MARIN COUNTY
LOCAL COASTAL PROGRAM

Background Reports for Submittal to California Coastal Commission

July 30, 2013

The materials contained in the following Background Reports are not part of the Local Coastal Program (LCP) for purposes of the California Coastal Act. These materials are being provided to the California Coastal Commission as part of the LCP Amendment submittal package for the purpose of assisting the Commission in their review of the proposed Amendment.

The Background Reports contained herein are as follows:

1. California Coastal Act, Chapter 3
2. Local Coastal Program Framework, including background information about the history of the LCP, how coastal permit requirements are implemented, and related materials
3. LCP Units I and II, Natural Resources Background Text Excerpts
4. Land Use Analysis of the Coastal Zone
5. Agricultural Land Analysis of Marin County

CHAPTER 3
COASTAL RESOURCES PLANNING AND MANAGEMENT POLICIES

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GENERAL

Section 30200 Policies as standards; resolution of policy conflicts

(a) Consistent with the coastal zone values cited in Section 30001 and the basic goals set forth in Section 30001.5, and except as may be otherwise specifically provided in this division, the policies of this chapter shall constitute the standards by which the adequacy of local coastal programs, as provided in Chapter 6 (commencing with Section 30500), and, the permissibility of proposed developments subject to the provisions of this division are determined. All public agencies carrying out or supporting activities outside the coastal zone that could have a direct impact on resources within the coastal zone shall consider the effect of such actions on coastal zone resources in order to assure that these policies are achieved.

(b) Where the commission or any local government in implementing the provisions of this division identifies a conflict between the policies of this chapter, Section 30007.5 shall be utilized to resolve the conflict and the resolution of such conflicts shall be supported by appropriate findings setting forth the basis for the resolution of identified policy conflicts.

(Amended by Ch. 43, Stats. 1982.)

ARTICLE 2
PUBLIC ACCESS

Section 30210 Access; recreational opportunities; posting

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

(Amended by Ch. 1075, Stats. 1978.)

Section 30211 Development not to interfere with access

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212 New development projects

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or, (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

(b) For purposes of this section, "new development" does not include:

(1) Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.

(2) The demolition and reconstruction of a single-family residence; provided, that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.

(3) Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height, or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.

(4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not a seaward of the location of the former structure.

(5) Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.

As used in this subdivision "bulk" means total interior cubic volume as measured from the exterior surface of the structure.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 of Article X of the California Constitution.

(Amended by: Ch. 1075, Stats. 1978; Ch. 919, Stats. 1979; Ch. 744, Stats. 1983.)

Section 30212.5 Public facilities; distribution

Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.

Section 30213 Lower cost visitor and recreational facilities; encouragement and provision; overnight room rentals

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred.

The commission shall not: (1) require that overnight room rentals be fixed at an amount certain for any privately owned and operated hotel, motel, or other similar visitor-serving facility located on either public or private lands; or (2) establish or approve any method for the identification of low or moderate income persons for the purpose of determining eligibility for overnight room rentals in any such facilities.

(Amended by: Ch. 1191, Stats. 1979; Ch. 1087, Stats. 1980; Ch. 1007, Stats. 1981; Ch. 285, Stats. 1991.)

Section 30214 Implementation of public access policies; legislative intent

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

(b) It is the intent of the Legislature that the public access policies of this article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's constitutional right of access pursuant to Section 4 of Article X of the California Constitution. Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Section 4 of Article X of the California Constitution.

(c) In carrying out the public access policies of this article, the commission and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to, agreements with private organizations which would minimize management costs and encourage the use of volunteer programs.

(Amended by: Ch. 919, Stats. 1979; Ch. 285, Stats. 1991.)

ARTICLE 3
RECREATION

Section 30220 Protection of certain water-oriented activities

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30221 Oceanfront land; protection for recreational use and development

Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

(Amended by Ch. 380, Stats. 1978.)

Section 30222 Private lands; priority of development purposes

The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

Section 30222.5 Oceanfront lands; aquaculture facilities; priority

Oceanfront land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.

(Added by Ch. 1486, Stats. 1982.)

Section 30223 Upland areas

Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

Section 30224 Recreational boating use; encouragement; facilities

Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

ARTICLE 4
MARINE ENVIRONMENT

Section 30230 Marine resources; maintenance

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231 Biological productivity; water quality

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30232 Oil and hazardous substance spills

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Section 30233 Diking, filling or dredging; continued movement of sediment and nutrients

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(l) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where the improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

(Amended by: Ch. 673, Stats. 1978; Ch. 43, Stats. 1982; Ch. 1167, Stats. 1982; Ch. 454, Stats. 1983; Ch. 294, Stats. 2006.)

Section 30234 Commercial fishing and recreational boating facilities

Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.

Section 30234.5 Economic, commercial, and recreational importance of fishing

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

(Added by Ch. 802, Stats. 1991.)

Section 30235 Construction altering natural shoreline

Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fishkills should be phased out or upgraded where feasible.

Section 30236 Water supply and flood control

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Section 30237 (Repealed by Ch. 286, Stats. 2004.)

ARTICLE 5
LAND RESOURCES

Section 30240 Environmentally sensitive habitat areas; adjacent developments

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

(Amended by Ch. 285, Stats. 1991.)

Section 30241 Prime agricultural land; maintenance in agricultural production

The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas' agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.

(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.

(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.

(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.

(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

(Amended by: Ch. 1066, Stats. 1981; Ch. 43, Stats. 1982.)

Section 30241.5 Agricultural land; determination of viability of uses; economic feasibility evaluation

(a) If the viability of existing agricultural uses is an issue pursuant to subdivision (b) of Section 30241 as to any local coastal program or amendment to any certified local coastal program submitted for review and approval under this division, the determination of "viability" shall include, but not be limited to, consideration of an economic feasibility evaluation containing at least both of the following elements:

(1) An analysis of the gross revenue from the agricultural products grown in the area for the five years immediately preceding the date of the filing of a proposed local coastal program or an amendment to any local coastal program.

(2) An analysis of the operational expenses, excluding the cost of land, associated with the production of the agricultural products grown in the area for the five years immediately preceding the date of the filing of a proposed local coastal program or an amendment to any local coastal program.

For purposes of this subdivision, "area" means a geographic area of sufficient size to provide an accurate evaluation of the economic feasibility of agricultural uses for those lands included in the local coastal program or in the proposed amendment to a certified local coastal program.

(b) The economic feasibility evaluation required by subdivision (a) shall be submitted to the commission, by the local government, as part of its submittal of a local coastal program or an amendment to any local coastal program. If the local government determines that it does not have the staff with the necessary expertise to conduct the economic feasibility evaluation, the evaluation may be conducted under agreement with the local government by a consultant selected jointly by local government and the executive director of the commission.

(Added by Ch. 259, Stats. 1984.)

Section 30242 Lands suitable for agricultural use; conversion

All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.

Section 30243 Productivity of soils and timberlands; conversions

The long-term productivity of soils and timberlands shall be protected, and conversions of coastal commercial timberlands in units of commercial size to other uses or their division into units of noncommercial size shall be limited to providing for necessary timber processing and related facilities.

Section 30244 Archaeological or paleontological resources

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

ARTICLE 6
DEVELOPMENT

Section 30250 Location; existing developed area

(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.

(b) Where feasible, new hazardous industrial development shall be located away from existing developed areas.

(c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.

(Amended by Ch. 1090, Stats. 1979.)

Section 30251 Scenic and visual qualities

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30252 Maintenance and enhancement of public access

The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service, (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing nonautomobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.

Section 30253 Minimization of adverse impacts

New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

(c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.

(d) Minimize energy consumption and vehicle miles traveled.

(e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.

(Amended by Ch. 179, Stats. 2008)

Section 30254 Public works facilities

New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.

Section 30254.5 Terms or conditions on sewage treatment plant development; prohibition

Notwithstanding any other provision of law, the commission may not impose any term or condition on the development of any sewage treatment plant which is applicable to any future development that the commission finds can be accommodated by that plant consistent with this division. Nothing in this section modifies the provisions and requirements of Sections 30254 and 30412.

(Added by Ch. 978, Stats. 1984.)

Section 30255 Priority of coastal-dependent developments

Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

(Amended by Ch. 1090, Stats. 1979.)

ARTICLE 7
INDUSTRIAL DEVELOPMENT

Section 30260 Location or expansion

Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Sections 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.

Section 30261 Tanker facilities; use and design

Multicompany use of existing and new tanker facilities shall be encouraged to the maximum extent feasible and legally permissible, except where to do so would result in increased tanker operations and associated onshore development incompatible with the land use and environmental goals for the area. New tanker terminals outside of existing terminal areas shall be situated as to avoid risk to environmentally sensitive areas and shall use a monobuoy system, unless an alternative type of system can be shown to be environmentally preferable for a specific site. Tanker facilities shall be designed to (1) minimize the total volume of oil spilled, (2) minimize the risk of collision from movement of other vessels, (3) have ready access to the most effective feasible containment and recovery equipment for oil spills, and (4) have onshore deballasting facilities to receive any fouled ballast water from tankers where operationally or legally required.

(Amended by: Ch. 855, Stats. 1977; Ch. 182, Stats. 1987.)

Section 30262 Oil and gas development

a) Oil and gas development shall be permitted in accordance with Section 30260, if the following conditions are met:

(1) The development is performed safely and consistent with the geologic conditions of the well site.

(2) New or expanded facilities related to that development are consolidated, to the maximum extent feasible and legally permissible, unless consolidation will have adverse environmental consequences and will not significantly reduce the number of producing wells, support facilities, or sites required to produce the reservoir economically and with minimal environmental impacts.

(3) Environmentally safe and feasible subsea completions are used when drilling platforms or islands would substantially degrade coastal visual qualities unless use of those structures will result in substantially less environmental risks.

(4) Platforms or islands will not be sited where a substantial hazard to vessel traffic might result from the facility or related operations, as determined in consultation with the United States Coast Guard and the Army Corps of Engineers.

(5) The development will not cause or contribute to subsidence hazards unless it is determined that adequate measures will be undertaken to prevent damage from such subsidence.

(6) With respect to new facilities, all oilfield brines are reinjected into oil-producing zones unless the Division of Oil and Gas, Geothermal Resources of the Department of Conservation determines to do so

would adversely affect production of the reservoirs and unless injection into other subsurface zones will reduce environmental risks. Exceptions to reinjections will be granted consistent with the Ocean Waters Discharge Plan of the State Water Resources Control Board and where adequate provision is made for the elimination of petroleum odors and water quality problems.

(7)(A) All oil produced offshore California shall be transported onshore by pipeline only. The pipelines used to transport this oil shall utilize the best achievable technology to ensure maximum protection of public health and safety and of the integrity and productivity of terrestrial and marine ecosystems.

(B) Once oil produced offshore California is onshore, it shall be transported to processing and refining facilities by pipeline.

(C) The following guidelines shall be used when applying subparagraphs (A) and (B):

(i) "Best achievable technology," means the technology that provides the greatest degree of protection taking into consideration both of the following:

(I) Processes that are being developed, or could feasibly be developed, anywhere in the world, given overall reasonable expenditures on research and development.

(II) Processes that are currently in use anywhere in the world. This clause is not intended to create any conflicting or duplicative regulation of pipelines, including those governing the transportation of oil produced from onshore reserves.

(ii) "Oil" refers to crude oil before it is refined into products, including gasoline, bunker fuel, lubricants, and asphalt. Crude oil that is upgraded in quality through residue reduction or other means shall be transported as provided in subparagraphs (A) and (B).

(iii) Subparagraphs (A) and (B) shall apply only to new or expanded oil extraction operations. "New extraction operations" means production of offshore oil from leases that did not exist or had never produced oil, as of January 1, 2003, or from platforms, drilling island, subsea completions, or onshore drilling sites, that did not exist as of January 1, 2003. "Expanded oil extraction" means an increase in the geographic extent of existing leases or units, including lease boundary adjustments, or an increase in the number of well heads, on or after January 1, 2003.

(iv) For new or expanded oil extraction operations subject to clause (iii), if the crude oil is so highly viscous that pipelining is determined to be an infeasible mode of transportation, or where there is no feasible access to a pipeline, shipment of crude oil may be permitted over land by other modes of transportation, including trains or trucks, which meet all applicable rules and regulations, excluding any waterborne mode of transport.

(8) If a state of emergency is declared by the Governor for an emergency that disrupts the transportation of oil by pipeline, oil may be transported by a waterborne vessel, if authorized by permit, in the same manner as required by emergency permits that are issued pursuant to Section 30624.

(9) In addition to all other measures that will maximize the protection of marine habitat and environmental quality, when an offshore well is abandoned, the best achievable technology shall be used.

b) Where appropriate, monitoring programs to record land surface and near-shore ocean floor movements shall be initiated in locations of new large-scale fluid extraction on land or near shore before operations begin and shall continue until surface conditions have stabilized. Costs of monitoring and mitigation programs shall be borne by liquid and gas extraction operators.

c) Nothing in this section shall affect the activities of any state agency that is responsible for regulating the extraction, production, or transport of oil and gas.

(Amended by Ch. 420, Stats. 2003)

Section 30263 Refineries or petrochemical facilities

(a) New or expanded refineries or petrochemical facilities not otherwise consistent with the provisions of this division shall be permitted if (1) alternative locations are not feasible or are more environmentally damaging; (2) adverse environmental effects are mitigated to the maximum extent feasible; (3) it is found that not permitting such development would adversely affect the public welfare; (4) the facility is not located in a highly scenic or seismically hazardous area, on any of the Channel Islands, or within or contiguous to environmentally sensitive areas; and (5) the facility is sited so as to provide a sufficient buffer area to minimize adverse impacts on surrounding property.

(b) New or expanded refineries or petrochemical facilities shall minimize the need for once-through cooling by using air cooling to the maximum extent feasible and by using treated waste waters from inplant processes where feasible.

(Amended by Ch. 535, Stats. 1991)

Section 30264 Thermal electric generating plants

Notwithstanding any other provision of this division, except subdivisions (b) and (c) of Section 30413, new or expanded thermal electric generating plants may be constructed in the coastal zone if the proposed coastal site has been determined by the State Energy Resources Conservation and Development Commission to have greater relative merit pursuant to the provisions of Section 25516.1 than available alternative sites and related facilities for an applicant's service area which have been determined to be acceptable pursuant to the provisions of Section 25516.

Section 30265 Legislative findings and declarations; offshore oil transportation

The Legislature finds and declares all of the following:

(a) Transportation studies have concluded that pipeline transport of oil is generally both economically feasible and environmentally preferable to other forms of crude oil transport.

(b) Oil companies have proposed to build a pipeline to transport offshore crude oil from central California to southern California refineries, and to transport offshore oil to out-of-state refiners.

(c) California refineries would need to be retrofitted if California offshore crude oil were to be used directly as a major feedstock. Refinery modifications may delay achievement of air quality goals in the southern California air basin and other regions of the state.

(d) The County of Santa Barbara has issued an Oil Transportation Plan which assesses the environmental and economic differences among various methods for transporting crude oil from offshore California to refineries.

(e) The Governor should help coordinate decisions concerning the transport and refining of offshore oil in a manner that considers state and local studies undertaken to date, that fully addresses the concerns of all affected regions, and that promotes the greatest benefits to the people of the state.

(Added by Ch. 1398, Stats. 1984; amended by Ch. 294, Stats. 2006.)

COASTAL DEVELOPMENT APPROVAL PROCESS IN DETAIL

1.1 What is the local coastal program?

The law known as the California Coastal Act of 1976 requires each coastal city and county to prepare a local coastal program that establishes the kind, location, and intensity of land and water uses appropriate to its portion of the coastal zone. A local coastal program, or LCP, consists of a local government's land use plan and land use map, zoning ordinance and zoning district maps, and other implementing measures that carry out the LCP's purpose.

The Calif. Coastal Act of 1976 is part of the state's Public Resources Code, beginning at section 30000

The two primary components of the LCP are the land use plan, or LUP, and the zoning/implementation plan, or IP. The LUP contains a set of written policies that provide direction for decision-makers, property owners, and the public regarding the types and intensities of land uses that are most suited to each coastal area. The LUP also includes a land use map that shows generally the uses that are appropriate in each area, maps of sensitive biological resources, and maps of other coastal resources, as appropriate, such as coastal public accessways. Some cities and counties have opted to divide their coastal area for planning purposes into more than one geographic "segment"; Marin County's original local coastal program included two LUPs, one for the southern part of the coastal zone ("Unit 1") and one for the northern part ("Unit 2").

The zoning/implementation plan, or IP, includes the relevant portions of the local government's zoning code, which regulates land uses and establishes appropriate height, bulk, and setback requirements for structures, as well as specific standards which carry out land use plan policies. The IP also contains zoning maps that show which zoning rules apply to each lot. In addition, the IP contains procedural requirements that govern which types of projects require a Coastal Permit, how a Coastal Permit can be obtained, and the opportunities for public participation in Coastal Permit review.

Interim Chapters 22.56 and 22.57 of Title 22 of the Marin County Code are the primary components of the existing LCP zoning/IP; Article V of the Marin County Development Code is the primary component of the updated zoning/IP

A third document related to the local coastal program is a set of procedural documents intended to assist property owners and the public in understanding the day-to-day application of the LCP. These procedures, called here the "administrative manual," include Coastal Permit application forms, the "categorical exclusion orders" that define certain types of projects that are exempt from Coastal Permits, and a chart that summarizes Coastal Permit requirements and exemptions. The administrative manual is not, in itself, a part of the LCP, although it reflects LCP requirements.

When reviewing a local coastal program submittal, the Coastal Commission votes separately on the two components of the LCP, first on the LUP, and then on the IP. The Coastal Commission staff prepares a written recommendation on each component of the LCP for review by the Commission, the County, and members of the public. Under the Coastal Act, in order to certify the local coastal program the Coastal Commission must determine (1) that the land use plan conforms with the requirements of Chapter 3 of the Coastal Act, and (2) that the zoning and implementation provisions are consistent with, and adequate to carry out, the land use plan policies. In other words, for each land use plan policy, there must be zoning or other implementing measures that reflect that policy and ensure that it will be applied to coastal projects. The overall intent of the LCP structure is that Coastal Permit decisions, and more specifically the land development and other projects that they authorize, will reflect the goals and objectives of the local coastal program. Once approved, the local coastal program (including LUP and IP components) remains unchanged, unless and until the County adopts and the Coastal Commission subsequently certifies amendment(s) to it.

Under CEQA, the Secretary of Resources may certify a regulatory program of a state agency as exempt from the preparation of an Environmental Impact Report (EIR) if the agency's program provides sufficient environmental information; see Public Resources Code section 21080.5

Pursuant to the California Environmental Quality Act (CEQA), land use plans and zoning ordinances adopted by counties and cities are typically accompanied by environmental review documents, such as an Environmental Impact Report (EIR). Local coastal programs are also subject to CEQA but environmental documentation takes place in a different manner. The California Secretary for Resources has determined that the Coastal Commission's process of reviewing and adopting local coastal programs itself provides the consideration of environmental impacts, project alternatives, and mitigation measures required by CEQA, and is legally the "functional equivalent" of the documentation provided in an EIR or negative declaration. For instance, the Coastal Commission's published reports and findings supporting its action on a local coastal program must contain a discussion of environmental impacts, project alternatives, and suitable mitigation measures, as appropriate. The County's LCP update process has addressed CEQA requirements in a way that supports the "functional equivalency" provision, and therefore a separate environmental review document has not been prepared for the local coastal program.

Chapter 3 of the Coastal Act begins at Public Resources Code section 30200

Local coastal program policies, in turn, are intended to reflect and carry out the coastal resource protection provisions of the Coastal Act of 1976. Those policies are contained in Chapter 3 of the Coastal Act. Among the Chapter 3 policies are those that encourage the provision of public access to and along the shoreline; the LCP is required to have an identifiable "public access component" in order to address existing and proposed opportunities for the public to get to the shore.

1.2 What is the coastal zone?

The "coastal zone" is the geographic area to which the policies of the Coastal Act apply. The coastal zone is defined by the Coastal Act of 1976 and is shown on a set of maps prepared by the California Coastal Commission. In Marin County, the coastal zone extends the length of the County, a distance of some 70 miles, from the Sonoma County line to near Point Bonita, west of the Golden Gate Bridge. The coastal zone extends seaward a distance of three miles, which is the extent of California's state waters. The coastal zone extends landward a variable distance, depending on topography. Because the coastal zone is defined by law, changes to it can be made only by the Legislature (except for certain specified minor changes, such as to avoid bisecting a lot, that the Coastal Commission may approve).

California's coastal zone is defined by Public Resources Code section 30103. In Marin County, the coastal zone is similar to, but not the same as, the coastal corridor designated by the Countywide Plan

In the vicinity of the Estero Americano and Estero de San Antonio, in the northwest part of the County, the coastal zone extends up to 5 miles inland. The coastal zone also includes both sides of Tomales Bay, the perimeter of the Point Reyes Peninsula, and the shoreline south to a point outside the Golden Gate. The coastal zone does not include the portions of Marin County that adjoin San Francisco Bay. Within Marin County's coastal zone are the communities of Dillon Beach, Oceana Marin, Tomales, Marshall, Point Reyes Station, Inverness, Olema, Bolinas, Stinson Beach, and Muir Beach.

For regulatory purposes, federal lands, such as those within the Point Reyes National Seashore and the Golden Gate National Recreation Area, are not technically within the coastal zone. Land use decisions on federal lands are generally subject to a type of Coastal Commission jurisdiction known as "federal consistency review." The Coastal Commission has the authority, under federal laws and rules, to determine whether certain federal actions are consistent with California's federally recognized coastal management program. The policies of the certified local coastal program provide guidance to the Coastal Commission in making federal consistency decisions.

1.3 What is a "Coastal Permit"?

After Marin County's local coastal program was initially approved by the Coastal Commission, a process known as "certification", in 1980/81, the County took on responsibility for reviewing and issuing Coastal Permits for development within its jurisdiction area. Coastal Permits are required for activities defined as "development" by the Coastal Act, unless

"Development" is defined in the Coastal Act by Public Resources Code section 30106.

See the "flow charts" that follow this discussion for an illustration of the Coastal Permit review process.

otherwise exempted. While the County reviews Coastal Permit applications for proposed development in most areas of the coastal zone, the Coastal Commission retains permanent jurisdiction (also known as "original jurisdiction") even after LCP certification over developments on tidelands, submerged lands, and public trust lands. For example, the Coastal Commission reviews Coastal Permit applications for construction of mariculture facilities located in Tomales Bay, using the LCP's mariculture policies for guidance.

The Coastal Commission also exercises appeal jurisdiction over certain Coastal Permit applications reviewed by Marin County. There are two kinds of "appealable" development projects. One kind consists of projects located within a geographic appeals area defined by the Coastal Act (generally, that area located between the Pacific Ocean, including Tomales Bay, and the first public road paralleling the ocean, in addition to areas near streams and wetlands). Some of these geographic appeals areas are shown on maps adopted by the Coastal Commission. (*Note: Not all geographic areas are, or can be, reflected on maps.*) The second kind of appealable development consists of projects, regardless of location, that are not listed in the County's certified coastal zoning code as the "principal permitted use" within the applicable zone district. Thirdly, major public works and major energy facilities are appealable to the Coastal Commission.

See Public Resources Code section 30603 regarding appeals to the Coastal Commission.

In most cases only those projects that have been approved, rather than denied, by the County can be appealed to the Coastal Commission. Furthermore, the Coastal Commission requires generally that all appealable developments be afforded a public hearing by the County decision maker(s), or at least the opportunity for a public hearing, if requested by an interested party. In general, the Coastal Commission requires that all opportunities for local appeal be "exhausted" (that is, taken through all available levels), prior to the filing of an appeal with the Coastal Commission. However, if the County charges an appeals fee, then a prospective appellant may file an appeal directly with the Coastal Commission (which charges no appeals fee, unless the appeal is determined to be "frivolous").

Relatively few Coastal Permits have been appealed to the California Coastal Commission; records of some 2,100 Coastal Permits acted on by Marin County from 1982 to 2009 show fewer than 10 appeals to the Coastal Commission

When the Coastal Commission considers an appeal of a Coastal Permit decision made by the County, the Local Coastal Program provides the "standard of review" against which the proposed development is considered. The Marin County LCP thus forms the basis for both the County's initial decision on the project and, should the project be appealed to the Coastal Commission, for any subsequent decision the Coastal Commission might make on the project. Furthermore, to approve a development on a site located between the sea and the nearest public road, the County (or the Coastal Commission, if the project has been appealed

to that body) must make an additional specific finding that the project is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act.

The Coastal Act offers the option of "consolidated review" for any single project that requires both a Coastal Permit from Marin County and a Coastal Permit from the Coastal Commission. Such a case can arise for a project site located near the shoreline, for instance, where part of the project is in the Coastal Commission's "original jurisdiction" area, while the remainder is in the County's jurisdiction area. If the applicant, the County, and the Coastal Commission (through its executive director) agree, then the Coastal Commission may process and act upon a consolidated coastal development permit. Doing so would result in an applicant needing only one, rather than two separate, Coastal Permits. The standard of review for a consolidated Coastal Permit is Chapter 3 of the Coastal Act, with the Local Coastal Program used as guidance.

See Public Resources Code section 30601.3 for more on "consolidated permit" review.

1.4 Brief History of the Marin County Local Coastal Program

Marin County's local coastal program (LCP) took effect on May 13, 1982. The County elected to prepare the LCP land use plan in two geographic parts. The Board of Supervisors approved the plan for the southern portion of the coastal zone, known as Unit 1, on August 21, 1979. Unit 2, the plan for the northern part of the coastal zone (including agriculture policies for all of the County's coastal zone), was approved by the Board of Supervisors on December 9, 1980. Following completion of the Unit 1 and Unit 2 plans and their approval by the Coastal Commission, the County prepared zoning and implementing provisions for its entire coastal zone area. Upon final approval by the Coastal Commission, the County took over responsibility for reviewing coastal permits.

The Marin County LCP, which took effect in 1982, included the Unit 1 and Unit 2 land use plans, along with Chapters 22.56 and 22.57 of the Marin County Code and applicable zone district maps

a) Local Coastal Program Amendments

Some fifteen amendments to the original LCP were adopted between 1982 and 2008. These amendments include some of very limited scope, such as those that simply modified the potentially allowable use of a particular lot, as well as others with broader effects, changing land use policies throughout the County's coastal zone or incorporating certain community plans into the LCP.

b) Categorical Exclusion Orders

In addition to "certifying" the LCP in 1982, the Coastal Commission approved three related documents known as "categorical exclusion orders." These documents are mechanisms by which the Coastal

"Categorical exclusion orders" are authorized by the Calif. Coastal Act; see Public Resources Code section 30610(e). Preparation and approval of categorical exclusion orders is optional under the Coastal Act, not required

Commission has "excluded" certain categories of development, in specified locations, from the requirement to obtain a Coastal Permit that would otherwise apply. Marin County's categorical exclusion orders (#E-81-2, E-81-6, and E-82-6) cover certain agriculturally-related developments, lot line adjustments, signs, single-family residences within specified and mapped portions of Dillon Beach, Oceana Marin, Tomales, Point Reyes Station, and Olema, and certain additions to single-family residences. For instance, in many cases, an addition to a single-family residence of less than 50 percent of the floor area of the dwelling before the addition, or 1,000 square feet, whichever is less, is excluded from a Coastal Permit. The exclusion of these developments from the Coastal Permit requirement resulted from a determination by the Coastal Commission that the specified developments would have no potential for significant adverse effects, either individually or cumulatively, on coastal resources.

The categorical exclusion orders that apply to Marin County are separate from the LCP. These orders were adopted by the Coastal Commission under a different type of review (including environmental review) than the LCP itself. For instance, preparation of the LCP is subject to the "functional equivalency" provisions of the California Environmental Quality Act (CEQA) and accompanying regulations, which provide that the Coastal Commission's process of review and approval satisfies environmental review requirements, without preparation of a separate Environmental Impact Report (EIR). By contrast, preparation of a categorical exclusion order is not subject to the "functional equivalency" provision, and therefore must be accompanied by an Environmental Impact Report or negative declaration, as appropriate. Although the provisions of the LCP have been updated through amendments, no change has been made to the categorical exclusion orders. They continue to apply to the specified types of development, just as they did in 1981 and 1982 when approved by the Coastal Commission. For ease of administration, the categorical exclusion orders have been referenced in the LCP, including in the "administrative manual."

Public Resources Code section 30213, as amended, addresses "lower cost visitor and recreational facilities" but not housing facilities; Public Resources Code section 30007 provides that nothing in the Coastal Act exempts local governments from meeting other housing requirements

c) Affordable housing provisions

As originally adopted in 1976, the Coastal Act contained a policy providing that housing opportunities for persons of low and moderate income shall be protected, encouraged, and where feasible, provided. The original Marin County LCP, which was prepared while that policy was in effect, contains related provisions (for instance, see pages 56 and 66 in the Unit 1 land use plan. Later, the Coastal Act was amended by the Legislature to remove the requirement regarding housing opportunities in the coastal zone for persons of low and moderate income, while at the same time providing that nothing in the Coastal Act "shall exempt local

governments from meeting the requirements of state and federal law with respect to providing low- and moderate-income housing,…" In other words, the Coastal Act does not contain housing policies that are specific to the coastal zone; instead, coastal cities and counties, along with other jurisdictions, must comply with applicable housing requirements. (See section 1.5, part (g) below for more on LCP housing provisions.)

d) LCP update process: 2008–2011 (and beyond)

The Planning Commission and staff of the Community Development Agency re-initiated efforts to revise the County's LCP in the early 2000s. The purpose of this revision has been to gather comments from residents of the County's coastal communities, members of the public, and Coastal Commission staff regarding the existing Unit 1 and Unit 2 LCPs. The LCP revision process has also provided an opportunity to see how changed conditions since 1982 might be addressed by the plan. Those who have commented on the LCP revision have noted that, in many respects, the LCP originally certified by the Coastal Commission in 1982 has served the County and its coastal resources very well. Amendments to the LCP that are reflected in this document, therefore, are intended to be primarily incremental in nature, while maintaining the plan's strong emphasis on protecting Marin County's outstanding coastal resources, agricultural activities, the natural environment, distinctive communities, and opportunities for public recreation.

Several public workshops were conducted by the Planning Commission during 2009 and 2010. Each workshop has focused on one or more LCP topics, such as community development, water quality, and environmental hazards. Direction provided by the Planning Commission as a result of these workshops has led to creation of the draft Land Use Plan (LUP) and Zoning/Implementing Program (IP), which will undergo additional public review and action by the Planning Commission and Board of Supervisors. Ultimately, the updated LCP will be submitted to the Coastal Commission for review and approval.

One goal of the LCP update is to smooth implementation by creating a single LUP in place of the separate Unit 1 and Unit 2 documents. All of the topics addressed by Units 1 and 2 are covered in the updated LCP, but are organized into groups reflecting the Elements of the Countywide Plan, adopted in 2007. Portions of the Marin County Development Code serve as the primary implementing mechanisms for the revised LCP. Because Coastal Act requirements are in some cases different from those that apply to the Countywide Plan, LCP provisions that apply to wetlands and streams, for instance, reflect some differences from Countywide Plan policies. In the coastal zone, development must meet the requirements of the LCP.

The amended Marin County Local Coastal Program consists of:

1. The land use plan (text, land use map, and resource maps)
2. Implementing Program/Zoning (Development Code provisions and zone district maps)

1.5 How does the Marin County local coastal program guide development?

The definition of "development" is contained in Public Resources Code section 30106

The concept of "development" is a key element in the way that the local coastal program is used to guide permit decisions regarding proposed projects in the coastal zone. "Development," as defined in the Coastal Act, is a broadly inclusive term, encompassing not only construction of residences, commercial projects, and other buildings, but also changes in the nature or intensity of use of land or existing buildings, as well as land divisions and certain other activities. Developments undertaken by public entities, including the County and community service/utility districts, as well as by state agencies such as Caltrans and California State Parks, are generally subject to Coastal Permit requirements.[1]

See Public Resources Code section 30610 for the authority for exclusions and exemptions from Coastal Permit requirements; see also section 30600(e) for additional Coastal Permit exemptions that apply to certain highway and public works projects

Although many construction and other projects constitute "development," the Coastal Act also provides authority for certain exemptions and exclusions from Coastal Permit requirements. For instance, the definition of "development" specifically excludes the harvesting of agricultural crops from any requirement to obtain a Coastal Permit. The Coastal Act and accompanying regulations provide that certain repair and maintenance projects and other improvements to existing structures, including single-family residences, are exempt from Coastal Permit requirements. Furthermore, certain emergency response activities, including those undertaken by a public agency to keep a road open following a landslide or other disaster, are exempt from ordinary Coastal Permit requirements. If not exempt or excluded in one way or another, "development" requires approval of a Coastal Permit.

[1] "Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. *(Public Resources Code section 30106)*

Replacement of a structure, other than a public works facility, that is destroyed by a disaster is exempt from a Coastal Permit in many cases. The criteria for the Coastal Permit exemption are stated in the Coastal Act, and they provide generally that, to be exempt, a replacement structure must be constructed for the same use as the destroyed structure, be in the same location, and be approximately the same size. A replacement structure that would not meet the specified criteria may also be proposed, such as a replacement structure to be re-sited to a different place on the property, but the project then would be subject to the regular Coastal Permit process rather than an exemption. In any event, other County requirements, such as for a building permit, remain in effect regardless of the Coastal Permit exemption.

Public Resources Code section 30610(g) addresses replacement of structures destroyed by a disaster; "disaster" is defined as "any situation in which the force or forces which destroyed the structure to be replaced were beyond the control of its owner"

Yet another exemption from the requirement to obtain a Coastal Permit for development applies to projects identified by the Coastal Commission in what are known as "categorical exclusion orders." (See Section 1.4.b above)

a) Coastal Permit Review. The Community Development Agency (CDA) is responsible for the review of Coastal Permit applications for proposed developments within Marin County's jurisdiction area. (As noted in section 1.3 above, the Coastal Commission is responsible for the review of developments on tidelands and other areas within its permanent jurisdiction area.) Activities that require a Coastal Permit often require one or more other types of zoning or development approval from the Community Development Agency under the Development Code or other County codes. If more than one type of permit is required, the permits are ordinarily processed simultaneously.

When a building project or other activity is brought to the attention of the Community Development Agency, questions that must be addressed include: is the project site within the coastal zone (see section 1.2 above)? If so, is the project site within the County's, or the Coastal Commission's, Coastal Permit jurisdiction area? Does the activity constitute a "development"? If so, is the activity exempt by law, regulation, or otherwise from the requirement of obtaining a Coastal Permit? For instance, is the activity addressed by a Categorical Exclusion Order?

An additional question must be answered in order to process a Coastal Permit application: is the project potentially appealable to the Coastal Commission (see section 1.3 above)? As noted above, if the project is appealable to the Coastal Commission, then the application must be scheduled for a public hearing, or in some cases the opportunity for a public hearing must be offered, if requested by an interested party.

The Coastal Act's Coastal Permit requirements for additions to existing single-family residences are addressed by Public Resources Code section 30610(a), and accompanying Coastal Commission regulations are at section 13250 (Title 14, Division 5.5).

"De minimis permit waivers" are addressed by Public Resources Code section 30624.7 and the Coastal Commission's regulations at section 13238 (Title 14, Division 5.5).

The answers to the questions listed above depend upon the nature of the proposed activity, as well as upon its precise location. For instance, a proposed improvement to an existing single-family residence, such as an expanded kitchen, is exempt from a Coastal Permit in most locations, but not if the site is within 50 feet of the edge of a coastal bluff. To be exempt from a Coastal Permit under a Categorical Exclusion Order, both the nature and the location of the proposed project must qualify under the terms of the order (developments of any type located on parcels adjacent to a beach or to the sea, for instance, are not categorically excluded).

If an activity is determined to require a Coastal Permit, then the applicant must submit a Coastal Permit application. The application may be processed in one of several different ways, depending on the nature and location of the project. A simple project that can be determined to have no impacts, or only minimal impacts, upon coastal resources or public access to the coast may be granted a "de minimis waiver." A de minimis waiver is a type of Coastal Permit to which no conditions of approval are attached; the project is simply approved, as is, by staff of the Community Development Agency. *[Note that the de minimis waiver procedure was not part of Marin County's original 1982 local coastal program. Instead, the de minimis waiver procedure is a "streamlining" measure that is anticipated to be included in the draft updated LCP.]*

If conditions of approval are appropriate (and therefore the proposed project does not qualify for a de minimis waiver), then a Coastal Permit is required. A Coastal Permit may, in some cases, be approved administratively, without a public hearing, by the Director of the Community Development Agency. Because no local public hearing is held, an administrative permit is suitable only for a project which is not potentially appealable to the Coastal Commission, because the Coastal Commission requires that a project appealed to that body should first have been afforded a public hearing before the County decision-maker(s).

If a public hearing is required, such as for an appealable project, then the hearing is scheduled in order to allow input from members of the community and the general public prior to a decision on the application. Public hearings on Coastal Permit applications are held by the Deputy Zoning Administrator, whose permit decisions are appealable first to the Planning Commission and subsequently to the Board of Supervisors. Public hearings can also be held by the Planning Commission with the decisions appealable to the Board of Supervisors.

A streamlining measure that was not available in 1982 when the County's original local coastal program was approved applies to proposed development that, although appealable to the Coastal Commission, is defined by the Coastal Act as a "minor development." A "minor

development" is one that the County determines is consistent with the local coastal program, requires no discretionary approvals other than a Coastal Permit, and would have no adverse effects on coastal resources or public access to the coast. A Coastal Project that would meet that definition but would require a public hearing because it could be appealed to the Coastal Commission can be processed expeditiously through use of a "public hearing waiver." In such a case, public notice is provided to neighboring property owners and others who may have an interest in the project, alerting them that a public hearing will be scheduled only if requested by one of them. Notice of the potential "public hearing waiver" must be provided to all the same persons that would be notified if a public hearing were actually scheduled. If no one requests a public hearing, then the hearing requirement is simply waived, and the Community Development Agency proceeds to take action on the Coastal Permit application.

Coastal Permit decisions are made by the County only after the permit application is determined to be complete and the appropriate type of Coastal Permit action is selected, as described above. The Zoning/Development Application Submittal Guide provided by the Community Development Agency explains the submittal requirements for various types of permits, including Coastal Permits. The submittal requirements typically include plans and other materials that explain the proposed project; other submittal requirements reflect specific policies of the local coastal program, such as the need in some cases for the County to obtain a biological survey paid for by the applicant to document sensitive biological resources that could be affected by a project.

A Coastal Permit decision is supported by a completed application, project plans, and other file materials, as well as (except in the case of a de minimis waiver) a written staff report that describes the proposed project and its relationship to applicable LCP provisions. A decision on the Coastal Permit application, which follows the conclusion of the public hearing, if held, includes "findings" that explain how the proposed project does or does not comply with LCP provisions. Those provisions include both applicable policies of the land use plan and provisions of the appropriate sections of the County Code that have been approved as part of the LCP. Coastal Permit findings address only LCP requirements; the relationship of a proposed project to the Countywide Plan, community plans that are not incorporated in the LCP, or other plans is documented elsewhere. If necessary to ensure that a proposed project will be consistent during and after construction with LCP requirements, conditions of approval may be adopted.

Decisions of the Deputy Zoning Administrator may be appealed to the Planning Commission and the Board of Supervisors. Furthermore, as

described above, certain Coastal Permit decisions may be appealed to the California Coastal Commission.

"Emergency" means: "a sudden, unexpected occurrence demanding immediate action to prevent or mitigate loss or damage to life, health, property, or essential public services." (section 13329, Coastal Commission regulations)

b) Emergency Coastal Permits. The Coastal Act provides for two kinds of response to an emergency. First, when there is insufficient time to issue a regular or administrative Coastal Permit for a development required to respond to an emergency, the Community Development Agency Director or designated official may grant an emergency permit upon reasonable terms and conditions. For instance, where storm-related erosion threatens a structure with collapse, a property owner might seek an emergency permit to strengthen the building's foundation. Ordinarily, an emergency permit of this type includes an expiration date and a requirement that a "follow-up" Coastal Permit be obtained, in order to authorize development on a permanent basis. The follow-up Coastal Permit is subject to requirements for public notice, a public hearing if required, and other procedures that are ordinarily followed for non-emergency Coastal Permits.

Emergency permits are authorized by Public Resources Code section 30624; the "emergency permit waiver" is authorized by Public Resources Code section 30611.

A second type of emergency response applies only to the provision of public services. When immediate action by a person or public agency performing a public service is required to protect life and public property from imminent danger, or to restore, repair, or maintain public works, utilities, or services, or in other cases of emergency, the requirement of obtaining a Coastal Permit may be waived upon notification of the Executive Director of the Coastal Commission. This type of emergency response does not authorize the permanent erection of major structures.

c) "Non-coastal" development permits. The Development Code, Title 22 of the Marin County Code, provides requirements for the development and use of private and public land, buildings, and structures within Marin County. Additional requirements affecting development and the use of property are contained in other sections of the Marin County Code, such as Title 23 (Natural Resources) and Title 24 (Development Standards). These provisions protect the health and welfare of Marin County residents and the general public and are based on laws and regulations other than the California Coastal Act of 1976, which authorizes the issuance of Coastal Permits. Although a Coastal Permit and other County permits needed for a particular project are generally processed at the same time, the permits are distinct. The standards applied to the permits are different, review procedures are different, and appeal procedures are different.

Design Review procedures are contained in Chapter 22.42 of the Development Code (Marin County Code Title 22)

Design Review is a type of County development review that is separate from Coastal Permit review. Plans and proposals for physical improvements are scrutinized as a means of assuring that, for instance, the exterior appearance of a proposed structure, landscaping, parking, and

signs, will be compatible with the design, scale, and context of surrounding properties. Although the objective of Design Review may be similar to the objective of the local coastal program with respect to assuring compatibility of appearance, Design Review is a separate process. The standards applied to the Design Review of a proposed project are those contained in the Countywide Plan and the applicable community plan, whereas the standards applied to the review of a Coastal Permit are those contained in the local coastal program. Moreover, in the event that a County-approved Coastal Permit is appealed to the California Coastal Commission, that body would look only at local coastal program standards in reviewing the appeal, and not the provisions of the Countywide Plan and community plan.

Master Plans, Precise Development Plans, and Use Permits are other examples of County entitlements that are separate from Coastal Permits. Each type of entitlement has its own standards and procedures under the Marin County Code. Each is separate from Coastal Permit requirements.

Under the California Government Code, variances from standards of the Marin County Development Code may be granted due to special circumstances applicable to a property, including size, shape, topography, or surroundings of a lot, when the strict application of the Development Code would deny the property owner privileges enjoyed by other property owners in the vicinity and under an identical zoning district. Coastal Permit Variances provide relief from standards relating to height, floor area ratio, and setbacks. Coastal Permit Variances cannot be granted for relief from LCP policies, use limitations, or minimum lot size and density requirements.

d) Pre-existing development. Existing structures and land uses generally do not require a Coastal Permit to continue in existence. Structures and land uses legally in existence now and that were already in existence before February 1, 1973, when the predecessor statute to the Coastal Act of 1976 took effect, are generally considered to be "grandfathered," and thus do not require Coastal Permit approval to continue in place. However, any person claiming a vested right in a development and who wishes to be exempt from the permit requirements of the Coastal Act must substantiate that claim in a proceeding before the Coastal Commission.

A structure or new land use that came into existence on or after February 1, 1973, on the other hand, should have been authorized by a Coastal Permit, unless specifically exempted, either from the California Coastal Commission or the County of Marin. If no Coastal Permit was ever issued for a development that came into existence on or after February 1, 1973, even if the project was authorized by building permits or other land use

entitlements at the time, then an "after-the-fact" Coastal Permit is ordinarily required or, in some cases, removal of the development. The determination of whether a Coastal Permit is required in any given case depends on the facts of the particular case.

e) Areas of deferred certification. Certain coastal areas located within a county or city jurisdiction area are known as "areas of deferred certification" (ADCs). Such geographic areas are not considered by the Coastal Commission to be part of the final, certified local coastal program, even while surrounded by other areas that are addressed by the LCP. The creation of an ADC results generally from a lack of agreement between the Coastal Commission and a county or city regarding the local coastal program policies or zoning provisions that should apply to a specific geographic area. Certification by the Coastal Commission of the remainder of the LCP jurisdiction area may occur, while the site of the disagreement remains "uncertified."

In Marin County's original local coastal program, there is one ADC, namely the row of lots on the north side of Calle del Arroyo, adjoining Bolinas Lagoon in Stinson Beach. Those lots are considered to be an "area of deferred certification" stemming from the County's approval of the LCP in the early 1980s and disagreement with the Coastal Commission over appropriate zoning designation for those parcels. Consequently, those lots were not considered part of the certified local coastal program, and any proposal to develop them would require Coastal Permit review by the Coastal Commission, rather than the County.

f) Community plans. Community plans are considered part of the Marin Countywide Plan. Community plans supplement the Countywide Plan by providing local goals and objectives that pertain to an individual community. Such plans are typically prepared with substantial input from community members, and they provide more detail and explanation of desired outcomes.

The Dillon Beach Community Plan and the Bolinas Gridded Mesa Plan were certified by the Coastal Commission, via amendments to the Local Coastal Program. Selected policies of the Point Reyes Station Community Plan that relate to development of affordable housing were also certified by the Coastal Commission.

Other Community Plans have been prepared for the coastal communities of Muir Beach, Stinson Beach, Bolinas, Point Reyes Station, Inverness Ridge communities, East Shore communities (Tomales Bay), and Tomales. These govern permits issued under the Countywide Plan, such as Design Reviews and Use Permits. The updated LCP incorporates many Community Plan policies that were identified by members of the

communities as being appropriate to be part of the LCP. The community plans themselves remain as separate documents.

g) Housing provisions. Since the original Marin County local coastal program was prepared, the Legislature has adopted a number of housing laws that apply both within and outside the coastal zone. Nothing in the Coastal Act exempts a local government from meeting such requirements. At the same time, in meeting housing requirements a local government is not exempted from meeting the requirements of the Coastal Act. Therefore, statutory requirements for protection of coastal resources and for the provision of housing must be applied in such a way as to carry out simultaneously several different policy goals. Addressing both Coastal Act and housing law requirements demands an individual approach for each local coastal program, which reflects local conditions, ordinances, and permitting procedures.

Government Code section 65852.2 addresses second residential units; Marin County Code section 22.32.140 reflects the requirements of this law

State law supports second residential units within residential areas. The law provides, with certain exceptions, for streamlined permit processing through the use of "ministerial approval" for second residential units. Marin County has adopted a series of ordinances that address residential second units.

The state second-unit law provides that it does not supersede or lessen the effect of the Coastal Act. Standards for the protection of coastal resources and coastal access therefore are unchanged by the law. The second unit law does, however, affect the procedure that can be used for a Coastal Permit. The law provides that a local government shall not hold a public hearing on a Coastal Permit application for a second residential unit. As noted above, the Coastal Act generally requires that a local government public hearing be held on a Coastal Permit application for a development that could be appealed to the Coastal Commission. To reconcile these different requirements, the local coastal program provides for second residential units in the coastal zone, while requiring at the same time that impacts of development on coastal resources be addressed to the maximum extent feasible through the Coastal Permit process. Requirements for public hearings on Coastal Permits (or for no local government public hearing for a second residential unit) are addressed in the Zoning/Implementation Plan portion of the local coastal program.

Government Code section 65852.2(j) provides that a local government shall not hold a public hearing on a Coastal Permit application for a second unit. Whether or not a County public hearing is held, if the second unit is located in an appealable area, then the Coastal Permit would be appealable to the Coastal Commission.

Other provisions in state law encourage affordable housing by providing for density bonuses and "incentives or concessions" intended to spur the construction of new affordable units. An incentive or concession might mean a reduction in site development standards, a modification of zoning code requirements, or some other measure that would result in cost reduction. Site development standards and other requirements are contained in the local coastal program, and therefore incentives or

Government Code section 65915 addresses density bonuses and incentives or concessions

concessions could have an effect on LCP requirements. At the same time, the affordable housing law states that it shall not be construed to supersede or lessen the effect of the Coastal Act. Consequently, both housing provisions and Coastal Act standards must be addressed and reconciled in the local coastal program. The LCP accomplishes this goal by providing policies that encourage affordable housing and by specifying the procedures by which density bonuses, incentives, or concessions may be applied to development in the coastal zone (such procedures are part of the Zoning/Implementation Plan portion of the LCP).

Marin County Local Coastal Program (LCP)

Chart: When is a Coastal Permit Required?

Part 1: Coastal Permit Required from Marin County
*(To fully analyze a given project, see also **Part 2** and **Part 3**.)*

(Note: This chart reflects permit requirements of the Marin County Local Coastal Program as proposed to be amended, as well as requirements of the Coastal Act and the California Coastal Commission's regulations.)

A C**oastal Permit**[*] is required for "development" as defined by the Coastal Act of 1976.[†] "Development" is defined broadly by the Coastal Act, and it encompasses many construction activities, land and water uses (or changes in use), and subdivisions. "Development" means on land, in or under water:

A. Placement or erection of any solid material or structure ("structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line);
B. Discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste;
C. Grading, removing, dredging, mining or extraction of any materials;
D. Change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code) and any other division of land, including lot splits, except where the land division is brought about in connection with the

[*] The Interim Zoning Ordinance uses the term "coastal project permit" (for instance in Section 22.56.040) whereas the Coastal Act refers to "coastal development permit" (see Public Resources Code Sec. 30101.5)

[†] "Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. *(Calif. Public Resources Code Sec. 30106)*

In contrast to the term "development," "new development" has a slightly different definition, according to Public Resources Code Sec. 30212, for purposes of applying the public access policies of the Coastal Act.

Part 1: Coastal Permit Required from Marin County
*(To fully analyze a given project, see also **Part 2** and **Part 3**.)*

purchase of such land by a public agency for public recreational use;
E. Change in the intensity of use of water, or of access thereto;
F. Construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and
G. The removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511).

Furthermore, a **Coastal Permit** is required for:

H. Demolition of any structure built prior to 1930.
I. Significant alteration of land forms as provided by Sec. 22.68.050.
J. Projects of state and local public agencies not exempted by Section 22.68.050.
K. Wells and borings unless exempt or categorically excluded.
L. Expansion or construction of septic systems.
M. Closure of coastal accessways.
N. Agricultural processing facilities.
O. Any improvement to a structure where the coastal permit issued for the original

Part 1: Coastal Permit Required from Marin County
*(To fully analyze a given project, see also **Part 2** and **Part 3**.)*

structure by the county or coastal commission indicated that any future improvements would require a coastal permit.
P. Any improvement made pursuant to a conversion of an existing structure from a multiple unit rental use or visitor-serving commercial use to a use involving a fee ownership or longterm leasehold, including but not limited to a condominium conversion stock cooperative conversion or motel/hotel time-sharing conversion

As a general guide, if a proposed development requires one or more Marin County land use or construction permits, such as a building permit, use permit, or subdivision approval, then a C**oastal Permit** is also required, unless a specific exemption is noted in **Part 2** of this document. Applicable codes contain the permit requirements; this chart is intended only as a guide.

Part 2: Coastal Permit Exempt

The following are exempt from a coastal permit, except as noted:

A. Improvements to existing single-family residences and other structures, including:

All fixtures and other structures, including decks, directly attached to the structure;

Residential accessory uses on the same site as an approved residential use, such as garages, swimming pools, fences, and storage sheds, but not including guest houses or self-contained residential units (as used in this section "guest house" means any accessory structure having a floor area of more than four hundred square feet or any accessory structure which contains plumbing);

Landscaping on the lot;

1) Except a coastal permit is required if the project includes:

a) An improvement to a structure located on a beach; in a wetland, stream, or lake; seaward of the mean high tide line; in an environmentally sensitive habitat area, in an area designated as highly scenic in the LCP land use plan *(Note: as of the date of this document, no areas have been designated by the LCP as "highly scenic")*; or within 50 feet of the edge of a coastal bluff; **or**

b) Any significant alteration of land forms, including removal or placement of vegetation, on a beach or sand dune, in a wetland or stream, or within 100 feet of the edge of a coastal bluff,[‡] or in environmentally sensitive habitat areas; **or**

c) The expansion or construction of water wells or septic systems;

2) And a coastal permit is required if:

Development is located between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of any beach or of the mean high tide line of the sea where there is no beach, whichever is the greater distance,

[‡] Note that the Coastal Commission's regulations for improvements to single-family dwellings are slightly different than those for improvements to other structures; in the interest of making this simpler to follow, the requirement have been merged here by using the more restrictive language of the two.

Part 2: Coastal Permit Exempt

and

the improvement would result in:

a) An increase of 10 percent or more of internal floor area of an existing structure or an additional improvement of 10 percent or less where an improvement to the structure had previously been undertaken pursuant to a coastal permit exemption; **or**

b) An increase in height by more than 10 percent of an existing structure; **or**

c) Construction of any significant non-attached structure on a residential lot, such as garages, fences, shoreline protective works, or docks.

B. Repair and maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of such repair or maintenance.

1) Except a coastal permit is required if:

The object of repair or maintenance is a seawall, revetment, bluff retaining wall, breakwater, groin, culvert, outfall, or similar shoreline work

and

the project includes:

a) Substantial alteration of the foundation of the protective work including pilings and other surface or subsurface structures, **or**

b) The placement, whether temporary or permanent, of rip-rap, artificial berms of sand or other beach materials, or any other forms of solid materials, on a beach or in coastal waters, streams, wetlands, estuaries and lakes or on a shoreline protective work except for agricultural dikes within enclosed bays or estuaries, **or**

c) The replacement of 20 percent or more of the materials of an existing structure with materials of a different kind, **or**

d) The presence, whether temporary or permanent, of **mechanized construction equipment** (such as a motor-driven back-hoe or tractor, but not including power tools) or the stockpiling or storage of **construction**

Part 2: Coastal Permit Exempt

materials on any sand area, bluff, or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams;

2) And a coastal permit is required if:

The project constitutes any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams

and

the project includes:

a) The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials, **or**

b) The presence, whether temporary or permanent, of mechanized equipment (such as a motor-driven back-hoe or tractor, but not including power tools) or the stockpiling or storage of construction materials.

3) And a coastal permit is required if:

The project constitutes any method of routine maintenance dredging that involves:

a) The dredging of 100,000 cubic yards or more within a twelve (12) month period, **or**

b) The placement of dredged spoils of any quantity within an environmentally sensitive habitat area, on any sand area, within 50 feet of the edge of a coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams, **or**

c) The removal, sale, or disposal of dredged spoils of any quantity that would be suitable for beach nourishment in an area the Coastal Commission has declared by resolution to have a critically short sand supply that must be maintained for protection of structures, coastal access, or public recreational use.

Part 2: Coastal Permit Exempt

4) And a coastal permit is required if:

The object of repair or maintenance is a structure built prior to 1930

and

The project is not consistent with the structure's original architectural character.

C. Repair and maintenance of existing public roads, as listed in the "Repair, Maintenance, and Utility Hookup Exclusions from Permit Requirements" adopted by the California Coastal Commission, Sept. 5, 1978 *(see attached)*. In general, maintenance activities are those that are necessary to preserve the road facility as constructed, within the existing right-of-way.

D. Immediate emergency work necessary to protect life or property or immediate emergency repairs to public service facilities necessary to maintain service as a result of a disaster in a disaster-stricken area in which a state of emergency has been proclaimed by the Governor pursuant to Chapter 7 (commencing with Section 8550) of Division 1 of Title 2 of the Calif. Government Code).

E. Emergency projects undertaken, carried out, or approved by a public agency to maintain, repair, or restore an existing highway, as defined in Section 360 of the Vehicle Code, except for a highway designated as an official state scenic highway pursuant to Section 262 of the Streets and Highways Code, within the existing right-of-way of the highway, damaged as a result of fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide, within one year of the damage. This paragraph does not exempt from this section any project undertaken, carried out, or approved by a public agency to expand or widen a highway damaged by fire, flood, storm, earthquake, land subsidence, gradual earth movement, or landslide.

F. The following developments (a summary only is provided here; see Categorical Exclusion Orders E-81-2, E-81-6, and E-82-6 for a complete list, maps, and a statement of conditions that apply):

1) Agricultural developments, including barns, dairy pollution projects, storage tanks, and others;

Part 2: Coastal Permit Exempt

2) Non-agricultural developments, including on-site signs, certain lot line adjustments, and traffic control signing and minor roadway improvements; 3) Single-family residences on certain lots and land divisions of four parcels or less in Point Reyes Station; 4) Single-family residences in Olema, Old Dillon Beach, Tomales, and Oceana Marin; and 5) Certain minor additions to single-family residences.
G. The replacement of any structure destroyed by a disaster if the replacement structure meets all of the following criteria: 1) Conforms to applicable existing zoning requirements; **and** 2) Is for the same use as the destroyed structure; **and** 3) Does not exceed either the floor area, height, or bulk of the destroyed structure by more than 10 percent; **and** 4) Is sited in the same location on the affected property as the destroyed structure; **Notwithstanding the above, a coastal permit is required for replacement of a public works facility destroyed by a disaster.**
H. Any activity that involves the conversion of any existing multiple-unit residential structure to a time-share project, estate, or use, as defined in Section 11003.5 of the Calif. Business and Professions Code.
I. Maintenance dredging of existing navigation channels or moving dredged material from those channels to a disposal area outside the coastal zone, pursuant to a permit from the US Army Corps of Engineers.
J. Public Utility service connections, operation and maintenance of distribution and transmission facilities, and other activities listed in the "Repair, Maintenance, and Utility Hookup Exclusions from Permit Requirements" adopted by the California Coastal Commission, Sept. 5, 1978. *(See attached)*

Part 2: Coastal Permit Exempt

K. A temporary event which:

1) Would not occupy a sandy beach, or would occupy a sandy beach only in a remote location with minimal demand for public use; **and**

2) Would not involve a charge for general public admission or seating where no fee is currently charged for use of the same area; **and**

3) Would not have the potential for adverse impacts on wetlands, streams and riparian corridors, or other environmentally sensitive habitat areas; **and**

4) Have a duration of one day or less.

Notwithstanding the above, a coastal permit for a temporary event may be required upon a determination by the Director of the Community Development Agency that:

1) The temporary event, either individually or together with other temporary events scheduled before or after the particular event, precludes the general public from use of a public recreational area for a significant period of time; **or**

2) The event and its associated activities or access requirements will either directly or indirectly impact environmentally sensitive habitat areas, rare or endangered species, or significant scenic resources; **or**

3) The event is scheduled between Memorial Day weekend and Labor Day and would restrict public use of roadways or parking areas or otherwise significantly impact public use of coastal waters or access to coastal waters.

L. Nuisance abatement actions by the County that are necessary to protect public health and safety, when such abatement must occur more quickly than could occur if authorized by a coastal permit. If exempt from a coastal permit, a nuisance abatement action shall involve the minimum level of development activity necessary to successfully abate the nuisance.

Part 3: Coastal Permit or Other Authorization Required from the California Coastal Commission

The following categories of "development" require a coastal permit or other authorization from the California Coastal Commission (or other authority), but not from Marin County:

A. Projects in the Coastal Commission's retained jurisdiction, which includes tidelands, submerged lands, or on public trust lands, whether filled or unfilled, lying within the coastal zone (Public Resources Code § 30519(b);

B. Projects within any state university or college *(Note: as of the date of this document, no state university or college is located within Marin County's coastal zone)* (Public Resources Code § 30519);

C. Public works projects subject to a public works plan (Public Resources Code § 30605). *(Note: a public works plan may include, but is not limited to, a project undertaken by the State Parks Department, Caltrans, or another transportation or public recreation agency; as of the date of this document, no public works plan as defined by the Coastal Act has been approved within Marin County's coastal zone)*

D. Projects that involve amending a coastal permit that the Coastal Commission has issued previously;

E. Projects in an area where the Local Coastal Program has not yet been certified. *(Note: in Marin County, one such "area of deferred certification" was created when the LCP was certified by the Coastal Commission on April 1, 1980. That area includes the lots located on the north side of Calle Del Arroyo adjoining Bolinas Lagoon in Stinson Beach. Contact the Coastal Commission for more information.)*

F. Thermal power plants of 50 megawatts or greater along with the transmission lines, fuel supply lines, and related facilities to serve them, which require approval by the California Public Utilities Commission (Coastal Act § 30600(a) referencing Public Resources Code § 25500). *(Note: no such power plants have been proposed in Marin County's coastal zone.)*

G. Federal projects, including but not limited to projects undertaken by the National Park Service or U.S. Army Corps of Engineers;

H. Non-federal projects on federal land, for instance, projects undertaken by leaseholders within the Point Reyes National Seashore.

Part 3: Coastal Permit or Other Authorization Required from the California Coastal Commission

For more information on projects that require Coastal Commission approval, contact:

North Central Coast District
California Coastal Commission
45 Fremont St. Suite 2000
San Francisco, CA 94105
415-904-5260

Chart #1

COASTAL PERMIT JURISDICTION

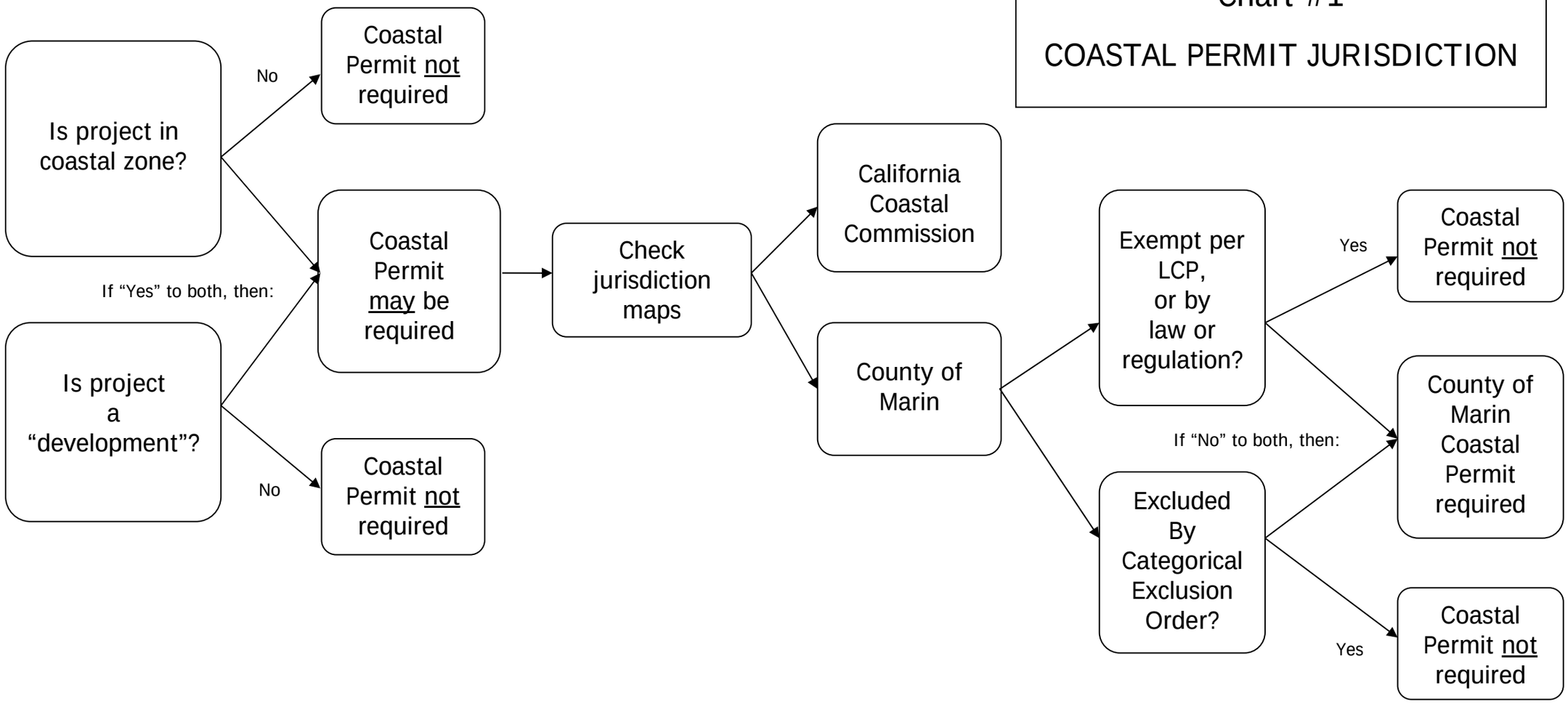
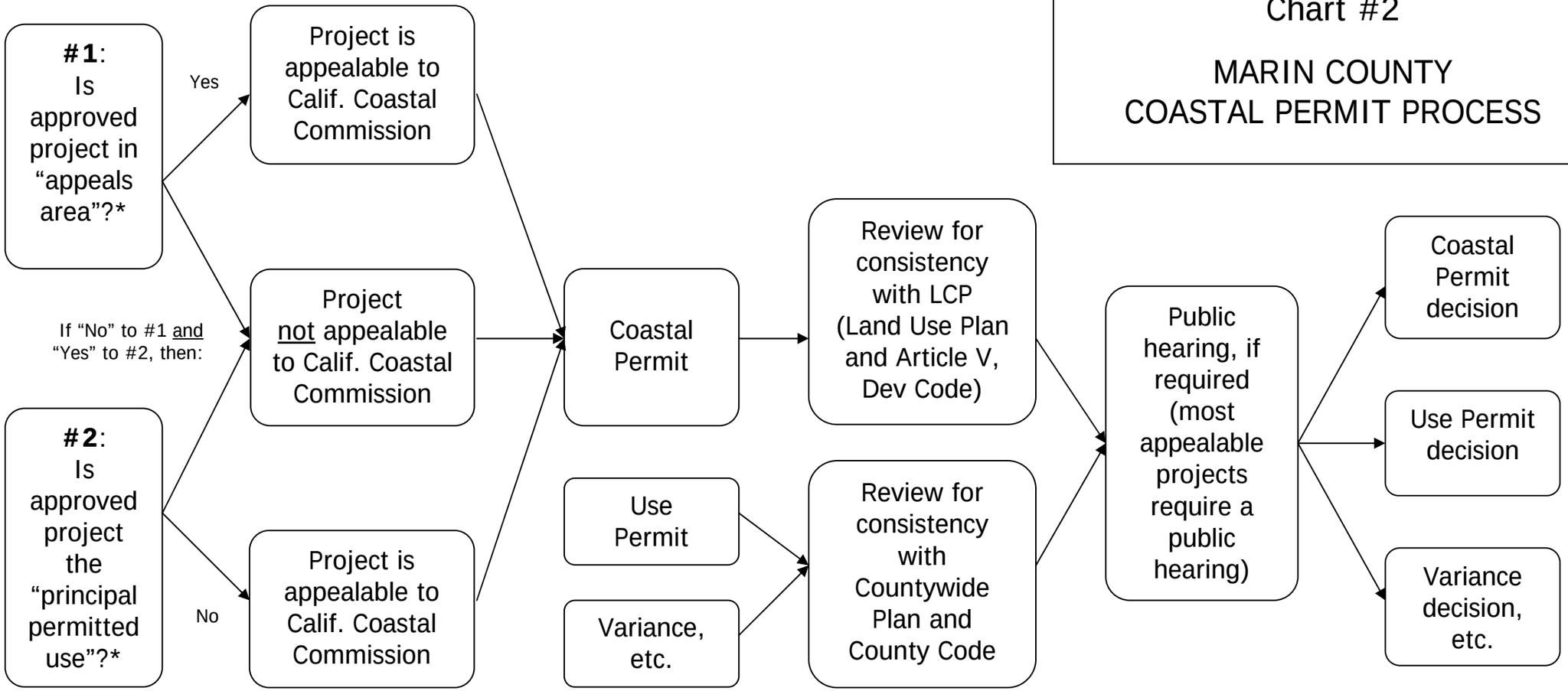


Chart #2

MARIN COUNTY COASTAL PERMIT PROCESS



*Only projects approved by the County are appealable to the Calif. Coastal Commission other than major public works projects and major energy facilities, which are appealable whether approved or denied.

MARIN COUNTY

LOCAL COASTAL PROGRAM

Units 1 & 2 *(Amended)*

Natural Resources Background Text Excerpts

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY
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UNIT 1

ADOPTED BY MARIN COUNTY BOARD OF SUPERVISORS

August 21, 1979

CERTIFIED BY STATE COASTAL COMMISSION

April 1, 1980

II. NATURAL RESOURCE PROTECTION

STREAM PROTECTION

Streams and riparian vegetation provide valuable and limited habitat for bird and animal life that must be protected under the policies of the Coastal Act. Riparian vegetation helps maintain a high level of water quality by filtering sediment from surface runoff and stabilizing soil on adjacent stream banks. In addition, the shading offered by streamside vegetation maintains cool streamwater temperatures for fish and promotes a favorable habitat for fish by contributing insects to the stream for food. Riparian vegetation growing at the edges of wetland areas acts as a noise and visual buffer between developed areas and wildlife habitat.

Such streams and adjacent vegetation are fragile habitats which can be easily disturbed or destroyed by stream alterations or by adjacent uses. The loss of riparian vegetation on streambanks can cause erosion and sedimentation to the stream, increased runoff, and higher streamwater temperatures which, in turn, adversely affect fish and wildlife. The proposed policies will assure protection to these fragile habitats through the establishment of limitations on stream alterations, protection of riparian vegetation, and the creation of stream buffer zones in accordance with Sections 30230, 30231, 30236, and 30240 (a) and (b) of the Coastal Act.

Two streams within Unit I are of special significance because they support annual runs of steelhead trout and silver salmon. Because of the importance of these fishery resources, the resource values of both Pine Gulch Creek and Redwood Creek are described in more detail below.

Pine Gulch Creek.

Pine Gulch Creek is an approximately 7 mile long perennial stream that drains a watershed of about 7.8 square miles. Of the 7 mile stream length, 3 miles are within the coastal zone. The portion of the stream within the coastal zone is partially within lands of the Point Reyes National Seashore, but the majority flows through the agricultural lands of Paradise Valley and the Pine Gulch Creek Delta. Upstream from the coastal zone, the creek flows entirely within lands of the Point Reyes National Seashore. Recorded flows have varied from a high of 715 cfs (cubic feet per second) to periods, during very dry years, or no recorded surface flow in late summer. The mean flow, the flow occurring 50 percent of the time, in Pine Gulch Creek is 2 cfs (Ritter, 1975).

Pine Gulch Creek is the principal source of fresh water to Bolinas Lagoon and probably contributes about one-half of the Lagoon's freshwater inflow. This flow is especially important in the summer when the remaining tributary streams dry up or are reduced to very low flows.

The stream supports annual runs of steelhead trout and silver salmon. The stream provides good spawning and rearing habitat for both species, and is the most important steelhead and salmon stream tributary to Bolinas Lagoon. In addition to the anadromous species, there are resident populations of rainbow trout, stickleback, and sculpin.

Steelhead and silver salmon spawning migrations occur during the period from late November through April in years of normal runoff. Most upstream migration occurs during and immediately following periods of heavy storm runoff. All silver salmon die after spawning. Steelhead, however, begin a return migration to the ocean soon after

completion of spawning.

Both juvenile steelhead and silver salmon require a period of residency in the stream before migrating downstream to the ocean. The length of freshwater residency may vary from one to three years or more depending on the living conditions in the stream. The major downstream migration of juvenile steelhead and silver salmon occurs during the period from February through June, depending on the water year and pattern of winter-spring runoff.

Fish habitat is physically reduced to a minimum during the low-flow period of July through October. This is the most critical time for survival of fish populations in Pine Gulch Creek. At this time, the actual physical habitat supporting fish life is at its minimum and the amount of available habitat becomes a limiting factor in the health and survival of fish populations.

Pine Gulch Creek offers excellent summer nursery habitat for juvenile salmonids and other fishery resources. Stream surveys and observations on the Creek have revealed the presence of high populations of juvenile steelhead and silver salmon during the summer and fall months. Headwater springs produce a perennial streamflow that maintains nursery habitat throughout the length of stream utilized by anadromous fishes.

In addition to the anadromous resource, Pine Gulch Creek helps support a wide variety of riparian associated species. Riparian vegetation is dense, consisting of alders and willows in the overstory with a variety of understory shrub and herbaceous species. Wildlife species are especially abundant in riparian zones and virtually all species common to the riparian type could be expected here. In one of the more unusual observations, sharp-tailed sparrows have been found wintering in the Pine Gulch Creek Delta.

Diversion dams and other in-stream structures or streambed alterations can seriously delay, impede or completely block the upstream and downstream migrations of anadromous salmonids. The free passage of fish is required to maintain viable populations. The migration of steelhead and silver salmon on Pine Gulch Creek require unimpeded passage from November through June.

Water diversions can be equally harmful to the salmonid resource. This is especially critical during the low-flow period of July through October when diversions can seriously limit or completely eliminate available habitat.

There are six existing water diversions on file with the Division of Water Rights, State Water Resources Control Board for Pine Gulch Creek. A seventh diversion, by the Bolinas Community Public Utility District, is in the process of being cancelled. The existing filed users can divert approximately 1.8 cfs at maximum allowed use. There may be additional diverters using water under a riparian right, pre-1914 appropriative right, or other claim of right who have not filed with the State.

The anadromous fish resource is the most sensitive wildlife use of the Creek, but most other species found in the riparian zone are dependent on the flow of water to some extent. The diversion, reduction, or elimination of flows in the Creek will reduce the quality of the habitat for these species as well.

Land use along the Creek in the Coastal Zone includes several different agricultural zonings ranging from A-5 to A-60. The majority of the A-60 land is located west of the Creek and at the southern edge of the national seashore, and about half of it is proposed for addition to the seashore. Grazing of cattle is the principal agricultural

activity on this land. The land zoned A-5 and A-10 is located in the Paradise Valley, Horseshoe Hill, and Gospel Flat section of Bolinas. Parcel sizes vary, as do the variety of agricultural uses. The Bolinas Community Plan mentions the following agricultural uses in the area: livestock grazing (cattle, horse, goat, sheep), raising other domestic animals (chickens, rabbits, bees), and both small and large scale vegetable growing.

Some agricultural practices can result in adverse impacts upon the fishery resources of the creek and ultimately upon the resource values of Bolinas Lagoon. Land erosion and resulting sedimentation can be accelerated via improper or inadequate soil conservation practices.

Redwood Creek.

Redwood Creek is an approximately 4.8 mile long perennial stream that drains a watershed of about 9.9 square miles. Of the 4.8 mile stream length, approximately one mile is within the coastal zone. The remainder of the stream flows through land owned by several public agencies including the National Park Service, State Department of Parks and Recreation, and Marin Municipal Water District. The portion of the stream within the coastal zone flows through land either owned by the Park Service in the Golden Gate National Recreation Area (GGNRA) or proposed for acquisition by them. No records of stream flow have been kept on a long term basis. Department of Fish and Game personnel measured streamflow on June 18, 1975 at two stations in the Creek. The upper station located at the southern border of Muir Woods measured 0.284 cfs (cubic feet/second). The lower station at the shoreline highway crossing measured 0.07 cfs. These flows were taken at the end of one of the driest rain seasons in this region's recorded history and probably do not represent normal flows for a mid-June period. It is more likely they represent late summer, early fall flows before the onset of the winter rains.

The stream supports annual runs of steelhead trout and silver salmon. The stream provides good spawning conditions and slightly less important juvenile rearing habitat. In addition to the anadromous species, there is also a resident population of rainbow trout in the upper reaches of the stream.

The life history and habitat requirements of steelhead and silver salmon are discussed in the section on Pine Gulch Creek and will not be repeated here. The impacts of stream alteration including diversion dams, streambed alteration, water diversions, and vegetation removal are also discussed in that section, and these impacts apply to Redwood Creek as well as Pine Gulch Creek. The State Division of Water Rights has no record of filings made to divert water from this Creek. There may be diverters using water under a riparian right, pre-1914 appropriative right, or other claim of right who have not filed statements of Water Diversion and Use with the State. A 1976 Department of Fish and Game stream survey reported two diversions.

The section of stream, through Muir Woods National Monument represents the stream's best spawning substrate and riffle system but provides the least shelter and pool habitat. This has been a result of past bank stabilization and removal of fallen trees and branches. This results in a reduction in the number of juvenile salmonids the stream is able to support. Downstream from Muir Woods, the frequency of 1 and 2 year old salmonids increases markedly where the banks have not been riprapped and where fallen vegetation is not removed.

The approval of the Pelican Inn by the Coastal Commission included a condition that requires a water quality monitoring program of Redwood Creek be instituted. The testing will be done in the adjacent section of Redwood Creek to determine if septic

effluent from the Ina is reaching the Creek.

Land use along the Creek in the coastal zone includes a mix of agricultural and residential uses. North of the Shoreline Highway Creek crossing, the land has historically supported a fresh cut flower farm. This land is now partially within the GGNRA with the remainder involved in the acquisition process.

South of the Shoreline Highway Creek crossing are a number of small lots owned by the Zen Center, Audubon Canyon Ranch, and other private owners, zoned R-A:B-2. The majority of these lots have been included for acquisition by the GGNRA in the Burton Omnibus Parks Bill. Five flood plain parcels located along Shoreline Highway, where it crosses Redwood Creek and immediately downstream, were not included in the acquisition bill. The proposed acquisition will place the entire length of the Creek in the coastal zone into public ownership with the exception of three parcels (199-181-06, 13 and 14) owned by the Zen Center, which have about 460 feet of creek frontage. The three parcels are located within the floodplain of the Creek in an area which has flooded regularly. Vegetation is primarily riparian with impressive stands of Red Alder, California Buckeye, and Willow. Wildlife species are especially abundant in riparian zones, and virtually all species common to the riparian type could be expected here.

Based on existing County zoning and standards, development of this land to the highest density allowed by zoning (10,000 sq. ft, lots) could significantly impact the Creek. It would require the removal of significant amounts of riparian vegetation, seriously reducing its value to wildlife. The installation of septic systems or similar waste disposal method would be necessary and would require a 100 foot setback from the Creek. Percolation rates acceptable to the County are not assured due to the periodic flooding and high water table of the properties.

In order to assure protection of the resource values of Redwood Creek, the privately owned parcels along the Creek should be rezoned to a minimum one-acre lot size, including those parcels proposed for acquisition by the GGNRA. Pending acquisition, such lands are still subject to the provisions of the Coastal Act and must be designated for an intensity of use consistent with the resource protection policies of the Act.

LAGOON PROTECTION

Bolinas Lagoon is a 1400 acre estuarine area composed of salt water, tidal mudflats, marshlands, and sandbars of which approximately 1100 acres are flooded by high tides. Its condition varies from a wintertime estuary to a summertime lagoon, based on the amount of freshwater runoff it receives. Pine Gulch Creek is the principal source of fresh water to the lagoon, probably contributing about one-half of the lagoon's fresh water inflow. The other fifty percent is runoff from creeks which enter the lagoon on the east side. They all flow largely through GGNRA land with flows tied closely to the rainfall pattern. There is increased flow in winter and little or no surface flow in the summer. The Lagoon has a watershed of about 17 square miles or 10,600 acres. The majority of this land is in some form of public ownership for park use or is privately owned and maintained as a natural area (Audubon Canyon Ranch). The remaining private land is within the planning areas of the Bolinas and Stinson Beach Community Plans. Specific subjects of concern within this area are included in other portions of this report (Pine Gulch Creek, Seadrift, Bolinas Gridded Mesa, Shoreline Development).

The Lagoon has been extensively studied. Topics include its geology (Galloway, 1977), (Gluskoter, 1962 and 1969), and (Wahrhaftig, 1971); hydrology and

sedimentation (Burghy, 1971), (Isselhardt and Wilde, 1968) and (Ritter, 1969 and 1973); wildlife (California Dept. of Fish and Game, 1970), (Gustafson, 1968), (Lewis and Sibley, undated), (Page and Stenzel, 1975) and (Rowntree, 1971); marine organisms (Chan, 1967), (Gustafson, 1968), (Molina and Rathburn, 1968) and many papers from the College of Marin, Bolinas Marine Station; and planning issues (Marin County Planning Dept., 1966) and (Sedway, 1971).

The Army Corps of Engineers has begun a major 5 year study of flow hydrodynamics, sedimentology, water quality, and marine and wildlife resources. They plan to produce a model that incorporates these physical processes. By varying the conditions that affect the Lagoon, it will be possible to predict the consequences of proposed actions.

The physical condition of the Lagoon has been affected by two degrading impacts in the recent past: sedimentation and pollution/contamination. Sedimentation is a natural process that all enclosed bodies of water undergo over time. Bolinas Lagoon has two principal sources of sediments: watershed erosion and sediments of a marine origin, principally the eroding Bolinas cliffs outside the mouth of the Lagoon. The exact contribution of each source has not been established, but several researchers feel the marine source is now contributing over half the current sediment load. Watershed erosion was of greater significance in the past when logging, cordwood cutting, overgrazing and poor farm management all increased sediment loads. This source of sediments has been substantially reduced with the inclusion of most watershed land into parks and a halting of poor land management. Sedimentation will continue in the future as a natural process from the watershed but at a reduced rate. (See Chapter IV for a discussion of development standards proposed to reduce erosion and sedimentation into the Lagoon.)

Pollution/contamination of the Lagoon has been a recent problem. Pollutants have been identified from three principal sources: watershed runoff, direct sewage discharge into the Lagoon channel, and septic system failure in the Stinson Beach area. The contribution of pollutants from the watershed has dropped substantially with the creation of the federal and state parks and the discontinuance of dairy operations. The contribution from direct sewage discharge has largely been eliminated by the construction of the Bolinas Public Utilities District (BPUD) treatment facility on the Mesa. The problem of septic failures in the Stinson Beach area has also been largely corrected through actions taken by the Regional Water Quality Control.

A quarantine was established on August 12, 1970 to address the problem of Lagoon contamination by BPUD which was discharging raw sewage into the mouth of the Lagoon. The waters of the Lagoon and the immediately adjacent open ocean were quarantined against the uses of water contact sports and shellfish harvesting. The quarantine was to remain in effect until the State and Marin County Public Health Departments determined that sewage treatment facilities adequate to prevent contamination of the Lagoon had been provided by the Bolinas Public Utility District. BPUD has completed sewage conveyance and treatment facilities which under normal operation are adequate to prevent raw sewage contamination of the Lagoon. The State Department of Health, however, will not make a recommendation to lift the quarantine until two problems are corrected: improving a sewer line on Brighton Street that interchanges fluids with a storm drain and improving the reliability of a lift station that has failed on at least one occasion and allowed raw sewage to flow to the Lagoon. The lifting of the existing quarantine would likely be followed by a new quarantine in the southeast corner of the Lagoon, where sampling has consistently recorded high pollutant levels.

Toxic substances have also been released into the Lagoon. In efforts to control the growth of algae in the Seadrift Lagoon, the water has been treated with copper

sulfate. A further treatment measure is a periodic flushing of the lagoon when the tides are of sufficient height. This flushing action of the Seadrift Lagoon releases any toxic substances from it into the Bolinas Lagoon where their effects on aquatic organisms, particularly mollusks, are extremely deleterious.

Management of Bolinas Lagoon is the responsibility of the Marin County Parks and Recreation Department. This responsibility was granted to the County in 1969 through S.B. 2295, which gave the County title to the tidelands in "Bolinas Bay". The legislative grant included numerous conditions upon which the grant was established, such that the lands be used for purposes in which there is a general Statewide interest (shallow draft vessel emergency refuge, park, recreation, fishing, preservation/restoration of biological resources). To implement this grant, the County was to prepare a management plan acceptable to the State Lands Commission and which was to be reviewed five years after its adoption to determine if it was being implemented. This plan was prepared by the County Parks and Recreation Department and adopted by the Board of Supervisors in February, 1972. The State Lands Commission approved the plan in February, 1973. The County has prepared a five year report describing their actions in implementing the plan for review by the State Lands Commission and which has been approved by them.

The adopted Bolinas Lagoon Plan was developed with one primary goal in mind; "...that the proposals are based on the protection, conservation, and ecological health of the tidelands, while allowing education, scientific study, and recreation which will not be destructive". Elements in the plan include observation points at several locations around the Lagoon, a pedestrian/bike path system from Stinson Beach to Bolinas, an educational facility, and a limited power boat use area between the end of the Seadrift Spit to the existing Bolinas and Seadrift docks. No other developed uses were included and the majority of the Lagoon and the land immediately surrounding it was to remain undeveloped. The major recommendations and policies of the Bolinas Lagoon Plan are summarized below:

1. Restoration and preservation of the intertidal and subtidal marine environment is this plan's primary emphasis. Such a goal permits a dual use of the area for nature education and scientific research purposes of a character unmatched anywhere else in California, especially within the boundaries of a major metropolitan area.

2. Picnicking, pedestrian and bicycle paths, nature interpretation and study areas, a non-powered boat launching float and related facilities may be provided. These areas and the general setting of the lagoon will permit the pursuit of many recreational activities of Statewide significance, also including fishing, clamming and photography, for instance. Expansion of the small boat harbor facility is not recommended as being detrimental to the main.

3. An all weather harbor of refuge has previously been rejected because of its inordinately high cost and detrimental long term effects on the lagoon's biological community. Present boating facilities are to be retained with minor channel and related improvements aimed at perpetuating the access of shallow draft vessels to authorized areas, The Corps of Engineers is to study monitored rehabilitative dredging under its existing authority.

Since the adoption of the plan, the Bolinas Lagoon Technical Advisory Committee has been formed. The Committee consists of representatives from several institutions or agencies with a direct interest in Bolinas Lagoon and citizen representatives from Bolinas and Stinson Beach. They advise the Parks and Recreation Commission on important planning issues concerning the Lagoon. Their role and membership is further defined in the Bolinas Lagoon Five Year Report.

An important action taken on the advice of the Bolinas Lagoon Technical Advisory Committee was to initiate the actions which led to the designation of Bolinas Lagoon as a "Nature Preserve", as defined in Marin County Code 10.06. Nature preserves are County parks "...where the primary objective is to retain the area it its natural state". This formal action implements the primary goal of the 1973 plan.

There are two remaining areas of land use resource conflict on or near the Lagoon, excluding Seadrift which is discussed in a separate section of this report. One concerns the marshy pastures south of the Pine Gulch Creek Delta. These lands have been identified by Page and Stenzel (1975) as important feeding and resting areas for shorebirds. A portion of this land has been acquired by the County, but the section adjacent to the Bolinas-Olema Road is in private ownership. The land is zoned A-10, but none of the parcels are ten acres in size. Homes are found on several of the parcels. The land known as the "Wilkins" parcel contains the majority of the significant marshy areas. Under the existing zoning, one home could be built on this land. The value of the land to shorebirds could be greatly reduced if current agricultural uses were to change.

A second area along Bolinas Lagoon where resource conflicts remain includes the lots along the northerly side of Calle del Arroyo in Stinson Beach. Many of these small (40 feet by 80 feet) lots consist of unfilled marsh area, while other parcels have been historically filled and/or now support houses.

Section 30240 of the Coastal Act requires that environmentally sensitive habitat areas be protected against any significant disruption of habitat values, that proposed development in areas adjacent to sensitive area , s be sited and designed to prevent impacts which would significantly degrade such habitat, and that the development be compatible with the continuance of the habitat areas. Based upon the preponderance of evidence that has been developed in connection with the impacts on Bolinas Lagoon of additional development in the adjacent Seadrift subdivision (where the nearest lagoon lots are located on the other side of a road and over 100 feet away from the lagoon), the type and intensity of development which would be permitted under the present zoning for existing lots northerly of Calle del Arroyo would also significantly degrade the habitat values of the adjacent marsh area and would be inconsistent with this section of the Coastal Act. Lots on Calle del Arroyo are only 80 feet in depth and are therefore severely constrained both in their suitability for the use of septic systems, and the difficulty in providing an adequate setback from the lagoon to assure that such development will not adversely impact the adjacent habitat areas.

The types of impacts that would result from such development in conflict with Section 30240 of the Act would be both indirect and direct. These impacts include the preconstruction activities, such as grading, filling, and other such activities which involve the use of heavy equipment. Such activities would significantly increase the production of sediment into the lagoon, increase the ambient noise level in the area, and would be severely disruptive of wildlife use of the adjacent marsh areas that are located less than 80 feet away. (Such activities will be even closer where development would take place on those lots which consist primarily of marsh.) Completed construction and use of structures permitted under the present A-1 zone would generate additional disturbances of the marsh wildlife, and would potentially contribute to degradation of the area's water quality through the increased coverage of the area by impervious surfaces, which would increase stormwater runoff and the quantity of heavy metals, hydrocarbons, and nitrates discharged into the lagoon. Such development adjacent to the marsh would also increase the likelihood of increased intrusion into these habitat areas, especially by domestic pets and by the residents of

the dwellings.

To mitigate these impacts this plan proposes a resource management area designation that would permit use of the property for various low-intensity activities by right and by special use permit. This designation will assure protection of the fragile resources contained within the adjacent marsh area. The uses proposed will provide for reasonable use of the property in recognition of the severe development constraints which affect development of these lots. These development constraints have generally been recognized in the existing real estate market since land values on this portion of Calle del Arroyo are less than one tenth those of similar shorefront properties in the Seadrift area. Redesignation of the property, however, will assure that the land use on the property will be consistent with the Coastal Act and that it will not encourage future speculation and the development of expectations that such lots may indeed be usable in the future for single-family development creating future pressure for such incompatible development.

The area along Calle del Arroyo has long functioned as the only location in this entire of Stinson Beach where members of the public can park on the street in order the roadway to obtain access to Seadrift Beach. Construction of structures along the northerly side of would eliminate a substantial portion of the existing parking which has historically been available to the public by the construction of driveways and by potential pre-emption of on-street parking by residents within the new houses. The proposed resource management area designation would therefore be consistent with Section 30211 of the Coastal Act, which provides that development shall not interfere with the public's right of access to the sea where acquired by use.

Construction of structures on the northerly side of Calle del Arroyo would substantially degrade public views from Calle del Arroyo into the adjacent lagoon, and would also degrade scenic views of the slopes of Bolinas Ridge which are also available from Calle del Arroyo. Therefore, the proposed designation is consistent with Section 30251 of the Coastal Act, which provides, in part, that permitted development shall be sited to protect views to and along the ocean and scenic coastal areas.

DUNE AND SANDY BEACH PROTECTION

The natural dune formations and sandy beach areas require protection to assure consistency with several different policies of the Coastal Act. Such dunes and the sandy beach areas (formed as a result of natural shoreline processes) provide natural protection from wave runup generated from prolonged storms and high seas, and provide environmentally sensitive habitat for several species of plants and animals that have been able to adapt to the harsh environment of the shoreline and the rigors of wind, sand, and salt. Such plants form an integral part of the dune ecosystem by stabilizing dune formations and providing feeding and nesting habitat for several wildlife species. The dune and plant associations are fragile systems that are especially subject to disruption. Natural sand dunes and sandy beach areas are also part of the natural shorelines process of littoral sand transport along the coast. Sandy beach areas, while providing essential protection to upland areas from wave runup, also provide habitat area and are a valuable resource which must also be protected under the Coastal Act. Natural dune formations and sandy beach areas are located primarily in the Seadrift and Stinson Beach areas.

Section 30240 of the Coastal Act provides that environmentally sensitive habitats be protected against any significant disruption of habitat values, that proposed development in areas adjacent to sensitive areas be sited and designed to prevent impacts which would significantly degrade such habitat, and that the development be compatible with the continuance of the habitat areas.

Section 30235 of the Coastal Act specifically limits any construction that alters natural shoreline processes to situations where it is required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and where it is designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Residential development on natural sand dunes and on sandy beach areas, if permitted, would significantly disrupt the natural shoreline process. Therefore, consistent with this policy of the Coastal Act, LCP Policies restrict residential development from natural dune areas and areas of sandy beach, since such development is not a coastal dependent use for which alteration of natural shoreline processes is permitted under the Coastal Act. Such a policy, which requires preservation of the natural system of protection from wave run-up and high seas, will also minimize the necessity for shoreline protective devices, in accordance with the policy of the Coastal Act.

Of particular concern is the protection of the natural dune formations and sandy beach area located west of the paper street Mira Vista in the Patios of Stinson Beach, The dunes and beach area were historically subdivided into residential lots and could someday be potentially subject to pressure for development. At this time, the lots are generally owned by contiguous properties across Mira Vista, partially as protection to these lot owners to assure future protection of their existing views of the ocean. While the Stinson Beach Plan proposes to achieve protection of these dune areas through a land trade between these property owners and the land now within the street-right-of-way, such a trade now appears very difficult to implement because of uncertainty as to the ownership of the existing street-right-of-way. Lot consolidation with the contiguous lots across Mira Vista Street will assure protection of this significant dune system in a manner which simply memorializes the existing pattern of land ownership in the area.

Section 30211 of the Coastal Act provides that development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation. (Emphasis added.) The LCP public access policies serve to incorporate this provision of the Coastal Act policy into the LCP in order to assure that the dry sand areas along Seadrift and Stinson Beach to the first line of terrestrial vegetation shall be protected for both public use and enjoyment consistent with the protection of private property rights. These beach areas have historically received tremendous use from residents of the entire Bay Area and provide one of the sunniest, most fog-free climates of any coastal area in the immediate vicinity. Under the above cited section of the Coastal Act, such historic public use of these beach areas must be protected.

HABITAT PROTECTION

Coastal Communities

Various resource and habitat areas have generally been identified in the community plans for the Muir Beach, Stinson Beach, and Bolinas communities, as well as in a publication entitled: "Natural Resources of the North Central Coast Region" prepared in 1975 for the North Central Coastal Commission. They include:

Muir Beach. The Elizabeth Terwilliger Butterfly Trees are located at Pacific Way and Lagoon Drive and consist of a grove of introduced Monterey Pine Trees. Additional Butterfly Trees are located along both sides of Pacific Way and are one of the few local resting places for Monarch Butterflies on their yearly migration. These trees are reported to contain 60,000 to 70,000 butterflies from October through February (Berhnheim, 1973).

Stinson Beach. The Stinson Beach community contains many large cypress trees which also provide roosting habitat for the Monarch butterflies on their annual migration. In addition, there are significant stands of native bay trees as well as an alder grove at the juncture of Stinson Creek and Bolinas Lagoon.

Audubon Canyon Ranch. The Ranch contains approximately 1300 acres and supports a large egret and heron rookery in the redwood grove located in Audubon Canyon.

Bolinas. The Bolinas area contains several important habitats which have been identified in the Bolinas Community Plan and the document "Natural Resources of the North Central Coast Region". These habitat areas are described below.

Upland Grasslands: Shorebirds of many species forage on the grassy uplands during high tides and winter storms when suitable habitat at Bolinas Lagoon is unavailable. Limited grazing of these lands does not seem to affect the habitat value of these lands and may even tend to improve it since tall vegetation can obstruct the movements of the feeding birds.

Egret and Heron roosting areas: Trees located at the foot of Francisco Mesa and Kent Island provide roosting habitat for herons and egrets, including the Black-crowned Night Heron.

Bolinas Quail Refuge: The entire mesa became a quail refuge in the 1920's probably to provide a means of prohibiting hunting. The Coastal Scrub vegetation on the mesa provides habitat for large populations of many different species of wildlife,

Butterfly Trees: Bolinas contains several groves of introduced tree species which serve as resting places for wintering Monarch Butterflies. Although each grove is not used every year, all groves have been used in the past.

White-tailed Kite Habitat: Within the United States, the white-tailed kite is currently only found in California and is designated as a protected species by the Department of Fish and Game. Grasslands on the Bolinas Mesa and along Horseshoe Hill Road provide feeding areas for this species. The kites also use oak trees for roosting at night and as nesting sites during the breeding season.

The location of these habitat resource areas are shown on the natural resource maps on file with the Marin County Planning Department.

While some of these areas, such as the Elizabeth Terwilliger Butterfly trees and the Alder Wood in Muir Beach, are proposed for acquisition by the GGNRA, The LCP must include policies to assure their protection while the lands remain under the Commission's jurisdiction. Similarly, other resource and habitat areas exist within the Unit I area which must be protected in order to assure consistency with Section 30240 (a) and (b) of the Coastal Act.

Duxbury Reef

Duxbury Reef is an approximately 66 acre intertidal shale reef which extends for two and one-half miles off the Bolinas Peninsula. At minus tides, the exposed reefs stretch as much as one-half mile from the shore. It is the largest reef on the west coast of the United States and the largest shale reef in the country (Chan and Molina, 1969). It supports unusual and large populations of California-Mussel, rockboring invertebrates, and other marine organisms. Studies of Duxbury Reef marine invertebrates have been

carried out by Chan (.1974), Chan and Molina (1969) and Gosliner and Williams (1970). Studies have also been conducted by Chan (1970, 1971) on the effects of educational use on the Reef.

The Reef has been designated a Marine Life Reserve in the California Fish and Game Code and is identified as an "Area of Special Biological Significance" by the State Water Resources Control Board. The marine reserve was established in 1972 in recognition of the special biological significance of the area. 'Basically, this means that only market and rock crabs, abalone, and those marine fish for which the Department of Fish and Game has set size, seasonal and bag limits can be taken within the boundaries of the reserve. The limitations are contained in Section 27.20 of the Fish and Game regulations, which states:

> In the Duxbury Reef area in Marin County no fish expect abalone, market crabs (Cancer spp.), rockfish (Sebastes spp.), lingcod, cabezon, perch (Embiotocidae), halibut, flounder, sole, turbot, salmon, kelp greenling, striped bass, steelhead, monkey face-eel, rock-eel, wolf-eel, and smelt (Atherinidae and Osmeridae) may be taken between the high tide mark and 1,000 feet beyond the low tide mark at any place on the coastline or any reef or rock situated between the westerly extension of the southerly boundary of the Pt. Reyes National Seashore and the southerly extension of the centerline of Kale Road in Bolinas Beach. All other fish and forms of aquatic life are protected and may not be taken without a written permit from the Department.

"Areas of Special Biological Significance" are those areas designated by the State Water Resources Control Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. The Duxbury Reef reserve is described geographically in State law as follows:

> From Point 1 determined by the intersection of the mean high tide line and the southerly extension of the centerline of Kale Road at Bolinas Beach; thence northerly and westerly along a meander line following the mean high tide line to Point 2 determined by the intersection of the mean high tide line and the westerly extension of the southern boundary of Point Reyes National Seashore; thence along the westerly extension of the southern boundary of Point Reyes National Seashore to a distance of 2,000 feet beyond the mean high tide line; thence southerly and westerly parallel to the mean high tide line at a distance of 2,000 feet to the intersection with the southerly extension of Kale Road; thence along the aforesaid extension northerly to Point 1.

Figure 2 shows the location and extent of Duxbury Reef.

The Reef is currently patrolled by a representative of the County Parks and Recreation Department on a daily basis. It is on a route which includes Bolinas Lagoon and other nearby County maintained facilities, The Reef is also patrolled by two Department of Fish and Game wardens (one marine and one land based) who patrol the area routinely on a biweekly basis. More intensive coverage is given during periods of minus tides.

In the past, Duxbury Reef has been subject to over use by rock clammers and educational visitors. Rock clammers regularly chopped up the soft shale to harvest the abundant boring clams. This activity resulted in a leveling of portions of the Reef and a reduction in the available habitats (crevices) for many marine animals. Educational visitors were in the habit of collecting virtually any marine animal which they discovered (especially the larger species such as sea stars and crabs) as they moved over the Reef, greatly reducing the population levels of many species. Since the

establishment of the Duxbury Reef Marine Reserve, State laws prohibiting the collecting of most intertidal animals, and the regular patrol of the reef area by County of Marin Parks and Recreation Department personnel, impacts associated with human use have been greatly reduced. (Zeigler, 1978) The present level of protection and patrol coverage is adequately protecting the marine resources. The proposed expansion of the Point Reyes National Seashore to land south of the present boundary would include the north section of the Reef and would increase patrol activity by park service rangers to the least patrolled section. This will also reduce the possibility of deleterious land uses occurring on lands above the Reef.

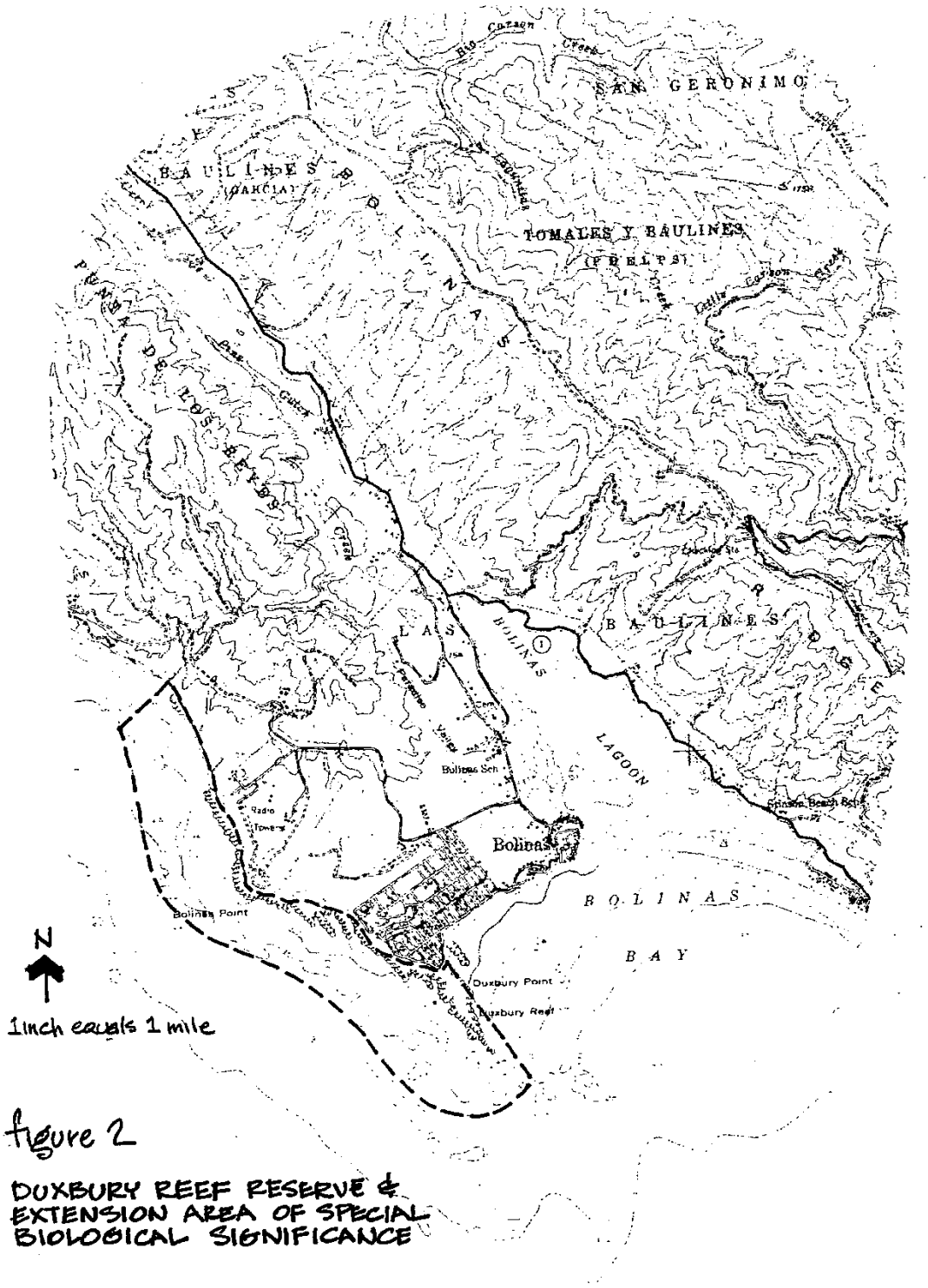


figure 2

DUXBURY REEF RESERVE & EXTENSION AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE

Figure 1: Duxbury Reef Reserve and Extension Area of Special Biological Significance

UNIT 2

ADOPTED BY MARIN COUNTY BOARD OF SUPERVISORS

December 9, 1980

CERTIFIED BY STATE COASTAL COMMISSION

April 1, 1981

II. RESOURCE PROTECTION

NATURAL RESOURCES

COASTAL ACT POLICIES/INTRODUCTION

The protection of natural resources in the coastal zone is a major emphasis of the Coastal Act. The Act's policies on natural resources, contained in Sections 30230, 30231, 30236, and 30240, can be divided into two main categories: water and marine resources, and environmentally sensitive land habitats. The full text of these sections is given in Appendix A.

Based on the characteristics of natural resources in the Unit II coastal zone, the two resource categories which appear in the Coastal Act have been expanded into five: 1) the marine environment of Tomales Bay, 2) water quality in Tomales Bay, 3) streams and riparian habitats, 4) wetlands, and 5) coastal dunes and other sensitive land habitats. LCP policies on these topics are divided into five corresponding groups. The discussion below combines a description of Unit II's resources with the planning issues involved.

MARINE ENVIRONMENT OF TOMALES BAY

The major marine resource in the Unit II coastal zone is Tomales Bay, which offers a great diversity of marine habitats and, correspondingly, a rich and diverse marine life. The importance of Tomales Bay as a natural resource has been recognized statewide.

Habitats and marine life. Rocky points, intertidal areas, and shoreline substrates in Tomales Bay offer habitat for a wide variety of marine invertebrates, birds, and occasionally, marine mammals. The Bay's benthic sediments vary from cobble and coarse sand to gravel, fine silt, and mud. Depth conditions are similarly varied, offering habitats for many distinct invertebrate communities. Biologists have estimated that over 1000 species of invertebrates can be found in the Bay. The great variety of fishlife also reflects the Bay's many habitats. Herring, crab, and perch are the most frequently caught commercial species. In addition, halibut, jacksmelt, striped bass, rockfish, and greenlings are taken. Oysters are grown commercially in several locations around Tomales Bay and recreational clamming for some half dozen species of clams is very popular. Other notable marine life found in Tomales Bay includes harbor seals, which use the sand spits surrounding Hog Island as a haulout area, and several species of sharks and rays which spawn in the Bay.

Eelgrass beds. One of the most significant marine resources of Tomales Bay are the extensive eelgrass beds which occur primarily in shallow waters at the northern end of the Bay. These eelgrass beds are critical for the survival of a particular species of migratory bird, the Black Brant, which depends upon the eelgrass for food. Eelgrass is also important to the Pacific herring which enters the Bay annually to deposit eggs, principally on the eelgrass. Approximately 5000 tons of these fish run in Tomales Bay each year.

Special recognition. The importance of Tomales Bay as a resource is indicated by the fact that the Bay was one of four areas in California to be considered in 1978 for nomination as an Estuarine Sanctuary under the Federal Estuarine Sanctuary Program. Tomales Bay is also included in a proposed Point Reyes - Farallones Marine Sanctuary, one of three such marine sanctuaries in the state which are currently being studied by the National Oceanic Atmospheric Administration (NOAA). In recognition of the importance and unique values of Tomales Bay, the Regional Coastal Commission adopted a resolution in February 1979 designating Tomales Bay a "Special Resource Area". That resolution states in part, "... the North Central Coast Regional Commission does ... designate the coastal waters and immediately adjacent uplands of Tomales ... Bay ... as a Special Resource area; such designation to denote the Commission's commitment to the protection, enhancement, and where feasible, restoration of the unique and important natural resources of this area."

WATER QUALITY IN TOMALES BAY

Water quality issues in the Unit II coastal zone have revolved primarily around the condition of Tomales Bay. Although the quality of waters in the Bay is considered to be generally good, there have been certain problems which deserve discussion here.

Natural runoff/agricultural uses. Tomales Bay has a record of coliform contamination during the rainy season when freshwater runoff is greatest. There are numerous sources of coliform in the Bay, including natural sources, such as wildlife guano, domestic animals, and septic systems. Dairy operations in the watershed also contributed to high levels of coliform in the past. In an effort to correct this problem, the Regional Water Quality Control Board established "Minimum Guidelines for Protection of Water Quality from Animal Wastes", which have been implemented gradually since 1975. The implementation of these guidelines has resulted in a general improvement in the coliform quality of tributary streams to Tomales Bay. Local dairymen, and the individuals from local, state, and federal agencies who assisted them, are to be commended for their efforts to implement the Minimum Guidelines and thus preserve a high level of water quality in the Bay.

Due to the fluctuating water quality of Tomales Bay brought about by changes in season and runoff volumes, the Bay's waters have been classified as "conditional" by the State for the purpose of commercial shellfish production. (It should be noted that all other natural water bodies in California in which shellfish are grown commercially have been given the same classification.) The State Department of Health takes frequent water quality samples from the Bay and, when necessary, temporarily closes shellfish operations until coliform levels have dropped to acceptable levels. The shellfish then purify themselves in a short period of time. The fact that Tomales Bay is suitable for raising animals for human consumption is indicative of its generally high water quality.

Unlike shellfish operations, recreational use of Tomales Bay generally has not been hampered by lowered water quality. Water quality monitoring has shown that general health standards in the Bay are adequate for most of the spring, summer, and early autumn when recreational use is heaviest.

Septic systems. Widespread use of septic systems along the shoreline of Tomales Bay and in the watershed also contribute to water quality problems in the Bay. Many systems on the bay shore are old and built on, over, or in bay mud or sand. Because of shoreline erosion in certain areas of the Bay, such as Marshall, some existing residences have lost a significant portion of their leachfields. The erosion of a

leachfield area reduces the volume of soil which can filter and cleanse the septic effluent, thus creating the potential for water quality degradation. In addition, few if any of these systems meet the County's septic system code. Septic systems in the watershed of Tomales Bay, such as those in Inverness Ridge, may also contribute pollutants to groundwater supplies and possibly the Bay.

Studies of the hydrodynamic conditions of Tomales Bay have shown that flushing characteristics in different parts of the Bay differ substantially, a fact which is significant for water quality control. In general, the northern third of the Bay near the mouth is flushed fairly thoroughly by tides, the middle third is sluggishly mixed, and the southern third has very poor flushing characteristics. Thus, it is possible that the southern end of the Bay is more susceptible to water quality degradation than the northern end.

Erosion and siltation. Soil erosion in the watershed of Tomales Bay and subsequent sedimentation in the Bay itself adversely affect water quality and the viability of marine habitats. Although some erosion occurs naturally in all ecosystems, the rate of erosion has been greatly accelerated in certain areas of the Bay's watershed due to construction activities, road building, improper agricultural practices, stream alterations, and vegetation removal. Soils on the Inverness Ridge are especially susceptible to erosion due to their poorly consolidated character and steep slope: almost one-half of the Ridge has slopes equal to or greater than 30%. The cachement basin for all materials eroded from the Tomales Bay watershed is, of course, the Bay itself, which has experienced accelerated filling in past years, especially at its southern end. To reduce erosion problems in the future, the LCP proposes strict standards on grading and land development.

STREAMS AND RIPARIAN HABITATS

There are a large number of streams in the Unit II coastal zone, of many different sizes and with different characteristics. The discussion below applies to most of these in a general way. The LCP policies proposed for streams are intended to apply to perennial or intermittent streams which are mapped by the United States Geological Survey (U.S.G.S.) on the 7.5 minute quadrangle series.

Streams. Streams and creeks are sensitive habitats for many species of birds and fish. The Walker and Lagunitas Creek systems which feed Tomales Bay support runs of anadromous fish in Marin County, primarily silver salmon and steelhead trout.

Walker Creek currently supports only remnant populations of salmon and trout, although the Department of Fish and Game expects to enhance these populations with a restoration program associated with the Soulajule project. Restoration measures, including a fish augmentation program, streamside habitat improvement, and fish stocking, will probably take at least ten years to show an effect. Lagunitas Creek supports a spawning run of several thousand fish, which is also expected to be increased as a result of restoration measures by Fish and Game.

Continued freshwater inflows to Tomales Bay are required to meet the spawning needs of these anadromous fish. Freshwater inflows are important for other reasons as well. They flush salt water, accumulated bottom sediments and toxic elements seaward. Such inflows also influence the distribution of shellfish in the Bay and may be significant for invertebrate populations and plant life in wetland areas, in turn affecting the birds which use these areas to feed.

Because of the critical importance of freshwater inflows to the ecology of

Tomales Bay, water diversions and dam construction on tributary streams have been significant issues. Approximately 75% of all freshwater inflow to the Bay comes from the two largest creeks: Lagunitas Creek to the south and Walker Creek to the north. Major impoundments in the watershed of Lagunitas Creek include Kent, Alpine, and Bon Tempe Lakes, Lake Lagunitas and Nicasio Reservoir. On Walker Creek, the largest project to date is the Soulajule Reservoir. Estimates are that these and smaller diversions have reduced the mean annual net freshwater inflow to Tomales Bay by approximately 25%. The long-term effects of such diversions on marine resources in Tomales Bay are poorly understood.

Other issues of particular concern in relation to streams in Unit II are sedimentation and water pollution, both in the streams themselves and downstream. Heavy siltation of stream beds destroys fish habitat, increases flood hazards, and retards groundwater recharge. Runoff from upland development or agricultural areas can pollute streams and downstream waters. Overgrazing and dairy waste pollution have been the major causes of these problems in the past. Damage from agricultural uses can occur by allowing livestock free access to natural waterways and grazing livestock up to the edges of streams and in riparian areas. As a result, habitats are damaged by streambank erosion, the trampling of vegetation, sedimentation to streams, and contamination through runoff.

Riparian habitats. Protection of streams requires both protection of a stream itself and of the riparian vegetation growing adjacent to it. Common plant genera associated with this vegetation type include maple (Acer), alder (Alnus), ash (Fraxinus), and willow (Salix). On steeper sites, riparian vegetation is generally confined to a narrow strip along watercourses, while in flatter areas it may extend for several hundred feet in width.

Riparian vegetation provides a valuable and limited habitat for bird and animal life and helps maintain a high level of water quality by filtering sediment from surface runoff and stabilizing soil on adjacent stream banks. The shading offered by streamside vegetation maintains cool streamwater temperatures for fish. This vegetation promotes a favorable habitat for fish in other ways by contributing insects to the stream for food and helping to shape pools and riffles. Riparian vegetation growing at the edges of wetland areas acts as a noise and visual buffer between developed areas and wildlife habitat. All of these beneficial effects are lost, wholly or in part, when this vegetation is damaged or destroyed.

WETLANDS

Definitions. The Coastal Act includes numerous policies on wetlands, estuaries, and other water bodies. Since these policies apply differently depending on the water body involved, it is important that the distinction between such water bodies be clear. The State Coastal Commission has adopted Interpretive Guidelines containing specific definitions of wetlands, estuaries, streams and rivers, lakes, and open coastal waters. For wetlands, the Commission's interpretation is based on a definition developed by the U.S. Fish and Wildlife Service. According to this definition, generally, wetlands exist where the soil is predominantly hydric (wet), the plant cover is predominantly hydrophytic (plants grow in water or in very moist ground), and the land is flooded or saturated at some time of year. A full definition is given in Appendix B.

In the Unit II coastal zone, there are two coastal wetland areas of statewide significance: one is Tomales Bay and the other, the northern county region including the Estero Americano and the Estero de San Antonio. Since over two-thirds of the original coastal wetlands in California have been destroyed or degraded, the

remaining wetland areas, such as those in Unit II, assume an even greater significance.

Tomales Bay. In addition to the important marine habitats in Tomales Bay discussed earlier, the Bay includes approximately 440 acres of marsh and 2900 acres of mudflats which have great value as a wetland habitat, and for recreation, water quality, and scientific and educational purposes. The wetlands are a vital link in the migratory path - the Pacific Flyway - of many species of waterfowl, and thousands of birds use the Bay each year. Wetlands also serve as corridors to valuable spawning and nursery sites for anadromous fish, primarily silver salmon and steelhead trout. Water quality and supply are enhanced by the filtering and storage functions of wetland areas. Recreational opportunities, too, for fishing, birdwatching, and photography, are provided by Tomales Bay wetlands. All of these beneficial functions may be threatened by dredging and filling, sedimentation from upland development, incompatible uses or overuse, and stream alterations.

The largest wetland area in Tomales Bay, consisting of salt marsh and mudflats, is located at the southern end of the Bay within the Tomales Bay Ecological Reserve. The reserve comprises approximately 500 acres of land, owned and managed by the State Wildlife Conservation Board. At one time, the wetlands in the area of the reserve covered an additional 500 acres to the south. This acreage, however, was diked, drained, and converted to agricultural use many years ago. Other areas of salt marsh in Tomales Bay occur in small scattered patches along the east shore, most notably at the mouths of Walker Creek and Millerton Gulch and on Tom's Point. Areas of freshwater marsh can be found on the upland side of many salt marshes fringing Tomales Bay. The largest of these is the Olema marsh, near the junction of Olema and Lagunitas Creeks. The Cypress Grove area also has sizeable marsh habitat.

Estero Americano and Estero de San Antonio. The second major wetland area in the Unit II coastal zone is north of Tomales Bay and includes the Esteros Americana and de San Antonio, These esteros are described in the report The Natural Resources of Esteros Americano and de San Antonio by the State Department of Fish and Game, from which this discussion was taken. According to this report, the open waters of the Estero American cover about 300 acres, and wetland habitats extend over an additional 400 acres. The smaller and more southerly Estero de San Antonio includes about 90 acres of open water and over 200 acres of wetland habitats.

The esteros are unique in comparison to other coastal wetland areas. Originally formed from "drowned river valleys," the esteros have steeply sloping hillsides which create an abrupt transition from uplands to open water. The resulting fjord-like quality of the esteros is not found in other California wetlands. The esteros are also unique in that they are "seasonal estuaries" whose connection to the ocean is periodically closed. During the late spring and summer months, when the inflow of freshwater from the upland watershed is small, a sand bar forms at the mouth of each estero. Tidal influence is eliminated and evaporation is high, sometimes resulting in a hypersaline estuary with salinities far above that of the ocean. In winter months, by contrast, winter rainfall runoff keeps the mouths of the esteros flooded and open. During this time, tidal influence extends three to four miles upstream, approximately half the length of each estero.

Within the watersheds of the esteros, there are a wide variety of habitat types and a high diversity of associated animal species. Major habitats include open water, seasonal brackish marsh, California annual type grassland, coastal prairie and coastal scrub. Animal life includes seventy-one species of water and marsh-related birds and sixty-six species of terrestrial birds. Monthly observations of birdlife indicate the im-

portance of the esteros to migrating and wintering birds-as well as to year-round residents. Surveys of fish species are equally impressive, identifying thirty-one marine and freshwater species in the two esteros. Greatest species abundance and diversity are located at each estero mouth. The rich bird and fish populations are due, in part, to the abundance of marine invertebrates which inhabit the mudflats, eelgrass beds, and channel bottoms of the esteros.

The State of California, acting through the State Lands Commission, is the owner of all tide and submerged lands in Estero de San Antonio and Estero Americano. Lands adjacent to these two esteros are privately owned; as a result, there is free public access to the water only from the public roads crossing the esteros and from the Pacific Ocean.

Agriculture continues, from its historic beginnings, as the primary use of the lands surrounding the esteros. Dairying and sheep and cattle grazing are at present the major agricultural industries in the area, although some farms raise turkeys. Past agricultural land uses have included row crops of corn, beets, potatoes, onions, oats, and hay, only small areas of which continue today. Estero Americano was reportedly a navigable body of water in the late 1880's and was used for shipping potatoes to market.

Estero Americano and Estero de San Antonio [cont.]

Major problems threatening the existence of Esteros Americano and de San Antonio as they are today include encroachment by urban development and degradation of water quality. Northwest of the mouth of Estero Americano, and south of the mouth of Estero de San Antonio, are coastal subdivisions of immediate threat to the esteros lands. Water quality problems have resulted from improper agricultural practices producing runoff and increased sedimentation. In response to federal * water quality regulations, the North Coast Regional Water Quality Control Board in conjunction with the Soil Conservation Service has been involved in a local program to eliminate point and non-point source discharges which have been degrading the quality of estero waters. The effectiveness of this program to date indicates the likelihood of non-polluted estero water in a few years.

The Marin County General Plan designates the Esteros Americano and de San Antonio as "conservation zones." However, specific plans for implementation of this concept do not presently exist. The lands surrounding the esteros are designated "agricultural" and are zoned C-APZ-60.

[Amended pursuant to BOS Resolution No. 88-333 (Attachment 1, p.2) [12/20/88], approved by CCC with suggested modifications 4/12/89, 2nd BOS Resolution No. 89-216 [8/8/89], CCC ED Checkoff 4/13/90]

COASTAL DUNES AND OTHER SENSITIVE LAND HABITATS

Environmentally sensitive habitat areas are defined in Section 30107.5 of the Coastal Act as, "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem." More specifically, such habitats may serve as prime examples of particular natural communities; be unique, rare or fragile; provide habitat for rare or endangered species of wildlife and thus be vital to species survival; or be of particular scientific or educational interest.

One of the most significant habitat areas in Unit II is the area of coastal dunes,

encompassing some 250 acres, in the vicinity of Sand Point. This area, located at the mouth of Tomales Bay just southeast of the community of Dillon Beach, is used for a recreational resort known as Lawson's Landing. The resort includes recreational trailer, boat rental, moorage, and repair areas and is used for a wide variety of recreational activities including camping, picnicking, clamming, beachcombing, and hang-gliding. Expansion of the resort has been considered in the past.

In addition to recreational uses, a 23-acre site located approximately mile southeast of Dillon Beach is used for a sand quarry operation under a surface mining and quarry permit from the County. The permit, issued in 1977, allows 10-15,000 tons of sand to be quarried each year for five years. The project as conditioned did not require an EIR. The permit conditions included limiting the operation to excavation only (no processing allowed) and allowing the County to limit or reduce the extent or rate of excavation if it exceeds the natural rate of replacement. The project should be reviewed prior to any extension of the permit to ensure that sand quarrying is not causing a deterioration of dunes or vegetation.

The dunes on Sand Point, varying in height from 10 to 150 feet, occur in two formations: fore dunes, a series of three longitudinal dunes running parallel and the adjacent to the ocean beach; and rear dunes, located inland systems. The foredunes serve the important function of protecting inland area from wave runup generated by prolonged storms and high seas. Both foredunes and rear dunes provide unique habitats for several species of plants and animals which have been able to adapt to the harsh environment of the shoreline and the rigors of wind, sand and salt. One particular plant of note in the area, the Dune Tansy, is a rare and endangered plant as listed by the National Smithsonian Institution and the California Native Plant society. The entire dune area should be considered Tansy habitat.

All vegetation in the dunes forms an integral part of the dune ecosystem by stabilizing dune formations. Plants impede the rate of sand movement by breaking up the smooth flow of air and causing sand to settle. Dune and plant associations are fragile systems which are especially subject to disruption. If the protective mantle of vegetation is broken, dune movement is accelerated to a point where plant growth cannot keep pace with shifting sand, causing erosion and a change in dune position. Heavy recreational use in dune areas and overly rapid sand extraction can adversely impact dune stability and should be regulated to prevent this occurrence. Stabilization of the dunes in the Sand Point Area has been accomplished over a fifty year period in conjunction with Soil Conversation Service. Great care should be taken to ensure that protective vegetation is not disturbed if additional development or increased use occurs in the area.

ATTACHMENT #5
Local Coastal Program Amendments (LCPA)
DRAFT Land Use Analysis Report
[11-26-2012]

INTRODUCTION

This report has been prepared to describe development in the Coastal Zone: what has occurred since the LCP was originally certified as well as projections that could occur if land vacant in 2006 were fully developed according to the zoning designations in the LCPA. Potential land use is defined as the possible build out of a parcel based on the LCP, zoning and development policies as interpreted by planners. There is no implicit or explicit time horizon associated with this "build out" estimate. While particular sites may develop at their respective buildout assumptions by a certain time, the date at which there would be buildout cannot be foreseen. The buildout numbers assume theoretical build out, which is based on calculating allowable development under the land use designation. This is the highest possible development potential. In some cases, theoretical buildout may be greater than the development that would realistically occur due to a number of factors such as:

- Environmental constraints may result in a lower density than allowed
- Other policies or regulations may lower the amount of development allowed
- A landowner may seek less development than is allowed under the land use

The location and density of new development is a major policy concern of the Coastal Act. This issue is addressed in Section 30250(a) of the Act which provides in part that new development shall be located within, contiguous with, or in close proximity to existing developed areas or in areas with adequate public services and where it will not have significant adverse effects on coastal resources.[1] This objective was reflected in the LCP Units I and II, certified in 1980 and 1981 respectively. The LCP continues to maintain this objective via policy C-CD-2 Location of New Development.

Marin's coastline extends approximately 106 miles in length from Sonoma County south down to Point Bonita. The Coastal Zone represents approximately 130 square miles (82,168 acres) of the county's 520 square miles of total land area. Of this total, approximately 53 square miles (33,913 acres) are owned and managed by the federal government (National Park Service). This leaves approximately 75 square miles (48,255 acres) of the Coastal Zone under County jurisdiction (refer to Map 2 Marin County Coastal Zone in the LCPA. Approximately 15,382 acres are within its coastal villages. From north to south, these villages include the following: Dillon Beach, Tomales, East Shore (including Marshall), Inverness, Point Reyes Station, Olema, Bolinas, Stinson Beach and Muir Beach.

Demographically, the majority of Marin County's population lives in cities along U.S. 101. In 2010, approximately 6,502, or 2.6%, of Marin's 252,409 residents lived within the Coastal Zone. The overall population of the coastal zone decreased 1.4% from 1990 to 2010. Within the individual coastal communities, the change in population has been more dramatic. The population of Tomales (-28.2%), Point Reyes Station (-16.7%), Olema (-16.1%), Stinson Beach (-16.2%), Muir Beach (-6.3%), and Inverness (-6.3%) all shrank in size. On the other hand, East Shore/Marshall (20.1%), Bolinas (19.2%), and Dillon Beach (2.1%) experienced minor to larger population gains. With respect to housing units, in contrast, the Coastal Zone saw a 22.6% growth in the number of housing units during this same period. However, this averages out to an

[1] LCP Unit II, p. 199

approximate increase of only 1% per year. Table 1 shows the percent change in census population and housing change for the coastal zone from 1990 – 2010.

Table 1
Census Population and Housing Change
1990 - 2010[2]

Village	Population Change	Housing Unit Change
Bolinas	19.2%	42.5%
Dillon Beach	2.1%	31%
East Shore/Marshall	20.1%	112.6%
Inverness	-6.3%	33.6%
Muir Beach	-6.3%	7.3%
Olema	-16.1%	24.4%
Point Reyes Station	-16.7%	11.1%
Stinson Beach	-16.2%	17.1%
Tomales	-28.2%	4.3%
Coastal Zone – all areas	-1.4%	22.6%
Marin County	9.7%	5.3%

In terms of population growth, it is difficult to determining the historic population of the Coastal Zone prior to 1990. However, using data from the Census Bureau the County's Geographic Information System estimates that the population in the Coastal Zone was approximately 6,667 in 1990, which grew to 7,118 by 2000, then declined to 6,572 by 2010. This represents a decrease of 95 residents, or 1.4 percent of the population, over the twenty year period. In terms of housing units, there were approximately 3,929 housing units in 1990, which increased to 4,818 in 2010, representing a 22.6 percent increase (889 units) over the same period.

Table 2
Population and Housing in the Coastal Zone
1990 - 2010[3]

Year	Population	Housing Units
1990	6,667	3,929
2000	7,118	4,143
2010	6,572	4,818
% Change (1990 – 2010)	-1.4%	22.6%

Table 3 shows residential buildout figures for the Coastal Zone for the existing LCP to the proposed LCPA. As stated in Unit I, the 1971 Marin County Housing Conditions Survey reported an existing 1,584 total units for all of the communities within the Coastal Zone. In comparison, the analysis done for the 2007 Marin Countywide Plan (CWP) Final Environmental Impact Report (FEIR) reflects that this number has since grown to approximately 3,789 existing units, a 139.2% increase over 36 years. The FEIR reports a buildout potential for 1,638 additional units, providing for a total buildout (by year 2030) of 5,427 units, a 43 percent increase.

[2] US Census Bureau
[3] Figures extracted from the US Census Bureau data and the Marin County Community Development Agency Geographic Information System

Table 3 Residential Buildout Figures for the Coastal Zone					
Village	**Existing LCP Units (1980/81)**	**LCPA Existing Units (2007)**	**LCPA Existing Vacant Lots (2007)**	**LCPA Potential Units (2007)**	**LCPA Buildout Total (2007)**
Muir Beach	129	146	18	33	179
Stinson Beach	540	751	135	214	965
Bolinas	602	666	577	377	1,043
Olema	27	37	21	17	54
Point Reyes Station	186	374	66	137	511
Inverness Ridge	740	960	328	357	1,317
Marshall / East Shore Tomales Bay	70	121	120	76	197
Tomales	72	103	31	41	144
Dillon Beach/Oceana Marin					
Oceana Marin	133	233	66	101	334
The Village	151	148	24	7	155
Lawson's Dillon Beach Resort	13	18	28	17	35
Lawson's Landing	n/a	n/a	n/a	n/a	n/a
Sub Total	*297*	*399*	*118*	*125*	*524*
Areas outside Village Areas	n/a	232	n/a	261	493
TOTAL	**2,663**	**3,789**	**1,414**	**1,638**	**5,427**

The majority of land within the Coastal Zone lies outside of the village limit (community expansion) boundaries, and is comprised mainly of open space, agricultural use, and federal and State parklands. However, some development does exist in these areas, primarily in the northern half of the Coastal Zone. In these "other" areas, there are approximately a total of 232 existing units and a buildout potential for 261 additional dwelling units, including farmworker and second units. The total buildout (by year 2030) for these "other" areas is 493 units.

The discrepancy in the number of dwelling units reported in the CWP FEIR compared to the 2010 Census should be noted. One potential reason for this discrepancy may be due to the methodology the Census Bureau used in counting the population. For example, the Census Bureau did not mail Census forms to post office boxes because responses must be associated with a specific residence location, not the post office box location. Most, if not all, residents in Marin's coastal villages receive mail via post office box. Instead, the Census Bureau canvased these areas door to door to conduct in person interviews with households that did not mail in their form or receive one. Census workers were supposed to be hired locally from the community they serve to obtain these census responses since they are local and familiar with the neighborhoods. However, undercounts in the census may occur and pose a problem, particularly because not all areas and groups are undercounted at the same rate. Another discrepancy may be due to the fact that there are more units on the ground being used for housing that are being reported, particularly on agricultural lands, for farmworker or other family members.

A review of County and Coastal Commission Coastal Permit records were conducted from 1980 through 2009.[4] This review indicates that residential development has been the predominate

[4] Only approved permits were tallied, although a few records that lack a final action but otherwise appear to have been complete were counted also. Records were tallied according to the property address, rather than by community plan boundaries. Tallied

form of new development in the Coastal Zone. There have been a total of 342 coastal permits issued for single family dwellings during this period. A breakdown of permits by community is as follows:

Coastal Permits for Single-Family Dwellings 1980 - 2009		
Community	**Coastal Permits**	**Categorical Exclusions**
Muir Beach	10	Need to research
Stinson Beach (excluding Seadrift)	30	Need to research
Seadrift	127	Need to research
Bolinas	20	Need to research
Olema	0	Need to research
Point Reyes Station	30	Need to research
Inverness Ridge	71	Need to research
East Shore/Marshall	10	Need to research
Tomales	13	Need to research
Dillon Beach	2	Need to research
Oceana Marin	29	Need to research
TOTAL	**342**	**To be determined**

In addition to construction of new single-family residences, significant development activities in the Coastal Zone include additions to existing residences and major repairs, including "tear-down" and replacement. Minor additions to existing structures, in many locations, do not require a coastal permit at all; however, most additions on sensitive sites, such as those located between the first public road and the sea, do require a coastal permit. Furthermore, land uses other than residential exist in the coastal zone. Agriculture, for instance, is extensive in the coastal zone. In many cases, however, agricultural and other non-residential land uses include relatively few activities that constitute "development." A tally of coastal permits reviewed since 1980 indicates the following:

Coastal Permits for Single-Family Dwellings 1980 - 2009	
Development Type	**Coastal Permits**
New single-family residence	342
Additions to Existing Single-Family Residence	354
Repairs to or Replacement of Existing Single-Family Residence	44
Multi-family residential	9
Visitor-serving accommodations	16
Nonresidential, Including Additions and Repairs	30
Agriculture/mariculture	40
Land divisions/lot line adjustments	101
Highway/transportation	16
Public Works, Including Water Wells and	69

records do not indicate whether development actually took place. Not counted were applications that were withdrawn, permit time extensions, permit amendments that only changed permit conditions, and a handful of records that were apparently faulty, such as a few with non-coastal-zone addresses. Included in the tally also are records of single-family residences subject to a categorical exclusion, which therefore did not require a coastal permit application, although categorical exclusion records do not appear to be fully complete.

Parks	
Shoreline protective device/slope stabilization	34
Other (habitat restoration, unspecified)	97
TOTAL	**1,152**

The discrepancy in the number of dwelling units reported in the CWP FEIR compared to the 2010 Census should be noted. One potential reason for this discrepancy may be due to the methodology the Census Bureau used in counting the population. For example, the Census Bureau did not mail Census forms to post office boxes because responses must be associated with a specific residence location, not the post office box location. Most, if not all, residents in Marin's coastal villages receive mail via post office box. Instead, the Census Bureau canvased these areas door to door to conduct in person interviews with households that did not mail in their form or receive one. Census workers were supposed to be hired locally from the community they serve to obtain these census responses since they are local and familiar with the neighborhoods. However, undercounts in the census may occur and pose a problem, particularly because not all areas and groups are undercounted at the same rate. Another discrepancy may be due to the fact that there are more units on the ground being used for housing that are being reported, particularly on agricultural lands, for farmworker or other family members.

Public Facilities: Water Supply and Demand

The Coastal Act relates the amount of permitted new residential, commercial, and industrial development with the availability of adequate services. The Coastal Act directs new development to existing developed areas that are able to accommodate it or to other locations outside developed areas where adequate public services are available. Thus, whether within or outside existing developed areas, new development must be supported by adequate public services. Furthermore, the Coastal Act requires that public works facilities shall be designed and limited to accommodate needs generated by development permitted consistent with the Act. In other words, such facilities should be sized so as to provide adequate services to development, but not sized in such a way as to create growth-inducing effects.

Maintaining a balance between the level of development and capacity of public services is essential to preserve service quality and avoid service shortages. Without this balance, communities can experience such impacts as water pollution that could result from inadequate on-site sewage disposal, as well as public safety problems associated with an inadequate water supply.

The following table presents a summary of current (2005) and 2030 supply and demand by water service area on an annual basis. The 2030 demand figures are those projected by the water supplier. This table does not address summer peaks when available water supplies may fall short or during drought periods. The water agencies generally have sufficient water on an average annual basis and do not anticipate projects to increase overall supply and see little or no future growth in water demand. However, most are strained to meet peak demands in summer and seek additional supply or storage to meet peak demands. NMWD West Marin service area may have a deficit in future years if the projected buildout water use is reached. NMWD is actively investigating additional supplies and most likely would have additional groundwater rights supplies and surface rights. In general, the water agencies have effectively used conservation (water demand management) to reduce and delay water supply augmentation projects.

Current and Projected Water Supply and Demand Comparison (Normal Year)[5]				
Water Service Area	2005/Current		Water Supplier 2030 Buildout	
	Supply (AFY)	Demand (AFY)	Supply (AFY)	Demand (AFY)
NMWD West Marin	372	347	372	533
BCPUD	175	165	175	165
SBCWD	203	175	203	181
IPUD	145	95	145	100
MBCSD	50	29	50	29
CSWS	56	29	56	29
EMWS	21	15	21	21

A detailed description and analysis for each water service area is included in the remainder of this report.

Zoning and Land Use

The zoning districts are established in Chapter 22.62 of the LCPA Development Code, which also describes allowable land uses and Coastal Permit requirements and development standards, if any, for each district.

Coastal Zoning Districts	
Zoning	**Description**
Agricultural and Resource-Related Districts	
C-APZ	Coastal, Agricultural Production Zone
C-ARP	Coastal, Agricultural Residential Planned
C-OA	Coastal, Open Area
Residential Zoning Districts	
C-RA	Coastal, Residential, Agricultural District
C-R1	Coastal, Residential, Single-Family
C-RSP	Coastal, Residential, Single-Family Planned
C-RSPS	Coastal, Residential Single-Family Planned, Seadrift Subdivision
C-R2	Coastal, Residential, Two-Family
C-RMP	Coastal, Residential, Multiple Planned
Commercial and Mixed-Use Zoning Districts	
C-VCR	Coastal, Village Commercial/Residential
C-H1	Coastal, Limited Roadside Business
C-CP	Coastal, Planned Commercial
C-RMPC	Coastal, Residential/Commercial Multiple Planned
C-RCR	Coastal, Resort and Commercial Recreation

[5] 2007 CWP FEIR, p. 4.9-76

Special Purpose and Combining Districts C-OA C-PF	Open Area Public Facilities Minimum Lot Size

Land Use Categories

LCPA policies C-CD-22, C-CD-23, C-CD-24, and C-CD-25 establish the land use map designations, land use categories, and land use intensity standards. Map Set 19a – 19m are the Land Use Policy Maps, which show the spatial distribution and intensity of existing and proposed uses of the land for housing, business, agriculture, open space, and other categories of public and private uses within the Coastal Zone. The land use categories, minimum lot size/density range, FAR, and consistent zoning are described as follows:

Agricultural

The following agricultural land use categories established to preserve and protect a variety of agricultural uses, and to enable the potential for agricultural production and diversification. Historically, 60 acres has been the minimum parcel size for most agricultural lands in the county. Various policies regarding agricultural productivity, water availability, effects on water quality, and other factors govern the subdivision of such lands, along with the intensities described below. The effect is that subdivisions of agricultural lands are rare.

Land Use Category	Minimum Lot Size/Density Range	FAR	Consistent Zoning
Agriculture 1 (C-AG1)	31 to 60 acres	.01 to .09	C-APZ-60 C-OA
Agriculture 2 (C-AG2)	10 to 30 acres	.01 to .09	C-APZ-11 to C-APZ-30 C-OA
Agriculture 3 (C-AG3)	1 to 9 acres	.01 to .09	C-ARP-2 to C-ARP-10

Very Low Density Residential

The following very low density residential land use categories (minimum lot sizes of 5 to 60 acres) are established for single-family residential development on large properties in rural areas where public services are very limited or nonexistent and on properties where significant physical hazards and/or natural resources significantly restrict development.

Land Use Category	Minimum Lot Size	FAR	Consistent Zoning
Single-Family 1 (C-SF1)	20 to 60 acres	.01 to .09	C-RSP-0.05 to C-RSP-0.016
Single-Family 2 (C-SF2)	5 to 19 acres	.01 to .09	C-RSP-0.02 to C-RSP-0.05

Rural/ Residential

The following Rural/Residential land use categories (minimum lot sizes of 20,000 square feet to 5 acres) are established for single-family residential development in areas where public services are limited and on properties where physical hazards and/or natural resources may restrict development.

Land Use Category	Minimum Lot Size/ Density Ranges	FAR	Consistent Zoning
Single-Family 3 (C-SF3)	1 to 5 acres	.01 to .09	C-R1:B4 C-R1:B5 C-RA:B4 C-RA:B5 C-RA:B6 C-ARP-2 C-RSP-0.2 to C-RSP-1 C-A2:BD C-A2:B4
Single-Family 4 (C-SF4)	20,000 sq. ft. to 1 acre (1–2 du/ac)	.01 to .15	C-RA:B3 C-RSP-1.1 to C-RSP-2 C-R1:BD C-R1:B3 C-RR:B3 C-RE:B3
Planned Residential (C-PR)	1 unit per 1 to 10 acres	.01 to .09	C-RMP-0.1 to C-RMP-1

Low Density Residential

The following low density residential land use categories (minimum lot sizes of 20,000 square feet or less) are established for single-family and multi-family residential development in areas where public services and some urban services are available and where properties are not typically limited by physical hazards or natural resources

Land Use Category	Minimum Lot Size/ Density Ranges	FAR	Consistent Zoning
Single-Family 5 (C-SF5)	10,000 to 20,000 sq. ft. (2–4 du/ac)	.01 to .25	C-R1:B2 C-RA:B2 C-RR:B2 C-RSP-2.1 to RSP-4 C-A2:B2
Single-Family 6 (C-SF6)	Less than 10,000 sq. ft. (4–7 du/ac)	.01 to .3	C-R1 C-R1:B1 C-RA:B1 C-RSP-4.1 to C-RSP-0.5
Multi-Family 2	1 to 4 du/ac	.01 to .3	C-R2

(C-MF2)			C-RMP-1 to C-RMP-4

Low to Medium Density Residential

The following low to medium density residential land use categories (from 5 to 16 units per acre) are established where moderate density single-family and multi-family residential development can be accommodated in areas that are accessible to a range of urban services near major streets, transit services, and neighborhood shopping facilities.

Land Use Category	Density Range	FAR	Consistent Zoning
Multi-Family 3 (C-MF3)	5 to 10 du/ac	.1 to .3	C-RMP-5 to C-RMP-10

General Commercial/Mixed Use

The General Commercial mixed-use land use category is established to allow for a wide variety of commercial uses, including retail and service businesses, professional offices, and restaurants, in conjunction with mixed-use residential development. The Development Code includes permitted and conditional uses and development standards consistent with this designation. The Land Use Policy Maps provide floor area ratio (FAR) standards for this designation. Residential development located in a mixed-use development within this designation shall be included in the permissible amount of development under these FARs. For projects consisting of low and very low income affordable units, the FAR may be exceeded to accommodate additional units for those affordable categories. For projects consisting of moderate income housing, the FAR may be exceeded in areas with acceptable traffic levels of service – but not to an amount sufficient to cause an LOS standard to be exceeded.

Land Use Category	Density Range	FAR	Consistent Zoning
General Commercial/Mixed Use (C-GC)	---	See Land Use Policy Maps	C-CP C-H-1 C-RMP-.1 to C-RMP-30
Neighborhood Commercial (C-NC)	---	See Land Use Policy Maps	C-VCR C-RMPC C-VCR:B2
Recreational Commercial (C-RC)	---	See Land Use Policy Maps	C-RCR

Public Facility, Quasi-Public Facility, and Open Space

Lands used for public facilities and quasi-public institutional purposes, including airports, schools, hospitals, cemeteries, government facilities, correctional facilities, power

distribution facilities, sanitary landfills, and water facilities, are designated Public Facility or Quasi-Public Facility, depending on the nature of their use. The Public Facility category is established for land owned by a governmental agency and used as a public institution. The Quasi-Public Facility category is provided for land owned by a nongovernmental agency that is used as an institution serving the public. A Public Facility or Quasi-Public Facility designation may be combined with another land use designation. In such instances, the applicable standard of building intensity is that for Public or Quasi-Public Facility, as depicted on the Land Use Policy Maps. Lands in public ownership for open space purposes, such as recreation, watershed, and habitat protection and management, are designated Open Space. In addition, private lands may be designated Open Space when subject to deed restrictions or other agreements limiting them to open space and compatible uses. Lands designated Open Space are subject to an FAR of .01 to .09. The following categories shall be established for public and quasi-public land use. The zoning designations listed are examples of consistent zoning and are not the only possible consistent zoning designations.

Land Use Category	Density Range	FAR	Consistent Zoning
Public (C-PF)	---	See Land Use Policy Maps	C-PF C-PF-RSP-.05 to C-PF-RSP-7 C-PF-RSP-.01 to C-PF-RMP-16 C-PF-ARP-20
Quasi-Public (C-QPF)	---	See Land Use Policy Maps	C-RMP-.1 C-RA:B1
Open Space (C-OS)	---	See Land Use Policy Maps	C-OA

Transportation

Road Capacity

The capacity of a road is a measure of its ability to accommodate moving traffic, both that generated by local development and that generated by visitors from outside the coastal zone. In contrast to water and sewer service, which do not in themselves inhibit visitor travel to or use of the coast, the capacity of the road network and its congestion level have a direct effect on the visitor's ability to get to the coast and on his experience once he arrives. A second contrast with other services is that the capacity of Highway One (or State Route 1/Shoreline Highway), the major coastal access link, is limited and, except for minor improvements, cannot be expanded. In the Coastal Act, the Legislature specifically required that Highway One be maintained as a scenic two-lane road in rural areas of the coastal zone. Thus, its present and future capacity is limited to the traffic which it can handle in its present configuration, or with minor improvements.

Highway One is a two-lane highway that runs north to south in West Marin and the Coastal Zone. With the exception of its access point from U.S. 101 at Tamalpais Valley, Highway One follows the east side of the Golden Gate National Recreation Area and the entire recreational corridor of West Marin for the duration of its length through the county. There is relatively little

development surrounding Highway One. The corridor is used primarily for intercommunity travel within West Marin or by visitors to the county.[6]

The CWP FEIR stated that certain segments of Highway One reported substandard LOS ratings. However, these segments are outside the Coastal Zone and include Highway One between U.S. 101 and Almonte Boulevard, with a V / C ratio of 1.53 for the northbound direction, PM peak and 1.35 for the southbound direction, AM peak. This is primarily due to the performance of the signal at State Highway One and Almonte Boulevard.[7] A review of more recent roadway segment monitoring results indicates that Highway One from Sir Francis Drake Boulevard to Point Reyes Station reported a LOS A.[8]

Traffic volumes and peak levels of service for various segments of Highway One are shown in the table below. All segments exhibit a peak hour LOS A.

Traffic Volumes and Peak Levels of Service for State Route 1 (Highway One) ADT and Peak Hour[9]

Post Mile						Peak Hour LOS and basis			
Segment	**Location or segment**	**Back AADT**	**Ahead AADT**	**Ahead Pk Hr**	**Back Pk Hr**	**% Ahd**	**LOS Ahd**	**% Back**	**LOS Back**
5.92	Muir Woods Rd	3250	3750	390	330	13.93%	LOS A	11.79%	LOS A
12.21	Panoramic Highway	3750	4050	420	390	15.00%	LOS A	13.93%	LOS A
17.066	Fairfax Bolinas Rd	2750	2350	240	280	8.57%	LOS A	10.00%	LOS A
17.2	Bolinas Rd	2350	2600	270	240	9.64%	LOS A	8.57%	LOS A
26.509	Sir Francis Drake Blvd, South	2600	3300	340	270	12.14%	LOS A	9.64%	LOS A
28.6	Sir Francis Drake Blvd, North	3300	6000	620	340	22.14%	LOS A	12.14%	LOS A
29.33	Point Reyes Petaluma Rd	6000	2300	240	620	8.57%	LOS A	22.14%	LOS A
38.409	Marshall Petaluma Rd	2300	1450	180	290	6.43%	LOS A	10.36%	LOS A
45.36	Tomales Petaluma Rd	1700	1350	170	220	6.07%	LOS A	7.86%	LOS A
45.66	Dillon Beach Rd	1300	1250	160	170	5.71%	LOS A	6.07%	LOS A
47.86	Two Rock Rd	1250	960	120	160	4.29%	LOS A	5.71%	LOS A
50.509	Marin Sonoma County Line	960			120			4.29%	LOS A

Sir Francis Drake Boulevard Through Inverness

Sir Francis Drake Boulevard through Inverness serves as a major access road to the Point Reyes National Seashore and Tomales Bay State Park and is a scenic roadway for coastal visitors. The road is also the sole access way for residents of Inverness Ridge. It parallels the Tomales Bay shoreline and passes through the communities of Inverness and Inverness Park where small commercial establishments, restaurants, and parking facilities are sited adjacent to the road, Both the volume and pattern of recreational traffic impacts these uses and has raised concern in the community about safety and road capacity.

[6] 2007 CWP FEIR, 4.2-6
[7] 2007 CWP FEIR, 4.2-6
[8] 2011 Marin Congestion Management Program Amended Draft, Table 5, p. 12
[9] Based on Caltrans data from V/C rations which were last used in the 1999 CMP. Data compiled by Art Brook, Marin County Department of Public Works, email correspondence dated 4/3/2012.

The existing LCP reported that, based on planning and engineering estimates of road capacity, existing and future traffic volumes, and visitor use of nearby state and federal parks, Sir Francis Drake had adequate capacity to handle existing traffic volumes and all projected increases. This conclusion was based on an estimated road capacity of 10,000 average daily trips (ADT) and actual peak use counts of 3300 ADT, taken near Bear Valley Road in the summer of 1976. Projected increases in traffic volumes, assuming full buildout on Inverness Ridge and a doubling of recreational traffic, are not anticipated to utilize all of the remaining 6700 ADT capacity. Traffic counts taken from the Tomales Bay State Park General Plan illustrates the peak/hour, peak/month and annual average daily traffic counts for Sir Francis Drake Boulevard and Highway One.

Traffic Counts for Highway One and Sir Francis Drake Boulevard[10]			
	Peak Hour	**Peak/Month**	**Annual Average Daily Traffic**
*Highway One	700	6900	6500
**Sir Francis Drake Boulevard	385	2193	1500
*State of California, Department of Transportation, Traffic Operations Division, 2001 traffic counts **Marin County Department of Public Works. June and July 1996. Counts taken at intersection of Sir Francis Drake Boulevard and Pierce Point Road.			

The current vehicle service levels on Highway 1 and Sir Francis Drake Blvd. are well within moderate traffic levels defined as having reasonably steady, high-volume flows of traffic as indicated by the National Research Council's Highway Capacity Manual (2000).[11]

Besides Highway One, the second main access link to the Coastal Zone is Sir Francis Drake Boulevard. Three other roads provide-access to the coast from eastern Marin - the Tomales-Petaluma, Marshall-Petaluma, and Pt. Reyes - Petaluma Roads - but since these roads are relatively lightly traveled, they do not have capacity problems.

Transit Service

Local transit service to West Marin and the Coastal Zone is provided by Marin Transit via the West Marin Stagecoach. Two routes serve the Coastal Zone: Routes 61 and 68. Route 61 operates Monday through Friday, offering limited weekday and weekend morning and evening routes between Marin City and downtown Bolinas via Panoramic Highway, with stops in Stinson Beach. On the weekends service extends to the Sausalito Ferry. Route 68 operates daily from San Rafael, serving the San Geronimo Valley via Sir Francis Drake Boulevard with stops at the Bear Valley Visitor Center at the Point Reyes National Seashore, Olema, downtown Point Reyes Station, Inverness Park, and Inverness. Routes are limited on Sundays and holidays with limited morning and evening service the rest of the week. The Stagecoach can accommodate up to two bicycles and are available on a first-come, first-served basis. Vehicles are also equipped with rear wheel-chair lifts and space for up to two wheelchairs.

[10] California State Parks, Tomales Bay State Park General Plan, Volume 1 of 2, May 14, 2004, p. 33
[11] California State Parks, Tomales Bay State Park General Plan, Volume 1 of 2, May 14, 2004, p. 227

DILLON BEACH

Dillon Beach Buildout (Unit II - 1981)[12]					
	Existing Units	**Vacant Lots**	**Potential Units**	**Buildout Total**	**Existing Nonresidential SQFT**
Oceana Marin	133	138	172	305	n/a
The Village	151	19	19	170	n/a
Lawson's Dillon Beach Resort	13	6	44	57	n/a
Lawson's Landing	n/a	n/a	n/a	n/a	n/a
TOTALS	**297**	**163**	**235**	**532**	**n/a**

Dillon Beach Buildout (2007)					
	Existing Units	**Vacant Lots**	**Potential Units**	**Buildout Total**	**Existing Nonresidential SQFT**
Oceana Marin	233	66	101	334	480 ft^2
The Village	148	24	7	155	0 ft^2
Lawson's Dillon Beach Resort	18	28	17	35	25,195 ft^2
Lawson's Landing	--	--	--	--	--
TOTALS	**399**	**118**	**125**	**524**	**25,675 ft^2**

Dillon Beach is a small coastal community overlooking Bodega Bay on the northwest coast of Marin County and surrounded extensively on the north and east by agricultural lands.[13] According to the US Census, the full time population of the community has increased from 277 in 1990 to 319 in 200, and then decreased to 283 by 2010, a total change of 2.1%. Meanwhile, housing units, as recorded by the Census, increased from 336 in 1990 to 440 in 2010, a 31% increase over the twenty year period. The surrounding agricultural lands are in active agricultural use and many of them are under agriculture preserve (Williamson Act) contracts. The community lies approximately three miles south of the Sonoma County line and four miles west of Tomales, off Highway One, and at the end of Dillon Beach Road.[14] The Dillon Beach Community Plan divides the community, which covers approximately 211 total acres of land, into four distinct subareas known as Oceana Marin, the Village, Lawson's Dillon Beach Resort and Lawson's Landing.[15]

[12] LCP Unit II (amended), Table 24, p. 200
[13] 1989 Dillon Beach Community Plan, p.. ES-1 & ES-3.
[14] 1989 Dillon Beach Community Plan, p. 2-1.
[15] 1989 Dillon Beach Community Plan, Figure 2-3, p. 2-6

Census Population and Housing in Dillon Beach 1990 - 2010[16]		
Year	**Population**	**Housing Units**
1990	277	336
2000	319	415
2010	283	440
% Change (1990 – 2010)	2.1%	31%

The Census reports the median age of Dillon Beach residents as 57.4 years. The majority (94%) of the population is white while 3.2% is Hispanic or Latino. Of the 440 total housing units, 147 (33.4%) are occupied while 293 (66.6) are vacant. Of these vacant units, 7.3% are for rent, 1.6% are for sale, and 56.1% are for seasonal, recreational, or occasional use. Of the occupied units, 85% are owner occupied while 15% are rentals. The majority of the vacant housing units (84.3%) are for seasonal, recreational, or occasional use.

A review of Coastal Permits indicates that two have been issued in The Village area and 29 in the Oceana Marin areas since 1980. However, construction of single-family residences (and an addition to an existing single family dwelling) is categorically excluded from a Coastal Permit in these areas. Further research is needed here to determine the number of categorical exclusions that have been issued in Dillon Beach.

The LCP recommended rezoning various properties in Dillon Beach to address issues with new development, including the appropriate density of development on multi-family parcels in Oceana Marin, and the density of residential and commercial development in Lawson's Dillon Beach Resort. Parcels in Oceana Marin were rezoned to in order to recognize the environmental characteristics of the sites and public service constraints. Furthermore, residential densities were established in the C-RMPC district in Lawson's Dillon Beach Resort were established, based on the environmental characteristics of the site and public service constraints. Before any development or subdivision of these parcels occurs, adequate water supply and sewage disposal must be demonstrated. The following describes buildout for the Oceana Marin, Village, and Lawson's Dillon Beach Resort areas.

Oceana Marin

Oceana Marin is a private subdivision covering approximately 153 acres on the hilly, northern part of the Dillon Beach Community.[17] LCP Unit II reported an existing 133 units within the subarea and 138 vacant lots with buildout potential for an additional 172 dwelling units, bringing total potential buildout for Oceana Marin to 305.[18] Today, there are 233 existing units in Oceana Marin. There remain approximately 66 vacant lots and a buildout potential of 101 dwelling units. This provides a total potential buildout of 334 units within the subarea of Dillon Beach.

The Village

The Village refers to the nine acre residential neighborhood in the center of town. It is the small, older, tightly clustered area of the community defined by Ocean View Avenue, Park Avenue, Cypress Avenue, Beach Avenue, Summer Street, and the northernmost block of Cliff Street. It is characterized by small houses and cottages built on very small lots. It is the oldest, most tightly-clustered group of houses in the Dillon Beach community.[19] According to the LCP Unit II, this area (formerly known as Old Dillon Beach) had 151 existing units in 1981, with 15 vacant lots

[16] US Census Bureau
[17] 1989 Dillon Beach Community Plan, p. ES-3.
[18] LCP Unit II (amended), Table 20, p. 200.
[19] 1989 Dillon Beach Community Plan, p. ES-3.

providing a buildout potential of 19 additional dwelling units.[20] There are now 148 existing dwelling units in the area, representing a loss of three units since 1988 when the LCP was amended. There remain approximately 24 vacant lots in the area and a buildout potential of 7 additional units, bringing the total buildout potential for the Village to 155 units.

Lawson's Dillon Beach Resort

Lawson's Dillon Beach Resort is defined as the area from the Village south to Lawson's Landing.[21] The Lawson's Dillon Beach Resort area covers approximately 49 acres and includes the Lawson's old general store, cabins for vacation rental, as well as a cafe and surf shop.[22] The area also includes an extensive beachfront for public recreational use. Today the Lawson's Dillon Beach Resort area is developed with 18 dwelling units, an increase of 5 units since 1988. There are approximately 28 vacant lots in the subarea, with a buildout potential for 17 additional units, bringing total potential buildout for Lawson's Dillon Beach Resort to 35 units.

The LCP reported that the Ocean Marin, Village, and Lawson's Dillon Beach Resort areas of Dillon Beach together contain approximately 297 existing units and 163 vacant lots. At that time the community had a reported buildout potential of 235 additional units with a total potential buildout potential of 532 dwelling units.[23] Today, there are exists approximately 399 units, an increase of 33% over a 20 year period. There is also approximately 2,486 existing nonresidential square feet. There now remain 118 vacant lots with a buildout potential of 125 dwelling units and no additional nonresidential square feet, providing a total potential buildout for Dillon Beach of 524 units. The majority of the development potential in Dillon Beach exists in the Oceana Marin subdivision, which contains 101 of the 125 potential buildout units.

The buildout estimates described above are based on the assumption that adequate public services would be available for all lands zoned for residential or other types of development. However, development within the boundaries of water and sewer service districts is constrained in many cases by limited capacity. Outside the boundaries of service districts, development is constrained in some areas by lack of available groundwater or soil conditions that are poorly suited for on-site sewage disposal.

Water Supply

The Dillon Beach area primarily uses groundwater for its water supply and is served by two small independent water companies: the California Water Service Company (formerly Coast Springs Water Company) and the Estero Mutual Water System.[24] The Coast Springs Water Supply (CSWS) is based on seven groundwater wells in Dillon Beach. During the drier summer months, the combined yield of these wells can drop dramatically from a maximum average combined yield of roughly 50,000 gpd down to approximately 24,000 gpd.[25]

A large portion of this water, up to 36,000 gpd, is pumped from a single large well located adjacent to the channel of Dillon Creek. This well is actually a horizontal infiltration gallery dug into the ground approximately 30 yards from the centerline of Dillon Creek from which water is pumped. The water from this well is not strictly groundwater, but is rather groundwater under the influence of surface water, namely Dillon Creek. In addition to this horizontal well, CSWS operates six vertical wells known as the "hillside wells." These wells are drilled to depths

[20] LCP Unit II (amended), Table 20 p. 200.
[21] 1989 Dillon Beach Community Plan, p. ES-4.
[22] http://www.dillonbeachresort.com/
[23] LCP Unit II (amended), p. 200
[24] 2007 CWP FEIR, p. 4.9-1
[25] 2007 CWP FEIR, p. 4.9-43

between approximately 200 to 250 feet into hillsides surrounding Dillon Beach and yield the remainder of the system's water supply. [26]

CSWS also maintains two storage tanks with a combined capacity of 335,000 gallons. These tanks are used to store water pumped by the CSWS's potable water wells for later distribution. This storage capacity allows CSWS to deal with peak single day water demand during vacation periods, which may exceed the well system's daily extraction capacity. Peak demand in Dillon Beach can rise sharply during peak vacation periods. Typical peak demand during these periods is approximately 40,000 gpd. This is very close to the CSWS average daily well yield of 50,000 gpd, and in excess of observed lower yield levels during periods of drought. This storage capacity enables CSWS to meet peak demands, but a prolonged period of peak demand coinciding with a drought could exhaust this supply.[27]

The Marin County Environmental Health Services documents 12 drinking water wells within the community of Dillon Beach. These wells include some of the wells operated by CSWS or EMWS and private wells. The private wells, while few in number, may lessen the demands placed on CSWS, represent potential future connections, or potentially compete for groundwater supplies.[28] In the future, private well failure may prompt a well owner to request connection to EMWS. The CSWS currently has a moratorium on new service hookups. At this point, the CSWS has no plans to expand its water supply or to lift the moratorium on new service connections. With this in mind, it is anticipated that there will be no foreseeable increase in CSWS water supply.[29]

CSWS has conducted a hydrologic study to investigate the feasibility of further developing its existing wells to increase their yield. The study determined that further extraction of groundwater within the CSWS service boundaries would not be economically feasible.[30]

The **Estero Mutual Water System (EMWS)** is a mutually homeowner-owned water company. Water provided to the community by EMWS is from nearby groundwater and surface water resources. These include two wells that together yield approximately 3 gpm.[31] These wells are screened in deep aquifers that respond slowly to both recharge and drawdown, although seasonal variations do occur. Peak well yields often occur in the months of May and June. In addition to wells, EMWS also has riparian water rights to divert during the rainy season up to 400 AFY from an unnamed tributary of the Estero de San Antonio. Diverted flows that are not immediately delivered to customers are stored in a small reservoir. The reservoir is then slowly drawn down over the course of the summer dry season.[32] The annual supply from the reservoir is estimated to be 17 AFY. As the supply of water from the reservoir is independent from daily surface water flows and EMWS's groundwater well supply, this supply provides EMWS a means of satisfying higher seasonal demand during the summer and dealing with single day, peak demand spikes during prime vacation periods.[33]

Records compiled by Marin County Environmental Health Services indicate 12 domestic drinking water wells in Dillon Beach. As noted in the preceding CSWS discussion, these wells

[26] Ibid
[27] Ibid, p. 4.9-43 – 4.9-44
[28] CWP FEIR p. 4.9-44
[29] Ibid
[30] Ibid, p. 4.9-46
[31] Ibid
[32] CWP FEIR, p. 4.9-47
[33] CWP FEIR, p. 4.9-48

can reduce the demands placed on EMWS or, conversely, compete for available supply. In the future, private well failure may prompt a well owner to request connection to EMWS.[34]

Currently, no capital improvements are planned for the expansion of EMWS water supplies in the next several years as the system is sufficient to meet current and projected future water demand.[35] Water levels in the wells are slow to respond to precipitation, with peak levels occurring as late in the year as early June. The annual yield of these wells has been estimated at four AFY.[36]

As mentioned above, the Coast Springs Water System recently conducted a hydrologic study to investigate the feasibility of further developing its existing groundwater wells to increase yields. This study determined that further extraction of groundwater from these wells was economically infeasible. Since EMWS wells likely draw water from the same groundwater source area as the Coast Springs Water System's wells, and have similar yields, it is very likely that further development of EMWS wells is similarly constrained.[37]

Limitations to the EWMS water supply include:[38]

- Surface water availability is limited, especially during droughts;
- Groundwater yield is limited; and
- There is a shortage of storage. A severe multiyear drought could result in the draining of the reservoir.

Coast Springs Water System Existing and Future Demand

Coast Springs supplies water to a portion of the Oceana Marin subdivision and to the Village. Estero Mutual's service area is limited to properties within Oceana Marin. In addition to providing joint water service to the Oceana Marin subdivision, the two companies share some of the same source areas for water supply. While the systems are individually managed and operated, a one-inch plastic line physically connects the two for emergency purposes.[39]

The Coast Springs Water System (CSWS) currently has a moratorium on new service hookups, and at this time has no plans to expand its water supply or lift said moratorium.[40] The CSWS presently provides water to customers through 252 individual service connections. The bulk of these connections (249) are to single-family residential customers. CSWS also serves one commercial customer, a mobile home park, and a post office in Dillon Beach. The current moratorium allows only for the addition of three connections to currently undeveloped lots.[41] It should be noted that the data in the following table provide only an estimate of year-round water demand and are not illustrative of the challenges posed by CSWS by seasonal fluctuations in water demand. The CSWS experiences summer peaking problems but is not expected to experience a water supply deficit during extreme droughts.

It is important to note that the County's buildout numbers do not consider the moratoria for this supplier. While the moratorium is not expected to be lifted in the near future, it is unclear what

[34] CWP FEIR, p. 4.9-47
[35] CWP FEIR, p. 4.9-47
[36] CWP FEIR, p. 4.9-49
[37] CWP FEIR, p. 4.9-49
[38] CWP FEIR p. 4.9-49
[39] LCP Unit II, as amended by Resolution No. 88-333, p.8.
[40] 2007 CWP FEIR, p. 4.9-44.
[41] 2007 CWP FEIR, p. 4.9-66.

the water supply situation will be in 2030. It is anticipated that technological advances will allow even greater conservation of water and make alternative water supply sources more feasible leading to the lifting of the connection moratoria. Meanwhile, the LCP requires the use of water saving devices in all new development in order to minimize wastewater generation and to encourage the conservation of coastal water resources. This is in addition to the requirement that adequate public services are available prior to approving new development.

CSWS Current and Projected Water Demand[42]				
	2005		2030	
Water Use Sector	**No. of Accounts**	**Deliveries (AFY)**	**No. of Accounts**	**Deliveries (AFY)**
Single Family	249	27	252	27
Multi Family	1	*	1	*
Commercial	1	*	1	*
Industrial	0	0	0	0
Institutional/ Governmental	1	*	1	*
Landscape Irrigation	0	0	0	0
Agricultural	0	0	0	0
Losses	0	2	0	2
Total	*252*	*29*	*255*	*29*

Current and Projected Water Supply and Demand Comparison (Normal Year)[43]				
	2005/ Current		Water Supplier 2030/Buildout	
Water Service Area	**Supply**	**Demand (AFY)**	**Supply**	**Demand (AFY)**
CSWS	56	29	56	29
EMWS	21	15	21	21

Estero Mutual System Existing and Future Demand

The Estero Mutual Water System (EMWS) is a mutually homeowner-owned water company[44] that serves approximately 132 individual connections, all of which are single-family residential developments located within Oceana Marin. In addition to these connections, there are about 40 undeveloped lots in Dillon Beach. Once these lots are developed, the total number of connections serviced by the EMWS would be 172. Further expansion of demand is not anticipated with the exception of the subdivision of four to six existing undeveloped lots. Thus, by 2030, there could be a maximum of 178 connections serviced by EMWS.[45] Currently, no

[42] 2007 CWP FEIR, Exhibit 4.9-28, p. 4.9-67
[43] 2007 CWP FEIR, Exhibit 4.9-31, p. 4.9-76
[44] 2007 CWP FEIR, p. 4.9-46.
[45] 2007 CWP FEIR, p. 4.9-66.

capital improvements are planned for the expansion of EMWS water supplies in the next several years as the system is sufficient to meet current and projected future water demand.[46] It is anticipated that water demand will grow by approximately 35 percent as the number of new water service connections could likely grow from 132 to 178. The EMWS experiences summer peaking problems and would likely experience a water supply deficit during extreme droughts.

EMWS Current and Projected Water Demand[47]				
	2005		2030	
Water Use Sector	**No. of Accounts**	**Deliveries (AFY)**	**No. of Accounts**	**Deliveries (AFY)**
Single Family	132	14	178	19
Multi Family	0	0	0	0
Commercial	0	0	0	0
Industrial	0	0	0	0
Institutional/ Governmental	0	0	1	0
Landscape Irrigation	0	0	0	0
Agricultural	0	0	0	0
Losses	0	1	0	2
Total	***132***	***15***	***178***	***21***

Sewage Disposal

The North Marin Water District provides sewer service to 199 residential connections in Dillon Beach. The gravity system flows to a lift station with a capacity of 144,000 gallons per day. Flows from the sewerage lift station are discharged into two three-million gallon storage and treatment ponds. Treated effluent is discharged to an 11-acre subsurface disposal field.[48]

Sewage treatment and disposal in most of Oceana Marin is provided by a centralized sewer system. Treatment and disposal in the Village, Lawson's Dillon Beach Resort, Lawson's Landing, and the surrounding agricultural areas rely on individual, on-site septic systems. The combination of sandy soils and seasonal occupancy has so far allowed most septic systems to function effectively. However, methods of sewage disposal at Lawson's Landing have caused problems in the past. The recently approved project at Lawson's Landing by the Coastal Commission requires improvements in sewage disposal facilities, including a new wastewater treatment and disposal system and abandonment of the existing unpermitted septic tanks.[49] Due to the potential for substantially greater development on the multi-family parcels in Oceana Marin and at Lawson's Dillon Beach Resort, proposed development in all planned districts in these areas (C-RMP, C-RMPC, and C-RCR) shall demonstrate prior to approval that safe and environmentally-sound sewage disposal is available.[50]

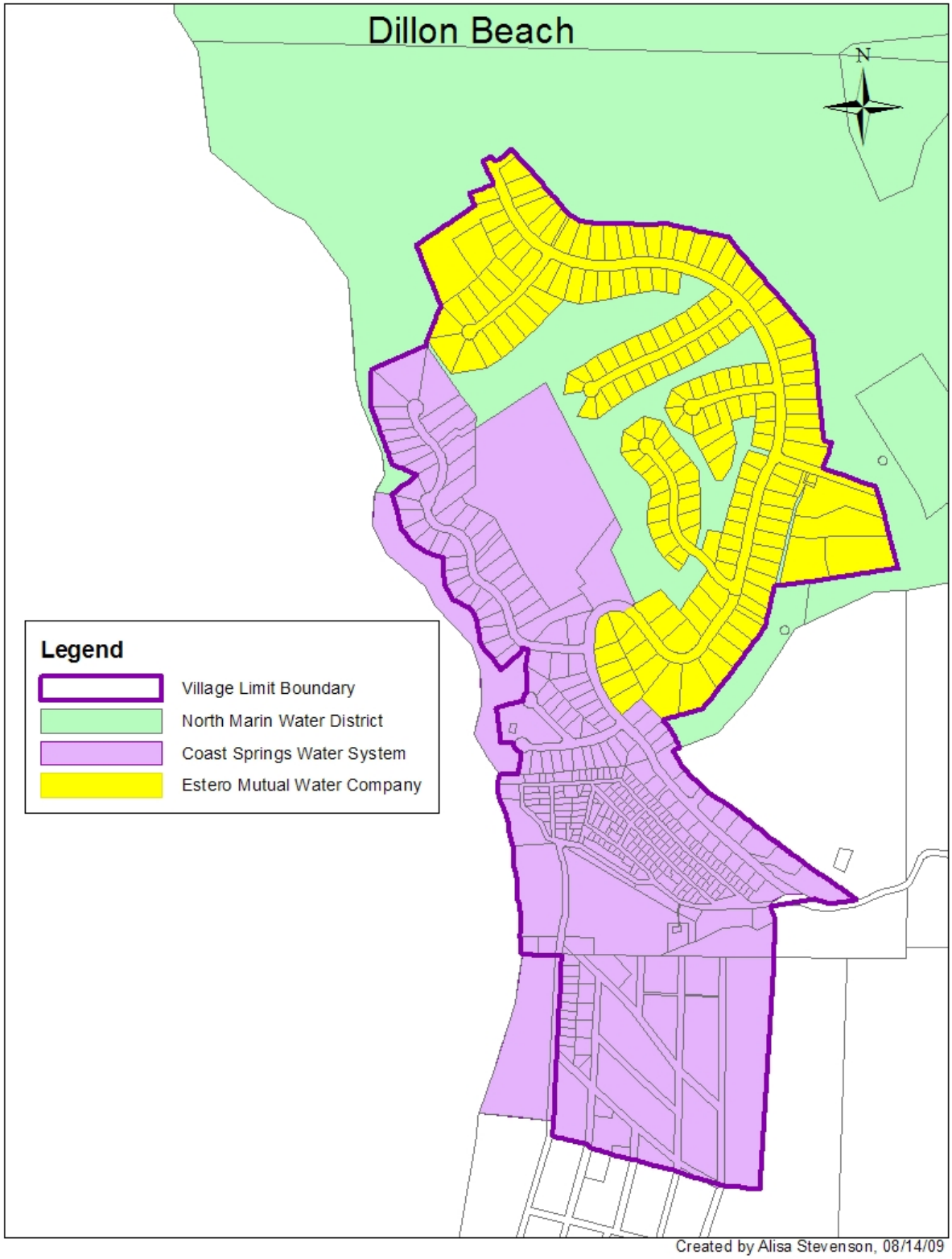
[46] 2007 CWP FEIR, p. 4.9-47.
[47] 2007 CWP FEIR, Exhibit 4.9-29, p. 4.9-68.
[48] 2007 CWP FEIR, p. 4.10-20
[49] California Coastal Commission Staff Report 2-06-018/A-2-MAR-08-028 (Lawson's Landing), 7/1/11, p. 121
[50] LCP Unit II (amended), Policy 3e, p. 191

Village Limit Boundary

The village limit boundary for Dillon Beach extends from the northern boundary of the Oceana Marin subdivision on the north to the southern end of Lawson's Dillon Beach Resort to the south, and from the shoreline on the west to the eastern side of Oceana Marin, the Village, and Lawson's Dillon Beach Resort. Lawson's Dillon Beach Resort parcel 100-100-47 is included within this area. This boundary provides an urban/rural delineation and is intended to preserve agricultural lands for agricultural uses, by establishing the area within which development is to occur.[51] Areas to the north and east of the village limit boundary area are zoned as agricultural production zones with a maximum of one unit per 60 acres (C-APZ-60) in order to protect agricultural uses, the water quality and habitat of Esteros Americano and de San Antonio, and the area's scenic resources. The area from the village limit boundary south to Tomales Bay (Lawson's Landing) is zoned for resort and commercial recreation (C-RCR), but is also used during part of the year for grazing cattle. Lawson's Landing is a separate, private recreational resort area that includes a private beach, bayfront property and a campground. Lawson's Landing is adjacent to the Dillon Beach community and is outside of the village limit boundary.

No changes are proposed for the Dillon Beach Village Limit Boundary.

[51] 1989 Dillon Beach Community Plan, p. 1-2.


Dillon Beach
N
Legend
Village Limit Boundary
North Marin Water District
Coast Springs Water System
Estero Mutual Water Company
Created by Alisa Stevenson, 08/14/09

TOMALES

Tomales Buildout						
Source:	Existing Units	Vacant Lots	Potential Units	Buildout Total	Existing Nonresidential SQFT	Proposed Non-Residential SQFT
Unit II, 1981[52]	72	n/a	88	160	n/a	n/a
Unit II, 1981[53]	91	n/a	102	193	n/a	n/a
CWP FEIR, 2007	103	31	41	144	35,833	35,833

Census Population and Housing in Tomales 1990 - 2010[54]		
Year	**Population**	**Housing Units**
1990	284	117
2000	210	85
2010	204	122
% Change (1990 – 2010)	-28.2	4.3%

The village of Tomales is a small well-defined historic settlement covering approximately 260 acres of land located near Highway 1 just east of Tomales Bay. According to the US Census, the full time population has decreased from 284 in 1990 down to 204 in 2010, a 28.2% loss. The median age of Tomales residents is 50.5 years. Census data reports that 94.6% of the population is white and 4.4% are Hispanic or Latino. The average household size is 2.06 persons. Meanwhile, the number of housing units has remained relatively stable, increasing 4.3% from 117 to 122 units over the same twenty year period. Of the 122 total housing units, 99 (81.1%) are occupied and 23 (18.9%) are vacant. Of these vacant units, 3 (2.5%) are for rent, one (0.8%) is for sale, two (1.6%) are sold but not occupied, while 14 (11.5%) are for seasonal, recreational, or occasional use. Of the occupied housing units, 59 (59.6%) are owner-occupied and 40 (40.4%) are renter-occupied.

The median age of Tomales residents is 50.5 years. Census data reports that 94.6% of the population is white and 4.4% are Hispanic or Latino. The average household size is 2.06 persons.

The 1981 LCP Unit II reported 72 existing residential units in Tomales and a buildout potential of 88 additional units, bringing total buildout to 160 units. Buildout figures for Tomales were updated in 1988 and reflected 91 existing units and up to 102 additional buildout units. Today there are approximately 103 existing dwelling units, an increase of 43 percent. The total projected buildout for the community is now estimated at 144 total units (as of 2007), based on the assumption of 31 vacant lots that together may provide a buildout potential of 41 additional dwelling units, including second units. Most residential and commercial development in Tomales

[52] LCP Unit II, p. 200.
[53] LCP Unit II p. 205 (amended via Resolution 88-333)
[54] US Census Bureau

is still concentrated in a well-defined 12 block area in the center of town, where existing zoning permits 6,000 square foot lots.

Records indicate that approximately 13 Coastal Permits for new residential units have been issues since 1980.[55] The majority of these permits (ten) were issued since 2000. However, the construction of single family residences (and additions) on a vacant, legal lot of record within the identified exclusion area are excluded from a Coastal Permit. There have been approximately [X] Categorical Exclusions for new residential units issued during this period. Additional research is needed here to determine the number of categorical exclusions that have been issued.

There is approximately 35,833 square feet of non-residential development in Tomales. No additional non-residential development is proposed.

Water Supply

Unit II identified two issues concerning water supply: 1) Whether adequate groundwater resources are available to serve buildout, and 2) if buildout would cause overdraft of those resources.[56] These questions are difficult to answer because no studies on groundwater availability have been conducted for the area, as such studies would be time consuming and expensive.

On site water sources are required to be proved before new development can take place, although there is little knowledge of the area's groundwater characteristics or the long-range capacity for population growth depending on local water sources. Ideally, a groundwater supply study could be conducted to determine whether the yield of the groundwater basin can support buildout of the community. Such a study, however, would be an expensive and time-consuming undertaking. Regardless, buildout of the community may not exhaust groundwater supplies or cause overdraft of the groundwater basin. Since water availability may be uncertain in some locations, however, on-site well test to demonstrate adequate flow must continue to be required prior to development.[57] LCP Policy LCP policy C-PFS-1 requires ensuring that adequate services, e.g. water supply, sewage disposal, and transportation (including public transit as well as road access and capacity if appropriate) are available prior to approving new development. Lack of available services shall be grounds for project denial or for a reduction in the density.

A limited-scope hydro geological assessment report was written by Kleinfleder, Inc. in 2005 for a proposed 22-unit housing development on the Sass property. This study's scope was specific to two new wells that were drilled for the development. Neither a groundwater budget nor a hydrologic water balance was performed. The study showed that the aquifer was able to transmit groundwater at rates sufficient to supply water to both wells. Outside wells were influenced by pumping tests, but not adversely impacted and there was adequate recovery.[58]

Potable water for Tomales is provided by private, individual on-site wells tapped into local groundwater sources.[59] According to Marin County Environmental Health Services (EHS), as of 2007 there were 100 total private wells in Tomales, 79 of which were used for domestic purposes and 17 for irrigation. Two wells are used for both purposes.[60] A focused review of well

[55] California Coastal Commission and Marin County Community Development Agency permit database, 2009
[56] LCP Unit II, p. 166
[57] Unit II p. 166 (amended language)
[58] Marin LAFCO Tomales Area Service Review and Sphere of Influence Update, 2009, p. 7
[59] 1997 Tomales Community Plan, p. IV-18.
[60] 2007 CWP FEIR, Exhibit 4.9-19, p. 4.9-50.

construction and pumping rates for approximately 60 wells in Tomales revealed that wells are screened in fractured sandstone of the Franciscan Complex with yields ranging between two and 30 gpm. Specific capacity (defined as the ratio of well yield over water level drawdown) averages between 0.1 and 0.3 gallons per minute per foot of drawdown (gpm/ft of dd), which is below the threshold for consideration of a municipal public water supply well. The existing water supply conditions in Tomales indicate that fractured bedrock can provide limited water supply to rural communities. While the concentration of private wells in these rural communities indicates the presence of groundwater supply, a large numbers of wells also may indicate that well yields are limited, that wells are prone to failure and replacement, and that numerous wells are being drilled to provide sustainable supply.[61]

There are three potential other sources of water: (1) deep wells and springs, (2) Walker Creek, and (3) Stemple Creek. Walker Creek is approximately one mile south of Tomales, while Stemple Creek is approximately one mile north. Importing water form these two distant sources would be economically infeasible for a community as small as Tomales. General estimates of water potential from these sources would require a study of moderate scale, while a comprehensive study would be a larger undertaking. In the absence of such information, long-range plans for development in Tomales are based on the historical precedent that there was apparently sufficient local water available to serve larger populations in the past (about 300 people in the late 1800's), but it should be noted that this is not really an adequate information base because per capita water use may be higher today and historical data is not very specific.[62]

The availability of water supply for hydrant flow still remains an issue for fire safety. Emergency water supplies are available and accessible at various locations around the village. There is a 69,000-gallon community fire water storage system that is owned and operated by Marin County Fire Department located on the corner of Railroad and Second Street. It has been in operation since 1999 and includes five fire hydrants. Since this tank and its related water distribution facilities (water lines, fire hydrants, etc.) have been constructed, emergency water supply storage capacity and distribution has been adequate for structural fire protection in Tomales. This upgrade improved the area's ISO (Insurance Service Office) rating from 9 to 4.[63] The ISO rating is a numerical grading system used by the insurance agency to develop premium rates for residential and commercial businesses with regards to fire protection services.

In spring 2008, the high school installed a 250,000-gallon water storage tank for the purposes of irrigation and fire protection. There are future plans to serve the elementary school and residential areas on the east side of Highway 1. With this extension there would be the possibility of four additional hydrants. These future plans are dependent on grant funding. In addition, the TVCSD plans to get their wastewater treatment system advanced to a tertiary treatment level, which would provide an additional one million gallons of emergency water for fire suppression.[64]

Sewage Disposal

The Tomales Village Community Services District (TVCSD) and Tomales Sewer Maintenance District together provide sewage collection and service system for existing residences, commercial establishments and school facilities.[65] The TVCSD was formed in 1999 to provide

[61] 2007 CWP FEIR, Exhibit 4.9-19, p. 4.9-50
[62] Unit II p. 166 (amended language)
[63] Tomales Area Service Review & Sphere of Influence, August 2009, p. 7
[64] Tomales Area Service Review & Sphere of Influence, August 2009, p. 8
[65] 2007 CWP FEIR, p. 4.10-20.

wastewater collection and treatment service in Tomales, as well as recreation services and park maintenance and operation of the Tomales Community Park. There are currently 109 active connections being served by the Tomales sewer system.[66] In 1979, there were 75 connections. [67] Sewage in the downtown area is provided by TVCSD while septic systems are used in the outlying areas.

The Tomales wastewater treatment plant is a biological treatment type, secondary treatment facility designed for an average annual flow of 0.038 mgd. Disposal of the treated effluent is into a storage pond from which an adjacent field is seasonally irrigated. Gravity sewers are predominately six and eight inches in diameter. There is approximately 2.25 miles of existing gravity sewer main and 1.25 miles of collection lines. The collection system includes one lift station. The lift station is equipped with two grinder sewage pumps, each of which are capable of delivering the 22 gpm (30,000 gpd) design flow. Dual pumps are provided so that one is a standby unit for the other in case one of the pumps becomes inoperable. (TVCSD 2009, page 2, and Marin LAFCO, 2008c).

TVCSD's treatment process includes influent and effluent flow measuring and recording equipment, secondary treatment by aerated ponds, irrigation field, and the high school storage pond and school irrigation areas. The storage ponds provide effluent storage during winter months when irrigation is impractical. The total capacity of the storage pond is based upon storage for a period of 120 days. (Marin LAFCO, 2008c, page 5). According to TVCSD, 15% of total capacity has been set aside for infill projects within District boundaries. The system is currently operating at approximately half capacity. There is adequate capacity to support foreseeable future growth in Tomales.

The Tomales wastewater treatment plant is designed for an average annual flow of 38,000 gpd. It is estimated that the system could accommodate a population of up to 450 people.[68] According to the 2007 CWP FEIR, the total number of existing dwelling units within these districts amounts to 90 units, including 28 within the Tomales Village Community Service District and 62 within the Tomales Sewer Maintenance District.[69] This leaves 50 existing residential dwellings in Tomales outside of the community sewer service area that as a result likely have to rely on the use of individual on-site septic systems. For the 2007 FEIR, the service district reported the ability to accommodate approximately 50 new residential units.[70]

The Marin Local Agency Formation Commission (LAFCO) is in the process of conducting a Tomales Area Service Review and Sphere of Influence Update. The proposal would accommodate future sewer connections and park services to six parcels: APNs: 102-041-40, 41, 42, 43, 44, and 102-080-08. A Draft Initial Study was released in September 2009 (http://lafco.marin.org/studies/pdf/MarinLAFCOTVCSDDMND.pdf). LAFCO staff recommended the LAFCO Commission adopt Alternative 2 as the revised SOI of the TVCSD to correlate with the C-VCR, C-CP and C-RSP zoning district boundaries (consistent with PF-1.1 of the Community Plan). LAFCO has not brought the boundary change to the Commission as of yet. This will be further updated if and when the Commission considers this issue.

[66] Marin Lafco Tomales Area Service Review and Sphere of Influence Update Draft Initial Study, Sept.. 2009 p. 102
[67] LCP Unit II, p. 177
[68] Marin LafcoTomales Area Service Review and Sphere of Influence Update Draft Initial Study, Sept. 2009 p. 14
[69] 2007 CWP FEIR, Exhibit 4.10-3, p. 4.10-16.
[70] 2007 CWP FEIR, p. 4.10-20.

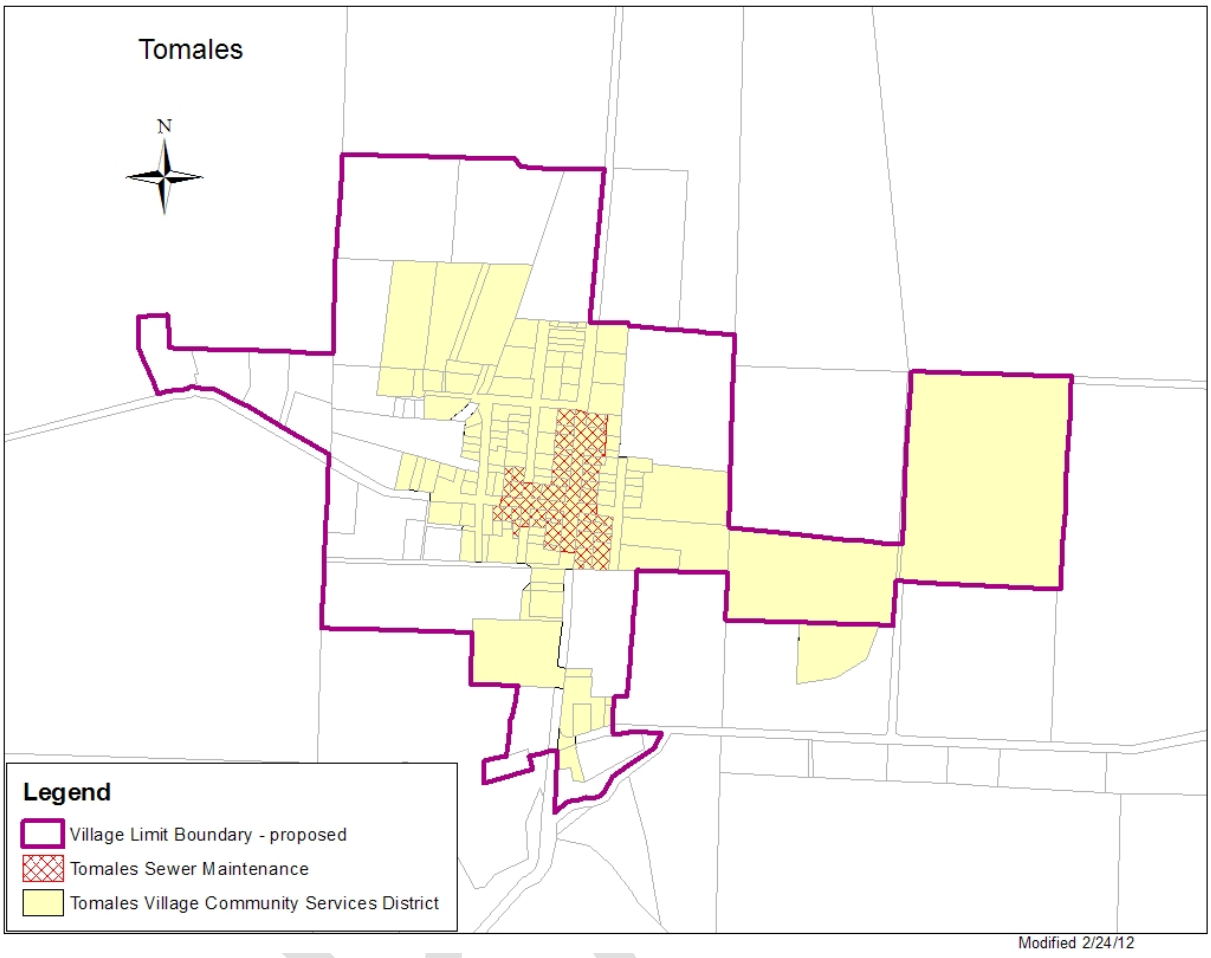
Village Limit Boundary

The Tomales village limit boundary was established by the 1977 Tomales Community Plan, primarily to avoid intrusion into surrounding agricultural lands.[71] The community expansion boundary continues to include a core of small VCR-zoned lots surrounded by small agricultural parcels. According to Unit II, the boundary was drawn to include: 1) those parcels that are too small for large scale agricultural use, and 2) those parcels that have been zoned for commercial use.[72] The expansion area includes a core of lots zoned C-VCR surrounded by residentially zoned parcels of up to 7 units per acre. These are buffered by parcels 2 – 15 acres in size zoned for 2, 5, and 10 acre lots. It also includes a fire station, churches, and several public school sites. Except for these, no parcels larger than 15 acres lie within the expansion boundary. Except for a number of parcels adjacent to Tomales – Petaluma Road zoned C-ARP-20, all other lands outside the boundary are zoned C-APZ-60.

A change to the community expansion boundary is proposed to remove parcel 100-090-18, a 12.4 acre unimproved parcel owned by Michael Etemad and zoned C-APZ-60. This parcel is not within the Tomales Village Community Services District or Tomales Sewer Maintenance District. It is also outside of the Community Plan boundary. Removing the parcel from the expansion area would align both the community plan and community expansion boundary in this section of the community, and is also consistent with the criteria used to delineate the community expansion boundaries. Aside from this change, no further modifications are proposed.

Existing zoning provides room for expanded commercial development. No rezonings are recommended. A number of small agricultural parcels were rezoned from A-2, A-10, and A-20 zoning to planned agricultural/residential (C-ARP) zones to allow for the preservation of the maximum amount of agricultural land, protect views within the community, and allow greater flexibility in design. All lands within the village limit boundary that are zoned C-ARP should remain zoned as such at current maximum densities (one unit per 2, 5, 10 and 20 acres).

[71] LCP Unit II, p. 204.
[72] LCP Unit II p. 92


Tomales
N
Legend
Village Limit Boundary - proposed
Tomales Sewer Maintenance
Tomales Village Community Services District
Modified 2/24/12

EAST SHORE/MARSHALL AREA

East Shore/Marshall Area Buildout Comparison				
Source:	**Existing Units**	**Vacant Lots**	**Potential Units**	**Buildout Total**
LCP Unit II, 1981[73]	70	56	60	130
CWP FEIR, 2007	121	120	76	197
Percent Change (1981 – 2007)	72.9%	114.3%	26.6%	51.5%

Census Population and Housing in East Shore 1990 - 2010[74]		
Year	**Population**	**Housing Units**
1990	269	182
2000	328	190
2010	323	387
% Change (1990 – 2010)	20.1%	112.6%

The East Shore community covers approximately 4,250 acres of a very narrow strip of land along the eastern shoreline of Tomales Bay.[75] Existing development is generally clustered in small sheltered pockets[76] with residential development occurring predominately west of Highway One along the shoreline. Between these residential clusters are stretches of undeveloped land which currently afford visual and physical access to the shoreline.[77] The community plan reported that no town center has developed and remained central to the social and economic fabric of the East Shore community, which continues to remain true.[78] The planning area of the East Shore includes the town of Marshall, shoreline uses north and south of the town, and agricultural land to the east of the shoreline. Highway 1 runs in a north-south direction through the planning area parallel to the shoreline, and the Marshall-Petaluma Road extends eastward in the planning area from the town of Marshall toward Sonoma County.[79]

The East Shore Community Plan reports a population count of 250.[80] The US Census reports that the population increased from 269 in 1990 to 328 in 2000, then slightly decreased to 323 in 2010, representing a 20.1% increase over the twenty year period. However, it should be noted the population remained relatively stable between 2000 and 2010. Meanwhile, the number of housing units increased from 182 to 387 between 1990 and 2010, a 112.6% increase. A large majority of the growth in housing units appears to have occurred from 2000 to 2010.

[73] LCP Unit II, p. 200.
[74] US Census Bureau
[75] 1987 East Shore Community Plan, p. i.
[76] LCP Unit II, p. 203.
[77] 1987 East Shore Community Plan, p. 17
[78] 1987 East Shore Community Plan, p. 31.
[79] 1987 East Shore Community Plan, p. 5.
[80] 1987 East Shore Community Plan, p. 2.

Most of the shoreline of Tomales Bay was subdivided many years ago into approximately 240 small lots which formed a narrow continuous string of building sites between the Bay and Highway 1 or Sir Francis Drake Boulevard.[81] Today there are approximately 225 total lots encompassed by the East Shore planning area. LCP Unit II reported 70 existing dwelling units within the Marshall/East Shore area, with 56 vacant lots remaining. These lots held a buildout potential for 60 additional dwelling units, bringing total buildout to 130 units for the area[82] in addition to some potential commercial expansion. Today there are 121 existing units, representing a 72 percent increase (51 units) since the LCP was originally certified. These existing units are built on 99 (44%) of the 225 total lots in the area. Presently there remain 120 vacant lots, with a buildout potential for 76 additional dwelling units. This provides a total buildout of 197 units for the East Shore area. In addition, there is approximately 35,833 square feet of existing nonresidential development. No additional nonresidential development is anticipated.

Records indicate that approximately 10 Coastal Permits for single-family residences have been issued in the East Shore area since 1980. In addition, Coastal Permits were issued for the following: 13 for residential additions; two for residential repairs or teardowns; 5 visitor-serving accommodation; 13 for agriculture or mariculture; 12 for a land division or lot line adjustment; 17 for water wells and park facility; 4 for shoreline protective device and slope stabilization, including repair; and 21 other types, including habitat restoration or otherwise unspecified.

The shoreline of Tomales Bay is perhaps the most sensitive area with development potential in the Unit II Coastal Zone. Many shoreline lots are less than 200 feet in width and are characterized by steep or sloping terrain and sandy or rocky beaches. Much of the legally defined lot area of these shoreline lots is under water all or part of the time. Buildout in this area could have many significant adverse environmental impacts, including impacts on the water quality and marine resources of Tomales Bay, blockage of public physical and visual access to the water, adverse impacts on mariculture operations in the Bay, and further loss of valuable coastal habitats such as mudflats and beaches.[83]

There continues to be major public service constraints on new shoreline development as well. Water is lacking and most lots cannot support on-site sewage disposal systems consistent with established standards from the County and the Regional Water Quality Control Board. Furthermore, the presence of public trust lands is still an issue for new shoreline development since the State of California holds a public trust easement over tidelands and submerged lands in Tomales Bay, which limits the purposes for which these lands can be developed. The State Lands Commission has not clearly defined the boundary of public trust lands in Tomales Bay or the specific uses which are or are not appropriate. Thus, the effect of the public trust on shoreline uses is still unclear.[84] The State Lands Commission currently reviews coastal development permits on a case-by-case basis to determine if additional permits are needed.

Water Supply

The West Marin branch of the North Marin Water District includes approximately 100 parcels of the East Shore of Tomales Bay, although the District does not provide water service to the area at this time.[85] The area relies on individual wells or springs. There are approximately 66 domestic and seven irrigation wells in the Marshall area. There are also four wells used for both

[81] LCP Unit II (amended), p. 203
[82] LCP Unit II (amended), p. 203
[83] LCP Unit II (amended), p. 203
[84] LCP Unit II (amended), p. 203
[85] Info provided 08/05/09 via email correspondence by Chris DeGabriele, General Manager of NMWD.

domestic and irrigation, and eight wells with an unknown use, for a total of 88 wells.[86] The table below shows the four small public water systems currently established in the Marshall area and the sources used to supply the water for each system. The systems used in the Marshall area are defined as "Transient, Non-Community Water System," which is a public water system that is not a community water system and does not regularly serve at least 25 of the same persons over six months of the year.

East Shore Area Small Public Water Systems[87]			
Name	**System Type**	**Source**	**Source Description**
Hog Island Oyster Company	Transient, Non-Community Water System	Groundwater	1 well
Marshall Boat Works	Transient, Non-Community Water System	Groundwater	1 active well, 2 inactive wells
Nick's Cove	Transient, Non-Community Water System	Groundwater	1 well, functionally active
Tony's Seafood	Transient, Non-Community Water System	Groundwater under the direct influence of surface water	1 collection gallery

Except for a few locations, such as the canyon behind Marconi Cove marina, most of the east side of Tomales Bay has little known potential for development of additional water supplies. The ability of surface sources to provide supply is limited by the fact that many east side streams are intermittent and thus cannot be used year-round. Some of these streams are already used for agriculture, a use which has priority over private residential development in the Coastal Act. The potential for obtaining water from groundwater supplies also appears quite limited. Studies of water supply undertaken in the late 1960's by the North Marin County Water District determined that there are no dependable supplies of groundwater in any quantity in the geologic formations on the east side of the Bay and that groundwater supplies along Walker Creek are severely limited. It is also unlikely that the small shoreline lots have adequate on-site water resources to support individual domestic wells or, if they do, that such wells could supply wholesome water supplies with septic systems installed on the same lots. Contamination by septic effluent would, in fact, be likely, given the high water tables on the east side of the Bay which have been found to exist through geologic and soil investigations. Importation of water from outside sources is unlikely due to the high cost involved.[88]

In summary, there appears to be very little potential for developing additional water supplies on the east side of Tomales Bay. Available information strongly suggests that there is not adequate water to serve buildout. In addition, the potential for contamination of on-site wells from septic effluent is high. Concerning fire protection, water supplies must be imported by truck, or, if the tide is in, can be drawn directly from Tomales Bay. On-site storage tanks may be required for new construction.[89]

Sewage Disposal

Developments along the shoreline of Tomales Bay rely exclusively upon septic systems, holding tanks, and other methods of on-site sewage disposal. In general, due to the age of existing

[86] 2007 CWP FEIR, p. 4.9-50
[87] 2007 CWP FEIR, Exhibit 4.9-20, p. 4.9-52
[88] LCP Unit II (amended), p. 165
[89] LCP Unit II (amended), p. 165

systems and the physical characteristics of shoreline lots, the condition of most existing systems is very marginal. Many are old, failing, and have lost a significant portion of their leachfields to erosion. In some instances, raw sewage may be discharged directly into Tomales Bay.[90]

Providing for adequate sewage disposal is a major constraint on new shoreline development, primarily due to the lack of adequate land area on which to fit a septic system. Most lots on the shoreline are less than 1 acre in size and of this area; often two-thirds or more is under water. The remaining land area is often barely large enough for a building, leaving little or no room for a septic tank and successfully functioning leachfield. In this situation, few lots can meet the 100 foot setback between a leachfield and the Bay, as required by County regulations.[91]

A project to develop a sanitary wastewater facility in the East Shore area has been proposed to address public health and water quality concerns. The facility is proposed to be located on the Goodman-Barinaga Ranch (Assessor's Parcel Number 106-210-75) on the east side of Highway One, on the hillslope just south of the Marshall Boatworks. The facility would serve up to 38 existing developed lots in Phase I with possible future service of an additional 20 developed lost to the south of the Phase I area.[92]

The estimated design wastewater flow for the proposed Phase 1 Service Area is approximately 9,120 gallons per day (gpd), based on an average unit flow of 240 gpd per residential connection for 38 parcels, with a total of bedroom count of 87 bedrooms. The Phase 1 Service Area improvements would also include County acquisition of a five-acre community leachfield site or approval of a friendly condemnation taking of that leachfield site on the Goodman-Barinaga Ranch. The project does not propose mandatory connection to the community system by all property owners in the Phase 1 Service Area. Only those property owners who voluntarily choose to connect to the community system, at the onset or with a standby option, would be provided connections and would participate in the financing (and grant funding benefits) of the project facilities. Future connections may be extended to any non-participating property owners in the Phase 1 Service Area, at additional cost. Non-participating property owners in the Phase 1 Service Area would automatically be grouped with the other properties in the project area outside of Phase 1, and would be included in the East Shore Area-Wide Wastewater Management Program discussed under Section C below.[93]

It has been determined through soil, percolation, and groundwater studies that the recommended community wastewater site for the Phase 1 Service Area has sufficient capacity for additional connections beyond the 38 identified parcels in the Phase 1 Service Area. It is estimated that capacity exists for approximately 20 additional residential connections (or the equivalent). This additional capacity is estimated to be sufficient to potentially serve the existing developed properties located to the south of the Phase 1 Service Area; this includes properties from Tony's to Marconi and South of Marconi. Since this is a reasonably likely future phase of work.[94]

The collection and disposal service under this project would be provided solely to existing developed properties. The project is specifically not intended to allow for building and connection of currently undeveloped properties, nor to allow new bedroom additions to existing

[90] LCP Unit II (amended), p. 175
[91] LCP Unit II (amended), p. 175
[92] East Shore Wastewater Improvement Project Final Environmental Impact Report, March 2007, p. 10
[93] East Shore Wastewater Improvement Project Final Environmental Impact Report, March 2007, p. 10
[94] IBID

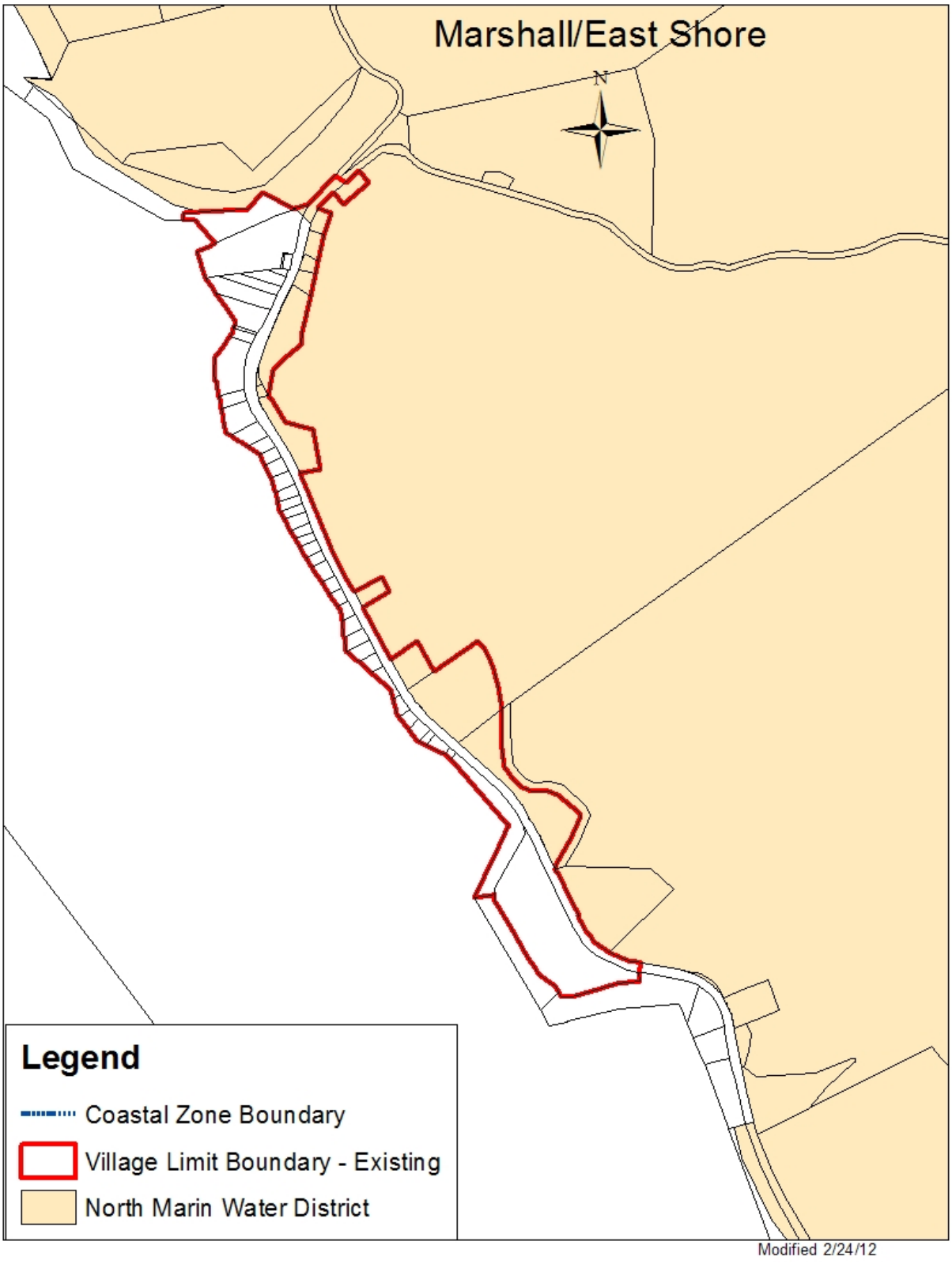
residences. This is a self-mitigating feature of the project (as well as a condition of the grant used to fund the project) intended to avoid concerns about growth inducement.[95]

Village Limit Boundary

When the LCP was originally certified a village limit boundary was not proposed for the village of Marshall. The LCP noted that the village is "unable to expand without further polluting Tomales Bay or encroaching on grazing lands" and that "only very limited growth through infilling is recommended." The LCP further noted that the small clusters of development along the east side of Tomales Bay, such as Nick's Cove and Blake's Landing, should not be allowed to grow into villages or to merge.[96]

The LCP was amended in 1988 to incorporate the Dillon Beach Community Plan. When this was done the LCP established a new limit boundary so that, on the east side of Highway One, it included the dozen or so small already subdivided parcels abutting Highway One, located between the Marshall – Petaluma Road and the Marshall Boat Works, which are zoned C-VCR and C-ARP-2 . On the west side of Highway One, the limit boundary includes the Hog Island Oyster Company and south down to the Marshall Store and Post Office, including the area immediately south of the Marshall Boat Works. No changes are proposed to the existing Village Limit Boundary at this time.

[95] East Shore Wastewater Improvement Project Final Environmental Impact Report, March 2007, p. 11
[96] LCP Unit II (amended), p. 93


Marshall/East Shore
N
Legend
Coastal Zone Boundary
Village Limit Boundary - Existing
North Marin Water District
Modified 2/24/12

INVERNESS

Inverness Buildout Comparison				
Source:	Existing Units	Vacant Lots	Potential Units	Buildout Total
LCP Unit II, 1981[97]	740	320	420	1,160
CWP FEIR, 2007	960	328	357	1,317
Percent Change (1981 to 2007)	29.7%	2.5%	-15.0%	13.5%

The Inverness Ridge is bounded on the north by Tomales Bay State Park, on the west and south by the Point Reyes National Seashore, and on the east by Tomales Bay and Lagunitas Creek.[98] These features effectively serve as the permanent expansion boundary for growth of the community.[99] The two major centers within the community are Inverness and Inverness Park. According to the U.S. Census Bureau, the population of Inverness has declined from 1,392 in 1990 to 1,304 people in 2010, a decline of 88 people (-6.3%) over a twenty year period. Meanwhile, the Census Bureau reports that housing units increased 33.6% over the same period. Of the 1,130 existing housing units, 697 (61.7%) are occupied and 433 (38.3%) are vacant. Of these vacant units, 27 (2.4%) are for rent, 3 (0.3%) are rented but not occupied, 10 (0.9%) are for sale, 2 (0.2%) are sold but not occupied, and 369 (32.7%) are for seasonal, recreational, or occasional use. Of the occupied housing units, 451 (64.7%) are owner-occupied and 246 (35.3%) are renter-occupied. The homeowner vacancy rate is 2.2% and the rental vacancy rate is 9.8%. The median age of the population is 57.3 years and 92.9% are white.

Census Population and Housing in Inverness 1990 - 2010[100]		
Year	**Population**	**Housing Units**
1980	n/a	781[101]
1990	1,392	846
2000	1,421	999
2010	1,304	1,130
% Change (1990 – 2010)	-6.3%	33.6%

A review of permit records indicates that 71 Coastal Permits have been issued for single-family residential units between 1980 and 2009. During that same period, 21 subdivisions or lot line adjustments were processed, but available records do not indicate how many new lots might have resulted from these actions.

[97] LCP Unit II (amended), p. 200.
[98] 1983 Inverness Ridge Community Plan, p. 6
[99] LCP Unit II (amended), p. 93, and 1983 Inverness Ridge Community Plan, p. 29
[100] US Census Bureau
[101] 1983 Inverness Ridge Community Plan, p. 63

In terms of land use, a large portion of the Inverness community is within the Point Reyes National Seashore. Land uses in Inverness consist of single family residential, general commercial mixed use, recreational commercial, and open space. Single family residential densities range from 1 to 19 units per acre. All commercial activity is located on Sir Francis Drake Boulevard. The general commercial mixed use has a Floor Area Ratio range of 0.05 to 0.30, while recreational commercial has a range of 0.05 to 0.15. The community is primarily residential with limited commercial development in Inverness and Inverness Park.

The LCP continues to strictly limit the expansion of any commercial development and restricts new development to established village centers, based on two reasons: 1) Inverness is considered to be providing its fair share of visitor enterprises, and 2) Point Reyes Station is still recognized as the commercial hub of West Marin.

The LCP Unit II states that in 1981, at the time of its adoption, there were 740 existing units on the Inverness Ridge, spread over an area of approximately 2,200 acres for an overall density of 1 unit per 3 acres.[102] It reported a potential buildout of an additional 420 units for the 320 vacant lots that remained in the area. The buildout projection was based on the maximum potential for subdivision under existing zoning at the time. This provided for a total buildout projection of 1,160 dwelling units. The number of existing dwelling units has grown by 220 since 1981 to 959, a 29.7% increase, while the buildout units have increased 157 dwelling units to a total of 1,317. In addition, the number of vacant lots has gone up from 320 to 328 during this same period.

The LCP cited major coastal issues such as lack of adequate community water supplies, potential cumulative impacts of buildout utilizing septic systems, impacts from erosion and sedimentation on the water quality of Tomales Bay, and limited fire protection and road capacities, particularly in the Paradise Ranch Estates subdivision.[103] These impacts have been reduced through the reduction in zoning densities recommended in the Inverness Ridge Communities Plan and purchase of various parcels into the Point Reyes National Seashore, [104] despite that none of the recommended consolidations in the Paradise Ranch Estates Lot Consolidation Plan have been implemented.

Water Supply and Demand

Water and sewer service to Inverness Ridge is provided by two different water companies, in addition to lots served by private on-site water sources such as wells. The areas of Inverness served by NMWD-West Marin include Inverness Park and Paradise Ranch Estates, which use groundwater pumped from two wells adjacent to Lagunitas Creek. NMWD-West Marin provides water service through its Point Reyes Water System. This system also serves the communities of Point Reyes Station and Olema. The Point Reyes water system is one interconnected supply and distribution system and is completely separated from NWWD water facilities in the Novato service area. The Point Reyes water system also serves the Point Reyes National Seashore Headquarters at Bear Valley, Silver Hills, the U.S. Coast Guard Housing Facility in Point Reyes Station, and two West Marin dairies.[105]

[102] LCP Unit II (amended), p. 171
[103] LCP Unit II (amended), p. 202
[104] LCP Unit II (amended), p. 202
[105] 2007 CWP FEIR, 4.9-12

The Inverness Public Utility District (IPUD) provides water service and fire protection to the small community of Inverness. IPUD's service area encompasses some 1,600 acres, of which 500-600 acres are watershed. Approximately 373 of the watershed are in public ownership; IPUD owns 190 acres and Tomales Bay State Park owns 183 acres. IPUD effectively manages the entire publicly owned watershed, including the portion owned by the State Park.[106] The full time population living within the district's boundaries was estimated at 702 people during the 2000 Census. The community of Inverness is a popular vacation area with numerous weekend and vacation homes. The main challenge facing IPUD is to provide for the peak demand imposed during prime vacation periods in the summer months.

To meet the water demands of the community it serves, IPUD gathers surface water from IPUD and State owned watershed lands and then transfers that water to one of two main micro-filtration plants where it is treated and piped to storage tanks around Inverness. Water is then released from these storage tanks as necessary to satisfy the community's demand. This surface water supply is supplemented with groundwater from three groundwater wells. IPUD acquired its current water system in 1980 and since that time has expanded the storage system. Current storage capacity is 279,750 gallons (325,000 - 45,250 for fire resources). The highest observed single day demand was 170,000 gallons in 1996. The last expansion was in 1990 when a 20,000-gallon tank was replaced with a 70,000-gallon tank.[107]

IPUD and the NMWD-West Marin service area have an emergency water agreement that allows for the transfer of water between the two district's water systems through an intertie in the event of an emergency. During a water supply availability or distribution catastrophe, up to 40 gpm of water can be sent from either the NMWD West-Marin or the IPUD water systems to the other system on a temporary basis. This emergency agreement is not intended to provide either system with a sustainable supply of water during a significant drought or to provide for any portion of regular customer water demand. The agreement expires June 30, 2014.[108]

IPUD operates two water treatment plants: one main plant in First Valley and a second smaller plant in Third Valley. The main plant operates continuously year-round, while the second, smaller plant is used on a seasonal, as-needed basis from late spring through fall. Both plants provide micro-filtration and chlorination. The main plant's capacity is rated nominally at 100 gpm while the smaller plant is rated nominally at 15 gpm. In combination, the plants provide a theoretical finished-water capacity of 115 gpm or approximately 165,000 gpd. IPUD estimates that realistically its sustainable finished water capacity is 155,000 gpd. If operated at full sustainable daily capacity on a year round basis, these treatment plants would be able to produce approximately 174 AFY.[109]

Outside of IPUD's agreement for emergency water supply with NMWD, IPUD does not import, exchange, or transfer water supplies with any other water supplier. Similarly, IPUD does not utilize desalinated water or reclaimed water as a source of water supply. Records provided by Marin County Environmental Health Services indicate that there are a significant number of private domestic (103) and irrigation (eight) wells within the community of Inverness. The wells are not operated by IPUD and their yields are unknown. Most were drilled prior to 1980, but wells have been installed as recently as 2005. The private wells can be regarded as beneficially lessening the current demands placed on the IPUD system, and not as competing for water

[106] Inverness Area Sphere of Influence Update, May 2007, p. 3
[107] 2007 CWP FEIR, 4.9-34
[108] 2007 CWP FEIR, 4.9-34
[109] 2007 CWP FEIR, 4.9-34

supply. Most of these wells were in operation prior to IPUD acquisition of the water system, so the current IPUD assessment of water supply likely incorporates the effect of private wells. Private wells also may represent a future potential demand for IPUD if wells fail and owners seek connection to IPUD.[110]

Capital improvements planned by the IPUD include an expansion of water treatment capacity and replacement of aging finished-water storage tanks and increase in finished-water storage capacity to 345,000 gallons. Total storage capacity at this time for finished water is 325,000 gallons, of which 45,250 gallons are set aside as fire reserve. IPUD does not anticipate the expansion of its water supply as there is little potential for growth in the district's service area.[111] Water supply is anticipated to remain constant at approximately 145 AFY, of which 125 AFY is sourced from local surface water and 20 AFY from groundwater.[112]

Surface Water. The three streams from which IPUD diverts all of its surface water are known as First Valley Creek (a.k.a. Inverness Creek, Ness Creek, or Brook Ness Creek), Second Valley Creek (a.k.a. Alder Creek), and Third Valley Creek. Since there are no large reservoirs within the district, the district is largely dependent on the daily flows in these three streams and the limited temporary storage capacity provided by its holding tanks. Two major unnamed tributaries to First Valley Creek are spring-fed and maintain year-round creek flow though no springs have been observed along the main channel.[113]

The watersheds for each of these three creeks are surrounded by the protected public lands of the Point Reyes National Seashore, consequently development within these watersheds has been minimal and the watersheds are relatively pristine. The presence of Coho salmon was not recorded in either First Valley Creek or Second Valley Creek during surveys conducted by the National Marine Fisheries Service and the California Department of Fish and Game and neither stream is tributary to a known spawning stream. However, the fact that these surveys did not record the presence of Coho does not preclude the possibility of Coho salmon within these streams.[114]

IPUD diverts water from a pair of intakes in each steam. The so-called High Intakes are located higher in each streams' watershed, closer to the headwaters, and the Low Intakes are located nearer to each stream's outlet to Tomales Bay. Most of the water used by IPUD is diverted at the High Intakes. High Intake diversions are supplemented by up to 38,000 gpd of diversions at the Low Intakes. IPUD holds a pre-1914 prescriptive water right to divert water via the High Intakes. Water diverted through the Low Intakes is allowed through an agreement with the United States California Department of Fish and Game. Streamflow is gauged on a monthly basis at each of the High Intakes. Measurements taken since 2000 have recorded combined streamflows for all three streams ranging from as much as 2,000,000 gpd to as little as 69,000 gpd at the High Intakes.[115]

Groundwater. IPUD operates three groundwater wells to supplement its supply of surface water. The annual yield of these three wells is estimated to be approximately 20 AF. 131 Individually each well's yield is estimated at slightly less than five gpm. These wells are not located over any groundwater basin delineated by the California Department of Water

[110] 2007 CWP FEIR, p. 4.9-35
[111] 2007 CWP FEIR, p. 4.9-35
[112] 2007 CWP FEIR, p. 4.9-36
[113] 2007 CWP FEIR, p. 4.9-37
[114] 2007 CWP FEIR, p. 4.9-37
[115] 2007 CWP FEIR, p. 4.9-37

Resources (DWR). 132 Instead, these wells are likely screened in the granitic bedrock that underlies Inverness. The primary function of these wells is to supplement supply when surface water yields are low.[116]

The largest water supply challenge facing IPUD is the potential for large spikes in water demand during peak holiday and vacation periods. While sufficient water supply is available on an annual basis to satisfy the community's annual water demand, IPUD's lack of long term storage and reliance on the availability of streamflow leave the district vulnerable to supply shortfalls during dry periods when streamflow is low. Additionally, a potential bottleneck in the IPUD water system, which may restrict the district's ability to meet peak single day customer water demand spikes, is the rate at which surface water can be processed by the district's water treatment facilities.[117]

During late summer and fall, before the beginning of the rainy season, the amount of surface water available can be equal to or slightly less than the daily production demand. The largest measured single day demand for the IPUD water system was 170,000 gpd, while typical single day peak summer water demand ranges from 150,000 gpd to 155,000 gpd. As peak demands generally occur during the driest parts of the year, single day water demand can exceed available streamflow. During a drought period, High Intakes streamflow was measured at 69,000 gpd.[118]

To aid in meeting peak levels of single day water demand, IPUD utilizes a network of several storage tanks. The total storage capacity of IPUD's network of two steel and eight redwood water storage tanks is 325,000 gallons. Additional capacity exists within the network, but it is unusable due to the poor condition of the storage tanks. Streamflow diverted at the High Intakes can also be supplemented with up to 58,000 gpd of water obtained from the district's three groundwater wells and the Low Intakes, but this supplemental supply is also likely to be reduced in the event of drought conditions. The current capacity of the storage tanks is sufficient to provide water to satisfy the highest observed single day water demand in the absence of streamflow. However, should a multi-day period of peak demand coincide with a severe drought, this water storage capacity could be exhausted rapidly.[119]

To deal with the possibility of a supply shortfall, IPUD has implemented a peak demand conservation program that has reduced the weekly variation in customer demand from 48 percent to 12 percent, helping to smooth out demand spikes. This program allows for the IPUD Board of Directors to declare a water shortage emergency under the conditions cited in Sections 350 through 850 of the California Water Code. This declaration places restrictions on the delivery of water and the consumption of water supplied for public use. There are four stages in the implementation of the declared water shortage emergency: (1) general conservation and prohibition of nonessential uses of water; (2) prohibitions on outdoor uses of water and / or restrictions on when outdoor watering is permitted; (3) prohibition of outdoor watering at all times; and 4) water rationing. The IPUD Board of Directors has the option of applying penalties in the event of water usage that is in violation of the declared water shortage emergency.[120]

To remove the potential bottleneck of insufficient treatment capacity, IPUD acquired a new treatment unit in 2002. The unit adds an additional 15 gpm or 21,500 gpd, of finished-water

[116] 2007 CWP FEIR, p. 4.9-38
[117] 2007 CWP FEIR, p. 4.9-38
[118] 2007 CWP FEIR, p. 4.9-38
[119] 2007 CWP FEIR, p. 4.9-38
[120] 2007 CWP FEIR, p. 4.9-38

capacity. This third micro-filtration unit brings the total finished-water capacity of the IPUD's water treatment system to 176,500 gpd, which exceeds the district's largest observed single day water demand of 170,000 gpd. [121]

In 2005, the NMWD-West Marin service area reported a total of 785 connections for its entire service area, 691 of which were single-family residential. In addition, the district reported a count of 1,156 connections as its buildout estimate for 2030.[122] This would allow for 371 additional connections in West Marin. For Inverness specifically, there exists 157 active connections in Inverness Park and 156 in Paradise Ranch Estates, providing for a total of 313 active connections. 307 of these connections are reported as being residential, while five are for commercial development and one is for agriculture.[123] Individual buildout estimates for each of the coastal communities served by NMWD-West Marin are not available at this time according to district staff.[124] However, it is expected that at full estimated buildout by year 2030, NMWD-West Marin will experience a water supply deficit based on average water supplies.[125] This could significantly limit development potential for the communities serviced by the district.

The northern part of Inverness Ridge is serviced by IPUD. The IPUD serves approximately 540 residential unit equivalents (RUEs) through 501 individual service connections within its approximately 2.5 square mile area. RUE is a measurement that allows commercial and residential users to be grouped together. Of the 501 customer connections, 483 are residential services and 18 are non-residential. The 18 non-residential connections consist of a three-room school, a church, a library/museum, a yacht club, seven inns or motels, four retail establishments, two restaurants, and one utility (SBC).[126]

As in many of the coastal communities, residential occupancy levels within the IPUD district fluctuate on a seasonal basis. Approximately 207 of the dwelling units serviced by IPUD are vacation and weekend houses occupied only during the summer and other peak holiday periods. During these peak vacation times, the community's population can swell by several thousand people. This population fluctuation can create large short-term spikes in water demand and significant seasonal fluctuations in water demand.[127]

IPUD produces on average approximately 95 AFY of water. It is estimated that local users consume approximately 85 AF of water annually. An additional ten AFY are reserved for system overhead, non-metered uses, and system losses due to pipeline leakage. The district expects to meet future water demands with its current facilities, except for eventual replacement of water storage tanks. The community of Inverness itself is nearly built-out, as only a few potentially developable lots remain. Future growth expansion of the district is constrained by the surrounding Point Reyes National Seashore and Tomales Bay State Park. IPUD estimates that ultimate development will be 600 RUE's, slightly more than a ten percent increase over the current service demand. IPUD does not expect the total number of connections ever to exceed 525 (an increase of 24 over the current 501).[128]

[121] 2007 CWP FEIR, p. 4.9-39
[122] 2007 CWP EIR, Exhibit 4.9-22, p. 4.9-57
[123] Per 04/21/2011 via email correspondence by Chris DeGabriele, General Manager of NMWD.
[124] Per 08/12/09 email correspondence with Drew McIntyre, Chief Engineer of NMWD.
[125] 2007 CWP EIR, Exhibit 4.9-35, p. 4.9-83.
[126] 2007 CWP FEIR, p. 4.9-62
[127] 2007 CWP FEIR, p. 4.9-62
[128] 2007 CWP FEIR, p. 4.9-62

The following table summarizes the current and projected water supply available to IPUD through 2030. As no capital improvements are planned to expand the IPUD current water supply beyond current levels, water supply is anticipated to remain constant at approximately 145 AFY.

IPUD Current and Projected Water Supplies (AFY) – Normal Year[129]						
Water Supply Source	***2005***	***2010***	***2015***	***2020***	***2025***	***2030***
Local Surface Water	125	125	125	125	125	125
Groundwater	20	20	20	20	20	20
Imported	0	0	0	0	0	0
Wholesaler	0	0	0	0	0	0
Reclaimed	0	0	0	0	0	0
Transfer / Exchange	0	0	0	0	0	0
Desalination	0	0	0	0	0	0
Total	***145***	***145***	***145***	***145***	***145***	***145***

The following table provides a breakdown of the current and projected water demand predicted by the IPUD through 2030. These projections indicate only slight increases in annual water demand through 2030.

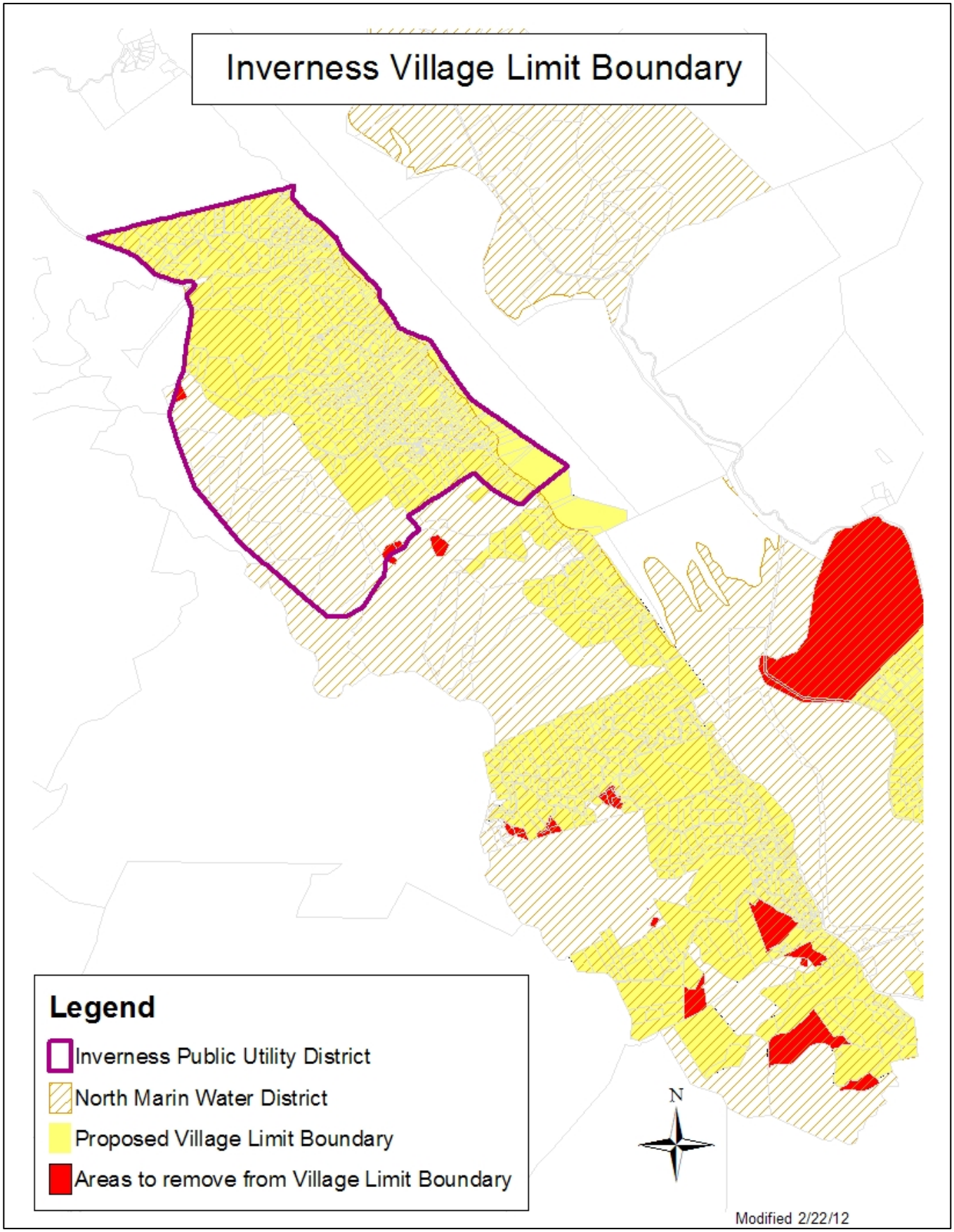
IPUD Current and Projected Water Demand[130]				
	2005		**2030**	
Water Use Sector	**No. of Accounts**	**Deliveries (AFY)**	**No. of Accounts**	**Deliveries (AFY)**
Single Family	483	82	506	86
Multi Family	0	0	0	0
Commercial	15	2	16	3
Industrial	0	0	0	0
Institutional/ Governmental	3	1	3	1
Landscape Irrigation	0	0	0	0
Agricultural	0	0	0	0
Losses	0	10	0	11
Total	***501***	***95***	***525***	***100***

[129] 2007 CWP FEIR, p. 4.9-36
[130] 2007 CWP FEIR, Exhibit 4.9-26, p. 4.9-64

Village Limit Boundary

The LCP notes that the Inverness Community Plan sets the village limit boundaries for the area. Growth is limited in the area since it is bounded by Tomales Bay to the east and National Park Service lands to the north, west, and south, creating a stable boundary within which growth can occur in accordance with Section 30214 of the Coastal Act.[131] The figure below shows the village limit boundary for Inverness. The existing village limit boundary is proposed for modification to remove parcels that have since been publicly acquired. However, in some cases privately owned parcels are removed to prevent small islands, such as with 109-330-06 along the northwestern ridge, and 114-040-72 and 73, a small cluster of parcels co-owned by the Nature Conservancy, and 114-040-30, which is privately owned adjacent to the Nature Conservancy parcels. Another cluster of privately owned parcels are 114-040-56 and 57. Both are zoned C-OS and were proposed for federal park acquisition, which did not occur. They remain unimproved. In addition, parcel 114-040-29, which is privately owned and developed with multiple residential units, is also removed from the boundary. It is zoned C-RSP-0.1 and was also proposed for federal park acquisition.

[131] LCP Unit II, p. 93


Inverness Village Limit Boundary
Legend
Inverness Public Utility District
North Marin Water District
Proposed Village Limit Boundary
Areas to remove from Village Limit Boundary
N
Modified 2/22/12

POINT REYES STATION

Point Reyes Station Buildout				
Source:	Existing Units	Vacant Lots	Potential Units	Buildout Total
LCP Unit II, 1981[132]	186	n/a	615	801
CWP EIR, 2007[133]	374	66	137	511
Percent Change (1981 – 2007)	101.1%	---	-77.7%	-36.2%

Census Population and Housing in Point Reyes Station 1990 - 2010[134]		
Year	**Population**	**Housing Units**
1976	n/a	147
1990	1018	441
2000	818	373
2010	848	490
% Change (1990 – 2010)	-16.7%	11.1%

Point Reyes Station is one of the oldest communities in the Coastal Zone, covering approximately 1,500 acres of land at the southern tip of the Tomales Bay Watershed. It has historically served as the commercial hub for rural West Marin.[135] According to US Census figures, the median age of the town's population is 51.1 years. The population has decreased from 1018 people in 1990 to 848 people in 2010, a 16.7 percent loss over this period. Whites make up 85.5% of the population, followed by Hispanic or Latino at 18%.

The Point Reyes Station Community Plan reports that there were 147 total units (excluding the Coast Guard housing) in 1976.[136] Census data indicates housing then increased to 441 units in 1990, but then decreased to 373 units in 2000, then increased to 490 units in 2010. This represents a total increase of 233% in housing units over the 34 year period, which averages out to approximately 114 units per decade (or about 10 units per year). Of the 490 total housing units, 412 (84.1%) are occupied and 78 (15.9%) are vacant. Of these vacant units, 15 (3.1%) are for rent, one (0.2%) has been sold but not occupied, and 43 (8.8%) are for seasonal, recreational, or occasional use, and 19 (3.9%) are other vacant. Of the occupied housing units, 451 (64.7%) are owner-occupied and 246 (35.3%) are renter-occupied. The homeowner vacancy rate is 0% while the rental vacancy rate is 6.8%. Of the occupied housing units, 207 (50.2%) are owner-occupied and 2.5 (49.8%) are renter-occupied.

The heart of the Point Reyes Station Planning Area is the historic downtown area, which is characterized by small lots and a variety of large and small, old and new commercial buildings, closely adjoined by vintage residences. The continued co-existence of residential uses next to commercial and public uses in the downtown area is a major goal of the 2001 Point Reyes

[132] LCP Unit II, p. 200
[133] Data extracted from available GIS land use tables attributed based on the 2007 CWP EIR analysis.
[134] US Census Bureau
[135] 2001 Point Reyes Station Community Plan, p. i
[136] 2001 Point Reyes Station Community Plan, p. 23

Station Community Plan.[137] Current zoning concentrates commercial activity and buildings in the Downtown Area of the community. Only less intensive businesses such as home offices, cottage industries, B&B's and small agriculture-related commercial activities are permitted in other parts of the planning area.[138]

The community is bounded by two large, agriculturally used lots, the Giacomini Ranch and the Martinelli Ranch. The GGNRA has acquired the Giacomini Ranch, which has been restored to tidal marshlands. The Martinelli Ranch was acquired by the GGNRA in 1987 but is leased back as grazing land for livestock. The remaining acreage in the community has been zoned for mixed agricultural-residential, multiple residential, or village commercial-residential uses in densities that limit agriculture to small-scale or secondary activities.[139]

Land uses in Point Reyes Station include mixed residential-commercial, single family residential, open space, agriculture, and some multi-family residential. Single family residential densities range from 1 to 4 units per acre. Multi- family residential densities range from 1 to 10 units per acre, while the mixed residential-commercial ranges from 1 to 20 units per acre and has a Floor Area Ratio of 0.30 to 0.50. Agricultural densities ranges from 1 unit per 1 to 60 acres.

The 1981 LCP Unit II reported an existing dwelling unit count of 186, with a buildout potential for 615 additional units, which provided a total buildout for Point Reyes Station of 801 units.[140] Today there are 374 existing dwelling units, which have more than doubled since 1982. These existing units are built on 311 (66%) of the total 469 lots within the community. The potential residential buildout for the area has decreased considerably from the 1981 figure to a present figure of 137 additional units, providing for a total buildout of 511 units. There remain a total of 66 vacant lots in the Point Reyes Community. There is presently a combined total of 181,267 ft^2 of nonresidential development on 37 lots in Point Reyes Station. There is approximately 1,620 ft^2 of additional nonresidential buildout potential.

A review of Coastal Permit data indicates that a total of 30 residential units were considered since 1980. Additional research is needed to review the data.

The lack of adequate parking in the downtown area and the resulting congestion impacts on Highway One was cited as a concern in the LCP, which could limit commercial development in the future.[141] The Community Plan reported that through traffic on Highway One in the downtown area seems to operate at acceptable levels.[142] However, the Community Plan also notes congestion issues with the intersection of Highway One and Mesa Road due to parking and double parking in front of businesses, and suggests evaluating two potential options. Other suggestions include extending the 25-mph zone of Highway One at the intersection of Sir Francis Drake Boulevard, and a comprehensive evaluation of the design of all parking spaces on Third Street, B Street and the south side of Fourth Street.

[137] 2001 Point Reyes Station Community Plan, p. 11
[138] 2001 Point Reyes Station Community Plan, p. 15
[139] 2001 Point Reyes Station Community Plan, p. 11
[140] LCP Unit II, p. 200.
[141] LCP Unit II (amended), p. 202
[142] 2001 Point Reyes Station Community Plan, p. 48

Water Supply

The community of Point Reyes Station is provided water service through the Point Reyes Water System by the West Marin branch of the NMWD. The Point Reyes water system is one interconnected supply and distribution system and is completely separated from NWWD water facilities in the Novato service area. The Point Reyes water system also serves the Point Reyes National Seashore Headquarters at Bear Valley, Silver Hills, the U.S. Coast Guard Housing Facility in Point Reyes Station, and two West Marin dairies. The Point Reyes Water System has been undergoing gradual expansion and improvements since the original system, serving Point Reyes Station and Inverness Park, was acquired by NMWD in 1971.[143]

The source of water for the Point Reyes system is primarily drawn from two wells adjacent to Lagunitas Creek in Lagunitas Valley. The two wells are located on U.S. Coast Guard property in Point Reyes Station and pump at a combined rate of 530 gpm. These so-called Coast Guard wells are in the tidal reach of Lagunitas Creek on an elevated gravel bench about 50 feet north of the creek and 15 feet above the streambed. Water supply to the wells is drawn from a gravel aquifer adjacent to Lagunitas Creek. Yields of these NMWD wells indicate that a viable groundwater supply is present and safe yields may be in excess of 300 AFY. The aquifer's water supply is dependent primarily on the amount of water flowing in the creek.[144]

The well supply is excellent in terms of providing ample flow with minimal drawdown. However, during times of low creek flow and/or high tides, seawater can be drawn into the wells and water supply. This happened during the 1976-77 drought, and in the winters of 1980-81 and 1986-87. A salinity intrusion avoidance-pumping plan has been developed to lessen water quality impacts.[145]

NMWD constructed a new water supply well adjacent to Lagunitas Creek on the Gallagher Ranch to address potential salinity intrusion. This well is over one mile upstream from the Coast Guard well site and has a capacity of 170 gpm. The well is not yet connected to the West Marin distribution system and salinity levels continue to be monitored to determine if the high capital costs of a pipeline would be worthwhile. [146]

A July 2000 storage capacity study for NMWD's West Marin service area indicated that the 550 gpm pumping capacity is adequate to meet existing needs. If standby redundancy were desired, an additional 250 gpm would be needed. At build out, an additional 300 gpm would be needed to meet demands adequately and, if standby redundancy were desired, an additional 550 gpm would be needed. Therefore, a total capacity of 850 gpm would be needed at build out with an additional 550 gpm for standby redundancy.[147]

Preliminary review of Marin County's database of private drinking and irrigation wells indicates that only 14 wells are in Point Reyes and four are in Olema. Three of the wells are used for irrigation while the remaining wells are domestic wells.[148]

The NMWD West Marin service area and the neighboring Inverness Public Utility District (IPUD) have an emergency water agreement that allows for the transfer of water between the two district's water systems through an intertie in the event of an emergency. During a water supply

[143] 2007 CWP FEIR, p. 4.9-12
[144] 2007 CWP FEIR, p. 4.9-13
[145] 2007 CWP FEIR, p. 4.9-14
[146] 2007 CWP FEIR, p. 4.9-15
[147] 2007 CWP FEIR, p. 4.9-15
[148] 2007 CWP FEIR, p. 4.9-15

availability or distribution catastrophe, up to 40 gpm of water can be sent from either the NMWD West Marin or the IPUD water systems to the other system on a temporary basis. A catastrophic event is considered an acute problem and may include pipeline or treatment plant failure, extraordinary fire, supply contamination, or interruption caused by natural and manmade disasters. This emergency agreement is not intended to provide either system with a sustainable supply of water during a significant drought or to provide for any portion of regular customer water demand. The agreement expires June 30, 2014.[149]

NMWD-West Marin reported 388 active connections to Point Reyes Station as of 2009. 329 of these connections are reported as residential, while the remaining 59 are utilized by commercial development.[150] Since the district is unable to provide buildout data for Point Reyes Station specifically, it remains difficult to estimate future development potential based on water availability.[151]

NMWD-West Marin is expected to experience a water supply deficit at full buildout with both normal and drought years, which might limit the potential for new development in Point Reyes Station.[152] In addition, NMWD-West Marin currently experiences summer peaking problems. However, there is a discrepancy between water supplier current and projected numbers and County estimates. This issue has not yet been resolved.

Sewage Disposal

Point Reyes Station relies on on-site sewage disposal in the form of septic systems, cesspools, mound systems and other methods, which discharge into the ground. Because of limited space in the commercial downtown area, a number of combined systems have been established with two or more buildings connected to one septic system. In several cases, including some of the older residences, adjacent contiguously owned lots are used for leachfields since the developed lot is too small to support a septic system itself.[153]

Outside of the downtown commercial area, development is served by individual septic systems. The only exception exists at the U.S. Coast Guard Housing Facility, housing approximately 150 people, where sewage disposal consists of a gravity-fed collection system feeding into three holding tanks with a total capacity of 13,000 gallons. Sewage is presently pumped out of the tanks several times a week and is hauled to the Coast Guard's treatment facility at Two Rock in Sonoma County. In the mid-70's, the Coast Guard attempted to terminate this situation through installation of a community sewer that would serve both the Coast Guard Housing Facility and the downtown area. A study and EIR for a joint sewer was undertaken by North Marin County Water District in 1976. When the community failed to approve funding for its share of the project, the proposal was abandoned.[154]

Mound systems, sand filters and other alternative self-contained waste disposal systems may be permitted by the County Environmental Health Division, subject to ongoing monitoring requirements. The Community Plan supports the use of these and other new disposal techniques, provided the necessary safeguards for natural resource protection and public health

[149] 2007 CWP FEIR, p. 4.9-16
[150] Data provided 08/05/09 via email correspondence by Chris DeGabriele, General Manager of NMWD.
[151] Per 08/12/09 email correspondence with Drew McIntyre, Chief Engineer of NMWD.
[152] 2007 CWP FEIR, Exhibit 4.9-72, p. 4.9-113.
[153] 2001 Point Reyes Station Community Plan, p. 56
[154] 2001 Point Reyes Station Community Plan, p. 56

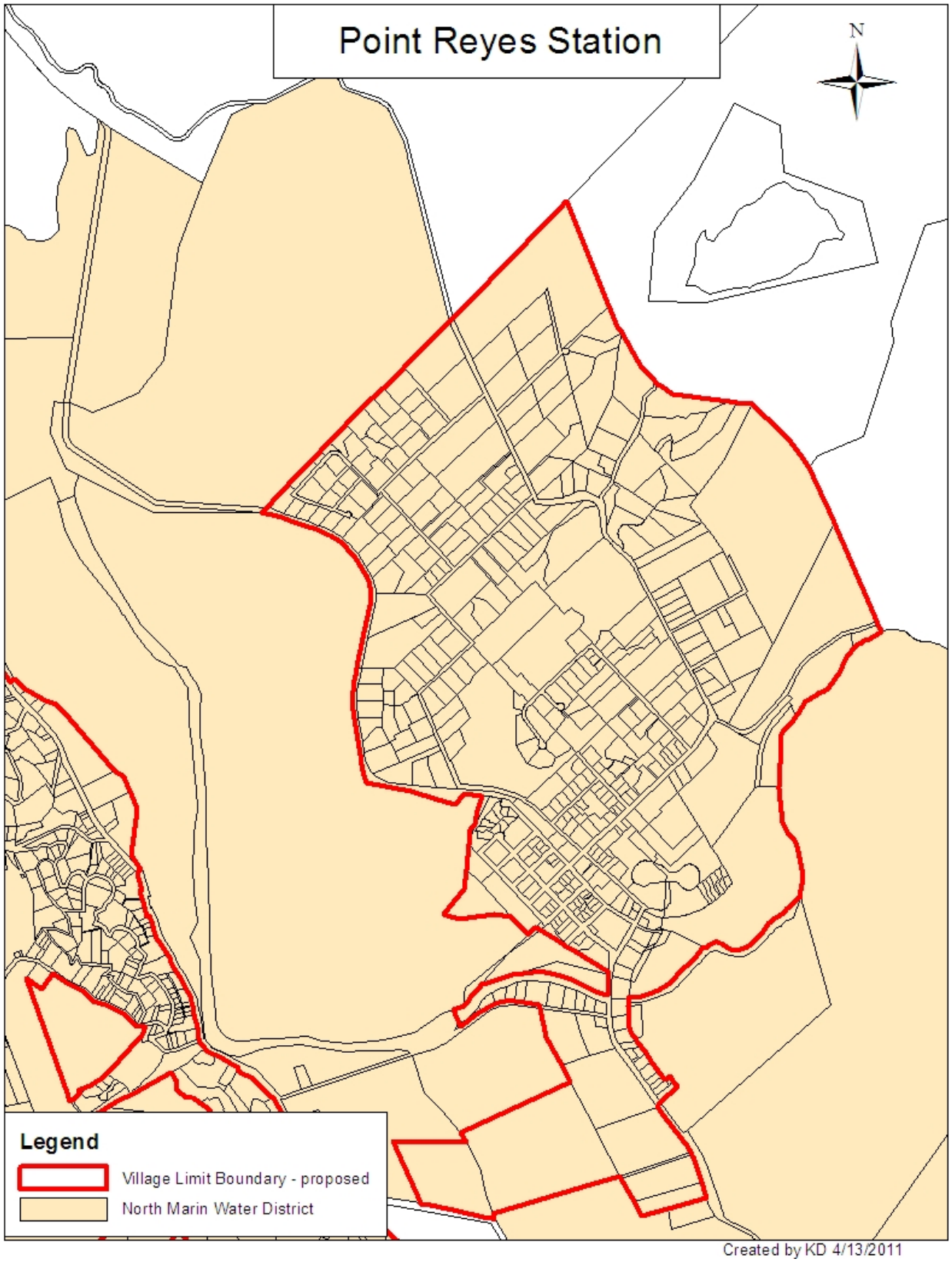
can be maintained. In addition, ways should be found to screen or otherwise mitigate the artificial appearance of mound systems.[155]

Village Limit Boundary

The existing Village Limit Boundary for Point Reyes Station remains unchanged except for the removal of the Martinelli Ranch property, parcel 119-040-04 located at the northern area of town, which was acquired by the Golden Gate National Recreation Area in 1987. This parcel is currently zoned C-RMPC (Residential Multiple Planned Commercial) and is leased as grazing land for livestock. The Community Plan recommends rezoning this site to C-OA.[156] This site was initially considered as a location for a waste treatment facility, although this is no longer a viable option due to the acquisition by the GGNRA. Excluding this parcel from the Village Limit Boundary would continue to preserve the agricultural use of the property, as intended by Section 30241 of the Coastal Act, and still provide adequate room for future community growth. The parcel also will continue to serve as a buffer between the community and the nearby Tomales Bay Ecological Reserve.

At the southern end of town, parcels 166-170-01, 08, 18, and 21 are proposed for removal since these are federally owned. These are zoned either C-ARP3 or C-ARP-5. Two privately owned parcels, 166-170-06 and 07, are privately owned and zoned C-ARP-5. These are suggested for removal since retaining them would create an island with the removal of the federally owned parcels.

[155] 2001 Point Reyes Station Community Plan, p. 56
[156] 2001 Point Reyes Station Community Plan, p. 12


Point Reyes Station
N
Legend
Village Limit Boundary - proposed
North Marin Water District
Created by KD 4/13/2011

OLEMA

The community of Olema consists of a small enclave of approximately 161 acres of privately-owned lands surrounded by federal parkland, located at the junction of two major coastal access roads of Highway One and Sir Francis Drake Boulevard.

Olema includes a mix of recreational commercial, neighborhood commercial, residential, and agricultural land uses with two small single-family areas. Dwelling unit densities range from 1-2 units per acre in the residential area and 1-20 units per acre in the commercial mixed use area. FAR ranges from .05 to .15 in the recreational commercial and .30 to .50 in the neighborhood commercial area. The agricultural land use has a density of 1 unit per 1-9 acres. These are shown on the Olema Land Use Policy Map 19d.

A review of Census block data indicates that the population of Olema was approximately 112 persons in 1990. The population increased 84.8% to 207 persons in 2000, and then declined 54.6% to 94. Overall, the population decreased 16.1% over the twenty year period. Meanwhile, housing units increased 24.4% over the same period, which averages out to less than one unit per year.

Census Population and Housing in Olema 1990 - 2010[157]		
Year	**Population**	**Housing Units**
1990	112	45
2000	207	50
2010	94	56
% Change (1990 – 2010)	-16.1%	24.4%

The LCP recommended additional rezoning to prevent extensive strip commercial development, provide for the expansion of visitor serving facilities, allow mixed commercial and residential uses in the village center, protect visual resources, and ensure adequate public services are available. The following parcels were rezoned as follows:

Policy Status: Unit II Policy 3.b (1) p. 44 (Recreation and Visitor-Serving Facilities)				
Assessor Parcel Number	**Old Zoning**	**Proposed Zoning**	**Existing Zoning**	**Ordinance No.**
166-030-15	RCR	APZ-60	C-OA	2704
166-010-27	RCR	APZ-60	C-APZ-60	2704

Policy Status: Unit II Policy 3.b (2) p. 44: (Recreation and Visitor-Serving Facilities)				
Assessor Parcel Number	**Old Zoning**	**Proposed Zoning**	**Existing Zoning**	**Ordinance No.**
166-181-01,03	RCR	VCR	C-VCR	2704

[157] US Census Bureau

166-181-04	A-2:B-2	VCR	C-VCR	2704
166-192-01	A-2:B-2	VCR	C-VCR	2704
166-192-02 (now 166-192-06)	RCR	VCR	C-VCR	2704
166-220-15 (now 166-220-18 & 19), 166-220-16	RCR	VCR	C-VCR	2704

Policy Status: Unit II Policy 3.b (3) p. 44: (Recreation and Visitor-Serving Facilities)				
Assessor Parcel Number	**Old Zoning**	**Proposed Zoning**	**Existing Zoning**	**Ordinance No.**
166-191-03,04	H-1	VCR	C-VCR	2704
166-201-06,09,10,13 (09 & 01 combined to 14)	H-1	VCR	C-VCR	2704
166-201-02,07,08	A-2:B-2	VCR	C-VCR	2704
166-203-02,03	H-1	VCR	C-VCR	2704
166-212-03,04	A-2:B-2	VCR	C-VCR	2704
166-213-01,02	A-2:B-2	VCR	C-VCR	2704

Policy Status: Unit II Policy 3.b (4) p. 45 (Recreation and Visitor-Serving Facilities)				
Assessor Parcel Number	**Old Zoning**	**Proposed Zoning**	**Existing Zoning**	**Ordinance No.**
166-202-01	H-1	H-1	C-VCR	2704
166-202-02,03,04 (166-202-02 combined to 166-340-07,08)	A-2:B-2	A-2:B-2	C-VCR	2704

Policy Status: Unit II Policy 3.b (5) p. 45 (Recreation and Visitor-Serving Facilities)				
Assessor Parcel Number	**Old Zoning**	**Proposed Zoning**	**Existing Zoning**	**Ordinance No.**
166-193-01,02 (now 166-340-06,07)	H-1,A-2:B-2	RCR	C-RCR	2704
166-230-05 (subdivided to 166-340-02, 03, 04, 08, 09)	H-1,A-2:B-2	RCR	All C-ARP-1.2 except 08, which is C-ARP-1.2/C-RCR	2704

Policy Status: Unit II Policy 8a.3 p. 209 (Location and Density of New Development)

Assessor Parcel Number	Old Zoning	Proposed Zoning	Existing Zoning	Ordinance No.
166-182-01	A-2:B-2	R-A:B-3	C-R-A:B-3	2704
166-183-01	A-2:B-2	R-A:B-3	C-R-A:B-3	2704
166-230-04	A-2:B-2	ARP-5	C-ARP-5	2704
166-230-08 – 10, 12 - 19	A-5	ARP-5	C-ARP-5	2704

All of the H-1 parcels have been rezoned as shown in the above tables, while the residential areas once zoned A-2:B-2 are now C-VCR. These zoning changes more accurately reflect the constraints on developments posed by septic system use.

LCP Unit II described the commercial development of Olema as including the Olema Store, Jerry's Farm House, Olema Inn, Olema Ranch Campground and the Post Office.[158] Approximately one third of the C-RCR land is developed, largely due to the Olema campground, while the remaining two-third are agricultural land abutting Highway One. Virtually all of the H-1 land, which has been rezoned to either C-RCR or C-VCR, are developed, half with commercial and half with residential uses. Much of the central part of the town is now zoned C-VCR, which provides for a mix of commercial and residential uses.

Today, 80 percent of the commercially zoned parcels have been developed. Specifically, of the 43 C-VCR and 8 C-RCR zoned parcels, four C-VCR and six C-RCR parcels remain undeveloped, respectively. The four undeveloped C-VCR parcels total 2.11 acres and include parcels 166-220-16, 166-212-04, 166-201-01 and 08. These have a buildout potential of 3 additional units. Meanwhile, six of the eight C-RCR parcels remain undeveloped. The two developed parcels are part of the Olema Campground. No additional residential or commercial buildout is anticipated on these parcels since those uses are prohibited.

The LCP Unit II reported 27 existing dwelling units in Olema (as of 1981) and that under existing zoning there was a buildout potential for an additional 103 dwelling units, providing a total buildout of 130 units.[159] The recommended rezonings would reduce this potential to an estimated total buildout of 60 units.

Olema Buildout							
Source:	Existing Units	Existing Nonresidential SQFT	Vacant Lots	Potential Units	Potential Nonresidential SQFT	Total Buildout Units	Total Nonresidential Buildout SQFT
LCP Unit II, 1981[160]	27	n/a	n/a	103	n/a	130	n/a
CWP FEIR 2007	37	25,593	21	17	19,398	54	44,991

[158] LCP Unit II p. 33
[159] LCP Unit II (amended), p. 200
[160] LCP Unit II (amended), p. 200

There are currently 37 existing dwelling units in Olema, an increase of 37 percent. These existing units are built on 31 (53%) of the total 58 lots in the community. There remain 16 vacant lots with a potential buildout of an additional 17 units for a total buildout of 54 units for the community. These lots are scattered throughout the small community area and range in size from 0.43 to 26.64 acres. However, six of these parcels are within the Golden Gate National Recreation Area and are zoned C-ARP-5. The County may want to consider a program to rezone these parcels to C-OA to be consistent with the Open Space (C-OS) land use designation. Of the remaining ten parcels, 3 are assigned a C-VCR zoning designation and fall under the C-NC land use category, 4 are zoned C-RCR and fall under the C-RC land use category, 1 is zoned C-ARP and falls under the C-AG3 category, and 1 is zoned C-RA:B3 and falls under the C-SF4 land use category.

There is presently 25,593 ft^2 of nonresidential development in Olema, with buildout potential for an additional 19,398 ft^2 of such development. This provides for a total buildout for commercial development in Olema of 44,991 ft^2.

Water Supply

Water service to Olema is provided by the North Marin Water District (West Marin Area). The NMWD service area also includes the areas of Point Reyes Station, Inverness Park, and Paradise Ranch Estates. The District experiences summer peaking problems. Water suppliers are actively looking into additional supplies such as additional storage and wells.

As of 2009, NMWD reported an existing 41 active connections in Olema, 25 of which are residential while the other 16 are commercial.[161] This represents a growth of 14 connections since the LCP was originally certified.[162] The District does not maintain individual data for Olema; instead information is aggregated as part of the overall service area.[163] The NMWD-West Marin District is expected to experience a water supply deficit of 81 AFY at buildout.[164] In addition, the District experiences summer peaking problems. The Districts is actively looking into additional supplies such as additional storage and wells.[165]

Sewage Disposal

All new development in Olema relies on on-site sewage disposal methods. Individual homes and shops rely upon septic systems while the Olema Ranch Campground has a small package treatment facility. Few problems have been experienced with sewage disposal in the area due to the very few number of residential units which have been built – 37 total.

Zoning densities were revised (as described above) in the Olema area to address the potential for cumulative impacts that exists from buildout on small lots utilizing septic systems (as recommended by Unit II Sewage Disposal Policy 3.b p. 190) in recognition of sewage disposal constraints. The LCP recommended rezoning to maintain minimum lot sizes of 20,000 square feet for areas east of Highway One, while maintaining 1 acre minimums for all lots bordering Olema Creek.[166] Parcels 166-182-01 and 166-183-01 were rezoned from A-2:B-2 to C-RA:B2, which has a 20,000 square foot minimum lot size. Of the 17 lots that border Olema Creek, there

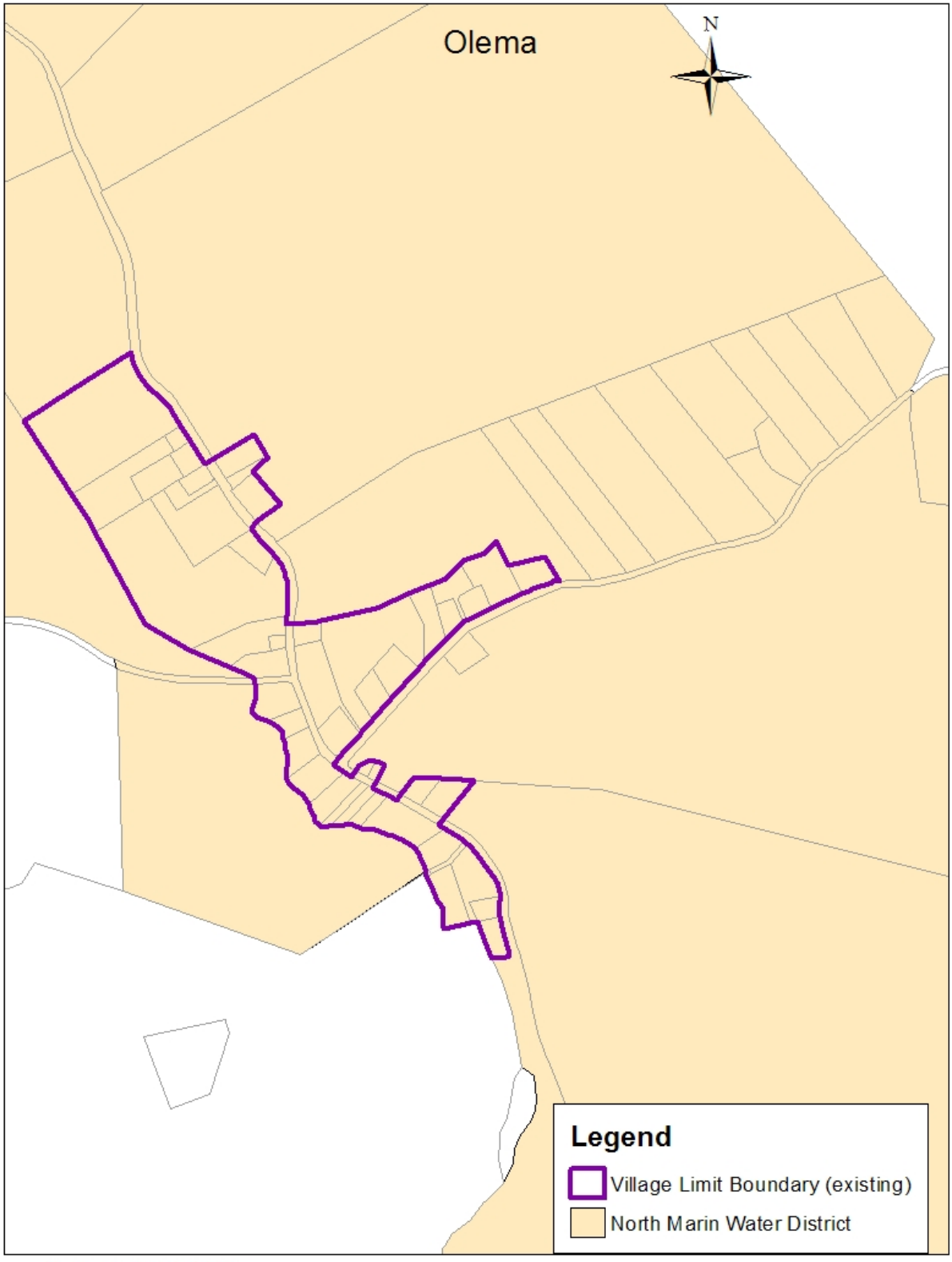
[161] Info provided 08/05/09 via email correspondence by Chris DeGabriele, General Manager of NMWD.
[162] LCP Unit II Table 16 Existing and Potential Residential Units in the Point Reyes Water Service Area, p. 142
[163] Per 08/12/09 email correspondence with Drew McIntyre, Chief Engineer of NMWD.
[164] 2007 CWP EIR, Exhibit 4.9-35, p. 4.9-83 and Exhibit 4.9-72, p. 4.9-113
[165] 2007 CWP FEIR, p. 4.9 - 82
[166] LCP Unit II Sewage Disposal Policy 3.b p. 190

are approximately five C-VCR zoned parcels that are less than one acre in size. The C-VCR zoning requires a 7,500 square foot minimum lot size. As described above, the total buildout for the community is 54 units, far below the 103 units originally anticipated in Unit II, which reduces the cumulative impacts on water quality and stream resources on Olema Creek.

Village Limit Boundary

The 1981 LCP Unit II states that the future expansion of Olema is strictly limited by federal parklands, which completely surround it, and recommended adopting the parkland boundary as the Village Limit Boundary. This action would fulfill the requirements of Section 30241 of the Coastal Act.[167] No modifications are proposed to the existing village limit boundary.

[167] LCP Unit II (amended), p. 93


Olema
N
Legend
Village Limit Boundary (existing)
North Marin Water District
Modified by KD 3/23/2012

BOLINAS

Bolinas Buildout				
Source:	Existing Units	Vacant Lots	Potential Units	Buildout Total
LCP Unit I, 1980[168]	602	n/a	815	1417
CWP EIR, 2007[169]	666	577	377	1043

Census Population and Housing in Bolinas 1990 - 2010[170]		
Year	**Population**	**Housing Units**
1977	2,700	634
1990	1,359	692
2000	1,246	629
2010	1,620	986
% Change (1990 – 2010)	19.2%	42.5%

Bolinas is small closely knit community located roughly 30 miles north of San Francisco at the southernmost tip of the Point Reyes National Seashore. The Bolinas Community Plan estimates the population of Bolinas was approximately 2,700 persons in 1977 with about 634 existing dwellings.[171] Since 1977, census data indicate that the population steadily declined to 1,246 residents in 2000, then rebounded to 1,620 residents in 2010. Overall the population has increased 20% between 1990 and 2010. Meanwhile, the number of housing units increased from 692 in 1990 to 986 by 2010, a 42.5% increase. Since 1977 the population has decreased by 40 percent while the number of housing units increased by 55 percent.

2010 Census data indicate that the population of Bolinas is predominately white (86.8%), while approximately 16% of the population is Hispanic or Latino. The median age is 49.3 years. There are 698 total households and the average household size is 2.05 residents per household. The average family size is 2.65. Of the 986 total housing units, 698 are occupied (70.8%) and 288 (29.2%) are vacant. Of the 288 vacant units, 243 units (24.6) are for seasonal, recreational, or occasional use, while eight (0.8%) are for rent, 0.7% are for sale, and 30 (3%) are "other" vacant. Of the occupied housing units, 401 (57.4%) are owner-occupied and 297 (42.6%) are renter-occupied. The homeowner vacancy rate is 1.7% while the rental vacancy rate is 2.6%.

The Bolinas community encompasses approximately 3,683 acres of land and is bound by the Point Reyes National Seashore (PRNS), the GGNRA and the Bolinas Lagoon. These natural features effectively serve as the permanent community expansion boundary for Bolinas.[172] Within this boundary are the subareas of Bolinas, known as downtown, the Little Mesa, Terrace Avenue, and the Gridded Mesa. The community's two biggest "neighborhoods" are the historic

[168] LCP Unit I, p. 78.
[169] Figures extracted from available GIS land use tables attributed based on the 2007 CWP EIR analysis.
[170] US Census Bureau
[171] 1975 Bolinas Community Plan, p. 50
[172] LCP Unit I p. 68

Downtown and the Gridded Mesa. Downtown Bolinas is a collection of commercial and residential buildings on Wharf Road and Brighton Avenue.

The Bolinas Gridded Mesa is an area of about 300 acres on a bluff overlooking Bolinas Bay and the Pacific Ocean. This area was subdivided in 1927 into more than 5,336 lots (20' x 100' in size) and sold for $69.50 each to subscribers to the San Francisco Bulletin.[173] Since the original subdivision, some lots have been consolidated into larger lots, while many remain their original size. In 1980, when Unit I was certified, it reported 384 existing dwelling units on the Mesa. Under the existing development standards of the time, approximately 600 additional dwellings could have been built on the Mesa.[174]

According to the 2007 CWP EIR analysis, there are presently 666 existing dwelling units built on 622 (43%) of the 1,457 total lots in the Bolinas community. There remain 577 vacant lots in Bolinas, the majority of which are located on the Bolinas Gridded Mesa. These dwelling units are primarily clustered in the downtown area and across the Gridded Mesa. Altogether there are a potential of 377 additional units in Bolinas, bringing total buildout for the area to 1,043 dwelling units.[175] Based on the table above, the number of housing units has increased from 602 in 1980 to 666 in 2007, an increase of 10 percent over the twenty-seven year period (compared to the 55 percent growth reported by the Census data in the first paragraph above). Total buildout is expected to decrease from 1,417 to 1,043 units, a 26 percent reduction.

The Bolinas Gridded Mesa Plan, an amendment to the Bolinas Community Plan, was developed after Unit I and dealt with improving the existing conditions and determining the development capacity of the Mesa. This Plan was certified as part of the LCP by the California Coastal Commission on March 27, 1985. The Mesa Plan stated that while the Mesa accounted for only about one-half of the total dwelling units in Bolinas, it accounted for over two-thirds of the residentially zoned portion of the Bolinas Planning Area.[176]

Comparison of Buildout Potential in Bolinas By Sub Area: Existing to Proposed LCP

Sub Area	Acres	(Existing LCP) Existing Units (July 1974, Unit I p. 78)	(Existing LCP) Buildout Units (July 1974)	Existing Units 2007	Potential Units	Buildout Total
Rural Area	2675	17	81	34	36	70
Dogtown	69	7	18	15	0	15
Horseshoe Flat	280	29	58	56	9	65
Gospel Flat	168	9	24	12	3	15
Downtown (Wharf & Brighton Roads)	30	68	83	83	12	95
Terrace Avenue	54	53	86	81	16	97
Little Mesa	32	35	83	39	26	65

[173] 1985 Bolinas Gridded Mesa Plan, p. 2.
[174] LCP Unit I, p. 77
[175] Data extracted from available GIS land use tables attributed based on the 2007 CWP EIR analysis
[176] 1985 Bolinas Gridded Mesa Plan, p. 3.

Gridded Mesa	326	384	984	346	275	621
TOTAL	**3,634**	**602**	**1417**	**666**	**377**	**1043**

Public Facilities and Services

The community of Bolinas is provided water and sewer service by the Bolinas Community Public Utilities District (BCPUD). BCPUD's jurisdiction encompasses approximately five square miles including the community's commercial center and mesa areas. The mesa area served includes some agricultural and publicly owned lands. The service area does not include residential properties north of Gasper's Lane and Mesa Road and on Horseshoe Hill Road, which relies on individual wells and septic systems. BCPUD handles domestic water collection, treatment and distribution, solid waste disposal, and sewage collection and treatment for the area. BCPUD presently provides water service to 591 accounts (or connections), 519 of which are single-family residential, 37 are multi-family, 29 are commercial and institutional, and 2 are agricultural. Four connections are inactive.[177] These inactive connections have been categorized for single family use. The full-time population within BCPUD's service area is approximately 1,500. However, recreational areas in and surrounding Bolinas are popular destinations on summer weekends and holidays, during which the local population increases substantially. To address chronic water shortages during the dry season, BCPUD since 1971 has maintained a moratorium on new service connections to the municipal water supply and has relied on voluntary rationing by customers.[178] The moratorium is still in effect and is governed by Resolution 173, adopted in 1977.[179]

Water Supply

BCPUD obtains its water supply from one local stream, Arroyo Hondo, and from two surface reservoirs, Woodrat Reservoirs 1 and 2. The catchment areas for Arroyo Hondo and the two surface reservoirs are situated within the Point Reyes National Seashore. Consequently, the surface water sources are well protected against potentially contaminating activities. Water licenses have been secured separately for each source, and there are no sensitive species associated with the Arroyo Hondo stream.[180]

Two dams on the Arroyo Hondo provide on average 135 AFY of water, while Woodrat Reservoirs 1 and 2 have a combined net safe yield of 40 AFY. All raw water is treated at BCPUD's advanced microfiltration water treatment plant, which was installed in 1996. Treated water is stored in two 430,000-gallon tanks prior to distribution.[181] There is one pump station and one water treatment plant treating an average of approximately 170,000 gallons per day with a maximum treatment capacity of treating 230,400 gallons per day. The District's water distribution system has approximately 20,000 linear feet of pipeline.[182]

In 2004, BCPUD produced 168 AF of water compared to 150 AF in 2000. Average annual water demand is between 140,000 and 150,000 gpd (157 to 168 AFY). Maximum water production capacity, when allowances are made for routine downtime, is 190,000 gpd. For six to seven months of the year, sufficient water supplies can be drawn from the stream. During the dry season, stream discharge decreases substantially, and the storage reservoirs must augment this source.[183] BCPUD does not import, exchange, or transfer water supplies and does not

[177] 2007 CWP FEIR, p. 4.9-25 and 4.9-58
[178] 2007 CWP FEIR, p. 4.9-25
[179] Bolinas Area Service Review & Sphere of Influence Update, August 2007, p. 12
[180] 2007 CWP FEIR, p. 4.9-25
[181] 2007 CWP FEIR, p. 4.9-25
[182] Bolinas Area Service Review & Sphere of Influence Update, August 2007, p. 6
[183] 2007 CWP FEIR, p. 4.9-25

perform desalinization. BCPUD's reliance on surface water alone for its water supply makes it susceptible to periods of low stream discharge during the dry season.[184]

BCPUD has plans to construct a water reclamation plant. The water from this plant will be used to irrigate adjacent soccer and baseball fields. In addition, BCPUD plans to replace older pipes in its distribution system in order to limit the amount of water lost due to leakage, which is estimated at about ten percent. BCPUD is actively characterizing the distribution system to prioritize point repairs. Neither the proposed water reclamation plant nor pipe repair plans have been finalized.[185]

Water Demand

The moratorium on new connections is expected to be maintained in the foreseeable future. The District expects to maintain service at existing levels. [186] In 2005 BCPUD reported that water supply was 175 AFY and demand was 165 AFY. These numbers are not expected to change at buildout.

However, while the District does not project changes in future water supply and demand, analysis of data from the CWP FEIR projects BCPUD will incur a water supply deficit at buildout. This is because the CWP FEIR assumes new development within the service area. While the moratorium is not expected to be lifted in the near future, it is unclear what the water supply situation will be in 2030. It is anticipated that technological advances will allow even greater conservation of water and make alternative water supply sources more feasible leading to the lifting of the connection moratorium.

The County numbers are about 6 percent higher on average than water supplier estimates. Most of the differences are due to the method of counting/reporting multifamily units. Many of the water supplier numbers reflect multifamily connections rather than multifamily units. For example, a ten unit apartment building may have only one meter and a water supplier would count it as one multifamily connection while the County counts ten units. The County numbers also include second units while the water suppliers probably do not unless there are two water meters. While the County and the water suppliers should strive to get accurate counts of housing units, this difference does not sway the results of this analysis.

Based on information from the CWP FEIR, BCPUD is projected to experience a water supply deficit of 64 AFY in a normal year at buildout.[187] BCPUD is also expected to experience a deficit during extreme drought years and will continue to have summer peaking problems. The LCP indicated that the lifting of the moratorium is dependent on the construction of a third reservoir. [188] BCPUD does not plan on constructing this reservoir.

Wastewater Treatment

In 1990, BCPUD completed an infiltration / inflow correction project to eliminate unwanted stormwater runoff and seawater intrusion. While the project reduced infiltration / inflow by 70 percent, the District still experiences capacity problems in years of above average rainfall and has continued the moratorium on new service connections enacted in 1990 as a requirement for Clean Water Grant Program funding. BCPUD's treatment plant was designed to treat 0.065 MGD and had an average flow of 0.035 MGD in 2005. The difference between the system's

[184] 2007 CWP FEIR, p. 4.9-26
[185] 2007 CWP FEIR, p. 4.9-26
[186] 2007 CWP FEIR, p. 4.9-58
[187] 2007 CWP FEIR, Exhibit 4.9-31 p. 4.9-83
[188] LCP Unit I, p. 45

average dry weather flow of 0.065 MGD and average wet weather flow of 0.090 MGD is less than 40% and within the District's peak permitted wet weather flow of 0.20 MGD.[189] Therefore, the BCPUD would be unable to treat additional wastewater flows generated by new land uses.[190]

Approximately one-third of the community is linked to the sewerage system. The remaining units use septic systems. Septic tanks in the District are periodically pumped and the effluent is hauled to the treatment plant. The District accepts up to three 1,200-gallon loads per day from District residents only.[191]

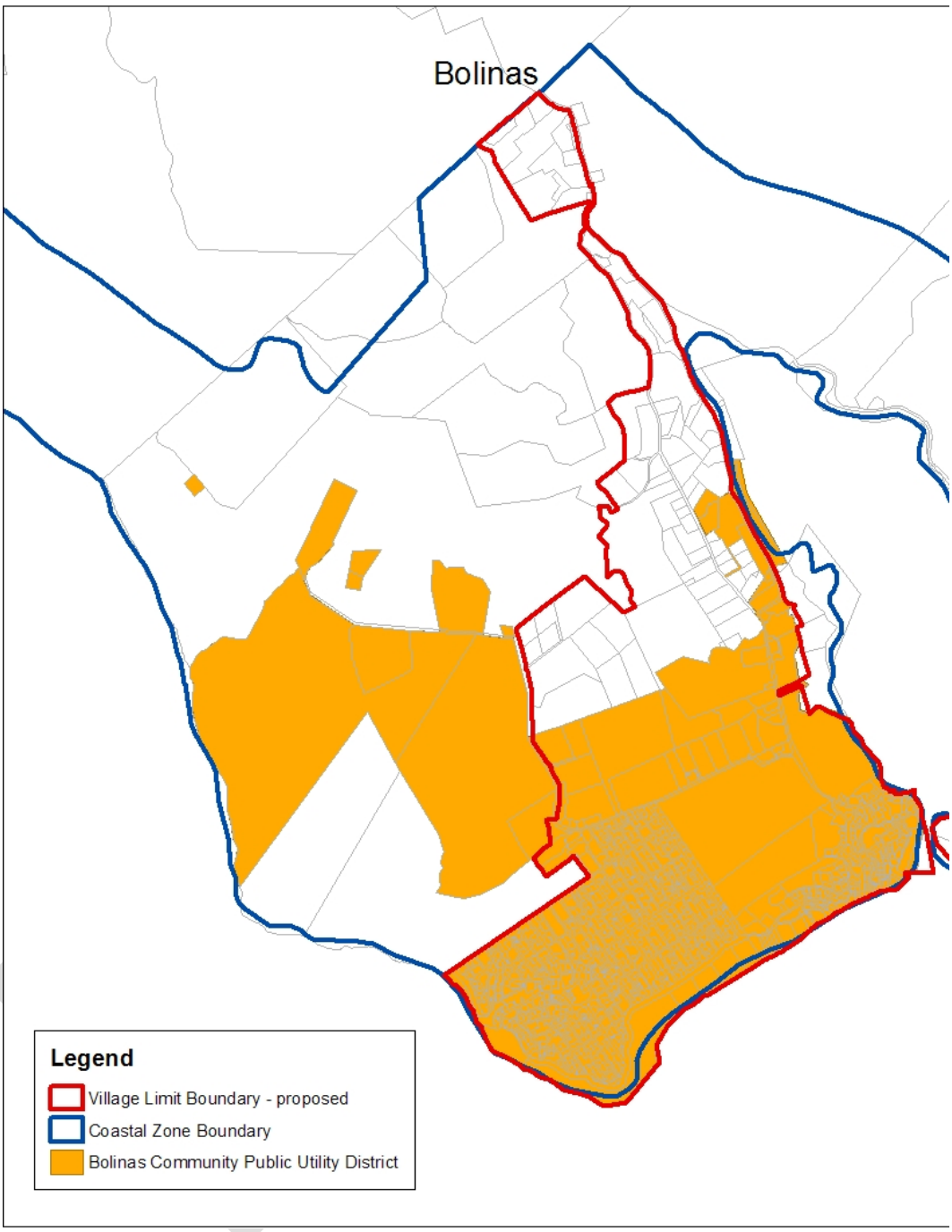
BCPUD would have insufficient capacity to accommodate projected growth without renovation, expansion or construction of new facilities. While the BCPUD's moratorium would ensure that existing land uses and development have adequate wastewater service, except during prolonged rainfall, projected development would still exceed the treatment capacity of BCPUD's facility. While the District's moratorium on new land uses and development would ensure that existing land uses and development have adequate wastewater service, except during prolonged rainfall, projected development would still exceed the treatment capacity of this facility. In order to minimize this impact, the CWP FEIR recommends BCPUD maintain the existing moratorium on new development and deny discretionary projects until such time the District is able to construct new or expanded facilities with sufficient capacity to accommodate such growth.[192] In addition, new or expanded facilities may be required to meet future water quality standards and treatment requirements.[193]

Village Limit Boundary

Because the community of Bolinas is surrounded by the Point Reyes National Seashore (PRNS), the Golden Gate National Recreation Area (GGNRA), Bolinas Lagoon, and the Pacific Ocean, the original certified LCP did not define a village limit boundary for the area as these natural features effectively serve as a permanent community expansion boundary. However, consistent with the other Coastal Zone villages, a new village limit boundary is proposed for Bolinas.

The proposed village limit boundary includes the Gridded Mesa, Terrace and Brighton Avenues, Wharf Road, Gospel Flat, and most of the Horseshoe Flat area. Publicly owned land within the GGNRA and PRNS are excluded, as are all lands zoned C-APZ-60 and C-ARP-60.

[189] Bolinas Area Service Review & Sphere of Influence Update, August 2007, p. 7.
[190] 2007 CWP FEIR, p. 4.10-26
[191] 2007 CWP FEIR p. 1.10-19
[192] 2007 CWP FEIR, p. 4.10-27
[193] 2007 CWP FEIR, p. 4.10-27


Bolinas
Legend
Village Limit Boundary - proposed
Coastal Zone Boundary
Bolinas Community Public Utility District

STINSON BEACH

Located along the Pacific Ocean coastline, the community of Stinson Beach is a small, primarily residential village surrounded by federal and State parklands. It is home to approximately 751 individuals[194] and covers approximately 384 acres of land roughly 19 miles north of San Francisco (by car). The community is bounded by the Bolinas Lagoon, Mount Tamalpais State Park, Golden Gate National Recreation Area and the Pacific Ocean.[195] These natural features effectively serve as a permanent community expansion boundary for Stinson Beach and limit future expansion opportunities.[196]

The population of Stinson Beach in 1970 was estimated at 792, representing 0.38 percent of the total Marin County population, which decreased to 715 by 1980.[197] The population slightly increased to 754 in 1990 and stayed steady through 2000, but then decreased to 632 in 2010. The town's population has decreased 20% since 1970. The Stinson Beach County Water District (SBCWD) estimates will grow to 835 residents by the year 2030.[198] According to US Census figures, the median age of the town's population is 54.4 years. Whites make up 92.1% of the population, followed by Hispanic or Latino at 5.2%.

Census Population and Housing in Stinson Beach 1970 - 2010[199]

Year	Population	Housing Units
1970	792	n/a
1980	715	n/a
1990	754	660
2000	751	693
2010	632	773
% Change (1970 – 2010)	**-20.2%**	**n/a**
% Change (1990 – 2010)	**-16.2%**	**17.1%**

Housing unit figures are not readily available prior to 1990. Census figures report that the number of units increased from 660 in 1990 up to 693 in 2000, a 5% increase. By 2010 the number of units increased to 773, an 11% increase over the decade. The number of units increased 17.1% between 1990 and 2010.

Of the 773 total housing units, 339 (43.9%) are occupied and 434 (56.1%) are vacant. Of these vacant units, 14 (1.8%) are for rent, one (0.1%) has been rented but not occupied, 5 (0.6%) are for sale, one (0.1%) has been old but is not occupied, 398 (51.5%) are for seasonal, recreational, or occasional use, and 15 (1.9%) are "other" vacant. Of the occupied housing units, 209 (61.7%) are owner-occupied and 130 (38.8%) are renter-occupied. The homeowner vacancy rate is 2.3% while the rental vacancy rate is 9.7%.

Stinson Beach land uses include single-family from 1 unit per 1 – 5 acres to 4 – 7 units per acre, and multi-family from 1 – 4 units per acre. Stinson Beach also includes general

[194] http://demographics.marin.org/2000comdevcensus/ComDev_Docs/StinsonBeach.pdf
[195] 1985 Stinson Beach Community Plan, p. 58.
[196] LCP Unit I (p. 68) states: "*The extensive public lands surrounding the three villages of Unit I significantly diminish the issue of the location of new residential development. These parklands effectively establish community expansion areas for the Unit I areas.*"
[197] 1985 Stinson Beach Community Plan, p. 59-60
[198] 2005 SBCWD UWMP, p. 5.
[199] US Census Bureau

commercial/mixed use land uses at 0.05 – 0.25 FAR and Neighborhood Commercial with a FAR of .30 to .50. Agricultural densities are 1 unit per 1 acre to 1 unit per 9 acres.

Stinson Beach Buildout				
Source:	**Existing Units**	**Vacant Lots**	**Potential Units**	**Buildout Total**
LCP Unit I, 1980	540	n/a	360	900
CWP EIR, 2007	751	135	214	965
Percent Change (1980 – 2007)	39.1%		-40.5%	7.2%

For the Stinson Beach community as a whole, the 1980 LCP Unit I reported approximately 540 existing dwelling units, with a potential buildout of an additional 364 units, providing a total buildout of 900 units for the area. Of the 360 potential units, 243 could occur in Seadrift, 24 in the Highlands area, 39 in the Patios area, 30 in the Calles, and 28 along Panoramic Highway.[200]

Today there are presently 751 existing dwelling units in Stinson Beach (including Seadrift), built on 673 (73%) of the 936 total lots in the community. There remain 135 vacant lots with a buildout potential for an additional 214 units, bringing the total buildout potential to 965 units.

Seadrift Buildout

Approximately half of the land area encompassed by the Stinson Beach community is part of the Seadrift subarea. Seadrift is a large privately-owned subdivision comprising the northern portion of the Stinson Beach community. 374 of the 936 lots within Stinson Beach are part of the subdivision. The 1980 LCP Unit I reported an existing 346 subdivided lots at Seadrift, 164 of which were either residentially developed or had permits authorizing such development. The plan stated that 182 vacant lots remained and were scattered along the ocean, the Bolinas Lagoon and the two sides of the Seadrift Lagoon.[201] There are presently 277 existing single-family dwelling units in Seadrift, built on 277 (74%) of the 374 total lots in the subdivision. There remain 53 vacant lots with a buildout potential for 55 additional dwelling units, providing for a total of 332 units in Seadrift.

Unit I outlined land use and zoning proposals for Stinson Beach. Pursuant to the Location and Density of New Development Policy 29 (p. 79), existing R-2 designations were retained in order to protect and maintain the existing character of the community. In addition, the policy required no development other than single-family residences on any parcel of less than 7,500 square feet in area in order to minimize septic tank problems and the cumulative impacts of such development on public access along Calle del Arroyo. The Calles are presently zoned C-R-2.

Unit I, Policy 30 recommended certain properties along Shoreline Highway that were previously zoned R-3 to be rezoned to R-2 in order to minimize flood hazards and the adverse impacts on Easkoot Creek and to be consistent with existing character of the community. These were rezoned by Ordinance 2259. Policy 31 recommended designating the R-1 properties on the east side of Calle del Arroyo to a "Resource Conservation Area" in order to assure protection of the adjacent marsh areas of Bolinas Lagoon. These parcels have not been rezoned and are

[200] LCP Unit I, p. 69
[201] LCP Unit I, p. 70.

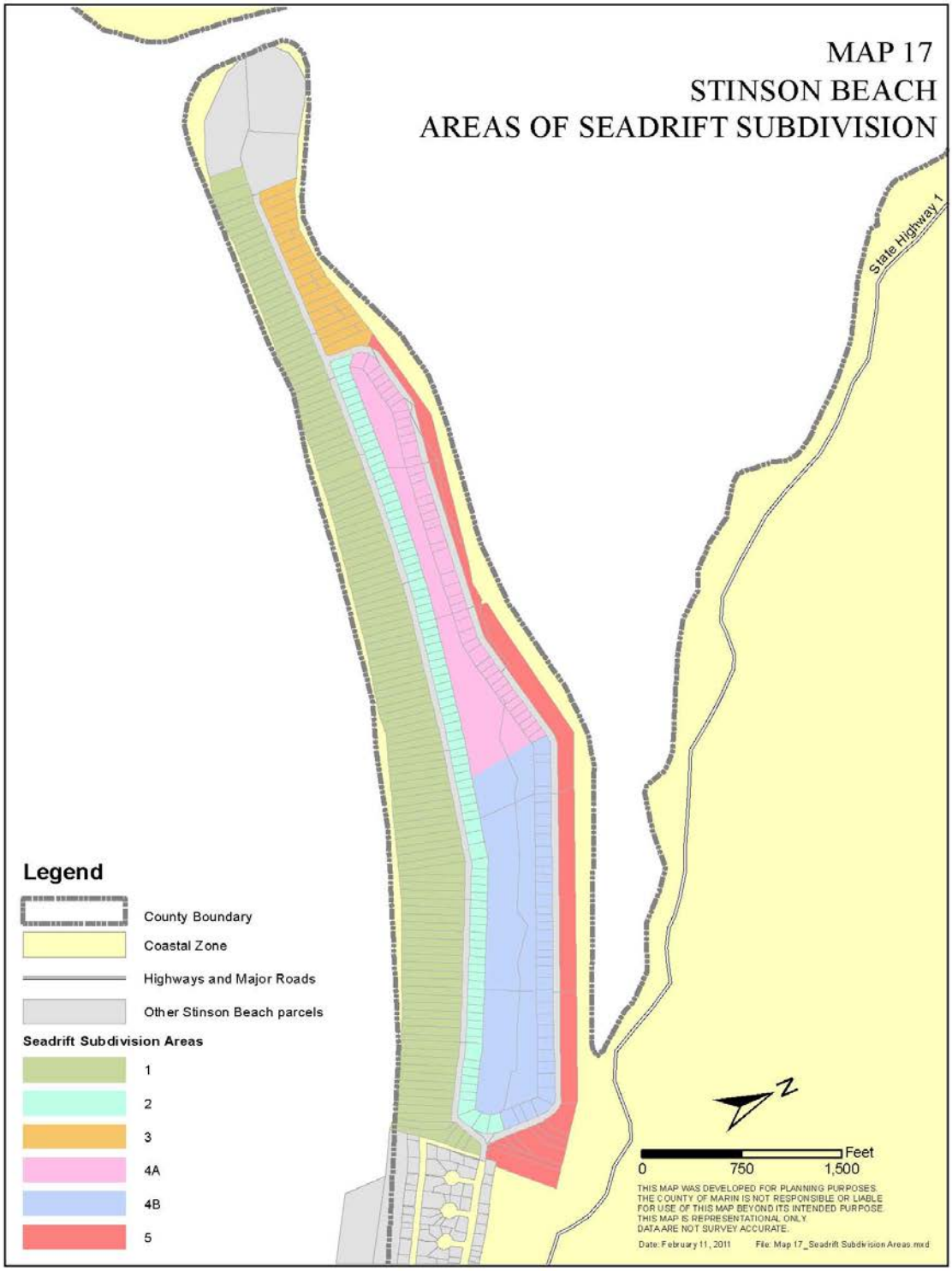
part of the Area of Deferred Compensation, which was created on June 3, 1981 and includes 24 parcels totaling 3 ½ acres. The principal issues are the question of buildout on ten vacant parcels and their inadequacy in size for individual septic systems while maintaining a 100' protective setback from the Bolinas Lagoon edge. Finally, Policy 32 requested that properties presently zoned R-1 on the seaward side of the paper street Mira Vista should be redesignated to RSP-2.0 in order to assure preservation of the natural sand dunes and sandy beach areas located seaward of Mira Vista. The properties were subsequently rezoned pursuant to Ordinance 2638 to C-RSP-2.0.[202]

Unit I analyzes the location and density of new development at Seadrift Subdivision separately from the rest of Stinson Beach. For purposes of land use policy, the Subdivision is divided into five sub-areas. Ordinance 2638 rezoned Seadrift lots in each sub-area pursuant to the LCP recommendations in Policy 36 (p. 81). The five areas are described as follows:

- Area 1. Area 1 includes those lots fronting on the Pacific Ocean and generally south of Seadrift Road. These properties present the least potential for adverse impacts by new development activities because of their size, location relative to lagoon waters, and buildout potential. Ordinance 2638 rezoned these lots from R-1 to C-RSPS-2.9 (minimum lot size of 15,000ft²). All lots except for APN 195-310-68 (lot 142) have been developed.
- Area 2. Area 2 includes those lots generally between Seadrift Lagoon and Seadrift Road. These properties are smaller lots with a large amount of buildout potential adjacent to the interior Seadrift Lagoon. Approximately 33 of the 96 lots remain undeveloped. Ordinance 2638 rezoned these lots C-RSPS-1.4 (Coastal Residential, Single-Family Planned, 1.4 units per acre) to ensure a minimum lot size of 30,000ft².
- Area 3. Area 3 includes those lots fronting on Bolinas Lagoon and generally west of Dipsea Road. Ordinance 2638 rezoned these lots to C-RSPS-1.4 (Coastal Residential, Single-Family Planned, 1.4 units per acre) to establish a 30,000ft² minimum lot size.
- Area 4. Area 4 includes those lots fronting on Dipsea Road and the Seadrift Lagoon area. This area is further divided into Areas 4A and 4B. All lots in Area 4a are zoned C-RSPS-0.387 (Coastal Residential, Single-Family Planned, 1 unit per 2.89 acres) with the exception of 7 lots that are zoned C-RSPS-4.5 (Coastal Residential, Single-Family Planned, 4.5 units per acre). These seven lots were rezoned according to Ordinance 2822 per Policy 36.d.3. In Area 4b most of lots were rezoned to C-RSPS-4.39 per Policy 36.d.3 via Ordinance 2822. The remaining lots are zoned C-RSPS-0.387. Only four of the approximately 93 lots in Area 4 remain undeveloped.
- Area 5. Area 5 includes 26 acres consisting of approximately 28 lots adjacent to the Bolinas Lagoon and the entrance gate of Seadrift. This area previously consisted of 26 acres consisting of 2 lots of 6 and 20 acres, respectively. At the time of certification the land was unsubsidized; however, a portion of the property was improved with underground utility services and has since been subdivided. Although Area 5 was not an explicit part of the Seadrift Subdivision, it was included in the analysis because of the physical relationship and ownership of the land. Because of its location and general configuration, a number of development standards were included in Policy 36.d.e to address potential conflicts with the objectives identified in the Seadrift Section above.

[202] See Status of LCPs, Part 2, North Central Coast District Actions through June 30 ,2008/ http://www.coastal.ca.gov/la/docs/lcp/lcpstatus-2008.pdf

Policy 36.d.e recommended additional development in Area 5 shall be limited to no more than seven additional single-family, detached dwellings limited to a single 6 acre parcel. The original 8.7 acre parcel was subdivided into 9 lots, of which seven have been developed. These seven developed lots are 195-090-45, 46, 47, 50, 51, 53, and 55.


MAP 17
STINSON BEACH
AREAS OF SEADRIFT SUBDIVISION
State Highway 1
Legend
County Boundary
Coastal Zone
Highways and Major Roads
Other Stinson Beach parcels
Seadrift Subdivision Areas
1
2
3
4A
4B
5
N
Feet
0
750
1,500
THIS MAP WAS DEVELOPED FOR PLANNING PURPOSES.
THE COUNTY OF MARIN IS NOT RESPONSIBLE OR LIABLE
FOR USE OF THIS MAP BEYOND ITS INTENDED PURPOSE.
THIS MAP IS REPRESENTATIONAL ONLY.
DATA ARE NOT SURVEY ACCURATE.
Date: February 11, 2011
File: Map 17_Seadrift Subdivision Areas.mxd

Public Facilities and Services

The Stinson Beach County Water District (SBCWD) provides water service and manages sewer and garbage disposal services for the community. There is no centralized sewage treatment and disposal facility in Stinson Beach, and as a result, existing and future development in the area relies on the use of individual on-site wastewater disposal systems.[203] SBCWD provides state-of-the-art management of on-site wastewater treatment and disposal systems, but does not provide reclaimed water.[204]

SBCWD presently serves water to 718 metered connections including residential, commercial and federal and State park recreation uses. Stinson Beach is zoned primarily as single family residential land use, and 95 percent of the water connections are for single family homes. Over 40 percent of these are vacation homes that are not occupied full-time. However, summertime and weekend visitors can easily exceeded 10,000 persons on any given weekend from July through October.[205]

Only minor growth in water demand is anticipated in the foreseeable future. Growth potential is limited in Stinson Beach by the publicly owned lands surrounding the community, and SBCWD estimates that there may be potential for 60 additional lots to be developed before the community is built out. Additional increase in water demand may occur as vacation homes are used increasingly as year-round primary residences.[206] However, the SBCWD will experience a water supply deficit of 15 AFY during a single dry or drought year at buildout.[207]

Over the next 20 years it is estimated that demand on the District's water supply will increase according to the number of new meter connections, and proportional to the projected rate of growth. Between 1991 and 2000, only 25 new meter connections were installed (from 682 to 718 connections- a rate of 2.8 connections per year). However, the year-round population of the community increased by 121 persons between the years 1990 and 2000 (approximately 12 persons per year, based on actual census data).[208] This may be an indicator that growth within the community of Stinson Beach is increasing as more vacation homeowners sell or rent their property to year-round residents. The 2005 SBCWD UWMP predicts that the population of Stinson Beach will grow from 755 residents in 2005 to 835 residents by the year 2030.[209]

The SBCWD monitors 700 on-site septic systems, as required by the San Francisco Bay Region of the California State Regional Water Quality Control Board. The current agreement requires reports of monitoring and program management on an annual basis. According to the annual report covering the period from June 30, 2007 to July 1, 2008, 96 percent of the on-site septic systems monitored received a "passing" rating. Those systems with received a "failed" rating have had their discharge permits revoked. These permits will be reissued following completion of the repair(s) listed by the District.[210]

Village Limit Boundary

A Village Limit Boundary (formerly Community Expansion Boundary) was not established for Stinson Beach in the existing LCP since the community is both bounded by both public lands

[203] 2005 SBCWD Urban Water Management Plan
[204] 2007 CWP EIR, p. 4.9-28
[205] CWP EIR, p. 4.9-48
[206] 2007 CWP EIR, p. 4.9-62
[207] 2007 CWP EIR, Exhibit 4.9-55 p. 4.9-100
[208] 2005 SBCWD UWMP, pp. 27 & 30.
[209] 2005 SBCWD UWMP, p. 5.
[210] 2005 SBCWD UWMP, p. 1

and the Pacific Ocean. However, consistent with other coastal communities, a village limit boundary is now proposed, as shown on the following figure. The proposed boundary is based on existing public open space areas and the existing Community Plan boundary, and falls within the Stinson Beach County Water District service area.

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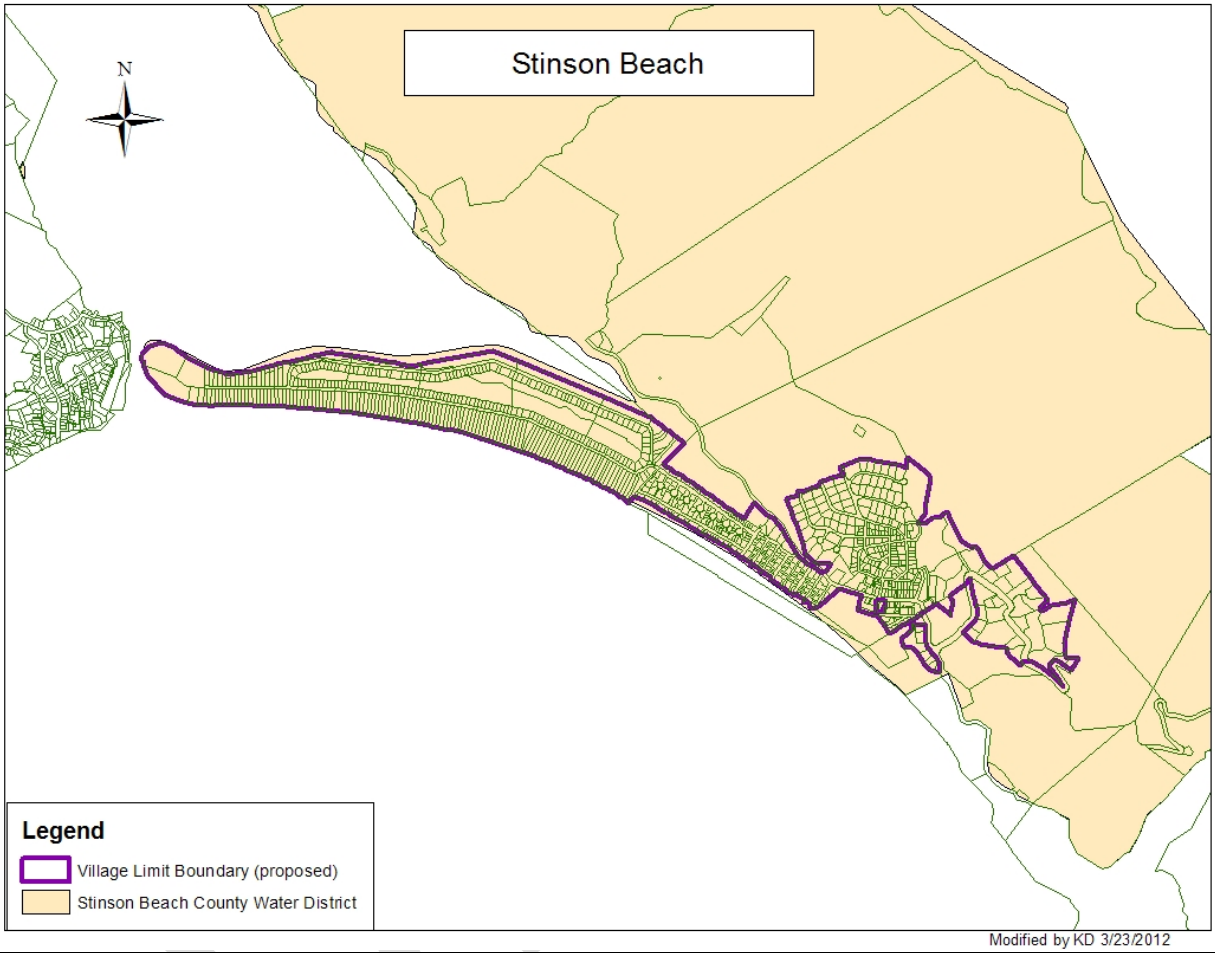


MUIR BEACH

Muir Beach is a small coastal community situated along the lower portions of Redwood Creek (Frank Valley) and Green Gulch and along the ridge overlooking Big Lagoon and the Pacific Ocean. The primarily residential community is surrounded by Federal and State park lands, which limits the amount of available land for expansion and serves as a development boundary. Residential densities range from 1 unit per 1 – 5 acres to 2 – 4 units per acre. Muir Beach also contains low density agricultural land uses at 1 unit per 31 – 60 acres. Muir Beach has one neighborhood commercial /mixed use parcel, occupied by the Pelican Inn, with a FAR 0.86. Primary access to the area is provided by Highway One.

The population of Muir Beach has remained steady at about 300 persons since 1979. Between 1979 and 2010, the population decreased from 314 to 310, a 1.3% decline. However, the 2007 Marin Countywide Plan Final Environmental Impact Report states that Muir Beach is characterized by full-time residency with a permanent population of about 350 residents.[211] The Muir Beach Community Plan reports 129 units in 1979. According to Census data, this increased to 151 units in 1990, and then fluctuated down to 144 in 2000 and back up to 162 units in 2010. Overall, the number of units increased 25.6% over 31 years. Much of this growth (17%) occurred between 1979 and 1990.

Census Population and Housing in Muir Beach 1990 - 2010[212]		
Year	**Population**	**Housing Units**
1979[213]	314	129
1990	331	151
2000	295	144
2010	310	162
% Change (1979 – 2010)	-1.3%	25.6%
% Change (1990 – 2010)	-6.3%	7.3%

Muir Beach Buildout							
	Existing Units	Existing Non-residential SQFT	Vacant Lots	Potential Units	Potential Non-residential buildout SQFT	Total Buildout Units	Total Non-Residential Buildout SQFT
Muir Beach Community Plan, 1979[214]	129	n/a	44	44	0	173	5,779
2007 CWP FEIR	146	5,779	18	33	0	179	5,779

[211] 2007 Marin Countywide Plan Final Environmental Impact Report, p. 4.9 - 39
[212] US Census Bureau
[213] 1979 Muir Beach Community Plan, p.12
[214] 1979 Muir Beach Community Plan, p. 12

LCP Unit I defers to the 1979 Muir Beach Community Plan as a reference for policy background material, which reports an existing dwelling unit count of 129 units and a total population of 314 individuals, as of 1979. The Community Plan states that 44 vacant lots remain in the area and a projected buildout of 173 units. The only commercial use in the area is the Pelican Inn, located at Highway 1 and Pacific Way, which is zoned Coastal, Village Commercial Recreational (C-VCR). No additional commercial zoning or development is planned for the area.

According to the 2007 CWP EIR analysis, there are currently 146 existing dwelling units. This means 17 units have been constructed since 1979. Of the 187 lots in the community, there remain 18 undeveloped lots with a buildout potential for 33 additional dwelling units, providing for a total buildout of 179 units. The 18 vacant lots are zoned C-RA-B zoning designation.

Water Demand and Supply

The Muir Beach Community Service District (MBCSD) was formed in 1958 and serves the community of Muir Beach. The District is responsible for water distribution, supply and treatment; road and access easement maintenance; recreation and assists the Muir Beach Volunteer Fire Department in the provision of supplemental fire protections service. The MBCSD service area is approximately 820 acres and primarily includes the Muir Beach residential area, Green Gulch Zen Center agricultural lands, the Pelican Inn, and public lands of the GGNRA (including Muir Beach), but also extends up the coastline west of Shoreline Highway and inland along the south side of Shoreline Highway. [215]

The District maintains two wells (drilled in 1996 and 2002) located at Santos Meadow between California State Parks and GGNRA on MBCSD property adjacent to Frank Valley Road. The wells draw from an aquifer that flows parallel to Redwood Creek, flowing from Muir Woods to the ocean. A 150,000 gallon redwood storage tank serves the High Zone area of the Seacape Subdivision while a 100,000 gallon redwood storage tank serves the Low Zone properties of the Bello Beach subdivision. A second well in the Low Zone area failed in 1986 and has not been replaced.[216]

The MBCSD relies solely on groundwater pumped from a well field located along Redwood Creek. These water diversions are subject to a water rights permit from the California State Water Resources Control Board, which permits a maximum diversion of 45,000 gpd (0.07 cfs) with a mandatory reduction in daily pumping to no more than 35,000 gpd during severe drought conditions. On an annualized basis, the maximum diversion of 45,000 gpd is equivalent to 50 AFY.[217]

Water Supply Source	***2005***	***2010***	***2015***	***2020***	***2025***	***2030***
Local Surface Water	0	0	0	0	0	0
Groundwater	29	50	50	50	50	50
Imported	0	0	0	0	0	0
Wholesaler	0	0	0	0	0	0

[215] Muir Beach Area Service review and Sphere of Influence Update, October 2007, p. 3
[216] Muir Beach Area Service review and Sphere of Influence Update, October 2007, p. 8
[217] Marin Countywide Plan Final Environmental Impact Report, p. 4.9 - 41

Reclaimed	0	0	0	0	0	0
Transfer / Exchange	0	0	0	0	0	0
Desalination	0	0	0	0	0	0
Total	***29***	***50***	***50***	***50***	***50***	***50***

The MBCSD provides water service to 152 active connections, 147 of which are residential and five for service to a commercial establishment (the Pelican Inn), a horse barn/equestrian facility, the Muir Beach Community Center, Muir Beach Park, and to the State park land. Of the non-residential connections, only the commercial connection for the Pelican Inn represents a significant demand. While the water supply for the MBCSD is constrained by limitations on groundwater pumping defined by the water rights permit for maximum diversions and diversions under severe drought conditions, potential impacts to streams and associated habitats, and low well yields due to the Franciscan Formation bedrock,[218] the District has indicated this is adequate to serve future demand and potential maximum buildout. Per capita demand is less than 50 gallons per capita per day (gpcd).[219]

Because there is no potential for additional visitor-serving uses in Muir Beach, additional water use will be limited to the buildout of the residential lots and increased demand from the beach park.[220]

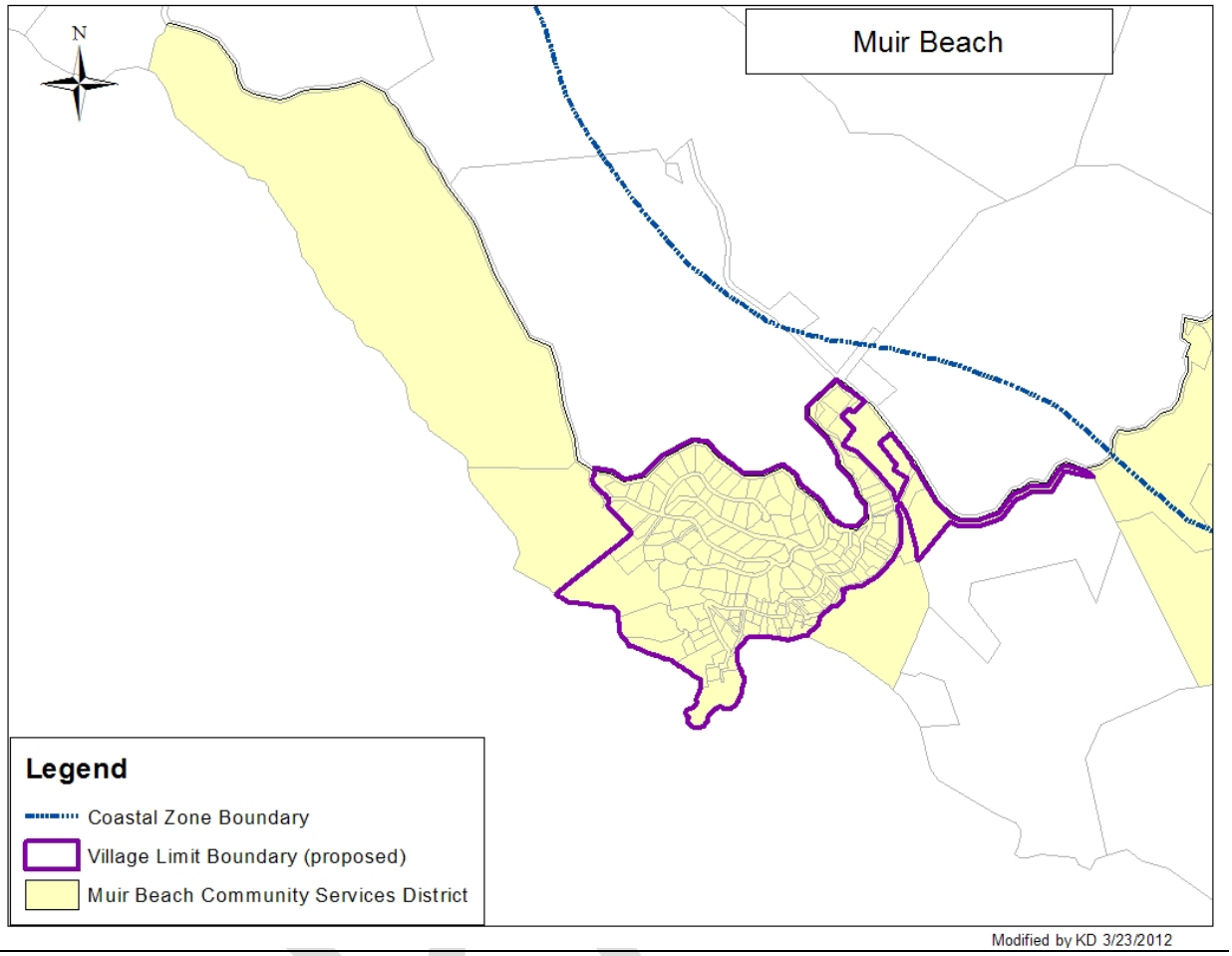
Village Limit Boundary

Similar to Stinson Beach and Bolinas, the existing Unit I LCP did not provide a Village Limit Boundary (formerly community expansion boundary) for the Muir Beach community because the area is bounded by the Pacific Ocean and State and Federal parklands, which serve as natural development boundaries. However, a Village Limit Boundary is now proposed to provide guidance on where reasonable growth and infill should occur. The proposed Village Limit Boundary (VLB) includes all the residentially zoned areas in the upper Seacape subdivision and the lower Bello Beach subdivision, as well as the Pelican Inn property. Parcel 199-191-13, located adjacent to the Pelican Inn and within the Golden Gate National Recreation area, is excluded even though it is within the MBCSD service area. In addition to State and Federal park lands, the properties owned by the San Francisco Zen Center, which are zoned C-ARP-60, are not included. The remaining properties in the VLB are residentially zoned except for the Pelican Inn, which is zoned C-VCR. Furthermore, the VLB does not extend outside of the MBCSD service area.

[218] Marin Countywide Plan Final Environmental Impact Report, p. 4.9 - 42

[219] Letter to Michele Rodriguez of the Marin County Community Development Agency from Donovan Macfarlane, General Manager, Muir Beach Community Services District, June 1, 2004

[220] Unit I p. 44


N
Muir Beach
Legend
Coastal Zone Boundary
Village Limit Boundary (proposed)
Muir Beach Community Services District
Modified by KD 3/23/2012

MARIN COUNTY

AGRICULTURAL ECONOMIC ANALYSIS

FINAL REPORT

November 2003

Prepared for:
Marin County Community Development Agency
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San Rafael, CA 94903-4157

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APPENDICES

I. INTRODUCTION/FINDINGS

This report analyzes the economic issues currently facing agriculture in Marin County, with a primary focus on the impact of estate developments on agricultural lands. This analysis is intended to assist County decision-makers in formulating policies and programs that will maintain and support the future of Marin County's agriculture. It provides a background for the Agricultural Element of the General Plan.

This report addresses the following major topics:

- A review of the Baxter-McDonald-Smart study of 1973 – what was relevant 30 years ago, what is still relevant;
- Analysis of the impact of large estates on agricultural viability, including:
  - Costs and income of undeveloped agricultural land;
  - The impact of residential development on costs; and
  - Analysis of the current state of County-wide agricultural lands.
- Farm economics issues, addressing the key issues facing:
  - Organic vegetable farms;
  - Vineyards;
  - Dairies; and
  - Livestock operations
- Fiscal analysis – what are the County government costs and revenues attributable to agriculture.

Key Findings:

Baxter, McDonald & Smart Review: The major problem in 1973 was that agricultural lands were subject to speculation for subdivision into suburban housing. Today, the major issue is high value estate development. The concern, however, is similar - that land costs can be driven up beyond agriculture's ability to pay, thus discouraging maintaining agricultural use.

Impact of Large Estates:

- Grazing land under Williamson Act contract *without* residential improvements brings in more income for agricultural leases than the estimated costs of land ownership. Net income (not including debt service for land purchase) ranges from $7.46 to $21.23 per acre depending on parcel size.
- Adding high value residential development drives up land ownership costs beyond what agricultural income can cover, usually by large orders of magnitude (depending on parcel size and extent of improvements).
- On five case study parcels, proposed developments would shift the cost/income balance to large shortfalls in all but one case.
- Landholding costs far in excess of the potential agricultural income will, in the long term, be a disincentive to continued agricultural operations.
- County ranches over 60 acres account for 85% of the privately-owned agriculturally-zoned land. Of that, 14% of the acreage is assessed at values over $2,000 per acre. The three ranches assessed at over $14,000 per acre represent only 5% of the private agriculturally-zoned ranch acreage but 59% of the total assessed value (AV).
- Fortunately, the 86% of over 60-acre ranches with values ranging from $55 to $2000 per acre have estimated costs well below average lease rates for grazing land.
- It is timely for policy makers to develop approaches that will protect agricultural use from "gentrification" into non-productive estates.

Farm Economics:

- Organic Farms - Analysis of a hypothetical organic farm operation in Marin County shows that almost all crops can be profitable based on current estimated average costs and income. The most critical variable is successful marketing of products.
- Vineyards – Based on current estimated average costs and income, a Marin County vineyard should be profitable after four years. Value added for producing wine as part of the operation can ensure a market for the grapes and substantially increase potential profits.

- Dairies – While the number of dairies and cows in the County has decreased, milk output has increased. The County's dairies can benefit from value added products (such as cheese and yogurt), but face challenges of cost and availability of pasturelands.
- Livestock – The main operations are for raising cows and calves. Two operators are finding a niche in the higher-priced grass fed beef market.

Fiscal: Marin County agriculture contributes a significant net surplus to the County general fund of $1.3 million annually. Additionally, property taxes from agriculture generate almost $10.3 million annually to education and other County funds.

Note that almost 75% of the assessed value is from agricultural parcels under 60 acres in size. Large ranch holdings contribute relatively little in property taxes but also require less County services.

II. BAXTER-MCDONALD STUDY REVIEW

Thirty years ago, Marin County undertook a thorough review of its policies relating to agriculture. The goal was to protect and support the County's farmlands, which were increasingly endangered by urban/suburban development and speculative land values.

As part of that review, Baxter, McDonald and Smart Inc. conducted an analysis, dated September 1973. The 1973 report summarized the key issues as follows:

> "The question of the viability of agriculture in Marin is, simply stated, whether or not a rancher can and will stay in business or whether others will enter agriculture over the foreseeable future... We have determined that it is possible to make a living from ranching in Marin at the present time....
>
> "Whether a rancher will stay in business can best be described as an uncertainty over the land use – residential or agricultural – that will be predominant in west Marin in future years. Because of the potential value of these lands for residential development, making management decisions which commit the land to continued agricultural use means forgoing possible large capital gains from its sale for development purposes. The possibility that increased densities will be permitted in west Marin, however uncertain, has led many ranchers to regard their operations in an interim fashion: they put in enough work to cover their expenses and taxes while waiting for an optimum time when they can sell or develop.
>
> "Even those who do not wish to sell or develop are affected by the uncertainty. Due to the incompatibility of agriculture with high-intensity development, these ranchers are uncertain about their future prospects in the event that development is permitted. Their uncertainty makes them hesitant about taking on long-term loans for necessary capital improvements.
>
> "However, the analysis of economic and social attitudes done during the present study leads to the conclusion that:
>
> GIVEN SOME ASSURANCE THAT RURAL MARIN WILL BE PROTECTED FROM INCOMPATIBLE DEVELOPMENTS AND THAT PRIORITY IS GIVEN TO THE NEEDS OF AGRICULTURE WITHIN ITS REALM, PEOPLE WILL CONTINUE TO RANCH IN MARIN OVER THE FORESEEABLE FUTURE."

The Baxter, McDonald, and Smart report also noted that, even if marginal revenues from farming are not equal to marginal costs, there are other non-economic reasons

for farmers to maintain their operations in Marin, such as the environmental beauty, carrying on family traditions, and enjoying the community of family operated ranches.

In addition, the Baxter, McDonald & Smart report made recommendations, summarized as follows:

> "1. The County should improve its ability to assist ranchers in making necessary ranch improvements...
> "2. The County should adopt policies designed to ensure that any rural residential development is compatible with its agricultural neighbors.... Development rights should be purchased [where necessary].
> "3. Alternative land uses of both agricultural and recreational natures are available and should be encouraged [as] a more viable alternative than residential development in terms of agricultural compatibility."

Looking back over the 30-year time period since 1973, it is on the one hand gratifying to see how effective the County's policies have been in maintaining its agricultural land and economy, and on the other hand ironic that the issues in 2003 are almost identical to those faced in 1973.

The County has achieved success in consistent application of large lot sizes and agricultural use zoning, removing much of the speculative value increases - not to mention residential subdivisions - which would have otherwise occurred. This has been coupled with the effective program of Marin Agricultural Land Trust (MALT) to purchase agricultural open space easements and lease-back arrangements from the Point Reyes National Seashore and Golden Gate National Recreation Area (GGNRA) guaranteeing long-term agricultural use. In addition, the County continues to offer support to farmers, such as in meeting environmental regulations, making farm improvements, and developing marketing strategies.

What was not anticipated 30 years ago was that some landowners or buyers would use large agriculturally-zoned parcels essentially for estate development. High-value residential development keeps the large acreage intact, but it undermines the economics and the "will" to maintain agricultural use. This new (but similar) challenge is the major focus of this 2003 report.

III. IMPACT OF LARGE ESTATES ON AGRICULTURAL VIABILITY

The major problems identified in 1973 were that agricultural lands were subject to speculation for development rather than farming value. Today, the speculation is not so much for subdivision into suburban housing but is for high value estate development. The concerns are the same, however:

- Land costs can be driven up beyond agriculture's ability to pay for the taxes, insurance and maintenance costs association with the land;
- New estate owners may not be interested in making long-term investments in agricultural improvements, or even accommodating agricultural use; and
- There can be land-use conflicts between non-agricultural residents and commercial agricultural operations.

Viability of agricultural use still rests on whether the farmer or rancher can and will stay in business and whether others will enter into agriculture in the foreseeable future.

In this section we will look at:

- the costs and income of grazing land without residential improvements;
- the impact residential development has on the cost/income balance (based on average cost and income factors as well as specific case study parcels); and
- the current status of agricultural parcels county-wide.

A. Costs and Income of Agricultural Land

Livestock grazing land, which represents over 90% of the County's agricultural acreage, has fairly constant costs and returns per acre. Much of this land is hilly and unirrigated; its basic value is for growing grass, which can support a fairly predictable number of sheep or cows, which in turn provide income to the rancher from wool, meat, or dairy sales. Up until recently, there has been a balance, on average, between land ownership costs and agricultural income, helping to keep Marin County's grazing lands in productive use.

Table 1 estimates and compares the land costs and income from hypothetical average agricultural parcels of various sizes (without non-agricultural improvements). The major costs associated with the agricultural use of these lands include:

- Property taxes;
- Insurance; and
- Fence maintenance.

These are discussed below.

1. Property Tax: A large proportion of Marin's agricultural acreage is under Williamson Act (Land Preservation Act) contract, which limits the Assessor's evaluation to the agricultural value, rather than potential market value, of the land. The Assessor uses a conservative lease rate of $21 per acre for grazing lands. The Assessor calculates the capitalized value of that lease rate annually. For this analysis, we used a 3-year average of 7%, plus 1% risk and 1% property tax, for a capitalization rate of 9%. Based on that capitalization rate on annual lease income, the assessed value (AV) averages $233 per acre, for a tax cost of $2.33 per acre.

2. Insurance: According to knowledgeable insurance brokers, insurance for unimproved grazing lands can range from $500 for a 60-acre parcel up to $2,000 for a 2,000-acre parcel. The cost per acre decreases as parcel size increases, as estimated in the footnote of Table 1.

3. Fence Maintenance: A major expense for landowners for grazing operations is installing, repairing and replacing fencing. In the footnote of Table 1 we estimate the costs based on square parcels with cross fencing of 40-acre pastures. Assuming fencing costs at $4 per linear foot, with replacement required every ten years, fence costs will average $0.40 per linear foot per year. Smaller parcels have more linear feet of fencing per acre than larger parcels. Thus cost of fence maintenance can vary from an estimated $11.88 per acre for a 60-acre parcel down to $5.10 per acre for a 2,000 acre parcel. Actual costs vary based on the parcel's shape, the amount of cross fencing, the level of maintenance, and the quality of the fencing.

The total of these three major cost factors ranges from $22.54 per acre for a 60-acre parcel down to $8.43 per acre for a 2,000-acre parcel. (We have not included other costs such as water development or utilities which could vary widely by parcel.)

The income attributable to land can be either from the landowners' own grazing operations or from leasing their land to a ranch operator. The going lease rates in Marin range from $20 to $35 per acre for grazing land; we have used an average of $30 income generated per acre. It should be noted that lease rates will vary widely depending on factors such as slopes, soils, accessibility, size of parcel, and length of lease.

Comparing estimated costs with income, we see in Table 1 that grazing land without residential improvements can generally bring in more income than it costs. Even on a small hypothetical 60-acre parcel, costs of $22.54 per acre are exceeded by lease income of $30.00 per acre, for a net income of $7.46 per acre, or $447 annually for the parcel. For larger parcel sizes, the total costs per acre are reduced, and thus the net income per acre increases. For example a 400-acre parcel is estimated to generate a net income of $18.40 per acre or $7,359 for the whole parcel. A 2,400-acre parcel would have a net income of $21.23 per acre, or a total of $50,961 for the parcel.

Both the costs and potential income from grazing use of unimproved agricultural land are fairly fixed. The rancher may be able to improve income to some degree through skilled operations, capital investments, effective marketing and value-added products. Unpredictable weather, disease or the overall economy could also affect costs and income. These factors, however, are overshadowed by the impact of residential development.

B. Impact of Residential Development

The major wild card in the agricultural land cost/income balance is property value increase for new residential improvements. High-value estate development on the County's agricultural lands drives up the land ownership costs for both property taxes and insurance. This can tip the scales so that the cost of land ownership exceeds (by orders

of magnitude) what the agricultural income can cover. This may result in the owner of the new estate having little motivation to continue the traditional grazing use.

It should be noted that some owners of high value improved parcels may maintain agricultural use, even with little economic incentive to do so, because of other factors, such as family tradition and the esthetics of a pastoral setting. From an economics viewpoint, however, if agricultural income is no longer significant in offsetting ownership costs, the agricultural use becomes less likely, especially into the future as high-value parcels change ownership.

1. Potential Impact Analysis

Table 2-A estimates the increased assessed value and landowner's costs from a range of potential residential developments. The costs depend largely on the size of the residential development, so we have analyzed a range from an 1,800 sq. ft. to a 14,000 sq. ft. development (which could include one or more guest houses in addition to a main residence). The County Assessor uses a construction cost for housing of $175 per sq. ft. Other structural improvements (e.g. barns, garages) are estimated at an average of 50% of residential value, based on data from the case study (discussed below). In addition, we estimate that the site of the residence plus land-related improvements (e.g. driveways, well, septic systems) will add $300,000 per developed acre to total value. In all, the property value increase ranges from $772,500 for a 1,800 sq. ft. residence up to $6.1 million for a 14,000 sq. ft. development.

The estimated added costs to the landowner of these improvements include:

- Property tax, at 1% of the added value; and
- Insurance, at 0.2% of the added value.

Thus annual costs of land ownership for the added residential development range from $9,270 for a 1,800 sq. ft. home up to $72,900 for a 14,000 sq. ft. residential development.

Table 2-B spreads these added costs on a per acre basis to the entire parcel. The smaller the parcel, the higher the cost per acre will be for the residential development. For example, the 1,800 sq. ft. development would add annual costs of $155 per acre to a 60-acre parcel, compared to $4 per acre on a 2,400-acre parcel.

Finally, Table 2-C shows the impact of adding these residential-related land costs to the net lease income of undeveloped agricultural land (from Table 1). As noted above, without non-agricultural improvements, all parcel sizes had a positive net income, with a higher profit margin for larger parcels. When the ownership costs of large estate development are added, costs overwhelm potential income in most cases. The discrepancy between costs and income can be by orders of magnitude. For example:

- On a 60-acre parcel, even a moderate 1,800 sq. ft. residence results in costs exceeding income by $147 per acre.
- On a 400-acre parcel that would net $18.40 income per acre for agricultural use, adding a 7,000 sq. ft. residential development results in an $73 per acre net cost;
- On a 200-acre parcel, a 14,000 sq. ft. development results in a net cost of $349 per acre.

The scenarios that are close to break-even or still show a net income are the moderate 1,800 to 3,500 sq. ft. residences on larger parcels and the 7,000 sq. ft. development only on the largest 2,400-acre parcel size.

2. Case Study Parcels

While the foregoing discussed hypothetical cases, Table 3 shows the actual proposed (or in one case completed) developments on five case study parcels. These sample parcels, identified by the Planning Department, are proposed for (or have recently added) substantial improvements. They range in size from 60 to 845 acres. For each sample parcel, we describe:

- the existing unimproved land value;
- the proposed added value to land and structures; and

- the costs and agricultural income balance prior to and after the proposed improvements.

As summarized in Table 3-A, the assessed value of these sample case study parcels before and after improvements ranges widely:

- For the 60-acre Matthews parcel, before improvements assessed value (AV) is $6,468 per acre; after improvements it would be $25,344 per acre.
- For the 100-acre Moritz parcel, the $12,427 per acre existing land value rises to $27,309 per acre after improvements.
- For the 210-acre Hansen-Brubaker parcel, base land is valued at $4,024 per acre, rising to $9,362 per acre after improvements.
- For the 446-acre Patrick Brennan parcel, the land is valued at $432 per acre, rising to $1,629 per acre with the recently completed development.
- For the 845-acre Hick's Mountain Ranch parcel, the base land is valued at $1,558 per acre. After improvements, this would rise to $12,845 per acre.

Note that the scope of proposed improvements also ranges widely:

- A modest 1,850 sq. ft. residence on the Patrick Brennan parcel;
- Mid-range 3,500 to 4,000 sq. ft. residences with varying amount of related improvements on the Matthews, Moritz, and Hansen Brubaker parcels; up to
- Eight residences totaling 33,200 sq. ft. plus related improvements for the large Hick's Mountain Ranch parcel.

Each of the case study parcels and their proposed developments are described in detail in Appendix A. Appendix A also compares the total developed assessed values of these parcels with other parcels of similar size and zoning, illustrating that proposed high value improvements far exceed typical current values in the County.

Table 3-B compares the before and after improvement land costs with potential agricultural income on a per acre basis. The land costs included in this analysis are property tax, insurance (for both land and improvements), and fencing, using the same factors as Tables 1 and 2 above.

Before improvements, the parcels range from small net incomes to significant net costs. After proposed improvements, however, all of the parcels have costs exceeding potential agricultural income.

- Hick's Mountain Ranch goes from above break-even net income of $6 per acre to a net cost of $143 per acre after improvements.
- Patrick Brennan goes from a net income of $15 per acre to a small net cost of $7 per acre.
- Hansen-Brubaker is below break-even, at a net cost of $21 per acre, without development, but goes to a net cost of $103 per acre after development.
- Moritz has the highest pre-improvement costs, at $106 per acre, which would double to $332 per acre after development.
- Matthews, with a net cost of $47 per acre before improvement, rises to $307 net cost after improvement.

While these landowners may choose to sustain higher annual costs for the benefits of their rural estate lifestyle, landholding costs in the range of three to ten times the potential agricultural income will, in the long term, be a disincentive to continued agricultural operations.

C. Current Status of County-Wide Agricultural Lands

High-value residential developments adversely impact agricultural viability, both in theory and in current specific cases. This section looks at the County Assessor's data to determine how much land has already been affected and recommends corrective measures.

Table 4 shows Countywide Assessor's data on public and privately-owned lands designated for agriculture. Of the total 173,119 acres, just over 41,000 are publicly owned. Much of this acreage is leased for grazing, contributing substantially to the County's agricultural economy. Because of its public ownership, however, it is not threatened by

residential development. We will therefore focus on the 132,000 acres of privately-owned agriculturally-zoned lands.

As shown, parcels under 60 acres account for about 9% of the privately-owned agricultural lands while representing almost 75% of the assessed value. Much of this is due to residential value on these small parcels. About 5% of the privately-owned acreage and assessed value is in separate parcels over 60 acres in size. The lion's share (85%) of privately-owned acreage (112,436 acres) is in identified ranch units over 60 acres, often comprising several Assessor's parcels. These ranches are the most significant for purposes of protecting the County's grazing land.

Table 5 and 6 further analyze the 112,436 acres of Marin County ranches. As shown in Table 5-A, these 209 ranches range from 60 to 2,500 acres in size, with most (80%) from 200 to 1,600 acres. Generally, the larger sized ranches have a lower assessed value per acre. For example, the 1,200 to 1,600 acre ranches, with 16% of the acreage, represent less than 4% of AV, at an average of $537 per acre. The 100 to 200 acre ranches, in contrast, have an average AV of $2,308 per acre.

The exception to this picture is the largest sized ranches. These seven ranches, with 14% of the ranch acreage, account for almost 57% of the assessed value, at an average of almost $9,000 per acre. This anomaly is due to two ranches with high value large-scale developments, disproportionate to grazing land values.

As discussed above, the landowner's annual costs for such lands include property taxes, fence maintenance and replacement, and land-related liability insurance. Table 5-B estimates the average land costs as they apply to these various ranch sizes. The combination of property tax, insurance and fencing costs range from almost $78 per acre for the smaller 60 to 100 acre ranches down to only $12 per acre for the 1,200 to 1,600 acre ranches. From 200 acres through 1,600 acres, the estimated costs per acre are less than average lease rates of $30 per acre. Again, the largest ranches are anomalous, with costs over $104 per acre due to the two ranches with unusually high assessed values.

Table 6 looks at the same 112,436 acres of ranches grouped by their average assessed value per acre. Here we find that 86% of the acreage is assessed at between $55 and $2,000 per acre. The three ranches with the highest average values (over $14,000 per acre) account for 5% of the acreage but almost 59% of the total AV. The 37 ranches that range from $2,000 to $14,000 per acre represent an additional 9% of the acreage and 18% of the total AV.

Table 6-B shows the impact of estimated costs per acre for property tax, insurance and fencing to these ranches. In a nutshell, for the 86% of the ranch acreage valued at under $2,000 per acre, estimated costs are significantly below average lease rates of $30 per acre. (Again note that actual lease rates vary based on soils, slopes, access, lease length and other factors.) Ranches valued between $2,000 and $4,000 per acre (another 6% of the acreage) are on the margin, with costs of $42 per acre somewhat exceeding the average $30 per acre lease rate. In contrast, ranches from $4,000 to $14,000 AV per acre have costs of almost $100 per acre; and the three ranches of over $14,000 AV per acre have costs over $310 per acre.

So far only a limited number of the County's agriculturally-zoned ranches (8% of the privately-owned ranch acreage) are affected by high value development that overwhelms potential income for grazing use. Keeping land values (and thus costs) in balance with agricultural income is critical to maintaining long-term agricultural viability. Fortunately, this problem is being addressed at an early stage. Just as the County was able, through zoning and other policies and support efforts, to reduce land speculation for subdivision of agricultural lands, it is timely to develop approaches that will again protect and stabilize agricultural use from "gentrification" into non-productive estates.

County policy-makers should explore approaches to maintaining an "agriculture-friendly" ratio of land costs to lease income. Such approaches may include:

1. Define a reasonable ratio of lease income to land related costs, including placing a ceiling on the value of non-agricultural improvements. The economic analysis above could be applied on an area-specific basis to determine income and cost factors in order to limit

the impact of proposed new development, or an overall ceiling could be placed on the size of farm residences. The acceptable level is a policy decision that balances the long-term economic viability of agricultural use with the expectation of landowners to build a livable residence on a ranch.

2. Other measures to enhance long-term agricultural viability could include installing agricultural improvements, such as water development, land leveling (if appropriate) and financing animal waste disposal or watering facilities. If appropriate to the site and soil capacity, higher value crops such as vine or vegetable acreage could be developed. The landowner could also finance annual agriculture-related costs such as weed control, access roads, and fence maintenance.

Table 1: Land Cost vs. Lease Income

Ranch size	Per Acre Insurance (1)	Fence cost (1)	Prop. Tax (2)	Total Land Cost	Lease Income	Net Income per Acre	Per Ranch Net Income Total
60	$8.33	$11.88	$2.33	$22.54	$30.00	**$7.46**	$447
100	$6.00	$10.33	$2.33	$18.66	$30.00	**$11.34**	$1,134
200	$3.50	$8.54	$2.33	$14.38	$30.00	**$15.62**	$3,125
400	$2.13	$7.14	$2.33	$11.60	$30.00	**$18.40**	$7,359
800	$1.25	$6.49	$2.33	$10.07	$30.00	**$19.93**	$15,943
1,600	$0.78	$6.09	$2.33	$9.20	$30.00	**$20.80**	$33,278
2,400	$0.63	$5.81	$2.33	$8.77	$30.00	**$21.23**	$50,961

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(1) Insurance and Fencing Costs

Ranch size	Insurance Costs Per Ranch	Per Acre	Fencing Costs Perimeter	Cross Fence	Total	Cost @$.40/ft	Per Acre
60	$500	$8.33	1,617	165	1,782	$713	$11.88
100	$600	$6.00	2,087	495	2,582	$1,033	$10.33
200	$700	$3.50	2,952	1,320	4,272	$1,709	$8.54
400	$850	$2.13	4,174	2,970	7,144	$2,858	$7.14
800	$1,000	$1.25	5,112	4,620	9,732	$3,893	$6.49
1,600	$1,250	$0.78	5,903	6,270	12,173	$4,869	$6.09
2,400	$1,500	$0.63	6,600	7,920	14,520	$5,808	$5.81

Fence maintenance costs based on square parcels with cross fencing in 40 acre quarter sections
Average $4 per linear foot for replacement fence - 10 year life = $0.40 foot year
Source: Stephanie Larson UC Coop Extension, Sonoma County 707-565-2621.
Insurance Sources:
Larry File, Broker: United International Insurance 559-226-1205
Larry Walsh lwalsh@entertainmentinsurance.com

(2) Property Tax based on Williamson Act Assessment

		Per Acre
Lease rate for land		$21
Capitalization rate		
Income (3 year average)	7%	
Risk	1%	
Property Tax	1%	
Total Capitalization rate	9%	
Capitalized Value		$233
Property Tax @ 1%		$2.33

Source: Nelson Gemmels, County Assessors Office

Table 2: Cost vs. Income With Added Residential

A - Residential Costs

Residential Size in Sq. Ft.	< - - - Residential Size 1,800	3,500	7,000	- - - > 14,000
Residential AV @$175/sq.ft.	$315,000	$612,500	$1,225,000	$2,450,000
Improvements @ 50%	$157,500	$306,250	$612,500	$1,225,000
Residential Land in Acres	1.0	2.0	4.0	8.0
Residential Land AV @$300K/Ac	$300,000	$600,000	$1,200,000	$2,400,000
Total Added AV	$772,500	$1,518,750	$3,037,500	$6,075,000
Costs				
Property Tax @1.0%	$7,725	$15,188	$30,375	$60,750
Insurance @ 0.2% AV (1)	$1,545	$3,038	$6,075	$12,150
Total Added Costs	**$9,270**	**$18,225**	**$36,450**	**$72,900**

B - Added Residential Cost Per Acre by Ranch Size

Ranch Size				
60	$155	$304	$608	$1,215
100	$93	$182	$365	$729
200	$46	$91	$182	$365
400	$23	$46	$91	$182
800	$12	$23	$46	$91
1,600	$6	$11	$23	$46
2,400	$4	$8	$15	$30

C - Net Income vs. Residential. Costs Per Acre by Ranch Size

Ranch size	Net Ranch Income (2)	< - - Ranch Income Less Residential Cost			- - >
60	$7.46	($147.04)	($296.29)	($600.04)	($1,207.54)
100	$11.34	($81.36)	($170.91)	($353.16)	($717.66)
200	$15.62	($30.73)	($75.50)	($166.63)	($348.88)
400	$18.40	($4.78)	($27.17)	($72.73)	($163.85)
800	$19.93	$8.34	($2.85)	($25.63)	($71.20)
1,600	$20.80	$15.01	$9.41	($1.98)	($24.76)
2,400	$21.23	$17.37	$13.64	$6.05	($9.14)

(1) Strong Associates estimate of insurance costs

(2) Net Income per Acre from Table 1.

Table 3: Case Study - Lease Income to Cost Analysis

A- Parcel Description

	A	B	C	D	E
Name	Matthews	Moritz	Hansen Brubaker	Patrick Brennan	Hick's Ranch
Parcel #'s	121-120-31	188-90-13	106-220-22	106-110-1	121-10-1 121-10-3
Parcel Size in Acres	60.0	99.5	209.6	446.0	845.2
Land Value					
Existing	$368,069	$1,237,114	$843,654	$192,451	$1,316,672
Residential Acres	1.0	1.0	1.0	1.0	10.0
Added Land AV	$300,000	$305,000	$344,400		$2,600,000
Improvement Value					
Residential Sq. ft.	3,588	4,100	3,449	1,850	33,200
Residential Value	$538,200	$703,000	$603,575	$323,750	$5,810,000
Related Improvements	$294,395	$473,448	$170,960	$210,414	$1,129,600
Total Improvement Value	$832,595	$1,176,448	$774,535	$534,164	$6,939,600
Total Land + Improvements	$1,520,664	$2,718,562	$1,962,589	$726,615	$10,856,272

B - Costs/Income

Existing Land Costs/Income per Acre					
Land Value / Acre	$6,468	$12,427	$4,024	$432	$1,558
Property Tax Cost	$65	$124	$40	$4	$16
Land Insurance Cost (1)	$8	$8	$6	$6	$4
Fence Cost (1)	$12	$12	$10	$10	$9
Total Costs	$77	$136	$51	$15	$24
Lease Income	$30	$30	$30	$30	$30
Net Costs/Income	**($47)**	**($106)**	**($21)**	**$15**	**$6**
Ratio of Lease Income to Total Costs	2.6	4.5	1.7	0.5	0.8
Costs/Income With Improvements per Acre					
Land plus Improvement Value / Acre	$25,344	$27,309	$9,362	$1,629	$12,845
Property Tax Cost	$253	$273	$94	$16	$128
Improvement Insurance Costs (2)	$63	$68	$23	$4	$32
Land Insurance Cost	$8	$8	$6	$6	$4
Fence Cost	$12	$12	$10	$10	$9
Total Costs	$337	$362	$133	$37	$173
Lease Income	$30	$30	$30	$30	$30
Net Costs/Income	**($307)**	**($332)**	**($103)**	**($7)**	**($143)**
Ratio of Lease Income to Total Costs	11.2	12.1	4.4	1.2	5.8

(1) From Table 1
(2) From Table 2

Table 4: County-Wide Agricultural Zoned Land

	Acres	% of Acres	Assessed Value	Per Ac Value	% of AV
Publicly Owned Ag Land					
Parcels under 60 acres	9,396				
Numbered Ranches over 60 acres	31,667				
Subtotal	**41,063**		$0		
Privately Owned Land					
Parcels under 60 acres	12,208	9.2%	$943,336,182	$77,272	74.6%
Parcels over 60 acres	7,412	5.6%	$66,924,280	$9,029	5.3%
Numbered Ranches over 60 acres	112,436	85.1%	$253,887,412	$2,258	20.1%
Subtotal	**132,056**	100.0%			100.0%
Total	**173,119**		$1,264,147,874	$7,302	

Source: County Assessor's Office

Table 5: County Wide Ag Land - Ranches Sorted by Size

A - Description of Ag Ranches

< - Ranch size - > From	To	Total Ranch Count	Total Acres	% of Total Ac	Average Ranch size	Assessed Value Total	% of Total AV
60	100	9	731	1%	81	$4,001,764	1.6%
101	200	39	5,887	5%	151	$13,590,034	5.4%
201	400	67	19,693	18%	294	$26,888,928	10.6%
401	800	49	28,483	25%	581	$42,259,685	16.6%
801	1,200	25	23,632	21%	945	$13,897,997	5.5%
1,201	1,600	13	17,952	16%	1,381	$9,648,650	3.8%
1,601	2,500	7	16,058	14%	2,294	$143,600,354	56.6%
Total All Parcels		209	112,436	100%	538	$253,887,412	100.0%

B - Estimated Costs per Acre

< - Ranch size - > From	To	AV	PropertyTax @1.1% of AV	Insurance(1)	Fencing	Total Costs Per Acre	Est. Net Income (2)
60	100	$5,474	$60.22	$6.63	$10.90	$77.75	($47.75)
101	200	$2,308	$25.39	$4.19	$9.19	$38.77	($8.77)
201	400	$1,365	$15.02	$2.45	$7.70	$25.17	$4.83
401	800	$1,484	$16.32	$1.57	$6.52	$24.41	$5.59
801	1,200	$588	$6.47	$1.29	$5.87	$13.64	$16.36
1,201	1,600	$537	$5.91	$1.01	$5.45	$12.38	$17.62
1,601	2,500	$8,943	$98.37	$0.84	$4.98	$104.19	($74.19)

(1) Insurance costs for land only. Does not include improvement value insurance.

(2) Assumes an average lease income of $30 per acre.

Table 6: Ranches Sorted by Assessed Value per Acre

A - Description of Ag Ranches

< - Per Ac AV - >		Ranch	Total	% of	Average	AV Total	% of AV
From	To	Count	Acres	Total Ac	Ranch size		
$55	$200	27	17,744	16%	657	$2,730,616	1.1%
$201	$400	33	23,209	21%	703	$7,022,128	2.8%
$401	$600	28	16,168	14%	577	$8,110,997	3.2%
$601	$800	26	14,458	13%	556	$9,754,849	3.8%
$801	$1,200	25	13,447	12%	538	$13,698,013	5.4%
$1,201	$2,000	30	11,465	10%	382	$17,300,244	6.8%
$2,001	$4,000	19	6,775	6%	357	$19,604,939	7.7%
$4,001	$14,000	18	3,801	3%	211	$26,613,621	10.5%
$14,001	$33,000	3	5,370	5%	1,790	$149,052,005	58.7%
Total All Parcels		209	112,436	100%		$253,887,412	100.0%

B - Estimated Costs per Acre

< - Per Ac AV - >		AV	PropertyTax	Insurance(1)	Fencing	Total Costs	Est. Net
From	To		@1.1% of AV			Per Acre	Income (2)
$55	$200	$154	$1.69	$1.47	$6.10	$9.27	$20.73
$201	$400	$303	$3.33	$1.44	$6.04	$10.81	$19.19
$401	$600	$502	$5.52	$1.57	$6.34	$13.43	$16.57
$601	$800	$675	$7.42	$1.62	$6.35	$15.39	$14.61
$801	$1,200	$1,019	$11.21	$1.64	$6.40	$19.24	$10.76
$1,201	$2,000	$1,509	$16.60	$1.18	$4.16	$21.94	$8.06
$2,001	$4,000	$2,894	$31.83	$2.43	$7.95	$42.21	($12.21)
$4,001	$14,000	$7,002	$77.02	$5.18	$15.28	$97.48	($67.48)
$14,001	$33,000	$27,755	$305.31	$0.91	$5.12	$311.34	($281.34)

(1) Insurance costs for land only. Does not include improvement value insurance.

(2) Assumes an average lease income of $30 per acre.

IV. FARM ECONOMICS ISSUES

Marin County had 133,444 acres of land in agricultural use in 2000, according to the U.S. Department of Agriculture. Of this, 177 acres were in vegetable and non-grape fruit production, 94 acres were in vineyards, 6,065 acres were used for livestock feed crops (hay and silage), and the remaining acreage was used as pasture for livestock grazing.

This section of the report will focus on four components of the County's agriculture:

- Organic vegetable farms;
- Vineyards;
- Dairy operations; and
- Livestock operations.

A. Organic Vegetable Farming

Both cost and revenue estimates vary widely based on a variety of factors, including some beyond control (such as weather and national economy) and some partially controllable (such as regulatory costs, erosion or crop damage, and marketing success). See Appendix B-1 for a detailed cost/income analysis of a hypothetical 40-acre organic farm with a variety of different crops. The analysis shows that almost all crops can be profitable based on current estimated average costs and income.

On the cost side, most growers own their own land and (until a change of ownership occurs) are not adversely impacted by annual land costs. We estimate annual rent or ownership cost at $400 per acre, or $250 per crop-acre. Some farmers lease land in this cost range. Much of the cropland is adjacent to wetlands that cannot be developed. Limited acreage is available.

The proximity to creeks, wetlands or publicly owned lands makes many of these farms subject to strict regulations by a variety of government agencies, including both State and federal fisheries, wildlife, and water quality agencies. In some cases, the

requirements of these agencies can be at cross-purposes with the County's goals of protecting and supporting agriculture, forcing farmers to make large capital investments or simply to stop their operations altogether.

Potential income from each crop varies widely depending both on the yield and the price per unit. Clearly these are the biggest variables in the economic performance of each crop and the overall farm.

In the past, Marin County's organic growers had a secure market niche that included fairly large retail outlets such as Whole Foods. Unfortunately for the small-scale farmers, organic production has now become a big business, with large commercial farms supplying an increasing share of the market, at highly competitive prices.

The growers and Marin County's policy makers will need to work creatively together to help keep these farms viable. Some of the marketing strategies that should be aggressively pursued include:

- Direct marketing, possibly through a collective broker, to consumers, restaurants, and farmers' markets;
- Expanding direct sales to new markets, for example to local schools, hospitals and senior residences;
- Establishing a collective permanent farmers' market and marketing; and
- Educating local residents on the advantages of buying locally.

B. Vineyards

Marin County currently has limited acreage in vineyards, 94 acres in 2000, compared to its neighbors to the north (Napa, Sonoma, and Mendocino Counties). Vineyards require labor- and capital-intensive investment with no or very low yields for the first three years. After that period, they can be very profitable but, as with any crop, are subject to fluctuations in demand and price. Wine grapes have recently experienced a drop in sales income.

Appendix B-2 estimates per acre costs and income over time from a hypothetical 40-acre Marin County vineyard operation. The first three years involve major investments (including land, planting and cultivation, and water) with no or minimal yields. Note that land costs for new and expanding vineyards, estimated at $20,000 per acre (or $1,200 per acre per year), are much higher than for organic farms. By year 4, vineyards should begin producing a small net profit. From 5 on, they show a good annual profit (over $2,000 per acre).

Two Marin wine grape growers are also producing their own wines. This value added agricultural product provides a guaranteed market for the grapes and increases the income to the operator as the prestige of the wine grows.

C. Dairies

Milk and milk products have dominated agricultural sales in Marin for over 125 years. Between 1950 and 2000, however, the number of dairies in Marin County decreased from 200 to 31, and the number of head of dairy cattle decreased from approximately 20,000 to 12,000. Despite this downward trend in dairies and animal numbers, countywide milk production has increased slightly, going from 1.95 million pounds in 1964 to 2.25 million pounds in 2000, due to increased milk production per cow and other improvements in farming practices. About 20% of the Bay Area's milk comes from Marin dairies. (Source: Marin County "Key Trends, Issues, & Strategies Report" December 2002)

In general, Marin County dairies raise their own heifers (calves up to 2 or 3-years old, before they have their first calf and begin milking), mostly on pasturage. Some heifers may be sold (or bought) to keep the desired number of dairy cows for the operation. A few ranchers have gone exclusively into raising and selling heifers, without running a dairy operation. Once the cows are milking, they are kept in more concentrated areas, fed primarily on imported feed.

Dairies are much more intensive operations than livestock grazing, requiring up to 12 employees for a 200-cow dairy (usually milking twice a day), extensive capital

investments, importing of feed to maintain balanced nutrition and healthy milk production, veterinarian services, good access to transportation, and so forth. While operating costs are higher, so are potential returns. Dairies may pay up to $70 or $75 per acre per year for good pastureland that is convenient to their operation.

Some of the assets of Marin's dairies are:

- A well-established organic dairy business that has a strong and growing market niche;
- The grasslands along the coast have a higher moisture content, minimizing the need for supplemental feed or irrigation;
- The milk and milk products from the coastal grassland-fed cows have a unique flavor that is popular, especially for gourmet cheeses; and
- A few dairies have successfully gone into value added products, primarily cheese and yogurt, that enhance income from their operations.

On the other hand, challenges facing Marin's dairies include:

- Rising land costs for pasture areas on private lands;
- The pasture use of federal lands, for example Pt. Reyes National Seashore, is leased rather than owned, discouraging the long-term investments required to a successful dairy operation.

D. Livestock Operations

Livestock ranches in Marin County are predominantly cow/calf operations. Typically, the rancher maintains a herd of cows that calve every year (usually in early Fall). The calves nurse and graze until June or July when, at an average weight of about 750 pounds, they are sold for beef. One rancher in Sonoma County is doing Spring calving, with a new calf able to reach about 450 pounds by June or July, without requiring as much import feed. Few of the County's ranches buy stockers, that is weaned calves of about 650 pounds, with the goal of grass feeding them to add another 200 pounds per cow.

With a typical Fall calving operation (calves being born from mid-August to mid-October), the rancher will need to import hay from late summer until the grass is ample to feed both the cows and calves. Depending on when the rain starts, this may be from early February to late March. The amount of forage crop can vary widely from year to year based on rainfall and of course also varies with the soil, slope and vegetation conditions of the land. Wildlife grazing can have a minor impact on how much forage is available for the cattle. Grass production can range from about 1,800 to 7,000 pounds per acre per year (some of which is left to protect the next year's crop).

Generally, ranchers need from 6 to 15 acres per head (which includes both cow and calf). Whether from grass or supplemental feed, each animal unit needs about 1,000 pounds of feed per month, or about six tons per year. Imported feed can range from about $60 to $105 per ton depending on quality.

An operation needs a minimum of about 100 head of cattle to have enough calves to make the weight of a truck shipment. A 200-head ranch gives more flexibility for marketing. Thus a viable ranch unit could range from 600 acres (for example in coastal areas where grass is relatively lush) to over 2,000 acres. In this range of 100 to 200 head (with cow and calf counting as one head), one rancher runs the operation single-handedly, with only occasional specialized help. Ranches generally have no employees.

At least two operators are innovating by going into the grass-fed beef market. There is a growing market for grass fed beef, and these products demand a higher price that generally exceeds the increased operating costs. These operations take full advantage of Marin's proximity to a large, relatively wealthy urban area. Most of the grass fed beef is marketed through direct sales either via the Internet or to specialty meat markets and restaurants.

In addition to cattle livestock, some Marin ranchers also raise sheep. This sector, however, has been shrinking due primarily to problems of predators (coyotes) and

international market competition (mostly from Australia and New Zealand). Marin County has an innovative program of paying sheep ranchers (out of the General Fund) to implement non-lethal controls for predators and to reimburse losses due to predators.

It should be noted that a portion of the publicly owned Point Reyes National Seashore is leased for livestock grazing, making a significant contribution to the County's agricultural economy. These leases are based on animal units per month (AUMs), rather than per acre, which allows the public agency to control extent and seasons of use.

V. FISCAL ANALYSIS

In addition to the value of agriculture for food supply, jobs, income, and land management, Marin County's agricultural economy also contributes significantly to County government revenues. As discussed below and shown in Table 5, agriculture generates significantly more revenues than it requires in County costs, yielding a net annual surplus of **$1.3 million** (or $7.50 per farm acre) to the general fund.

In addition, the County's farms contribute $8.1 million in property taxes to education, $1.7 million to fire and utility districts, and over $0.4 million to County Library and Marin Open Space funds.

A. Revenues

The major source of revenue is from property tax. The assessed value of all agricultural lands in Marin County is almost $559 million and the value of improvements on agricultural property an additional $705 million, totaling $1.26 billion in assessed value (AV) in 2001-02. It is interesting to note that parcels under 40 acres in size represent only 6% of the agricultural land acreage but over 70% of the AV. The 94% of the acreage that is in parcels over 40 acres is valued at $350 million, with most of that concentrated in the highest value parcels (as noted above in Table 4).

The total property tax revenue is 1% of the total AV, or $12.6 million annually. Of that, the County general fund receives an average net, after shifts to the education fund, of 18.7% (the actual percentages vary by tax rate area, as detailed in Appendix C). Thus the County receives an estimated **$2,365,000** from this source. In addition, agriculture annually contributes $8.1 million in property taxes to education, $1.7 million to fire and utility districts, and $440,000 to County Library and Marin Open Space funds (shown in Appendix C).

Supplementing the property tax revenue is the State's subvention of taxes from lands under Williamson Act contracts. This adds **$235,000** annually to the County's revenues.

The County's revenue from Cooperative Extension operations includes State and federal subventions, grant funds, and gifts, amounting to almost **$703,000** annually. Revenues generated for the County's Agricultural Commissioner's office include fees for environmental protection/ pest control services and consumer protection inspections, as well as the agricultural share of gas tax revenues, coming to over **$527,000** annually.

In addition, there are an estimated 2,392 residents associated with agriculture – an agricultural work force of 1,415, times the ratio of workforce-to-residents of 1.69 (from George Goldman, Cooperative Extension). Each resident will generate the same estimated per person revenues as all County residents. At an average of $721 per person, this accounts for an additional **$1,724,000** in annual revenues. See Appendix C for a detailed analysis of revenues and costs attributed to population (such as judicial, welfare, and most services) versus land and other sources (such as property tax and business-related sources). Some items (such as sales tax and interest) are split proportionately between population and other sources.

Total annual revenues from agriculture to Marin County's general fund in 2001-02 are thus estimated at **$5.55 million**, as summarized in Table 5. Note that these estimates do not reflect potential cutbacks in local revenues that may result from current State budget shortfalls.

B. Costs

The itemized budget costs directly attributable to agriculture are for:

- The Cooperative Extension support services and grant-funded programs, amounting to **$907,000** in 2001-02; and

- The Agricultural Commissioner's Office pest control, consumer protection, apiary and report services, coming to **$1,068,00** annually.

In addition, the people-related costs of serving agricultural residents (at the $953 per person average of all unincorporated area residents) come to **$2.28 million** per year. (Note that residents of unincorporated areas bear both county-wide costs and added sheriff costs of serving only the unincorporated area. Again see Appendix C for details.)

Total agriculture-related costs are thus **$4.26 million** annually.

Comparing revenues and costs, as shown in Table 5, agriculture yields a **net surplus** of **$1.3 million** annually to the general fund, or $7.50 per acre of agricultural land. In other words, for each $1.00 in costs, agriculture generates $1.31 in revenues.

Table 7: Fiscal Impact of Agriculture on County General Fund

Revenues				
Property Tax Revenue		Assessed Value (1)	Prop Tax @1%	County Total
Land		$558,933,232		
Improvements		$705,214,642		
Total		$1,264,147,874	$12,641,479	
County's Share (1)	18.71%			$2,365,451
Williamson Act Subvention				$235,000
Cooperative Extension (3)				
Federal Subvention			$67,410	
State (University of Cal. Budget)			$369,753	
Gifts			$2,500	
Grants			$262,953	$702,616
Ag Commissioner - Fees for services (3)				
Environmental Protection - Pest control			$313,761	
Consumer Protection & Inspection			$5,503	
Apiary & Reports			$0	
Gas Tax (9265)			$207,416	$526,680
Population Related Revenues		Ag pop (2)	Rev/pop (4)	
		2,392	$720.62	$1,723,558
Total Revenue from Agriculture				**$5,553,305**
Costs				
Cooperative Extension				
Grant Funded programs			$262,953	
Coop Extension Agricultural Support			$644,218	$907,171
Ag Commissioner				
Environmental Protection - Pest control			$959,223	
Consumer Protection & Inspection			$91,588	
Apiary & Reports			$16,922	$1,067,733
Population Related Costs		Ag pop (2)	Cost/pop (5)	
		2,392	$953.45	$2,280,432
Total Cost from Agriculture				**$4,255,336**
Net Revenue from Agriculture		County Ag acres		**$1,297,970**
Revenue per Acre		173,119		$7.50

(1) See Appendix A: Ag Share of County Prop. Tax

(2) Ag population estimated based on ratio to ag work force:

Ag work force (George Goldman-Coop Ext.)	1,415
Ratio of population to workforce (ABAG)	1.69
Ag population	2,392

(3) Coop Extension and Ag Commissioner Annual Reports

(4) County Pop-related Revenues	Revenue/Cost	Population	Per person
County wide	$180,084,068	249,900	$720.62
(5) County Pop-related Costs			
County wide	$218,140,224	249,900	$872.91
Unincorporated area	$5,549,545	68,900	$80.54
Total	$223,689,769		$953.45

Note: For (4) & (5) see Appendix B: Budget Analysis 2001-2002

APPENDIX A: CASE STUDY ANALYSIS OF SAMPLE PARCELS

We have analyzed five sample parcels, identified by the Planning Department, that are proposed for (or have recently added) substantial improvements. Three of the samples are zoned C-APZ-60; two are zoned ARP-60. They range in size from 60 to 845 acres. Each is described below. Tables A-1 through A-5 include detailed parcel data and a comparison of each parcel, before and after improvements, with the average values per acre of selected parcels of similar size and zoning.

The 60-acre **Matthews** parcel, zoned ARP-60, is located on Old Rancheria Road, Nicasio. The land supports 4 horses and goats, with a base AV of $6,468 per acre. The proposed improvements would include a residence, two garages, a barn, and added land value totaling over $1.1 million, bringing total AV to **$25,344** per acre. The similarly zoned parcels (ranging from 41 to 93 acres) have an average AV of $10,854 per acre. The improved Matthews parcel would thus be **2.3** times that average value. Note that seven of the 28 similar parcels have improvement values of $500,000 or more, with per acre total AV similar to Matthews; one of those substantially exceeds Matthews, with a total AV of $35,600 per acre.

The 99.5-acre **Moritz** parcel, on Highway 1 near Bolinas, is zoned C-APZ-60. The land currently supports 20-25 head of cattle, with a year-round stream, a well, and 34 acres of irrigated pasture, plus $126,600 of existing improvement AV. The base *land* value is $12,427 per acre, and the base improvement value is $1,272 per acre, totaling $13,700 per acre. The proposed improvements include a primary residence, a cottage, garage, and barn, plus added land AV (driveway, septic, grading, residential site, etc.) totaling almost $1.5 million. These will bring the total AV to **$28,581** per acre. In contrast, the sample of 25 similarly zoned parcels, ranging from 63 to 136 acres, have an average total AV of $2,712 per acre. The improved Moritz parcel would be **10.5** times that average value. Only one of the similar parcels exceeds Moritz' improved value.

The **Hansen/Brubaker** parcel, with 210 acres, is zoned C-APZ-60 (with no overlay). The base land AV is $844,000, or $4,024 per acre. The property, located on Shoreline Highway near Marshall, currently supports 35 head of cattle on slopes from 10-14%. Proposed development is for $775,000 of structural improvements (residence, guest house, barn and garage), plus an estimated $344,000 added AV to the land (grading, driveway, septic system, and residential site assessment). These improvements will raise the total AV to **$9,362** per acre. In contrast, the selected similar parcels (same zoning, using the smaller parcel size for a conservative comparison, with other parcels ranging from 160 to 207 acres) have an average total value of $1,155 per acre. Thus the improved Hansen/Brubaker property will be **8.1** times the value of similar parcels.

The 446-acre **Patrick Brennan** parcel, on Marshall/Petaluma Road, is zoned C-APZ-60 with an A60 overlay. The improvements on this parcel (including a 1,850 sq. ft. residence) were already added to the tax roll in 1999, bringing the total assessed value (AV) to **$1,629** per acre. There is a relatively small sample of other parcels with the same zoning: 18 parcels ranging from 139 to 584 acres. The average total AV of these comparable parcels is $613 per acre. Thus the improved Brennan parcel is **2.7** times the average value of the similar parcels, with only two of the 18 other parcels at or exceeding its AV per acre.

The **Hick's Mountain Ranch**, on Petaluma Road near Nicasio, comprises two parcels totaling 845 acres. Zoned ARP-60, the land currently supports 30-70 head of cattle on 10-14% slopes. The current base AV is $1,558 per acre. The proposed improvements include eight residences, several garages and barns, plus land improvements such as grading, driveways, and residential sites, which combined add over $10 million in value, bringing the total AV to **$12,845** per acre. The similar parcels average 344 acres (comparable to the smaller Hick's Mountain parcel), and have a total AV averaging $889 per acre. Hick's Mountain's improved value will therefore be **14.4** times the average of similar parcels, with only one other parcel at a comparable value.

APPENDIX A: Parcel Detail

A-1: Matthews Parcel

Base: Description of Parcel (1)

APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Total/ac
121-120-31	ARP-60	60	$388,069	$6,468	$0		**$6,468**
Proposed Added Value (2)			$300,000		$832,595		
Total			$688,069	$11,468	$832,595	$13,877	**$25,344**
Average of similar parcels (3)				$6,254		$4,600	**$10,854**
Ratio of improved parcel to similar parcels				1.8		3.0	**2.3**

(1) 200 Old Rancheria Road, Nicasio.
Land supports 4 horses and goats. Proposed 3 ac of vines and small vegetable garden (private use?)

(2) Description of proposed improvements

Land AV			Total Value		
Grading Septic, well			$150,000		
Land for home 1ac @$150,000			$150,000		
Added Land AV			**$300,000**		
Improvement AV	Sq.ft.	Val/sf			
Residence	3,588	$150	$538,200		
Garage	550	$85	$46,750		
2nd Garage	937	$85	$79,645		
Barn	1,920	$50	$96,000		
Other	480	$150	$72,000		
Added Improvement AV			**$832,595**	294,395	54.7%

(3) Matthews - Similar Parcels (from 40.9 to 93.4 acres)

Prop APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Lnd+Imp/ac
121-50-6	ARP-60	93.4	$40,645	$435	$0	$0	$435
121-180-12	ARP-60	48.1	$42,863	$891	$18,602	$387	$1,278
121-160-5	ARP-60	46.6	$123,736	$2,657	$27,245	$585	$3,242
121-70-27	ARP-60	61.7	$187,582	$3,042	$61,431	$996	$4,038
153-190-27	ARP-60	87.0	$384,948	$4,425	$0	$0	$4,425
121-70-43	ARP-60	53.5	$242,460	$4,534	$0	$0	$4,534
121-290-8	ARP-60	66.6	$381,078	$5,725	$0	$0	$5,725
121-120-26	ARP-60	47.9	$161,918	$3,383	$144,091	$3,011	$6,394
121-100-22	ARP-60	58.9	$280,214	$4,755	$111,227	$1,888	$6,643
121-120-30	ARP-60	66.9	$463,644	$6,927	$0	$0	$6,927
121-160-51	ARP-60	61.0	$442,345	$7,257	$0	$0	$7,257
121-120-29	ARP-60	40.9	$311,213	$7,600	$0	$0	$7,600
121-190-7	ARP-60	73.3	$354,185	$4,833	$234,590	$3,201	$8,034
121-120-33	ARP-60	59.6	$521,050	$8,745	$0	$0	$8,745
121-160-35	ARP-60	67.4	$632,133	$9,373	$0	$0	$9,373
121-200-4	ARP-60	79.3	$501,454	$6,326	$247,734	$3,125	$9,452
121-70-42	ARP-60	61.5	$186,461	$3,030	$404,330	$6,570	$9,599
121-70-32	ARP-60	67.0	$371,240	$5,541	$274,992	$4,105	$9,646
121-70-28	ARP-60	59.0	$249,081	$4,218	$327,621	$5,548	$9,767
121-160-31	ARP-60	42.1	$217,453	$5,163	$254,403	$6,041	$11,204
121-70-11	ARP-60	89.6	$281,718	$3,143	$784,031	$8,747	$11,890
121-70-45	ARP-60	68.9	$496,111	$7,199	$869,299	$12,615	$19,814
121-270-41	ARP-60	56.4	$1,147,365	$20,345	$0	$0	$20,345
121-250-50	ARP-60	65.3	$844,287	$12,934	$498,762	$7,641	$20,575
121-70-31	ARP-60	60.9	$294,530	$4,836	$973,397	$15,984	$20,821
121-120-32	ARP-60	56.7	$409,440	$7,222	$824,061	$14,534	$21,756
121-270-40	ARP-60	66.1	$631,791	$9,559	$826,672	$12,508	$22,067
121-120-27	ARP-60	57.7	$826,852	$14,322	$1,229,333	$21,293	$35,614
Total		1,763.4	$11,027,797		$8,111,821		
Average (/28)		63.0	$393,850	**$6,254**	$289,708	**$4,600**	**$10,854**

APPENDIX A continued
A-2: Moritz Parcel

Base: Description of Parcel (1)

APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Total/ac
188-90-13	C-APZ-60	99.5	$1,237,114	$12,427	$126,643	$1,272	**$13,699**
Proposed Added Value (2)			$305,000		$1,176,448		
Total			$1,542,114	$15,491	$1,303,091	$13,090	**$28,581**
Average of similar parcels (3)				$1,588		$1,124	**$2,712**
Ratio of improved parcel to similar parcels				9.8		11.7	**10.5**

(1) Land supports 20 to 25 head of beef cattle or 5 ac per cow. Supplemental feeding needed 12 to 25 tons
Total yield of 38 ac is 61,500 lb. 20 cows @8,400lb per cow year is 168000 lb. or 37% of required intake
Year round stream and 4.9 gpm well. 34 ac of irrigated pasture

(2) Description of proposed improvements

Land AV	Lin.ft.	Val/ft.	Total		
Driveway	2,200	$25	$55,000		
Septic/Well			$50,000		
Grading			$50,000		
Land for home 1ac @$150,000			$150,000		
Added Land AV			**$305,000**		
Residential AV	Sq Ft	Val/sf			
Primary Residence	2,900	$170	$493,000		
Cottage	1,200	$175	$210,000		
Garage	1,130	$100	$113,000		
Barn	4,096	$88	$360,448		
Added Improvement AV	9,326		**$1,176,448**	$838,448	170.1%

(3) **Moritz - Similar Parcels (from 63.2 to 135.8 acres)**

Prop APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Lnd+Imp/ac
100-20-22	C-APZ-60	63.2	$12,881	$204	$0	$0	$204
100-50-9	C-APZ-60	63.8	$61,839	$969	$134,703	$2,111	$3,080
188-90-6	C-APZ-60	67.2	$2,136,645	$31,796	$463,056	$6,891	$38,687
100-20-12	C-APZ-60	67.2	$14,321	$213	$0	$0	$213
104-40-31	C-APZ-60	68.0	$585,045	$8,601	$0	$0	$8,601
166-10-32	C-APZ-60	70.7	$66,630	$942	$210,095	$2,972	$3,914
100-20-7	C-APZ-60	71.5	$13,440	$188	$0	$0	$188
100-40-9	C-APZ-60	76.6	$62,916	$821	$286,430	$3,737	$4,558
100-50-8	C-APZ-60	77.0	$13,800	$179	$0	$0	$179
100-50-38	C-APZ-60	84.0	$82,758	$985	$377,679	$4,496	$5,481
100-100-3	C-APZ-60	85.9	$19,306	$225	$0	$0	$225
100-20-21	C-APZ-60	87.0	$15,641	$180	$0	$0	$180
100-30-9	C-APZ-60	92.5	$17,046	$184	$0	$0	$184
100-20-8	C-APZ-60	96.9	$22,002	$227	$0	$0	$227
104-40-3	C-APZ-60	101.5	$16,095	$159	$0	$0	$159
100-50-19	C-APZ-60	102.3	$161,787	$1,582	$4,893	$48	$1,630
100-50-6	C-APZ-60	105.2	$46,106	$438	$438,107	$4,164	$4,603
100-100-4	C-APZ-60	106.4	$21,745	$204	$0	$0	$204
100-100-13	C-APZ-60	107.3	$45,222	$421	$330,904	$3,084	$3,505
100-20-26	C-APZ-60	121.5	$142,822	$1,175	$376,288	$3,097	$4,272
100-20-13	C-APZ-60	122.6	$23,141	$189	$0	$0	$189
100-20-3	C-APZ-60	125.1	$66,173	$529	$25,663	$205	$734
100-50-31	C-APZ-60	125.9	$31,063	$247	$2,901	$23	$270
100-100-15	C-APZ-60	134.2	$28,452	$212	$0	$0	$212
119-40-28	C-APZ-60	135.8	$40,751	$300	$0	$0	$300
Total		2,359.3	$3,747,627		$2,650,719		
Average (/25)		94.4	$149,905	**$1,588**	$106,029	**$1,124**	**$2,712**

APPENDIX A continued
A-3: Hansen/Brubaker Parcels

Base: Description of Parcel (1)

APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Total/ac
106-220-20	C-APZ-60	0.0	$0				
106-220-22	C-APZ-60	209.6	$843,654	$4,024			
Total Base		209.6	$843,654	$4,024	$0		**$4,024**
Proposed Added Value (2)			$344,400		$774,535		
Total			$1,188,054	$5,667	$774,535	$3,695	**$9,362**
Average of similar parcels (3)				$602		$553	**$1,155**
Ratio of improved parcel to similar parcels				9.4		6.7	**8.1**

(1) Land supports 35 head of beef cattle (age 2 to 10) or 10 ac per cow.
Existing well. Plans for a 12-14 GPM well +2-2500 Gal Storage tanks
Address: 18000 Shoreline Hwy. - near Marshall: Slopes 10%to 14%

(2) Description of proposed improvements

Land AV	Lin.ft.	Val/ft.	Total Value			
Grading etc.			$100,000			
Driveway	3,720	$20	$74,400			
Septic			$20,000			
Land for home 1ac @$150,000			$150,000			
Added Land AV			**$344,400**			
Improvement AV	Sq.ft.	Val/sf				
Residence	3,113	$175	$544,775			
Guest house	336	$175	$58,800			
Barn	1,920	$50	$96,000			
Garage	937	$80	$74,960			
Added Improvement AV			**$774,535**	$424,160	77.9%	Imp to House

(3) Hansen/Brubaker - Similar Parcels (from 160.1 to 206.5 acres)

Prop APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Lnd+Imp/ac
100-90-13	C-APZ-60	199.7	$33,789	$169	$0	$0	$169
100-20-11	C-APZ-60	193.5	$34,599	$179	$0	$0	$179
100-20-23	C-APZ-60	173.5	$31,073	$179	$0	$0	$179
100-100-29	C-APZ-60	162.9	$32,924	$202	$0	$0	$202
100-30-24	C-APZ-60	171.5	$38,594	$225	$0	$0	$225
100-20-19	C-APZ-60	166.9	$34,248	$205	$3,825	$23	$228
104-40-10	C-APZ-60	169.4	$39,040	$230	$0	$0	$230
100-50-42	C-APZ-60	198.6	$51,703	$260	$8,333	$42	$302
100-20-20	C-APZ-60	182.2	$47,197	$259	$12,230	$67	$326
100-20-17	C-APZ-60	206.5	$54,024	$262	$32,600	$158	$419
100-40-24	C-APZ-60	188.5	$52,812	$280	$50,764	$269	$549
100-30-7	C-APZ-60	160.6	$79,553	$495	$36,384	$227	$722
100-50-37	C-APZ-60	183.8	$60,565	$330	$73,686	$401	$731
100-30-23	C-APZ-60	167.5	$60,430	$361	$72,830	$435	$795
106-210-10	C-APZ-60	203.1	$103,875	$511	$58,810	$290	$801
100-20-27	C-APZ-60	193.6	$64,266	$332	$97,712	$505	$837
100-100-22	C-APZ-60	164.2	$54,183	$330	$84,969	$517	$847
104-130-1	C-APZ-60	162.8	$67,552	$415	$71,424	$439	$854
100-50-40	C-APZ-60	167.0	$118,392	$709	$45,860	$275	$983
100-50-16	C-APZ-60	160.4	$41,017	$256	$128,260	$800	$1,055
100-20-16	C-APZ-60	163.2	$66,434	$407	$111,736	$685	$1,092
100-50-29	C-APZ-60	160.2	$98,848	$617	$83,344	$520	$1,137
100-100-5	C-APZ-60	167.3	$61,686	$330	$224,472	$1,198	$1,529
100-50-27	C-APZ-60	160.1	$116,040	$725	$172,798	$1,079	$1,804
100-40-30	C-APZ-60	161.2	$336,931	$2,090	$220,494	$1,368	$3,458
106-220-35	C-APZ-60	169.6	$655,969	$3,867	$0	$0	$3,867
104-130-47	C-APZ-60	184.4	$82,952	$450	$668,705	$3,627	$4,077
100-100-17	C-APZ-60	199.8	$469,821	$2,352	$482,846	$2,417	$4,769
Total		4,962	$2,988,717		$2,742,082		
Average per Parcel (/28)		177.2	$106,740	$602	$97,932	$553	$1,155

Parcel sizes range from 160.1 to 206.5 acres

APPENDIX A continued

A-4: Patrick Brennan

Base: Description of Parcel (1)

APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Total/ac
106-110-1	C-APZ-60,A	446	$192,451	$432	$534,164	$1,198	**$1,629**
Proposed Added Value (2)							
Average of similar parcels (3)				$310		$303	**$613**
Ratio of improved parcel to similar parcels				1.4		3.9	**2.7**

(1) 9800 Marshall/Petaluma Road, Marshall
This staff report was written in 1996. The description of development and Ag operations is not as detailed

(2) Single Family residence (1,850 Sq. Ft.) added in 1999; already on the tax roll.

(3) Patrick Brennan - Similar Parcels (from 138.6 to 584.4 acres)

Prop APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Lnd+Imp/ac
104-120-10	C-APZ-60,A60	282.3	$33,871	$120	$0	$0	$120
104-120-1	C-APZ-60,A60	340.6	$38,301	$112	$12,444	$37	$149
104-110-2	C-APZ-60,A60	374.4	$56,315	$150	$0	$0	$150
104-110-9	C-APZ-60,A60	334.3	$52,006	$156	$12,767	$38	$194
100-60-13	C-APZ-60,A60	187.6	$39,670	$211	$2,529	$13	$225
102-140-16	C-APZ-60,A60	168.8	$38,812	$230	$0	$0	$230
104-50-10	C-APZ-60,A60	338.9	$85,471	$252	$0	$0	$252
106-230-1	C-APZ-60,A60	534.2	$97,173	$182	$71,057	$133	$315
100-50-43	C-APZ-60,A60	268.4	$69,395	$259	$47,262	$176	$435
100-60-12	C-APZ-60,A60	179.8	$68,431	$381	$49,084	$273	$654
100-30-11	C-APZ-60,A60	149.4	$56,419	$378	$60,024	$402	$780
100-90-4	C-APZ-60,A60	179.3	$59,505	$332	$90,192	$503	$835
106-110-6	C-APZ-60,A60	584.4	$292,728	$501	$198,235	$339	$840
104-110-10	C-APZ-60,A60	387.4	$71,777	$185	$258,357	$667	$852
100-60-33	C-APZ-60,A60	241.4	$111,264	$461	$98,222	$407	$868
100-30-10	C-APZ-60,A60	138.6	$53,394	$385	$123,205	$889	$1,274
106-210-12	C-APZ-60,A60	157.2	$136,050	$865	$121,865	$775	$1,640
104-110-6	C-APZ-60,A60	415.5	$269,697	$649	$451,076	$1,086	$1,735
Total		5,262.6	$1,630,279		$1,596,319		
Average (/18)		292.4	$90,571	**$310**	$88,684	**$303**	**$613**

APPENDIX A continued
A-5: Hick's Mountain Ranch Parcels

Base: Description of Parcel (1)

APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Total/ac
121-10-1	ARP-60	453.3	$95,703	$211			
121-10-3	ARP-60	391.9	$1,220,969	$3,116			
Total Base		845.2	$1,316,672	$1,558	$0		**$1,558**
Proposed Added Value (2)			$2,600,000		$6,939,600		
Total			$3,916,672	$4,634	$6,939,600	$8,211	**$12,845**
Average of similar parcels (3)				$549		$340	**$889**
Ratio of improved parcel to similar parcels				8.4		24.2	**14.4**

(1) Land supports 30 to 70 head of beef cattle or 16 ac per cow.
Year round stream. Plans for a ?? GPM well +20,000 underground water tank
11100 Pt. Reyes - Petaluma Road, near Nicasio: Slopes 10% to 14%

(2) Description of proposed improvements

Land AV						Acres	Val/unit	Total Value
Grading etc.							$800,000	$800,000
Driveway (Lin.ft.) - Unpaved roads							$300,000	$300,000
10 Acres at Residential Value - @ $150,000/acre						10	$150,000	$1,500,000
Added Land AV								**$2,600,000**
Improvement AV	1	2	3 & 4	5 & 6	7 & 8	Total Sq.ft.		
Residences	12,000	3,800	8,500	2,400	6,500	33,200	$175	$5,810,000
Garages	1,170	936	1,250		864	4,220	$85	$358,700
Barn	1,920			5,000	4,500	11,420	$50	$571,000
Barn garage	940					940	$85	$79,900
Other	800					800	$150	$120,000
Added Improvement AV								**$6,939,600**

(3) Hick's Mountain Ranch - Similar Parcels (from 134.1 to 511.2 acres)

Prop APN	Zoning	Acres	Land AV	Land AV/ac	Impr AV	Impr AV/ac	Lnd+Imp/ac
121-100-25	ARP-60	379.9	$31,392	$83	$0	$0	$83
121-20-4	ARP-60	257.5	$22,192	$86	$0	$0	$86
121-40-3	ARP-60	358.3	$38,748	$108	$0	$0	$108
121-100-23	ARP-60	252.1	$29,805	$118	$0	$0	$118
106-230-9	ARP-60	507.3	$87,360	$172	$0	$0	$172
121-20-3	ARP-60	327.2	$50,969	$156	$17,353	$53	$209
121-40-8	ARP-60	402.8	$56,786	$141	$30,065	$75	$216
121-50-18	ARP-60	343.2	$80,434	$234	$0	$0	$234
121-270-17	ARP-60	148.2	$41,877	$283	$17,622	$119	$402
121-100-4	ARP-60	442.6	$118,138	$267	$72,661	$164	$431
121-50-30	ARP-60	155.5	$39,176	$252	$34,680	$223	$475
106-230-5	ARP-60	371.2	$80,759	$218	$99,208	$267	$485
121-120-1	ARP-60	511.2	$104,186	$204	$169,027	$331	$534
121-60-6	ARP-60	300.1	$71,718	$239	$88,968	$297	$536
121-60-5	ARP-60	417.3	$126,402	$303	$97,417	$233	$536
121-10-2	ARP-60	408.8	$97,292	$238	$127,593	$312	$550
121-60-4	ARP-60	507.1	$136,535	$269	$183,079	$361	$630
121-50-41	ARP-60	308.9	$97,705	$316	$123,749	$401	$717
121-70-9	ARP-60	445.0	$111,550	$251	$222,207	$499	$750
121-40-2	ARP-60	356.4	$82,890	$233	$200,646	$563	$796
121-30-17	ARP-60	186.4	$162,391	$871	$0	$0	$871
121-100-29	ARP-60	254.4	$304,465	$1,197	$41,500	$163	$1,360
121-40-5	ARP-60	401.2	$476,833	$1,188	$104,040	$259	$1,448
121-50-32	ARP-60	303.2	$134,096	$442	$480,493	$1,585	$2,027
121-20-1	ARP-60	459.7	$1,376,838	$2,995	$0	$0	$2,995
121-30-30	ARP-60	134.1	$949,774	$7,083	$928,550	$6,925	$14,008
Total		8,939.6	$4,910,311		$3,038,858		
Average per Parcel (/26)		343.8	$188,858	$549	$116,879	$340	$889

APPENDIX B-1: Organic Vegetable - Income/Cost Analysis

Foot notes for Appendix B

(1 Labor $12: tractor/pickup $6 $18.00 /hour
(2 Labor $9.00
(3 Water Costs per ac. ft. $300.00
(4 Land Rent: 50 acres farmed equals 80 producing
(5 Investment Costs (assume a 50 ac farm)

	Cost	Depreciation Years	Annual Dep. Cost	Annual Interest @6%	Combined Cost
Building farm storage	$10,000	20	$500	$600	
Caretaker mobile home	$75,000	20	$3,750	$4,500	
Fuel Tanks	$5,000	20	$250	$300	
Storage bins	$12,000	10	$1,200	$720	
Tools	$15,000	15	$1,000	$900	
Tractors (2)	$70,000	12	$5,833	$4,200	
Truck - 3/4 and 2 ton	$50,000	7	$7,143	$3,000	
Trailer - Harvest utility	$7,000	15	$467	$420	
Discs - 2	$15,000	12	$1,250	$900	
Cultivators - 2	$7,000	12	$583	$420	
Multi crop tools	$20,000	10	$2,000	$1,200	
Specific crop tools	$35,000	10	$3,500	$2,100	
Land level/terrace/tile/rip	$100,000	10	$10,000	$6,000	
Drip/Sprinkle irrigation syste	$100,000	10	$10,000	$6,000	
Total (80 acres)	$521,000		$47,476	$31,260	$78,736
Per acre			$593	$391	$984

A - Green cabbage

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.25	$18.00	$59
Irrigate/weed/thin/pest (2)	35	$9.00	$315
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$35.00	$35
Total Cultivation			**$826**
Harvest			
Equipment (1)	1.95	$18.00	$35
Pick labor (2)	130	$9.00	$1,170
Material (boxes)	600	$1.45	$870
Broker fees	1	$85.00	$85
Total Harvest			**$2,160**
Overhead Costs			
Assessments (organic fees)	1	$40.00	$40
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,374**
Water cost	Ac.Ft.		
Water	1.63	$300.00	$489
Total Cost			**$4,849**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	250	550	
Income per box	$9.00	$15.00	
Total Income	$2,250	$8,250	**$5,250**
Net Income			**$401**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	31,500	394
Good	45,000	563

(a) Carton weight in pounds 80

APPENDIX B Continued

B - Cauliflower

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	6.4	$18.00	$115
Irrigate/weed/thin/pest (2)	56.8	$9.00	$511
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$250.00	$250
Total Cultivation			**$1,294**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	320	$9.00	$2,880
Material (boxes)	160	$6.45	$1,032
Broker fees	1	$100.00	$100
Total Harvest			**$4,016**
Overhead Costs			
Assessments (organic fees)	1	$60.00	$60
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,394**
Water cost	Ac.Ft.		
Water	1.42	$300.00	$426
Total Cost			**$7,130**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	600	900	
Income per box	$7.00	$12.00	
Total Income	$4,200	$10,800	**$7,500**
Net Income			**$370**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	12,000	600
Good	17,000	850

(a) Carton weight in pounds 20

C - Cucumbers

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	4.85	$18.00	$87
Irrigate/weed/thin/pest (2)	42.2	$9.00	$380
Compost/pest mgnt.	1	$240.00	$240
Planting costs	1	$130.00	$130
Total Cultivation			**$965**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	280	$9.00	$2,520
Material (boxes)	900	$0.90	$810
Broker fees	1	$110.00	$110
Total Harvest			**$3,444**
Overhead Costs			
Assessments (organic fees)	1	$35.00	$35
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,369**
Water cost	Ac.Ft.		
Water	1.21	$300.00	$363
Total Cost			**$6,140**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	600	900	
Income per box	$6.00	$11.00	
Total Income	$3,600	$9,900	**$6,750**
Net Income			**$610**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	17,500	500
Good	30,000	857

(a) Carton weight in pounds 35

APPENDIX B Continued

D - Garlic

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	7.21	$18.00	$130
Irrigate/weed/thin/pest (2)	71.2	$9.00	$641
Compost/pest mgnt.	1	$320.00	$320
Planting costs	1	$970.00	$970
Total Cultivation			**$2,188**
Harvest			
Equipment (1)	0	$18.00	$0
Pick labor (2)	445	$9.00	$4,005
Material (boxes)	726	$1.00	$726
Broker fees	1	$50.00	$50
Total Harvest			**$4,781**
Overhead Costs			
Assessments (organic fees)	1	$90.00	$90
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,424**
Water cost	Ac.Ft.		
Water	1.21	$300.00	$363
Total Cost			**$8,756**

Income	Low	High	Average
Yield per acre in boxes	80%	20%	
Number of boxes	300	500	
Income per box	$17.00	$55.00	
Total Income	$5,100	$27,500	**$9,580**

Net Income	**$824**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	16,500	330
Good	20,000	400

(a) Carton weight in pounds 50

E - Leaf Lettuce

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.35	$18.00	$60
Irrigate/weed/thin/pest (2)	27.3	$9.00	$246
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$80.00	$80
Total Cultivation			**$804**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	96	$9.00	$864
Material (boxes)	650	$1.00	$650
Broker fees	1	$80.00	$80
Total Harvest			**$1,598**
Overhead Costs			
Assessments (organic fees)	1	$25.00	$25
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,359**
Water cost	Ac.Ft.		
Water	1.46	$300.00	$438
Total Cost			**$4,198**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	400	700	
Income per box	$5.00	$10.00	
Total Income	$2,000	$7,000	**$4,500**

Net Income	**$302**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	20,500	410
Good	32,500	650

(a) Carton weight in pounds 50

APPENDIX B Continued

F - Romaine Lettuce

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.35	$18.00	$60
Irrigate/weed/thin/pest (2)	27.3	$9.00	$246
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$110.00	$110
Total Cultivation			**$834**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	88	$9.00	$792
Material (boxes)	760	$1.00	$760
Broker fees	1	$75.00	$75
Total Harvest			**$1,631**
Overhead Costs			
Assessments (organic fees)	1	$25.00	$25
Office, Insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,359**
Water cost	Ac.Ft.		
Water	1.46	$300.00	$438
Total Cost			**$4,261**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	300	750	
Income per box	$6.00	$11.00	
Total Income	$1,800	$8,250	**$5,025**
Net Income			**$764**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	27,000	540
Good	35,000	700

(a) Carton weight in pounds 50

G - Red Onions

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	5.35	$18.00	$96
Irrigate/weed/thin/pest (2)	86.2	$9.00	$776
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$160.00	$160
Total Cultivation			**$1,450**
Harvest			
Equipment (1)	3.75	$18.00	$68
Pick labor (2)	73	$9.00	$657
Material (boxes)	1400	$1.00	$1,400
Broker fees	1	$100.00	$100
Total Harvest			**$2,225**
Overhead Costs			
Assessments (organic fees)	1	$42.00	$42
Office, Insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,376**
Water cost	Ac.Ft.		
Water	2.29	$300.00	$687
Total Cost			**$5,737**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	600	1,300	
Income per box	$4.00	$9.00	
Total Income	$2,400	$11,700	**$7,050**
Net Income			**$1,313**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	38,500	770
Good	65,000	1,300

(a) Carton weight in pounds 50

APPENDIX B Continued

H - Yellow Onions

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	6.75	$18.00	$122
Irrigate/weed/thin/pest (2)	86	$9.00	$774
Compost/pest mgnt.	1	$290.00	$290
Planting costs	1	$160.00	$160
Total Cultivation			**$1,473**
Harvest			
Equipment (1)	3.75	$18.00	$68
Pick labor (2)	83	$9.00	$747
Material (boxes)	1182	$1.00	$1,182
Broker fees	1	$105.00	$105
Total Harvest			**$2,102**
Overhead Costs			
Assessments (organic fees)	1	$42.00	$42
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,376**
Water cost	Ac.Ft.		
Water	2.29	$300.00	$687
Total Cost			**$5,638**

Income	Low	High	Average
Yield per acre in boxes	70%	30%	
Number of boxes	600	1,300	
Income per box	$4.00	$11.00	
Total Income	$2,400	$14,300	**$5,970**
Net Income			**$332**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	38,500	770
Good	65,000	1,300
(a) Carton weight in pounds	50	

I - Non-Staked Snap Peas

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	2.9	$18.00	$52
Irrigate/weed/thin/pest (2)	28.7	$9.00	$258
Compost/pest mgnt.	1	$0.00	$0
Planting costs	1	$55.00	$55
Total Cultivation			**$493**
Harvest			
Equipment (1)	0.33	$18.00	$6
Pick labor (2)	500	$9.00	$4,500
Material (boxes)	645	$1.00	$645
Broker fees	1	$65.00	$65
Total Harvest			**$5,216**
Overhead Costs			
Assessments (organic fees)	1	$36.00	$36
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,370**
Water cost	Ac.Ft.		
Water	1.13	$300.00	$339
Total Cost			**$7,418**

Income	Low	High	Average
Yield per acre in boxes	60%	40%	
Number of boxes	400	700	
Income per box	$13.00	$18.00	
Total Income	$5,200	$12,600	**$8,160**
Net Income			**$742**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	4,000	400
Good	6,000	600
(a) Carton weight in pounds	10	

APPENDIX B Continued

J - Non-Staked Snow Peas

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	2.9	$18.00	$52
Irrigate/weed/thin/pest (2)	28.6	$9.00	$257
Compost/pest mgnt.	1	$0.00	$0
Planting costs	1	$55.00	$55
Total Cultivation			**$492**
Harvest			
Equipment (1)	0.33	$18.00	$6
Pick labor (2)	250	$9.00	$2,250
Material (boxes)	645	$1.00	$645
Broker fees	1	$65.00	$65
Total Harvest			**$2,966**
Overhead Costs			
Assessments (organic fees)	1	$22.00	$22
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,356**
Water cost	Ac.Ft.		
Water	1.13	$300.00	$339
Total Cost			**$5,153**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	300	500	
Income per box	$10.00	$16.00	
Total Income	$3,000	$8,000	**$5,500**
Net Income			**$347**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	4,000	400
Good	6,000	600
(a) Carton weight in pounds	10	

K - Green Bell Peppers

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	6.2	$18.00	$112
Irrigate/weed/thin/pest (2)	54	$9.00	$486
Compost/pest mgnt.	1	$236.00	$236
Planting costs	1	$600.00	$600
Total Cultivation			**$1,561**
Harvest			
Equipment (1)	0.4	$18.00	$7
Pick labor (2)	320	$9.00	$2,880
Material (boxes)	645	$1.00	$645
Broker fees	1	$100.00	$100
Total Harvest			**$3,632**
Overhead Costs			
Assessments (organic fee	1	$40.00	$40
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,374**
Water cost	Ac.Ft.		
Water	2.29	$300.00	$687
Total Cost			**$7,255**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	600	1,000	
Income per box	$6.00	$12.00	
Total Income	$3,600	$12,000	**$7,800**
Net Income			**$545**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	23,000	657
Good	33,000	943
(a) Carton weight in pounds	35	

APPENDIX B Continued

L - Red Bell Peppers

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	6.2	$18.00	$112
Irrigate/weed/thin/pest (2)	54	$9.00	$486
Compost/pest mgnt.	1	$236.00	$236
Planting costs	1	$600.00	$600
Total Cultivation			**$1,561**
Harvest			
Equipment (1)	0.4	$18.00	$7
Pick labor (2)	220	$9.00	$1,980
Material (boxes)	600	$1.00	$600
Broker fees	1	$100.00	$100
Total Harvest			**$2,687**
Overhead Costs			
Assessments (organic fee	1	$40.00	$40
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,374**
Water cost	Ac.Ft.		
Water	2.29	$300.00	$687
Total Cost			**$6,310**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	400	800	
Income per box	$6.50	$14.00	
Total Income	$2,600	$11,200	**$6,900**
Net Income			**$590**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	23,000	657
Good	33,000	943
(a) Carton weight in pounds	35	

M - Sweet Corn

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.15	$18.00	$57
Irrigate/weed/thin/pest (2)	15.2	$9.00	$137
Compost/pest mgnt.	1	$357.00	$357
Planting costs	1	$50.00	$50
Total Cultivation			**$728**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	58	$9.00	$522
Material (boxes)	415	$1.00	$415
Broker fees	1	$50.00	$50
Total Harvest			**$991**
Overhead Costs			
Assessments (organic fees)	1	$25.00	$25
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,359**
Water cost	Ac.Ft.		
Water	2.46	$300.00	$738
Total Cost			**$3,816**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	200	400	
Income per box	$5.00	$15.00	
Total Income	$1,000	$6,000	**$3,500**
Net Income			**($316)**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	9,000	180
Good	20,000	400
(a) Carton weight in pounds	50	

APPENDIX B Continued

N - Winter Squash - Large Variety

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.85	$18.00	$69
Irrigate/weed/thin/pest (2)	30.05	$9.00	$270
Compost/pest mgnt.	1	$357.00	$357
Planting costs	1	$50.00	$50
Total Cultivation			**$874**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	160	$9.00	$1,440
Material (boxes)	850	$1.00	$850
Broker fees	1	$50.00	$50
Total Harvest			**$2,344**
Overhead Costs			
Assessments (organic fees)	1	$40.00	$40
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,374**
Water cost	Ac.Ft.		
Water	1.79	$300.00	$537
Total Cost			**$5,129**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	500	850	
Income per box	$5.00	$11.00	
Total Income	$2,500	$9,350	**$5,925**
Net Income			**$796**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	25,000	500
Good	40,000	800
(a) Carton weight in pounds	50	

O - Winter Squash - Small Variety

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	3.85	$18.00	$69
Irrigate/weed/thin/pest (2)	30.05	$9.00	$270
Compost/pest mgnt.	1	$300.00	$300
Planting costs	1	$80.00	$80
Total Cultivation			**$847**
Harvest			
Equipment (1)	0.2	$18.00	$4
Pick labor (2)	134	$9.00	$1,206
Material (boxes)	320	$1.00	$320
Broker fees	1	$50.00	$50
Total Harvest			**$1,580**
Overhead Costs			
Assessments (organic fees)	1	$40.00	$40
Office, Insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,374**
Water cost	Ac.Ft.		
Water	1.79	$300.00	$537
Total Cost			**$4,338**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	500	850	
Income per box	$3.00	$11.00	
Total Income	$1,500	$9,350	**$5,425**
Net Income			**$1,087**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	25,000	500
Good	40,000	800
(a) Carton weight in pounds	50	

P - Mixed Melons

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	1	$60.00	$60
List beds/cultivate/plant (1)	5.5	$18.00	$99
Irrigate/weed/thin/pest (2)	20	$9.00	$180
Compost/pest mgnt.	1	$235.00	$235
Planting costs	1	$420.00	$420
Total Cultivation			**$1,062**
Harvest			
Equipment (1)	0	$18.00	$0
Pick labor (2)	0	$9.00	$0
Material (boxes)	800	$3.10	$2,480
Broker fees	1	$75.00	$75
Total Harvest			**$2,555**
Overhead Costs			
Assessments (organic fees)	1	$30.00	$30
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,364**
Water cost	Ac.Ft.		
Water	3.75	$300.00	$1,125
Total Cost			**$6,106**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of boxes	500	900	
Income per box	$5.00	$11.00	
Total Income	$2,500	$9,900	**$6,200**

Net Income	**$94**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	17,000	567
Good	25,000	833

(a) Carton weight in pounds 30

Q - Strawberries

Costs	Time	Cost/Unit	Total/ac.
Cultivation costs			
Disk/chisel/pickup (1)	3.75	$18.00	$68
Cover crop allocation	0	$60.00	$0
List beds/cultivate/plant (1)	0	$18.00	$0
Irrigate/weed/thin/pest (2)	740	$9.00	$6,660
Compost/pest mgnt.	1	$1,000.00	$1,000
Planting costs	28000	$0.04	$1,120
Total Cultivation			**$8,848**
Harvest			
Equipment (1)	0	$18.00	$0
Pick labor (2)	1600	$9.00	$14,400
Material (boxes)	0	$3.10	$0
Broker fees	1	$75.00	$75
Total Harvest			**$14,475**
Overhead Costs			
Assessments (organic fees)	1	$30.00	$30
Office, insurance, sanitation			$100
	Acres		
Land Rent (4)	0.625	$400	$250
Investment cost share (5)			$984
Total Overhead			**$1,364**
Water cost	Ac.Ft.		
Water	2	$300.00	$600
Total Cost			**$25,287**

Income	Low	High	Average
Yield per acre in boxes	50%	50%	
Number of Flats	1,700	3,000	
Income per box	$9.00	$14.00	
Total Income	$15,300	$42,000	**$28,650**

Net Income	**$3,363**

Per Knott's Handbook for Vegetable Growers: Per ac. yields Nationwide

	Pounds	Carton (a)
Average	17,000	1,889
Good	25,000	2,778

(a) Carton weight in pounds 9

APPENDIX B-2: Wine Grapes - Income/Costs Analysis

Costs: per Acre	Year 1	Year 2	Year 3	Year 4	Year 5 on
Cultural Costs					
Prune/train vines: chop/weed /cultiv	$486	$735	$897	$733	$733
Mildew Insect fertilize wire remove	$90	$251	$276	$282	$282
Pickup truck	$180	$180	$180	$180	$180
Harvest					
Yield per acre (In tons)	0.0	0.0	1.5	3.5	6.0
Cost of harvest @$150 ton	$0	$0	$225	$525	$900
Overhead					
Office/insurance/consultants/repair	$700	$700	$750	$800	$800
Depreciation & interest (1)	$1,586	$1,586	$1,586	$1,586	$1,586
Land cost (6% interest on $15,000)	$900	$900	$900	$900	$900
Water: 1.17 Ac.ft /year @ $300	$351	$351	$351	$351	$351
Interest on startup costs (2)					$693
Annual Cost	$4,293	$4,703	$5,165	$5,357	**$5,732**
Income					
Yield per acre in tons	0.0	0.0	1.2	3.5	4.0
Price per ton (3)			$2,000	$2,040	$2,000
Total Income @$1,600/ton			$2,400	$7,140	**$8,000**
Net Income after costs					**$2,268**

(1) Interest and Depreciation Schedule

	Total (40 ac.)	Per Acre	< - Depreciation Period	- > Cost	Interest @6%
Building	$20,000	$500	20	$25	$30
Land Level/terrace/tile	$32,000	$800	10	$80	$48
Irrigation system	$80,000	$2,000	10	$200	$120
Tools/ATV/equipment	$40,000	$1,000	5	$200	$60
Clearing ripping	$24,000	$600	20	$30	$36
Hardware	$12,000	$300	4	$75	$18
Plants vines	$96,000	$2,400	20	$120	$144
Trellis install	$100,000	$2,500	10	$250	$150
Total				$980	$606
Total: Depreciation plus Interest/acre					$1,586

(2) Cumulative net cost at year 4, @ 6% Interest

	Year 1	Year 2	Year 3	Year 4
Cost	$4,293	$4,703	$5,165	$5,357
Income	$0	$0	$2,400	$7,140
Cost at year e	$4,293	$4,703	$2,765	($1,783)
Cumulative c	$4,293	$9,254	$12,574	$11,545
Add 6% Inter	$258	$555	$754	**$693**
Cumulative c	$4,551	$9,809	$13,328	

(3) Income from wine grapes

	2001	2000
Total Co inco	$465,938	235104
County produ	228.4	116.5
price paid per	$2,040	$2,018

Appendix C-1: Agriculture Share of County Property Tax Revenue

	TRA Average (1)	Fund Share (2)	Net to Fund	Ag Prop Tax
County General	28.28%	66.16%	18.71%	**$2,365,451**
County Library	3.51%	72.65%	2.55%	**$322,467**
Marin Open Space	1.11%	90.04%	1.00%	**$126,358**
Fire/ PUD	15.19%	87.61%	13.31%	**$1,682,188**
Residual (Educ/Other)	51.91%		64.43%	**$8,145,014**
Total	100.00%		100.00%	**$12,641,479**

(1) Sample of unincorporated Tax Rate Areas distribution of fund revenue factors:

			< - -	Tax Rate Area Sample		- - - - >
Description	Fund #	Average	94010	56011	60020	76003
County General	101002	0.282812	0.271846	0.280363	0.254682	0.324357
County Library	101158	0.035111	0.033749	0.034807	0.031619	0.040269
Marin Open Space	105010	0.011101	0.010670	0.011004	0.009996	0.012732
Fire/ PUD	NA	0.151890	0.191429	0.086408	0.154999	0.174725

(2) Total County ERAFT (Educ.) tax shift

	Gross Tax	To ERAFT	Net to Fund	Fund Ratio
County General	$97,371,337	$32,947,051	$64,424,286	66.16%
County Library	$5,605,298	$1,532,945	$4,072,353	72.65%
Marin Open Space	$3,825,566	$380,868	$3,444,698	90.04%
Fire/ PUD	$215,100	$26,654	$188,446	87.61%

Appendix C-2: County Budget Analysis (2001-02)

		County Wide	Unincorp	Total
Revenues				
	Population related	$180,084,068	NA	$180,084,068
	Other (1)	$102,642,310	NA	$102,642,310
	Agriculture		$279,404	$279,404
	Total	$282,726,378	$279,404	$283,005,782
	Per Person Revenue (2)	**$720.62**		**$720.62**
Costs				
	Population related	$218,140,224	$5,549,545	$223,689,769
	Other (1)	$46,152,835	$3,699,697	$49,852,532
	Agriculture	$0	$196,942	$196,942
	Total	$264,293,059	$9,446,184	$273,739,243
	Per Person Cost (2)	**$872.91**	**$80.54**	**$953.45**
Net	Population related	($38,056,156)	($5,549,545)	($43,605,701)
	Per Person	**($152.29)**	**($80.54)**	**($232.83)**

(1) Includes land related budget items such as property tax - See Appendix Detail below

(2) County Wide Population	249,900
Unincorporated Population	68,900

Appendix C: Detail County Budget Analysis - P. 1

		< - - Allocation % - - - >				< - - - Allocation Amount - - - >				
Revenues	2001-2	Pop	Other	bcpop	Ag	Pop related	Other	Mixcpop / other	Ag	Total
Taxes	Budget	related		/other						
Property tax Secured	$55,681,248		100%			$0	$55,681,248	$0	$0	$55,681,248
Property tax Unsecured	$2,067,845		100%			$0	$2,067,845	$0	$0	$2,067,845
Property Tr. Tax	$2,650,328		100%			$0	$2,650,328	$0	$0	$2,650,328
Other Property Tax	$8,798,542		100%			$0	$8,798,542	$0	$0	$8,798,542
Aviation Tax	$122,505	100%				$122,505	$0	$0	$0	$122,505
Sales Tax	$3,149,769		0%	100%		$0	$0	$3,149,769	$0	$3,149,769
Transient Occ Tax	$1,538,240	50%	50%			$769,120	$769,120	$0	$0	$1,538,240
Supplemental Assessment	$5,718,688			100%		$0	$0	$5,718,688	$0	$5,718,688
Total Tax	**$79,727,165**					$891,625	$69,967,083	$8,868,457	$0	**$79,727,165**
Licenses, Permits & Franchises										
Franchises	$437,346			100%		$0	$0	$437,346	$0	$437,346
EC Solid Waste	$287,436		100%			$0	$287,436	$0	$0	$287,436
EC Small Wells	$72,275		100%			$0	$72,275	$0	$0	$72,275
EC SM Public	$30,565		100%			$0	$30,565	$0	$0	$30,565
Food Plan Ck	$41,214	100%				$41,214	$0	$0	$0	$41,214
Pool plan Ck	$5,008		100%			$0	$5,008	$0	$0	$5,008
Permit Fees	$11,485			100%		$0	$0	$11,485	$0	$11,485
Dog Lic	$160,316	100%				$160,316	$0	$0	$0	$160,316
Weights & Measure Fee	$39,283		100%			$0	$39,283	$0	$0	$39,283
Pesticide Lic	$4,290		100%			$0	$4,290	$0	$0	$4,290
Business Lic Fee	$840,760		100%			$0	$840,760	$0	$0	$840,760
Business Lic Resid (cable e	$543,158		100%			$0	$543,158	$0	$0	$543,158
Food Permits	$711,764		100%			$0	$711,764	$0	$0	$711,764
Housing Permits	$232,177		100%			$0	$232,177	$0	$0	$232,177
Pump truck permits	$18,571		100%			$0	$18,571	$0	$0	$18,571
Public Pool permit	$141,921		100%			$0	$141,921	$0	$0	$141,921
Septic tank permit	$385,705		100%			$0	$385,705	$0	$0	$385,705
Underground Storage	$317,286		100%			$0	$317,286	$0	$0	$317,286
Building plan Ck review	$813,672		100%			$0	$813,672	$0	$0	$813,672
Const Permit	$1,546,890		100%			$0	$1,546,890	$0	$0	$1,546,890
Road permit	$59,070		100%			$0	$59,070	$0	$0	$59,070
Total	**$6,700,192**					$201,530	$6,049,831	$448,831	$0	$6,700,192
Fines Forfeitures & Penalties										
Court costs p9	$3,389,593	100%				$3,389,593	$0	$0	$0	$3,389,593
Court costs p10	$1,817,147	100%				$1,817,147	$0	$0	$0	$1,817,147
Total	**$5,206,740**					$5,206,740	$0	$0	$0	$5,206,740
Use of Money/property										
Interest Income	$9,763,849			100%		$0	$0	$9,763,849	$0	$9,763,849
Rental Income	$2,076,567			100%		$0	$0	$2,076,567	$0	$2,076,567
Total	**$11,840,416**					$0	$0	$11,840,416	$0	$11,840,416
Other governments										
State - Ag pest	$71,722				100%	$0	$0	$0	$71,722	$71,722
Ag Gas Tax	$201,082				100%	$0	$0	$0	$201,082	$201,082
Welfare	$23,482,830	100%				$23,482,830	$0	$0	$0	$23,482,830
Abandoned Vehicle	$85,894	100%				$85,894	$0	$0	$0	$85,894
Veh Realign	$9,146,750	100%				$9,146,750	$0	$0	$0	$9,146,750
Highway user tx	$3,090,000	100%				$3,090,000	$0	$0	$0	$3,090,000
Bus Lic Tx Highway car	$1,342,000	100%				$1,342,000	$0	$0	$0	$1,342,000
Motor Veh in Lieu Tax	$14,807,915	100%				$14,807,915	$0	$0	$0	$14,807,915
State Human aid p13	$5,123,108	100%				$5,123,108	$0	$0	$0	$5,123,108
State Human aid p14	$5,603,816	100%				$5,603,816	$0	$0	$0	$5,603,816
State Human aid p15	$3,950,717	100%				$3,950,717	$0	$0	$0	$3,950,717
State Human aid p16	$1,303,268	100%				$1,303,268	$0	$0	$0	$1,303,268
AID for Agriculture	$6,600				100%	$0	$0	$0	$6,600	$6,600
Weights and Measure	$4,749	100%				$4,749	$0	$0	$0	$4,749
State Human aid p17	$10,156,393	100%				$10,156,393	$0	$0	$0	$10,156,393
State Human aid p18	$4,868,610	100%				$4,868,610	$0	$0	$0	$4,868,610
Federal Human aid p19	$3,638,257	100%				$3,638,257	$0	$0	$0	$3,638,257
Federal Human aid p20	$7,578,806	100%				$7,578,806	$0	$0	$0	$7,578,806
Fed/State Human p 21	$5,971,903	100%				$5,971,903	$0	$0	$0	$5,971,903
Sales Tax State	$20,397,621			100%		$0	$0	$20,397,621	$0	$20,397,621
Federal Human aid p22	$10,728,963	100%				$10,728,963	$0	$0	$0	$10,728,963
Fed/State Human p 23	$6,359,356	100%				$6,359,356	$0	$0	$0	$6,359,356
Fed/State Human p 24	$1,308,869	100%				$1,308,869	$0	$0	$0	$1,308,869
Total	**$139,229,229**					$118,552,204	$0	$20,397,621	$279,404	$139,229,229

Appendix C - Detail P. 2		< - - Allocation % - - - >				< - - - Allocation Amount			- - - >	
Revenues	2001-2 Budget	Pop related	Other	bcpop /other	Ag	Pop related	Other	Mix:pop / other	Ag	Total
Charges for Service										
Audit Accounting fees	$142,156			100%		$0	$0	$142,156	$0	$142,156
Property Tax Administration	$1,127,034		100%			$0	$1,127,034	$0	$0	$1,127,034
Human service fees p24	$2,293,283	100%				$2,293,283	$0	$0	$0	$2,293,283
Planning Eng. Fees	$1,302,830		100%			$0	$1,302,830	$0	$0	$1,302,830
Election services	$576,008	100%				$576,008	$0	$0	$0	$576,008
Probation	$4,039	100%				$4,039	$0	$0	$0	$4,039
Estate fees	$344,402		100%			$0	$344,402	$0	$0	$344,402
Court fees p.26	$821,696	100%				$821,696	$0	$0	$0	$821,696
Legal/medical fees p.27	$2,800,478	100%				$2,800,478	$0	$0	$0	$2,800,478
Legal/medical fees p.28	$2,841,271	100%				$2,841,271	$0	$0	$0	$2,841,271
Library fees	$226,925	100%				$226,925	$0	$0	$0	$226,925
Park Fees	$120,161	100%				$120,161	$0	$0	$0	$120,161
Total	**$12,600,283**					$9,683,861	$2,774,266	$142,156	$0	$12,600,283
Other revenues										
People related park fees p2	$313,444	100%				$313,444	$0	$0	$0	$313,444
Park fees p30-31	$886,253	100%				$886,253	$0	$0	$0	$886,253
People fees p30-31	$796,025	100%				$796,025	$0	$0	$0	$796,025
Mix property/people p30-31	$1,763,386			100%		$0	$0	$1,763,386	$0	$1,763,386
Property fees p32-33	$941,980		100%			$0	$941,980	$0	$0	$941,980
People fees p32-33	$3,069,408	100%				$3,069,408	$0	$0	$0	$3,069,408
Mix property/people p32-33	$18,708,849			100%		$0	$0	$18,708,849	$0	$18,708,849
Property fees p34	$4,560		100%			$0	$4,560	$0	$0	$4,560
People fees p34	$297,291	100%				$297,291	$0	$0	$0	$297,291
Mix property/people p34	$920,561			100%		$0	$0	$920,561	$0	$920,561
Total	**$27,701,757**					$5,362,421	$946,540	$21,392,796	$0	$27,701,757
Total All Revenues	**$283,005,782**					$139,898,381	$79,737,720	$63,090,277	$279,404	$283,005,782
Ratio Pop / Other					100%	63.7%	36.3%			
Mix allocated to Pop / Other						$40,185,687	$22,904,590	$63,090,277		
Total with Mix added						**$180,084,068**	**$102,642,310**		**$279,404**	$283,005,782

Appendix C - Detail P. 3

Costs	2001-2 Budget	Allocation % Pop related	Other	bcpop /other	Ag	Allocation Amount Pop related	Other	Mbcpop / other	Ag	Total
General Government										
Legislative	$3,861,551			100%		$0	$0	$3,861,551	$0	$3,861,551
Auditor-controller Tres, retir	$4,941,079			100%		$0	$0	$4,941,079	$0	$4,941,079
Assessor-Recorders	$4,851,960		100%			$0	$4,851,960	$0	$0	$4,851,960
County Councel	$2,412,926	100%				$2,412,926	$0	$0	$0	$2,412,926
Human Resource	$2,476,583	100%				$2,476,583	$0	$0	$0	$2,476,583
Elections	$1,762,780	100%				$1,762,780	$0	$0	$0	$1,762,780
Communications Sherrif	$3,533,268	100%				$3,533,268	$0	$0	$0	$3,533,268
Communication - other	$2,571,314			100%		$0	$0	$2,571,314	$0	$2,571,314
Property Mgnt	$4,225,371		100%			$0	$4,225,371	$0	$0	$4,225,371
Plant Acq. County	$16,868,919			100%		$0	$0	$16,868,919	$0	$16,868,919
Plant Acq. Parks	$511,155	100%				$511,155	$0	$0	$0	$511,155
Promotion	$30,000	100%				$30,000	$0	$0	$0	$30,000
Other General	$21,667,775			100%		$0	$0	$21,667,775	$0	$21,667,775
Public Protection						$0	$0	$0	$0	
Judicial	$20,227,272	100%				$20,227,272	$0	$0	$0	$20,227,272
Sheriff Admin	$2,081,248	60%	40%			$1,248,749	$832,499	$0	$0	$2,081,248
Unincorporated Patrol	$9,249,242	60%	40%			$5,549,545	$3,699,697	$0	$0	$9,249,242
Investigagation	$1,514,866	100%				$1,514,866	$0	$0	$0	$1,514,866
Civil and Court	$3,357,783	100%				$3,357,783	$0	$0	$0	$3,357,783
Major Crimes	$1,116,627	100%				$1,116,627	$0	$0	$0	$1,116,627
Vehicle	$172,798	100%				$172,798	$0	$0	$0	$172,798
Other Sheriff	$546,643			100%		$0	$0	$546,643	$0	$546,643
Detention and Correction						$0	$0	$0	$0	
All	$19,037,082	100%				$19,037,082	$0	$0	$0	$19,037,082
Fire Protection										
All	$13,048,318		100%			$0	$13,048,318	$0	$0	$13,048,318
Protective Inspection										
Engineering etc.	$2,912,944		100%			$0	$2,912,944	$0	$0	$2,912,944
Other Protection										
Land planning	$6,351,175		100%			$0	$6,351,175	$0	$0	$6,351,175
People services	$2,971,743	100%				$2,971,743	$0	$0	$0	$2,971,743
Detention correction Grants	$1,590,364	100%				$1,590,364	$0	$0	$0	$1,590,364
Public Ways (roads)										
Roads	$9,989,868	50%	50%			$4,994,934	$4,994,934	$0	$0	$9,989,868
Airport	$603,321	100%				$603,321	$0	$0	$0	$603,321
Planning	$124,405		100%			$0	$124,405	$0	$0	$124,405
Health and Sanitation						$0	$0	$0	$0	
Health services	$21,821,814	100%				$21,821,814	$0	$0	$0	$21,821,814
Health 2	$26,704,641	100%				$26,704,641	$0	$0	$0	$26,704,641
Hospital	$426,057	100%				$426,057	$0	$0	$0	$426,057
Health programs	$5,148,512	100%				$5,148,512	$0	$0	$0	$5,148,512
Rural Programs	$4,009,971	100%				$4,009,971	$0	$0	$0	$4,009,971
Public Assistance										
Administration	$21,376,594	100%				$21,376,594	$0	$0	$0	$21,376,594
Juvinal Court	$34,003	100%				$34,003	$0	$0	$0	$34,003
Various services	$3,052,944	100%				$3,052,944	$0	$0	$0	$3,052,944
Veterans Services	$75,653	100%				$75,653	$0	$0	$0	$75,653
Public assistance programs	$13,762,932	100%				$13,762,932	$0	$0	$0	$13,762,932
Library Service	$7,007,115	100%				$7,007,115	$0	$0	$0	$7,007,115
Agricultural Ed										
Coop Extension	$196,942				100%	$0	$0	$0	$196,942	$196,942
Recreation and Culture										
Parks	$3,052,932	100%				$3,052,932	$0	$0	$0	$3,052,932
Veterans services	$2,458,753	100%				$2,458,753	$0	$0	$0	$2,458,753
Total Costs	$273,739,243					$182,043,717	$41,041,303	$50,457,281	$196,942	$273,739,243
Less Unincorporated County only						$5,549,545	$3,699,697			
Total County Wide Costs						$176,494,172	$37,341,606			$213,835,778
Percentage between Population and Land						82.5%	17.5%			100.0%
Add in Mix of Both 'Costs'						$41,646,052	$8,811,229	$50,457,281		$50,457,281
Total with Mix added						$218,140,224	$46,152,835			$264,293,059

APPENDIX D-1: Contact List

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Al Sokolow, Public Policy Specialist, Cooperative Extension
Joan C. Thayer, Marin County Assessor-Recorder
Warren Weber, Organic vegetable grower

APPENDIX D-2: Bibliography

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