

**CHAPTER 15
NINE KEY ELEMENTS**

The California Nonpoint Source (NPS) Grant Program allocates Clean Water Act section 319(h) funding from the U.S. EPA to support projects that implement full scale, on-the-ground management measures or practices in alignment with the watershed-based plans to address water quality problems in surface water and groundwater resulting from NPS pollution. Before giving 319 NPS grants to projects, the project proponent/grantee must demonstrate that the USEPA's Nine Key Elements are in place for a watershed. The purpose of this chapter is to explicitly identify which of the nine key elements are included in this TMDL and described in this Staff Report.

In California, wide ranges of plans are being used to comply with the nine key elements, often in combination with each other. Examples of plans that are being used to comply with the key elements include local watershed plans, coordinated resource management plans, TMDL implementation plans, comprehensive conservation and management plans, and Regional Water Quality Control Plans (Basin Plans), and combinations thereof. Applicants that need assistance may work with their Regional Water Boards to verify that the combination of plans has the nine elements. Those elements that are not included in existing plans will need to be incorporated into the plans, as appropriate, to be eligible for Clean Water Act 319(h) funds.

Grant awards may be withdrawn if all nine key elements are not adequately addressed. During the full proposal stage of the grant selection process, applicants will complete a table (see Table F-1 under Appendix 1 on the Clean Water Act 319(h) Grant Solicitation webpage) to indicate where each key watershed plan element is addressed. The State Water Board NPS grant website is at:
http://www.waterboards.ca.gov/water_issues/programs/nps/solicitation_notice.shtml

Although many different components may be included in a watershed plan, U.S. EPA has identified nine key elements that are critical for achieving improvements in water quality. U.S. EPA requires that these nine elements be addressed in watershed plans funded with incremental Clean Water Act section 319 funds and strongly recommends that they be included in all other watershed plans intended to address water quality impairments. In general, state water quality or natural resource agencies and U.S. EPA will review watershed plans that provide the basis for section 319-funded projects. Although there is no formal requirement for U.S. EPA to approve watershed plans, the plans must address the nine elements discussed below if they are developed in support of a section 319-funded project.

All projects supported with Clean Water Act section 319(h) funds must implement activities based on sound watershed-based plans as defined by the United States Environmental Protection Agency (U.S. EPA) in its "Handbook for Developing Watershed

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Plans to Restore and Protect Our Waters (U.S. EPA's Handbook)". U.S. EPA's Handbook is based on the idea that significant environmental results are more likely where plans provide detailed information to ensure that priority activities are being undertaken to achieve water quality objectives and beneficial uses within a specific time frame.

The nine key elements are listed below and are further detailed throughout this Staff Report to help future project proponents obtain funds. This report is intended to satisfy the requirements of a watershed plan / TMDL for the purposes of 319(h) grant funding.

Element 1: Identification of Causes & Sources

Identification of causes of impairment and pollutant sources or groups of similar sources that need to be controlled to achieve needed load reductions, and any other goals identified in the watershed plan. Sources that need to be controlled should be identified at significant subcategory level along with estimates of the extent to which they are present in the watershed (e.g., X number of dairy cattle feedlots needing upgrading, including a rough estimate of the number of cattle per facility; Y acres of row crops needing improved nutrient management or sediment control; or Z linear miles of eroded streambank needing remediation).

Chapter 5 (Source Analysis) describes the studies conducted to identify sources and categories of fecal waste and their relationship to elevated concentrations of fecal indicator bacteria as measured in the surface waters of the Russian River Watershed.

The major human sources of fecal waste include:

- Discharges of municipal wastewater directly to surface waters;
- Discharges of untreated sewage from sanitary sewer systems;
- Discharges of wastewater from percolation ponds and through spray irrigation;
- Discharges of runoff from land application of municipal Biosolids;
- Discharges to land from water recycling projects;
- Discharges from onsite wastewater treatment systems;
- Discharges from recreational water uses and users;
- Discharges from homeless encampments; and
- Discharges of storm water to municipal separate storm sewer system (MS4s) and from areas outside MS4 boundaries.

Sources of domestic animal and farm animal waste identified in this TMDL project include:

- Discharges of pet waste;
- Discharges from non-dairy livestock and farm animals; and
- Discharges of manure from dairy cows.

An assessment of the exact location of many of the potential sources of fecal waste (e.g., leaking sanitary sewer lines, leaking onsite waste treatment systems) will be identified through individual inspections or the development and implementation of a Bacteria Load

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Reduction Plan (BLRP) by a responsible party (e.g., municipality or county). The development of implementation of BLRPs and other similar site specific management plans could benefit from funding under the 319(h) grant program.

Element 2: Load Reductions Expected for Management Measures

Load reductions for management measures are generally calculated on a project by project basis. On the basis of the existing source loads estimated for element (1), the watershed plan will similarly determine the reductions needed to meet the water quality standards. The watershed plan will then identify various management measures (see element 3 below) that will help to reduce the pollutant loads and estimate the load reductions expected as a result of these management measures to be implemented, recognizing the difficulty in precisely predicting the performance measures over time.

Estimates for loading reductions should be provided at the same level as that required in the scale and scope component in Element 1 (e.g., the total load reduction expected for dairy cattle feedlots, row crops, or eroded streambanks). For waters for which U.S. EPA has approved or established TMDLs, the plan should identify and incorporate the TMDLs. Applicable loads for downstream water should be included so that water delivered to a downstream or adjacent segment does not exceed the water quality standards for the pollutant of concern at the water segment boundary. The estimate should account for reductions in pollutant load from point and nonpoint sources identified in the TMDL as necessary to attain the applicable water quality standards.

Waste load allocations and load allocations are established for the identified sources as described in Chapter 8 (TMDL, Loading Capacities, and Margin of Safety). The load allocations are given as concentrations. Critical to attaining the load allocations will be developing individual management plans, updating existing permits, or developing new permits by which to establish appropriate best management practices and/or treatment technologies. Developing individual monitoring requirements will also be critical to tracking compliance, measuring trends, and determining appropriate adaptations to the management plans. Each of these elements could benefit from funding from the 319(h) program.

Element 3: Management Measures

The watershed plan should include a description of the management measures or management practices and associated costs that will need to be implemented to achieve the load reductions in Element 2, and a description (using a map or a description) of the critical areas where those measures are needed to implement the plan.

The plan should describe the management measures that need to be implemented to achieve the load reductions estimated under element 2, as well as to achieve any additional pollution prevention goals called out in the watershed plan (e.g., habitat conservation and

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protection). Pollutant loads will vary even within land use types, so the plan should also identify the critical areas in which those measures will be needed to implement the plan. This description should be detailed enough to guide implementation activities and can be greatly enhanced by identifying on a map priority areas and practices.

As above, Chapter 5 (Source Analysis) defines the specific and categories of sources, Chapter 8 establishes the load and waste load allocations, and Chapter 9 (Implementation) describes the implementation plan by which allocation will be achieved. Specific to the draft TMDL Action Plan is the requirement of responsible parties to develop Bacteria Load Reduction Plans and other management plans, as appropriate, by which to identify the management and treatment approaches best suited for the specific site or sites. Development and implementation of these plans would benefit from funding under the 319(h) program. A list of the reasonably foreseeable compliance measures (a.k.a, management measures) are identified and evaluated for their potential environmental impacts, costs and sources of funding in Chapter 11 (CEQA) and Chapter 12 (economic considerations). Management measures that qualify for project funding are not limited to the measures evaluated in this Staff Report. Funding is based on measures that address the specific type of impairment

Element 4: Technical and Financial Assistance

Estimate of the amount of technical and financial assistance needed associated costs, and / or the sources and authorities that will be relied upon to implement this plan. The watershed plan should estimate the financial, technical assistance and authorities needed to implement the entire plan. This includes implementation and long-term operation and maintenance of management measures, I/E activities, monitoring, and evaluation activities. The watershed plan should also document which relevant authorities might play a role in implementing the plan. Plan sponsors should consider the use of federal, state, local, and private funds or resources that might be available to assist in implementing the plan. Shortfalls between needs and available resources should be identified and addressed in the plan.

Responsible parties for each of the source categories is described in detail in Chapter 9 (Implementation). Costs and sources of funding for management measures are identified in some detail in Chapter 12 (Economic Considerations).

Element 5: Information and Education Component

An information/education component that will be used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented should be included in the watershed plan.

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The plan should have a component that identifies the education and outreach activities or actions that will be used to implement the plan. These activities may support the adoption and long-term operation and maintenance of management practices and support stakeholder involvement efforts.

Chapter 9 (Implementation), Chapter 11 (CEQA) and Chapter 12 (Economic Considerations) each describe the need for and components of an educational/outreach efforts. Responsible parties are required to develop such program, where appropriate. In addition, the Regional Water Board is collaborating with the Russian River Watershed Association to establish a Russian River Regional Monitoring Program through which substantial education and outreach will occur. This collaboration is for multiple purposes and to serve multiple projects in the Russian River Watershed. As the program becomes more fully developed, it will become a cornerstone of the monitoring and outreach efforts necessary to support continued implementation of the Russian River Pathogen TMDL.

Element 6: Schedule

Chapter 9 (Implementation) presents various implementation measures and the estimated time schedule associated with implementation for this TMDL. Project proponents seeking funds should have project specific schedules. A plan should include a schedules for implementing the management measures outlined in you watershed plan. The schedule should reflect the milestones developed in Element 7.

Element 7: Measureable Milestones

Plans should have description of interim measurable milestones for determining whether nonpoint source management measures, BMPs, or other control actions are being implemented. Measurable milestones quantify progress in implementing the measures for watershed plan. These milestones may indicate whether they are being implemented on schedule, whereas Element 8 will measure the effectiveness of the management measure, for example, by documenting improvements in water quality.

Chapter 9 (Implementation) defines the multi-steps necessary to fully implement appropriate controls for each of the sources areas of concern. Milestones are given as deadlines, deliverables, and concentration trends.

Element 8: Evaluation of Progress

The watershed plan should also include a set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made towards attaining water quality standards. As projects are implemented in the watershed, water quality benchmarks should be identified to track progress. The *criteria* in Element 8 (not to be confused with *water quality criteria* in federal regulations) are the benchmarks or waypoints to measure against through monitoring. These interim targets

can be direct measurements (e.g., *E. Coli* concentrations) or indirect indicators of load reduction (e.g., number of beach closings). The plan should also indicate how the watershed plan needs to be revised if interim targets are not met. The revisions could involve changing management practices, updating the loading analyses, and reassessing the time it takes for pollution concentrations to respond to treatment.

Chapter 4 (Numeric Targets) and Chapter 7 (Linkage Analysis) describe the targets proposed to measure protection of the recreation beneficial use and their linkage to the existing water quality objective. As above, the first step in controlling many of the identified sources in this TMDL is for responsible parties to develop and then implement BLRPs, or other management plans, as appropriate. The load and waste load allocations are given as concentrations, as are the numeric targets. Adequate effluent monitoring and receiving water monitoring will be an important element of individual management plans, new or upgraded programs (e.g., Local Area Management Plans for onsite waste treatment systems), discharge permits, and other actions as described in Chapter 9 (Implementation). Collaboration under the Russian River Regional Monitoring Program will also play an important role in measuring progress towards attainment of numeric targets and water quality objectives.

Element 9: Monitoring

The watershed plan should also incorporate a monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established in Element 8. Chapter 9 (Monitoring) describes TMDL requirements and responsible parties for monitoring, assessment, and adaptive management, while also providing an umbrella stewardship approach for cooperation and collaboration in the Russian River Watershed. A monitoring component should be designed to determine whether progress is being made toward attaining or maintaining the applicable water quality standards. The monitoring program should be fully integrated with the established schedule and interim milestones criteria identified above. The monitoring component should be designed to determine whether loading reductions are being achieved over time and substantial progress in meeting water quality standards is being made. Watershed-scale monitoring can be used to measure the effects of multiple programs, projects, and trends over time. Instream monitoring is particularly relevant to the project. As above, the Regional Water Board is collaborating with the Russian River Watershed Association in the development of a Russian River Regional Monitoring Program to serve this and many other monitoring needs in the Russian River Watershed.

Summary

The level of detail needed to address the nine key elements of watershed management plans listed above will vary in proportion to the homogeneity or similarity of land use types and variety and complexity of pollution sources. Urban and suburban watersheds will therefore generally be planned and implemented at a smaller scale than watersheds with

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large areas of a similar rural character. Similarly, existing watershed plans and strategies for larger river basins often focus on flood control, navigation, recreation, and water supply but contain only summary information on existing pollutant loads. They often generally identify only source areas and types of management practices. In such cases, smaller sub-basin and watershed plans and work plans developed for nonpoint source management grants, point sources, and other storm water management can be the vehicles for providing the necessary management details. Additional information is included in the Federal Clean Water Act section 319(h) Guidelines.

Specific to the Russian River Watershed and this Pathogen TMDL, Chapter 9 (Implementation) describes the multiple entities and regulatory mechanisms by which appropriate management measures will be implemented and monitored. Some of the sources identified in the watershed require further site specific evaluation prior to determining appropriate management measures or treatment. In those cases, the parties responsible for developing and ultimately implementing approved management plans (e.g., BLRPs, erosion control plans) are clearly identified. The availability of 319(h) grant funds to support the development and implementation of both the watershed plan and the individual management plans may be critical to the success of this TMDL. As required by U.S. EPA, the TMDL describes each of the nine key elements of a watershed plan in chapters throughout the staff report and as summarized here.