied to aquifer outcrop area when adequate (as determined by the Planning and Development Department) monthly rainfall data is available.

In the absence of such data one of the other two methods (Blaney Curves, Miller and Rapp) will be used.

Estimates of field recharge using the soil moisture balance method involve preparation of a computer spreadsheet which applies monthly values of rainfall, applied water (if any), runoff and potential vegetation evapotranspiration to a model of the "soil reservoir" based on rooting depth and soil moisture holding capacity. An example of this spreadsheet is presented as Table 3. Key parameters used in this analysis are described below:

(a) **Applied water.** Monthly irrigation amount applied to crop planted on top of aquifer outcrop. Monthly amounts based on 1) total annual use divided proportional to the monthly values for plant potential evapotranspiration or 2) crop irrigation schedule according to Cooperative Extension or California Dept. of Water Resources.

(b) **Rainfall.** Values from an appropriate nearby rain gauge(s) monitoring by the Santa Barbara County Flood Control District. (Refer to Precipitation Data Report, 1990).

(c) **Runoff factor.** The portion of precipitation which goes to runoff is not available for deep percolation. Until detailed studies are completed an average figure of 20 percent (80 percent effective rainfall) will be used. This figure is rounded from the 19 percent cited by Miller and Rapp (1968).

(d) **Moisture capacity.** This figure refers to the ability of a particular soil type to hold water by capillary force. It is measured in inches of water per inch of soil. The figure used in the analysis will be that listed for the aquifer outcrop area in the SCS soil survey for Santa Barbara County. If an SCS value is unavailable, a value determined by the Planning and Development Department geologist will be used.

(e) **Rooting depth.** Vegetation rooting depth equals the thickness of the soil reservoir. The values used are based on USGS reports, information provided by the farm advisor and other studies.

(f) **Soil reservoir capacity.** This figure is the product of the moisture capacity times the rooting depth. It represents the total amount of water (in inches) that can be held in the soil reservoir. If additional water is added beyond this amount it is presumed to percolate to groundwater.

(g) **Potential evapotranspiration.** The potential evapotranspiration annual curve used in the analysis will be based on USGS reports, evapotranspiration measurements at CIMIS stations, vegetation water use studies by the State Department of Water Resources or other related studies.

Water yield shown in the last column on Table 3 represents the amount of water available to the soil reservoir in excess of the moisture holding capacity of the soil reservoir and the potential evapotranspiration of the vegetation. The monthly values are averaged over a long period of time (decades) to obtain a figure for average annual recharge in AFY per acre of aquifer outcrop. This figure is multiplied times the aquifer acreage and rounded to the nearest one AFY to obtain average annual field recharge.

(4) Stream seepage. Under native conditions (no pumping) bedrock aquifers in mountain areas (e.g. the Santa Ynez Mountains) have water levels at or near the elevation of the streambed. During and after the rainy season, water which has infiltrated into the aquifer as field recharge, discharges into the creek (baseflow). Seepage from streams does not occur because the aquifer is full and, at times, spilling. A drop in aquifer water level due to well pumpage will induce recharge from stream flows as well as reducing (or eliminating) baseflow out of the aquifer.

Magnitude of potential stream seepage depends on stream flow rates, streambed geometry, a seepage rate and the length of stream which crosses the aquifer outcrop. The County Water Agency (CWA) has developed a model which relates all of these factors and provides an estimate of long-term average annual recharge attributable to stream seepage. This model is based on 39 years of daily flows recorded at the USGS gauging station in San Jose Creek. It contains a function which calculates daily stream width (wetted surface width) at various flow rates over the 39 year period for a given channel geometry. Using this function and a stream seepage rate in gallons per day per square foot of wetted surface area a potential annual average seepage figure (in AFY) can be obtained. The information needed to perform this analysis on any particular aquifer is listed below (Table 3).

(a) Stream flows. Average annual runoff in the watershed above the aquifer under analysis is estimated using the procedure developed by Crippen in USGS Professional Paper 417-E (1965). This method accounts for elevation, watershed area, potential evapotranspiration, the isohyetal distribution of rainfall and rock type. The average annual runoff ("recoverable water") estimated by this method for San Jose Creek in Goleta was compared to the actual average runoff measured by the USGS daily flow gauge on that creek over a 39-year period (1940-79). The "Crippen estimate" of 1569 AFY (Table 4a) was very close to the 1576.8 AFY measured by the gauge. However, the gauged values are approximately five percent lower that they would be under native conditions because of stream diversions and minor percolation losses to the Goleta Groundwater Basin upstream of the gauging station. Thus, the average annual flows used for the seepage analysis will be the Crippen calculated value increased by five percent. Table 4b is an example recoverable water worksheet for San Onofre Creek. The estimated average annual flows for a watershed are distributed on a daily basis over the 39-year modeling period using the daily gauged flows at San Jose Creek. The runoff at a watershed under study (Crippen plus five percent) is divided by the 1576.8 AFY measured at the San Jose gauge to obtain a "San Jose Creek Multiplier". This multiplier is applied to the gauged daily flows at San Jose Creek to obtain a model of daily flows at the aquifer under analysis.

The point along the stream where flows are estimated (the downstream limit of the "watershed") will be placed near the downstream contact or limit of the aquifer 20 percent of the distance from that point to the upstream contact of the aquifer. This location is incorporated into the seepage modeling discussed below.

TABLE 3
Example Soil Moisture Balance Analysis Spreadsheet

VAQUEROS FORMATION, ELLWOOD CANYON
SOIL MOISTURE BALANCE ANALYSIS
Rainfall data 1941-1979 (modified from Dos Pueblos Ranch)
Oaks and brush veg. cover (Rooting depth = 14')
Sandy soil (Moisture Capacity = .07 in./in. from SCS)
Soil reservoir capacity = 11.76 inches (14' x 12"/ft x .07"/in.)
Runoff as % of precipitation = 20

	Month	Applied Water	Rainfall (Inches)	Runoff factor (.9 = 10% runoff)	Effective rainfall (inches)	Initial Soil Moisture (Inches)	Total Available Moisture (Inches)	Potential ET (Inches)	Final Soil Moisture (Inches)	Water Yield
1940	Aug	0	0	0.8	0	0	0	8.71	0	0
	Sept	0	0	0.8	0	0	0	5.25	0	0
	Oct	0	0.95	0.8	0.76	0	0.76	2.07	0	0
	Nov	0	0.54	0.8	0.432	0	0.432	1.21	0	0
	Dec	0	11.26	0.8	9.008	0	9.008	1.21	7.798	0
	Jan	0	12.22	0.8	9.776	7.798	17.574	1.64	15.934	4.174
	Feb	0	10.37	0.8	8.296	11.76	20.056	2.87	17.186	5.426
	Mar	0	14.79	0.8	11.832	11.76	23.592	4.54	19.052	7.292
	Apr	0	6.94	0.8	5.552	11.76	17.312	6.17	11.142	0
	May	0	0.01	0.8	0.008	11.142	11.15	8.33	2.82	0
	June	0	0	0.8	0	2.82	2.82	7.79	0	0
	Jul	0	0.04	0.8	0.032	0	0.032	8.64	0	0
1941	Aug	0	0.01	0.8	0.008	0	0.008	8.71	0	0
	Sept	0	0	0.8	0	0	0	5.25	0	0
	Oct	0	1.12	0.8	0.896	0	0.896	2.07	0	0
	Nov	0	0.56	0.8	0.448	0	0.448	1.21	0	0
	Dec	0	6.31	0.8	5.048	0	5.048	1.21	3.838	0
	Jan	0	1.01	0.8	0.808	3.838	4.646	1.64	3.006	0
	Feb	0	0.95	0.8	0.76	3.006	3.766	2.87	0.896	0
	Mar	0	2.22	0.8	1.776	0.896	2.672	4.54	0	0
	Apr	0	4.03	0.8	3.224	0	3.224	6.17	0	0
	May	0	0	0.8	0	0	0	8.33	0	0
	June	0	0	0.8	0	0	0	7.79	0	0
	Jul	0	0	0.8	0	0	0	8.64	0	0
1942	Aug	0	0	0.8	0	0	0	8.71	0	0
	Sept	0	0.04	0.8	0.032	0	0.032	5.25	0	0
	Oct	0	1.82	0.8	1.456	0	1.456	2.07	0	0
	Nov	0	0.78	0.8	0.624	0	0.624	1.21	0	0
	Dec	0	1.72	0.8	1.376	0	1.376	1.21	0.166	0
	Jan	0	16.21	0.8	12.968	0.166	13.134	1.64	11.494	0
	Feb	0	5.32	0.8	4.256	11.494	15.75	2.87	12.88	1.12
	Mar	0	3.69	0.8	2.952	11.76	14.712	4.54	10.172	0
	Apr	0	1.16	0.8	0.928	10.172	11.1	6.17	4.93	0
	May	0	0.04	0.8	0.032	4.93	4.962	8.33	0	0
	June	0	0	0.8	0	0	0	7.79	0	0
	Jul	0	0	0.8	0	0	0	8.64	0	0
	•									
	•									
	•									
1977	Aug	0	0	0.8	0	0	0	8.71	0	0
	Sept	0	0	0.8	0	0	0	5.25	0	0
	Oct	0	0	0.8	0	0	0	2.07	0	0
	Nov	0	0	0.8	0	0	0	1.21	0	0
	Dec	0	6.1	0.8	4.88	0	4.88	1.21	3.67	0
	Jan	0	11.39	0.8	9.112	3.67	12.782	1.64	11.142	0
	Feb	0	14.81	0.8	11.848	11.142	22.99	2.87	20.12	8.36
	Mar	0	14.77	0.8	11.816	11.76	23.576	4.54	19.036	7.276
	Apr	0	2.83	0.8	2.264	11.76	14.024	6.17	7.854	0
	May	0	0	0.8	0	7.854	7.854	8.33	0	0
	June	0	0	0.8	0	0	0	7.79	0	0
	Jul	0	0	0.8	0	0	0	8.64	0	0
1978	Aug	0	0	0.8	0	0	0	8.71	0	0
	Sept	0	1.12	0.8	0.896	0	0.896	5.25	0	0
	Oct	0	0	0.8	0	0	0	2.07	0	0
	Nov	0	3.55	0.8	2.84	0	2.84	1.21	1.63	0
	Dec	0	1.58	0.8	1.264	1.63	2.894	1.21	1.684	0
	Jan	0	6.16	0.8	4.928	1.684	6.612	1.64	4.972	0
	Feb	0	6.81	0.8	5.448	4.972	10.42	2.87	7.55	0
	Mar	0	5.95	0.8	4.76	7.55	12.31	4.54	7.77	0
	Apr	0	0	0.8	0	7.77	7.77	6.17	1.6	0
	May	0	0	0.8	0	1.6	1.6	8.33	0	0
	June	0	0	0.8	0	0	0	7.79	0	0
	Jul	0	0	0.8	0	0	0	8.64	0	0
		TOTAL =	918.21						TOTAL=	62.674
		ANN.AVG.=	23.5438462	inches/yr				ANN. AVG. RECHARGE	in./year	1.60702564
									AFY/acre	0.1339188

TABLE 4a - Example of Recoverable Water Worksheet

SAN JOSE CREEK WATERSHED RECOVERABLE WATER WORKSHEET

(FOLLOWS PROCEDURE DEVELOPED IN USGS PROFESSIONAL PAPER 417-E)

Altitude Range (ft, MSL)	WtrshdArea (Acres)	Area % of Wtrshd	Rainfall (P) (in inches)	Potential ET (E, in.)	P/E	R/E	Recovrable Water (R)	Adjusted R (= K*R)	Watershed Loss (L)
2500 – 3000	510	14.5%	30.00	54.00	0.56	0.103	5.54	7.20	22.80
2000 – 2500	1020	28.9%	29.00	55.50	0.52	0.085	4.74	6.16	22.84
1600 – 2000	637	18.1%	28.00	56.00	0.50	0.075	4.18	5.43	22.57
1200 – 1600	361	10.2%	27.00	56.00	0.48	0.067	3.73	4.86	22.14
800 – 1200	297	8.4%	25.50	55.20	0.46	0.058	3.22	4.19	21.31
400 – 800	404	11.5%	24.00	53.50	0.45	0.053	2.84	3.70	20.30
150 – 400	297	8.4%	22.00	51.00	0.43	0.047	2.39	3.11	18.89
TOTALS	3526	100.0%							
Weighted Avgs.			27.30	54.79			4.11	5.34	21.96

ADJUSTED RECOVERABLE WATER = 5.34 inches (weighted average over watershed).
WATERSHED AREA = 3526 acres.
WATERSHED RUNOFF IS ESTIMATED @ ..... 1569 Acre Feet / Year.

GEOLOGIC INDEX:

Category	% of wtrshd	Index
A (* 10)	7%	70
B (* 100)	0%	0
C (* 0)	92%	0
D (* 100)	1%	100
E (* 10)	0%	0
F (* 20)	0%	0
G (* 40)	0%	0
TOTAL GEO INDEX =		170

The TOTAL GEO INDEX indicates a K value of . 1.3
(see CHART on page E21 of 417-E).

TABLE 4b - Example of Recoverable Water Worksheet

SAN ONOFRE CREEK WATERSHED RECOVERABLE WATER WORKSHEET

(FOLLOWS PROCEDURE DEVELOPED IN USGS PROFESSIONAL PAPER 417-E)

(File "onofre2.wk3")

Altitude Range (ft, MSL)	WtrshdArea (Acres)	Area % of Wtrshd	Rainfall (P) (in Inches)	Potential ET (E, In.)	P/E	R/E	Recovrable Water (R)	Adjusted R (= K*R)	Watershed Loss (L)
2000 – 2600	264	20.8%	22.00	55.40	0.40	0.036	1.99	2.59	19.41
1600 – 2000	222	17.5%	21.00	56.00	0.38	0.030	1.67	2.17	18.83
1200 – 1600	271	21.3%	20.00	56.00	0.36	0.025	1.42	1.85	18.15
800 – 1200	305	24.0%	19.00	55.20	0.34	0.022	1.24	1.61	17.39
400 – 800	158	12.4%	18.00	53.50	0.34	0.021	1.12	1.45	16.55
150 – 400	51	4.0%	17.00	51.00	0.33	0.020	1.03	1.34	15.66
0 – 150	0	0.0%	16.00	51.00	0.31	0.017	0.85	1.10	14.90
TOTALS	1271	100.0%							
Weighted Avgs.			19.98	55.17			1.49	1.93	18.05

ADJ. RECOVERABLE WATER = 1.93 Inches (Watershed weighted mean runoff depth).
WATERSHED AREA = : 1271 Acres.
CALCULATED WATERSHED RUNOFF IS ..... 205 Acre Feet / Year.
WATERSHED RUNOFF IS ESTIMATED @ ..... 215 Acre Feet / Year.

GEOLOGIC INDEX:

Category	% of wtrshd	Index
A (* 10)	7%	70
B (* 100)	0%	0
C (* 0)	93%	0
D (* 100)	0%	0
E (* 10)	0%	0
F (* 20)	0%	0
G (* 40)	0%	0
TOTAL GEO INDEX =		70

The TOTAL GEO INDEX indicates a K value of 1.3
(see CHART on page E21 of 417-E).

SAN JOSE CREEK MULTIPLIER = 0.136243
Aquifer name Vaqueros
Aquifer length along stream (L) = 300
Effective aquifer length along stream = 600
(Up to 300' added to (L) for subsurface underflow)
POTENTIAL STREAM RECHARGE = 11.80314
(see Stream Seepage Curves)

(b) Streambed geometry. The streambed geometry incorporated into the model is based on field measurements of the creek in Ellwood Canyon at the northern outcrop of the Vaqueros Formation. This channel geometry is considered representative of creeks on the South Coast. Narrower channels occur in some areas which would allow for less seepage per unit of flow. Ellwood Canyon geometry will, however, be used unless site specific data is available.

(c) Seepage factor. A seepage factor of 10 gallons per day per square foot of wetted surface area is used in the analysis. This factor is based on measurements of seepage made during controlled releases down Mission Creek in the City of Santa Barbara (Martin, 1984). This factor is used as the best available information but may be higher than the actual rate for consolidated rock aquifers. A figure of 15 gpd/ft^2 was measured in river gravels by the County Water Agency. Such gravels are far more permeable (orders of magnitude) then bedrock aquifers or the alluvial sediments in Mission Creek.

(d) Streambed length. This length is measured from the upper to the lower geologic contacts of the aquifer along the streambed as delineated on the USGS topographic map.

A table of monthly flow values calculated with the stream flow model for San Onofre Creek is presented in Table 5 based on the multiplier determined with the recoverable water worksheet. A table of seepage values is presented in Table 6. The seepage figures are generated from the estimated flows, the stream length and the seepage factor and streambed geometry parameters discussed above. The relationship between average annual potential stream seepage and the San Jose Creek multiplier is presented graphically on Figure 2. The stream seepage curves shown on this graph plot the multiplier versus the average annual potential seepage per 100 feet of aquifer exposed along the stream for various total effective exposure lengths. The different curves required for each value of effective aquifer exposure length reflects the fact that the stream flows in the downstream parts of an aquifer are reduced by percolation into the upstream parts the aquifer. As aquifer exposure length increases the average percolation per 100 feet of that exposure length progressively declines. The curves shown on Figure 2 are based on estimated flows at a point located 20 percent of the distance from the downstream contact or limit of the aquifer to the upstream contact of the aquifer. All analyses will incorporate this parameter.

In summary, once the appropriate multiplier and stream length are known, the potential seepage is readily estimated from the curves on Figure 2. For purposes of environmental review all values are rounded to the nearest 1 AFY.

A geologic circumstance which occurs in some canyons is where a thin body of alluvium partially fills the valley over the bedrock aquifer under study. It can be reasonably argued that clay layers within the alluvium prevents seepage of stream water into an underlying aquifer. It can also be reasonably argued that the alluvium enhances the potential recharge by increasing the area of hydrologic connection through which stream flow or underflow in the alluvium could recharge a bedrock aquifer. It would require detailed long term records of stream flows, water levels and pumpage along with several monitoring wells to document

either effect. This data is rarely, if ever, available. For purposes of environmental review, the model-derived value will be used as the estimate of potential seepage from stream flow and underflow.

(f) Indirect Recharge. A drop in aquifer water level due to pumpage can induce underflow from adjacent consolidate rock units. Given that most of the sandstone aquifers in the county are either bounded by or interbedded with generally impermeable shales and mudstones, underflow cannot be counted on to provide substantial amounts of recharge. The stratified nature of the bedrock formations requires that water would have to flow across the bedding planes and through the least permeable stratigraphic layers. Increments of safe yield would be added by dropping water levels over an area of the adjacent formation such that additional direct recharge from rainfall or stream seepage be accessed. To account for potential recharge due to subsurface underflow, the area accessed by a well will be considered to extend 300 feet (measured horizontally) into the formation up-gradient of the aquifer, as defined using the guidelines in this manual, if that formation contains water-producing horizons (e.g. fractured sandstones). The estimation of field recharge and potential stream seepage will be adjusted to allow for larger aquifer surface area and greater effective aquifer stream length.

Table 5 - Estimated Monthly Flows @ San Onofre Creek Based Upon SBCWA San Jose Creek Flow Model

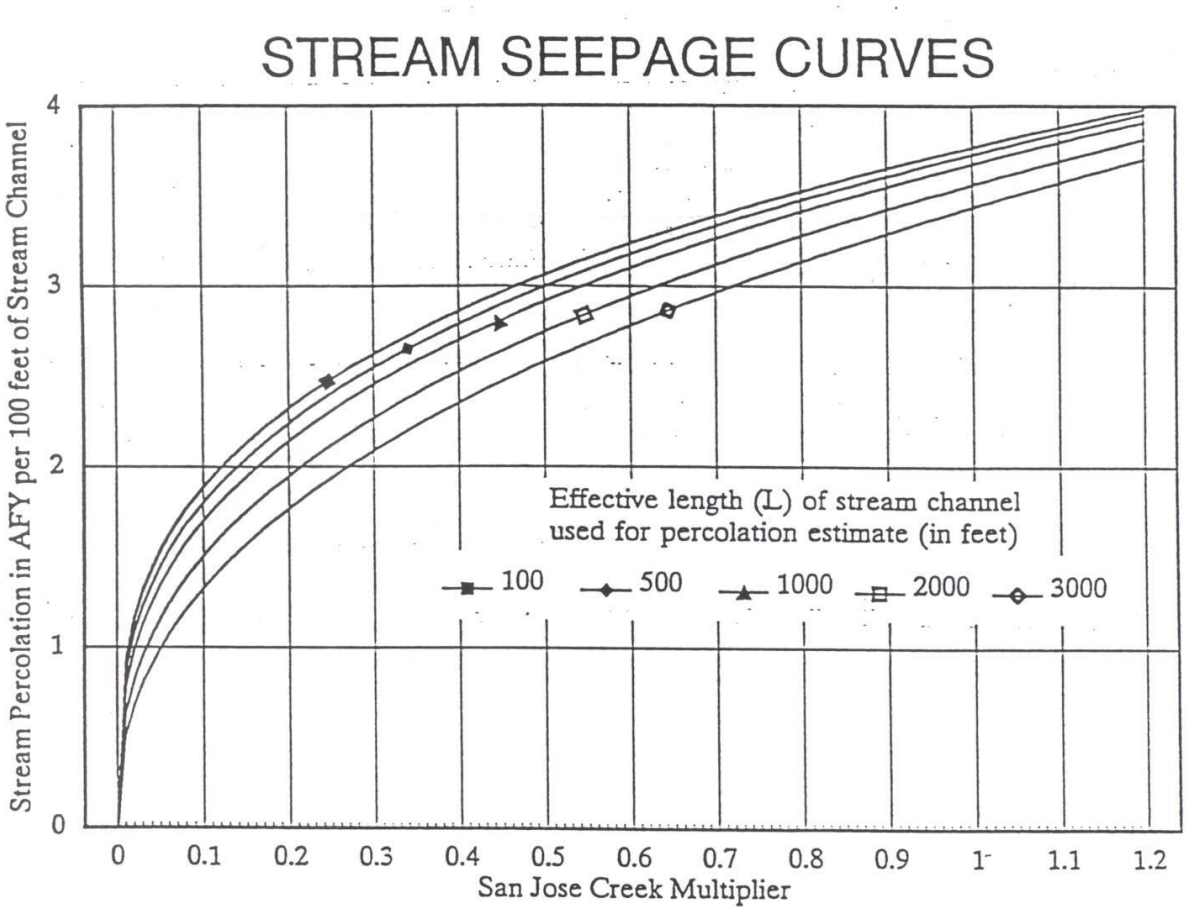
Estimated monthly STREAM FLOW at San Onofre Creek, Vaqueros Formation:
San Jose multiplier = .13624
Formation exposure length (feet) = 600; Channel Geometry = Ellwood Creek

WtrYear	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Totals
1940-41	0	0	52	159	255	306	201	22	11	7	5	4	1022
1941-42	3	4	31	11	4	6	34	7	2	1	0	1	104
1942-43	2	3	3	246	49	76	13	6	2	2	1	1	404
1943-44	2	2	8	3	71	43	6	6	2	1	1	1	146
1944-45	2	30	4	4	56	15	6	3	1	1	0	0	121
1945-46	0	1	29	2	4	24	5	3	0	0	0	0	69
1946-47	0	41	30	1	1	3	1	1	0	0	0	0	79
1947-48	0	0	0	0	0	3	2	0	0	0	0	0	4
1948-49	0	0	2	1	1	24	1	9	1	0	0	0	38
1949-50	0	2	6	7	16	3	2	1	0	0	0	0	37
1950-51	0	1	1	2	1	2	1	1	0	0	0	0	9
1951-52	0	0	13	298	8	125	20	8	3	1	3	2	483
1952-53	3	10	33	21	3	4	4	4	2	0	0	1	84
1953-54	0	3	3	20	10	13	6	5	1	0	0	0	62
1954-55	0	2	7	16	6	5	8	11	2	0	0	0	58
1955-56	0	1	99	128	18	7	21	23	3	1	1	0	303
1956-57	0	0	1	22	36	12	19	14	2	1	0	0	107
1957-58	1	2	44	31	167	158	235	12	4	3	2	1	659
1958-59	1	1	2	15	37	4	2	2	2	1	0	0	65
1959-60	0	0	1	8	10	5	8	2	0	0	0	0	35
1960-61	0	11	4	6	2	2	1	0	1	1	1	0	28
1961-62	0	3	8	5	404	25	5	3	2	1	1	0	458
1962-63	2	2	2	3	35	12	10	5	4	1	1	1	77
1963-64	1	10	3	7	3	4	9	2	1	1	0	0	42
1964-65	1	4	30	11	2	6	79	4	3	1	1	1	143
1965-66	1	172	114	27	11	5	3	2	1	1	1	0	337
1966-67	1	11	196	192	25	32	72	15	5	2	3	2	556
1967-68	2	7	6	4	4	17	11	2	1	1	0	0	54
1968-69	1	2	3	273	203	65	42	12	10	3	3	3	620
1969-70	2	5	4	13	33	60	3	1	2	1	0	0	125
1970-71	1	16	21	8	4	5	3	4	3	1	0	0	66
1971-72	1	2	51	7	3	2	1	1	1	0	0	0	71
1972-73	1	26	2	88	180	84	12	11	5	2	1	1	413
1973-74	1	4	7	62	5	26	8	3	3	2	1	1	123
1974-75	1	2	44	3	94	97	9	5	3	2	0	0	261
1975-76	1	1	2	1	32	14	3	3	1	0	0	4	63
1976-77	4	3	2	18	2	3	1	10	1	0	0	0	46
1977-78	0	0	20	205	213	312	62	17	7	4	5	10	855
1978-79	7	8	8	16	31	54	13	5	4	3	1	1	149
Average	**1**	**10**	**23**	**50**	**52**	**43**	**24**	**6**	**2**	**1**	**1**	**1**	**215**

Table 6 - Estimated Monthly Stream Seepage (Percolation) Based Upon SBCWA San Jose Creek Flow Model

Estimated monthly STREAM PERCOLATION, San Onofre Creek Vaqueros Formation:
San Jose multiplier = .13624
Formation exposure length (feet) = 600; Channel Geometry = Ellwood Creek

WtrYear	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Totals
1940-41	0.0	0.0	1.1	2.7	3.5	3.9	3.4	2.0	1.6	1.4	1.2	1.1	22.0
1941-42	1.1	1.1	1.7	1.6	.9	1.1	1.9	1.4	.8	.7	.4	.7	13.3
1942-43	.7	1.0	1.1	2.3	2.0	2.7	1.7	1.3	.9	.9	.5	.6	15.6
1943-44	.9	.8	1.2	1.0	2.0	1.9	1.2	1.3	.9	.6	.5	.4	12.8
1944-45	.8	1.4	1.2	1.2	1.3	1.4	1.3	1.1	.4	.6	0.0	.1	10.9
1945-46	.1	.7	1.4	.8	.8	1.1	1.1	1.0	0.0	0.0	0.0	0.0	7.0
1946-47	0.0	1.2	1.5	.6	.4	1.0	.7	.7	0.0	0.0	0.0	0.0	6.1
1947-48	0.0	0.0	0.0	0.0	.1	.4	.6	0.0	0.0	0.0	0.0	0.0	1.1
1948-49	0.0	0.0	.3	.7	.4	1.3	.5	.7	.5	0.0	0.0	0.0	4.4
1949-50	0.0	.1	.8	1.1	1.1	1.1	.9	.4	.2	0.0	0.0	0.0	5.7
1950-51	0.0	.4	.8	.9	.7	.8	.3	.6	0.0	0.0	0.0	0.0	4.6
1951-52	0.0	0.0	.8	3.1	1.4	2.7	1.9	1.5	1.0	.5	1.1	.9	14.7
1952-53	1.0	1.4	1.9	1.8	.8	1.2	1.1	1.1	.8	.1	.3	.6	12.1
1953-54	.1	.9	1.1	1.1	1.0	1.2	1.3	1.3	.3	.1	0.0	0.0	8.5
1954-55	0.0	.8	1.3	1.4	1.1	1.2	1.1	1.5	.7	.1	0.0	0.0	9.3
1955-56	0.0	.7	1.9	2.1	1.7	1.4	1.8	1.8	1.0	.8	.6	.2	14.1
1956-57	0.0	.3	.6	1.5	1.4	1.3	1.4	1.6	.7	.5	0.0	0.0	9.4
1957-58	.4	.9	1.4	1.5	2.8	3.2	3.3	1.6	1.1	1.1	.9	.7	18.8
1958-59	.7	.7	.8	1.4	1.8	1.1	.9	.8	.8	.5	0.0	.3	9.8
1959-60	.2	.4	.6	1.3	1.3	1.2	1.0	.9	.2	.1	.2	.1	7.5
1960-61	0.0	1.3	1.1	1.2	.8	.8	.5	.4	.5	.5	.4	0.0	7.4
1961-62	.1	.7	1.2	1.1	3.5	2.1	1.3	1.0	.9	.7	.6	.3	13.7
1962-63	.9	.8	.8	1.0	1.5	1.5	1.4	1.3	1.1	.8	.7	.6	12.4
1963-64	.8	1.2	1.1	1.2	1.0	1.1	1.2	.8	.7	.6	.1	0.0	9.8
1964-65	.6	1.0	1.5	1.5	.9	1.1	2.3	1.1	1.0	.7	.6	.6	12.9
1965-66	.4	2.1	1.9	1.9	1.5	1.2	1.1	1.0	.7	.6	.6	.4	13.5
1966-67	.7	1.1	2.5	2.4	1.9	2.0	2.8	1.7	1.2	.9	1.0	.9	19.2
1967-68	.9	1.2	1.3	1.1	1.0	1.5	1.5	.9	.7	.5	.2	.3	11.1
1968-69	.7	.9	1.1	2.8	3.2	2.7	2.2	1.7	1.5	1.1	1.0	1.0	19.9
1969-70	.8	1.2	1.2	1.6	1.7	1.9	1.0	.8	.9	.6	.2	.3	12.1
1970-71	.5	1.0	1.5	1.4	1.1	1.2	1.0	1.2	1.0	.6	.3	.2	10.9
1971-72	.6	.9	1.8	1.4	1.0	1.0	.7	.7	.6	.2	.2	.3	9.2
1972-73	.6	1.4	1.0	2.0	3.0	2.9	1.6	1.6	1.2	1.0	.7	.8	17.7
1973-74	.4	.8	1.0	2.1	1.2	2.0	1.4	1.0	1.1	.9	.7	.7	13.4
1974-75	.5	.8	1.5	1.1	2.3	2.4	1.4	1.3	1.0	.9	.3	.1	13.6
1975-76	.5	.7	.9	.8	1.4	1.5	1.0	1.0	.5	.2	.2	.8	9.6
1976-77	1.1	1.0	.9	1.4	.8	1.1	.7	1.2	.7	.3	.1	.1	9.5
1977-78	0.0	.1	.5	2.8	3.1	3.8	2.6	1.9	1.4	1.2	1.3	1.6	20.3
1978-79	1.4	1.4	1.5	1.7	1.9	2.1	1.6	1.3	1.1	1.0	.8	.4	16.2
Average	**.5**	**.8**	**1.2**	**1.5**	**1.5**	**1.7**	**1.4**	**1.1**	**.8**	**.5**	**.4**	**.4**	**11.80**



Curve Formulas

Symbols: Y = Average stream percolation per 100 feet of stream channel.
X = San Jose Creek Multiplier
L = Effective length of stream channel

$$Y = A(X^B)$$

$A = aL^2 + bL + c$ ($a = -6.27 \times 10^{-9}$; $b = -9.54131 \times 10^{-5}$; $c = 3.7822$)

$B = aL + b$ ($a = 3.896525 \times 10^{-5}$; $b = .296611$)

Figure 2 - Stream seepage curves based on the San Jose Creek flow model.

(5) Summary and Discussion. The safe yield value assigned to a consolidated rock aquifer will be the sum of the estimated field recharge and potential stream seepage as calculated by the above methods. An alternative to the above "inventory" analysis is the Pumpage versus Change-in-Storage method. This method involves observing change in the amount of water stored in an aquifer over a long-term base period representing average hydrologic conditions. The change in storage is compared to the amount pumped and the difference is attributed to recharge. If sufficient site-specific, long-term water level and pumpage data is available for the aquifer under study (as determined by the Planning and Development Department geologist) the Pumpage versus the Change-in-Storage method will be used. Desired data for a Pumpage versus Change-in-Storage analysis would include detailed records of pumpage volumes and water levels at several points in the watershed for a period of at least ten years. This data is rarely available. Meaningful information on yield can be obtained, however, with detailed records over a shorter period. Three years of such records could allow for analysis of one or more of the three elements of recharge (field recharge, stream seepage and underflow). As an example, three years of data during a drought may only provide information on subsurface underflow. The estimated underflow would be added to the field recharge and stream seepage values calculated by the standard methods to obtain a safe yield figure. Available information on recharge obtained from site-specific geologic or well data will be considered in all analyses.

3. Well interference threshold. The impact of a net increase in pumpage, either from an existing well or a new well is potentially significant if:

a. The production rate of a pre-existing nearby well as presently constructed would drop as a result of interference (cone of depression) to a level which would not support the existing use on that parcel or would not support a planned use for which a discretionary or ministerial permit has been granted.

b. The proposed new pumpage would result in a substantial degradation of water quality such that an existing use on a nearby parcel or a planned use for which a discretionary or ministerial permit has been granted could no longer be supported.

This impact will be analyzed by the Planning and Development Department geologist during case review using standard hydrogeologic methods (e.g. Theis Equation).

4. Water demand estimations.

a. Introduction. A proposed project's future water use can be estimated using either of two methods. The first involves water duty factors. These factors, listed in Table 7 are averages of water demand for particular categories of users based on historical records or land use surveys. The categories are defined by lot size, type of use, zoning, and rarely, soil type. A project with a proposed land use which falls within the listed categories will have its demand estimated by this method. A second method is to estimate the future water use of a project based on a summation of each specific indoor and outdoor use. This method is used if an appropriate water duty factor is not in Table 7 or can not be feasibly generated during project review. Table 8a lists estimated indoor uses per person per year. Table 8b present estimates of water demand for various outdoor and unusual uses. If specific use factors are used to estimate both the interior and exterior demand of a project, the calculated demand must be increased by 10

percent to account for emergency and unusual uses. The factors are to be used without the 10 percent contingency if a portion of the project's demand is based on a water duty factor. For example, in the case of an unusual lot size, a standard water duty factor for a smaller lot can be used. An amount of demand calculated for the additional lot area with a specific use factor would be added to the duty factor for the smaller lot. Another example would be in estimating the proportion of interior use included in a water duty factor.

In some cases, the water demand of certain agricultural crops is needed in the analysis of the net increase in water demand due to a proposed project. Table 9 lists water duty factors published by the U.C. Cooperative Extension (Farm Advisor) in 1991 for various crops grown in Santa Barbara County.

b. Demand calculations. A project's net new consumptive use is the figure which is compared to the Threshold of Significance to determine level of impact on groundwater resources. This figure represents the gross demand (i.e. water duty factor demand) adjusted for return flows to the groundwater basin, loss of natural recharge due to construction of impervious surfaces, increased recharge due to irrigated area or recharge basins and historic use on the site. "Historic use" is defined as the demonstrated average water use on the project site during the most recent ten years, excluding years prior to availability of water to the site. Both high and low water use years would be counted in the average. A "Project Water Demand Worksheet" is included as Figure 3. This worksheet accounts for all of the adjustments listed above and is designed for use in all areas of the County. Each of the factors used are explained on the attached instructions.

C. Mitigation Measures.

Measures that can be applied to projects in order to minimize withdrawals from a groundwater basin (i.e. conserve water resources) or reduce impacts in an overdrafted basin are listed below. These measures are modified from the *A Planners Guide to Conditions of Approval and Mitigation Measures* manual available from the Planning and Development Department.

a. Outdoor water use shall be limited through the measures listed below.

[Planner: This is a menu; select only those conditions that apply. You may also use some of these measures as water conservation conditions without requiring a landscape and irrigation plan.]

(1) Landscaping shall be with native and/or *[planner specify]* drought tolerant species.

(2) Drip irrigation or other water saving irrigation shall be installed.

(3) Plant material shall be grouped by water needs.

(4) Turf shall constitute less than 20 percent of the total landscaped area.

(5) No turf shall be allowed on slopes of over four percent

(6) Extensive mulching (two inch minimum) shall be used in all landscaped areas to improve the water holding capacity of the soil by reducing evaporation and soil compaction.

(7) Soil moisture sensing devices shall be installed to prevent unnecessary irrigation.

(8) Permeable surfaces such as turf block or intermittent permeable surfaces such as french drains shall be used for all parking areas and driveways.

(9) The applicant shall plumb each lot for a grey water system. Each dwelling shall contain a grey water system plumbed to front and rear yard irrigation systems.

(10) The applicant shall contract with an agency that sells reclaimed water to provide water for all exterior landscaping. Non-reclaimed water shall not be used to water exterior landscape. Prior to ___ the applicant shall deliver the above contract to County Counsel for review and approval. The applicant shall renew the contract annually and send copies of the contract and all receipts for reclaimed water received to permit compliance staff. These documents shall be due on _ of every year commencing ___.

(11) Separate landscape meters shall be installed.

Plan requirements: Prior to _____, a landscape and irrigation plan shall be submitted to P&D for review and approval. The applicant/owner shall enter into an agreement with the County to install required landscaping/irrigation and maintain required landscaping for the life of the project.

Timing: The applicant shall implement all aspects of the landscape and irrigation plan prior to occupancy clearance.

Monitoring: P&D shall conduct site visits to ensure installation prior to occupancy.

b. Indoor water use shall be limited through the following measures *[Planner: This is a menu; select only those conditions that apply]*:

(1) All hot water lines shall be insulated.

(2) Water pressure shall not exceed 50 pounds per square inch (psi). Water pressure greater than 50 pounds per square inch shall be reduced to 50 psi or less by means of a pressure-reducing valve.

(3) Recirculating, point-of-use, or on-demand water heaters shall be installed.

(4) Water efficient clothes washers and dishwashers shall be installed.

(5) Self regenerating water softening shall be prohibited in all structures. *[Required in Laguna Sanitation District.]*

(6) Lavatories and drinking fountains shall be equipped with self-closing valves. *[Commercial only]*

(7) Pool(s) shall have electronic pool cover(s).

Plan Requirements: Prior to ___, indoor water-conserving measures shall be graphically depicted on building and/or grading plans, subject to P&D review and approval.

Timing: Indoor water-conserving measures shall be implemented prior to _____.

Monitoring: P&D shall inspect for all requirements prior to occupancy clearance.

c. The existing facility shall be retrofitted with water conserving showerheads (2 gpm) and toilets (1.6 gallons per flush).

Timing: Prior to land use clearance the retrofitting shall be completed by the applicant.

d. High water consumption businesses (defined by P&D), including: _____, shall be prohibited from operating on the subject property.

Plan Requirements and Timing: Prior to _____, the applicant shall record an covenant agreeing to the prohibition with P&D for County Counsel approval to be included as a note on building plans, on lease agreements and in CC&Rs.

Monitoring: P&D shall ensure no such businesses occupy building prior to issuing land use clearance

e. Reclaimed water shall be used for all dust suppression activities during grading and construction.

Plan Requirements and Timing: This measure shall be filed as a note with the final map and included as a note on the grading plan. Prior to the commencement of earth movement, the applicant shall submit to P&D an agreement/contract with a company providing reclaimed water stating that reclaimed water shall be supplied to the project site during all ground disturbances when dust suppression is required. *[Planner: see RECLAIMED WATER section]*

Monitoring: P&D staff shall inspect activities in the field to ensure non-potable water is being used in water trucks.

f. All new development shall provide for on-site recharge basin(s) or shall contribute fees to an area wide program to provide for a Specific Plan Area Recharge System *[planner specify]*. On-site recharge vs. contribution of the area wide system shall be based upon on-site recharge conditions and shall be determined by P&D. Basin(s) shall be maintained for the life of the project by a Homeowners' Association. Recharge systems shall be developed in conjunction with the FCD.

Plan Requirements: Installation and maintenance for two years shall be ensured through a performance security provided by the applicant.

Timing: Recharge basins shall be installed (landscaped and irrigated subject to P&D and FCD approval) prior to __.

Monitoring: Permit Compliance shall site inspect for installation and maintenance of landscape. FCD sign off is required on final grading plans, and Permit Compliance sign off is required to release security.

g. Water wells used on-site shall be monitored by the use of a flow meter or by analysis of electric meter records and recorded semi-annually (May 15 - June 1 and November 15 - December 1). Static water level shall be recorded for each well at the same time as the water production is recorded. *[Planners: Use only for salt water intrusion or when requested by the County hydrologist/geologist.]*

Plan Requirements and Timing: Prior to _the applicant shall record an agreement subject to P&D and County Counsel approval which agrees to the above condition and describes any future mitigation necessary should water quality degrade. The applicant shall maintain a record of meter readings and water levels, available to P&D upon request, for the life of the project.

Monitoring: P&D shall review reports and determine if future mitigation is necessary.

h. A water quality test shall be completed by the applicant.

Plan Requirements: The applicant shall submit test to EHS and P&D for review and approval.

Timing: Test shall be completed and submitted and approved prior to well permit issuance.

i. A pump test for the water well shall be completed by the applicant.

Plan Requirements: The applicant shall submit test to EHS and P&D for review and approval.

Timing: Test shall be completed and submitted and approved prior to well permit issuance.

j. The owner shall complete a water quality analysis on a semiannual basis to avoid the possibility of salt water intrusion into groundwater. Pumping shall cease if the following conditions occur *[P&D specify]*.

Plan Requirements: A copy of the report shall be furnished to EHS and to P&D semiannually.

Timing: Prior to _____, the first water quality analysis shall commence.

k. All drilling effluent shall be collected in an earthen sump (approx. 300 s.f. area, 1.5 to two feet deep) and disposed of at a location acceptable to P&D and EHS.

Plan Requirements: Prior to _____, plans for the sump and disposal areas shall be submitted to P&D and EHS for review and approval. Sump and disposal areas shall be depicted on _____ plans.

Timing: Sump and disposal areas shall be constructed prior to _____.

l. Water well shall be solely exploratory. Any development, except for the exploration and testing thereof, is NOT approved under this Coastal Development Permit.

m. A water meter shall be installed for the non-exploratory well(s).

Timing: Prior to the use of the well for any non-exploratory purpose, the applicant shall install a water meter.

Monitoring: The applicant shall provide proof of meter installation to P&D.

n. Water well use shall be used solely for parcel _____. Water use on a separate parcel shall require further review and a Special Use Permit and Coastal Development Permit.

o. The well head including all accessory equipment, shall be screened from all viewsheds and neighboring properties within 45 days of well installation.

Plan Requirements: A landscape plan indicating same shall be submitted prior to issuance of land use clearance for P&D approval. *[Planner: use landscape bond condition]*.

Timing: Landscape plan shall be implemented prior to _____.

Monitoring: P&D shall inspect site prior to _____.

p. The applicant shall install a coastal water quality monitoring well and monitor water quality per measure #10 above.

Monitoring: P&D shall review the completion report of the well.

(to be included with reporting under measure 10. above)

Measures suggested to mitigate the potential of certain projects to degrade water quality include the following:

q. Preparation of a fertilizer/pesticide application plan which minimizes deep percolation of chemical-laden water to be reviewed and approved by the Planning and Development Department and the Public Health Department, Environmental Health Services Division.

r. Installation of subsurface percolation basins and traps which would allow for detection and removal of fertilizers, pesticides and other chemicals.

s. Biannual or annual water quality analysis for the detection of organic or inorganic contaminants in production or monitoring wells.

REFERENCES

Miller, G.A. and Rapp, J.R., 1968: Reconnaissance of the groundwater resources of the Ellwood-Gaviota area, Santa Barbara County, California; U.S.G.S. Open File Report, 50p.

Crippen, J.R., 1965: Natural water loss and recoverable water in mountain basins of Southern California; U.S. Geological Survey Professional Paper 417-E.

Gibbs, D.R. and Holland, P.R., 1990: County of Santa Barbara, Flood Control and Water Conservation District, Precipitation Data Report.

PROJECT WATER DEMAND WORKSHEET (Page 1 of 4)

Environmental Thresholds and Guidelines Manual (1992 Edition)
County of Santa Barbara
Resource Management Department, Division of Environmental Review
By Brian R. Baca, 4/92
(File "thresh1.wk3")

Project Name: _____

Case Number: _____

APN(s):	Parcel size (Ac)	Zone District
_____	_____	_____
_____	_____	_____
_____	_____	_____

Project Description: _____

_____

_____

DEMAND CALCULATIONS (Refer to instructions on pages 3 and 4)

	Water Duty Factor (AFY/Unit)	# Units	Gross Demand	Consum. Use Fac.	Net Consum. Use (AFY)
Residential					
Combined	_____	_____	_____	_____	_____
Interior	_____	_____	_____	_____	_____
Exterior	_____	_____	_____	_____	_____
Irrigation (Refers to potential agricultural activities on large lots in addition to residential demand associated with the homesites)					
AFY/parcel	_____	_____	_____	_____	_____
AFY/acre	_____	_____	_____	_____	_____
Commercial					
Combined	_____	_____	_____	_____	_____
Interior	_____	_____	_____	_____	_____
Exterior	_____	_____	_____	_____	_____

Total demand = _____ AFY

PROJECT WATER DEMAND WORKSHEET (Page 2 of 4)

RECHARGE ADJUSTMENTS

* These adjustments are made only for projects which are located north of the Santa Ynez Mountains (i.e. the North County). This is because most of the basin area on the South Coast is in confined conditions. Note that there is not universal agreement as to the location and size of of the recharge area of each basin. All projects will be treated as if overlying a confined basin. Any recharge credit which might be due an individual project located in an identified recharge area of a South Coast basin is considered accounted for in the increase of the Threshold of Significance from previous manuals.

Credits (Instructions on page 4)

Field recharge increase

(_____ - _____) * _____ = _____

(Irrigated infiltration rate (AFY/acre) - Non-Irrigated Infil. rate (AFY/acre)) * New Irrigated Area (Ac.) = _____

Recharge basin

_____ * _____ * _____ = _____

Rainfall Feet/year * Acres Impervious Surfaces * System Eff. = _____

Debits

Loss of natural recharge

_____ acres impervious surfaces * _____ AFY/acre infiltration rate = (_____)

Total adjustments = _____ AFY

HISTORIC USE CREDIT

_____ * _____ = _____ AFY

Water demand of historic land use which will be discontinued due to proposed project * Consum. Use Fac. = Historic Use

SUMMARY

_____ + - _____ - _____ = _____ AFY

Total demand - Recharge Adjustment - Historic Use = Net new Consumptive Use

Threshold of Significance

_____ _____ AFY

Groundwater Basin T.O.S.

Notes: _____

_____

PROJECT WATER DEMAND WORKSHEET (Page 3 of 4)

Worksheet Instructions (calculation parameters)

Demand

1. Water Duty Factors: Included in the DER Thresholds manual(Table 3) for a variety of land uses. In some cases appropriate water duty factors may be generated by the DER geologist during case review. Note that the term "Units" can refer to parcels, dwelling units, 1000's of sq.ft. of building coverage or acres.

2. Number of Units: Only the residential units or other land uses which will be added as a result of the project are evaluated. Existing land uses which would continue after project approval are not included in project demand.

3. Gross demand: (Water Duty Factor * # of Units)

4. Consumptive Use Factor: This factor adjusts the gross water demand to account for return flows to the groundwater basin (A C.U. Factor of .6 equals 40 % return flows). Listed below are C.U. Factors to be used:

Basin	CUF	Explanation
Montecito	1.00	Gross water demand in the South Coast Basins is considered equal to consumptive
Foothill	1.00	use. This is because the recharge area is a small portion of the area of the
Goleta	1.00	of the basins(aquifers are confined) and interior effluent is ultimately conveyed to the ocean. (Wastewater reclamation is considered a new source of supply available to the purveyor.)
Santa Ynez	0.75	Average consumptive use factor estimated by RMD Registered Geologist and
Buellton	0.75	County Water Agency Senior Hydrologist.
Lompoc	0.75	
San Antonio	0.75	
Cuyama	0.75	
Santa Maria	0.75	
Exceptions:		
	0.60	Areas with sandy soils (Orcutt, Careaga or equivalent formation)
	0.70	Orcutt area on the Orcutt Fm. (Clay layers impede infiltration)
	0.75	Vandenberg Village (area of sandy soil but some of infiltrated landscape irrigation water discharges into creek and is consumed by riparian vegetation)
	0.50	Wastewater disposed in the Santa Ynez River riparian basin.
	*	Long-term pumpage offsets due to acceptance of treated wastewater will be counted as a direct return to the basin. (Must be demonstrated to the satisfaction of the DER Geologist)
	1.00	Projects served by consolidated rock aquifers.

5. Net Consumptive Use: (Gross demand * C.U.Factor)

6. Residential Demand: Separate factors for interior and exterior use are only used when the consumptive use factors for each are different. Generally, interior use will be based on average occupancy figures from the most recent census (3.01 people/SFD) times the per person use for the type of plumbing fixtures involved. A 10 % contingency will be added to this figure.

7. Irrigation demand: Estimated by developing a water duty factor from similar land uses in the vicinity (AFY/parcel) or by an assessment of likely uses of the onsite soil types. This analysis can be performed by the applicant and reviewed for adequacy by the DER Geologist or may be prepared entirely by the DER Geologist.

8. Commercial Demand: Based on water duty factors (AFY/1000 sq.ft.) from the Thresholds Manual or as developed during case review.

PROJECT WATER DEMAND WORKSHEET (Page 4 of 4)

Recharge Adjustments *

* These adjustments are made only for projects which are located north of the Santa Ynez Mountains (i.e. the North County). This is because most of the basin area on the South Coast is in confined conditions. Note that there is not universal agreement as to the location and size of of the recharge area of each basin. All projects will be treated as if overlying a confined basin. Any recharge credit which might be due an individual project located in an identified recharge area of a South Coast basin is considered accounted for in the increase of the Threshold of Significance from previous manuals.

9. Loss of Natural Recharge: The infiltration rate will be calculated by the DER Geologist using the Soil Moisture Balance method or Blaney Curve method. (See listing of infiltration rates in 10. below)

10. Field recharge increase: Irrigated and non-irrigated infiltration rates are calculated by the DER Geologist (listed below). Absent a detailed site plan, the proportion of impervious area and the percentage of the remaining area to be irrigated will be estimated as follows:

Lot size (sq.ft./unit)	% Impervious Area	% of yard area irrig.
7000 - 21780	35	75
21781 - 43560	30	60

Infiltration Rates (AFY/acre)

Area	Irrigated	Non-Irrigated	Analysis Method
Orcutt	.19	.05	Blaney
Buellton	.26	.09	Blaney
Santa Ynez	.30	.11	Blaney
Los Alamos	.25	.08	Blaney
Lompoc	.21	.07	Blaney

11. Recharge Basin: System efficiency is set at a maximum of .80 to account for system losses due to evaporation, leaks, loss of permeability of recharge basin over time and spills during peak flow events. A lower figure may be will be used if analysis by the DER Geologist, or other technical information, indicates that 80% efficiency cannot be achieved in the long term. Figure for annual average rainfall to be obtained from the Precipitation Data Report (Gibbs and Holland, 1990). To obtain this credit, the runoff from the impervious surfaces of the project must be conveyed to the recharge basin through impervious drains(not an unlined drainage channel).

Historic Use Credit

12. Historic use credit is only given for existing land uses that will be discontinued upon approval of the proposed project. (Examples: Removal of orchard for a new dwelling, elimination of landscaped area through enlargement of a structure, retrofitting a older onsite structure with low flow fixtures)

13. Consumptive Use Factor: Same as figure used for the demand calculation.

Summary

14. Total consumptive demand adjusted for recharge less discontinued historic use equals net new consumptive use. This figure is compared to the Threshold of Significance established for the groundwater basin to assign the impact level disclosed in the environmental document.

TABLE 7

1992 Groundwater Thresholds Manual - Water Duty Factors

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
CARPINTERIA VALLEY	1 DU/3 acre	3.00	1.64	0.55		Data from the Carpinteria Water District, 7/88. (Refer to 88-EIR-12)
	1 DU/acre	1.00	0.86	0.86		
	1.8 DU/acre	24200.00	0.60	1.08		
	3.3 DU/acre	13200.00	0.40	1.32		
	4.6 DU/acre	9470.00	0.34	1.56		
	Condominiums		0.25			
	Apartments		0.20			
	Mobile Homes		0.16			
	Office/Retail			0.95		
	Motel			8.70		
	Restaurant			4.50		
	Industrial			2.30		
	Schools			0.36		
	Parks, Irrigated Open Space			2.64		
	Greenhouses			3.00		
	Open nurseries, field crops			1.00		
MONTECITO	1-E-1	43560.00	1.02	1.02		Data from the Montecito Water District, 1989. (81-88 average water use)
	20-R-1	20000.00	0.68	1.48		
	3-E-1	3 acres	1.70	0.56		
	7-R-1	7000.00	0.45	2.80		
	7-R-2	3500.00	0.26	3.18		
SUMMERLAND	Less than 2500	0.20				Data from SCWD. (79-88 average water use)
	2501-5000	0.21				
	5001-8500	0.27				
	8501-15000	0.30				
	15001-30000	0.40				
	30001-50000	0.71				
	50001-105000	1.10				
	Restaurant					
	Other					
	Public Schools	1.40				
	Irrigation	1.10				

TABLE 7 (Cont'd)

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
CITY OF SANTA BARBARA	SFD "Small"	Up to 9999 sf/lot	0.32			Data from City of Santa Barbara Water Demand Factor and Conservation Study "USER'S GUIDE" Document No. 2
	SFD "Medium"	10000-22000	0.51			
	SFD "Large"	22000-1 Acre	0.85			
	SFD "over 1 acre lot"	More than 1 Acre	1.44			
	Multi-Family Apartment		0.24			
	Auto Repair/Auto Body Shop				0.11	
	Bank				0.17	
	Church				0.17	
	Church w/School				0.18	
	Condominium		0.28			
	Convalescent Hospital				0.11	factor in AFY/bed
	Gas Station				0.29	
	Gas Station/Mini Market				0.49	
	General Office				0.10	
	Grocery Store				0.42	
	Health Club				0.32	
	Hotel/Motel				0.13	factor in AFY/room
	Hotel/Motel/Restaurant				0.15	factor in AFY/room
	Industrial Assembly & Manufacturing				0.09	
	Industrial R&D				0.15	
	Medical Office				0.15	
	Mixed Medical/Dental				0.23	
	Multi-Family Apartment		0.24			
	Restaurant, 24 hour				0.04	factor in AFY/seat
	Restaurant, Fast Food				1.26	
	Restaurant, Sit Down				0.02	
	Retail, Large-over 20,000 s.f.				0.07	
	Retail, Small-under 20,000 s.f.				0.11	
	Retirement Facility				0.10	factor in AFY/room
	Senior Apartment		0.12			
	School-Elementary				0.02	factor in AFY/student
	School-Junior High				0.03	factor in AFY/student
	Theater				0.0047	factor in AFY/seat
	Warehouse/Industrial Storage				0.07	
	Turf-grass					
	Cool-Season			2.40	0.06	
	Warm-Season			2.10	0.05	
	Orchards					
	Avocados			1.35	0.03	
	Citrus			1.53	0.04	

TABLE 7 (Cont'd)

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
CITY OF SANTA BARBARA	Non-Water Conserving					
	Groundcovers			1.80	0.04	
	Shrubs			1.80	0.04	
	Trees			1.50	0.03	
	Low Water Using (1/2 of above figures)					
	Groundcovers			1.80	0.04	
	Shrubs			1.80	0.04	
	Trees			1.50	0.03	
GOLETA VALLEY	1 DU/3+ acres (202 #)*	3.00	1.81	0.60		Data from the Goleta Water District, 1988. (1973-86 average use)
	1 DU/1.5 acres (204)*	1.50	1.22	0.81		
	1 DU/1 acre (698#)*	1.00	0.70	0.70		
	20-R-1 (208#)*	20000.00	0.50	1.09		
	15-R-1 (151#)*	15000.00	0.44	1.28		
	12-R-1 (938#)*	12000.00	0.36	1.31		
	10-R-1 (1282#)*	10000.00	0.33	1.44		
	8-R-1 (2815#)*	8000.00	0.30	1.63		
	7-R-1 (3092#)*	7000.00	0.27	1.68		
	10-R-2 (66#)*	5000.00	0.22	1.92		
	7-R-2 (87#)*	3500.00	0.22	2.74		
	DR 1, 1.8, 2	43560-24200-21780	0.73	.73-1.31-1.46		
	DR 3.3, 3.5	13200-12446	0.41	1.35-1.44		
	DR 4, 4.6, 6	10890-9470-7260	0.30	1.20-1.38-1.80		
	DR 8, 10	5445-4356	0.30	2.40-3.00		
	DR 12, 12.3, 16	3630-3541-2723	0.26	3.12-3.2-4.16		
	DR 20, 25	2178-1742	0.23	4.60-5.75		
	DR 30	1452	0.13	3.900		
	Highway C.,Neighbrhd C.,				0.30	
	CII,CN,C2, C3, Retail C.,				0.23	
	General C.				0.53	
	Shopping Center-SC				0.40	
	Rest.-2100(Assrs.UsrCde)				0.33	
	Hotel/Motel 0700					
	Gas Station 2500					

*SFD water duty factors are shown reduced by .10 AFY because all examples were pre-1980 construction and not subject to water efficiency ordinances currently in effect.

TABLE 7 (Cont'd)

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
GOLETA VALLEY	Retail (store) 1100 1200				0.13	
	Office 1700, 1800, 2400				0.15	
	Research Park MRP				0.14	
	Light Industry M-1***				0.28	
	Heavy Industry M-2****				0.10	
	Light/Heavy Industry M-1/M-2				0.23	
	Prof. Institutional P/I*****				0.14	
	Chrch.-7100(Assrs.Usrcd)				1.1/CHURCH	
** Does not include parking lot and driveways						
*** Includes engineer/construction/food/publishers						
**** Includes auto repair/painting/trucking/builder's supply						
*****Includes professional office/hospital/library/resrch. & dev.						
SANTA YNEZ VALLEY	Residential					Data from SYRMCD, Improvement District #1 1977
	1 DU/10 acres	10.00	1.15	0.12		
	1 DU/5 acres	5.00	0.98	0.20		
	1 DU/1-4 acres	1-4	0.82	.82- .205		
	1 DU/10000-20000 ft2	10000-20000	0.52	2.27-1.13		
	1 DU/2180-7000 ft2	2180-7000	0.14	2.79- .87		
	Commercial			1.64		
	Industrial			0.62		
	Institutional			3.30		
	Agricultural					
Buellton Area						Data from the Buellton Community Services District. (1982-91 average use)
	8-R-1	8000	0.57	3.10		
	7-R-1	7000	0.57	3.50		
LOMPOC VALLEY	Residential					Data from City of Lompoc, 1977 ; Park Water, 1972
	1 DU/1-3 acres	1-3	.62	0.31		
	1 DU/20,000-1 ac.	1 ac.-20000 ft.2	.52-.62	1.28		
	1 DU/10,000-19,999	10,000-19,999	.30-.52	1.19		
	1 DU/3500-7000	3,500-7,000	.20-.30	2.07		

TABLE 7 (Cont'd)

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
LOMPOC VALLEY	Commercial			2.46		
	Industrial			0.98		
	Institutional			0.33		
	Public Facility					
Mesa Oaks Area						Data from the Mission Hills CSD. (1982-90 water use records)
	1 DU/12500	12500	0.82			
	DR-1.8	15000	0.87			
	1 DU/25000 ft.2	25000	1.00			
LOS ALAMOS VALLEY	Ag. (Non-prime soil; irrigation demand)	100-150 ac.	25.00	.25-.17		Figure based on land use survey by DER, 1989.
	RR-5	5 ac.	0.98	0.20		Data from the LACSD,1991 and modified from other sources. Refer to the Los Alamos Community Plan EIR.
	3-E-1	3 ac.	0.91	0.30		
	1-E-1	1 ac.	0.84	0.84		
	DR-1.8	24,200	0.73	1.31		
	10-R-1	10,000	0.62	2.70		
	7-R-1	7,000	0.57	3.55		
	DR-8	5,445	0.30	2.40		
	DR-12.3	3,540	0.26	3.20		
	PRD	15,000	0.67			
	Commercial (M-1)				0.28	
	Commercial (CH, C-2, C-3)				0.30	
ORCUTT AREA	Residential					Data from So Cal. Water Co.,1977.
	4 DU/acre		0.41	1.64		
	5-8 DU/acre		0.33	1.65 - 2.64		
	9-12 DU/acre		0.25	2.25 - 3.00		
	13-22 DU/acre (Includes trailers)		1.64	2.13 - 3.61	10,890	
	Commercial		2.05			
	Industrial		3.28			

TABLE 7 (Cont'd)

Area	Land Use Designation	Minimum Acres or Sq.Ft./Unit	AFY/Unit	AFY/Acre	AFY/ 1000sf	Explanation
ORCUTT (1992 Update)	10-R-1	10000.00	0.86			Data from Cal. Cities Water Co., 1-90 to 2-92 use records.
	-	13400.00	0.94			
	20-R-1	20000.00	1.08			
	-	40000.00	1.40			
CITY OF SANTA MARIA	Residential					Data from the City of Santa Maria, 1982-83 records.
	Single family	3.4 pers./unit		@ 133 gcpd		
	Condominium	2.0 pers./unit		@ 117 gcpd		
	Less than 4 rooms/unit	1.7 pers./unit		@ 117 gcpd		
	4 or more rooms/unit	2.5 pers./unit		@ 117 gcpd		
	Apartment	2.1 pers./unit		@ 87 gcpd		
	Mobile Home	2.5 pers./unit		@ 125 gcpd		
	M.H. without children	2.0 pers./unit		@ 125 gcpd		
	Commercial			0.06		
	Industrial			0.08		

Table 8a - Water Demand Estimations Based on Individual Indoor Uses For Santa Barbara County Including Limitations of Ordinance 2948 (Applies to all areas of Santa Barbara County)

Indoor Use Per Person	gal/yr. w/5.5 gal. Toilet* 3.9 gpm shwr.	gal/yr. w/3.5 gal. Toilet* 3 gpm shwr	gal/yr. w/1.6 gal. toilet* 2 gpm shwr
Toilet 4 flushes/day - gallons/flush 5.5/3.5/1.6	8030	5110	2336
Shower .7/day - 3.9 gal/3 gal/2 gpm x 10 min.	9965	7665	5110
Tub bath .2/day tub 1/2 full = 24 gallons	1752	1752	1752
Brush teeth 1.3/day x 2.5 gal	1186	1186	1186
Shaving 1/day 25% of pop. X 4.5 gal.	411	411	411
Washing hands 5/day wet and rinse @ .2 gal/wash	365	365	365
Drinking and cooking x 1 gallon/day	365	365	365
Clothes washing .29 x 35 gallons/wash	3704	3704	3704
Dishwashing (calc. 1 person assume 2 person/household) auto wash .5 wash/day x 18 gallons inc. rinse	3285	3285	3285
Garbage disposal (calc. one person assume 2 person/ house .5 use/day x 1 gallon	183	183	183
Gallons/Year/Person	**29,246**	**24,026**	**18,697**
AFY/person	**0898 AFY**	**.0737 AFY**	**.0574 AFY**

* Pre-ordinance toilets have mostly 5.5 gal tanks, Larry Farwell GWD 4/15/88 and Pre-ordinance standard pipe output (showers and faucets) was 3.9 gpm Ed Justus, Co., Bldg. Dept. 4/15/88.

** Further reductions in these indoor uses can be achieved through the installation of higher efficiency plumbing fixtures, for example, changing a 3.5 gallon flush toilet to a 1.6 gallon flush toilet.

Table 8b - Outdoor Use Per Unit (Applies county wide but some areas have a higher landscaping use).

Sauna/swimming pool .1 AFY	
Sauna/swimming pool with evaporation inhibitor	.05 AFY
Washing cars - soap and rinse with running water	15 gals/wash
Washing cars - 3 gallon bucket and brief rinse	105 gals/wash
Washing driveways	25 gals/wash
Green lawns, ornamental gardens	1.5-2 AFY/acre
Not so green lawns, ornamental gardens	1-1.5 AFY/acre
Drought resistant trees and shrubs and ivy	1 AFY/acre
Household gardens - beans, tomatoes, carrots, strawberries	1-4 AFY/acre
Commercial type orchards - avocados, lemons, walnuts	
New plantings 1-3 years	1.5-2 AFY/acre
Mature trees by flooding	1.5 AFY/acre
Mature trees by drip system	1.2 AFY/acre
Dust control/rider safety in horse arenas	1.2 AFY/acre
<u>Unusual Water Uses</u> (per unit)	
Pets - drinking - 1 gal/day bathing - .33 gal/day	1.33 gal/day
Water beds	100 gal/year
Dark room	20 gal/use
Washing floors and household cleaning	10 gal/week
Aquaria	1 gal/week 5 gal/day

If individual use factors (from Table 8) are applied by themselves, a contingency factor of 10 percent of the total indoor/outdoor use calculated should be added for darkrooms, , mopping floors, leaks in the water pipes, hoses left running accidentally, washing down the house or a boat, other occasional uses or future conversion of landscaping to higher water use plants.

Table E 9 - Agricultural Water Duty Factors in Santa Barbara County. Compiled by Cooperative Extension, University of California, Santa Barbara County (9-16-91)

Irrigation Water Use by Crops in Santa Barbara County (AFY/acre)

	South Coast Area		Santa Maria & Lompoc Valleys		Santa Ynez, Los Alamos & Sisquoc Valleys		Cuyama Valley	
Crop	**Range**	**Avg**	**Range**	**Avg**	**Range**	**Avg**	**Range**	**Avg**
Field crops								
Beans			.5-1.3	1.0	.9-1.5	1.3	1.0-1.7	1.5
Corn, field			1.5-2.2	1.8	2.0-2.8	2.2	2.4-3.2	2.8
Grain, irrigated			.3-.7	0.5	.6-1.0	.8	1.0-1.8	1.5
Sugar beets			2.6-3.2	3.0	3.0-3.6	3.2	3.6-4.6	4.0
Forages & Pastures								
Alfalfa			2.6-3.3	3.0	3.0-4.0	3.5	4.0-4.6	4.3
Pasture/irrigated			2.8-3.3	3.0	3.3-4.0	3.7	4.0-4.6	4.3
Sudangrass			1.0-1.8	1.5	1.3-2.0	1.7	2.0-3.0	2.5
Ornamentals								
Cut flowers/field	1.5-2.3	1.8	1.5-2.3	1.8				
Flower seeds			1.5-3.0	2.3	2.0-3.5	2.7		
Greenhouse:								
Carnations	2.0-3.0	2.5						
Mums, pompom	2.0-4.5	4.0						
Mums, potted	4.5-5.5	5.5						
Turfgrass	2.5-2.8	2.7	2.5-2.8	2.7	3.0-4.0	3.5	3.5-4.5	4.0
Trees and Vines								
Avocados	1.0-2.0	1.6	1.1-2.1	1.7				
Deciduous fruits			1.2-2.0	1.7	1.5-3.0	2.5	3.0-4.5	3.8
Grapes			.7-1.8	1.2	1.0-3.0	2.0		
Lemons	.8-1.8	1.5	1.0-2.0	1.6				
Walnuts	1.0-2.0	1.5	1.3-2.5	1.8	2.0-3.5	3.3		
Vegetables								
Broccoli/cabbage			1.3-1.5	1.4*	1.5-2.0	1.7		
Cauliflower			1.5-2.0	1.7*	2.0-3.0	2.5		
Carrots			1.5-3.0	2.3	2.0-2.5	2.2	2.5-3.5	3.0
Celery			2.0-2.5	2.2*	2.0-2.5	2.2		
Lettuce			1.0-1.3	1.1*	1.0-2.0	1.5		
Potatoes			1.5-2.0	1.7	2.0-3.0	2.5		
Strawberries	2.5-3.5	3.0	2.5-3.0	2.7				
Tomatoes	1.0-2.0	1.5	1.5-2.0	1.7				

*Average two crops per year in Santa Maria Valley (multiply factor shown by 2 to obtain AFY/acre)

13. NOISE THRESHOLDS *(Approved by the Board of Supervisors, August 1993; Revised September 15, 2020)*

A. Noise: Properties and Measurement.

Noise is defined as unwanted or objectionable sound. Sound is a form of energy detectable by the human hearing system, and it is commonly produced when some object is set into vibration. The vibration is transmitted to any surrounding media, such as air, causing pressure variations or "sound waves" among the air particles. These waves spread outward from the source, and along their path the waves can reflect off surfaces, they can bend around obstacles, and they can be absorbed by insulative materials. If sound waves reach one's ears, the membranes at the end of the ear canal begin vibrating. The vibration is transmitted by small bones in the middle ear to the cochlea, where the inner ear's sensory organ is located. Nerve impulses originating in the cochlea are interpreted by the brain as "sound."

Measurement of sound involves determining three variables: (1) magnitude; (2) frequency; and (3) duration.

1. **Magnitude.** The magnitude of variations in air pressure associated with sound wave results in the quality commonly referred to as "loudness". Human ears respond to a very wide range of sound pressures, producing numbers of awkward size when sound pressures are related on an arithmetic (1, 2, 3, ...) scale. It has therefore become customary to express sound magnitude in decibels (dB) which are logarithmic (1, 10, 100 ...) ratios comparing measured sound pressures to a reference pressure. The reference pressure commonly used in noise measurement is 20 micro-Pascals, which is considered to be the quietest sound normal ears can hear. This sound level is assigned the value zero dB, and each increment in sound level of 20dB represents a relative change in sound pressure of ten times. A three dB increase in sound level represents a doubling of sound energy, but it will not be experienced as a doubling of loudness. Loudness refers to how people judge the volume of sound. As a rule of thumb, a one dB change in sound level requires close attention to notice a change in loudness; a three dB change is clearly noticeable; and a 10 dB change will be nearly twice (or one-half) as loud. A noise of 70 dB sound is about twice as loud as 60 dB and four times as loud as 50 dB. The 50 dB noise will be twice as loud as 40 dB, and so on. Figure 1 illustrates the relationships among sound level, relative sound pressure, and relative loudness.

   Sound level diminishes as distance from the source increases. For a point source of sound in free space, the rate at which the sound attenuates is inversely proportional to the square of distance from the source. This means the sound level will drop six dB each time the distance from the source is doubled. A stream of vehicles on a busy highway represents a "line" source of sound and the rate of attenuation is different from a point source. The sound level from a busy highway will drop only about three dB for each doubling of distance. Sound attenuation from a train resembles a line source near the railroad tracks and at further distances (beyond about 0.3 the length of the train) can be considered a point source.

   Because decibels are logarithmic ratios, they cannot be manipulated in the same way as arithmetic numbers. Addition of decibels produces such results as 70 dB + 70 dB = 73 dB. Thus, if a single automobile produces a sound level of 73 dB, two such automobiles would produce a total sound level of 73 dB. Twice as much acoustic energy is being generated, and this is represented in decibels as a three dB change. As a second example of decibel addition, if one automobile produces a sound level of 70 dB and the other 60 dB, the combined sound level will be 70.4 dB. When the difference between two sound levels is greater than about 10 decibels, the lesser sound is negligible in terms of affecting the total level.

Air and ground absorption of sound waves will further attenuate sound levels. The rate at which these factors attenuate sound depends on frequency content of the sound, air temperature, relative humidity, terrain, and type of ground cover.

2. **Frequency.** A second characteristic of sound which must be included in the measurement is frequency. Typical community sounds consist of a wide range of frequencies, from the low roar of a diesel engine to the high-pitched whine of jet aircraft. Frequency refers to the number of times per second the object producing the sound vibrates, or oscillates. The unit of measurement of frequency is Hertz - one vibration per second being equal to one Hertz (Hz).

   The human ear responds to sounds whose frequencies are in the range from 20 Hz to 20,000 Hz. Frequencies above or below this range are inaudible to humans and are referred to as ultrasound and infrasound, respectively. Within the audible range, subjective response to noise varies. People generally find higher pitched sound to be more annoying than lower pitched sounds. Sensitivity of the ear also varies. While "loudness" depends primarily on sound pressure, it is also affected by frequency; and while "pitch" is closely related to frequency, it also depends on sound pressure. Thus, a 2,000 Hz tone at 5 dB sound pressure level sounds just as loud as a 20 Hz tone at 70 dB sound pressure level; 20 Hz at 70 dB sound pressure level is quiet to the ear; 2,000 Hz at 70 dB sound pressure level is quite loud.

   Because of these variations, a great deal of effort has gone into the development of systems which relate physical measurements of noise to subjective human response. Most of these depend on calculations based on sound pressure levels in various frequency bands "weighted" to correspond with human response. These procedures are cumbersome for most community noise assessment needs. Presently, the most widely used measure of "loudness: for community noise evaluation is the A-weighted sound level. The primary advantage of this descriptor is simplicity, and it has fair correlation with subjective assessments of loudness and annoyance. Sound levels in this report are A-weighted and referred to as "dB(A)".

3. **Duration.** The third characteristic of noise that must be accounted for to describe human noise response is duration. Noise-induced hearing loss, for example, is directly related to magnitude, frequency content, and duration of noise exposure. Annoyance due to noise is also associated with how often noise is present and how long noise persists.

   Environmental noise at any location is usually fluctuating from quiet one moment to loud the next. To adequately describe a noise environment, it is necessary to quantify the variation in noise level over time. One way to do this is to use a statistical approach and specify noise levels that are observed to be exceeded a given percentage of time. Commonly used exceedance levels are:

   L_{90} - That level exceeded 90 percent of the time, sometimes referred to as the Residual Noise Level.

   L_{50} - That level exceeded 50 percent of the time, the median sound level.

   L_{10} - That level exceeded 10 percent of the time, representing higher level, shorter duration noise.

   Another approach to quantifying time-varying noise levels is to calculate the Energy Equivalent Sound Level (L_{eq}) for the time period of interest. L_{eq} represents a sound level which, if continuous, would contain the same total acoustical energy as the actual time-varying noise which occurs during the observation period.

a. Time-weighted noise measures: CNEL, L_{DN}. Noise in a residential, or other noise-sensitive setting, is often more bothersome at night than during daytime. At night, background noise levels outdoors are generally lower than during the day. Also, the activity in most households decreases at night, lowering internally generated noise levels. Individual noise events are therefore more intrusive at night, since they stand out against the background more sharply than during the daytime.

Community Noise Equivalent Level (CNEL) and Day-Night Average Level (L_{DN}) are noise indices that attempt to take into account differences in intrusiveness between daytime and nighttime noises. CNEL and L_{DN} values result from the averaging of hourly Energy-Equivalent Sound Levels for a 24-hour period, with a weighting factor applied to evening and night-time L_{eq} values.

For CNEL and L_{DN} calculations, the day is divided into time periods with the following weightings:

(1) Community Noise Equivalent Level.

Daytime: 7 a.m. - 7 p.m. - weighting factor of 1

Evening: 7 p.m. - 10 p.m. - weighting factor of 5 dB

Nighttime: 10 p.m. - 7 a.m. - weighting factor of 10 dB

(2) Day-Night Average Level.

Daytime: 7 a.m. - 10 p.m. - weighting factor of 1

Nighttime: 10 p.m. - 7 a.m. - weighting factor of 10 dB

CNEL and L_{DN} have been shown to have good correlation with group responses to long-term noise exposure. In practice, CNEL and L_{DN} are virtually identical. Experience with highway, railroad, airport, and general community noise in this County has shown that the two measures consistently agree with 1.0 dB. In this report they are used interchangeably.

b. Noise exposure contours. Noise exposure contours are the mapped expressions of points of equal average noise level, analogous to topographic contours which are the mapped expression of points of equal elevation. Noise contours can be drawn with respect to any noise measure; to satisfy State requirements for the Noise Element, L_{DN} and CNEL have been used in this report. Noise contours usually refer to a single source of noise such as a freeway, although they sometimes combine multiple sources.

4. Ambient noise. Ambient noise refers to background noise. It is the composite of noise from all sources which impact a given location. It is the normally existing noise environment at a particular place. Ambient noise levels are measured as described in the previous sections, using weighted noise measurement systems.

Noise impacts associated with proposed projects may involve ambient noise in several ways. A project may involve a significant noise impact if it generates noise that creates a substantial increase in ambient noise levels affecting noise- sensitive uses in the project vicinity. A project may also have significant noise impacts if the project involves siting of a noise-sensitive land use in a location with high ambient noise levels.

B. Noise Threshold Criteria.

1. Controlling noise. Significant noise impact problems in Santa Barbara County are primarily associated with transportation facilities. Noise in the vicinity of airports, railroads, and major traffic-ways exceeds health and welfare criteria for noise exposure in relation to residential use. While noise from commercial, industrial, agricultural, and "population" activities may be part of the ambient noise at any location, rarely do these generate noise of the same magnitude as transportation sources.

In the unincorporated County, it is estimated that as many as 8,000 housing units and 21,000 persons are potentially exposed to transportation noise at Day-Night Average Levels exceeding 60 dB. The exposure level of 60-65 dB(A) is considered to be the maximum outdoor noise level compatible with residential and other noise-sensitive land uses. In locations outside the immediate influence of a major transportation noise source, ambient Day-Night Average Levels typically range from 46 dB(A) to 57 dB(A). Although localized noise problems will exist in these areas, generally ambient noise levels are acceptable, based on health and welfare criteria.

Controlling the impact of transportation noise must be approached both by quieting vehicles and by protecting sensitive land uses in locations where noise impact is excessive. The first of these approaches is beyond the legal jurisdiction of the County because Federal and State legislation is preemptive in the field of noise source control. The County's primary opportunities to manage transportation noise impact lie in:

a. Planning for compatible uses near existing transportation facilities.

b. Imposing design standards on proposed sensitive development near existing transportation facilities.

c. Incorporating noise control features into the design of new or expanded traffic-ways to protect existing sensitive areas.

2. Planning policies.

a. In the planning of land use, 65 dB(A) Day-Night Average Sound Level is regarded as the maximum exterior noise exposure compatible with noise-sensitive uses unless noise mitigation features are included in project designs.

b. Noise-sensitive land uses are considered to include:

1. Residential, including single- and multi-family dwellings, mobile home parks, dormitories, and similar uses.

2. Transient lodging, including hotels, motels, and similar uses.

3. Hospitals, nursing homes, convalescent hospitals, and other facilities for long-term medical care.

4. Public or primate educational facilities, libraries, churches, and places of public assembly.

c. Noise-sensitive uses proposed in areas where the Day-Night Average Sound Level is 65 dB(A) or more should be designed so that interior noise levels attributable to exterior sources do not exceed 45 dB(A) L_{DN} when doors and windows are closed. An analysis of the noise insulation effectiveness of proposed construction should be required, showing that the building design and construction specifications are adequate to meet the prescribed interior noise standard.

d. Residential uses proposed in areas where the Day-Night Average Sound Level is 65 dB(A) or more should be designed so that noise levels in exterior living spaces will be less than 65 dB(A) L_{DN}. An analysis of proposed projects should be required, indicating the feasibility of noise barriers, site design, building orientation, etc. to meet the prescribed exterior noise standard.

e. The Planning and Development Department, including the Building and Safety Division, and Public Health Department's Environmental Health Services Division have administrative procedures for determining project compliance with the State Noise Insulation Standards related to interior noise levels.

f. For protection of sensitive activities, as well as the airports, noise-sensitive land uses, other than hotels and motels insulated to the level prescribed in the State Noise Insulation Standards, should not be permitted within the 65 dB(A) CNEL contour of any airport.

g. Residential use should be avoided within the 65 dB(A) CNEL contour of any airport and under airport traffic patterns.

h. Zoning ordinance noise level provisions for the M-1 and M-2 zone districts require that noise generated by any use on the property shall not exceed 75 dB L_{10} at or beyond any point along the property boundary upon which such use is located. In no case shall the volume of sound exceed 65 dB L_{dn} at the location of any nearby noise sensitive uses. The M-RP zone district requires that the volume of sound generated or resulting from any use, other than motor vehicles, operated in any lot shall not exceed 50 decibels at any point along the boundary of or outside of the lot upon which such use is located. All of these requirements assume measurements are taken during calm air conditions.

i. In the planning and design of major transportation routes and facilities, noise impacts on existing or planned land uses are carefully considered so that noise-related land use conflicts are minimized.

j. The Goleta Community Plan (Policy N-GV-1) requires that interior noise-sensitive uses (e.g., residential and lodging facilities, educational facilities, public meeting places and others specified in the Noise Element) shall be protected to minimize significant noise impacts.

k. The Montecito Community Plan requires that noise-sensitive uses, as defined in the Noise Element, shall be protected from significant noise impacts.

l. The Summerland Community Plan requires that interior noise sensitive uses, noise-sensitive uses as defined in the Noise Element, shall be protected from significant noise impacts.

3. Noise thresholds. The following are thresholds of significance for assisting in the determination of significant noise impacts.

a. If existing exterior noise levels, including at outdoor living areas, experienced by sensitive receptors is below 65 dB(A) CNEL, and if the proposed project will generate noise that will cause the existing noise levels experienced by the sensitive receptors to exceed 65 dB(A) CNEL – either individually or cumulatively when combined with other noise-generating sources – then the proposed project is presumed to have a significant impact.

b. If existing exterior noise levels, including at outdoor living areas, experienced by sensitive receptors exceeds 65 dB(A) CNEL, and if the proposed project will generate noise that will cause the existing noise levels experienced by the sensitive receptors to increase by 3 dB(A) CNEL – either individually or cumulatively when combined with other noise-generating sources – then the proposed project is presumed to have a significant impact.

c. If existing noise levels experienced by sensitive receptors in interior livings areas is below 45 dB(A) CNEL, and if the proposed project will generate noise that will cause the existing noise levels experienced by the sensitive receptors in interior living areas to exceed 45 dB(A) CNEL – either individually or cumulatively when combined with other noise-generating sources – then the proposed project is presumed to have a significant impact.

d. If existing noise levels experienced by sensitive receptors in interior livings areas exceeds 45 dB(A) CNEL, and if the proposed project will generate noise that will cause the existing noise levels experienced by the sensitive receptors in interior living areas to increase by 3 dB(A) CNEL – either individually or cumulatively when combined with other noise-generating sources – then the proposed project is presumed to have a significant impact.

e. Noise from grading and construction activity proposed within 1,600 feet of sensitive receptors, including schools, residential development, commercial lodging facilities, hospitals or care facilities, would generally result in a potentially significant impact. According to EPA guidelines (see Figure 2) average construction noise is 95 dB(A) at a 50' distance from the source. A 6 dB drop occurs with a doubling of the distance from the source. Therefore, locations within 1,600 feet of the construction site would be affected by noise levels over 65 dB(A). To mitigate this impact, construction within 1,600 feet of sensitive receptors shall be limited to weekdays between the hours of 8 AM to 5 PM only. Noise attenuation barriers and muffling of grading equipment may also be required. Construction equipment generating noise levels above 95 dB(A) may require additional mitigation.

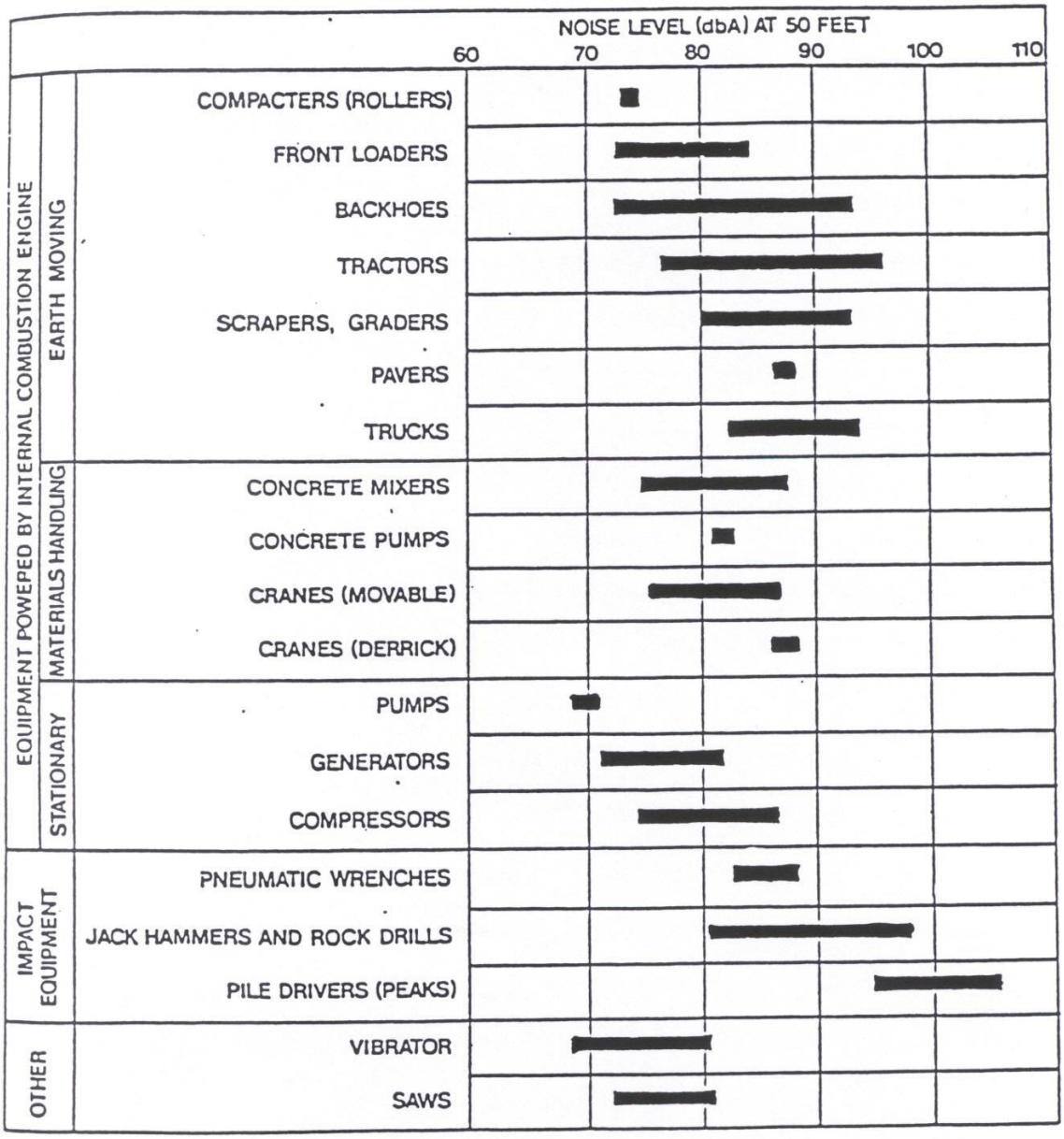
All noise studies evaluating ambient noise levels and changes resulting from project development should be prepared by licensed acoustical engineers.

Figure 1: Sound Level of Common Sounds

Sound	Sound Pressure Level	Relative Sound Pressure	Relative Loudness (approximate)
Jet Takeoff, 200 feet	120	1,000	64
Riveting Machine	110		32
Power Mower (at 5 feet)	100	100	16
Motorcycle (at 50 feet)	90		8
Inside Sports Car (50 mph)	80	10	4
Vacuum Cleaner	70	3	2
Ordinary Conversation (at3 feet)	60	1	1
Private Business Office	50		1/2
Inside Average Residence	40	0.1	1/4
Soft Whisper (at 5 feet)	30		1/8
Inside Recording Studio	20	0.01	1/16
Rustle of leaves	10		1/32
Threshold of Hearing	0	0.001	1/64

FIGURE 2

Noise Levels for Typical Construction Equipment Referenced to 50 Feet



Note: Based on limited available data samples.

Source: EPA, 1971· "Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances," NTID 300-1.

REFERENCES

1. U.S. Department of Transportation, Transportation Noise and Its Control (Washington, D.C. US GPO) 1972

2. U.S. Environmental Protection Agency, Public Health and Welfare Criteria For Noise (Washington, D.C. US GPO) 1973

3. U.S. Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect the Public Health and Welfare with an Adequate Margin of Safety (Washington, D.C. US GPO) 1974

14. PUBLIC SAFETY THRESHOLDS

A. Purpose.

The thresholds contained within this chapter assist the County in classifying the significance of impacts to public safety in a consistent and comprehensive manner when considering a discretionary land-use action. These thresholds focus on involuntary public exposure to acute risks that stem from certain types of activities with significant quantities of hazardous materials. Such activities include installations or modifications of facilities that handle hazardous materials (hereinafter referred to as hazardous facilities), and the transportation of hazardous materials. However, the thresholds also assist in identifying potentially significant impacts to non-hazardous land uses proposed in proximity to existing hazardous facilities.

The thresholds employ quantitative measures of societal risk during the environmental review of a proposed development to indicate whether the annual probability of expected fatalities or serious injuries is significant or not. Measuring societal risk must comply with County-approved guidelines; however, it is not necessary to complete a quantitative risk analysis in order to determine whether an environmental impact report is required or not during preparation of an initial study. Both unmitigated risk estimates and the effectiveness of options to mitigate significant risk should be tested against the threshold. If a proposed project exposes the public to significantly high risks despite all feasible measures to mitigate the impact, then approval of the project requires a statement of overriding considerations, adopted by the approving authority and supported by substantial evidence in the record. Upon project approval, the risk estimates should be adjusted and charted on the thresholds to reflect the risk accurately, based on accepted mitigation, for future land-use planning and permitting purposes.

As described below, these thresholds should not function as the sole determinants of significance for public safety impacts. Rather, they must be used in concert with applicable County policy, regulation, and guidelines to address other qualitative factors specific to the project which also help determine the significance of risk. For example, highly sensitive land uses (e.g., hospitals or schools) are generally given greater protection from hazardous situations overall. Also, long-term significant risks (e.g., natural gas production) generally are treated more conservatively than relatively short-term risks (e.g., natural gas exploration).

B. Definitions.

Acute risk - Chance of fatality or serious injury due to a single, short-term, involuntary exposure to a release of hazardous gas, liquid, or solid, or to a fire or explosion.

Fatality - Death, including exposure to an accident that produces escape-impairing symptoms and considering nearly all individuals that could be exposed (i.e., not just healthy workers, but the elderly, the young and individuals with preexisting health problems).

Feasible - Capable of being accomplished in a successful manner with a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

Occupational Safety - Applies to employees and contractors (not including construction crews) of a hazardous facility (including people who visit the hazardous facility to provide services or conduct business).

Qualitative Factors - Consideration of special characteristics of risk not generally included in its quantification but being sufficiently important to influence the identification and analysis of significant public safety effects, directly or indirectly.

Quantitative Factors - Use of relevant empirical data, in raw form or modified as necessary by expert judgment, and employed in scientifically or technically accepted methodologies, to predict the probability and consequences of an accident with regard to a potentially vulnerable individual or group of people.

Safety - A judgment of the acceptability of risk, recognizing that there is always some chance of an accident that may adversely affect someone, no matter what precautionary steps are taken to prevent the accident or protect against its consequences.

Serious Injury - Physical harm to a person that requires significant medical intervention.

Societal Risk - Risk to a group of people, expressed in terms of the distributed frequency of events that cause multiple casualties or, when appropriate, the likelihood of casualties at a specific location or area.

C. Applicability.

These thresholds apply to risks stemming from the following facilities and activities if (a) they are subject to a discretionary land-use action (or would communicate its concerns for public safety to another jurisdiction that is making a discretionary decision such as routes for shipping hazardous materials), and (b) initial analysis reveals substantial evidence to support a fair argument that the potential of a significant impact to public safety could result from approval of the project subject to such action.

1. Oil wells and gas wells (unless abandoned or undergoing abandonment), and associated production.
2. Gas and hazardous liquids pipelines, including oil if a significant risk is expected, but exempting existing natural gas pipelines owned by a Californian public utility regulated by the California Public Utilities Commission and operated for the purpose of delivering gas directly to the Goleta storage field or consumers (except activities related to liquefied natural gas), and exempting new low pressure distribution pipelines (125 psig or lower) operated by a Californian public utility and regulated by the California Public Utilities Commission.
3. Oil and/or gas processing and storage facilities, including facilities for removing sulfur, removing gas liquids, and compressing gas.
4. Oil refineries.
5. Handling, storage, and transport of compressed natural gas or methanol related to facilities for refueling motor vehicles with these materials.
6. All handling, storage, and transport of chlorine in containers with a capacity of one ton or more, or an equivalent amount of chlorine in bottles or cylinders connected through a common header.
7. Handling, storage, and transport of anhydrous ammonia in containers with a capacity of one ton or more, or an equivalent amount of anhydrous ammonia in bottles or cylinders connected through a common header.
8. Handling, storage, and transport of acutely hazardous rocket propellants such as nitrogen tetroxide (including instances where the County would communicate with other jurisdictions about discretionary actions that affect public safety in this County such as designation of routes for transporting hazardous materials).
9. Handling, storage, and transport of spent radioactive fuel and other high-level, radioactive materials (including instances where the County would communicate with other jurisdictions about discretionary actions that affect public safety in this County such as the designation of route for transporting hazardous materials).

10. Storage of natural gas liquids, including liquefied petroleum gas, unless such storage is limited to a single container with a maximum capacity of 10,000 gallons or less and does not require refilling more than once weekly.

11. Facilities of a type not addressed in 1-10 above, and not exclusively dedicated to retail distribution of consumer products (such as gasoline stations, or hardware, paint, and dry-cleaning stores) that: (a) use a classified Class A or B explosive (per Title 49, Code of Federal Regulations, 171-179); or (b) use substances classified as high-level radioactive materials; or (c) use specified quantities of regulated substances (pursuant to Title 19 of the California Code of Regulations, Division 2, Chapter 4.5) and meet all of the following criteria:

    a. The regulated substance(s) is stored as a compressed gas or liquefied compressed gas, or is expected to vaporize or evaporate quickly upon release (e.g., through failure of container, piping, or valve), or is stored as a liquid at a temperature that exceeds its boiling point;

    b. The regulated substance(s) has the potential to cause a significant risk to public safety according to the County's environmental thresholds. (For example, the regulated substance(s) exists as a gas or vapor upon accident release, and will either release into the open atmosphere or become dangerously explosive in a confined environment.)

    c. The regulated substance(s) is associated with a specific activity that is generally considered to be incompatible with surrounding land uses.

12. All development proposed in proximity to one or more existing hazardous facilities as described above, unless (a) the hazardous facility(ies) are inoperative for the purpose of abandonment, or (b) the proposed development is a single family residential unit which the County considers to be a voluntary exposure to the hazardous facility, or (c) the proposed development does not require a discretionary land-use action.

In cases 1 through 11 listed above, these thresholds apply to risks imposed on present and reasonably projected future land use, considering principally permitted uses under current zoning along with any conditional uses that are permitted or under review.

With regard to land uses with transitory populations (e.g., parks, roads, pedestrian and bike paths), these thresholds apply only when these populations are considered to be often present often or to often flow continuously (e.g., a frequently used recreational park or frequently traveled road). They do not apply when transitory populations are considered to be sporadic or often absent (e.g., hiking trails and other uses where the infrequent presence of people renders inclusion herein as overly speculative).

These thresholds do not apply to occupational safety (i.e., employees of the hazardous facility or people who visit the hazardous facility to provide services or conduct business). Occupational risk, which is governed by State and Federal OSHA, is considered to be more voluntary characteristically and, as such, is generally judged according to more lenient standards of significance than those used for involuntary exposure.

Additionally, these thresholds do not address impacts other than public safety, although accidents that involve hazardous materials potentially impact communities and the environment in other ways (e.g., ecological damage, ground/surface water contamination, demand on fire and police services, economic disruption, interruption to surrounding land uses). These thresholds may be used to address the probability of such impacts occurring. The determination of significance of all such impacts is left to other applicable thresholds and the judgment of specialists that address those impacts in environmental reviews.

Lastly, these thresholds do not address issues of chronic risks which adversely impact public health as a result of long-term or repeated exposure to a hazardous material or situation. Issues of chronic exposure to air toxins are covered under the thresholds for air quality, and the Air Pollution Control District advises on appropriate methodology for modeling air quality. Air quality modeling and methods of health risk assessment to address soil and water contamination differ from those applied to acute risks. Consequently, any application of this threshold to determine the significance of chronic risk should be done so cautiously, making necessary adjustments to the threshold as necessary.

D. Determining When To Do Quantitative Risk Analysis.

The thresholds of significance Subsection E, below, are designed for use during the preparation of an environmental impact report if the initial study reveals substantial evidence of a potentially significant risk to public safety due to exposure to hazardous materials. Comprehensive quantitative analysis of societal risk is necessary at this stage; however, this level of analysis is not required to prepare an initial study.

Instead, a four-step screening methodology is used during the preparation of the initial study for determining the potential of a project to have a significant effect on public safety.

1. Certain facilities, such as major sour gas pipelines and gas processing facilities that support offshore oil and gas facilities, would automatically be subject to quantitative risk analysis and the risk thresholds.

2. For facilities not included in step 1, staff first determines the hazard zone based on the threshold levels of concentration for the particular hazardous materials involved and reasonably worst-case accidents. Levels of concentration for most chemicals are identified by the state. The hazard zones for materials commonly used in the county will be determined. Any hazard zone that encompasses other potentially inhabitable land uses triggers step 3, inclusive of non-hazardous development (other than a single-family residence) proposed within the hazard zone of an existing hazardous facility. Otherwise, the proposed project is not considered to have a significant impact due to acute exposure to hazardous materials.

3. If the hazard zone encompasses off-site receptors, staff then calculates the Individual Risk for the hazardous material(s) involved, based on the probability of an accident occurring, and proceeds to Step 4. Calculations may be pre-determined based on existing information or will be accomplished through a qualified risk analyst.

4. Staff adjusts the Individual Risk to reflect conditional probabilities, called the Individual Specific Risk. Such probabilities address factors such as number of hours in the day in which someone is present in the hazard zone. A measurement of one in a million ($1 \times 10^{-6)}$ on an annual basis indicates sufficient evidence to trigger the risk thresholds and a comprehensive risk analysis.

E. Using These Risk Thresholds.

When an Environmental Impact Report is required, the CEQA Guidelines stipulate that it identify and focus on significant environmental effects of a proposed project. Such efforts include health and safety problems caused by the physical changes to the environment and any significant effects the project might cause by bringing development and people into the area affected by a significant hazard (section 15126). In so doing, the report must also identify and describe any significant environment effects which cannot be avoided if the proposed project is approved and implemented (generally referred to a unavoidable impacts). The Governor's Office of Planning and Research recommends that CEQA lead agencies establish thresholds of significance. These thresholds may be qualitative, quantitative, or both,

whichever form best fits their purpose of providing an analytical method to gauge the significance of a particular environmental effect in a consistent, efficient, and predictable manner.

For identifying the significance of impacts to public safety for purposes of CEQA compliance, the County has consistently focused on quantifying societal risk. In general, risk is a compound measure of the probability and consequences of an adverse effect. Common expressions of risk include individual risk and societal risk. Individual risk is somewhat restricted in its ability to reflect actual risk; it only expresses the risk to a single individual without consideration of the total vulnerable population in a hazardous zone (e.g., a remotely located facility carries an equivalent individual risk as one located next to a hospital). Societal risk, illustrated as a risk spectrum, expresses a continuous variation in risk as a relationship of probability and consequence, the latter measuring the number of estimated fatalities and serious injuries.

The thresholds illustrated in figures 1 and 2 require quantitative risk analysis to determine the total societal risk attributable to the full set of possible accidents that can occur from the operation of a hazardous facility or undertaking of an activity that involves handling of hazardous materials. The analysis must consider both the significance of the risk and the beneficial effect of mitigation. It must also comply with County guidelines for risk assessment to ensure compatibility with the thresholds and consistency over time. When these thresholds are applied to proposed development in proximity to an existing hazardous operation, the risk measurement must be adjusted to reflect reductions in risk due to mitigation and to reflect societal risk to the newly proposed development.

These thresholds refine previous, quantitative thresholds by employing the entire risk spectra of a project and they refine the qualitative character of previous thresholds by employing qualitative factors into the determination of significance. The thresholds provide three zones -- green, amber, and red -- for guiding the determination of significance or insignificance based on the estimated probability and consequence of an accident. Risk analysis is based on best available data and modeling techniques but still requires informed assumptions to compensate for gaps in data, shortfalls in modeling, or ability to predict future outcomes with 100 percent accuracy. Given the unavoidable margin of error associated with any projection, the amber zone represents an area where caution is recommended, particularly considering the presence or absence of relevant qualitative factors; meanwhile, the overall goal should remain focused on maximizing public safety, using feasible mitigation to achieve a risk spectrum that falls solely within the green zone.

Risk spectra plotted on the thresholds should be interpreted as follows for purposes of determining the potential significance of an adverse impact to public safety.

1. **Significant and Unavoidable Impact.** The County considers a societal risk spectrum that falls in the red or amber zones after application of all feasible mitigation to be an unavoidable, significant impact on public safety.

   Significant and unavoidable impacts to public safety may constitute an unreasonable risk, considering how far the risk spectrum penetrates into the red zone, the feasibility of alternative locations with lesser risk, other qualitative factors, and applicable law and guidelines. Unreasonable risk shall be determined for each project individually, based on policies provided in the Safety Element and other relevant policies and codes. Lacking any such determination, project approval requires a statement of overriding considerations by the applicable land-use authority, showing that the benefits of the proposed development exceed its adverse impacts to public safety.

2. **Significant but Mitigable Impact.** The County considers a societal risk spectrum that falls in either the red or amber zones to be a significant impact to public safety. Such risk shall be considered a significant but mitigable impact for purposes of compliance with CEQA if

application of feasible mitigation is sufficient to lower the risk spectrum so that it falls fully within the green zone.

3. **Insignificant Impact.** The County considers a societal risk spectrum that falls completely in the green zone to be an insignificant impact to public safety and no mitigation (or additional mitigation) is required for purposes of compliance with CEQA.

4. **Beneficial Impact.** Impacts beneficial to the environment.

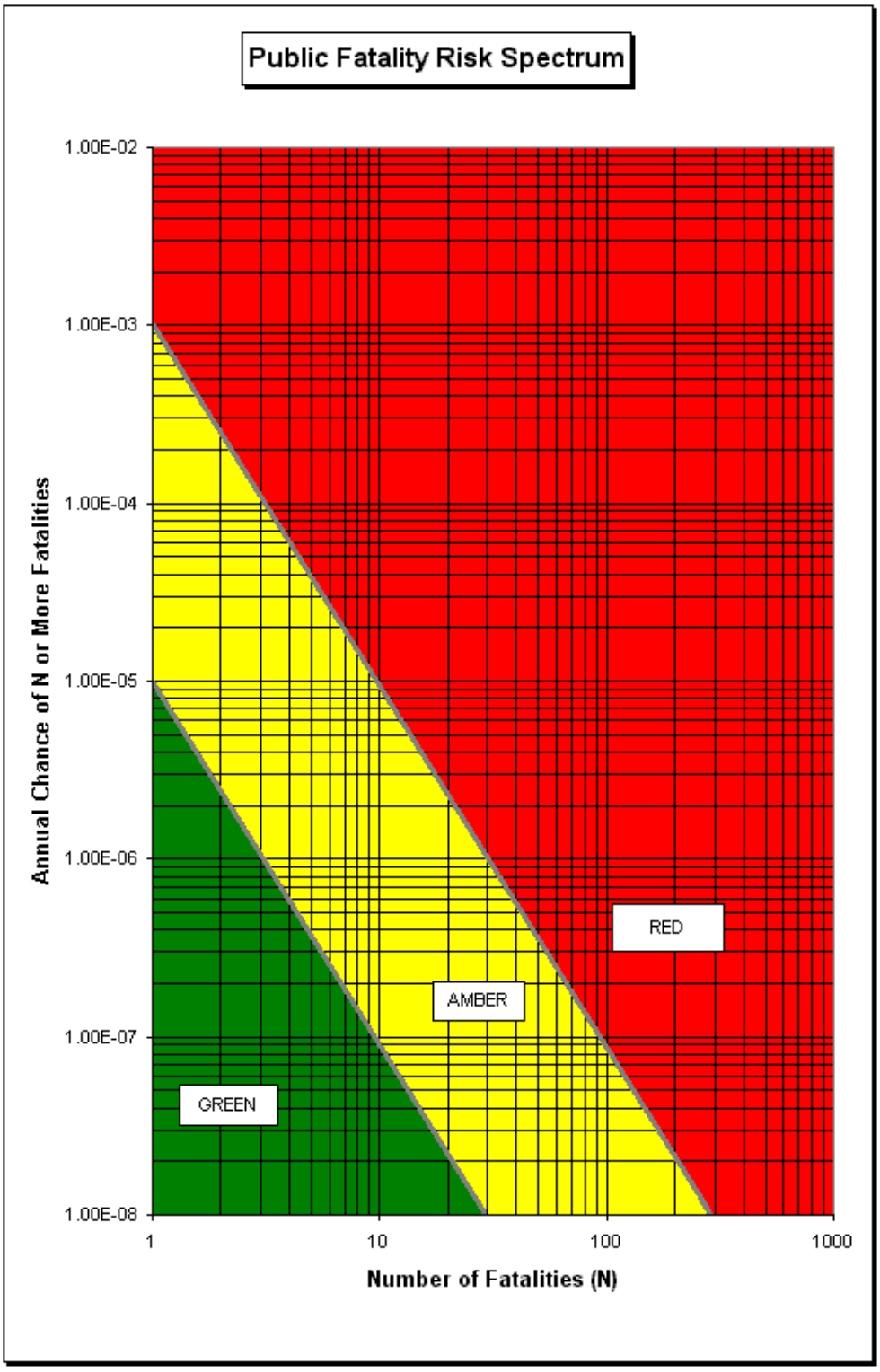


Figure 1 - Santa Barbara Fatality Risk Thresholds

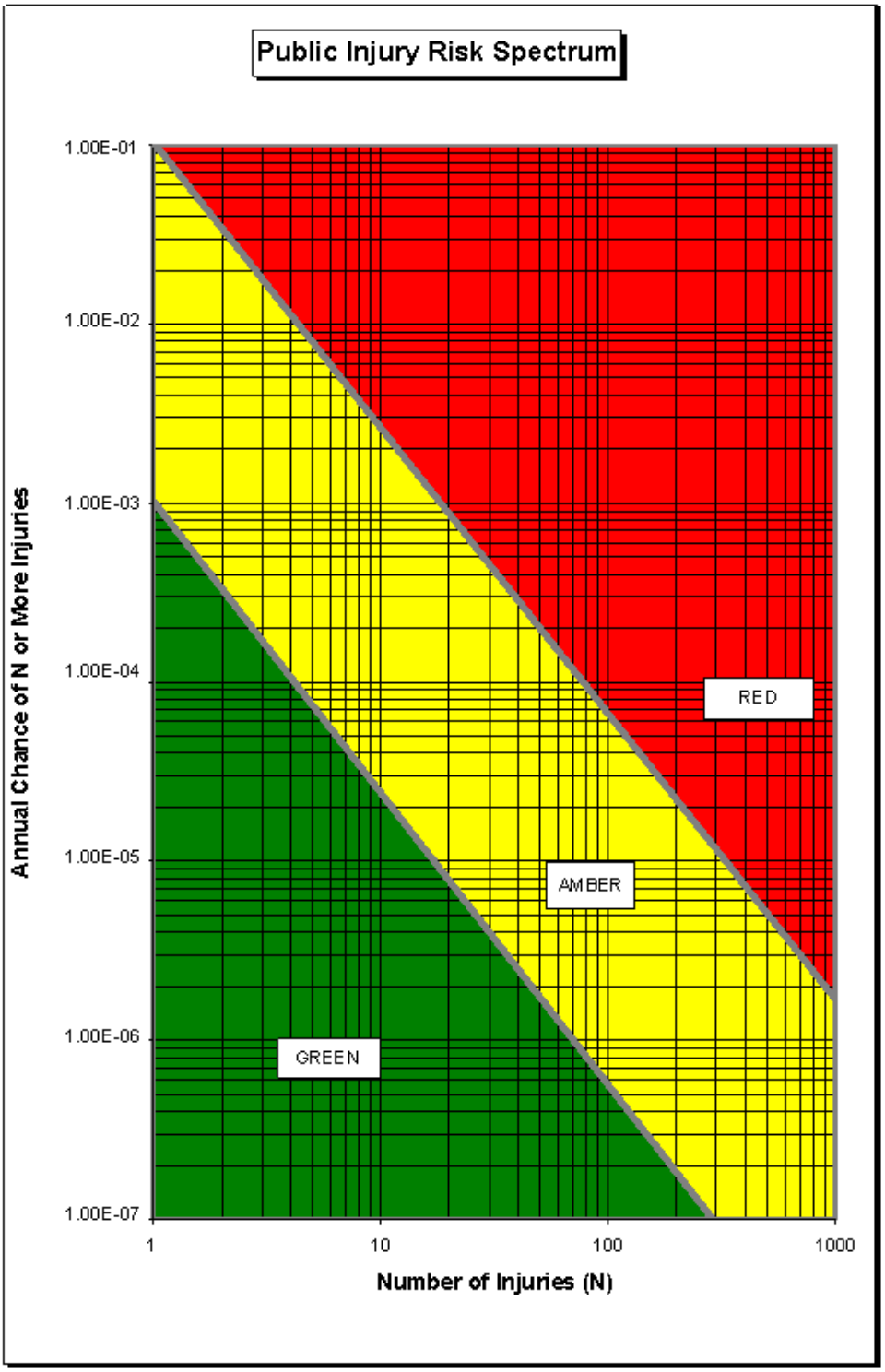


Figure 2 - Santa Barbara Injury Risk Thresholds

15. SCHOOLS THRESHOLDS (INTERIM) *(Approved by the Board of Supervisors, August 1993)*

A. Issue Summary.

The issue of existing and potential overcrowding of school facilities is of concern both locally and State-wide given the overall fiscal situation throughout the State of California and given the legal constraints regarding collection of funds and other mitigation on a project specific level. Several of the school districts in the County are currently experiencing overcrowding, including the Orcutt Union School District, Santa Maria Joint Union High School, and Hope School District, among others. Increased enrollment is difficult for the districts to deal with for a number of reasons which vary by district, including lack of existing facilities, lack of funding to construct new facilities and fund additional teachers, and lack of land to accommodate expanding campuses.

Under existing state law, a local jurisdiction cannot require mitigations or apply conditions which exceed the fees as allowed by state law for a development project which is consistent with its General Plan Designation. In many instances, this creates a situation where overcrowding may result from a project without the opportunity for mitigation through project conditions attached to a County permit. However, there are other measures, beyond the authority of the County, which may be used by the State and the school districts to address school facility impacts. These may include the use of temporary/portable classrooms, intra- or inter-district student transfers to less crowded schools, double session or year-round school schedules, and combination of classes of students on several grade levels. In the situation where the County is not able to recommend project specific mitigation which may reduce impacts to school facilities, the focus of CEQA is to disclose the impacts and to discuss the options which the school districts may use to address the overcrowding issue.

B. Determination of Significant Impact.

A significant level of school impacts is generally considered to occur when a project would generate sufficient students to require an additional classroom. This assumes 29 students per classroom for elementary/junior high students, and 28 students per classroom for high school students, based on the lowest student per classroom loading standards of the State school building program. This threshold is to be applied in those school districts which are currently approaching, at, or exceeding their current capacity.

A project's contribution to cumulative schools impacts will be considered significant if the project specific impact as described above is considered significant.

C. Methodology for Determining Significance.

At the present time, the Planning and Development Department has very little countywide information regarding school capacity status. Until we have compiled information on the various school districts in the County, the project planner should individually contact districts which may be affected by their project. A form has been developed which includes relevant questions to ask the affected districts regarding capacity, enrollment projections, and facility information. This form should be used to ensure that adequate information is received from the districts to determine if a significant impact would occur from the project.

D. Context of Analysis.

Based upon Corona-Norco Unified School District v. City of Corona (1993) 13 Cal.App.4th 1577, an ND rather than an EIR may be prepared for development projects having significant and unavoidable impacts only on schools (schools impacts are the only cause for preparation of an EIR) for which mitigation is limited by law to payment of standard fees.

E. Mitigation Measures.

The following mitigation measures may be used to address impacts to affected schools. However, mitigation is limited by state law. For projects which do not involve a legislative act, payment of standard fees, as specified in the second mitigation measure, is the maximum mitigation allowed. *Staff is currently reviewing mitigation options for projects which do involve a legislative act based upon the outcome of the recent election and other possible changes in applicable law. Staff will provide mitigation language for the Planning Commission's review during the hearing process on the thresholds.*

1. The applicant shall notify the *[Planner insert appropriate school district]* of the expected buildout date of the project to allow the District to plan in advance for new students.

   Plan Requirement: A copy of the notice shall sent to P&D prior to land use clearance for the project.

   Monitoring: P&D shall ensure letter is sent prior to issuing land use clearance.

2. The applicant shall pay the adopted fees per square foot of livable space being created by the project to the appropriate school district(s). These fees are used by the districts to construct temporary or permanent classroom space, but are not used to provide additional teachers.

   Plan Requirements and Timing: The applicant shall submit final square footage calculations and a copy of the fee payment to the school district(s) prior to _____.

   Monitoring: P&D shall ensure payment made prior to issuance of building permits.

16. SURFACE AND STORM WATER QUALITY SIGNIFICANCE GUIDELINES *(Approved by the Board of Supervisors September 2002)*

A. Introduction.

The following information is excerpted from several EPA publications including the preamble to the NPDES Phase II rules as published in the Federal Register[1] and EPA storm water fact sheets and guidance documents[2].

Storm water runoff from lands modified by human activities can harm surface water resources and, in turn, cause or contribute to an exceedance of water quality standards by changing natural hydrologic patterns, accelerating stream flows, destroying aquatic habitat, and elevating pollutant concentrations. Such runoff may contain or mobilize high levels of contaminants, such as sediment, suspended solids, nutrients (phosphorous and nitrogen), heavy metals and other toxic pollutants, pathogens, oxygen-demanding substances, and floatables. After a rain, storm water runoff carries these pollutants into nearby streams, rivers, lakes, estuaries, wetlands, and oceans. The highest concentrations of these contaminants often are contained in ‘‘first flush’’ discharges, which occur during the first major storm after an extended dry period. Individually and combined, these pollutants impair water quality, threatening designated beneficial uses and causing habitat alteration or destruction. Uncontrolled storm water discharges from areas of urban development and construction activity negatively impact receiving waters by changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife, and humans. Although water quality problems also can occur from agricultural storm water discharges and return flows from irrigated agriculture, this area of concern is statutorily exempted from regulation as a point source under the Clean Water Act and is not addressed in these guidelines.

Urbanization alters the natural infiltration capability of the land and generates a host of pollutants that are associated with the activities of dense populations, thus causing an increase in storm water runoff volumes and pollutant loading in storm water that is discharged to receiving waterbodies. Urban development increases the amount of impervious surface in a watershed as farmland, forests, and other natural vegetation with natural infiltration characteristics are converted into buildings with rooftops, driveways, sidewalks, roads, and parking lots with virtually no ability to absorb storm water. Storm water runoff washes over these impervious areas, picking up pollutants along the way while gaining speed and volume because of their inability to disperse and filter into the ground. What results are storm water flows that are higher in volume, pollutants, and temperature than the flows from more pervious areas, which have more natural vegetation and soil to filter the runoff. Studies reveal that the level of imperviousness in an area strongly correlates with decreased quality of the nearby receiving waters. Research conducted in numerous geographical areas, concentrating on various variables and employing widely differing methods, has revealed that stream degradation occurs at relatively low levels of imperviousness, such as 10 to 20 percent (even as low as 5 to 10 percent). Furthermore, research has indicated that few, if any, urban streams can support diverse benthic communities at imperviousness levels of 25 percent or more. An area of medium density single family homes can be anywhere from 25 percent to nearly 60 percent impervious, depending on the design of the streets and parking.

[1] 64 FR 68722

[2] Available on the Internet at www.epa.gov/npdes.

Relationship of Sources to Primary Pollutants of Concern

Pollutant Source/Activity	Primary Pollutants of Concern in Urban Runoff*								
	Physical Parameters[a]	Synthetic Organics[b]	Petroleum Hydrocarbons[c]	Heavy Metals[d]	Nutrients	Pathogens	Sediments	Oxygen-Demanding Substances[e]	Floatables[f]
Vehicle Service Facilities		●	●	●					
Gas Stations		●	●	●					
Metal Fabrication Shops		●	●	●					
Restaurants									●
Auto Wrecking Yards	●	●	●	●					
Mobile Cleaners		●							
Parking Lots	●		●	●					●
Residential Dwellings	●	●		●	●	●	●	●	
Parks/Open Spaces					●	●	●	●	●
Construction Sites	●						●	●	
Corporation Yards	●	●	●	●					
Streets & Highways	●		●	●				●	●
Marinas									●
Golf Courses		●			●		●	●	
Sewer Overflows	●					●		●	

a. salinity, pH, temperature. b. pesticides, herbicides, PCBs. c. oil, grease, solvents. d. lead, copper, zinc, cadmium. e. plant debris, animal waste. f. litter, yard wastes.

* adapted from *Model Urban Runoff Program.* July 1998. City of Monterey, City of Santa Cruz, California Coastal Commission, Monterey Bay National Marine Sanctuary, Association of Monterey Bay Area Governments, Woodward-Clyde and Central Coast Regional Water Quality Control Board. EPA Assistance Agreement No. C9-999266-95-0.

In addition to impervious areas, urban development creates new pollution sources as population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, pet waste, litter, pesticides, and household hazardous wastes, which may be washed into receiving waters by storm water or dumped directly into storm drains designed to discharge to receiving waters. More people in less space results in a greater concentration of pollutants that can be mobilized by storm water discharges into storm sewer systems.

The first national assessment of urban runoff characteristics was completed for the *Nationwide Urban Runoff Program (NURP)* study. The NURP study is the largest nationwide evaluation of storm water discharges undertaken to date. EPA conducted the NURP study to facilitate understanding of the nature of urban runoff from residential, commercial, and industrial areas. One objective of the study was to characterize the water quality of discharges from separate storm sewer systems that drain residential, commercial, and light industrial (industrial parks) sites. Storm water samples from 81 residential and commercial properties in 22 urban/suburban areas nationwide were collected and analyzed during the five-year period between 1978 and 1983. The majority of samples collected in the study were analyzed for eight conventional pollutants and three heavy metals. Data collected under the NURP study indicated that discharges from separate storm sewer systems draining runoff from residential, commercial, and light industrial areas carried more than 10 times the annual loading of total suspended solids (TSS) than discharges from municipal sewage treatment plants that provide secondary treatment. The NURP study also indicated that runoff from residential and commercial areas carried somewhat higher annual loadings of chemical oxygen demand (COD), total lead, and total copper than effluent from secondary

treatment plants. Study findings showed that fecal coliform counts in urban runoff typically range from tens to hundreds of thousands of most probable number (MPN) per hundred milliliters (ml) of runoff during warm weather conditions, with the median for all sites being around 21,000 MPN/100 ml.

B. Construction Site Runoff.

Polluted storm water runoff from construction sites often flows to storm drains and ultimately is discharged into local rivers and streams. Of the pollutants listed below, sediment is usually the main pollutant of concern. Sediment runoff rates from construction sites are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades. The resulting siltation, and the contribution of other pollutants from construction sites, can cause physical, chemical, and biological harm to our nation's waters. The siltation process described previously can (1) deposit high concentrations of pollutants in public water supplies; (2) decrease the depth of a waterbody, which can reduce the volume of a reservoir or result in limited use of a water body by boaters, swimmers, and other recreational enthusiasts; and (3) directly impair the habitat of fish and other aquatic species, which can limit their ability to reproduce. Excess sediment can cause a number of other problems for waterbodies. It is associated with increased turbidity and reduced light penetration in the water column, as well as more long-term effects associated with habitat destruction and increased difficulty in filtering drinking water.

Pollutants Commonly Discharged From Construction Sites

Sediment	Pesticides
Solid and sanitary wastes	Concrete truck washout
Nitrogen (fertilizer)	Construction chemicals
Phosphorous (fertilizer)	Construction debris

C. Post Construction Runoff.

There are generally two forms of substantial impacts of post-construction runoff. The first is caused by an increase in the type and quantity of pollutants in storm water runoff. As runoff flows over areas altered by development, it picks up harmful sediment and chemicals such as oil and grease, pesticides, heavy metals, and nutrients (e.g., nitrogen and phosphorus). These pollutants often become suspended in runoff and are carried to receiving waters, such as lakes, ponds, and streams. Once deposited, these pollutants can enter the food chain through small aquatic life, eventually entering the tissues of fish and humans. The second kind of post-construction runoff impact occurs by increasing the quantity of water delivered to the waterbody during storms. Increased impervious surfaces interrupt the natural cycle of gradual percolation of water through vegetation and soil. Instead, water is collected from surfaces such as asphalt and concrete and routed to drainage systems where large volumes of runoff quickly flow to the nearest receiving water. The effects of this process include stream bank scouring and downstream flooding, which often lead to a loss of aquatic life and damage to property.

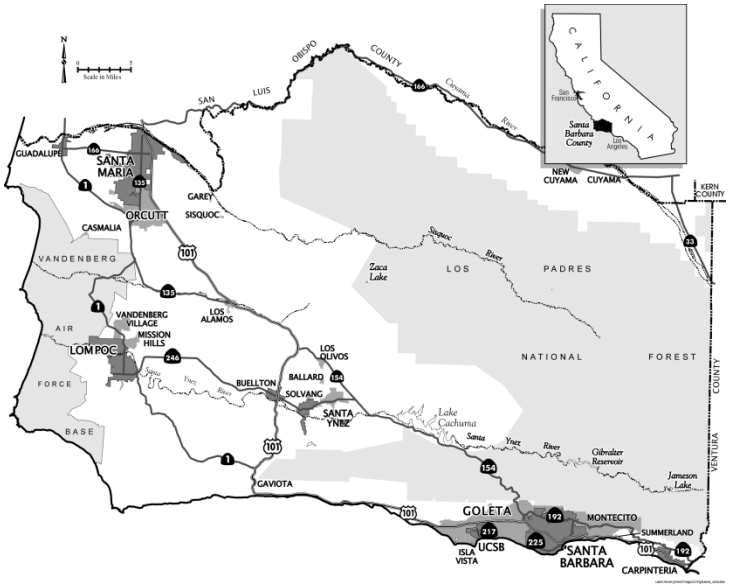
D. Federal and State Regulations.

The Federal Water Pollution Prevention and Control Act (i.e., the Clean Water Act or CWA) requires that discharges do not substantially degrade the physical, chemical or biological integrity of the Nation's waters. Specifically Section 402 established the National Pollutant Discharge Elimination System (NPDES) Regulations for wastewater and other pollutant discharges.

Congress amended the CWA in 1987 to require the implementation of a two-phased program to address storm water discharges. Phase I, promulgated by the U.S. Environmental Protection Agency (EPA) in November 1990, requires NPDES permits for storm water discharges from municipal separate storm

sewer systems (MS4s) serving populations of 100,000 or greater, construction sites disturbing greater than five acres of land, and ten categories of industrial activities.

Despite the comprehensiveness of the NPDES Phase I program, the EPA recognized that smaller construction projects (disturbing less than 5 acres) and small municipal separate storm sewers (MS4s[3]) were also contributing substantially to pollutant discharges nationwide. Therefore, in order to further improve storm water quality, the EPA promulgated the NPDES Phase II program (*Federal Register* Vol. 64, No. 235, December 8, 1999). The Phase II regulations became effective on February 7, 2000, and require NPDES permits for storm water discharges from regulated small MS4s and for construction sites disturbing more than 1 acre of land. The Phase II regulations published by the EPA designated the urbanized areas[4] of Santa Barbara County as a regulated small MS4.



In addition, Section 401 and 404 established regulations for the discharge of dredged or fill material into waters of the United States and water quality impacts associated with these discharges. In California, the Porter-Cologne Water Quality Control Act establishes waste discharge standards pursuant to the Federal NPDES program, and the state has the authority to issue NPDES permits to individuals, businesses, and municipalities.

E. County Water Quality Issues.

Because the EPA has determined that the urbanized areas of Santa Barbara County are subject to the Phase II NPDES regulations, it is presumed that the county has a general urban runoff water quality problem. In addition to this general presumption, over the last three years Project Clean Water has collected analytical water quality data and identified the water quality concerns in county streams, creeks and beach areas. These concerns include:

- Bacteria levels consistently above applicable standards during storm events,
- Levels of metals (copper, chromium, zinc, and lead) approaching or exceeding Regional Water Quality Control Board Basin Plan objectives,

[3] Those generally serving less than 100,000 people and located in an urbanized area as defined by the Bureau of the Census.

[4] An urbanized area is a land area comprising one or more places (central place(s)) and the adjacent densely settled surrounding area (the urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile.

- Elevated levels of nitrogen and phosphorus in all creeks during storm events, and
- Detection of pesticides in all watersheds.

The Regional Water Quality Control Board has also identified that the quality of several important recreational water bodies and water supplies have been impaired. These water bodies and their contaminants include:

- San Antonio Creek (northern) - sediments.
- Santa Ynez River - nutrients (e.g., phosphorus and nitrogen), salinity, total dissolved solids, chlorides and sediments.
- Goleta Slough - metals, pathogens, and sediment.
- Arroyo Burro Creek - pathogens (e.g., bacteria).
- Mission Creek - pathogens.
- Carpinteria Salt Marsh - nutrients and sediment.
- Carpinteria Creek - pathogens
- Rincon Creek - pathogens and sediment.

F. County Water Quality Protection Policies.

Policies regarding the protection of water quality in the unincorporated areas of Santa Barbara County are provided in the Comprehensive Plan Land Use Element, various Community Plans, and the Local Coastal Plan. The overarching policy which applies to both construction and post-construction is Land Use Element Hillside and Watershed Protection Policy 7 (Coastal Plan Policy 3-19), which states:

> *Degradation of the water quality of groundwater basins, nearby streams, or wetlands shall not result from development of the site. Pollutants, such as chemicals, fuels, lubricants, raw sewage, and other harmful waste shall not be discharged into or alongside coastal streams or wetlands either during or after construction.*

Project approval requires a finding of consistency with this and all other applicable water quality policies in the Comprehensive and Community Plans.

G. Significance Guidelines for Assessment of Water Quality Impacts.

Guidelines for assessing project-specific and cumulative water quality impacts are presented below. The assessment of impacts must account for construction-related impacts (i.e., vegetation removal, erosion, use of construction materials on the site, and staging of construction activities) and post-construction (or post-development) impacts (i.e., increases in impervious surfaces and increased runoff, entrainment of pollutants, and effects of discharges on aquatic habitats and biota).

1. Project Specific Potential Significance Impacts.

a. A significant water quality impact is presumed to occur if the project:

- Is located within an urbanized area of the county and the project construction or redevelopment individually or as a part of a larger common plan of development or sale would disturb one (1) or more acres of land;
- Increases the amount of impervious surfaces on a site by 25 percent or more;
- Results in channelization or relocation of a natural drainage channel;

- Results in removal or reduction of riparian vegetation or other vegetation (excluding non-native vegetation removed for restoration projects) from the buffer zone of any streams, creeks or wetlands;
- Is an industrial facility that falls under one or more of categories of industrial activity regulated under the NPDES Phase I industrial storm water regulations (facilities with effluent limitation; manufacturing; mineral, metal, oil and gas, hazardous waste, treatment or disposal facilities; landfills; recycling facilities; steam electric plants; transportation facilities; treatment works;; and light industrial activity);
- Discharges pollutants that exceed the water quality standards set forth in the applicable NPDES permit, the Regional Water Quality Control Board's (RWQCB) Basin Plan or otherwise impairs the beneficial uses[5] of a receiving waterbody; or
- Results in a discharge of pollutants into an "impaired" waterbody that has been designated as such by the State Water Resources Control Board or the RWQCB under Section 303 (d) of the Federal Water Pollution Prevention and Control Act (i.e., the Clean Water Act).
- Results in a discharge of pollutants of concern to a receiving water body, as identified in by the RWQCB.

b. Projects that are not specifically identified on the above list or are located outside of the "urbanized areas" may also have a project-specific storm water quality impact. Storm water quality impacts associated with these projects must be evaluated on a project by project basis for a determination of significance. The potential impacts of these projects should be determined in consultation with the county Water Agency, Flood Control Division, and RWQCB. The issues that should be considered are:

- the size of the development;
- the location (proximity to sensitive waterbodies, location on hillsides, etc.);
- the timing and duration of the construction activity;
- the nature and extent of directly connected impervious areas;
- the extent to which the natural runoff patterns are altered;
- disturbance to riparian corridors or other native vegetation on or off-site;
- the type of storm water pollutants expected; and
- the extent to which water quality best management practices are included in the project design.

c. All projects determined to have a potentially significant storm water quality impact must prepare and implement a Storm Water Quality Management Plan (SWQMP) to

[5] Beneficial uses for Santa Barbara County are identified by the Regional Water Quality Control Board in the Water Quality Control Plan for the Central Coastal Basin, or Basin Plan, and include (among others) recreation, agricultural supply, groundwater recharge, fresh water habitat, estuarine habitat, support for rare, threatened or endangered species, preservation of biological habitats of special significance.

reduce the impact to the maximum extent practicable. The SWQMP shall include the following elements:

- identification of potential pollutant sources that may affect the quality of the discharges to storm water;
- the proposed design and placement of structural and non-structural best management practices (BMPs) to address identified pollutants;
- a proposed inspection and maintenance program; and
- a method of ensuring maintenance of all BMPs over the life of the project.

Implementation of best management practices identified in the SWQMP will generally be considered to reduce the storm water quality impact to a less than significant level.

2. **Less than Significant Impacts.** The following land uses and projects are generally presumed to have a less than significant project-specific water quality impact. These include:

   - Redevelopment projects that do not increase the amount of impervious surfaces on the site nor change the land use or potential pollutants;
   - New development and redevelopment projects that incorporate into the project design construction BMPs for erosion, sediment and construction waste control and incorporate post-construction BMPs to protect sensitive riparian or wetland resources, reduce the quantity of runoff, and treat runoff generated by the project to pre-project levels;
   - Lot line adjustments that do not alter the development potential of the lots involved;
   - Development of a single family dwelling (and associated accessory uses including but not limited to roads and driveways, septic systems, guesthouse, pool, etc.) disturbing less than one acre on existing legal lot.

3. **Cumulative Impacts.** Because of the county's designation under the Phase II NPDES regulations, all discretionary projects (except those that do not result in a physical change to the environment) within the urbanized area whose contributions are cumulatively considerable must implement one or more best management practices to reduce their contribution to the cumulative impact.

H. General Mitigation Guidelines for Water Quality Impacts.

If water quality impacts are considered from the beginning stages of a project more opportunities are available for water quality protection. Best management practices (mitigation measures) chosen for a project should minimize water quality impacts and attempt to maintain pre-development runoff conditions. Best management practices are divided into two main categories, non-structural BMPs and structural BMPs.

Non-structural BMPs are preventative actions that involve management and source controls such as protecting and restoring sensitive areas such as wetlands and riparian corridors, maintaining and/or increasing open space, providing buffers along sensitive water bodies, minimizing impervious surfaces and directly connected impervious areas, and minimizing disturbance of soils and vegetation. Structural BMPs include: storage practices such as wet ponds and extended-detention outlet structures; filtration practices such as grassed swales, sand filters and filter strips; and infiltration practices such as infiltration basins and infiltration trenches. In many cases combinations of non-structural and structural measures will be required to reduce water quality impacts.

Non-structural and structural BMPs most applicable to the development projects in the county are included in " A Planner's Guide to Conditions of Approval and Standard Mitigation Measures" and the county's adopted BMP manuals for construction site runoff control. Additional guidance on best management practices is available from the State[6], the EPA[7] and from other sources such as BASMAA "Starting at the Source"[8]. Storm water technologies are constantly being improved, and staff and developers must be responsive to any changes, developments or improvements in control technologies.

[6] *California Storm Water Best Management Practice Handbooks* (California Stormwater Quality Task Force, 1993).
[7] On the Internet at www.epa.gov/npdes/menuofbmps/menu.htm.
[8] *Start at the Source: Design Guidance Manual for Stormwater Quality Protection* (Bay Area Stormwater Management Agencies Association, 1999).

17. SOLID WASTE THRESHOLDS *(Approved by the Board of Supervisors, August 1993; revised by the Board of Supervisors, September 16, 2008)*

A. Background and Existing Policies.

Four landfills operate within the County. These landfills include: the County operated Tajiguas Landfill (serving the South Coast, Santa Ynez Valley, Cuyama and Ventucopa), the City operated Santa Maria Landfill (serving the City of Santa Maria and the unincorporated areas of the Santa Maria Valley), the City operated Lompoc Landfill (serving the City of Lompoc and unincorporated areas of the Lompoc Valley, and the federally operated Vandenberg Air Force Base Landfill (serving Vandenberg Air Force Base). Two waste recycling and transfer stations and two waste transfer stations also serve the County's unincorporated areas including: the South Coast Recycling and Transfer Station (serving the South Coast area) , the Santa Ynez Valley Recycling and Transfer Station (serving the Santa Ynez Valley), the Cuyama Transfer Station (serving Cuyama Valley), and the Ventucopa Transfer Station (serving the Ventucopa area).

In September 1989, the California Integrated Solid Waste Management Act (also known as AB 939) was enacted into law. It required each municipality in the state to divert at least 50 percent of its solid waste from landfill disposal through source reduction, recycling, and composting by 2000. This 50 percent requirement also includes the waste stream that comes exclusively through construction and demolition (C&D) of buildings and homes in the County.

As of 2004, 63 percent of all solid waste generated in the unincorporated areas of the County of Santa Barbara was diverted for recycling or re-use (as certified by the California Integrated Waste Management Board). This diversion level is the result of implementation of the County Source Reduction and Recycling Element adopted by the Board of Supervisors in February 1992. Despite these diversion levels, landfill space is still limited.

In order to preserve our limited landfill resources, the County must maintain its high levels of diversion. New construction, especially remodeling and demolition, represents the greatest challenge to maintaining existing diversion rates. The solid waste thresholds described in this section will establish when a discretionary project is considered to result in a significant solid waste impact under the California Environmental Quality Act. Considering solid waste impacts of new development and providing mitigation to reduce solid waste will help the County maintain its State-mandated diversion rates and minimize impacts to the County's limited landfill space.

The primary mitigation measure for reducing solid waste impacts to less than significant level is preparation and implementation of a Solid Waste Management Plan (SWMP). The Public Works Department maintains a sample SWMP for public distribution with all permit applications that are expected to exceed thresholds. In addition, Land Use Development Policy 4 of the County's Comprehensive Plan Land Use Element requires a finding that there are adequate public services (in this case landfill capacity) to serve new development. This policy also provides the basis for inclusion of waste reduction mitigation measures as part of the conditions of project approval. Preparation and implementation of a SWMP for projects that exceed the defined threshold will reduce all solid waste impacts to a less than significant level.

B. Impact Assessment.

Solid waste impacts can be divided into two categories: 1) short-term waste generated from construction and demolition projects, and 2) long-term waste generated during project occupancy/operation.

1. **Waste generation during construction.** Generation of construction and demolition waste per cubic foot varies widely depending on the type and location of the project. Here are some general guidelines:

Commercial Development	Amounts in Pounds per Square foot
Remodel	40
Demolition	100
New construction	25
Residential Development	Amounts in Pounds per Square foot
Remodel	100
Demolition	60
New construction	15

These estimates are based on the US Environmental Protection Agency's 1998 construction and demolition study (Document: EPA530-R-98-010; June 1998) and data gathered by the San Luis Obispo Integrated Waste Management Authority in 2005 and 2006.

2. **Waste generation during occupancy/operations.**

   a. **Residential projects.** The annual per capita waste generation rate for Santa Barbara County is currently 2.11 tons. Of this 2.11 tons, the residential per capita waste generation rate is 0.95 tons (1,900 pounds), including interior and exterior waste. Waste generation rates are based on the County of Santa Barbara Waste Generation Study (February, 1991) and the Area Planning Council Forecast of 1989.

   The County average residents per household rates are:

   Single family residence: 3.01 people per household

   Attached residences (condos, townhomes, apartments, duplex, triplex): 2.65 people per household

   (These statistics come from 1990 census date, C. Pauley, Comprehensive Planning RMD.)

   To calculate a residential project's solid waste generation the following formula is used:

   For single family residence: 3.01 people/unit x # of units x 0.95 tons/year = tons/year/project.

   For attached units: 2.65 people/unit x # of units x 0.95 tons/year = tons/year/project.

   b. **Commercial/industrial/institutional projects.** To determine the waste stream for a specific project the following information is provided:

Type/Description	Annual Generation Rate (in tons)
Neighborhood Center (30,000 to 100,000 sq. ft.	sq. ft. x 0.0009
Regional Shopping Center (100,000 to 300,000 sq. ft.)	sq. ft. x 0.0012 (anchor store) sq. ft. x 0.0048 (tenant)
General Retail and Miscellaneous Services	sq. ft. x 0.0057
Eating and Drinking Establishment	sq. ft. x 0.0115
Automobile Dealer and Service Station	sq. ft. x 0.0016
Hotel and Motel	# of rooms x 0.80
Warehouse	sq. ft. x 0.0016
Health Services	sq. ft. x 0.0013
Hospital	# of rooms x 1.90

Type/Description	Annual Generation Rate (in tons)
Office	sq. ft. x 0.0013
Educational Institutions	sq. ft. x 0.0010
Transportation, Communications and Utilities	sq. ft. x 0.0026
Manufacturing	sq. ft. x 0.0026

(Figures are based on Industry & National Standards as discussed in the Ventura County Solid Waste Thresholds)

For project types that are indicated above, the estimated waste stream can be determined by surveying similar uses, ideally within Santa Barbara County. If possible, three such uses should be used in the survey.

Residual Impact Calculation: Waste Generation (tons per year) x 0.50 (% of waste reduction) = tons per year.

C. Thresholds of Significance.

1. Construction and demolition. Construction and demolition waste accounts for 31 percent of all waste generated by residents of Santa Barbara County. In order to comply with AB939 requiring a minimum of 50 percent of all waste to be diverted from landfills, the particular source of waste has been targeted.

Any construction, demolition or remodeling project of a commercial, industrial or residential development that is projected to create more than 350 tons of construction and demolition debris is considered to have a significant impact on public services.

Although amounts of waste generated vary project to project we have the following estimates of projects that will reach the threshold of significance:

a. Remodeling projects over 7,000 square feet for residential projects and 17,500 square feet for commercial/industrial projects.

b. Demolition projects over 11,600 square feet for residential buildings and 7,000 square feet for commercial/industrial buildings.

c. New construction projects over 47,000 square feet for residential buildings and 28,000 square feet for commercial/industrial buildings.

These estimates are based on the US Environmental Protection Agency's 1998 construction and demolition study (Document: EPA530-R-98-010; June 1998) and data gathered by the San Luis Obispo Integrated Waste Management Authority in 2005 and 2006.

2. Operations/occupancy.

a. Project specific. The following thresholds are based on the projected average solid waste generation for Santa Barbara County from 1990 - 2005. The goals outlined in the Source Reduction and Recycling Element (SRRE) assume a 1.2 percent annual increase, which equates to approximately 4,000 tons per year increase in solid waste generation over the 15 year period. A project is considered to result in a significant impact to landfill capacity if it would generate five percent or more of the expected annual increase in waste generation thereby using a significant portion of the remaining landfill capacity. Based on the analysis conducted (as illustrated in Table 1), the numerical value associated with the five percent increase is 196 tons per year. As indicated above, source reduction, recycling and composting can reduce a project's waste stream (generated during operations) by as much as 50 percent. If a proposed project generates 196 or more tons per year after reduction and recycling efforts,

impacts would be considered significant and unavoidable. Project approval would then require the adoption of overriding considerations. A typical single family residential project of 68 units or less would not trigger the threshold of significance.

b. Cumulative thresholds. Projects with a specific impact as identified above (196 tons/year or more) would also be considered cumulatively significant, as the project specific threshold of significance is based on a cumulative growth scenario. However, as landfill space is already extremely limited, any increase of one percent or more of the estimated increase accounted for in the SRRE, mitigation would be considered an adverse, yet insignificant, contribution to regional cumulative solid waste impacts. One percent of the SRRE projected increase in solid waste equates to 40 tons per year (in operational impacts). To reduce adverse cumulative impacts, and to be consistent with the SRRE, mitigation should be recommended for projects which generate between 40 and 196 tons of solid waste per year. Projects which generate less than 40 tons per year of solid waste would not be considered to have an adverse effect due to the small amount of solid waste generated by these projects and the existing waste reduction provisions in the SRRE. A typical single family residential project of 14 units or less would not trigger this adverse impact level.

D. Mitigation Measures.

The following mitigation measures are suggested for projects which would exceed County solid waste thresholds. This is a partial list of measures and does not preclude measures which may be applicable on a project specific basis.

The applicant shall develop and implement a solid waste management plan to be reviewed and approved by Public Works Department Resource Recovery and Waste Management Division and the Planning and Development Department and shall include one or more of the following measures:

- Provision of space and/or bins for storage of recyclable materials within the site.
- Establishment of a recyclable material pickup area.
- Implementation of a curbside recycling program to serve new development.
- Development of a plan for accessible collection of materials on a regular basis (may require establishment of private pick-up depending on availability of County sponsored programs).
- Implementation of a monitoring program (quarterly, bi-annually) to ensure a 35 - 50 percent minimum participation in recycling efforts, requiring businesses to show written documentation in the form of receipts.
- Development of Source Reduction Measures, indicating method and amount of expected reduction.
- Implementation of a program to purchase recycled materials used in association with the proposed project (paper, newsprint etc.). This could include requesting suppliers to show recycled material content.
- Implementation of a backyard composting yard waste reduction program.

One or more of the above measures may apply to a specific project. County waste characterization studies estimate that implementation of the measures described can reduce waste generation by 50 percent. The expected reduction in waste generation from mitigation measures for a specific project should be developed in consultation with the Public Works Department Resource Recovery and Waste Management Division.

Table 1 - Solid Waste Threshold Calculations

Table 5: Solid Waste Threshold Calculations

Year	Residential Generation	Change	5% of Change	Commercial Generation	Change	5% of Change	Industrial Generation	Change	5% of Change	Total Generation	Change	5% of Change	1% of Change
1990	156640			98650			52780			308070			
		1760	88		1290	64.5		450	22.5		3500	175	35
1991	158400			99940			53230			311570			
		1910	95.5		1300	65		450	22.5		3660	183	36.6
1992	160310			101240			53680			315230			
		1920	96		1310	65.5		450	22.5		3680	184	36.8
1993	162230			102550			54130			318910			
		1940	97		1330	66.5		460	23		3730	186.5	37.3
1994	164170			103880			54590			322640			
		1970	98.5		1350	67.5		460	23		3780	189	37.8
1995	166140			105230			55050			326420			
		2000	100		1370	68.5		460	23		3830	191.5	38.3
1996	168140			106600			55510			330250			
		2020	101		1380	69		470	23.5		3870	193.5	38.7
1997	170160			107980			55980			334120			
		2040	102		1400	70		480	24		3920	196	39.2
1998	172200			109380			56460			338040			
		2060	103		1420	71		480	24		3960	198	39.6
1999	174260			110800			56940			342000			
		2090	104.5		1440	72		480	24		4010	200.5	40.1
2000	176350			112240			57420			346010			
		2130	106.5		1450	72.5		480	24		4060	203	40.6
2001	178480			113690			57900			350070			
		2130	106.5		1480	74		490	24.5		4100	205	41
2001	180610			115170			58390			354170			
		2170	108.5		1500	75		490	24.5		4160	208	41.6
2003	182780			116670			58880			358330			
		2190	109.5		1510	75.5		500	25		4200	210	42
2004	184970			118180			59380			362530			
		2230	111.5		1530	76.5		500	25		4260	213	42.6
2005	187200			119710			59880			366790			
Average			101.87			70.2			23.67			195.73	39.15

Generation numbers were obtained from the County of Santa Barbara Waste Generation Study, February 1991.
All figures are tonnages.
Generation calculations assume a 1.2% growth rate.

18. THRESHOLDS OF SIGNIFICANCE FOR TRANSPORTATION IMPACTS *(Approved by the Board of Supervisors, September 15, 2020, replacing traffic impacts)*

A. Introduction

This chapter describes how to interpret and apply the four transportation threshold questions (i.e., "a," "b," "c," and "d") contained in the County's Initial Study Template, Section 4.14, Transportation. Most planners and environmental professionals are familiar with the metrics in threshold questions "a," "c," and "d," which address policy consistency, design features and hazards, and emergency access, respectively. However, threshold question "b" implements recent state laws and requires the County to analyze a project's transportation impacts using a new metric called "vehicle miles traveled" (VMT). Therefore, this chapter focuses on the screening criteria, thresholds of significance, and transportation studies for VMT and threshold question "b."

The screening criteria and thresholds of significance for VMT in this chapter reflect two primary sources – Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines) and Governor's Office of Planning and Research's (OPR) "Technical Advisory on Evaluating Transportation Impacts in CEQA" (OPR Technical Advisory) (OPR, 2018). CEQA Guidelines Section 15064.3, Determining the Significance of Transportation Impacts, contains recommendations and mandatory criteria for analyzing a project's transportation impacts. The OPR Technical Advisory contains general principles and specific recommendations to implement CEQA Guidelines Section 15064.3. It begins with an introduction and background information on VMT. The body of the advisory recommends screening criteria and thresholds of significance for land use projects, land use plans, and transportation projects.

This chapter provides essential information for analyzing transportation impacts under CEQA. It is the result of a comprehensive report prepared by the County and its transportation consultant, Fehr & Peers, titled "Transportation Analysis Updates in Santa Barbara County" (County of Santa Barbara, Planning and Development Department, July 2020). Please see this report for additional information on VMT, screening criteria, thresholds of significance, and other topics that appear in and informed the preparation of this chapter.

B. Background on CEQA Guidelines and Thresholds of Significance

On December 28, 2018, the California Natural Resources Agency certified and adopted proposed revisions to CEQA Guidelines Section 15064.3 and Appendix G: Environmental Checklist Form, Section XVII, Transportation. Section 15064.3 includes new criteria for determining the significance of a project's transportation impacts. Specifically, Section 15064.3(a) states "vehicle miles traveled is the most appropriate measure of transportation impacts." With this change, the County may no longer use automobile delay, as measured by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, as the basis for determining the significance of transportation impacts under CEQA.

CEQA Guidelines Section 15064.3(a) defines VMT as "the amount and distance of automobile travel attributable to a project." Depending on the type of project being analyzed, the VMT calculation can include all vehicle-trips, including passenger and commercial vehicles, or only cars and light-duty trucks. VMT is generally expressed on a daily basis for a typical weekday.

CEQA Guidelines Section 15064.3(c) specifies when these changes take effect. It states, "A lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide."

The revisions to Appendix G Section XVII removed references to circulation, traffic levels, and LOS. The revisions also added a new threshold question (i.e., "b") that considers whether a project would

conflict or be inconsistent with the VMT criteria for analyzing transportation impacts in CEQA Guidelines Section 15064.3(b).

Consistent with CEQA Guidelines Section 15064.7, Thresholds of Significance, the County developed and adopted the following thresholds of significance for determining the significance of a project's transportation impacts. CEQA Guidelines Section 15064.7(a) states, "[a] threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect." Projects that comply with an applicable threshold will normally have a less than significant effect on the environment. Projects that exceed or otherwise do not comply with an applicable threshold may have a significant effect on the environment and, as a result, may require project modifications or mitigation measures to avoid or reduce those effects to less than significant levels. The following thresholds reflect this general guidance as well as the specific guidance set forth in CEQA Guidelines Section 15064.3 regarding estimating VMT and developing thresholds of significance for VMT and transportation impacts.

C. Transportation Threshold Questions – Overview

As discussed above, CEQA Guidelines Appendix G, Section XVII, contains four transportation threshold questions to help assess a project's potential transportation impacts. The County uses these same threshold questions, which include the following:

a. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadways, bicycle, and pedestrian facilities?

b. Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)?

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d. Would the project result in inadequate emergency access?

Sections D, E, F, and G, below, describe each threshold question in further detail. The description of threshold question "b" (Section E) contains more detail since VMT is a new metric for analyzing transportation impacts under CEQA.

D. Threshold "a" – Potential Conflict with a Program, Plan, Ordinance, or Policy

The SBCAG's 2040 Regional Transportation Plan and Sustainable Communities Strategy (SBCAG, 2013) and the County's Comprehensive Plan, zoning ordinances, capital improvement programs, and other planning documents contain transportation and circulation programs, plans, ordinances, and policies. Threshold question "a" considers a project in relation to those programs, plans, ordinances, and policies that specifically address multimodal transportation, complete streets, transportation demand management (TDM), and other VMT-related topics. The County and CEQA Guidelines Section 15064.3(a) no longer consider automobile delay or congestion an environmental impact. Therefore, threshold question "a" does not apply to provisions that address LOS or similar measures of vehicular capacity or traffic congestion.

A transportation impact occurs if a project conflicts with the overall purpose of an applicable transportation and circulation program, plan, ordinance, or policy, including impacts to existing transit systems and bicycle and pedestrian networks pursuant to Public Resources Code Section 21099(b)(1). In such cases, applicants must identify project modifications or mitigation measures that eliminate or reduce inconsistencies with applicable programs, plans, ordinances, and policies. For example, some community plans include provisions that encourage complete streets. As a result, an applicant for a multifamily apartment complex may need to reduce excess parking spaces, fund a transit stop, and/or add bike storage facilities to comply with a community plan's goals and policies.

E. Threshold "b" – Potential Impact to VMT

Threshold question "b" establishes VMT as the metric to determine transportation impacts. Because VMT is a new metric, this section begins with background information on VMT and then outlines a three-step process for analyzing and, if necessary, mitigating a project's VMT impacts.

1. Background Information

County VMT

The County uses the Santa Barbara County Association of Governments' (SBCAG) Regional Travel Demand Model (RTDM) to estimate VMT. The RTDM (TransCAD Version 6.0) is a four-step travel demand model that performs the following classical modeling steps:

1. Trip generation (number of trips),
2. Trip distribution (where those trips go),
3. Mode choice (how the trips are divided among the available modes of travel), and
4. Trip assignment (route trips will take).

Each trip forecasted in the RTDM has a purpose, type, origin, and destination. The RTDM estimates and forecasts travel by traffic analysis zones (TAZ) for a 24-hour period[1] on a typical weekday. Approximately 360 TAZs have significant portions within the unincorporated areas of the county.

The SBCAG RTDM requires a geographic boundary to define the extent of data to select and analyze. The County's VMT metrics, described in the subsection below, use the unincorporated areas of the county (entire Santa Barbara County, excluding incorporated cities) as the geographic boundary for estimating VMT. This chapter refers to VMT for the unincorporated areas as "county VMT." County VMT reflects all vehicle-trips that start and/or end in the unincorporated areas of Santa Barbara County.

SBCAG periodically updates the RTDM's data and functions, such as when it prepares a new regional transportation plan/sustainable community strategy (RTP/SCS). The County uses the most up-to-date version of the RTDM to estimate VMT and evaluate transportation impacts.

Project-Level VMT Calculator

The County and Fehr & Peers developed the Project-Level VMT Calculator to help assess a project's VMT. The VMT Calculator incorporates screening criteria, thresholds of significance, mitigation measures, and data from the SBCAG RTDM. The VMT Calculator is available on P&D's website.

Planners or applicants enter the project type, location, size, zoning, and other key information into the VMT Calculator. The VMT Calculator uses this information to estimate the project's VMT. It then determines whether the project would meet or exceed the applicable threshold of significance. The VMT Calculator can also estimate the effectiveness of possible mitigation measures if the project would exceed the threshold of significance. The County periodically updates the VMT Calculator to use the most up-to-date version of the SBCAG RTDM.

The VMT Calculator can analyze land-use projects that are smaller than one TAZ. However, it does not have the capability to analyze large, complex, and/or unique projects, such as a community plan update, key site rezone and entitlements, a regionally serving retail project, or a regional-

[1] Daily includes: AM, Late AM, Lunch, Early PM, PM, Evening, Late Evening, and Night Time.

serving community center or agricultural processing facility. Such projects will require a VMT transportation study. Subsection I, VMT Transportation Studies, below, outlines the content of a VMT transportation study.

Baseline Environmental Setting

Environmental documents must typically describe the physical setting, or baseline, as it exists when a lead agency publishes a notice of preparation (NOP), or if a lead agency does not publish a NOP, when it commences the environmental review process. To calculate county VMT for every year until 2040, the County interpolated between the SBCAG RTDM's 2010 base year and 2040 future year VMT forecasts to establish specific county VMT values for each year.

VMT Metrics

CEQA Guidelines Sections 15064.3(b)(1) and 15064.3(b)(2) describe the criteria for analyzing transportation impacts for two types of projects: (1) land use projects and (2) transportation projects. The criteria for land use projects may also apply to land use plans. The following subheadings summarize the VMT methodology and metrics for both types of projects.

Land Use Projects and Plans

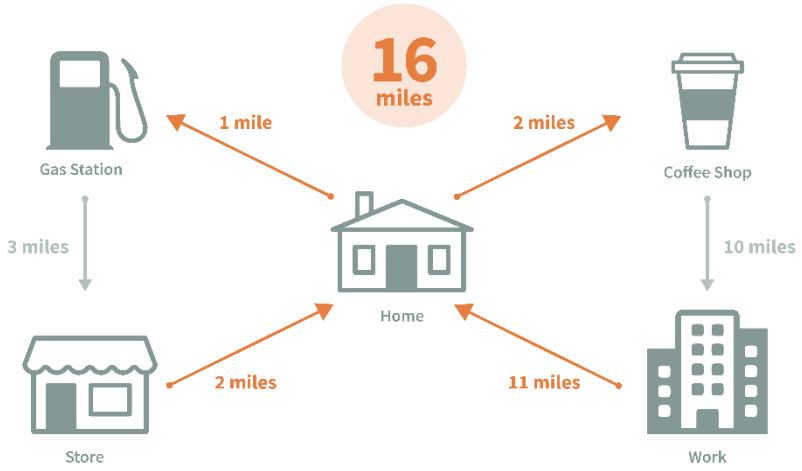
The SBCAG RTDM uses an origin-destination (OD) VMT methodology to estimate the VMT of land use projects and plans. The OD VMT methodology estimates the VMT generated by land uses or plans in a defined geographic area, such as the unincorporated county or a specific project site. The SBCAG RTDM estimates OD VMT by tracking all vehicles traveling to and from a defined geographic area and calculating the number of trips and length of those trips to estimate VMT.

State climate-change legislation typically expresses greenhouse gas emissions reduction targets as a quantitative or absolute numeric threshold. For example, Senate Bill 32 (2016) requires "that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." However, these targets do not translate directly into VMT thresholds of significance for individual projects. Therefore, the OPR Technical Advisory recommends that agencies assess a project's VMT impacts using an efficiency metric (e.g., per resident, per employee, or per service population) rather than a quantitative or absolute numeric threshold. The County estimates VMT for land use projects and plans using the following metrics.

- **Total VMT**: VMT generated by all land uses in a defined geographic area. Total VMT reflects all vehicle-trips (passenger and commercial vehicles) assigned on the roadway network. The County applies this metric to retail projects and the cumulative analysis for land use plans.
- **Total VMT per Service Population**: VMT generated by all land uses in a defined geographic area divided by the total number of residents and total number of employees in the geographic area. VMT per service population reflects all vehicle-trips (passenger and commercial vehicles) assigned on the roadway network. The County applies this metric to land use plans.
- **Home-based VMT per Resident**: VMT generated from travel between residents' homes and other destinations, such as work, school, or household errands, in a defined geographic area divided by the total number of residents in the geographic area. This metric excludes trips between two non-residential locations, such as from the store to the coffee shop. Home-based VMT per resident reflects all passenger vehicles (cars and light duty trucks) assigned on the

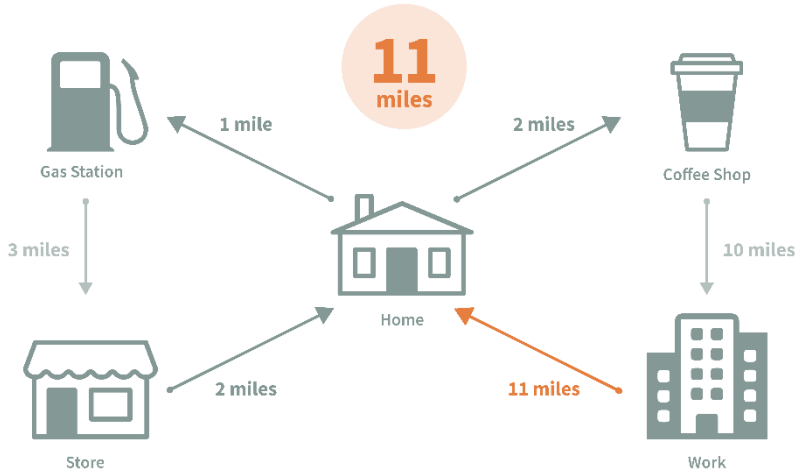
roadway network. Figure 1, below, illustrates the home-based trips that are included in this VMT metric. The County applies this metric to residential projects.

Figure 1 - Home-Based VMT per Resident



- **Home-based work VMT per Employee**: VMT generated from travel between employees' homes and work in a defined geographic area divided by the number of employees in the geographic area. Home-based work VMT per employee reflects all passenger vehicles (cars and light duty trucks) assigned on the roadway network. Figure 2, below, illustrates the home-based work trips that are included in this metric. The County applies this metric to employment projects.

Figure 2 – Home-Based Work VMT per Employee



Transportation Projects

The SBCAG RTDM uses a boundary VMT methodology to estimate the VMT of transportation projects. The boundary methodology considers all travel on roadways in a defined geographic area,

including vehicles that are traveling on the roadways but do not have an origin or destination in the defined geographic area. The SBCAG RTDM can track all vehicles traveling on the roadway network, the number of trips on each roadway segment, and the length of each roadway segment, and then estimate the VMT in the defined geographic area.

Transportation projects may change travel patterns and increase vehicle travel on the roadway network. This change is commonly known as "induced travel demand." Induced travel demand is the overall increase in VMT that is attributable to a project, but is distinct from any background changes in VMT caused by population change, economic growth, or other factors.

The OPR Technical Advisory recommends estimating induced travel demand by estimating the net change in total VMT within a defined study area. This means the analysis should assess total roadway VMT in the study area with (i.e., potential) and without (i.e., baseline) the project; the difference between the two is the amount of VMT attributable to the project, or net change in total VMT.

The County estimates VMT for transportation projects using total roadway VMT, or the VMT generated by the number of vehicles on each roadway segment and the length of each roadway segment in the defined geographic area. Total Roadway VMT reflects all vehicles (passenger and commercial vehicles) assigned on the roadway network.

Depending on the size and location of the roadway widening or other transportation project, the SBCAG RTDM may not fully capture the increase in VMT due to induced travel demand (e.g., change in travel patterns). In these cases, the analysis should compare the percent increase in lane miles (e.g., percent change in total lane miles that will result from the project) in the study area to the existing total roadway VMT to determine if additional induced travel demand would occur.

Project Types by Land Use Category

Table 1, below, provides a list of project types and the corresponding land use category they should be considered under for Step 1, Screening Criteria, and Step 2, Thresholds of Significance for Impact Analysis, below. The project types are examples, and do not represent an exhaustive list of every allowable land use in Santa Barbara County.

Table 1: Land Use Categories for Project Types

Residential

Residential projects generally fall within the types of allowable uses contained in the Residential zone designations in the Santa Barbara County Land Use and Development Code (LUDC), Montecito Land Use and Development Code (MLUDC), and Coastal Zoning Ordinance (CZO).

- Dwelling, one-family
- Dwelling, two-family
- Dwelling, multiple
- Farmworker housing
- Student housing
- Emergency shelter
- Special care facility
- Transitional and supportive housing
- Mobile homes
- Monastery

Employment

Employment projects generally fall within the types of allowable uses contained in the Agricultural, Commercial, Industrial, and Special Purpose zone designations in the LUDC, MLUDC, and CZO.

- Office
- Medical services
- Lodging (hotel, resort)
- Mining and energy facilities
- Manufacturing
- Recycling facilities
- Wholesaling and distribution
- Agricultural uses
- Cannabis - cultivation

Retail

Retail projects generally fall within the types of allowable uses contained in the Commercial and Special Purpose zone designation in the LUDC, MLUDC, and CZO. Regional retail projects are larger than 50,000 square feet.

- General retail
- Grocery/food store
- Cannabis – retail
- Convenience store
- Bar, tavern
- Vehicle sales and services
- Drive-through facility
- Farm supply and feed store
- Fuel dealer
- Restaurant
- Service station
- Shopping center
- Bank, financial facilities
- Truck stop
- Visitor-serving commercial
- Repair services
- Fitness centers
- Plant nursery
- Winery

2. Analyzing and Mitigating VMT

CEQA Guidelines Section 15064.3 and threshold "b" establish VMT as the most appropriate measure of transportation impacts under CEQA. The following subsections outline a three-step process for determining the significance of VMT impacts and, if necessary, mitigating significant VMT impacts.

Step 1: Project Screening

Many agencies use "screening criteria" to identify projects that would result in less than significant VMT impacts without conducting detailed VMT analyses and studies. The OPR Technical Advisory contains screening criteria for land use and transportation projects. The County uses these screening criteria. The OPR Technical Advisory does not include screening criteria for land use plans. Therefore, the analysis of land use plans must begin with Step 2, below.

The County presumes that land use or transportation projects meeting any of the screening criteria, absent substantial evidence to the contrary, would have less than significant VMT impacts and would not require further analysis. A single-component project (e.g., residence, office, or store) only needs to meet one of the screening criteria. However, each component of a multiple-component project (e.g., residential/retail mixed-use development) must meet at least one applicable screening criterion that relates to each specific land use.

Projects that do not meet any of the screening criteria require an analysis of VMT and a VMT transportation study. Such projects must proceed to Step 2, below.

Land Use Projects Screening Criteria

Table 2, below, lists the screening criteria for land use projects. The table contains a separate row and columns that list each project type and the applicable screening criterion.

Table 2: Screening Criteria for Land Use Projects

Screening Categories	Project Requirements to Meet Screening Criteria
Small Projects	A project that generates 110 or fewer average daily trips.[2]
Locally Serving Retail	A project that has locally serving retail uses that are 50,000 square feet or less, such as specialty retail, shopping center, grocery/food store, bank/financial facilities, fitness center, restaurant, or café. If a project also contains a non-locally serving retail use(s), that use(s) must meet other applicable screening criteria.
Projects Located in a VMT Efficient Area	A residential or office project that is located in an area that is already 15 percent below the county VMT (i.e., "VMT efficient area"). The County's Project-Level VMT Calculator determines whether a proposed residential or office project is located within a VMT efficient area.

[2] The County calculates a project's daily trips using the latest version of the *Trip Generation Manual* (Institute of Transportation Engineers) or locally valid trip rates approved by the County Public Works Department. Land uses with irregular or seasonal trip making characteristics, such as wineries or special event centers, should apply an annual average daily trip rate and provide a trip generation memo explaining how the project meets the screening criteria for small projects.

Table 2: Screening Criteria for Land Use Projects

Screening Categories	Project Requirements to Meet Screening Criteria
Projects near Major Transit Stop	A project that is located within a ½ mile of a major transit stop or within a ½ mile of a bus stop on a high-quality transit corridor (HQTC). A major transit stop is a rail station or a bus stop with two or more intersecting bus routes with service frequency of 15 minutes or less during peak commute periods. A HQTC is a corridor with fixed route bus service with frequency of 15 minutes or less during peak commute periods. However, these screening criteria do not apply if project-specific or location-specific information indicates the project will still generate significant levels of VMT. Therefore, in addition to the screening criteria listed above, the project should also have the following characteristics: - Floor area ratio (FAR) of 0.75 or greater; - Consistent with the applicable SBCAG Sustainable Communities Strategy (as determined by the County); - Does not provide more parking than required by the County's Comprehensive Plan and zoning ordinances; and - Does not replace affordable housing units (units set aside for very low income[3] and low income households[4]) with a smaller number of moderate or high-income housing units.
Affordable Housing	A residential project that provides 100 percent affordable housing units (units set aside for very low income and low income households); if part of a larger development, only those units that meet the definition of affordable housing satisfy the screening criteria.

[3] As referenced in California Government Code Section 65584(f)(2) and defined in California Health and Safety Code Section 50079.5(a), "'Very low income households' means persons and families whose incomes do not exceed the qualifying limits for very low income families as established and amended from time to time pursuant to Section 8 of the United States Housing Act of 1937. … In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for very low income households for all geographic areas of the state at 50 percent of area median income, adjusted for family size and revised annually."

[4] As referenced in California Government Code Section 65584(f)(2) and defined in California Health and Safety Code Section 50079.5(a), "'Lower income households' means persons and families whose income does not exceed the qualifying limits for lower income families as established and amended from time to time pursuant to Section 8 of the United States Housing Act of 1937. … In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually."

Transportation Projects Screening Criteria

According to the OPR Technical Advisory, the County considers transportation projects that would (1) reduce VMT, or (2) not likely lead to a substantial or measurable increase in vehicle travel, to have less than significant VMT impacts. OPR took two steps to help identify such transportation projects. First, the following transportation projects would likely lead to a measurable and substantial increase in vehicle travel and, therefore, would require further analysis under Step 2, below:

> Addition of through lanes on existing or new highways, including general purpose lanes, HOV [high occupancy vehicle] lanes, peak period lanes, auxiliary lanes, or lanes through grade-separated interchanges.

Second, the OPR Technical Advisory includes a sample list of transportation projects that would not likely lead to a substantial or measurable increase in VMT. Table 3, below, includes this same list, which the County uses to screen out transportation projects from further environmental review.

Table 3: Example Transportation Projects Screened from VMT Analysis[5]

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Conversion of existing general purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
- Addition of a new lane that is permanently restricted to use only by transit vehicles
- Reduction in number of through lanes

[5] This list is provided in the OPR Technical Advisory (OPR, December 2018, pages 20 and 21) for projects that "would not likely lead to a substantial measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis."

Table 3: Example Transportation Projects Screened from VMT Analysis[5]

- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
- Installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features
- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices
- Adoption of or increase in tolls
- Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase
- Initiation of new transit service
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- Removal or relocation of off-street or on-street parking spaces
- Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)
- Addition of traffic wayfinding signage
- Rehabilitation and maintenance projects that do not add motor vehicle capacity
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way
- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel
- Installation of publicly available alternative fuel/charging infrastructure
- Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor

Step 2: Thresholds of Significance for Impact Analysis

The County generally uses thresholds of significance to determine the significance of transportation impacts for projects and plans that do not meet any of the screening criteria in Table 2 or Table 3. The subsections below present separate VMT thresholds for land use projects, land use plans, and transportation projects.

The County expresses thresholds of significance in relation to existing, or baseline, county VMT. Specifically, the County compares the existing, or baseline, county VMT (i.e., pre-construction) to a project's VMT. Projects with VMT below the applicable threshold would normally result in a less than significant VMT impact and, therefore, would not require further analyses or studies. Nonetheless, CEQA Guidelines Section 15064(b)(2) states, "Compliance with the threshold does

not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant." Projects with a VMT above the applicable threshold would normally result in a significant VMT impact and, therefore, would require further analyses and studies, and, if necessary, project modifications or mitigation measures as discussed in Step 3, below.

The VMT thresholds of significance are for general use and should apply to most projects subject to environmental review. However, the thresholds may not be appropriate for unique projects. In such cases, CEQA Guidelines Section 15064.7(c) allows the County to use other thresholds "… on a case-by-case basis as provided in Section 15064(b)(2)." When using thresholds on a case-by-case basis, the County will need substantial evidence to justify why different thresholds are appropriate. It will also need to explain how non-compliance or compliance with these thresholds means that a project would result in significant or less than significant VMT impacts, respectively.

Land Use Projects

The OPR Technical Advisory recommended thresholds of significance for land use projects. The County adopted these same thresholds. Table 4 contains the thresholds for land use projects.

Table 4: Land Use Projects – Thresholds of Significance

Project Type	Threshold for Determination of Significant VMT Impacts
Residential	Project VMT exceeds a level of 15 percent below existing county VMT for home-based VMT per resident.
Employment	Project VMT exceeds a level of 15 percent below existing county VMT for home-based work VMT per employee.
Regional Retail	Project VMT results in a net increase in total VMT.
Mixed-Use Projects	Evaluate each project component independently using the applicable threshold of significance above for each component (e.g., for a mixed-use project with residential and office uses, apply the residential and employment thresholds of significance for each component separately).
Other Land Use types	For project types not listed above (e.g., school, sports or entertainment facility, park), the County will apply an absolute VMT threshold (e.g., total VMT or total roadway VMT) or efficiency-based VMT threshold (e.g., home-based VMT per resident, home-based work VMT per employee, or total VMT per service population). The applicable threshold will depend on the project's characteristics, including whether the project is locally or regionally serving. For projects that generally produce job-related travel (i.e., employment), the analysis can compare the project's VMT (i.e., home-based work VMT per employee) to existing county VMT. For projects that serve the region, the analysis can compare the project's total VMT to existing VMT, or compare the project's net increase in total VMT to the study area VMT.

Land Use Plans

Updating the County Comprehensive Plan, community plans, or other land use plans provides an opportunity to reduce VMT through defining land uses and providing a circulation network that minimizes longer distance trips and promotes travel through active modes of transportation. The OPR Technical Advisory recommends a threshold of significance for land use plans. The County also uses this threshold. Table 5 includes the threshold for land use plans.

Table 5: Land Use Plans – Threshold of Significance

Plans	Threshold for Determination of Significant VMT Impacts
Comprehensive Plan, Community Plan, Specific Plan	The plan's generated total VMT per service population exceeds a level of 15 percent below existing total VMT per service population for the geographic area.

Transportation Projects

The OPR Technical Advisory recommends using the net change in total VMT to analyze a transportation project's VMT impacts. As described under "VMT Metrics," above, this means the County would use the SGCAG RTDM to estimate total VMT in the study area with and without the proposed transportation project and account for induced travel demand. The results would show whether the project would increase, decrease, or have no effect on total VMT in the study area.

The study area should encompass the full area in which the project would change driving patterns. The study area for large projects affecting regional travel may include the entire county, while the study area for small projects may only encompass the local community.

The OPR Technical Advisory recommends a metric for estimating a transportation project's VMT impacts. However, it does not recommend a specific threshold of significance for transportation projects. Therefore, the County developed a threshold to determine whether a project conflicts or is inconsistent with CEQA Guidelines Section 15064.3(b) that considers the project's potential to increase VMT. Table 6, below, includes the threshold of significance for transportation projects.

Table 6: Transportation Projects Threshold of Significance

Transportation Project	Threshold for Determination of Significant VMT Impacts
Transportation Projects	Project results in a net increase in total roadway VMT in comparison to existing VMT for the study area.

Cumulative Impacts

CEQA requires lead agencies to consider a project's individual and cumulative impacts. Specifically, CEQA Guidelines Section 15064(h)(1) states, "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable.[6] The County typically uses one of two methods to determine whether a project's

[6] CEQA Guidelines Section 15064(h)(1) states (in pertinent part): "'Cumulatively considerable' means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects."

VMT impact is cumulatively considerable. As explained below, one method is for projects subject to an efficiency-based threshold of significance. The other method is for projects subject to an absolute threshold of significance and land use plans.

Projects subject to Efficiency-Based Thresholds. The County generally uses efficiency-based thresholds of significance (i.e., per resident, per employee, and per service population) to analyze most land use project's VMT impacts. Consistent with the OPR Technical Advisory (page 6), a land use project that falls below the applicable efficiency-based threshold of significance set forth in Table 4, above, would not have a VMT impact that is cumulatively considerable. Projects that are under the County's efficiency-based impact thresholds are already shown to align with long-term environmental goals to reduce VMT. As a result, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa. The Project-Level VMT Calculator provides the information necessary for this analysis.

Projects subject to Absolute Thresholds and Land Use Plans. Transportation projects and some land use projects are subject to an absolute threshold of significance (i.e., total roadway VMT or total VMT). The analysis of cumulative impacts for a project subject to an absolute threshold of significance should consider the combined impacts of the project and other closely related past, present, and reasonably foreseeable future projects. The project's or plan's contribution to a VMT impact would be cumulatively considerable if the study area's total roadway VMT or total VMT, as appropriate, would be higher in the future with the project or plan in place. Land use plans should undergo similar analysis even though their project-level impacts are subject to an efficiency-based threshold of significance (i.e., VMT per service population). A land use plan could change travel patterns in the region. However, an efficiency-based threshold may not fully capture such changes. Therefore, the analysis of a land use plan's cumulative impacts should consider the net increase in total VMT, which would provide a more detailed analysis of all travel in the plan area and region.

A transportation planner/engineer would use the SBCAG RTDM or an equivalent transportation model to generate the data necessary for this analysis. Specifically, the transportation planner/engineer would modify the future year SBCAG RTDM to reflect the project or plan and the study area's total roadway VMT or total VMT, as appropriate, would be compared to future conditions without the project or plan in place. The transportation planner/engineer can also complete a redistribution of land use so that the future SBCAG RTDM contains the same land use control totals with the project or plan.

Step 3: Potential Mitigation Measures

Projects and plans that exceed the thresholds of significance in Step 2 require project modifications or mitigation measures to avoid or reduce VMT impacts to a less-than-significant level (i.e., below the applicable threshold of significance). As discussed above, the VMT Calculator contains and, therefore, can help applicants assess the effectiveness of possible mitigation measures.

Mitigation measures may not always reduce a project's VMT impacts to a less-than-significant level. In such cases, CEQA Guidelines Section 15093 requires decision makers to make a statement of overriding considerations in order to approve the project or plan.

VMT related mitigation measures focus on reducing the number of single-occupant vehicle trips generated by the project or reducing the distance of those trips. The following strategies can help reduce VMT:

- Modify the project's site design or land use characteristics to reduce VMT generated by the project. This can include increasing/decreasing density, introducing a mix of uses, clustering

development, or making site design improvements such as sidewalks, bikeways, transit stop enhancements, and/or priority carpool parking.

- Implement TDM to reduce VMT generated by the project. TDM strategies are vehicle trip reductions made through project site modifications, programming, and operational changes. This can include on-going programs such as transit coordinators, transit pass subsidies, and/or shuttle programs.
- Apply any future programmatic mitigation mechanisms, where applicable, such as VMT mitigation banks, exchanges, and/or fee programs.

Applicants should tailor mitigation measures to a project's characteristics and potential impacts. They also must present substantial evidence to support any conclusions regarding whether the mitigation measures would reduce the impacts to less than significant or whether the impacts would remain significant and unavoidable. If the project will rely on programmatic mitigation measures, the applicant must show with substantial evidence how participation in the program will mitigate project-generated VMT.

F. Threshold "c" – Design Features and Hazards

Threshold "c" considers whether a project would increase roadway hazards. An increase could result from existing or proposed uses or geometric design features. In part, the analysis should review these and other relevant factors and identify results that conflict with the County's Engineering Design Standards or other applicable roadway standards. For example, the analysis may consider the following criteria:

- Project requires a driveway that would not meet site distance requirements, including vehicle queueing and visibility of pedestrians and bicyclists.
- Project adds a new traffic signal or results in a major revision to an existing intersection that would not meet the County's Engineering Design Standards.
- Project adds substantial traffic to a roadway with poor design features (e.g., narrow width, roadside ditches, sharp curves, poor sight distance, inadequate pavement structure).
- Project introduces a new use and substantial traffic that would create potential safety problems on an existing road network (e.g., rural roads with use by farm equipment, livestock, horseback riding, or residential roads with heavy pedestrian or recreational use).

If a project would result in potential roadway hazards, the applicant would need to modify the project or identify mitigation measures that would eliminate or reduce the potential hazards. For example, an applicant for a retail shopping center may need to shift the location of a new driveway or add sidewalks or pedestrian crossings to reduce potential conflicts between customers and pedestrians.

G. Threshold "d" – Emergency Access

Threshold "d" considers any changes to emergency access resulting from a project. To identify potential impacts, the analysis must review any proposed roadway design changes and determine if they would potentially impede emergency access vehicles.

A project that would result in inadequate emergency vehicle access would have a significant transportation impact and, as a result, would require project modifications or mitigation measures. For example, a project that modifies a street and, as a result, impairs fire truck access, would require modifications or redesign to comply with County and fire department road development standards.

H. Thresholds for Projects with Commercial Vehicles

CEQA Guidelines Section 15064.3(a) focusses on "automobile travel." The OPR Technical Advisory states that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. It does not include heavy-duty trucks, semi-trailers, construction equipment, or other commercial-type vehicles. The definitions in Subsection E.1, VMT Metrics, above, describe the types of vehicle-trips that are included in the various methods used to calculate VMT.

As a result, the VMT criteria and thresholds in the CEQA Guidelines and this chapter related to employment generating uses do not apply to those components of proposed projects that involve commercial vehicles. However, the VMT criteria and thresholds would apply to those components that involve passenger vehicles. For example, a proposed oil production or agricultural processing facility may involve significant numbers of commercial trucks and semi-trailers that would haul supplies and products to and from the facility. The project may also involve employees and others who would travel to and from the facility in passenger vehicles. In this case, the VMT analysis would not address potential VMT generated by the commercial trucks and semi-trailers and, therefore, would not consider such VMT a significant transportation impact. Rather, the VMT analysis would focus on VMT generated by passenger vehicles traveling to and from the facility (i.e., transportation threshold question "b").

Such facilities are still subject to the other transportation threshold questions listed above that do not apply VMT metrics or otherwise implement CEQA Guidelines Section 15064.3. Specifically, transportation threshold questions "a," "c," and "d," above, would apply to the project. Threshold questions "a," "c," and "d" consider a project's effects on the circulation system, roadway hazards, and emergency access, respectively. These non-VMT metrics and threshold questions would apply to the entire project, including potential impacts from commercial and passenger vehicles traveling to and from the facility. Applicants may need to submit a traffic study (e.g., local transportation assessment) to address threshold questions "a," "c," and "d."

I. VMT Transportation Studies

The following projects require a VMT transportation study:

- Projects that do not meet the VMT screening criteria in subsection E.1., Step 1: Project Screening, above; and
- Land use plans.

The County will only accept VMT transportation studies that use the most up-to-date version of the SBCAG RTDM or an equivalent transportation model at the time the County publishes the Notice of Preparation, or if the County does not publish a Notice of Preparation, at the time the County commences environmental analysis.

The following text and bullet points outline the requirements for VMT transportation studies. Studies for projects that meet the applicable threshold of significance should be succinct (three or four pages in length) and simply document why the project meets the applicable threshold. Studies for projects that do not meet the applicable threshold of significance need to be comprehensive and, at a minimum, include the information outlined in the text and bullet points below. The text and bullet points are not exhaustive; some VMT transportation studies may require additional data and analyses.

CEQA Guidelines Section 15064.3(a) states that agencies may no longer use automobile delay to determine the significance of transportation impacts under CEQA. Therefore, VMT transportation studies generally will not analyze LOS or similar measures of vehicular capacity or traffic congestion for purposes of CEQA. However, LOS remains an important metric for transportation planning and projects must still comply with applicable LOS-based policies and standards in the Comprehensive Plan.

Therefore, an applicant may need to submit a traffic study (e.g., local transportation assessment) that assesses the project's consistency with LOS policies and the project's effects on the road network and, if necessary, recommend access and/or roadway improvements. In such cases, the applicant may submit one comprehensive study that addresses (1) VMT and applicable thresholds of significance and (2) LOS and applicable policies and standards.

The following text and bullet points summarize the minimum requirements for a VMT transportation study. The County's Engineering Design Standards outline the requirements for traffic studies. Applicants should consult County Public Works staff before preparing a project-specific traffic study (e.g., local transportation assessment).

Executive Summary

VMT transportation studies should begin with an executive summary that is no more than two pages. The executive summary should briefly review the project's VMT transportation impacts and, if applicable, mitigation measures.

Maps

VMT transportation studies should include maps that show the following features:

- Project location and vicinity, including roadways that will be used by occupants and visitors to get to and from the project site, such as local roadways and access to major arterials and state highways; and
- Project site plan.

Tables

VMT transportation studies should include tables that include the following information:

- VMT analysis results; and
- VMT impact summary and mitigation measures.

Narrative, Footnotes and Appendices

VMT transportation studies should include narrative, footnotes, and appendices that include the following information:

- Sources and dates of data including persons contacted;
- Methods used and special circumstances;
- VMT calculations; and
- Mitigation measures proposed and effect on VMT or other applicable impact areas.

19. VISUAL AESTHETICS IMPACT GUIDELINES

A. Determinations of Significance.

The classification of a project's aesthetic impacts as beneficial or adverse, and insignificant or significant, is clearly subject to some personal and cultural interpretation. However, there are guidelines and policies which can be used to direct and standardize the assessment of visual impacts. Thus, this discussion does not constitute a formal significance threshold, but instead it directs the evaluator to the questions which predict the adversity of impacts to visual resources.

B. Assessing Visual Impacts.

Assessing the visual impacts of a project involves two major steps. First, the visual resources of the project site must be evaluated. Important factors in this evaluation include the physical attributes of the site, its relative visibility, and its relative uniqueness. In terms of visibility, four types of areas are especially important: coastal and mountainous areas, the urban fringe, and travel corridors.

Next, the potential impact of the project on visual resources located onsite and on views in the project vicinity which may be partially or fully obstructed by the project must be determined. To some extent, the former step is more important in rural settings, and the latter in urban areas. Determining compliance with local and state policies regarding visual resources is also an important part of visual impact assessment.

Significant visual resources as noted in the Comprehensive Plan Open Space Element which have aesthetic value include:

- Scenic highway corridors
- Parks and recreational areas
- Views of coastal bluffs, streams, lakes, estuaries, rivers, water sheds, mountains, and cultural resource sites
- Scenic areas.

All views addressed in these guidelines are public views, not private views.

C. Initial Study Assessment Questions for the Analysis of Visual Resources.

CEQA Guidelines Appendix G (b) states: "A project will normally have a significant effect on the environment if it will have a substantial, demonstrable negative aesthetic effect." The following questions are intended to provide information to address the criteria specified in Appendix G. Affirmative answers to the following questions indicate potentially significant impacts to visual resources.

1a. Does the project site have significant visual resources by virtue of surface waters, vegetation, elevation, slope, or other natural or man-made features which are publicly visible?

1b. If so, does the proposed project have the potential to degrade or significantly interfere with the public's enjoyment of the site's existing visual resources?

2a. Does the project have the potential to impact visual resources of the Coastal Zone or other visually important area (i.e., mountainous area, public park, urban fringe, or scenic travel corridor)?

2b. If so, does the project have the potential to conflict with the policies set forth in the Coastal Land Use Plan, the Comprehensive Plan or any applicable community plan to protect the identified views?

3. Does the project have the potential to create a significantly adverse aesthetic impact though obstruction of public views, incompatibility with surrounding uses, structures, or intensity of development, removal of significant amounts of vegetation, loss of important open space, substantial alteration of natural character, lack of adequate landscaping, or extensive grading visible from public areas?

REFERENCES.

1. Scenic Highway Element of the County Comprehensive Plan, 1982.
2. Open Space Element of the County Comprehensive Plan, 1979.
3. Coastal Land Use Plan, January 1982.
4. United States Forest Service, Visual Management System, 1973.
5. Geological Survey Circular 620, Quantitative Comparison of Some Aesthetic Factors Among Rivers, 1969.
6. U.S. Dept. of Agriculture, Agriculture Handbook 478, National Forest Landscape Management, Vol. 2, Chap. 2, Utilities, July 1975.
7. Viohl, Richard C., Nieman, Thomas J., The Description, Classification, and Assessment of Visual Landscape Quality, School of Landscape Architecture, S.U.N.Y. College of Environmental Science and Forestry, Syracuse N.Y., 13210, Exchange Bibliography #1064, Council of Planning Librarians.

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APPENDIX A

Santa Barbara County Planning and Development Department

Biological Resources Guidelines Technical Background Document

September 1994

Synopsis:

As an appendix to the Biological Resources Guidelines (September 1994) of the County Environmental Thresholds and Guidelines Manual, this document provides additional technical background information about biological resources, which may be useful when evaluating development proposals for impacts on vegetation, wildlife, and biological habitats.

Contents:

A. Summary of Biological Resource Statutes (September 1994)

The Biological Resources Guidelines provides a short summary of legal authority under the California Environmental Quality Act (CEQA) for evaluating biological resource impacts, and Federal, State and County requirements and polices for the protection of biological resources.

Following are additional excerpts describing the statutory basis for the protection of individual plant and animal species, and biological habitats.

1. The legal basis for protection of threatened, endangered and candidate species.

The following text is excerpted from a "Revised Memorandum of Law Demonstrating Continuing Compliance by the State of California with USC Section 1535(c) of the Federal Endangered Species Act of 1973", originally prepared in 1974 by Evelle Younger, Boronkay and Mok with revisions made by John K. Van de Kamp, Attorney General of California and others in 1990.

"The authority of the state to conserve resident species of fish, wildlife or plants determined by the state agency to be endangered or threatened is granted in the Federal Endangered Species Act (ESA) 16 USC section 1535(c)(1)(A) and (2) (A).

California Fish and Game Code Section 200 grants general authority to the Fish and Game Commission to regulate the taking or possession of birds, mammals, fish, amphibians and reptiles subject to more specific statutory restrictions...."

a. Regulations and statutory authority. "Important state authority for the conservation of endangered and threatened species of fish, wildlife and plants is found in California Endangered Species Act (CESA) enacted in 1984. California Fish and Game Code Section 2051 et seq. … In addition for a complete picture the California Endangered Species Act (CESA) must be read with the Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.) which also governs the preservation, protection and enhancement of endangered or rare native plants...."

b. California Endangered Species Act (California Fish and Game Code Sections 2051 et seq.) "This important conservation legislation declares State policy regarding threatened and endangered species, provides for a listing and review process, prohibits certain acts damaging to listed species, and provides a consultation process whereby state projects are reviewed for impacts on listed species. Both the Commission and Department are given important powers and duties vis-à-vis protection of subject species.

The CASE declares the State's interest in threatened and endangered species (California Fish and Game Code Section 2051) and unequivocally sets out the State's policy in California Fish and Game Code Section 2052:

"The Legislature further finds and declares that it is the policy of the state to conserve, protect, restore, and enhance any endangered species or any threatened species and its habitat and that it is the intent of the Legislature, consistent with conserving the species, to acquire lands for habitat for these species."

Toward that end state agencies in approving projects are required to seek out feasible alternatives to avoid jeopardizing the continued existence of listed species or provide appropriate mitigation and enhancement measures. California Fish and Game Code Sections 2053 - 2054. The California thresholds for endangered and threatened status (California Fish and Game Code Sections 2062 and 2067) are equivalent to Federal definitions. See 16 USC Sections 1532(6) and 1532(20). Also the tools listed for "conserving" resources (California Fish and Game Code Section 2061) are identical to the federal model. 16 U.S.C. Section 1532(3)."

"...Species to be so conserved must first be listed. That responsibility rests with the Fish and Game Commission upon consideration of sufficient scientific information. California Fish and Game Code Section 2070. The listing process may be initiated by petition from any interested person (California Fish and Game Code Section 2071, 2072 and 2072.3) or on recommendation of the Department of Fish and Game (California Fish and Game Code Section 2072.7. Petitions are evaluated by the Department which makes a recommendation to the Commission as to whether the petition contains sufficient information to determine if action is warranted. California Fish and Game Code Section 2073.5. Petitions and Department-initiated recommendations are then acted upon by the Commission, which decides whether to require formal review of the request. California Fish and Game Code Section 2074.2. Formal review and the corresponding "candidate species" status triggers substantial opportunities for public participation through the notification of interested parties. See California Fish and Game Code Section 2074, 2074.2, 2075, 2077 and 2078. This notification and opportunity to participate continues throughout the designation process. Formal review itself may take up to one year and results in a Department report on listing including, if appropriate, a preliminary identification of the habitat that may be essential to the continued existence of the species and recommendation as to management activities and other recommendations for recovery of the species. California Fish and Game Code Section 2074.6."

"Currently California's list of threatened or endangered plants and animals is set out in 14 Section Code Choosy. Sections 670.2 and 670.5. This listing is subject to periodic Department review and appropriate Commission response. California Fish and Game Code Section 2077...."

"Once a species is listed "[N]o person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product

thereof, that the Commission determines to be an endangered species or a threatened species, or attempt any of those acts," subject to some exceptions principally involving plants. California Fish and Game Code Section 2080....**This prohibition generally applies to candidate species undergoing formal review.** [emphasis added] California Fish and Game Code Section 2085..."

"In the event a project is being carried out by a local agency the Department [of Fish Section Game] may participate in the environmental review process as a responsible or trustee agency as appropriate. In that regard the status of threatened or endangered is recognized in the environmental review process (14 Section Code Choosy. 15380) and a project impact is normally considered significant, thus requiring the consideration of alternatives and mitigation, if a project will substantially affect a threatened or endangered species of animal or plant or the habitat of the species. 14 Section Code Choosy. Causa. 6, Chap. 3, Cheesy. G(c)."

"The Native Plant Protection Act [California Fish and Game Code Section 1900 et seq.] provides further authority to conserve plant species and conduct investigations in support of conservation in accordance with 16 U.S.C. sections 1535(c)(2)(A)(C).

c. Wildlife and Natural Areas Conservation Act (California Fish and Game Code Section 2700 et seq.). This legislation became effective November 9, 1988 and provides money for habitat protection for California species including those designated as threatened or endangered. California Fish and Game Code Section 2701. The principal protection focus is acquisition...."

"California Fish and Game Code Section 1700 et seq., entitled "Conservation of Aquatic Resources," declares State policy to encourage conservation of the living resources of the ocean and other state waters, including species preservation.

Similarly California Fish and Game Code section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to insure their continued existence at optimum levels and establishes an account to manage private donations toward that end....California Fish and Game Code Section 1800 et seq. provides that the policy of the State, inter alia, is "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient populations of all species of wildlife and the habitat necessary to ...perpetuate all species of wildlife for their intrinsic and ecological values...." Lastly, California Fish and Game Code Sections 1930-1933 establishes the significant natural areas program to protect and preserve important habitats and ecosystems through developing information with respect to natural resources (the California Natural Diversity Data Base)....[and other mechanisms]."

d. Public Resources Code. "California Public Resources Code Section 21000 et seq. was [enacted] in 1970 as the [California] Environmental Quality Act of 1970 (CEQA), to promote the declared legislative intent to maintain a quality environment including the protection of natural resources.

Section 21001(c) of the code provides that it is the policy of the State to "Prevent the elimination of fish or wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history."

The Act goes on to provide for an environmental impact report, similar to the provisions in the National Environmental Policy Act of 1969 and for the preparation of environmental impact reports by all local agencies, state agencies, boards, and commissions on any project which would have a significant effect on the environment."

e. California Coastal Act. "California Public Resources Code Section 30000 et seq. was added by statute in 1976 as the California Coastal Act. The act sets out various policies protecting marine and land resources including species and habitat. To this end, the California Coastal Commission was established to regulate development with local government along the coast to insure that development will be consistent with conservation policies."

f. Authority and jurisdiction over wetlands. The Federal Clean Water Pollution Control Act of 1972, ("Clean Water Act") requires a permit for the discharge of pollutants into the waters of the United States. The Clean Water Act defines pollutants to include dredge and fill materials (33 U.S.C. S 1362). Section 404 of the Clean Water Act authorizes the Army Corps of Engineers to issue permits to discharge dredge and fill materials into waters of the United States (33 U.S.C. S 1344(a). Federal Regulations define waters of the United States to include wetlands (33 CFR S 328.3(a)(7).

Due to the widely recognized high economic and biologic value of wetlands, the California Coastal Act mandates governmental regulation of these areas. The Act requires that the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes be maintained and, where feasible, restored. Sections of the Act provide general policies for development in and adjacent to wetlands, and specific policies for protecting these areas (California Coastal Commission, 1981).

Fish and Game Sections 1601 and 1603 prohibit any person or governmental agency, or public utility from substantially diverting or obstructing the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by the department, or use any material from the streambeds without obtaining the appropriate permit from the California Department of Fish and Game.

It is generally advisable to consult with representatives of these agencies prior to submittal of an application to the County, so that impacts to Wetlands and Deepwater Habitats are avoided or minimized to the greatest extent feasible.

2. The legal basis for the protection of habitats. California Fish and Game Code Section 1750 et seq. (Native Species Conservation and Enhancement Act) declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to ensure their continued existence at optimum levels.

California Fish and Game Code Section 1800 et seq. states that it is the policy of the state "to encourage the conservation and maintenance of wildlife resources" including the maintenance of "sufficient population of all species of wildlife and the habitat necessary to ... perpetuate all species of wildlife for their intrinsic and ecological values...."

Furthermore, CEQA (Public Resources Code section 21000(c) states that it is the policy of the state to: "...prevent the elimination of fish or wildlife species due to man's activities, ensure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history."

CEQA Appendix G, items (c), (d), and (t) specifically mention or refer to habitat.

The California legislature has further recognized the need to conduct habitat-based land use planning through adoption of the *Natural Community Conservation Planning Act of 1991 (NCCP)* (California Fish and Game Code Section 2800 et. seq.). The purpose of this Act is to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth. The NCCP process is designed to provide an alternative to current "single species" conservation efforts by formulating regional, natural community-based habitat protection programs to protect the numerous species inhabiting each of the targeted natural communities.

In 1986, the U.S. District Court for Hawaii *(Palila v. Hawaii Department of Land and Natural Resources and Sportsmen of Hawaii, 649 F.Supp.1070 [1986] (Palila II)* issued a ruling regarding destruction of habitat of an endangered bird known as "Palila" in the State of Hawaii. Regarding the term "harm" within the definition of "take" of the Federal Endangered Species Act, the Court concluded:

"A finding of "harm" does not require death to individual members of the species; nor does it require a finding that habitat degradation is presently driving the species further toward extinction. Habitat destruction that prevents the recovery of the species by affecting essential behavioral patterns causes actual injury to the species and effects a taking under Section 9 of the Act."

"The key to the Secretary's [of the Interior] definition is harm to the species as a whole through habitat destruction or modification. If the habitat modification prevents the population from recovering, then this causes injury to the species and should be actionable under Section 9."

See also *Sierra Club v. Lyng,* 694 F.Supp.1260 (E.D. Tex. 1988) and *Sierra Club v. Yeutter,* 926 F.2d 429 (5th Cir.1991). Further discussion of habitat protection under the Endangered Species Act is provided by Sidle and Bowman (1988).

B. Biological Survey Guidelines.

1. Initial assessment of biological resources (Initial Studies, EIRs and Mitigated NDs). During the overall land use permit process, an on-site inspection is conducted by the Planning and Development Department to determine if critical or sensitive biological resources may be impacted by a proposed project. Should the on-site investigation indicate the presence, or a high potential for the presence, of critical or sensitive biological resource, a biological survey may be required, pursuant to CEQA Section 15064 (Determining Significant Impacts). The biological survey could be completed as part of an EIR or it could be used to develop a Mitigated Negative Declaration as provided for by CEQA Section 15070:

a. The Initial Study shall be used to provide a written determination of whether a Negative Declaration or an EIR shall be prepared for a project.

b. Where a project is revised in response to an Initial Study so that potential adverse effects are mitigated to a point where no significant environmental effects would occur, a Negative Declaration shall be prepared instead of an EIR. If the project would still result in one or more significant effects on the environment after mitigation measures are added to the project, an EIR shall be prepared.

c. The EIR shall emphasize study of the impacts determined to be significant and can omit further examination of those impacts found to be clearly insignificant in the Initial Study.

Biological survey reports are conducted and written by professional biologists under contract to the County. Payment for the study is accomplished by a deposit with the County from the

applicant in an amount equal to the cost estimate of the consulting biologist. In some cases, work is performed by a Planning and Development Department-qualified biologist under contract to the applicant.

All biological surveys are subject to review and acceptance by Planning and Development Department staff and may require reexamination by an outside consulting biologist acceptable to the Planning and Development Department. If a disagreement among experts occurs, review by an independent biologist may be required.

In a majority of cases, applicants work with the staff of the Development Review Division to modify the project design for the purpose of reducing impacts to biological resources to an acceptable level. Project design modifications, with the applicant's consent, then become a part of the project description and the basis for issuing a Mitigated Negative Declaration. However, if design modifications are not acceptable to an applicant, then additional biological analysis (and possibly development of additional mitigation measures) would be required as a component of an EIR pursuant to the above citation from CEQA.

2. **Qualifications to perform the biological survey.** Biological consultants must be on the Planning and Development Department list of qualified biologists or on staff of a Planning and Development Department-qualified consulting firm or otherwise be acceptable to Planning and Development Department. A file is retained in the Planning and Development Department which tracks the performance of each consultant. Consultants should be selected on the basis of possessing objectivity and the following qualifications, in order of importance:

   a. A BA/BS in biological sciences or other degree specializing in the natural sciences.

   b. Professional or academic experience as a biological field investigator, with a background in field sampling design and field methods;

   c. Taxonomic experience and a knowledge of plant or animal (whichever is appropriate) ecology;

   d. Familiarity with plants, animals, or both (whichever is appropriate) of the area, including the species of concern; and

   e. Familiarity with the appropriate county, state and federal policies related to special status species and biological surveys.

   f. In addition, the County of Santa Barbara requires that a consultant, hired to perform a biological survey, presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed. Therefore, to avoid a real or perceived appearance of a conflict of interest, a biological survey submitted by a consultant shall be subject to verification of the Planning and Development Department staff biologists or a third outside consulting biologist.

3. **Guidelines for preparation of biological survey reports.** These guidelines were prepared by James R. Nelson, a botanist with the California Energy Commission, published in its original form by the California Department of Fish and Game (1984) and supplemented by Planning and Development Department staff in consultation with local biologists.

   a. When to conduct a biological survey. It is appropriate to conduct a biological field survey to determine if, or the extent to which, sensitive plants or animals or a habitat of concern will be affected by a proposed project when:

(1) Based upon an initial biological assessment, it appears that the project may damage potential special status plant or animal habitats;

(2) Special status species have historically been identified on the project site and adequate information for impact assessment is lacking; or

(3) No initial biological assessment by the Planning and Development Department biologist has been conducted and it is not known which habitats or the quality of habitats exist on the site, nor what the potential impacts of the project may be.

b. Guidelines and goals of the biological survey. Biological surveys that are conducted to determine the environmental impacts of development activities should include particular attention to all rare, threatened, and endangered species and habitats. The species and habitats are not necessarily limited to those that have been "listed" by state and federal agencies, but include any species that, based upon all available data, can be shown to be rare, threatened and/or endangered. These can include "federal candidate" species, "state special concern" species, and those of local concern such as those species which are endemic, rare in the region, or declining in number.

Field searches should be conducted in such a manner that they will locate any listed or special status plant or animal species that may be present/a resident or that may utilize the site on a seasonal rather than year-round basis. Specifically:

(1) Investigations should be conducted at the proper season and time of day when special status species are both evident and identifiable. Field surveys should be scheduled to coincide with known flowering periods, and/or during periods of phenological development that are necessary to identify plants of concern, and during periods critical to the species such as nesting for birds or larval development for amphibians.

(2) Investigations should be both predictive in nature and based upon field inspection. Surveys should predict the presence of rare plants and animals (which may not be present every year or which may use it infrequently) based upon the occurrence of habitats or other physical features, in addition to actual field observation. The survey should not be limited to a description of those species that are actually observed in the field. Every species noted in the field should be identified to the extent necessary to ensure that it is neither a listed nor special status species.

(3) Investigations should be conducted in such a manner that they are consistent with conservation ethics. Collections of voucher specimens or rare (or suspected rare) plants or animals should be made only when such actions do not jeopardize the continued existence of the population and in accordance with applicable state and federal regulations. All voucher specimens should be deposited at local public herbaria or recognized museums of natural history for proper storage and future reference. Photography should be used to document plant identifications and habitat whenever possible, especially when rare plant populations cannot withstand collection of vouchers.

(4) Investigations should be conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

(5) Investigations should be well-documented. When rare or endangered plants or animals or unusual plant communities are located, a California Native Plant Field Survey Form or its equivalent must be completed and sent to the Natural Diversity

Data Base and a copy attached to the report sent to the Planning and Development Department.

c. Contents of the biological survey. Reports of biological field surveys and reports must contain the following information with the exception of items 10 through 12 which are recommended for inclusion but may not be necessary in all cases.

(1) A detailed map of the project regional location and specific study area;

(2) A written description of the biological setting, referencing the plant community and a detailed map of the vegetation and/or animal habitat areas.

(3) A detailed description of the survey methodology;

(4) The dates and times of field visits;

(5) An assessment of all potential direct and indirect impacts;

(6) A discussion of the status, distribution, and habitat affinities of all special status plants or animals found at the project site;

(7) A discussion of the quality of the habitat considering: its ability to support species diversity, its ability to be self-sustaining (in the context of the surrounding area, not just the project boundaries), how common or rare it is (see Table 3 for example), how good a representative it is (plant community), the degree of previous disturbance, and other history of the site, etc.

(8) Recommended mitigation measures to reduce impacts to the maximum extent feasible and to protect the resource(s) by considering a range of possibilities, including: avoidance, fencing, open space easements, clustering and off-site mitigation;

(9) Suggestions for monitoring and evaluating the effectiveness of the mitigation measures;

(10) Solutions which, when feasible, work toward regional protection of the resources, including: combining open space easements with adjacent ownerships, maintenance of open space corridors; attempting to preserve as much contiguous habitat as possible;

(11) Recommended methods for the restoration of damaged habitats, where appropriate and feasible, and suggested success criteria to be achieved at the end of the proposed monitoring period;

(12) A list of all listed or special status plant or animal species observed or expected to occur on site. A list of additional species observed or expected should also be included. This may be representative of the communities present rather than exhaustive. Division by taxonomic group is not necessary.

(13) Copies of all Natural Diversity Data Base Field Survey Forms sent to Sacramento and Natural Community Field Survey Forms, for sensitive species or communities found on the project site;

(14) The name(s) of the field investigator(s); and

(15) A list of references cited, persons contacted, herbaria and museums visited, and the location of voucher specimens.

C. Biological Habitat Descriptions and Project Design Suggestions.

The following provides brief descriptions of some, though not all, of the habitats occurring in Santa Barbara County, an explanation of the habitat's importance, and project design suggestions for minimizing impacts to habitats, as well as individual plant and animal species. These habitats are by no means the only priority habitats in the County, rather, they represent the habitats where conflicts with land use developments most often occur.

1. Wetlands. All naturally occurring wetlands are considered significant resources because they provide a high number of functional values in a generally dry, arid region, and because of their extremely rare occurrence within the region. Examples include, but may not be limited to coastal salt and brackish marshes, fresh water marshes and vernal pools.

Wetlands, due to the presence of water, support the most diverse assemblages of plants and animals found in the southwestern United States. Because of the high biological productivity in wetlands and the historic elimination of 90 percent of California's wetlands, the highest numbers of threatened and endangered species most often occur here. Wetlands are utilized by a large number of organisms including invertebrate larvae, large mammals and plants that may only survive in wetland areas. Wetlands provide food, cover for protection against predators, and habitat for breeding of some species. Because Santa Barbara County is located along the Pacific Flyway, the County not only has a diverse resident bird population, but also those migrating birds that over-winter in Santa Barbara County (migrants). Wetlands provide seasonal and year-round habitat to several migrating bird species along the Pacific Flyway and fish utilize some of these areas as spawning and foraging habitat.

Wetlands also provide a number of public benefits[1] including: 1) protection of the shore from erosion (typically applicable to marshes, sloughs, and other estuaries), 2) Water Quality/Hydrology which support groundwater recharge, surface water availability, and water purification/filtration, 3) food chain support, 4) nutrient cycling, and 5) Socio-Economic benefits which include aesthetics, ethno-botany, recreation, research, education, economic benefit, etc.

a. Coastal salt marsh.

(1) Description. Coastal salt marshes are restricted to the upper intertidal zone of protected shallow bays, estuaries, and coastal lagoons. Physical conditions are dominated by the tides and variances in elevation which influence the frequency and duration of tidal flooding. The harsh, tidal environment of a salt marsh results in zones of different indicator plants. The environment includes tidal inundations of salt or brackish water, water-saturated soils containing few air spaces and hence reduced oxygen levels, and an environment fully exposed to sun, wide temperature fluctuations, wind, etc. The lowest zone is inundated twice daily; whereas the middle or upper zones may be inundated only once or twice a month, or even by only the highest spring tides (Faber, 1982).

Because tides are so important in providing moisture for coastal marshes, any interruption in tidal circulation can have drastic effects on these communities. The total area of marsh habitat may be correlated with the tidal prism (the total volume of water moving in and out of the slough\marsh\lagoon, etc). As tidal prisms are reduced through sedimentation due to urban and agricultural development or for road construction, the likelihood of closure at the mouth increases. This event can change the soil and water salinity and water levels. This is turn affects many salt-tolerant

[1] Bowland and Ferren (1992), and Sather and Smith (1984)

plants adapted to this type of environment and convert salt-marsh habitat to upland habitats available to species such as the Beldings Savannah sparrow. Additionally, wildlife species such as the tidewater goby, depend on brackish waters to survive.

In addition to sedimentation, increases of fresh water inputs into the system due to urban and agricultural runoff may reduce salinity levels, while upstream dams may have the opposite effect. This runoff may also introduce toxic elements into the marsh such as fertilizers, septic effluent, pesticides, oil, grease, etc. Other potential impacts include changes in depth of enclosed water, elevated temperatures and decreased oxygen from algal blooms often associated with high nitrogen levels from polluting sources. These changes can alter the number and diversity of wildlife species. (Zedler, J. 1982). Development adjacent to the area could also disrupt wildlife behavioral patterns due to noise, neighboring domestic dogs and cats and other physical disturbances.

(2) Project design suggestions.

(a) Maintain tidal prism.

(b) Minimize adverse hydrologic changes, sedimentation, and introduction of any toxic elements.

(c) Timing of construction activity should be carefully planned to minimize indirect impacts such as noise and turbidity on sensitive animal species during critical periods such as breeding and nesting.

(d) Maintain wildlife dispersal corridors.

(e) Enhancement and restoration of salt marshes that can be incorporated into the project include: removal of existing fill, improving tidal circulation through grading, channel excavation, or removing other impediments to circulation, and cleanup.

b. Vernal pools and associated features.

(1) Description. Vernal pools are perhaps the most unique, rare, and endangered type of wetlands in California according to a number of studies cited in the Ferren and Pritchett 1988 report (p. 3). In fact, these wetlands are found only in a few places in the world outside California, namely southern Oregon and in the Cape Province of South Africa (Faber, P. 1982).

A vernal pool is a small depression that fills with water during the winter (gradually drying during the spring and becoming completely dry in the summer) and supports a unique assemblage of plants.

V.L. Holland and David Keil (1990) add: "Vernal pool vegetation is characterized by herbaceous plants that begin their growth as aquatic or semi aquatic plants and make a transition to a dry-land environment as the pool dries. This generally results in the development of concentric rings of vegetation that develop around the margins of the drying pool. Most vernal pool plants are annual herbs. The relatively few perennial species grow from deeply seated rhizomes or rootstocks. Shrubs and trees are absent from vernal pool communities. Some species from vernal pool communities have very showy flowers and act as aspect dominants."

"Vernal Flat" is used to describe areas that are not easily definable as discrete basins (vernal pools) and whose wetland/upland affiliations fluctuate corresponding to

changing precipitation trends from year to year. Following several years of average to above-average rainfall, these tend to support vernal pool species and exclude upland species. Following several years of low rainfall, these areas tend to be characterized by upland species (Olson, 1992).

"Swales" are low moist areas, that when associated with vernal pools, may support vernal pool species including invertebrates (for example: U.S. Fish Section Wildlife Service, 1992). They may also be important because they transport rain water to a vernal pool or complex of pools.

Wildlife species, such as the Western Spadefoot Toad and California Tiger Salamander utilize these seasonal wetlands for breeding and egg-laying during the first rains of the year (December through April). The Tiger Salamander can spend several months in the larval stage, metamorphosing to adult salamanders as late as May through August when the pools dry up and then dispersing to rodent burrows in adjacent grassland areas. Spadefoot toads breed later in the year than tiger salamanders (March through April) and are dependent upon grass pollen and other vegetation for food and to conserve moisture during the tadpole stage. This species also metamorphoses to adults and disperses to surrounding rodent burrows in adjacent grasslands. Furthermore, other amphibians utilize these seasonal ponds as habitat.

Direct and indirect impacts to the pool itself may result in adverse changes to either the physical or chemical properties of the pool. Impacts to the watershed or community in which it functions may also impact the pool. For example, fragmentation of habitat may interrupt interaction between the habitat and the organisms within the pools (pollination, seed, invertebrate and vertebrate dispersal, provision of drinking and bathing water, etc.).

(2) Project design suggestions.

(a) Because vernal pools do not exist by themselves as isolated units, and instead function within a larger plant community such as a grassland, the surrounding upland habitat should be preserved to the maximum degree feasible. If the vernal pools occur in a dispersed pattern throughout an upland community, the entire community should be preserved as one unit.

(b) Design developments to provide a buffer around all vernal pools (with the possible exception of artificially created pools), or include enough of a buffer to protect the topographic watershed, whichever is greater. Typical buffer area: 100-250 feet from edge of pool.

(c) Vernal Pool "complexes" (groupings of several pools have swales according to hydrology and topography) should be avoided and buffered (minimum of 100 feet) or enough of a buffer to protect the topographic watershed of the entire complex, whichever is greater.

(d) Restoration and enhancement can include removal of exotic (non-native) species, planting of appropriate native species (seeding), removal of fill, relocation of foot and bike paths around rather than through the pools, etc.

(e) Disturbance to vernal pools or vernal pool complexes should be timed to avoid breeding seasons of sensitive wildlife species.

c. Riparian habitats.

(1) Description. Riparian habitat is generally considered as the terrestrial or upland area adjacent to freshwater bodies, such as the banks of linear watercourses (e.g.: creeks and streams), the shores of lakes and ponds, and aquifers which emerge at the surface such as springs and seeps (Bowland and Ferren 1992). The habitat is typically thought of as a corridor from stream bank to bank (from edge of riparian vegetation to edge of riparian vegetation) which may include a wetland portion in the center.[2]

Riparian habitat occurs in and along the County's four major rivers (Santa Ynez, Santa Maria, Cuyama and Sisquoc) and in and along the County's many creeks and streams. This habitat can also occur along arroyos and barrancas, and other types of drainages throughout the County.

Riparian habitat is particularly rich in wildlife species, in that water is present at least during some part of the year in these corridors and the dense plants of varying heights provide a diverse food source and safety from predators. In particular, riparian habitat provides forage, cover, water, migration and fawning for Santa Barbara County's resident deer herd. Various types of cover are required by deer including protective cover, for fawning, feeding and resting, escape cover from predators, and thermal cover to provide temperature regulation in the winter and summer. Riparian habitats typically provide all these habitat requirements. Deer also require a variety of food types in their diet, depending upon the time of year and will utilize oak woodlands, chaparral and grasslands adjacent to riparian corridors in order to obtain a sufficient diet. The shade of bank side vegetation can keep a stream cold enough for migratory sport fish such as steelhead trout.

Less obvious species that utilize the riparian corridors are the amphibians that require plunge pools in which to reproduce, seek protection from predation and maintain a constant body temperature. Pool and riffle sequences within streams and creeks are necessary for successful spawning for many species of fish. Specialized bird species such as Cooper's hawks and a great variety of songbirds utilize riparian habitat for breeding, nesting and foraging due to the diversity of structural heights and continuity of vegetation along the drainages.

(2) Project design suggestions.

(a) Incorporate into project design a vegetated buffer from the upland edge of the riparian canopy at least 50 feet in width.

(b) Inclusion of adjacent upland vegetation in the buffer. Upland vegetation is important as habitat for a large number of species, particularly amphibians,[3] and also aids in stabilizing the banks, which reduces erosion and sedimentation potential.

(c) Retain animal dispersal corridors, including the understory.

[2] The Cowardin classification system does not use the term "riparian". Cowardin categories for riparian systems are palustrine and riverine.

[3] Some species such as the western pond turtle may utilize upland habitat as much as 1/4 mile away from the riparian wetland (Sweet 1992).

(d) Construction activity can be planned to avoid critical time periods (nesting, breeding) for fish and other wildlife species.

(e) Careful siting of some projects such as bridges and pipelines can limit the disturbance area to previously disturbed locations.

(f) Restoration or enhancement of riparian habitat on a project site can enhance the ecological value of the creek, stream, or river, both upstream and downstream.

2. Chaparral. Chaparral is composed mainly of woody, evergreen shrubs. It forms extensive shrub lands that occupy most of the hills and lower mountain slopes of Santa Barbara County and throughout California. It is adapted to drought and fire, passing through cycles of burning and re-growth approximately every 30 years. Even though chaparral has no commercial value, it provides the most highly valued watershed cover of any vegetation community in the state (Hanes, 1977). Chaparral occurs throughout Santa Barbara County and is further broken down into a number of categories.

a. Burton Mesa chaparral.

(1) Description. Central Maritime Chaparral, also known as Sandhill or Burton Mesa Chaparral is a unique form of chaparral that is restricted to the aeolian sands of the Orcutt soils formation north of Lompoc. Many of the species unique to Burton Mesa Chaparral are narrowly restricted in distribution (Odion, Storrer and Semonsen 1993, Ferren et. al 1984, Smith 1976, Dames and Moore 1985). Because of the high number of endemic species (many of which are dominants in the community), the unusual oaks, and a rich herbaceous understory, Burton Mesa Chaparral has been recognized as a valuable biological resource by local biologists and the County of Santa Barbara. Various land uses have reduced its original limited extent which has been estimated as follows:

Original Central Chaparral Habitat	22,153 acres
1938 Central Maritime Chaparral	14,563 acres
1987 Central Maritime Chaparral	8,618 acres

In 1988 it was reported that of the 39 percent of original habitat that remains, two-thirds is found within Vandenberg Air Force base, where it is severely threatened by military development and land management practices that have resulted in the invasion of vigorous exotic (non-native) species particularly ice plant. These trends are continuing at a rapid rate (Odion, Hickson and D'Antonio 1992, Philbrick and Odion 1988).

Since the time the 1988 report was written a 5,125 acre property was acquired by the State of California. This land contains roughly 3,250 acres of semi-pristine to pristine, and roughly 150 acres of degraded Central Maritime Chaparral, in addition to substantial acreages of other important plant communities (Odion, Storrer and Semonsen 1993). Mitigation efforts are now being focused on acquisition of adjacent lands and funding of habitat restoration and management within the preserve.

b. Coastal sage scrub.

(1) Description. Coastal sage scrub is a drought-tolerant, Mediterranean habitat characterized by soft-leaved, shallow-rooted sub-shrubs such as California sagebrush, (*Artemisia californica*), several sage species (*Salvia spp.*), California buckwheat (*Eriogonum spp*.), and California encelia (*Encelia californica*) (Bowler,

1990). Commonly called "soft chaparral", Coastal sage scrub is highly fire adapted, and increases in species richness following fires, but a second wave in the number of species (mostly understory species that are not fire successional) occurs 15-25 years after burning (Westman 1987).

Coastal sage scrub and the related coastal succulent scrubs in northern Baja California originally extended from San Francisco to El Rosario in Baja California and has been divided into four floristic associations, two of which occur in Santa Barbara County: Diablan (San Francisco to Point Conception) and Venturan (Point Conception to Los Angeles). Coastal sage scrub is limited to the lower elevations of both the coastal and interior regions of the mountains where moist maritime air penetrates inland.

More than a decade ago it was estimated that 85 to 90 percent of the original coastal sage scrub habitat (Westman, 1981) had been eliminated as a result of urban development and agriculture (O'Leary, 1989). Other factors contributing to loss of this habitat have been reported to be increased air pollution and changes in fire frequency due to fire suppression activities. Coastal sage scrub is being reduced in its overall extent and fragmented by road and urban development particularly in Orange and San Diego Counties.

(2) Project design suggestions.

(a) The basic principles of preserving biodiversity apply to this habitat type. Design the project so that continuous, unbroken habitat areas are preserved to the greatest extent feasible.

(b) Retain corridors to connect with other undisturbed areas to preserve wildlife travel corridor.

(c) Removal of invasive exotic species such as freeway ice plant (Zedler and Scheid 1988) and pampas grass improves the quality of the remaining habitat.

(d) Consider indirect effects of chaparral removal, including reduction of groundwater recharge, increased erosion and sedimentation to adjacent creeks and streams which may affect riparian habitats and wildlife.

(e) Balance between design measures for habitat protection and for fire management.

3. Native grasslands.

a. Description. Native grasslands which are dominated by perennial bunch grasses such as purple needlegrass (*Stipa pulchra*) tend to be patchy (the individual plants and groups of plants tend to be distributed in patches). Valley Grassland in California once occurred over 8 million acres in the Central Valley and in scattered patches along the Coast Ranges (Heady, 1977). Few stands of native grasslands remain in the state and the habitat is considered rare both in the state and within the county. Even among the "pristine" grasslands in the state, the vegetative cover of native grassland species is reportedly rarely greater than 50 percent, and in many of these reserves it is commonly found between 15 and 25 percent of the total vegetative cover (Keeler-Wolf, 1992). A study commissioned by the County in 1989 reported that native grassland areas are exceedingly rare in the County, except on the Channel Islands and inside Gaviota State Park (Odion, 1989).

b. Project design suggestions.

(1) Design the project so that continuous habitat areas are preserved to the greatest extent feasible.

(2) Incorporation of restoration and enhancement measures, including weeding, intentional burning, revegetation (planting of seeds or plugs), or other procedures will facilitate natural regeneration of the grassland.

4. Woodlands and forests.

a. Description. Generally speaking, there are three types of oak woodlands in Santa Barbara County. Valley Oak Woodland is typically characterized by scattered trees surrounded by grassland, whereas trees in live oak and blue oak woodlands tend to be more closely spaced. Coast Live Oak (*Quercus agrifolia*) forms dense groves of trees on north-facing slopes and is the primary oak species found in southern oak woodlands. Deep alluvial soils in interior valleys support grasslands and Valley Oak Woodland (*Quercus lobata* and *Quercus agrifolia*). The foothills of the inner coast ranges are inhabited by Blue Oak (*Quercus douglasii*), Coast Live Oak (*Quercus agrifolia*), Digger Pine (*Pinus sabiniana*), and other components of blue oak woodland. The number, type, and density of oak trees, are principal characteristics which define the various types of woodlands; further, the relationship between trees and vegetation in the understory below in woodlands also define variety in woodland habitats. In addition to oak forests, a variety of pine and other coniferous forests also occur in the county. Oak communities are emphasized in the following discussion because they so frequently occur in the same areas in which developments are proposed.

Oak habitats offer diverse resources to wildlife: shade in summer, shelter in winter, perching, roosting, nesting, and food storage sites. Acorns are the most plentiful food source, but oak catkins, twigs, leaves, buds, sap, galls, fungi, lichens, and roots all provide important foods. Other species associated with the oak woodland include redberry, coffeyberry, toyon, mistletoe, poison oak, forbs and grasses which are also important foods for wildlife. Insects feeding in oak habitats are eaten by birds, reptiles, amphibians, mammals and other insects which in turn feed larger predators such as owls, hawks, snakes, bobcats, coyotes, mountain lions and bears. Some oak trees are "granary trees" in which acorn woodpeckers store acorns. Scrub jays and magpies inadvertently "plant" acorns when they store them in the ground. Dead trees, or snags, provide perching, feeding and nesting sites for raptors as well as thermal cover for smaller mammals, reptiles and amphibians. Oaks provide wildlife habitat from the seedling through the snag (dead tree) stages of succession in the woodland. This habitat type supports a diverse wildlife population, and disruption of the woodland often indirectly results in disrupting wildlife breeding, nesting, foraging, and dispersal.

b. Project design suggestions for Woodlands and Forests.

(1) Retain contiguous blocks of habitat area particularly where adjacent to offsite habitat areas.

(2) Retain animal migration corridors to other habitat areas.

(3) Retain understory.

c. Project design suggestions for individual native trees.

(3) Avoidance. The preferred method of protecting native trees is to avoid any disturbance within the area 6 feet away from their driplines (the outermost edge of a

tree's foliage) and drainage patterns above and below the tree. Although the stabilizing structural roots generally occur within the dripline, numerous and highly significant "feeder roots" which facilitate gas and water exchange and uptake of nutrients occur outside the dripline.

For management purposes, it is useful to think of a tree's root zone as being one third larger than the drip line area (University of California Cooperative Extension, no date). As a general rule, avoid grading and impervious surfaces within 6 feet of the dripline of all significant trees where ever feasible. This may be adjusted upwards or downwards depending on the size of the tree. It is advisable to include a margin of safety to account for unintentional errors during the construction phase of the project. The most vulnerable parts of a mature tree are the root crown (at the base of the trunk) and the entire root zone.

(2) Broad scale irrigation. Avoid irrigation with rainbirds beneath previously un-irrigated oaks because it is likely to create conditions favorable to oak root fungus. It is advised that irrigation water, if necessary, be infrequent (i.e., once a week), be done by hand or drip method (Semonsen 1992, Doud 1992), and be no closer than 6 to 10 feet (depending on the size) from the trunk of the tree.

(3) Hard surfaces. Any hard surfaces under oaks would better consist of paving blocks or other material which will allow air and rain water to reach the roots.

(4) Ground disturbance. As a general guideline, disturb no more than 20 percent of the total area beneath the dripline of any one tree.

d. Project design guidelines for non-native trees

(1) Monarch butterfly wintering sites can be preserved by keeping the grove of trees in a state so that shelter from wind and temperature extremes are retained. This may include other trees outside the main grove that affect wind exposure.

(2) Where possible, preserve other non-native trees that have value to important wildlife species.

D. Biological Mitigation Measures.

Please refer to the conditions of approval or mitigation measures in the biology section of the Santa Barbara County *A Planners Guide to Conditions of Approval and Mitigation Measures* which contains a listing of model measures containing standard language used when such measures are applied as conditions of permit approval. Please note that these measures are not applicable to all cases and projects. In addition, the wording of measures may be customized as appropriate to address specific project circumstances.

REFERENCES

Adams, L.W. & Dove, L.E. 1989. Wildlife Reserves and Corridors in the Urban Environment, A Guide to Ecological Landscape Planning and Resource Conservation. For the U.S. Fish and Wildlife Service, U.S. Department of the Interior.

Adams T.E. Jr., No date. Oak Seedling Mortality: Some Causes and Prevention.

Bailey, James A. 1984. Principals of Wildlife Management. Colorado State University.

Baird, Kathryn 1989. High Quality Restoration of Riparian Ecosystems. CALTRANS District 11. Published in "Restoration & Management Notes" Vol. 7, No. 2. Society for Ecological Restoration. Madison, Wisconsin.

Barbour, Burk and Pitts 1980. Terrestrial Plant Ecology. The Benjamin/Cummings Publishing Company, Inc. Menlo Park, California.

Borchert, M.I., Davis, F.W., Michaelsen, J. and Oyler, L.D. 1989. Interactions of factors affecting seedling recruitment of blue oak (Quercus douglasii) in California. Ecology 70: 389-404.

Bowland, Jackie and Wayne R. Ferren, Jr. August 1992. "Draft Wetland Classification and Environmental Analysis for the Dos Pueblos Golf Links." Prepared for ARCO Oil and Gas Company, Goleta, California.

Bowler, Peter 1990. Coastal Sage Scrub Restoration-I: The Challenge of Mitigation. Published in "Restoration & Management Notes" Vol. 8, No. 2. Society for Ecological Restoration. Madison, Wisconsin.

Brown R. and Davis F. 1991. Historical Mortality of Valley Oak (Quercus lobata, Nee) in the Santa Ynez Valley, Santa Barbara County, 1938-1989. USDA Forest Service Gen. Tech. Rep. PSW-126.

California Coastal Commission, 1981. Statewide interpretive guidelines for wetlands and other wet environmentally sensitive habitat areas. Adopted February 4, 1981.

California Department of Fish and Game, 1992(a). Significant Natural Areas of California 1992 Summary. Lands and Natural Areas Program.

California Department of Fish and Game, 1992(b). Letter to Jeff Harris, Resource Management Department, regarding Draft Biological Thresholds.

California Department of Fish and Game, 1987. Department of Fish and Game Recommended Wetland Definition, Mitigation Strategies, and Habitat Value Assessment Methodology. Presented by Glenn Rollins, Environmental Services Supervisor in public workshop to the Fish and Game Commission on June 24, 1987, Sacramento.

California Department of Fish and Game, 1984. Guidelines for Assessing Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities.

California Native Plant Society, 1988. Inventory of Rare and Endangered Vascular Plants of California. Special Publication No. 1; Fourth Edition. Sacramento, California.

California Native Plant Society, 1991. Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants. By CNPS Rare Plant Scientific Advisory Committee.

Callaway Ragan M. 1990. Effects of Soil Water Distribution on the Lateral Root Development of Three Species of California Oaks. American Journal of Botany 77(11): 1469-1475.

Callaway Ragan M. in press. Effects of Shrubs on the Recruitment of Quercus douglasii and Quercus lobata in Central California. Department of Biological Sciences, University of California, Santa Barbara, CA 93106. Ecology.

Chadwick, Douglas 1992. "U.S. Imperative: Networking Habitats". Defenders Magazine. Vol. 67, Number 5.

Collins, Paul 1992. Letter to Jeff Harris, County of Santa Barbara, Resource Management Department; Comments on Preliminary Draft Thresholds.

Cowardin, Carter, Golet and LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. Office of Biological Services, Fish and Wildlife Service, U.S. Department of the Interior.

Craul, Phillip J. 1992. Urban Soil: Problems and Promise. Fremontia. Volume 20 No. 4. California Native Plant Society.

Cummings, Earle W. and Stephen J. Nicola, 1986. Guidelines for Consulting with the Department of Fish and Game on Projects Subject to CEQA that May Affect Endangered and Threatened Species California Department of fish and Game; Environmental Services Division. Administrative Report 86-1.

Dames and Moore 1985. Biological Investigations, Double J Ranch, Los Olivos, California. Prepared for Double J Enterprises. Contained within McClelland Engineers 1986, 86-EIR-7, prepared for Santa Barbara County Resource Management Department.

Danielsen, K.C. 1990. Seedling Growth of Quercus lobata Nee (valley oak) and the Competitive Effects of Selected Grass Species. Thesis, California State University Los Angeles, U.S.A.

Davis F., 1992a. Telecommunication with Elihu Gevirtz, Resource Management Department, April.

Davis F., 1992b. Quoted in Santa Barbara News Press, March 29. "Oaks May be Dying Breed in the Santa Ynez Valley".

Doud, Ken, 1992. Floribunda Gardens, Santa Barbara, California, personal communication.

Faber, P. 1982, Common Wetland Plants of Coastal California: A Field Guide for the Layman. Pickleweed Press.

Faber and Holland 1988, Common Riparian Plants of California, A Field Guide for the Layman. Pickleweed Press.

Ferren W., Forbes H., Roberts D., Smith D. 1984. The Botanical Resources of The La Purisima Mission State Historic Park. Herbarium Publication No. 3, University of California, Santa Barbara.

Ferren W. and Gevirtz E. 1990. Restoration and creation of vernal pools: cookbook recipes or complex science? In D.H. Ikeda and R.A. Schlising [ed.s], Vernal pool plants-their habitat and biology, 89-107. Studies from the Herbarium No. 8, California State University, Chico.

Ferren W. and Pritchett D., 1988. Enhancement, Restoration, and Creation of Vernal Pools at Del Sol Open Space and Vernal Pool Reserve, Santa Barbara County, California. Environmental Research Team, The Herbarium, Environmental Report 13, Department of Biological Sciences, University of California, Santa Barbara.

Gibbons, Boyd, Director of the California Department of Fish and Game, January 7, 1992. Letter to Mr. Jim Burns, Assistant Executive Director California Coastal Commission regarding DFG Wetland Identification Procedures.

Griffin and Critchfield 1972. The Distribution of Forest Trees in California. USDA Forest Service Research Paper PSW-82/1972.

Heritage Oaks Committee, 1977. Native Oaks: Our Valley Heritage; A Guide to the Botany, Care, and Planting of Native Oaks in the Sacramento Valley. Sacramento, California.

Holland, Robert F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California, California Department of Fish and Game, Nongame Heritage Program

Holland V.L. and D.J. Keil 1990. California Vegetation. 4th Edition. Biological Sciences Department California Polytechnic State University San Luis Obispo, California.

Holland and Griggs, (date unknown). A Unique Habitat: California's Vernal Pools. Fremontia; California Native Plant Society.

Holland and Jain 1977. Vernal Pools. In Barbour and Major [eds], Terrestrial Vegetation of California, 515-533. Wiley-Interscience, New York

Howald, Ann M. and Laurie Parendes Wickenheiser 1990. Mitigation Plan Annotated Outline for Endangered Plants of California. California Department of Fish and Game, Natural Heritage Division; Endangered Plant Program.

McCreary, D. 1990. Seasonal Growth Pattern of Blue and Valley Oak Seedlings Established on Foothill Rangelands. Presented at Oak Woodlands and Hardwood Rangeland Management: A Research Symposium, October 31-November 2, 1990. University of California, Davis.

Menke, John W. 1992. Grazing and Fire Management for Native Perennial Grass Restoration on California Grasslands. Fremontia, Vol. 20, No. 2, California Native Plant Society.

Morro Group, The. 1989. Final Environmental Impact Report: Kelly-Gausman Land Division (89-EIR-2); Vandenberg Village, Santa Barbara County. Prepared for Santa Barbara County Resource Management Department.

Odion, Dennis, John Storrer and Vincent Semonsen. 1993. Biological Resources Assessment: Burton Mesa Project Area, Santa Barbara County, California. Prepared for the Santa Barbara County Resource Management Department.

Odion, Dennis, Diana Hickson and Carla D'Antonio. 1992. Central Coast Maritime Chaparral on Vandenberg Air Force Base: an inventory and analysis of management needs for a threatened vegetation type. Prepared for The Nature Conservancy.

Odion, Dennis. 1989. Native Grassland Resources in Santa Barbara County: An Evaluation of Preserve Sites and Mitigation Policy.

Olson, Mark 1992a. Botanical Resources of the Camino Corto Vernal Pool Parcel, Isla Vista, California. A report presented to The Santa Barbara County Resource Management Department. 30 April 1992.

Olson, Mark 1992b. Vernal Pools of Northern Santa Barbara County, California. A report presented to the Santa Barbara County Resource Management Department. The Herbarium, Department of Biological Sciences, University of California at Santa Barbara, CA. 30 September 1992.

Perry Thomas O. 1992. Tree Roots: Facts and Fallacies. Fremontia, Volume 20, No. 4. California Native Plant Society.

Philbrick R. 1992. "Assessment of Rare Plants and Sensitive Vegetation for Solvang 594." Prepared for Santa Barbara County Resource Management Department.

Philbrick R. and Odion D. 1988. Analysis of Preserve Sites for Burton Mesa Chaparral. Prepared for Santa Barbara County Resource Management Department.

Reed, Porter B. 1988. National List of Plant Species that Occur in Wetlands: California (Region O). U.S. Fish and Wildlife Service. Biological Report 88 (24).

San Francisco Bay Conservation and Development Commission 1987. Mitigation Practices Guidebook.

Santa Barbara County Resource Management Department 1992. Santa Ynez Valley Biological Habitat Map.

Santa Barbara News Press. 1993. "California Gnatcatcher Tests Clinton on Endangered Species". March 26.

Sather, J.H. and R.D. Smith 1984. An Overview of Major Wetland Functions and Values. U.S. Fish and Wildlife Service. FWS/OBS-84/18.

Semonsen, Vincent 1992. Comments on Draft Biological Thresholds. Dec. 6.

Sidle, John G. and David B. Bowman, Endangered Species Division, U.S. Fish and Wildlife Service, 1988. Habitat Protection Under the Endangered Species Act. *in* Conservation Biology, Volume 2, No. 1, pp. 116-118.

Smith, C. 1976. A Flora of the Santa Barbara Region, California. Santa Barbara Museum of Natural History, Santa Barbara, California.

Soiseth Chad, Sheila Wiseman, and Scott D. Cooper 1992. Faunal assemblages in vernal pools: evaluating the effectiveness of restoration efforts. Lecture presented at A Symposium: Restoration and Creation of Wetlands in Coastal Central and Southern California. The 73rd Annual Meeting, Pacific Division, AAAS; University of California, Santa Barbara.

Steven Craig and Associates, 1984. Rancho Saguaro Environmental Impact Report; 84-EIR-5. Prepared for Santa Barbara County Resource Management Department.

Stone, R. D. 1990. California's endemic vernal pool plants: some factors influencing their rarity and endangerment. In D.H. Ikeda and R.A. Schlising [ed.s], Vernal pool plants-their habitat and biology, 89-107. Studies from the Herbarium No. 8, California State University, Chico.

Storrer, John 1992. Letter to Elihu Gevirtz, County of Santa Barbara, Resource Management Department; Comments on Preliminary Draft Thresholds.

Storrer and Semonsen Environmental Services 1988. Biological Resource Evaluation: 1200 North Ballard Canyon Road, Santa Barbara County, California. (Consulting Botanist: Katherine Rindlaub)

Sudworth G. 1967. Forest Trees of the Pacific Slope. Dover Publications, Inc., New York, New York. First published in 1908 by the U.S.D.A.

Sweet, Sam. 1993. Personal communication with Elihu Gevirtz.

Sweet, Sam. 1992. *"Riparian Riches" Lecture*. April, Goleta Library.

Tate, J. 1986. The Blue List for 1986. American Birds 40(2) 227-236.

Tierney, R. 1991. 4th Year Progress Report: Off-Site Mitigation All American Pipeline Long-Term Revegetation. Santa Barbara California. November. Prepared for County of Santa Barbara Resource Management Department, Energy Division.

University of California Cooperative Extension, no date. Living Among the Oaks: A Management Guide for Landowners. Natural Resources Program, Berkeley.

U.S. Army Corps of Engineers and U.S. Environmental Protection Agency 1990. Memorandum of Agreement Between the [EPA] and the Department of the Army Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines.

U.S. Bureau of Land Management, U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. National Park Service, University of California, California Resources Agency, California Department of Fish and Game, Forestry and Fire Protection, Parks and Recreation and the State Lands Commission, no date. Memorandum of Understanding California's Coordinated Regional Strategy to Conserve Geological Diversity: "The Agreement on Biological Diversity".

U.S. Fish & Wildlife Service, Department of the Interior, 1991a. Endangered and Threatened Wildlife and Plants. 50 CFR 17.11 & 17.12. July 15.

U.S. Fish & Wildlife Service, Department of the Interior, 1991b. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. 50 CFR Part 17 Federal Register. November 21.

U.S. Fish & Wildlife Service, Department of the Interior, 1992.

Notice of Proposed Endangered Status for Four Fairy Shrimp and Vernal Pool Tadpole Shrimp Endemic to Vernal Pools and Swales in California. May 14.

Uram, Robert. 1991. *California Wetlands Seminar*. University of California, Santa Barbara.

West, Susan. 1991. Preserving Cougar Country: A Guide to Protecting Mountain Lion and Deer Habitat in California. For the Mountain Lion Foundation.

Wetland Training Institute, Inc. 1991. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual. WTI 91-2. 133pp.

Wilcove, David, Margaret McMilan and Keith Winston 1993. "What Exactly is an Endangered Species? An Analysis of the U.S. Endangered Species List: 1985-1991." *In* Conservation Biology, Volume 7, No. 1.

Wiskowski, Tara 1988. Sensitive Plants of Santa Barbara County. Prepared for the Division of Environmental Review, Resource Management Department, Santa Barbara County

Work G. No date. Observations and Questions from the Work Ranch. San Miguel, California.

Zedler, Joy. 1982. The ecology of southern California coastal salt marshes: a community profile. U.S. Fish and Wildlife Service, Biological Services Program, Washington, D.C. FWS/OBS-81/54.

Zedler, Joy. and R. Langis 1991. Authenticity: Comparisons of Constructed and Natural Salt Marshes of San Diego Bay. Restoration and Management Notes Vol. 9, No. 1. Society for Ecological Restoration. Madison, Wisconsin.

Zedler, Paul 1987. The ecology of southern California vernal pools: a community profile. U.S. Fish and Wildlife Service Biological Report 85 (7.11).

Zedler, Paul. and Scheid G.A. 1988. Invasion of Carporbrotus edulis and Salix lasiolepis after Fire in a Coastal Chaparral Site in Santa Barbara County, California. Madrono 35: 196-201.

APPENDIX B TO THE ENVIRONMENTAL THRESHOLDS AND GUIDELINES MANUAL:

FIELDWORK AND REPORTING GUIDELINES FOR CULTURAL RESOURCES

COUNTY OF SANTA BARBARA
GUIDELINES FOR DETERMINING THE SIGNIFICANCE OF AND IMPACTS TO CULTURAL RESOURCES:

ARCHAEOLOGICAL, HISTORIC, AND TRIBAL CULTURAL RESOURCES

PURPOSE

These Cultural Resources Fieldwork and Reporting Guidelines for development review, fieldwork, and reporting provide direction for conducting cultural resource investigations and preparing reports for discretionary projects being processed by the Santa Barbara County Planning and Development Department. These guidelines are designed to:

Make clear the County's requirements for conducting cultural resource investigations in the context of environmental review of development project applications pursuant to the California Environmental Quality Act (CEQA) and other applicable regulations and policies.

Ensure the quality, accuracy and completeness of cultural resource investigations and reports. Reporting structure is based on the State of California's Archaeological Resource Management Report format with modifications to fulfill County requirements. Depending on the types of resources and impacts identified, the format may vary and all elements may not be required.

Aid in staff's efficient and consistent review of maps and documents from different consultants.

Provide adequate information to make appropriate planning decisions and to make determinations regarding conformance with applicable regulations.

Increase the efficiency of the environmental review process and avoid unnecessary time delays.

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ATTACHMENTS

1. INTRODUCTION

This document guides planners and consultants conducting environmental review of cultural resources within the jurisdiction of the County of Santa Barbara, and in the preparation of technical studies that are the result of the application of the County's Guidelines for Determining the Significance of and Impacts to Cultural Resources: Archaeological, Historic, and Tribal Cultural Resources ("Guidelines"). This document is also intended to help County planners understand and review consultants' documents. Requirements described herein apply to both archaeological and historic resources. Reporting requirements are based on the Archaeological Resource Management Report (ARMR) format and content guidelines developed by the California Office of Historic Preservation (1990), Historical Resources Guidelines developed by the City of San Diego (2001), and the County of San Diego Report Format and Content Requirements (2007), but has been modified to address the best practices currently in use in Santa Barbara County. The intent of these guidelines is to ensure consistency in the investigation, reporting, and management of cultural resources including identification, evaluation, and preservation and/or mitigation. Please note that evidence that a copy of all cultural resources technical reports have been submitted to the Central Coast Information Center (CCIC) at UCSB is required prior to issuance of the first permit for the project.

2. DEVELOPMENT REVIEW

County Guidelines provide the context for development review; the following sections provide the nuts and bolts for County planners conducting California Environmental Quality Act (CEQA) review of discretionary development project permit applications. It is important to note that projects that require a Land Use Permit or Coastal Development Permit, which are usually exempt from CEQA review, are not exempt if the project for which the permit will be issued may have substantial adverse impacts to significant cultural resources. As noted in the Guidelines, historic resources are defined as the "built environment", are non- archaeological in nature, and are generally at least 50 years old. Archaeological resources are defined as the surface and subsurface remains of sites no longer in use or maintained in which evidence of past activity is preserved, and may be either prehistoric or historic, or both (Native American and European).

2.1 Consultants

Consultants (Principal Investigator) must be approved to work on development projects within the jurisdiction of the County. Reports submitted where the Principal Investigator is not an approved consultant will be subject to peer review, and may be rejected as incomplete. The County maintains a list of approved consultants (G:\GROUP\P&D\Consultants List\ConsultantsList.pdf)

2.2 Native American Participation

Native American consultation is described in Section 1.4 of the Guidelines. In addition to the requirements of SB 18 and AB 52, Native American involvement in development projects is required when prehistoric and contact and/or historic period Native American cultural resources are known to be present, and may include consultation and / or monitoring. Monitoring may also be required in situations where significant resources are not present, but the possibility exists that undiscovered resources may be encountered.

2.3 Planner Development Review Process

The development review process consists of identifying cultural resources within the boundaries of the project, including any off-site improvements associated with the project. This section provides guidance as to the County's expectations regarding project design and how a typical cultural resource investigation is to be conducted. Cultural resource investigations are typically conducted in phases (1, 2, and 3), with Phase 1 associated with identification efforts, Phase 2 associated with evaluation of significance and assessment of effects, and Phase 3 with mitigation. Not all phases are necessary for every project, and in some cases phases can be modified or combined. For example, a Phase 1 study may be expanded to include subsurface exploration, which is called an Extended Phase 1. In rare cases, Phases 2 and 3 can be combined. Please refer to Section 1.3.3 of the *Guidelines for Determining the Significance of and Impacts to Cultural Resources: Archaeological, Historic, and Tribal Cultural Resources* and Section 3.1 of this document for additional discussion of these phases of investigation.

2.3.1 Project Design

CEQA statute Section 21083.2(b) and County Comprehensive Plan Land Use Policy 5, as well as various Community Plan policies, require that reasonable efforts be made to preserve important cultural resources in place; therefore, project design is essential to achieving this goal. The design of a project should avoid, or incorporate cultural resources into open space, whenever possible. If the project proponent, consultant, and County staff agree to waive significance testing on cultural sites, those resources will be treated as significant and must be preserved through project design.

2.3.2 Cultural Resource Identification

County staff will make a determination based on available information whether a survey of the property for cultural resources is necessary. In addition to site visits, maps, aerial photos, cultural reports, and other documents that may be available in house, staff should also consult the Historic Resources Database, available on PhotoMapper, which contains information on potential and known historic resources.

Historic Resources. For the built environment, it is usually not necessary to do a formal survey to identify whether a potentially significant resource is present, as this information is typically known at the time a development application is submitted. Potentially significant historic resources may be identified through previously completed neighborhood surveys or individual historic resource inventories, or based on of the structure's age. If the property contains built features over 50 years of age whose significance has not been assessed, the planner will request a Phase 1 Historic Resource Study at project scoping (also see Section 2.3.3, below).

Archaeological Resources. For archaeological resources, if no or insufficient information is available to determine the need for a survey, staff will make an initial request for property-specific information from the Central Coast Information Center [CCIC] at UCSB where the California Historical Resources Information System [CHRIS] database is maintained. If a cultural resources survey is required, the applicant will be informed at project scoping. The applicant will then retain a professional cultural resources consultant who will conduct a full record search at the CCIC prior to surveying the property for cultural resources. This record search is optional for historic resources (i.e., the built environment) investigations. If an archaeological survey of the project property is required, it shall be conducted in such a manner as to determine whether cultural resources are absent or present within the project area. In some cases, such as alluvial depositional contexts or when surface visibility is inadequate, pedestrian survey may not be sufficient. In those cases, subsurface testing may be warranted despite the completion of a negative pedestrian survey. County staff will also contact the Native American Heritage Commission (NAHC) to identify potentially interested tribes, and P&D will notify those tribes of upcoming circulation of the environmental document for the project. If an archaeological survey has been completed, the resulting report will be provided to tribes or other NAHC-recognized Native Americans upon request.

No Prior Survey. Project properties that have not been previously completely surveyed for archaeological resources require a Phase 1 investigation as described above, unless conditions on the ground have been disturbed such that there is no possibility of the presence of cultural resources. Appropriate records, such as prior grading plans, will be required to demonstrate the extent of prior disturbance. Note that prior agricultural uses such as vineyards or cultivation of other crops do not preclude the potential for significant resources to be present. For the built environment, previously unevaluated features greater than 50 years of age require completion of a Phase 1 study to assess whether or not the resource is potentially significant.

Prior Survey. Normally, projects with a prior archaeological survey that is 10 years old or less may use the previous study, if the methods used for that survey meet the current standards. Surveys older than 10 years often used lower standards and should be repeated. If a previous study was sufficient, an addendum to the prior report must be completed that (1) updates all graphics to match the current development project; (2) discusses any change in interpretation, impacts, or mitigation; and (3) identifies changes in circumstances or new information of substantial importance that cause one or more effects to cultural resources. In addition, the addendum should identify whether cultural material was collected as part of the previous survey, and if so identify the location of the collection. Projects will be conditioned with the requirement of curation for any collection associated with prior studies that have not been curated. Negative surveys of adjacent or nearby properties, or negative surveys of only a portion of the subject property, will not be accepted as evidence that no cultural resources are present and a survey will be required.

Negative Survey. Negative archaeological surveys do not require a full cultural resources report. Instead a negative archaeological letter report is acceptable. Section 4.2, below, provides a negative archaeological letter report outline and content requirements, and an example template is provided in Attachment 2. Negative reports must be submitted to both the County (as a part of application processing) and the Central Coast Information Center (CCIC) at the Department of Anthropology, UCSB. Reports must be submitted to the CCIC prior to issuance of the first permit for the project.

Positive Survey. Positive surveys (i.e., those that identify significant or potentially significant cultural resources within the project area) require a "full" cultural resources survey report as detailed below in Sections 4.1 (Archaeological Technical Report) and 4.3 (Historic Resources Technical Report).

2.3.3 Cultural Resource Evaluation and Assessment of Project Impacts

If cultural resources cannot be avoided through project design or incorporation into open space, evaluation of resource significance will be required. For archaeological resources, significance evaluation and assessment of project impacts occurs as part of Phase 2. Evaluating resource significance and assessing impacts are detailed in the Guidelines. Note that significance evaluations are not required for resources that have been evaluated for CEQA significance in the past 10 years and there has been no change in the conditions which contributed to the determination of resource importance. Significance evaluation is also not required when significance is assumed in the absence of testing and the resources are placed in open space. However, archaeological resources that are placed in open space and will be capped should have subsurface index samples collected, since future research access will likely be precluded. In addition, site boundaries for these resources must be defined to determine whether they extend beyond the area designated for open space. Boundary definition will require subsurface probing unless the site is wholly contained on an exposed surface such as bedrock or a deflated surface. Resources should be re-evaluated if their condition or setting has improved or deteriorated, if new information is available, or if the resource is becoming increasingly rare due to the loss of other similar resources. Resource evaluation includes determining resource importance, assessing project impacts, identifying appropriate mitigation measures, and identifying the significance of impacts after implementation of mitigation. The following sections outline and provide guidance for these topics.

For historic resources (i.e., the built environment), the evaluation of resource significance takes place in Phase 1. If the resource is determined not to be significant, the report simply presents that conclusion supported by substantial evidence and no further research is necessary. If the historic resource is assessed as significant, the report may be expanded into a Phase 2 report that evaluates project impacts and proposes appropriate mitigation. It is also acceptable to create a stand-alone Phase 2 historic resources report and include the Phase 1 report as an appendix.

2.3.4 Cultural Resource Mitigation Measures

Section 3 of the Guidelines discusses mitigation and design considerations. Mitigation must be proposed for any project that has the potential to impact important cultural resources. The determination of mitigation measures is based on resource significance and the type (direct, indirect, cumulative) and severity of the impact. The focus of mitigation is the preservation, data recovery, and curation of the information that these resources contain that would otherwise be destroyed or lost due to construction and development activities. Avoidance and preservation in place is always the preferred mitigation approach.

For archaeological resources, mitigation may include data recovery excavations, often referred to as a Phase 3 investigation. A report of the results of such excavations, including any specialized studies, is prepared and all artifacts and project records are curated at an appropriate local curation facility at the applicant's expense. Projects may also be conditioned to include measures when archaeological resources are not identified but their presence is possible. For example, grading monitoring may be required when cultural resources are possibly present on a project site, or areas of a project site, but were not identified during fieldwork. Mitigation may also include measures to protect off-site resources even though the project does not propose development in that area. For example, a project proposes development adjacent to a known archaeological site (no development within the site boundaries). To mitigate for potential impacts to this resource, grading monitoring and temporary fencing may be made conditions of project approval. Grading monitoring in and of itself does not constitute an adequate mitigation measure for known or newly discovered cultural resources. If grading monitoring does result in the discovery of previously undiscovered cultural resources, all grading work should cease and County Planning and Development staff should be immediately contacted in order to determine the appropriate next steps.

For historic resources, avoidance and preservation in place, including restoration or rehabilitation of the structure, is always the preferred mitigation. Adaptive reuse and or relocation of a historic structure may also be an appropriate mitigation measure, but the appropriateness of such mitigation must be evaluated on a case-by-case basis. CEQA (CEQA Guidelines Section 15064.5(b)(3)) recognizes that a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Building or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (Weeks and

Grimmer, 1995) shall be considered as mitigated to a level of less than a significant impact on the historical resource. In addition, Historic American Buildings Survey /Historic American Engineering Record (HABS/HAER) documentation, or documentation similar to HABS/HAER may also be appropriate mitigation.

Note that the County does not normally consider HABS/HAER documentation alone as adequate mitigation for the destruction of significant historic resources (structures). In the case of Architectural Heritage Association v. County of Monterey, 122 Cal.App.4th 1095 (2004), it was found that "archival documentation cannot normally reduce destruction of an historic resource to an insignificant level." Also in the case of League For Protection of Oakland, 52 Cal.App.4th 896 (1997), the Court of Appeal held that the historic resources of the building to be demolished "normally cannot be adequately replaced by reports and commemorative markers." Therefore, documentation alone may not be an adequate mitigation measure to reduce the impact to less than significant. In such cases, where the historic resource is not being preserved, it may be necessary to identify the impact as significant and unavoidable.

3. ARCHAEOLOGY FIELDWORK GUIDELINES[32]

This section provides guidance for consultants conducting cultural resources investigations supporting County environmental review, and simultaneously provides benchmarks for planners that are reviewing the resulting reports to ensure that the efforts were sufficient. This section considers all three phases of cultural resources studies. Most of these guidelines are based on a cultural resources management plan prepared for Vandenberg Air Force Base[33].

3.1 Resource Identification (Phase 1)

Identification efforts must begin with background research to determine what efforts have previously been completed in and near the project, and to determine whether cultural resources have previously been recorded in and near the project. As part of that effort for archaeological research, consultants will request the Native American Heritage Commission (NAHC) to conduct a Sacred Lands search as part of the background research effort. Local Native American groups identified by the NAHC should be contacted to determine whether they have any information regarding sensitive cultural resources in or near the project. The resulting technical report should contain evidence of the NAHC consultation and evidence that local groups were contacted and consulted. In some instances, formal consultation with tribes by the County is required pursuant to SB 18 and AB52. SB 18 consultation is required for projects that include a General Plan amendment. See also the discussion of AB 52 consultation in Section 1.4.2 of the *Guidelines for Determining the Significance of and Impacts to Cultural Resources: Archaeological, Historic, and Tribal Cultural Resources.*

A record search is also required at the Central Coast Information System at the University of California, Santa Barbara, which is part of the California Historical Resources Information System (CHRIS). The record search should include not only the project area, but also the surrounding radius within half a mile of the project. Proof that this research was completed must be contained in the Phase 1 report. In areas of very high site densities, the half mile radius may be reduced to one quarter mile. For historic resources and historical archaeological resource identification, background research should include review of historic maps and aerial images (see http://mil.library.ucsb.edu/ap_indexes/FrameFinder); the Santa Barbara Historic Museum (the Gledhill Library); the Santa Barbara County Assessor's office; the National Register of Historic Places; the California Register of Historical Resources; the California Inventory of Historic Resources; and California Historical Landmarks.

Fieldwork for a Phase 1 archaeological investigation will minimally include a pedestrian survey of the ground surface. A survey should encompass the entire project area although impenetrable brush and/or steep slopes (greater than 30 percent) can result in less than complete survey coverage. If survey coverage is less than 100 percent, a map in the survey report should show the survey coverage and explain why certain areas were not covered. Surface survey should use parallel transects spaced no more than 15 meters apart. For small project area of less than an acre, survey transects should be

[32] Fieldwork guidelines are not provided for built environment resources.
[33] Lebow, Clayton G., and Michael J. Moratto, 2005, *Management of Prehistoric Archaeological Resources*. Vandenberg Air Force Base Integrated Cultural Resources Management Plan, Vol. 5, edited by Michael J. Moratto and Barry A. Price. Applied EarthWorks, Inc., Fresno, California. Submitted to U.S. Air Force, 30 CES/CEVPC, Vandenberg Air Force Base, California.

narrower. Project parameters can also dictate transect intervals. For example, a narrow linear project such as a fiber-optic cable installation, may warrant narrower transect spacing. Transect intervals should be noted in the survey report. The type of vegetation or ground cover (structures, pavement etc.) should be described throughout the project site and the resulting ground surface visibility estimated in percentage of ground surface visible. If ground visibility is poor, surveyors should take advantage of soil exposures during the survey, even if it means departing from the transect. Surveyors should also examine road cuts, creek banks, rodent burrows, previously excavated soils, and other exposures that would inform on potential buried site deposits. Photographs should be taken during the survey to document the setting, and daily notes should be taken to describe factors that may affect the survey outcome such as the weather, the terrain, surface visibility, and vegetation.

As defined in the Vandenberg Integrated Cultural Resources Management Plan, a prehistoric site is a place with three or more associated artifacts. Associated artifacts should be no more than 30 meters from other artifacts. A site is also defined by the presence of one or more features, with or without artifacts. All observed archaeological sites will be documented on California Department of Parks and Recreation 523 forms, minimally including a Primary Record (523A) and an Archaeological Record (523C).Of course, some cultural resources, such as cultural landscapes or sacred places, may not have any artifacts present. If the artifacts are greater than 30 meters from each other, they should be recorded as artifact isolates on California Department of Parks and Recreation 523 forms

Surface survey may be insufficient in some instances, and the pedestrian survey should be augmented with subsurface probing, which is called an Extended Phase 1 survey. Three circumstances typically call for an Extended Phase 1 study. One is insufficient exposures of the native surface due to dense vegetative cover or other obstructions such as pavement or imported fill. Second is where natural depositional processes may have buried archaeological deposits, such as in alluvial contexts. The third is to define the boundary of a known site(s) to aid in project design and development of avoidance measures. If known archaeological sites are within 100 meters of proposed project ground disturbance, whether the known site is on the project property or on an adjacent property, an extended Phase 1 should be conducted on the project property to ensure that there are no related subsurface deposits in the project area. If the Extended Phase 1 work is within or near (within 100 meters) a known prehistoric and/or Native American contact/historic archaeological site, a Native American monitor must be retained to observe the effort.

Extended Phase 1 surveys can be completed with manually excavated shovel test pits, geo-probes, or backhoe trenching. Manually excavated shovel test pits are preferable but cannot reach deeper than 80–100 centimeters and thus are insufficient for deeper exploration. Shovel test pits should be at least 30 centimeters in diameter and excavated in 20-centimeter levels. Excavation in each pit should continue until two consecutive sterile levels have been encountered, or until bedrock is reached. If an Extended Phase I survey uses backhoe trenching, the backhoe should proceed only under the direct supervision of a qualified archaeologist. Excavation should proceed in lifts no thicker than 30 centimeters (1 foot). For each lift, the equivalent of one 5-gallon bucket of sediments should be screened unless the deposit is known to be clearly sterile.

For both shovel test pits and backhoe trenching, the excavated sediments should be screened through 1/8-inch mesh at prehistoric sites and through 1/4-inch mesh at historical archaeological sites. Any recovered archaeological materials should be recorded and characterized and then returned to the unit during backfilling. Each unit should be documented on a form that describes the soils, non-cultural constituents, and archaeological materials by level. All shovel test pit/backhoe trench locations should be recorded with a global positioning system (GPS) with sub-meter accuracy, and the locations should be plotted in a map included in the survey report (ideally a figure that also depicts project plans, if available).

3.2 Resource Evaluation and Assessment of Project Impacts (Phase 2)

Evaluations of archaeological resource significance require that the consultant prepare and submit a proposal to the County for review prior to beginning the work. Fieldwork cannot begin until the County has approved the proposal. The consultant must describe the project and the site (or sites), and particularly the relationship to project components; provide a research design; discuss the proposed level of effort; describe the methods that will be used during fieldwork, laboratory processing, and technical analyses; and propose a report structure.

If background research was completed within one year as part of the Phase 1 study, it need not be repeated for the Phase 2 work. If not, background research and Native American consultation/coordination must be completed prior to Phase 2

fieldwork. Subsurface testing to evaluate the significance of prehistoric and/or contact/historic Native American archaeological sites requires monitoring by a Native American observer.

Typically, an evaluation of the significance of an archaeological site encompasses the entire site. It is possible, however, particularly at large sites that will only be partially impacted, to assume the site is significant and to focus the evaluation on the area of impact. In that case, the purpose of the evaluation is to determine whether the site deposit within the impact area contributes to the site's assumed significance and whether the project will adversely affect the site's significance. Levels of effort during a Phase 2 study will vary widely but must be sufficient to accurately define the site boundary and to collect data for evaluating site significance and assessing project impacts.

Field methods used to evaluate archaeological site significance vary but should have two primary components: defining the site extent and spatial variability (both vertical and horizontal), and collecting data for evaluating data potentials. Fieldwork should begin by defining site extent and spatial variability, which depending on the site might be completed with surface inspection (for sites with little or no possibility of a subsurface component, such as on bedrock or a deflated surface); manual excavation of shovel test pits, and or backhoe trenching. Methods used for shovel test pits and backhoe trenching will follow those described above for Extended Phase 1 studies. Geological and geomorphological studies may also be important in understanding the depositional history and integrity of archaeological deposits.

Gathering data for significance evaluation might include surface collection and subsurface excavation. For sites with the potential for subsurface components as demonstrated through shovel test pits and/or backhoe trenching, data collection should not be limited to just the surface. To sample subsurface deposits, relatively large manually excavated units should be strategically placed to recover a sample of material from the archaeological deposits and to expose stratigraphy and depositional contexts. These larger units should be square or rectangle and can be as small as 50 by 50 centimeters but should be no larger than 100 by 100 centimeters. Excavations should proceed in arbitrary 10-centimeter levels or smaller, stratigraphically distinct levels. Excavated sediments should be screened through 1/8-inch mesh although in some situations, such as dense clayey soils, it may be sufficient to screen a sample (minimally 25 percent of the volume) through 1/8-inch mesh and the remainder through 1/4-inch mesh. Archaeological screen residues must be retained for analysis, by level. Each excavation unit level must be recorded on a standard form that documents the depth, the level volume, the sediments, the non-archaeological constituents, and the archaeological constituents. At least one wall of each unit must be illustrated and the sediments/stratigraphy described. All units and surface collections used to collect spatial data and data for evaluation must be recorded with a global positioning system (GPS) with submeter accuracy, and the locations should be plotted in a map included in the technical report.

Materials collected during a Phase 2 study must be processed in an archaeological laboratory. Processing should include sorting into gross categories and cataloging. Specialists should analyze the catalogued remains; sampling may suffice depending on the quantities of materials. Many types of analyses might be completed depending on the recovered materials, with the goal of assessing data potentials relative to the project research design. Results of the analyses must be presented in a technical report as described in Section 4.0. Recovered archaeological materials must be curated in perpetuity at the Repository for Archaeological and Ethnographic Collections at the University of California, Santa Barbara or other accredited curatorial facility, at the project proponent's expense. If the Phase 2 study determines that a Phase 3 investigation is necessary, it may be acceptable to retain the Phase 2 collection until the Phase 3 work is complete and the two collections curated together. In some cases, a bond is required to cover the costs of the work. If there will be no data collection beyond the Phase 2 study, acceptance of the Phase 2 collection by the Repository must be demonstrated to the County before the planner will release the bond, if applicable, or prior to final Building Inspection Clearance, to allow the project to move forward.

3.3 Mitigation of impacts (Phase 3)

If impacts to a significant archaeological site cannot be avoided, data recovery excavation is one type of possible mitigation as discussed in the Guidelines. Prior to fieldwork, the consultant must prepare a data recovery plan for review and approval by the County. The approach and methods used during data recovery must be sufficiently thorough to help mitigate the damage to the site. The plan must include a research design that is more focused and refined than the Phase 2 research design because it will incorporate the results of the Phase 2 study. Targets for recovery must be established and field and

analytic methods must be detailed in the plan. For prehistoric and/or Native American contact/historic sites, monitoring by a Native American observer is required.

Methods used during a Phase 3 study are much the same as those used during the data collection part of a Phase 2 investigation, but more intensive. Excavations should focus on the area that will be impacted. The recovered sample should be large enough to address the research questions that were identified during Phase 2 significance assessment and refined in the Phase 3 data recovery research design. Excavation units may be configured to create block exposures (e.g., four 100 by 100 centimeter units or eight 50 by 50 centimeter units could form a 200 by 200 centimeter square), but the basic provenience unit must remain as the 100 by 100 centimeter unit. Generally, excavated sediments are screened through 1/8-inch mesh (and in some cases even 1/16-inch mesh) although a sampling strategy that includes a combination of 1/8- and 1/4-inch meshes might be justifiable. Water screening of samples passed through 1/8-inch mesh may be necessary to ensure better recovery of small constituents and limit damage to fragile remains. If warranted by the data potentials, column samples might be excavated in unit walls and the sediments from samples processed using flotation techniques to recover small constituents such as beads, fish bones, and carbonized seeds. Flotation techniques should be used to process at least a portion of deposits where carbonized remains are present or suspected, and not just limited to column samples. All of these considerations must be discussed in the proposal for County review.

Again, like a Phase 2 study, the recovered archaeological materials must be processed in an archaeological laboratory and at least a sample of the recovered remains must be analyzed by technical specialists. Specialist studies may include faunal analysis, various types of lithic analysis, radiocarbon dating, analysis of flotation samples, and others. Analyses must be sufficient to address the research questions that were identified during the Phase 2 significance assessment and refined in the Phase 3 data recovery research design. Following technical analyses, the recovered archaeological materials must be curated in perpetuity at the Repository for Archaeological and Ethnographic Collections at the University of California, Santa Barbara, or other local accredited facility, at the project proponent's expense. Curation must be demonstrated to the County before the planner will release the bond, if applicable, or prior to final Building Inspection Clearance, to allow the project to move forward.

4. REPORTING GUIDELINES

This section describes the County's guidelines for reporting cultural resources investigations. All cultural resources technical reports should follow the formats and guidance in this document, although depending on the types of resources and impacts identified, the format may vary and all elements may not be required. Depending on the results of the study (absence/presence of cultural resources), the County may require that one of the following be submitted:

Full Archaeological Resources Technical Report. A full report is required for projects where cultural resources are present on site, including Phase 1 studies where cultural resources are present. The full report shall include maps of the regional location of the project, the location of cultural sites, and site-specific maps that include the location of cultural deposits and features, with a current, legible overlay of the proposed project development plans. See Section 4. 1 for an outline and content requirements for a full Archaeological Resources Technical Report.

Negative Archaeological Resources Letter Report. This type of report is required for projects where no resources are present on site. See Section 4.2 for an outline and content requirements for a Negative Archaeological Resources Letter Report. See Attachment 2 for an example of a Negative Archaeological Resources Letter Report.

Historic Resources (i.e., built environment) Technical Report. This type of report is required for any evaluation of the built environment such as buildings and structures. In a Phase 1 historic resources study, the significance of the resource is evaluated. If the resource is assessed as not a potentially significant historical resource, then the report need go no further than Phase 1 and a relatively brief discussion may suffice. If the resource is assessed as significant, a Phase 2 report is prepared that evaluates potential project impacts to the resource and proposes appropriate mitigation. The Phase 1 report may simply be expanded to include Phase 2 or it may be appended to the Phase 2 report. See Section 4.3 for an outline and content requirements for Historic Resources Technical Reports.

Cultural resources reports will be reviewed for technical accuracy and completeness by a staff archaeologist, historian, peer reviewer, or planner. Reports are considered draft until staff determines the report to be complete. Each submittal and review of a draft cultural resources report is considered an "iteration". During each iteration, staff will either determine the report to be complete or respond with comments for necessary changes.

4.1 Full Archaeological Resources Technical Report

The following sections provide an outline and the criteria for the required elements of a "full" technical report. The structure of the report is based on the ARMR format with modifications to fulfill County requirements. Depending on the types of resources and impacts identified, the format may vary and all elements may not be required. For example, a Phase 1 report would include all of the information through Section 1.3, below, as well as Sections 4.1.1, 4.1,2 (if presence/absence testing was performed), 4.1.5, and 4.2. Similarly, a Phase 3 report would likely not include Sections 5 and 6, unless combined with a Phase 2 report.

4.1.1 Outline

A full archaeological technical report should include the following elements:

TITLE PAGE
PROJECT INFORMATION PAGE
TABLE OF CONTENTS
LIST OF ACRONYMS
EXECUTIVE SUMMARY/ABSTRACT
1.0 INTRODUCTION
- **1.1 Project Description**
- **1.2 Existing Conditions**
  - **1.2.1 Environmental Setting**
    - **Natural**
    - **Cultural**
  - **1.2.2 Record Search Results**
    - **Previous Studies**
    - **Previously Recorded Sites Adjacent to Study Area**
- **1.3 Applicable Regulations**

2.0 RESEARCH DESIGN (if applicable)
3.0 METHODS
- **3.1 Survey Methods**
- **3.2 Excavation Methods**
- **3.3 Laboratory and Cataloging Procedures**
- **3.4 Curation**
- **3.5 Native American Participation/Consultation**

4.0 RESULTS
5.0 DISCUSSION OF RESOURCE SIGNIFICANCE AND IMPACT ANALYSIS
- **5.1 Resource Significance**
- **5.2 Impact Analysis**

6.0 MANAGEMENT SUMMARY – MITIGATION MEASURES AND DESIGN CONSIDERATIONS

6.1 Significant and Unavoidable Impacts

6.1.1 Mitigation Measures and Design Considerations

6.2 Significant but Mitigable Impacts

6.2.1 Mitigation Measures and Design Considerations

6.3 Insignificant Impacts

6.4 No Impacts

6.5 Beneficial Impacts

7.0 REFERENCES

APPENDICES

4.1.2 Content

The following sections discuss the criteria for the required elements that are to be used when preparing an archaeological technical study. The elements described below are not exclusive and it is expected that the consultant will expand beyond these elements when necessary.

TITLE PAGE

The title page is the front exterior of the report and should contain the consultant's information, client's information, and the title of the report.

PROJECT INFORMATION PAGE

No slogans or company logos should appear. The cover should include only the following information:

- Report Type (e.g. Survey, Testing Program);
- Project common name;
- APN and address of property
- Permit number(s) (if applicable);
- Environmental document number, (if applicable);
- County Department contact's name, address and phone number;
- Date (must be revised during each edition of the draft Technical Study);
- Cultural Resource Technical Report preparer's name, firm name and address;
- Signature of County-Approved consultant;
- Project proponent's name and firm name (if applicable);
- List USGS quadrangle(s)
- List any site(s) located within the project area

Refer to Attachment 1 for an example of an acceptable, standard project information page.

TABLE OF CONTENTS

The Table of Contents is a mandatory section of every technical study except for a negative letter report. The Table of Contents must also contain a list of figures, tables, and appendices.

LIST OF ACRONYMS

The List of Acronyms should appear on the page directly following the Table of Contents and contain all acronyms used throughout the technical report, including technical, legal and industry related terms. The list must be alphabetical and clearly arranged.

The first time an abbreviation or acronym is utilized, provide the full name and then indicate the form of abbreviation that will be used throughout the document to represent that name, e.g.: "The project complies with the California Environmental Quality Act (CEQA) …"If an acronym is only used once or twice in a document, the acronym should be eliminated and it should be spelled out.

EXECUTIVE SUMMARY/ABSTRACT

The Executive Summary/Abstract should be as concise as possible, using clear simple language, not exceed 5 pages, and should provide an abstract of the scope and findings of the report. No new information should be provided in this section that is not further explained elsewhere in the document. This section should be written so that non-archaeological professionals can understand it. The purpose is to provide a quick reference. The Summary must be fully consistent with the text of the technical report. Make sure that the Executive Summary/Abstract accurately summarizes the issues discussed in the technical report text. For example, ensure that the issues identified for discussion in Chapters 4.0, 5.0, and 6.0, and the conclusions as to significance stated there, match the issues and conclusions stated in the Executive Summary/Abstract. Failure to ensure consistency may lead to the document being found inadequate by staff. The Executive Summary/Abstract must include the following information:

Describe the purpose and scope of the archaeological investigation. Specify the type of study that was conducted (e.g., literature search, inventory, evaluation, data recovery).

List the date(s) of the investigation.

Summarize the major findings of the investigation. For example, if the document reports an archaeological survey, list the number and types of resources identified during the survey.

If resources have been evaluated, summarize their significance as determined pursuant to the California Environmental Quality Act (CEQA) or other regulations and standards as appropriate.

The status of human remains (absence or presence) should be stated.

Briefly indicate what types of features and artifacts were encountered.

Discuss how the proposed project affects resources.

Describe constraints on the investigation (e.g., time, finances, logistics, vegetation, weather, landowner permission, vicious dogs).

Offer a summary of recommendations (e.g., test excavation, federal, state, or local register or list eligibility recommendations, and treatment recommendations).

Describe the disposition of field notes, collections, and reports.

1.0 INTRODUCTION

The objective of this section is to provide clarity for the reader. Specifically, background information as detailed below should be included to provide an understanding of the what, why, when, and where.

1.1 Project Description

This section provides a detailed description of the proposed project. The project description is the land- or resource-disturbing activity for which a cultural resources study is required. The project description must include all potential permanent and temporary impact areas, including access; staging, lay-down, and washout; and placement of utilities, including features such as on-site septic systems. The discussion must identify not only changes to the project site as it currently exists, but also include any off-site improvements that will be a part of the project. The project description provides information needed to determine how archaeological resources may be affected. How much information is appropriate for a given report may depend on what was included in previous reports for the project, and on the scope and size of the project. It is clear that the project description is fluid and evolves over the permitting process cycle. The intent of this section is to make the description as accurate as possible. If major changes occur (e.g. new off- site impacts) staff will request an update to the study.

The precise location and boundaries of the project site must be described. Both regional and vicinity (preferably topographic) location maps must be included to show the project's location. The project description should be as detailed as possible and may include but is not limited to the following:

- Size of project and area of proposed development.
- Purpose and scale of proposed uses associated with the project, such as residential development or recreational camping.
- Nature and extent of disturbance anticipated.
- Project phasing.
- Proposed structures (size, location, purpose etc.).
- Location of easements (existing and proposed) such as those for biological open space and roads.
- Proposed or potential uses within the open space (e.g. passive recreation such as hiking or horse trails).
- Off-site improvements (e.g. roads, utilities, facilities).
- U.S.G.S. Quadrangle map delineating the study boundaries (allows the CCIC to plot the location of the study).
- General location map showing the location of the project.
- Project plot plan/map (minimally 8.5”X11”).

1.2 Existing Conditions

1.2.1 Environmental Setting

Natural Setting

This section generally includes a discussion of the natural setting of and in the vicinity of the project. Describe any preserved lands (open space easements, Pre- Approved Mitigation Areas, Park Land) adjacent to or contiguous with the site. The description of the physical environment shall be based on the existing condition of the property. If prior unauthorized activities (e.g. grading, clearing) or actions taken in preparation for the project, such as septic testing or geotechnical investigations have altered the environmental setting, these should be described. The physical environment should include but is not limited to the following:

- Identify the natural physiographic region and biotic communities.
- Describe the current natural environment of the general area including landforms, hydrology, geology, soils, climate, vegetation, and animal life, as appropriate.
- The location of culturally important resources such as outcrops of cryptocrystalline rock, reservoirs, town sites, etc., should be discussed, as appropriate.
- Describe the natural environment as it is believed to have existed during the temporal periods of occupation under investigation, if such information is available.
- Describe the current land use (e.g., agriculture, mining, recreation, residential).
- Assess the current condition of the land within the project area (e.g., relatively unmodified, partially disturbed by construction or improvements).

Cultural Setting

This section provides the context for the evaluation of cultural resources. This section should provide an overview of the prehistory and history (including built environment) of the study area. Settlement patterns, subsistence practices, geographic boundaries, and environment should be incorporated into the discussion of each period. The following is an example of how this section should be broken into the different temporal periods. This example is not a mandatory County-approved version of the regional background but shows formatting and organization.

1.2.1 Environmental Setting

Natural Setting

Cultural Setting

Prehistoric

Early Holocene

Early Period

Middle Period

Late Period

Ethnohistoric Period
Historic
Mission Period
Rancho Period
American Period

No single classification is agreed upon for the different periods of prehistory and history. Various researchers have used different terms for these distinct periods. The cultural background of Santa Barbara County continues to evolve as new information is accumulated as a result of current research efforts. The above outline is provided as a guideline and it is recommended that each archaeologist provide their interpretation of the prehistory and history of the County of Santa Barbara.

1.2.2 Record Search Results

Previous Studies
Previously Recorded Sites Within and Adjacent to Study Area

Identification of previous investigations is the focus of this subsection. Previous work conducted on the project site and within a ½-mile radius of the project boundaries should be discussed. In areas of very high site densities, the ½-mile radius may be reduced to ¼-mile. The repository(ies) where the documents are held must be identified. The type of study (e.g. survey, Phase I evaluation) must be described for each investigation (tabular form). Note in the text and table whether or not the survey(s) partially or completely covered the project area, if applicable. Resources identified should be discussed and include information about site type, location of and topographical setting of sites to the project site, diagnostic artifacts if present, and provide a regional perspective. The following information should be included:

Evidence of a record search conducted at the Central Coast Information Center of the California Archaeological Inventory for known cultural resources and previous reports shall be included. Either a copy of the record search report performed by Information staff or the results of a records search performed by a professional consultant should be provided. Hard copies of DPR forms obtained for record searches are required to be attached to the report. Include the results of review of aerial photos and historic maps, and interviews, if conducted. Identify the location of cultural material that was collected as part of a previous study for any recorded sites within the project footprint.

List of site numbers and associated report references.

A map of the location of the cultural resources shall be included. Note that all archaeological reports that disclose site locations will remain confidential (not distributed to the public).

1.3 Applicable Regulations

This section should identify the regulations that are applicable to a project. Typical regulations that apply to County projects include CEQA and other sections of the Public Resources Code (as it applies to the discovery of human remains). Individual Community Plan policies or development standards, or policies of the Local Coastal Plan, may also be applicable.

2.0 RESEARCH DESIGN

A research design is required for any project that proposes to evaluate site significance (Phase 2) or mitigation through data recovery (Phase 3). A research design provides the theoretical basis for an archaeological study. Research designs vary in nature and level of detail depending on the project components and investigation type. Research designs are explicit statements of the theoretical and methodological approaches to be followed in an archaeological study. In some cases, research designs have been developed for specific geographic regions, types of investigations, or types of resources. For example, two County research design guidance documents, County of Santa Barbara Resource Management Department, *Archaeological Element of the Santa Barbara County Heritage Management Plan, Cultural Resource Guidelines* (Reissued January 1993), and County of Santa Barbara Resource Management Department, *Cultural Resource Guidelines, Historic Resources Element* (Revised January 1993) are available from P&D, and may include useful background information, but are not required to be the basis of research designs that may be required for some technical reports.

Research designs link theory, known information, research goals, and methods. The use of previously formulated research designs is acceptable if these designs are current and relate directly to the area and type of study under consideration.

When a research design is required, the following should be included:

- Discuss the theoretical basis of the proposed research. Cite or discuss the research paradigms under which the investigators are operating.

- Summarize previous research. A summary of important research questions pertinent to the study area or to the identified resources should be presented, with particular emphasis on the identification of relevant data gaps. Statements appealing to generally recognized goals of archaeology or anthropology by themselves usually lack the detail necessary for an adequate research design.

- Present testable hypotheses or research questions, or state the goals of the research. Any useful theoretical approach should be capable of generating testable hypotheses. A research design should present important research questions recognized for the region and relevant to the study, based on previous research.

- Identify the test implications of the hypotheses or research questions. Describe expected archaeological resource types, archaeological patterns, and data categories anticipated, as they relate to test implications or research questions. Discuss operational definitions for archaeological resource types (and rationales for their use), if different from OHP definitions of archaeological sites, historic resources, and isolated artifacts or resources.

3.0 METHODS

3.1 Survey Methods

3.2 Excavation Methods

3.3 Laboratory and Cataloging Procedures

3.4 Native American Participation

(Include all subsections that apply).

Methods of investigation must always be included in a full Archaeological Resources Technical Report. Methods should include all the tools (e.g. survey, indexing, testing, lab analysis, etc.) used by the project archaeologist/historian to identify archaeological resources, evaluate their significance, and to determine the appropriate mitigation for project impacts. The discussion of methodology can be organized for each site, or for similar sites. A brief discussion of the survey results can be included to clarify the methods used. The following outline provides the components that should be incorporated into this subsection if appropriate.

Describe how personnel conducting the work were organized and list the active participants and their duties. Identify the persons participating in the study such as Native American observers, monitors, and consultants, interested parties with special knowledge or expertise, and technical specialists.

Describe the data gathering methods employed (e.g., remote sensing data; surface survey; surface chemical analysis; sub-surface methods such as probing road and stream cuts or analyzing core probes, archival research). The methods description should provide details such as deployment of survey personnel, site recordation techniques, chemical analyses, index sampling, sub-surface test locations and methods, and remote sensing techniques.

Describe specific research and sampling strategies employed, the rationale for their use, and a description of how they were implemented.

Using actual project plans, show area(s) subject to investigation in relation to the Area of Potential Effect (APE) and project boundaries. For survey reports, depict areas surveyed, not surveyed, or surveyed using various strategies. Such maps can be included in an appendix. A USGS 7.5 minute map showing the outline of the survey area must also be included.

Provide a descriptive summary of the areas examined, noting areas that were not inspected in relationship to the sampling strategies employed, and why. Note the percentage of ground visibility for the areas inspected. Describe whether or not visibility was adequate for the purposes of the survey, and why or why not.

Describe the types and methods of excavation. Number each excavation location on a map of the site sufficiently detailed to depict the relationship between natural and archaeological features within the site. Include an explanation of the rationale for the placement of units.

Describe cultural materials collected (if any), including methods of documentation and removal.

Describe measures undertaken or needed to restore archaeologically disturbed site areas when archaeological field studies are completed.

Indicate where collected materials, photographs, and other documents are or will be curated. Curatorial agreements and reburial agreements should be provided in an appendix in the final draft of the report.

Discuss problems or constraints in conducting the research.

Identify what measures were taken to consult with the Native American Heritage Commission (NAHC) and/or local Native American groups, organizations, or individuals.

4.0 RESULTS

This section presents the information collected during the study. A thorough description of collected data is essential for the construction of meaningful and well- supported interpretations. When interpretations of data are mixed with or substituted for basic data presentations, the reader is left with no basis for independently assessing conclusions and inferences. It is therefore critical to explicitly separate data presentation from interpretation of those results whenever possible. In most cases, data should be presented in tabular format in addition to a summary discussion.

Use the following guidance when discussing results.

Archaeological Resources Survey Report

If no archaeological resources were located, their absence should be explicitly noted and a letter report is acceptable. See Attachment 2 for a sample archaeological negative letter report.

If resources were previously reported or anticipated but were not located, discuss the possible environmental and cultural factors that may have hidden or destroyed the resources.

If cultural resources were identified:

Provide information regarding the cultural resources that were observed and recorded, including prehistoric archaeological sites, historic sites, and isolated artifacts.

Recent or contemporary resources (e.g., modern roads, power lines, structures) noted but not formally recorded might also be discussed and include on a map, although such information may not be appropriate or necessary, and is usually not confidential.

If applicable, provide a synthesis of previous research as it relates to the project.

The following maps should generally be included in a report on the results of inventory:

- If not already presented, area(s) subject to investigation in relation to the Area of Po**t**ential Effects (APE) and project boundaries on an appropriate U.S.G.S. quadrangle (7.5 minute series) sufficient to allow CCIC mapping.

- For survey reports, depict areas surveyed, not surveyed, or surveyed using various strategies. Larger scale maps may also be appropriate to convey information regarding the nature of the investigation.

- U.S.G.S. quadrangle maps showing prehistoric resource locations recorded during survey.

- Archaeological resource sketch maps consistent in content and quality with the standards established in the California Archaeological Inventory Handbook for Completing an Archaeological Site Record distributed by the California OHP.

- Archaeological site contour maps depicting topographic and archaeological details, and surface and sub-surface study locations should be provided, if available, although such maps often are not prepared for survey reports.

Describe all resources.

The description should at a minimum include site type, chronological placement, size, and if there is any disturbance (e.g. grading, pot hunting etc.).

For each resource (historic, prehistoric, isolates), complete all appropriate DPR forms. The DPR forms may be placed in a confidential appendix or may be submitted electronically in pdf format. The submitted report must provide evidence that the DPR forms have been submitted to the Central Coast Information Center (CCIC). Once site numbers (trinomial, primary, isolate) are assigned they must be incorporated into the study and replace any temporary numbers. ***The report will not be considered final without the primary numbers and trinomials from the CCIC.***

Provide a master map (photocopy of appropriate USGS quadrangle) depicting the locations of all resources.

Archaeological Excavation Reports

Excavation can occur during any phase of a cultural resource investigation. The description of excavation during these various phases should be scaled to the size of the excavation, the importance of information to the objectives of the study, and the abundance and quality of information resulting from the excavation. In terms of data presentation, no distinction is made here between excavation conducted for evaluative purposes and excavation performed as a data recovery or mitigation phase. Data and interpretation should be presented separately when possible. Summarize the results of lengthy, appended special studies.

Describe the physical context of the archaeological deposit, including:

Site topography and geomorphology (if not addressed in Physical Environment).

Soil type (midden/non-midden), structure, stratigraphy and relationship to surrounding soils. Summarize results of special studies such as particle size analysis and soil chemistry, and include a copy of special studies reports in an appendix.

Non-cultural soil constituents (floral, faunal). Include a summary of special studies and insert reports in an appendix;

Anthropic soils and stratigraphic relationships.

Profiles of excavation units, trenches, or auger borings, as appropriate.

Describe archaeological features. Functional ascriptions/interpretations, such as hearth, oven, or house pit, may be unavoidable at this level of data presentation. It may be appropriate to discuss the relationship between feature and non-feature archaeological material distributions (e.g., the relationship between midden deposits and ovens or house pits).

Describe physical evidence including location dimensions, attributes, and associations.

Provide or reference illustrations and photographs of features.

Either present in full or summarize the results of special studies related to features (e.g., radiocarbon, flotation, micro-constituent analysis, chemical analysis).

Enumerate and describe artifacts by material type and artifact class (e.g., flaked- stone). Avoid typological ascriptions that impose or imply function or chronological association in the initial description. For example, biface, uniface, or modified flake is preferable to knife, scraper, or used flake. Such interpretations can follow in separate sections, as described below.

Discuss typological consideration of artifacts such as stone tools, beads, bone and groundstone tools, and historic materials.

Include illustrations/photographs of formal artifacts. These can be included in an appendix.

Present the results of analyses of artifact manufacture and use (e.g., flaked-stone manufacturing technology, use-wear studies, pottery analysis, basketry identification). Extensive and detailed analyses may be included in appendices. A summary of the results of these studies should be presented in the body of the report. Such studies should define analytic methods and distinguishing traits of analytic categories. For example, if a flaked-stone analysis involved the identification of different types of flakes, then the attributes that define such flake types should be reported. References to previous analyses should not supplant basic descriptions of methods and analytic categories.

Present the results of analyses such as radiocarbon dating, obsidian source and hydration studies, thermoluminescence dating, geomagnetic studies, pollen analysis, blood protein analysis, and others.

Describe non-artifactual archaeological material that reflects past human activities (e.g., burned seeds, charred animal bone), and materials that provide information on past environments or exploited resources (e.g., pollen).

Include identification studies for floral and faunal remains, with interpretations regarding the kinds and amounts of resources used, consumed, etc.

Present the results of physical analyses such as pollen, microconstituent analysis (flotation, coprolite studies).

Avoidance of impacts to human remains is a requirement. However, accidental discoveries sometimes occur in the process of site testing or data recovery and during construction grading and excavation, and sometimes even during analysis of recovered archaeological materials in a laboratory. The treatment of human remains is discussed in detail in Section 3.4 of the *Guidelines for Determining the Significance of and Impacts to Cultural Resources: Archaeological, Historic, and Tribal Cultural Resources*. In such cases, the procedures implemented or the information of discovery shall be provided. Information shall include the context of discovery, examination, and disposition of human remains, if any and presence of associated burial artifacts. Given the highly sensitive nature of human remains, examination and treatment of such remains will depend on the outcome of consultation with Most Likely Descendents (MLD) identified by the NAHC and land owners regarding the treatment of human remains. Therefore, whether and how human remains and associated grave goods are examined may vary greatly. Similarly, the nature and extent of reporting on the treatment of human remains may vary with the determination of the MLD. In general however, the following information is desirable from an archaeological and management standpoint.

Describe the context of the discovery of human remains. For example, describe if a human burial discovered during excavation was expected, based on consultant information or archaeological indicators.

Describe measures taken pursuant to state law, local ordinance, agreement, and/or agency policy regarding human remains.

Describe efforts to consult with the County, Coroner, Native American Heritage Commission, MLDs, and land owner.

Describe outcome of discussions regarding the treatment of human remains.

Describe actions taken with regard to the study of human remains (i.e., exposure, exhumation, analysis, reburial in-situ, reburial after exhumation).

Describe the location, physical position, orientation, and nature of the remains (e.g., primary inhumation, cremation). Include a description of grave associations and the physical/contextual relationships between human remains and associated artifacts. For example, describe if artifacts were overlying or underlying the human remains in a patterned arrangement, or were found within burial pit fill.

Report the results of analyses, including specialists' reports in a appendix.

Include photographs and illustrations.

Record/report the reburial location on a New Deposit/Redeposit Record (DPR 422I).

Describe the spatial distribution and patterning of cultural material by class (e.g., flaked-stone, bone). Present data on the intrasite distribution of cultural materials (i.e., vertical and horizontal stratigraphy, assisted by data tables).

5.0 DISCUSSION OF RESOURCE SIGNIFICANCE AND IMPACT ANALYSIS

5.1 Resource Significance

The descriptive data presented in subsection 4.2 above should be discussed and interpreted with explicit reference to the research design or study objectives defined in the report. In addition, unanticipated data recovered during the study may warrant discussion of additional research topics not included in the research design.

Discuss the results of the investigation as they relate to (1) specific topics and questions presented in the research design, and (2) the applicable elements of the approved County Guidelines for Determining the Significance of and Impacts to Cultural Resources: Archaeological, Historic, and Tribal Cultural Resources (Chapter 8 of the County's Environmental Thresholds Manual)

It is preferable to organize the discussion according to the structure of the research questions, hypotheses, and test implications presented in the research design, and the structure of the guidelines for determining significance. Discuss the results of the study in terms of the general research objectives of the study (e.g., settlement patterns, subsistence, and change through time). This discussion should place the investigation in a regional context, noting its role or contribution to an understanding of local, regional, state, or national history or prehistory. Finally, the individual guidelines (criteria) used should be listed and discussed as they relate to the resource, as applicable. See Section 1.0 of the Guidelines for more information on these criteria.

Note: If a resource has not been evaluated for significance and a decision is made to place it in open space in lieu of significance testing, significance is assumed.

5.2 Impact Analysis

Relying on the existing conditions and guideline(s) for the determination of significance, this discussion must detail each of the significant effects associated with the project for the resource being evaluated. Each guideline should be analyzed separately and a determination as to impact significance (significant and not avoidable, significant and mitigable to below a level of significance, not significant) must be made. The technical study should identify how effects would occur and how severe they would be. Impacts must be identified as direct, indirect or cumulative. The following guidance should be followed when preparing the analysis of project effects.

Identify impacts and mitigation measures for the *whole project*, including any remainder parcel which is not proposed to be developed currently or off-site improvements.

Be sensitive to the *age* of technical studies which are the basis for the analyses. Cultural studies older than 10 years may be unreliable.

Resources placed in open space must be assessed for indirect impacts.

6.0 MANAGEMENT SUMMARY – MITIGATION MEASURES AND DESIGN CONSIDERATIONS

6.1 Significant Unavoidable Impacts

6.1.1 Mitigation Measures and Design Considerations

6.2 Mitigable Impacts

6.2.1 Mitigation Measures and Design Considerations

6.3 Less Than Significant Adverse Effects

This section must discuss the feasible mitigation scenarios that could avoid, minimize, rectify, and/or reduce each of the significant environmental effects to the maximum extent feasible. There must be a clear connection between the proposed mitigation measure and the identified significant effect. In

addition, resources that were determined not to have a significant adverse effect must be discussed. Resources should be categorized as having impacts that are unavoidable, feasibly mitigated, or that have no adverse effects.

If mitigation is proposed, it should be identified and discussed. If a project is phased, the mitigation must be detailed and identify which phase of the project mitigation will be implemented.

Design considerations that were relied upon in determination of significance of impacts, while not considered mitigation, must be listed in the mitigation measures to ensure that they are included in the conditions of approval for the project (e.g. open space).

After the application of mitigation measures, state clearly whether the impact remains significant or is mitigated to a level below significance. In addition, identify whether the implementation of a mitigation measure will cause impacts to a resource.

Rather than providing the *exact wording* of proposed project approval conditions which will be used to implement mitigation measures, describe the *specific concept* of the proposed mitigation and specify how it must *function* to be effective. County staff will draft the exact wording to implement the requirement at later stages in project processing. For example, do not set forth the entire terms of a required open space easement, but rather state that an open space easement will be required over ... [state the area]...which will prohibit…[specify prohibited uses and activities]...but may permit ...[state any exceptions].

A research design and data recovery plan must be submitted to the County for any project that proposes data recovery as mitigation.

7.0 REFERENCES

This list must provide adequate references to documents cited in the technical study. References that were relied upon and which have a limited circulation must include a location where the public can readily access and review the document.

APPENDICES

Appendices must be identified by letter and may include but are not limited to the following:

- Record Search Results
- Specialized Studies and Analyses
- Artifact Catalog
- Native American Consultation

- Curatorial Agreements
- DPR Forms (New and Updated)

4.2 Negative Archaeological Resources Survey Letter Report

The following sections provide an outline and the criteria for the required elements of a letter report. Letter reports are only to be used for negative surveys or in cases where only isolates are present.

4.2.1 Outline

An archaeological letter report should include, at a minimum, the following elements:

NEGATIVE ARCHAEOLOGICAL SURVEY REPORT OUTLINE

TITLE PAGE
PROJECT INFORMATION PAGE
INTRODUCTION /PROJECT LOCATION
- **County,**
- **USGS 7.5" Quad & date**
- **Section, Township, and Range, or Land Grant**
- **Physical address & other locational data**
- **Assessor's Parcel Number**

OWNER'S CONTACT INFORMATION
SURVEY
- **Type**
- **Date of Survey**
- **Field Crew**

DESCRIPTION
- **Description of survey technique**
- **Assessment of adequacy of visibility for purposes of the survey**
- **Detailed explanation of why an extended Phase 1 was or was not performed**
- **Description of extended Phase 1 testing, if applicable**
- **Confirmation of negative results**
- **Project description with recommended conditions, if applicable**

RECORDS SEARCH
SACRED LANDS SEARCH

Figure 1: USGS Map with survey area clearly marked
Figure 2: Regional Location Map
Figure 3: Project plans with surveyed areas clearly marked

4.2.2 Content

The following sections discuss the criteria for the required elements that are to be used when preparing a negative archaeological letter report. A sample of a project information page and a letter report sample template are provided in Attachments 1 and 2, respectively.

TITLE PAGE

See subsection 4.1.2.

PROJECT INFORMATION PAGE

See subsection 4.1.2.

INTRODUCTION / PROJECT LOCATION

The following elements should be included in the project location:

- County
- USGS Quad Map and Date of Map
- Section, Township, and Range or Land Grant
- Physical Address (if no physical address is available, provide the street name and nearest cross streets.)
- Other Locational Data (include directions to the project site, which is especially important if there is no physical address.)

Assessor's Parcel Number (APN)

The Assessor's Parcel Number should be included in the report. If unavailable, contact County staff for assistance.

OWNER AND ADDRESS

SURVEY

Type. Identify the survey type. Negative surveys are typically "Intensive Pedestrian". Identify if extended Phase 1 testing was performed.

Date of Survey. Provide the date or dates of the survey.

Field Crew. Identify the members of the field crew and the absence or presence of a Native American monitor.

Description of Work. The description should briefly discuss the field methods (e.g. survey transects, etc.), areas surveyed, areas not inspected and why, site conditions (e.g. ground visibility, presence of trails, etc.), natural landforms, topography, and the proposed project (e.g. 24-lot subdivision). Identify whether or not an extended Phase 1 was conducted, and why or why not. If so, describe the testing program (i.e. shovel probes, backhoe trenches, depths of excavation, screening; also provide a figure showing where testing occurred overlain on project plans. Confirm negative results. Include a description of the proposed project any conditions (e.g. grading monitoring) that should be implemented and why.

Record Search. Provide evidence that a records search was conducted. DPR forms are not required. Include DPR forms for any isolates identified.

Sacred Lands Check. If a Sacred Lands Check was conducted, provide documentation.

FIGURE 1: USGS MAP

Identify the project site on a USGS map and attach it to the report. Enlarge the map if necessary in order to allow the CCIC to map the survey area.

FIGURE 2: REGIONAL LOCATION MAP

Identify the project site on a Regional Location map and attach it to the report.

FIGURE 3: SURVEY LOCATION(S)

Show the surveyed areas overlain on project plans. Enlarge for legibility if necessary.

4.3 Historic Resources Technical Report

The following subsections provide an outline and the criteria for the required elements of a "full" historic resources technical report. Depending on the types of resources and impacts identified, the format may vary and all elements may not be required. For example, a Phase 1 study would not include Section 6. Deviations may be allowable from the standard format outlined below, subject to P&D staff approval, as long as all of the relevant information is present.

4.3.1 Outline

HISTORIC RESOURCES TECHNICAL REPORT OUTLINE

TITLE PAGE
PROJECT INFORMATION PAGE
TABLE OF CONTENTS
LIST OF ACRONYMS
EXECUTIVE SUMMARY/ABSTRACT

1.0 PROJECT DESCRIPTION

2.0 SITE HISTORY/HISTORICAL CONTEXT

3.0 NEIGHBORHOOD CONTEXT

4.0 SITE DESCRIPTION

5.0 PHASE 1 ASSESSMENT

5.1 Evaluation and Analysis
- **Age**
- **Integrity (Location, Design, Setting, Materials, Workmanship, Feeling, and Association)**

5.2 Application of Resource Eligibility Criteria
- **California Register of Historical Resources (CRHR)**
- **County Historic Landmark/Place of Historic Merit**

6.0 PHASE 2 IMPACT ASSESSMENT AND MITIGATION

6.1 Potential Impacts to Historical Resource(s)

6.2 Mitigation Measures (if applicable

7.0 SUMMARY AND CONCLUSIONS

8.0 BIBLIOGRAPHY AND SOURCES USED IN PREPARATION OF REPORT

MAPS AND FIGURES

4.3.2 Content

TABLE OF CONTENTS

See Section 4.1.2.

LIST OF ACRONYMS

See Section 4.1.2.

EXECUTIVE SUMMARY (MANAGEMENT SUMMARY/ABSTRACT)

See Section 4.1.2.

1.0 PROJECT DESCRIPTION

Provide a summary of the proposed project including proposed alterations to existing resources, landscaping or setting. Identify the architect, designer, contractor or engineer responsible for the design. If the project is complex, list the total new square footage and/or number of units or scope of the project (i.e. replace an existing bridge with a new span, etc.)

2.0 SITE HISTORY/HISTORICAL CONTEXT

Prepare a historic context for the project parcel(s). The 1993 *County of Santa Barbara Resources Management Department Cultural Resource Guidelines Historic Resource Element* should be consulted as well as National Park Service guidance for evaluating historic properties: https://www.nps.gov/nr/publications/policy.htm.

3.0 NEIGHBORHOOD CONTEXT

Include a historic context statement for the neighborhood that characterize the study parcel's setting and development pattern (i.e. is it a suburban neighborhood, rural area, urban, beachfront or residential estate property.

4.0 SITE DESCRIPTION

Provide a description of the study parcel(s) built improvements such as buildings, structures and features including designed or vernacular landscapes. Guidance prepared by the National Park Service for evaluating landscapes can be found at: https://www.nps.gov/oclp/CLI%20PPG_January2009_small.pdf.

5.0 PHASE 1 SIGNIFICANCE ASSESSMENT

Provide the rationale for completing the significance assessment, such as identification of potentially significant architectural resources, historic/cultural associations, landscape components, etc.

5.1 Evaluation and Analysis

- **Age.** Provide an absolute or estimated age for the resource(s) based on onsite survey or a review of historic records such as permits, assessor's records, maps or other records, including pertinent grantor-grantee land ownership title record data for the period of historical significance.

- **Integrity**. Evaluate the seven aspects of integrity of the resource(s) using the guidance set forth in: https://www.nps.gov/nr/publications/bulletins/nrb15/nrb15_8.htm.

5.2 Application of Resource Eligibility Criteria

- **CRHR.** Apply the CRHR significance criteria to the resource [CEQA Section 15064.5(a)].
- **County Historic Landmark/Place of Historic Merit.** Apply the significance criteria set forth in Chapter 18a of the Santa Barbara County Code to determine if a potentially significant resource is present.

6.0 PHASE 2 IMPACT ASSESSMENT AND MITIGATION

6.1 Potential Impacts to Historic Resource(s)

- Apply the criteria set forth in CEQA Guidelines Section 15064.5(b).
- Apply the standards set forth in: *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (2017) https://www.nps.gov/tps/standards/treatment-guidelines-2017.pdf.

6.2 Mitigation Measures (if applicable)

- Mitigation measures shall be based on the guidance set forth under CEQA as well as *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (2017). Additional discussion of mitigation measures can be found in Section 3 of the Guidelines.

7.0 SUMMARY AND CONCLUSIONS

Summarize the findings of the report including the presence or absence of significant historic resources. If significant historic resources are identified, characterize project impacts to historic resources and their level of impact (insignificant, significant but mitigable, or significant and unavoidable). Also if the study parcel is within a specific Community Plan area such as Montecito, Summerland, Toro Canyon, etc., the conclusions should state whether or not the proposed project is consistent with the applicable policies and development standards for historic resources set forth in those planning documents.

8.0 BIBLIOGRAPHY AND SOURCES USED IN PREPARATION OF REPORT

Include a list of resources, archives and interviews used/accessed in the preparation of report

MAPS AND FIGURES

Include a regional location map (preferably a USGS map) and a parcel map. Include proposed project site plans if they exist for the property (an aerial photograph can serve in lieu of or in addition to a site plan). Photographs of each building, structure and feature as well as the setting and landscape should be included. Simple structures such as sheds, outbuildings, garages, water towers etc. often require only one photograph. More complex buildings should include images of all four sides of the building. Include sufficient images of the setting and property to characterize this aspect of the resource.

4.4 Cultural Resources Mapping Guidelines

Extent of Mapping Required:

Project Parcel (Property) Boundary

Off-site Improvement Areas – Any required off-site improvements (e.g., road improvements, utility extensions, etc.) must be mapped in accordance with these requirements. Mapping should include maximum area necessary to complete the improvement.

Base Map – The cultural resource map must be completed using a base map that includes:

- The most recent project plot plan and all existing and proposed utility and road easements;
- The proposed maximum limits of disturbance for the project (on and off site); including grading, septic systems, wells, construction staging areas, washout areas, road improvements, drainage improvements, etc.;
- Open Space/Conservation Easements;
- Topography (County topographic data is sufficient if project plans do not show it; however most project grading plans include topography);
- Major roads and major road names;
- Both proposed (solid lines) and existing (dashed lines) parcel/lot lines;
- Assessor Parcel Numbers;
- North arrow (specify magnetic or true);
- Bar or Graphic Scale;
- The location of archaeological and historic resources;
- Any applicable buffers for archaeological or historic resources.

Attachment 1

Project Information Page Template

REPORT TITLE

Project Common Name

Permit Numbers/ Environmental Document No. (If Available)

Lead Agency: County of Santa Barbara Planning and Development Department

Contact
County of Santa Barbara P&D, 123 East Anapamu Street, Santa Barbara, CA 93013-2058
Phone Number

Preparer:

Name
Firm Name Address
Phone Number

Signature

Project Proponent:

Name
Firm Name
Address

Date

USGS Quad(s)
Site Number(s)

Attachment 2
Negative ARCHAEOLOGICAL Resources Survey Report
Template and required contents

Project Common Name

Permit Numbers/ Environmental Document No. (If Available)

Lead Agency: County of Santa Barbara Planning and Development Department

Contact: _____

123 East Anapamu Street
Santa Barbara, CA 93013-2058
Phone Number_____

Preparer:

Name
Firm Name Address
Phone Number

Signature

Project Proponent:

Name
Firm Name
Address

Date

Quadrangle

RE: Project Name; Project Numbers Cultural Resources - Negative Findings

To Whom It May Concern:

Please be advised that a survey has been conducted on the above referenced project. It has been determined that there are no cultural resources present on this property. The project has been plotted on the attached USGS 7.5 minute topographical map for your information.

County: Santa Barbara
USGS 7.5' Quad: Date: Township: Range:
Address:
Other Locational Data:
Assessor Parcel Number(s):
Owner and Address:
Survey Type: Intensive Pedestrian Date of Survey:
Field Crew:

Description: The field survey was conducted using standard archaeological procedures and techniques. Continuous parallel transects (meters) were walked in a __/__direction. Survey conditions in these areas were good to fair, with some areas partially obscured by ground cover in the form of . In areas possessing dense vegetation, the survey methodology was adjusted to accommodate surface examination of trails and clearings and to facilitate the inspection of bedrock outcrops and stream beds. Identify if shovel scrapes, or extended Phase 1 testing was conducted. Explain why or why not. If extended Phase 1 was done, describe methods and results. No artifacts or features were identified during this survey. This project proposes to_____. (Optionally add any conditions [not mitigation] that may be required such as grading monitoring due to the presence of heavy vegetation etc.).

Record Search: Staff conducted a records search of the surrounding area using the California Historic Resources Inventory System (CHRIS). _____ studies ( ) have been conducted within a ___-mile radius and ____site(s) was/were identified (_____). The site(s) is/are approximately mile from the subject property. It (They) was/were recorded by_____and is/are described as____ (use tabular format if there are more than three).

Native American Consultation: No Sacred Lands were identified by the Native American Heritage Commission (NAHC). Staff contacted the Native American groups and individuals provided by the NAHC to further investigate whether they have knowledge of Sacred Lands occurring on the subject parcels. (No) response was received.

Sincerely,

Author/Principal Investigator Firm

Attachments
1. 7.5" USGS Topographical Map with Survey Area Identified
2. General Location Map
3. Project Plans with Survey Area Identified