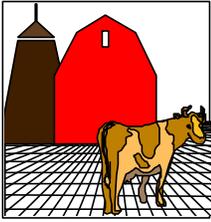


## Agriculture Management Measures



The SWRCB, CCC, and other State agencies have identified seven management measures (MMs) to address agricultural nonpoint sources of pollution that affect State waters. The agricultural MMs include practices and plans installed under various NPS programs in California, including systems of practices commonly

used and recommended by the U.S. Department of Agriculture (USDA) as components of Resource Management Systems (RMS), Water Quality Management Plans and Agricultural Waste Management Systems. These RMSs are planned by individual farmers and ranchers using an objective-driven planning process outlined in the NRCS National Planning Procedures Handbook. The RMSs are designed to achieve sustainable use of the different natural resource areas—Soil, Water, Air, Plants, Animals, and Human considerations.

California's MMs to address agricultural sources of NPS pollution in California:

- 1A. Erosion and Sediment Control
- 1B. Facility Wastewater and Runoff from Confined Animal Facilities
- 1C. Nutrient Management
- 1D. Pesticide Management
- 1E. Grazing Management
- 1F. Irrigation Water Management
- 1G. Education/Outreach

According to the USEPA (1993), agriculture contributes more than half of the pollution entering the Nation's water bodies; recent studies have identified it as the greatest source of water pollution in the United States. The primary agricultural NPS pollutants are nutrients, sediment, animal wastes, pesticides, and salts. Agricultural activities may also affect habitat through physical disturbances caused by livestock or equipment, or through the management of water.

### Management Measures:

**Erosion and Sediment Control.** MM 1A addresses NPS problems associated with soil erosion and sedimentation. Where erosion and sedimentation from agricultural lands affects coastal waters and/or waterbodies listed as impaired by sediment, landowners shall design and install or apply a combination of practices to reduce solids and associated pollutants in runoff during all but the larger storms. Alternatively, landowners may apply the erosion component of an RMS as defined in the NRCS Field Office Technical Guide (FOTG). The NRCS FOTG contains standards and specifications for installing these practices.

**Facility Wastewater and Runoff from Confined Animal Facilities.** Pursuant to MM 1B, facility wastewater and contaminated runoff from confined animal facilities must be contained at all times. Storage facilities should be of adequate capacity to allow for proper waste water use and should be constructed so they prevent seepage to ground water, and stored runoff and accumulated solids from the facility shall be managed through a waste use system that is consistent with MM 1C or removed from the site.

**Nutrient Management.** MM 1C addresses the development and implementation of comprehensive nutrient management plans for areas where nutrient runoff is a problem affecting coastal waters and/or water bodies listed as impaired by nutrients. Such plans would include a plant tissue analysis to

determine crop nutrient needs; crop nutrient budget; identification of the types, amounts, and timing of nutrients necessary to produce a crop based on realistic crop yield expectations; identification of hazards to the site and adjacent environment; soil sampling and tests to determine crop nutrient needs; and proper calibration of nutrient equipment. When manure from confined animal facilities is to be used as a soil amendment and/or is disposed of on land, the plan shall discuss steps to assure that subsequent irrigation of that land does not leach excess nutrients to surface or ground water.

**Pesticide Management.** Implementation of MM 1D is intended to reduce contamination of surface water and ground water from pesticides. Implementation of this measure will primarily occur through cooperation with the Department of Pesticide Regulation as provided in a Management Agency Agreement with the SWRCB. Elements of this measure include development and adoption of reduced risk pest management strategies (including reductions in pesticide use); evaluation of pest, crop, and field factors; use of Integrated Pest Management (IPM); consideration of environmental impacts in choice of pesticides; calibration of equipment; and use of anti-backflow devices. IPM is a key component of pest control. IPM strategies include evaluating pest problems in relation to cropping history and previous pest control measures, and applying pesticides only when an economic benefit will be achieved. When used, pesticides should be selected based on their effectiveness to control target pests and environmental impacts such as their persistence, toxicity, and leaching potential.

**Grazing Management.** MM 1E is intended to protect sensitive areas (including streambanks, lakes, wetlands, estuaries, and riparian zones) by reducing direct loadings of animal wastes and sediment. This may include restricting or rotationally grazing livestock in sensitive areas by providing fencing, livestock stream crossings, and by locating salt, shade, and alternative drinking sources away from sensitive areas. Upland erosion can be reduced by, among other methods: (1) maintaining the land consistent with the California Rangeland Water Quality Management Plan or Bureau of Land Management and Forest Service activity plans or (2) applying the range and pasture components of a Resource Management System (NRCS FOTG). This may include prescribed grazing, seeding, gully erosion control, such as grade stabilization structures and ponds, and other critical area treatment.

**Irrigation Water Management.** MM 1F promotes effective irrigation while reducing pollutant delivery to surface and ground waters. Pursuant to this measure, irrigation water would be applied uniformly based on an accurate measurement of cropwater needs and the volume of irrigation water applied, considering limitations raised by such issues as water rights, pollutant concentrations, water delivery restrictions, salt control, wetland, water supply and frost/freeze temperature management. Additional precautions would apply when chemicals are applied through irrigation.

**Education/Outreach.** The goals of MM 1G are to implement pollution prevention and education programs to reduce NPS pollutants generated from the following activities where applicable:

- a. Activities that cause erosion and loss of sediment on agricultural land and land that is converted from other land uses to agricultural land;
- b. Activities that cause discharge from confined animal facilities to surface waters;
- c. Activities that cause excess delivery of nutrients and/or leaching of nutrients;
- d. Activities that cause contamination of surface water and ground water from pesticides;
- e. Grazing activities that cause physical disturbance to sensitive areas and the discharge of sediment, animal waste, nutrients, and chemicals to surface and ground waters;
- f. Irrigation activities that cause NPS pollution of surface waters.

## **1. AGRICULTURE**

### **IMPLEMENTATION AUTHORITIES**

#### **Agriculture Management Measures**

- 1A. Erosion and Sediment Control
- 1B. Facility Wastewater and Runoff from Confined Animal Facilities (All Units)
- 1C. Nutrient Management
- 1D. Pesticide Management
- 1E. Grazing Management
- 1F. Irrigation Water Management
- 1G. Education/Outreach

**Management Measure 1A Erosion and Sediment Control Management Measure**

Apply the erosion component of a CMS as defined in the Field Office Technical Guide of the U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS) to minimize the delivery of sediment from agricultural lands to surface waters, *or*  
Design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to a 25-year, 24-hour frequency.

Agency	Authority	Programs	Implementation Location	Notes
Local governments	PZL (Gov. Code §§ 65000 et seq.) and California Coastal Act (CCA) §30500	<ul style="list-style-type: none"> <li>• General Plans/GP updates</li> <li>• Local Coastal Programs(LCP)/LCP amendments</li> <li>• Permits pursuant to above</li> <li>• Enforcement</li> </ul>	Statewide (LCP) policies/ordinances apply in coastal zone)	Local gov'ts adopt ordinances and rules and make land-use decisions consistent with State law. Installation of practices may require a permit.
Local irrigation, water and drainage districts	Water Code Div 11 and Div 17	Drainage of irrigation water	Local areas	Provides for drainage of irrigation waters
California Association of Resource Conservation Districts (CARCDs)/University of California Cooperative Extension (UCCE). NRCS.	Public Resources Code (PRC) Div 9	<ul style="list-style-type: none"> <li>• NRCS Field Office Technical Guide</li> <li>• Watershed Protection and Flood Prevention Program</li> </ul>	Statewide	<ul style="list-style-type: none"> <li>• Field Guide is incorporated into local management plans</li> <li>• Technical and financial assistance</li> </ul>
CCC	CCA (PRC §§30000 et seq.) and CA California Coastal Management Program (CCMP) pursuant to Coastal Zone Management Act (CZMA) [16 United States Code (USC) §§1451 et seq.]	<ul style="list-style-type: none"> <li>• LCP certification/ amendment</li> <li>• Coastal development permits</li> <li>• Federal consistency: review of federal actions affecting land or water uses or natural resources of the coastal zone</li> <li>• Enforcement</li> </ul>	Coastal zone	<ul style="list-style-type: none"> <li>• CCC certifies LCPs prepared by coastal cities/counties.</li> <li>• Installation of practices may require a permit.</li> <li>• Federal projects, permits and licenses must be found consistent with the CCMP before they are implemented.</li> </ul>
DOC, Office of Land Conservation	? 1987	Conserving the Wealth of the Land: A Plan for Soil Conservation	Statewide	This document provides guidance to Resource Conservation Districts (RCDs) on soil conservation efforts.
SCC	PRC Chapter 6, Div 21	Coastal Resource Enhancement Program (CREP)	Coastal zone and coastal watersheds, Statewide	The SCC implements measures to control erosion and reduce sedimentation of coastal wetlands.
SWRCB/RWQCB	California Code of Regulations (CCR) Title 27, Subdivision 1, Chapter 7,	Confined Animals Facility Program	Statewide	

	Subchapter 2, Article 1, §§22560- 22565			
USEPA via SWRCB	CWA § 402	Stormwater Quality Management Program	Statewide	
SLC	<ul style="list-style-type: none"> <li>• PRC §§6000 et seq. (includes lease authority)</li> </ul>	<ul style="list-style-type: none"> <li>• SLC leases (PRC §6501.1 and 6505.5) Grazing lease program</li> <li>• SLC leases (PRC §6501.1) Agricultural leasing program</li> </ul>	<ul style="list-style-type: none"> <li>• School Lands</li> </ul>	<ul style="list-style-type: none"> <li>• Grazing and agricultural lease activity is contingent upon applicant's compliance with permits, recommendations, or limitations issued by federal, State, and local governments including compliance with CEQA.</li> </ul>
The following are BACKUP AUTHORITIES that pertain to the Erosion and Sediment Control Management Measure.				
Agency	Authority	Programs	Implementation Location	Notes
DOC	PRC Div 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.
DFG	Fish and Game Code (FGC) § 5650	Discharge violations to waters of the State	Statewide	
DHS	Health and Safety Code (HSC) §116275 et seq.	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
DPR	Div. I, Chapter 1.25; Div. V, PRC §5000 et seq.		State Park System/State Parks (SPS)	DPR operates and maintains units of the SPS in areas of agriculture.
DWR	Water Code	Drinking Water Protection	Watershed	Reservoir sampling program
SWRCB/RWQCB	Porter-Cologne Water Quality Control Act (PCWQCA), California Water Code (CWC)	<ul style="list-style-type: none"> <li>• Nonpoint Source Management Plan (NPSMP)</li> <li>• Basin Plans</li> <li>• Water Quality Standards</li> <li>• Waste Discharge Requirements (WDRs)</li> <li>• Cleanup &amp; Abatement Orders</li> <li>• Cease and Desist Orders</li> <li>• Admin. Civil Liability</li> </ul>	Statewide	

USDA Agricultural Research Service	?	Research on new technologies and practices on erosion control	Statewide	
USDA Consolidated Farm Service	Various, ending with the Energy Security Act 1980	Agricultural Conservation Program	Statewide	Provides financial assistance for erosion control
USDA Cooperative State Research, Education, and Extension Service	?	Various	Statewide	
<b>Other efforts that pertain to Agriculture Management Measure 1A</b>				
<b>Agency</b>	<b>Authority</b>	<b>Programs</b>	<b>Implementation Location</b>	<b>Notes</b>
State/local/federal agency participation in MBNMS	MPRSA (16 USC §1431 et seq.)	MBNMS WQPP Action Plan for Agriculture	MBNMS	The MBNMS WQPP is a collaborative effort of federal, State, and local agencies and public and private groups initiated with an MOA among State and federal agencies. The agricultural plan focuses on the development of industry networks, technical assistance, educational programs, and financial incentives.

**Management Measure : 1B Facility Wastewater and Runoff from Confined Animal Facility Management (All Units)**

Limit the discharge from the confined animal facility to surface waters by:

Management Measure Component (1): Containing both facility wastewater and the contaminated runoff from confined animal facilities at all times up to and including storms exceeding a 25-yr, 24-hr frequency event [storage facilities should be of adequate capacity to allow for proper waste water utilization and should be constructed so they prevent seepage to ground water]; and

Agency	Authority	Programs	Implementation Location	Notes
Local governments	Planning and Zoning Law (PZL) (Gov. Code §§65000 et seq.) and CCA §30500	<ul style="list-style-type: none"> <li>• General Plans/GP updates</li> <li>• LCPs/LCP amendments</li> <li>• Permits pursuant to above</li> <li>• Enforcement</li> </ul>	Statewide (LCP policies/ordinances apply in coastal zone)	Local gov'ts adopt ordinances and rules and make land-use decisions consistent with State law. Installation of practices may require a permit
RCDs	PRC Div. 9	Various	Countywide	
UCCE	?	<ul style="list-style-type: none"> <li>• Farm Advisors</li> <li>• Watershed Management Education Programs</li> <li>• Ranch Planning Short Courses</li> <li>• Waste Management Workshop</li> </ul>	Statewide	
SWRCB/RWQCB	CCR Title 27, Subdivision 1, Chapter 7, Subchapter 2, Article 1, Sections 22560-22565	Confined Animal Facilities Program	Statewide	<ul style="list-style-type: none"> <li>• § 2562 pertains to storage</li> <li>• § 22563-22564 pertain to waste utilization</li> </ul>
SWRCB/RWQCB	CCR Title 14, Chapt. 13, Art. 6	Dead Animal Disposal	Statewide	
SWRCB/RWQCB	40 Code of Federal Regulations (CFR) 122.23	National Pollutant Discharge Elimination System (NPDES) Permits ≥1000 animal units	Statewide	
USDA/NRCS	Food Securities Act 1985	<ul style="list-style-type: none"> <li>• Conservation Technical Assistance Program</li> <li>• Soil and Water Conservation Program</li> <li>• Hydrological Unit Area Grant Program</li> </ul>	Statewide	

Management Measure component (2): Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system that is consistent with MM 1C.

Agency	Authority	Programs	Implementation Location	Notes
The following are BACKUP AUTHORITIES that pertain to the Confined Animal Facilities Management Measure				
Agency	Authority	Programs	Implementation Location	Notes
SWRCB/RWQCB	Porter-Cologne CWC Div 7 and CCR Title 23 Div 3 and 4	<ul style="list-style-type: none"> <li>• Basin Plans</li> <li>• Water Quality Standards</li> <li>• WDRs</li> <li>• Cleanup and Abatement Orders</li> <li>• Cease and Desist Orders</li> <li>• Admin. Civil Liability</li> </ul>	Statewide	
Consolidated Farm Service	?	Cost sharing on installation of waste management units for confined animals	Counties	
DFG	FGC § 5650	Discharge violations to State's water		
DPR	Div. I, Chapter 1.25; Div. V, PRC §5000 et seq.		SPS	DPR operates and maintains units of the SPS in areas where animals are confined.
DHS	HSC §116275 et seq.	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs of drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
DOC	PRC Div 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.

**Management Measure (MM) 1C Nutrient Management Measure**

Develop, implement, and periodically update a nutrient management plan to: (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is other than commercial fertilizer, determine the nutrient value and the rate of availability of the nutrients. Determine and credit the nitrogen contribution of any legume crop.

Soil and plant tissue testing should be used routinely. Nutrient management plans contain the following core components:

Management Measure Component (1): Farm and field maps showing acreage, crops, soils, and water bodies.

Management Measure Component (2): Realistic yield expectations for the crop(s) to be grown, based primarily on the producer’s actual yield history, State Land Grant University yield expectations for the soil series, or NRCS Soils-5 information for the soil series.

Management Measure Component (3): A summary of the nutrient resources available to the producer, which at a minimum include: (a) soil test results for pH, phosphorus, nitrogen and potassium; (b) nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable); (c) nitrogen contribution to the soil from legumes grown in the rotation (if applicable); and (d) other significant nutrient sources (e.g., irrigation water).

Management Measure Component (4): An evaluation of field limitations based on environmental hazards or concerns such as: (a) sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential, (b) lands near surface water, (c) highly erodible soils, and (d) shallow aquifers.

Management Measure Component (5): Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectation.

Agency	Authority	Programs	Implementation Location	Notes
Local governments Water Resource Management Agencies	PZL (Gov. Code §§65000 et seq.) and CCA §30500	<ul style="list-style-type: none"> <li>• General Plans/GP updates</li> <li>• LCPs/LCP amendments</li> <li>• Permits pursuant to above Enforcement</li> </ul>	Statewide (LCP policies/ordinances apply in coastal zone)	Local gov’ts adopt ordinances and rules and make land-use decisions consistent with State law. Installation of practices may require a permit
RCDs	PRC §9000 et seq.	Technical Assistance Program	Statewide	Provides individual and group guidance on crop fertilization and prevention of NPS pollution.
DFA	FAC §14583 and §14611(b)	Fertilizer Research and Education Program	Statewide	<ul style="list-style-type: none"> <li>• Annual Conference on Fertilizer Research</li> <li>• Extensive outreach with a web site, publications and videos</li> <li>• Publications include crop-specific management practices and environment issues</li> <li>• Conducts demonstration projects</li> <li>• Sponsor research and conferences by other organizations</li> </ul>
SWRCB	?	Biologically Integrated Orchard Systems (BIOS)	Statewide at local level in orchards	Promotes reduction in pesticide and fertilizer use.
UCCE, Farm Advisors	?	Technical Assistance	Statewide	Provides crop-specific fertilizer guidance and does research on nutrient application, promotes soil and plant tissue testing.

Agricultural Water Supplier delivering > 50,000 ac-ft	Assembly Bill (AB) 3616	Water Management Plans and Implementation Measures	Local	
American Society of Agronomy	?	Certified Crop Advisor Program	Statewide at local level	Voluntary certification for individuals who make soil and nutrient recommendations. Recommendations include: nutrient management plans, soil/ plant tissue testing, yield/fertilizer application rates and methods.
California Fertilizer Association DFA	Food and Agriculture Code (FAC) §1461	<ul style="list-style-type: none"> <li>• Nutrient Seminar Series</li> <li>• Community Outreach Program</li> <li>• Quarterly News Letter “From the Ground Up”</li> <li>• Crop-specific reports and videos</li> <li>• Western Fertilizer Handbook</li> <li>• Anhydrous Ammonia Transportation Safety Program</li> <li>• Environmental/Site Operations</li> </ul>	Statewide at local level	<ul style="list-style-type: none"> <li>• The annual seminar series is conducted at four sites in State</li> <li>• Education of communities on fertilizers</li> <li>• Newsletter gives the most recent information on crop fertilization</li> <li>• Reports and videos provides current crop-specific guidance</li> <li>• The Handbook provides thorough, complete methods for applying fertilizers</li> <li>• Environmental/Site Operations helps members comply with laws and regulations for air and water quality and safety.</li> </ul>
Management Measure Component (6): Identification of timing and application methods for nutrients to: (a) provide nutrients at rates necessary to achieve realistic crop yields; (b) reduce losses to the environment; and (c) avoid applications as much as possible to frozen soil and during periods of leaching or runoff.				
Agency	Authority	Programs	Implementation Location	Notes
DFA	FAC §14631 and CCR 2300-2312	Fertilizer Labeling	Statewide	
SWRCB/RWQCB	Water Code 1058 CCR 27, subch. 2 Art. 1, § 2256a,b PRC § 43103	Confined Animal Facilities Program	Local	Reasonable soil amendment rate. Run-off and percolation
AND SAME AS FOR MM COMPONENT (1)				

**Management Measure Component (7): Provisions for the proper calibration and operation of nutrient application equipment.**

Agency	Authority	Programs	Implementation Location	Notes
DFA	FAC §14681	Fertilizer Labeling	Statewide	

**Management Measure Component (8): When manure from confined animal facilities is to be used as a soil amendment and/or is disposed of on land, take steps to assure that subsequent irrigation of that land does not leach excess nutrients to surface or ground waters.**

Agency	Authority	Programs	Implementation Location	Notes
SAME AS FOR MM COMPONENT 1				

**The following are BACKUP AUTHORITIES that pertain to the Nutrient Management Measure.**

Agency	Authority	Programs	Implementation Location	Notes
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DOC	PRC Div 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.
DFA	FAC § 14551, 14561, 14591, 14563	<ul style="list-style-type: none"> <li>Fertilizer Licensing</li> <li>Register special fertilizers</li> <li>Fertilizer labeling</li> <li>Fertilizer cancellation</li> </ul>	Statewide	
DFG	FGC § 5650	Discharge to waters of the State violations	Statewide	
DHS	HSC §116275 et seq.	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
DPR	Div. I, Chapter 1.25; Div. V, PRC §5000 et seq.		SPS	DPR operates and maintains units of the SPS in areas where animals are confined
SWRCB/RWQCB	PCWQCA	<ul style="list-style-type: none"> <li>Basin Plans</li> <li>NPSMP</li> <li>Inland Surface Waters Plan (ISW Plan)</li> </ul>	Statewide	
NRCS, U.S. Geological Survey (USGS), U.S. Bureau of Reclamation (USBR), UCCE, Farm Services Agency (FSA)	?	Financial/technical assistance	Statewide	

Other efforts that pertain to Agriculture Management Measure 1C				
Agency	Authority	Programs	Implementation Location	Notes
State/local/federal agency participation in MBNMS	MPRSA (16 USC §1431 et seq.)	MBNMS WQPP Action Plan for Agriculture	MBNMS	The MBNMS WQPP is a collaborative effort of federal, State, and local agencies and public and private groups initiated with an MOA among State and federal agencies. The agricultural plan focuses on the development of industry networks, technical assistance, educational programs, and financial incentives.

**Management Measure: 1D Pesticide Management**

To reduce contamination of surface water and ground water from pesticides.

Management Measure Component (1): Evaluate the pest problems, previous pest control measures, and cropping history;

Agency	Authority	Programs	Implementation Location	Notes
CDPR	FAC §12811-12829 3CCR §6170-6193	Registration of pesticide products	Statewide	CDPR evaluates data to support registration of pesticide products.
CDPR	FAC §11501F	Pest Management Grants Program	Statewide	Investigation of innovative pest management practices that will lead to the development of reduced-risk pest management systems
CDPR	FAC §11501F	Pest Management Alliance Program	Statewide	Create alliances targeted at reducing pesticide risks and serving as practical models for adoption of new practices throughout an industry and across the state
CDPR	FAC §11501F	San Francisco IPM Project	San Francisco	Working with city and county in the development and implementation of innovative reduced-risk pest management strategies for the urban environment
CDPR	FAC §11501F	Biologically Integrated Farming Systems Project	San Joaquin Valley	Study comparing (BIOS) with conventional pest management systems
CDPR	FAC §11501F	IPM Innovators Program	Statewide	Encouragement and recognition of groups providing leadership and creativity in integrated pest management
CDPR	FAC §11501F	Pesticide Use Report Analysis	1996 Pesticide Use Report Analysis	Annual analysis of Pesticide Use Report data to interpret use changes and trends
CDPR	FAC § 11501F	Suppliers of Beneficial Organisms	Sacramento	Annual publication listing beneficial organisms sold for use as biological controls and suppliers
CDPR	FAC §11501F	Pest Management Survey Project	Sacramento	Removed database of current pest management alternatives for the major pests of agricultural

				commodities, based upon survey of University of California (UC) Farm Advisors
CDPR and County Agricultural Commissioner (CAC)	3 CCR §6622-6628	Pesticide Use Reporting	Statewide	An extensive program of reporting and database management.
CDPR and SWRCB	PCWQCA	MAA: Pesticide Management Plan for Water Quality: Reduced Risk Practices	Statewide	Reduced Risk Practices include all management practices in this management measure.
SWRCB	?	BIOS	?	
Management Measure Component (2): Evaluate the soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;				
Agency	Authority	Programs	Implementation Location	Notes
CDPR	3CCR §6170-6193 FAC §12811-12829	Registration of pesticide products	Statewide	CDPR evaluates data to support registration of pesticide products.
CDPR and CAC	FAC §13143-13152	Ground Water Protection Program: Prevention	Statewide	CDPR implements a prevention program consisting of the identification of potential contaminants, annual continuing education, and a wellhead stewardship program with CACs.
CDPR and CAC	FAC §13149-13152	Ground Water Protection Program: Response	Statewide	CDPR implements a program that requires CDPR to respond, within 90 days, to pesticide detections in ground water and determine whether or not the detection resulted from agricultural use.
CDPR and CAC	FAC §14004.5 3 CCR § 6400, 6432	Rice Pesticides Program	Central Valley	
CDPR and CAC	FAC §14005	Dormant Spray Program	Central Valley	CDPR stated it will use this authority if toxicity associated with dormant spray runoff is not mitigated with self-determined measures.
CAC	FAC §11701, 12973	Mix/load applications	Statewide	CAC staff make on-site inspections.
CDPR	FAC §14005	Surface Water Protection Program	Statewide	CDPR monitors concentrations and evaluates the environmental fate of those pesticides with the potential to run off.

Management Measure Component (3): Use integrated pest management (IPM) strategies that: (a) apply pesticides only when an economic benefit to the producer will be achieved(i.e., applications based on economic thresholds); and (b) apply pesticides efficiently and at times when runoff losses are unlikely;

Agency	Authority	Programs	Implementation Location	Notes
CDPR	FAC § 14005	Dormant Spray Program	Central Valley	CDPR stated it will use this authority if toxicity associated with dormant spray runoff is not mitigated with self-determined measures.
CDPR	FAC §11501F	Pest Management Grants Program	Statewide	Investigation of innovative pest management practices that will lead to the development of reduced-risk pest management systems
CDPR	FAC §11501F	Pest Management Alliance Program	Statewide	Create alliances targeted at reducing pesticide risks and serving as practical models for adoption of new practices throughout an industry and across the state
CDPR	FAC §11501F	IPM Innovators Program	Statewide	Encouragement and recognition of groups providing leadership and creativity in integrated and reduced-risk pest management
CDPR	FAC § 13150 3 CCR § 6400, 6486.1-6486.6 6570, 6458, 6800(a), 6802	Management of ground water contaminants	Statewide	CDPR regulates the use of aldicarb, atrazine, simazine, diuron, bromacil, prometon, and bentazon to prevent ground water contamination.
CAC	3CCR §6600	General standards of care	Statewide	CAC staff enforce these regulations.
UCCE	?	IPM Innovator Outreach Program	Statewide	
SWRCB	?	BIOS	Statewide	

Management Measure Component (4): When pesticide applications are necessary and a choice of registered materials exists, consider the persistence, toxicity, runoff potential, and leaching potential of products in making a decision;

Agency	Authority	Programs	Implementation Location	Notes
CDPR	FAC §12811-12829 3 CCR § 6170-6193	Registration of pesticides	Statewide	CDPR evaluates pesticide products and considers restrictions on the use of those with the potential to pollute.
CDPR and CAC	3 CCR § 6432	Conditions on Permits for Restricted Use Pesticides	Statewide	
CAC	PRC § 21080.5	Pesticide Permit Process	Statewide	
CAC	FAC §14006.5 3 CCR § 6426, 6432	Permit evaluation, alternatives and mitigation measures	Statewide	
RCDs with UCCE	?	IPM Innovator Outreach Program	Statewide	

Management Measure Component (5): Periodically calibrate pesticide spray equipment;

Agency	Authority	Programs	Implementation Location	Notes
CAC	FAC §11701-11732	Pest Control Operator License	Statewide	
CAC	3 CCR § 6630, 6460, 6600 FAC §11732	Proper identification and maintenance of application equipment	Statewide	
USEPA	FIFRA	Pesticide Labeling	Statewide	

Management Measure Component (6): Use anti backflow devices on hoses used for filling tank mixtures;

Agency	Authority	Programs	Implementation Location	Notes
CAC	3 CCR § 6610	Backflow Protection	Statewide	

The following are BACKUP AUTHORITIES that pertain to the Pesticide Management Measure

Agency	Authority	Programs	Implementation Location	Notes
CAC	FAC § 11896 and 13101	Cease and Desist Orders	Statewide	
CAC	FAC § 6432	Restricted Use Pesticide Permits	Statewide	
CAC	FAC § 11701 and 11732	Pest Control Operators License	Statewide	
CDPR	FAC Div 6 and 7	<ul style="list-style-type: none"> <li>Pesticide Registration/ Cancellation/Modification</li> <li>Environmental Fate Data</li> </ul>	Statewide	

		<ul style="list-style-type: none"> <li>Review</li> <li>• Restricted Materials List</li> <li>• Criminal/Civil Liability</li> </ul>		
CDPR, with authorities delegated from USEPA	Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)	<ul style="list-style-type: none"> <li>• Pesticide Registration</li> <li>• Labeling</li> <li>• Application</li> <li>• Regulation</li> <li>• Prohibition</li> <li>• Certify Applicators</li> </ul>	Statewide	
CDPR, with funding from USEPA	FIFRA 23(a)	Pest Management Grants	Statewide	
DOC	PRC Div. 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.
DFG	FGC §5650	Discharge to waters of the State violations	Statewide	
DHS	HSC §116275 et seq	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
DPR	Div. I, Ch. 1.25, Div. V: PRC §5000 et seq.		SPS	DPR operates and maintains units of the SPS in areas where pesticides are used.
SWRCB/RWQCB	PCWQCA CWC Div 7 and CCR Title 23	<ul style="list-style-type: none"> <li>• Basin Plans</li> <li>• Cease and Desist Orders</li> <li>• Cleanup and Abatement Orders</li> <li>• Civil Liability</li> <li>• BPTC</li> <li>• NPDES</li> </ul>	Statewide	
SWRCB/RWQCB	CWA §319(h) Grants	Grants to implement pesticide projects	Statewide	

Other efforts that pertain to Agriculture Management Measure 1D				
Agency	Authority	Programs	Implementation Location	Notes
State/local/federal agency participation in MBNMS	MPRSA (16 USC §1431 et seq.)	MBNMS WQPP Action Plan for Agriculture	MBNMS	The MBNMS WQPP is a collaborative effort of federal, State, and local agencies and public and private groups initiated with an MOA among State and federal agencies. The agricultural plan focuses on the development of industry networks, technical assistance, educational programs, and financial incentives.

**Management Measure 1E Grazing Management Measure**

Protect range, pasture and other grazing lands:

MM Component (1): By implementing one or more of the following to protect sensitive areas (such as streambanks, wetlands, estuaries, ponds, lake shores, and riparian zones): (a) exclude livestock, (b) provide stream crossings or hardened watering access for drinking, (c) provide alternative drinking water locations away from surface waters, (d) locate salt and additional shade, if needed, away from sensitive areas, or (e) use improved grazing management (e.g., herding) to reduce the physical disturbance and reduce direct loading of animal waste and sediment caused by livestock; and

MM Component (2): By achieving either of the following on all range, pasture, and other grazing lands not addressed under (1) above: (a) implement the range and pasture components of a CMS as defined in the Field Office Technical Guide of the USDA-NRCS by applying the progressive planning approach of the USDA-NRCS to reduce erosion, or (b) maintain range, pasture, and other grazing lands in accordance with activity plans established by either the Bureau of Land Management of the U.S. Department of the Interior or the Forest Service of USDA or the California Rangeland Water Quality Management Plan.

Agency	Authority	Programs	Implementation Location	Notes
California Association of Resource Conservation Districts/RCDs UCCE NRCS	PCWQCA	California Rangeland Water Quality management Plan (CRWQMP)	Statewide—private lands	Training and technical assistance in range management and ranch plan development; research; development of monitoring protocols
SCC	PRC Chapter 6, Div 21	CREP	Coastal zone and coastal watersheds, statewide	SCC implements measures to reduce impacts of grazing on wetlands, streams and other natural resource areas.

The Following are BACKUP AUTHORITIES that pertain to the Grazing Management Measure.

Agency	Authority	Programs	Implementation Location	Notes
DOC	PRC Div 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.
DFG	FGC § 5650	Discharge to waters of the State violations		
DHS	HSC §116275 et seq.	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.

DPR	Div. I, Chapter 1.25, Div. V:PRC §5000 et. seq.		SPS	DPR operates and maintains units of the SPS in grazing areas.
SWRCB/RWQCB	PCWQCA	<ul style="list-style-type: none"> <li>• NPSMP</li> <li>• Basin Plans</li> <li>• Cease and Desist Orders</li> <li>• Cleanup and Abatement Orders</li> <li>• Admin. Civil Liability</li> </ul>	Statewide	
<b>Other efforts that pertain to Agriculture Management Measure 1E</b>				
Agency	Authority	Programs	Implementation Location	Notes
State/local/federal agency participation in MBNMS	MPRSA (16 USC §1431 et seq.)	MBNMS WQPP Action Plan for Agriculture	MBNMS	The MBNMS WQPP is a collaborative effort of federal, State, and local agencies and public and private groups initiated with an MOA among State and federal agencies. The agricultural plan focuses on the development of industry networks, technical assistance, educational programs, and financial incentives.

### Management Measure 1F Irrigation Water Management

To reduce nonpoint source pollution of surface and ground waters caused by irrigation:

Management Measure Component (1): Operate the irrigation system so that the timing and amount of irrigation water applied match crop water needs. This will require, as a minimum: (a) the accurate measurement of soil-water depletion volume and the volume of irrigation water applied, and (b) uniform application of water. \*

Agency	Authority	Programs	Implementation Location	Notes
NRCS (lead)	?	Coordinated Resource Management and Planning (CRMP) Program	Statewide at local level	Direct, local public participation for planning, outreach, technology transfer, implementation, financial assistance, research, and monitoring.
DWR	? 1980	<ul style="list-style-type: none"> <li>• Agricultural Water Conservation Program</li> <li>• California Irrigation Management Information System (CIMIS)</li> <li>• Mobile Irrigation Management Laboratories</li> </ul>	Statewide	
DWR	AB 3616	Agricultural Efficient Water Management Practices	Statewide	
DWR	?	Agricultural Drainage Reduction Program	Statewide	
DWR	AB 658	Agricultural Water Management Planning	Statewide	
SWRCB/RWQCB	AB 3603	San Joaquin River Management Program	San Joaquin Valley	
CDPR/CAC	<ul style="list-style-type: none"> <li>• CCR 3 § 6800-6806,6557</li> <li>• FAC § 13141</li> </ul>	Ground Water Pesticide Contamination Prevention	Statewide	Enforced by CAC staff
DFG	?	San Joaquin Valley Drainage Implementation Program	San Joaquin Valley	DFG works with USBR, U.S. Fish and Wildlife Service (USFWS), USGS

Management Measure Component (2): When chemigation is used, include backflow preventers for wells, minimize the harmful amounts of chemigation waters that discharge from the edge of the field, and control deep percolation. In cases where chemigation is performed with furrow irrigation systems, a tailwater management system may be needed. \*

Agency	Authority	Programs	Implementation Location	Notes
CDPR/CAC	<ul style="list-style-type: none"> <li>• FAC §11501</li> <li>• CCR 3 § 6610</li> </ul>	Chemigation Program, Backflow Requirements	Statewide	Enforced by CAC staff

The following are BACKUP AUTHORITIES that pertain to the Irrigation Water Management Measure.

Agency	Authority	Programs	Implementation Location	Notes
CDPR/CAC	FAC	Pesticide Water Quality Management Plan and MAA with SWRCB	Statewide	management practices on chemigation
CDPR/USEPA	FIFRA	Pesticide Labeling	Statewide	Labeling may permit or ban chemigation with a particular pesticide
California State University: California Polytechnical University	?	Irrigation Training Research Center	?	
California State University: Fresno State University	?	Center for Irrigation Technology	?	
DOC	PRC Div 9	Watershed Grant Program	Statewide	Provides small grants to local RCDs to promote watershed restoration projects.
DHS	HSC §116275 et seq.	Drinking water source assessment and protection; drinking water sampling and analysis; regulation of public drinking water systems	Watersheds associated with drinking water sources	Assessment of potential contaminating activities in watershed; self-determined protection programs by drinking water systems and communities; collection of data on contaminants in drinking water supplies for the evaluation of water quality.
DPR	Div. I, Ch. 1.25, Div. V:PRC §5000 et. seq.		SPS	DPR operates and maintains units of the SPS in agricultural areas.
DWR	Agricultural Water Suppliers Efficient Water Management Practices Act (1990)	Cooperative studies on effectiveness and efficiency of agricultural water management practices	Statewide	
DWR	?	Agriculture Training and Education Program	Statewide	
SWRCB/RWQCB	1986 Water Conservation and Water Quality Bond Law	Agricultural Drainage Water Management Loan Program	Statewide	

SWRCB/RWQCB	PCWQCA	<ul style="list-style-type: none"> <li>• Basin Plans</li> <li>• NPSMP</li> <li>• Drainage Operation Plans</li> <li>• WDRs</li> <li>• Subsurface Agricultural Drainage Program</li> <li>• Water Rights</li> <li>• ISW Plan</li> </ul>	Statewide	Water Rights: Frost Control and Central Valley Project which regulates amount of water for irrigation
SWRCB/RWQCB	Clean Water Act	<ul style="list-style-type: none"> <li>• State Revolving Fund</li> <li>• 319(h) Grant Program</li> </ul>	Statewide	Grant/loan programs for irrigation projects
UCCE	?	Research, Education, Training and NPS workshops	Statewide	
USDA/NRCS	?	River Basin Survey and Investigation Program	Statewide	
USDA/FSA	Farm Bills of 1936, '73, '77, '79, and '80	<ul style="list-style-type: none"> <li>• Agricultural Conservation Program</li> <li>• Water Quality Incentive Program</li> </ul>	Statewide	
USDA/Agricultural Research Service (ARS)	Farm Bill	<ul style="list-style-type: none"> <li>• Water Management Research Laboratory</li> <li>• US Salinity Laboratory</li> </ul>	Statewide	
U.S. Department of Interior (USDI)/USBR	Central Valley Project Improvement Act	Water Conservation Plans	Statewide	All federal water contractors must submit a water conservation plan to DWR before contracts can be reviewed

\* The following limitations and special conditions apply:

- (1) In some locations, irrigation return flows are subject to other water rights or are required to maintain stream flows. In these special cases, on-site reuse could be precluded and would not be considered part of the management measure for such locations.
- (2) By increasing the water use efficiency, the discharge volume from the system will usually be reduced. While the total pollutant discharge load may be reduced somewhat, there is the potential for an increase in the concentration of pollutants in the discharge. In these special cases, where other management measures (nutrients and pesticides) do not reduce concentrations in the discharge, increasing water use efficiency would not be considered part of the management measure.
- (3) In some irrigation districts, the time interval between the order for the delivery of irrigation water to the farm may limit the irrigator's ability to achieve the maximum on-farm application efficiencies that are otherwise possible.
- (4) In some locations, leaching is necessary to control salt in the soil profile. Leaching for salt control should be limited to the leaching requirement for the root zone.
- (5) Where leakage from delivery systems or return flows supports wetlands or wildlife refuges, it may be preferable to modify the system to achieve a high level of efficiency and then divert the "saved water" to the wetland or wildlife refuge. This will improve the quality of water delivered to wetlands or wildlife refuges by preventing the introduction of pollutants from irrigated lands to such diverted water.
- (6) In some locations, sprinkler irrigation is used for frost or freeze protection, or for crop cooling. In these special cases, applications should be limited to the amount necessary for crop protection and applied water should remain on-site.

Management Measure 1G Education/Outreach

Implement educational programs to provide greater understanding of watersheds, and to raise awareness and increase the use of applicable agricultural management measures and practices where needed to control and prevent adverse impacts to surface and ground water. Public education, outreach, and training programs should involve applicable user groups and the community.

[Refer to the Agriculture Management Measures 1A – 1F listed in this document.]

Agency	Authority	Programs	Implementation Location	Notes
RCDs/UCCE /NRCS/	PRC Div 9	<ul style="list-style-type: none"> <li>NRCS Field Office Technical Guide</li> <li>Watershed Protection and Flood Prevention Program</li> </ul>	Statewide	<ul style="list-style-type: none"> <li>Field Guide is incorporated into local management plans</li> <li>Technical and financial assistance</li> </ul>
RCDs	PRC §9000 et seq.	Technical Assistance Program	Statewide	Provides individual and group guidance on crop fertilization and prevention of NPS pollution.
California Environmental Protection Agency (Cal/EPA), California Resources Agency (Cal/RA), USDA (NRCS), USDA Animal Health Inspection Service, UC, Western United Dairyman, CA Farm Bureau Federation, DFA, SWRCB, USDA Farm Services Agency, DFG, CA Manufacturing Milk Advisory Board, Milk Producers Council, CA Dairy Quality Assurance Program	Partnership Agreement 1998	California Dairy Quality Assurance Program	Statewide	Provides guidance on environmental stewardship on dairies to meet CZARA requirements
DFA	FAC §14583 and §14611(b)	Fertilizer Research and Education Program	Statewide	<ul style="list-style-type: none"> <li>Annual Conference on Fertilizer Research</li> <li>Extensive outreach with a web site, publications and videos</li> <li>Publications include crop-specific management practices and environment issues</li> <li>Conducts demonstration projects</li> <li>Sponsors research and conferences by other organizations</li> </ul>

DWR	?1980	<ul style="list-style-type: none"> <li>• Agricultural Water Conservation Program</li> <li>• CIMIS</li> <li>• Mobile Irrigation Management Laboratories</li> </ul>	Statewide	
DWR	?	Agriculture Training and Education Program	Statewide	
SWRCB/RWQCB	CCR Title 23, Chapt. 15, Art. 6 and CCR Title 15 §2560-2565	Confined Animals Facility Program	Statewide	
UCCE NRCS California Association of Resource Conservation Districts (CARCD)/RCDs	PCWQCA	CRWQMP	Statewide--private lands	Training and technical assistance in range management and ranch plan development; research; development of monitoring protocols
UCCE, Farm Advisors	?	Technical Assistance	Statewide	Provides Crop-specific fertilizer guidance and does research on nutrient application, promotes soil and plant tissue testing.
UCCE	?	<ul style="list-style-type: none"> <li>• Farm Advisors</li> <li>• Watershed Management Education Programs</li> <li>• Ranch Planning Short Courses</li> <li>• Waste Management Workshop</li> </ul>	Statewide	
UCCE	?	Research, Education, Training and NPS workshops	Statewide	
California State University: California Polytechnical University	?	Irrigation Training Research Center	?	
USDA Agricultural Research Service	?	Research on new technologies and practices on erosion control	Statewide	
USDA Consolidated Farm Service	Various, ending with the Energy Security Act 1980	Agricultural Conservation Program	Statewide	Provides financial assistance for erosion control
USDA Cooperative State Research, Education, and Extension Service	?	various	Statewide	
USDA/NRCS	Food Securities Act 1985	<ul style="list-style-type: none"> <li>• Soil and Water Conservation Program</li> </ul>		

American Society of Agronomy	?	Certified Crop Advisor Program	Statewide at local level	Voluntary certification for individuals who make soil and nutrient recommendations. Recommendations include: nutrient management plans, soil/plant tissue testing, yield/fertilizer application rates and methods.
California Fertilizer Association	?	<ul style="list-style-type: none"> <li>• Nutrient Seminar Series</li> <li>• Community Outreach Program</li> <li>• Quarterly News Letter "From the Ground Up"</li> <li>• Crop-specific reports and videos</li> <li>• Western Fertilizer Handbook</li> <li>• Anhydrous Ammonia Transportation Safety Program</li> <li>• Environmental/Site Operations</li> </ul>	Statewide at local level	<ul style="list-style-type: none"> <li>• The annual seminar series is conducted at four sites in State</li> <li>• Education of communities on fertilizers</li> <li>• Newsletter gives the most recent information on crop fertilization</li> <li>• Reports and videos provide current crop-specific guidance</li> <li>• The Handbook provides thorough, complete methods for applying fertilizers</li> <li>• Environmental/Site Operations help members comply with laws and regulations for air and water quality and safety.</li> </ul>
Coalition for Urban/Rural Environmental Stewardship (CURES)		Delta Water Quality Project	San Francisco Bay-Delta Region	
<b>Other efforts that pertain to Agriculture Management Measure 1G</b>				
<b>Agency</b>	<b>Authority</b>	<b>Programs</b>	<b>Implementation Location</b>	<b>Notes</b>
State/local/federal agency participation in MBNMS	MPRSA (16 USC §1431 et seq.)	MBNMS WQPP Action Plan for Agriculture	MBNMS	The MBNMS WQPP is a collaborative effort of federal, State, and local agencies and public and private groups initiated with an MOA among State and federal agencies. The agricultural plan focuses on the development of industry networks, technical assistance, educational programs, and financial incentives.