Summary of Monterey County Policies Relating to Anadromous Fish Habitat Conservation

Excerpted from the study: Effects of County Land Use Policies and Management Practices on Anadromous Salmonids and Their Habitat

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A list of activities considered to have potential impacts on fish and fish habitat was developed through the work of the County Planning Teams and the FishNet 4C Program Director. These activities are either conducted by county departments directly, or are regulated by the county with a county agency serving as the Lead Agency under the California Environmental Quality Act (CEQA). The identified activities were then categorized by the potential impacts they may have on anadromous salmonids and their habitat. This categorization is based upon Spence et. al. (1996). (See TABLE-1)

TABLE-1, Impact Categories for Identified Activities

Potential Impact to Anadromous Salmonids	County or County Regulated Activity
A. Streamflow Quantity Modifications	Road surfacing (impervious surfaces)
	Domestic water use
	Storm drainage
	Retention basins/overflow channels
	Road watering
B. Riparian Clearing	Floodplain clearing
	Channel clearing
	Levee construction
	Channel construction
	Site clearing
	Roadside brushing
C. Sedimentation	Grading/excavation/filling/
	Culvert installation
	Bridge construction
	Emergency grading
	Culvert clearance/repair
	Bridge repair
	Road regrading/resurfacing
	Channel clearing
	Levee repair
	Landslide removal
D. Instream Habitat Modification (physical)	Erosion control and channel armoring
	Channel clearing
	Retention basins/overflow channels
	Channel structure installation
E. Water Quality Impairment (thermal, biological or	Site clearing

Potential Impact to Anadromous Salmonids	County or County Regulated Activity
chemical)	Channel structure installation
	Channel clearing
	Floodplain clearing
	Herbicide spraying
	Storm drainage
	Waste water discharge
	Domestic animals
F. Migration Barriers	Channel structure installation
	Retention basins/overflow channels
	Channel construction
	Culvert installation

This list of activities and impacts was the basis for the policy analysis. All Monterey County general plan elements and ordinances which regulate these activities were analyzed (See TABLE-2). Policies which help avoid or mitigate impacts were identified, as were areas in which formal policies were missing. The specific policies along with relevant sections are presented in a series of tables at the end of this document. Highlights of the review are discussed below, by area of impact.

TABLE-2: General Plan Elements and Ordinances Reviewed

General Plan Elements	Ordinances
Natural resources, Chapter I	Grading, Chapter 16.08
Environmental constraints, Chapter II	Erosion control, Chapter 16.12
Human resources, Chapter III	Floodplain regulations, Chapter 16.16
Area development, Chapter IV	Preservation of Oak and Protected Trees, Chapter 16.60
Countywide land use, Chapter V	Pajaro River banks & levees, Chapter 16.65
Carmel Local Coastal Plan	Subdivision, Title 19
Carmel Area Plan	Zoning, Title 21
North County Area Plan	
South County Area Plan	
Greater Monterey Peninsula Area Plan	
Toro Area Plan	
Chachagua Area Plan	
Central Salinas Valley Area Plan	
Carmel Valley Master Plan	

Summary of Conclusions

Guiding principles for land use are found in Monterey County's General Plan with additional localized priorities contained in eight area plans which cover the entirety of the county. These guidelines are then implemented through ordinances which apply county wide. To comply with California's Coastal Protection Act, Monterey, like all county governments in California has adopted Coastal Plans and Coastal Zoning Ordinances, which require fairly comprehensive protections for salmonid habitat. There has been no similar state requirement for salmonid habitat conservation beyond the Coastal Zone. Only one of the four LCPs, for Carmel, was reviewed here.

There are a number of policies in place in Monterey County that protect fish habitat. These protections are most comprehensive in the coastal zone where strict development standards protect salmonid streams with riparian buffers. Coastal zone rules restrict floodplain development, channel modification, modification of streamflow quantity through water withdrawals, and they also strictly control grading.

Although there are no specific measures aimed at preserving fish habitat in non-coastal areas, measures in place to protect wildlife habitat in general, promote storm water retention, impose development setbacks from floodplains, and to control winter and agricultural grading and development on steep slopes play an important role in fishery protection in Monterey County.

However, a number of potential gaps in the protection of fish habitat were identified by this analysis. These are summarized below. The most important gaps identified are the lack of mandatory riparian buffers in non-coastal areas of the county, lack of standards for county sponsored stream channel and road maintenance practices, and the lack of consideration of fish passage in county transportation activities.

IDENTIFIED AND POTENTIAL POLICY GAPS SUMMARIZED:

G. Wildlife Habitat

- The extent to which designated sensitive habitat overlaps with critical salmonid habitat is unknown since mapping of salmonid locations is not available to county staff.
- No performance criteria or development standards for sensitive habitat buffer areas are established.

A. Streamflow Quantity Modification

- Monterey County's plans and ordinances do not address maintenance of adequate stream flow for fish, outside of the Coastal Zone.

B. Riparian Vegetation

- Riparian buffers are designated in the Coastal Zone only and not the county as a whole.
- Despite development setbacks from rivers designated in plans and ordinances, floodplain development which does not reduce the existing flood capacity still occurs.

Floodplain Management

- Although development setbacks from rivers are designated county wide by the zoning ordinance, developments which produce no net fill are still permitted.

C. Sedimentation

- No policies to address disposal of spoils, stream crossings, culvert diversion potential, and slope repair were found.
- No program for road reconstruction, decommissioning, and maintenance to minimize sedimentation and runoff impacts, was identified.

D. Channel Modification and Maintenance

- It is not known to what extent private and public bank stability structure permits (river work permits) require environmental review or analysis of cumulative effects on fish habitat.
- No county standards for channel maintenance done by public agencies were found. The extent to which river management plans have been developed is not known.

E. Water Quality

- Few specific measures for maintenance of water quality were found in Monterey County plans and ordinances.
- No performance standards for county use of herbicides or pesticides was found.

F. Migration Barriers

- No written county policies or action plans to mitigate fish migration barriers due to county maintained crossings were identified.
- No written policies requiring review of fish migration impacts due to emergency replacement of county crossings were identified.

G. Wildlife Habitat

Fish habitat in Monterey County is protected by the same means as other sensitive wildlife habitat, through analysis during the CEQA environmental review process. As in many other counties of California, protections of sensitive habitat are most rigorous in the coastal zone. In this zone, Sensitive Habitat is to be protected from development, including vegetation removal, excavation, grading, filling, road constructions and uses are limited to education, research, hunting, fishing and aquaculture (Carmel LCP - 2.3.3). Land use adjacent to these habitats must be compatible in use and density with habitat needs. Private or public development proposals in sensitive habitats must be surveyed by qualified biologists and must restrict disturbance and removal of vegetation to that needed for the structure.

For non-coastal areas, the General Plan requires careful planning near areas with limited plant communities, areas with particular value for wildlife, and areas with high value for fish and wildlife reproduction (7.1, 9.1). Areas of Special Biological Importance require careful land use and waste discharge to protect water quality (11.1). The Greater Monterey Peninsula Area Plan is the only one to define specific habitat areas for special protection, including redwood forest habitat and chaparral habitat (7.1).

General plan habitat guidelines are implemented through the Monterey County Zoning Ordinance. The zoning ordinance establishes a requirement for biological survey for all proposed development within a known sensitive habitat or within 100 feet of the habitat. Development within the habitat or the 100-foot buffer, including vegetation removal, excavation, grading, filling, and road construction is prohibited except for resource dependent uses. Only development with adequate mitigations or no significant or cumulative impacts to long-term maintenance of habitat may occur (21.66.020).

Planning staff report that discretionary and ministerial projects are checked for proximity to sensitive habitat. However, the county does not have a database which shows current fish habitat locations and is available on GIS.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- The extent to which designated sensitive habitat overlaps with critical salmonid habitat is unknown since comprehensive mapping of salmonid locations is not available to county staff.
- No performance criteria or development standards for sensitive habitat buffer areas are established.

A. Streamflow Quantity Modification

Streamflow quantity can be affected through withdrawals of water for domestic use and through increases in accumulated run off from surfaces hardened by development. Counties do not directly regulate water withdrawals, but they are responsible for regulation of drainage from developments.

Instream Flow Withdrawals: All of the counties acknowledge water supply as an issue in development and mandate water conservation and planning for the long term water needs of county residents. However, only coastal zone policies require counties to determine and plan for instream flows adequate to protect fish habitat. Monterey County does not require development projects to demonstrate that they will not reduce the availability of stream water for fish, except in the Coastal Zone.

The General Plan focuses its concerns on groundwater management. It requires land users to maintain groundwater recharge in vital water resource areas (5.1) and directs the county to manage increased uses of groundwater carefully, especially in areas known to be overdrafted (6.1). The North County plan calls for development and implementation of a groundwater management plan to promote recharge (5.1, 6.1). The Chachagua Area Plan also directs the county to work with appropriate agencies to develop a water supply system sufficient to allow fish migration to all portions of the Carmel and Arroyo Seco Rivers throughout the year (9.2.5).

Stormwater Retention: Development projects typically create hardened surfaces which change hydrologic regimes, affecting the magnitude and timing of stream flow. To minimize these development related impacts, many counties' policies prohibit changes in pre-development runoff rates. However, at the plan level, only Monterey's North County Area Plan directs that runoff rates be maintained at pre-development levels using detention ponds which are maintained by homeowners associations or community services districts (16.2). The South Area Plan and Central Salinas Valley Plan require increased storm water runoff from urban development to be controlled to mitigate impacts on agricultural lands downstream (16.2). In addition, the Carmel Valley Master Plan encourages development of on-site storm water retention and infiltration basins in groundwater recharge area (3.1).

Stormwater retention measures, to be applied county-wide, are specified at the ordinance level. The Erosion Control Ordinance requires that all runoff from a 10-year storm be retained on site

unless soil conditions make this infeasible, at which point runoff must be carried to the nearest drainage course using energy dissipaters. Detention is required for soils with permeability greater than 2 inches per hour using infiltration basins, percolation pits, or trenches. Where percolation is not feasible, all runoff must be detained or dispersed so that the rate does not exceed the predevelopment level (16.12.070). The Subdivision Ordinance also sets standards for development and authorizes requirement of detention ponds, drainage swales, and check dams to reduce peak storm flow (19.10.050).

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Monterey County's plans and ordinances do not address maintenance of adequate stream flow for fish, outside of the Coastal Zone.
- The General Plan does not prioritize maintenance of predevelopment runoff patterns, and language is uneven across the various area plans. However, implementation of retention requirements county-wide through the erosion control and subdivision ordinances may serve this function.

B. Riparian Vegetation

Coastal zone: Monterey County protects riparian vegetation in its Coastal Zone as required by the State Coastal Zone Protection Act. The Carmel Local Coastal Plan includes riparian corridors in its definition of sensitive habitat (2.3.3) and establishes riparian buffers of 150' on perennial streams and 50' on intermittent streams. New development, including structural flood control projects, is not allowed within this buffer. This plan recommends that the county adopt a riparian corridor ordinance (2.3.5.1). However, this has not been done.

Non-coastal zone: Monterey County has no riparian buffer requirements applied consistently to non-coastal areas. The General Plan requires all modifications of riparian vegetation for flood control purposes to conform with an approved river management plan (16.2.9). The North and South County Area plans require that new development be prohibited within any perennial or intermittent streams and not be allowed to disturb natural banks and vegetation (16.2.1). The Greater Salinas Area plan directs that riparian corridors be preserved but does not define these (7.1.4). The Chachagua Area Plan directs that development be sited to protect riparian vegetation on the Carmel and Arroyo Seco Rivers (9.1.3). The County's Zoning Ordinance prohibits thinning or removal of riparian vegetation within 200 feet of the Carmel River without a use permit (21.64.130).

Some riparian vegetation may occasionally be protected by tree protection provisions in the Zoning Ordinance which contains provisions requiring a permit for removal of protected native trees (including cottonwood and willow) greater than six inches in diameter at two feet above the ground in the Chachagua Area. To grant a permit, the tree must be deceased, injured, in danger of falling, or likely to spread insects or disease. Removal of not more than three projected trees per lot may be approved per year with a use permit (21.64).

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Riparian buffers are designated in the Coastal Zone only and not the county as a whole. Some additional protection may be accorded to vegetation along some rivers by area plans, but these are not consistent and have no accompanying implementation ordinance.

Floodplain Management

Riparian areas are by definition, a portion of the stream's floodplain. Some floodplain management policies may serve to protect riparian and stream functioning when they prohibit structures from the floodplain. Once structures are built on a floodplain, measures to prevent flooding such as installation of levees, clearing of riparian vegetation, or hardening of channel banks, often follow, all of which impact fish habitat.

Monterey County manages the floodplain based on federal policy which seeks to minimize damage to property and people from flooding. The floodplain area is divided into two major sections, the floodway or primary floodplain and the flood zone, or secondary floodplain. The floodway is defined as the stream channel and immediately adjacent lands (i.e., bankfull). The floodzone is the area prone to flooding during the 100-year flood as defined by the Flood Insurance Rate Map (FIRM) delineated by the Federal Emergency Management Agency (FEMA).

The General Plan prohibits all new discretionary development including filling, grading, and construction within 200' of riverbanks or within the 100-year floodway (16.2.3). Development within the 100-year floodplain requires an assessment of the contribution of the project to the existing flood hazard. The Greater Salinas Area Plan directs that agriculture and open space are priority land uses within the flood plain (16.2.3) and directs that the 100-year flood plain of Gabilan Creek be kept free from urban encroachment (51.2.4.1). The Central Salinas Valley Area Plan directs that the Arroyo Seco and Salinas Rivers be free from encroachment by development because of their riparian habitat, and ground water recharge and flood flow capacities (5.1.2.3). The South County Area Plan contains these same provisions for the Naciemento, San Antonio, and Salinas rivers (5.1.2.3). The Chachagua Area Plan requires a set back of development of at least 20 feet from the top of the bank of any tributary. The Carmel Valley Master Plan requires a permit for development within 200 feet of the Carmel River bank or 30 feet from any tributary bank (16.2.3).

The County's Floodplain Regulations (16.16) implements the setback requirements of 200' from river banks and 50' from watercourses and prohibits encroachment except for agriculture unless the new development will not reduce the existing flood capacity, affect other properties, or cause erosion hazards (16.16.050).

The Zoning Ordinance also implements development setbacks 200 feet from the floodway or riparian corridor within the Carmel Valley floodplain and requires a use permit in this area. Lots of record whose development would be in conflict with this may be developed for single family residential purposes with a use permit (21.64.130).

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Development setbacks from rivers are designated by some area plans, and implemented county wide by the zoning ordinance. However this ordinance allows floodplain development if it does not reduce the existing flood capacity, which means that developments which produce no net fill may be permitted. Monterey County estimates that at least 50 development projects have occurred in floodplains over the past decade.

C. Sedimentation

Monterey County is experiencing growth pressures on currently undeveloped land. Population in unincorporated Monterey County grew 13% in the last decade to reach 106,000 people. Another 8,000 residents are projected to be added by 2010. Subdivision processing in Monterey County has ranged from 15-32 over the past five years. Housing starts have averaged about 300 per year over the past three years.

Land development and construction activities may release sediment into anadromous fish streams unless adequately controlled. Policies that address grading and development on steep slopes serve to avoid or reduce these impacts. In addition to development, work such as road maintenance and agricultural cultivation routinely disturb soil. Policies that regulate these activities also avoid sedimentation impacts.

Grading: The County's General Plan requires erosion control procedures to be established and enforced for all private and public construction and grading projects (3.1.1) and directs that land use practices which could result in siltation and pollution of waters be carefully managed to assure productive habitat (9.2.1). Grading permits with an approved site plan which minimizes grading are required (15.1.12). The Grading Ordinance specifies that grading permits are required for movement of 100 cubic yards of material or more except for agriculture. Permits are to be denied if grading is liable to result in siltation of any water way. Performance bonds may be required to assure work is done in accordance with the grading plan. Design standards including revegetation within 30 days and use of erosion control methods are also specified (16.08).

The Erosion Control Ordinance requires an approved erosion control plan prior to permit issuance for building, grading or land clearing which specifies provisions for runoff control, land clearing, and winter operations. A land clearing permit is required for clearing of over two acres per year per site, or over one acre in water supply watersheds or high erosion hazard areas (16.12).

Winter Grading: Of all the plans, only the Carmel Valley Master Plan makes mention of specific measures required during winter grading. It requires the amount of land cleared and open at one time to be minimized and all exposed areas to be protected by mulching during the rainy season (3.1.1.3). However, the County's Erosion Control Ordinance implements these and other measures countywide. It prohibits land clearing of over 1 acre per year per site or grading of over 100 cubic yards between October 15th to April 15th in water supply watersheds, and high erosion areas unless authorized by the Building Inspector. When operations do take place,

disturbed surfaces must be protected, roads and driveways must have drainage facilities and erosion proof surfacing, and runoff must be detained or filtered by berms, vegetated filter strips and or catch basins. Controls must be maintained throughout the life of the project and in place at the end of each day's work (16.12.090).

Development on Steep Slopes: Development on steep slopes carries increased potential for soil erosion and subsequent stream sedimentation. Monterey's General Plan requires special erosion control and construction techniques for lands with slope above 30% (3.2.2) and designates density formulas by slope class (3.2.4). The Area Development Chapter prohibits development on slopes above 30% and requires dedication of these areas as scenic easements (26.1.10). Each of the Area Plans and the Carmel Valley Master plan also establishes residential densities of one site per acre for slopes below 20 percent and one site per two acres between 20 and 30 percent. The Carmel Valley Master Plan prohibits roads from crossing slopes over 30% (39.2).

Monterey's Erosion Control Ordinance reiterates the prohibition of development on slopes over 30 percent (16.12.040). The Subdivision Ordinance prohibits private roads on slopes over 15% (19.10.065). The Zoning Ordinance requires a Use Permit for development on slopes over 30%.

Cultivation: Monterey's North County, Chachagua, and Central Salinas Valley Area Plans prohibit conversion of uncultivated land with slopes over 25 percent to cropland. They also require a use permit for development of new or expanded agricultural operations on uncultivated slopes of 15 to 25 percent. The permit application requires submission of a management plan analyzing erosion potential and control (35.1). This is then implemented through the zoning ordinance (21.66.030).

Road Maintenance: Although Monterey County maintains 144 miles of unsurfaced roads, very little written policy on road maintenance practices was found in the county's plans and ordinances. The General Plan requires removal of side castings from grading of roads unless they can be distributed on site so as not to change the natural landform (17.3.13). Drainage details for private roads and driveways must conform to current engineering practices including erosion control measures (17.3.13). The Carmel Valley Master Plan allows relaxation of road standards in low-density hillside areas if this results in fewer cut and fill slopes and protects biological resources. The Grading Ordinance requires a grading permit for private road construction and conformance to grading provisions (16.08.080).

Monterey County, along with Santa Cruz and San Mateo Counties is currently developing road maintenance BMPs as part of the Water Quality Protection Program for the Monterey Bay National Marine Sanctuary. Implementation steps call for training public works departments on erosion control, establishing BMPs for road maintenance, establishing spoils stockpile areas, and installing sediment retention basins to keep sediment from reaching waterways from roads.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Few policies for mitigation of sediment impacts from county road maintenance were found. Policies address disposal of spoils, stream crossings, culvert diversion potential, and slope repair would help avoid current sedimentation impacts.
- No program for road reconstruction, decommissioning, and maintenance to minimize sedimentation and runoff impacts was identified.

D. Channel Modification and Maintenance

The primary agencies regulating activities in stream channels are the California Department of Fish and Game through the requirement for Streambed Alteration Agreements, and the US Army Corps of Engineer through the Section 404 permitting process. However, county governments do have some jurisdiction over channels through their responsibilities to review permit applications for installation of bank stability structures and through their own channel clearing and maintenance activities.

Bank Stability Structures: An activity of primary concern to the counties is the modification of stream channels by private landowners attempting to reduce bank erosion or flooding on their property. The Carmel Valley Master Plan requires private property owners to preserve the natural state of the Carmel River by maintaining willow cover, not building levees, and not altering the course of the river (7.1.4). Monterey's Erosion Control Ordinance specifies that streams and drainage courses not be disturbed except for approved road crossings (16.12.040). Monterey County's Floodplain Regulations require that any riverbank protection, riparian vegetation trimming or removal, or channel modification activities be undertaken with a river work permit. A maintenance plan for all flood protection measures, such as levees, dikes, dams or reservoirs is required (16.16.040). The Zoning Ordinance allows minor projects with no impact on the river's stability to be exempt if approved by the planning director (21.64.130).

Lagoon Breaching: Monterey County continues to breach the Carmel River sandbars under conditions specified in its 1992 "Interim Plan and Criteria for Emergency Breaching of the Carmel River Mouth". The US Army Corps and Coastal Development permits for this activity have expired and the county is operating under emergency status.

Channel Maintenance: Monterey County maintains about 60 miles of channel and levee to reduce flooding impacts. Monterey County's General Plan requires all modifications of riparian vegetation for flood control purposes to conform to an approved river management plan (16.2.9). Mitigations are established through Memorandums of Understanding or blanket Streambed Alteration Agreements with DFG. Conditions typically imposed include timing of clearing and restrictions on equipment in the stream bottom.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- It is not known to what extent private and public bank stability structure permits (river work permits) require environmental review or analysis of cumulative effects of projects on fish habitat.
- No county standards for channel maintenance done by public agencies were found. The extent to which river management plans have been developed is not known.

E. Water Quality

Water quality is an important component of fish habitat. Several areas of county jurisdiction affect water quality including storm water pollution prevention, use of chemicals, development density, and road maintenance.

Storm Water Pollution Prevention: Although Monterey County has no specific storm water pollution prevention ordinance, some measures are required to reduce water quality degradation. Monterey's General Plan requires parking lots with greater than 20 spaces to include oil, grease, and silt traps to protect water quality (21.2.3). The Chachagua Area Plan requires the county health department to monitor riparian water in creeks and stream in areas of high development for septic system failure, and to impose remediation when problems are found (21.3.1.5).

Chemical Use: Monterey's plans and policies make no mention of herbicide use.

Individual Watershed Management Plans: A number of water quality management plans have been developed for specific watersheds. These include the Pajaro Valley Basin Management Plan, Salinas Valley Water Project, Pajaro River Water Quality Management Plan, Big Sur Protected Waterway Local Coastal Plan, and the Watsonville Sloughs Water Resources Management Plan in Santa Cruz and Monterey counties.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- Few specific measures for maintenance of water quality were found in Monterey County plans and ordinances.
- No performance standards for county use of herbicides or pesticides was found.

F. Migration Barriers

Culverts and bridges over anadromous fish streams may create a barrier to migration of fish when not properly sized or installed. Monterey County maintains at least 173 bridges. Six bridges have been replaced in the last 10 years, and 15 more will be replaced in the next decade. Routine replacement of crossings affecting fish bearing streams is reviewed the Department of Fish and Game through the Streambed Alteration Agreement process.

Very little policy on fish migration barriers was found in Monterey County documents. One exception is the Chachagua Area Plan that directs the county to work with appropriate agencies to develop a water supply system sufficient to allow fish migration to all portions of the Carmel and Arroyo Seco Rivers throughout the year.

IDENTIFIED AND POTENTIAL POLICY GAPS:

- No written county policies or action plans to mitigate fish migration barriers due to county maintained crossings were identified.

- No written policies requiring review of fish migration impacts due to emergency replacement of county crossings were identified.