

4. WATER MANAGEMENT STRATEGIES & INTEGRATION

The purpose of Chapter 4 is to document the range of water management strategies considered to meet the Plan objectives, as required by the State Integrated Regional Water Management Grant Program.

4-1 Selected Management Strategies and Integration

This section documents the strategies that will be implemented as part of this Plan and discusses how they are linked to one another. See Section 4-3 for more information about integration of management strategies.

Ecosystem Restoration/Environmental and Habitat Improvement

Protection of water quality is essential for the human residents and biological communities residing in the Trinidad Bay ecosystem and its contributing watersheds. Implementation of the ICWMP will directly result in improvements in water quality parameters. Proposed activities that will achieve this result include an incentives program for onsite wastewater treatment system (OWTS) repairs, promotion of Best Management Practices to reduce sedimentation of local waterways, and stormwater drainage system improvements in the City of Trinidad. As described in Chapters 6 and 8, measurements of nonpoint source constituents will be taken during and after Plan implementation in order to compare before-and-after pollution levels. Improvement of groundwater and surface water quality in all parts of the watershed will in turn lead to enhancement of the water quality in the Trinidad Head ASBS. Furthermore, this Plan proposes to raise public awareness of general watershed issues, which is expected to result in future grassroots efforts toward ecological restoration.

Water Supply Reliability

Maintaining a reliable water supply will be necessary as the regional population grows and more development proposals are received. In 2003 the City of Trinidad was recorded as having 40 vacant lots and is predicted to provide an average of three new hook-ups per year. A number of vacant lots also exist in Westhaven and outlying areas. As they become developed some will require water connections through the Westhaven Community Services District (if capacity is expanded), while others will tap into groundwater or draw from local springs. Implementation of water conservation measures, as proposed in Chapter 6, will contribute toward the long-term sustainability of water supplies for Trinidad and Westhaven residents.

Local water supplies are also threatened by nonpoint source pollution as discussed elsewhere in this Plan. Management measures proposed to improve the quality of the water supply include OWTS repairs and road treatments to reduce sediment delivery to streams.

Groundwater Management

The Westhaven Community Service District supplies approximately 30% of its current annual demand from a groundwater well and many residents utilize groundwater resources by drawing

from private wells. Groundwater conditions in the planning area are not well understood. Implementation of a groundwater modeling study is proposed by the ICWMP so that the impact of human activities on groundwater flows may be understood. Improvements in groundwater quality will result from implementation of an OWTS repairs program, which will help to protect local aquifers from contamination by sewage effluent.

Recreation and Public Access

Maintaining safe public access to beaches and harbor in the Trinidad-Westhaven region is not only important to the local economy, but is a mandate of the California Coastal Commission and Coastal Conservancy and addresses environmental justice concerns. Bacterial contamination of local waterways, a likely result of leaking OWTS, has led to temporary beach closures in the area. Implementation of the ICWMP will reduce the likelihood of future beach closures by reducing the level of OWTS-related contaminants entering local surface waters. Replacement of the Trinidad Pier will reduce pollutant discharges which potentially threaten beneficial uses in the ASBS, including recreational, economic and cultural activities.

Stormwater Capture and Management

Storm water management is an important factor in protecting surface water quality. Stormwater runoff collects pollutants such as chemical fertilizers, pesticides and pet wastes as it runs over impervious surfaces and ends up in nearby watercourses. Furthermore, impervious ground surfaces reduce the extent to which rainfall can infiltrate the soil, resulting in larger amounts of stormwater entering streams rapidly, thus altering the natural hydrologic cycle. These effects can be minimized if stormwater is captured (detained) or re-routed. Implementation measures proposed by the ICWMP include the re-direction of stormwater drainage paths in the City of Trinidad and construction of stormwater retention and infiltration components. Projects such as these will reduce the amount of contaminated stormwater discharged to the Trinidad Head ASBS.

Water Conservation

Water conservation is important for ensuring local water supply reliability and for keeping OWTS functioning properly. Although the Trinidad-Westhaven area receives high amounts of rainfall, water conservation practices will become necessary during unexpected periods of drought and during storms, when runoff may overwhelm the capacity of OWTS. Conserving water will also ensure that wildlife, plants and aquatic organisms are supplied with adequate water to maintain the integrity of local ecosystems. The ICWMP proposes implementation of a conservation program to prevent OWTS from being overloaded with wastewater and to reduce the amount of water withdrawn from local streams. Measures will be focused on public outreach, encouraging people to voluntarily reduce their water consumption.

Water Quality Protection and Improvement

Water quality improvement is the major driving factor behind this Plan. Bacterial pollution, nutrient pollution and turbidity have been identified as the major components having a

detrimental effect on water quality in the planning area. An OWTS monitoring and repair program will identify individual sewage disposal systems that may be contributing to water quality problems, and will encourage repair or upgrading of those systems. By ensuring that septic systems within the study area are properly functioning, we can reduce the risk of effluent contamination of the surrounding groundwater and surface water resources. Waste diversion and water conservation efforts will also contribute to water quality improvement by preventing OWTS from becoming overburdened and thus prone to leakage. ICWMP implementation will also reduce suspended sediment in streams by identifying, prioritizing, and providing prescriptions for treating sources of sediment from road systems. Periodic water quality monitoring will ensure that objectives are being met, and stricter management measures may be proposed as necessary.

Water Recycling

Water recycling and reuse could further conserve water supplies and ensure that runoff is kept to an absolute minimum, reducing bluff destabilization at the Tsurai Study Area and other places. However, a number of factors make water recycling infeasible in the immediate future for the Trinidad-Westhaven area. The location of the water treatment plant 2.4 miles away from Trinidad means that a sizeable amount of energy would be required to pump the City's water back to the treatment center after it is used. In Westhaven and other outlying areas, the removal of used water from individual septic systems would require each system to be redesigned. The added costs of pumping water back to the treatment plant and upgrading the facility to accommodate reuse is not anticipated to be financially viable. For a region with a population of approximately 1,000, the cost of recycling water would be far greater than simply ensuring it is conserved properly. Water may be able to be recycled on a local / neighborhood level. The Trinidad Rancheria has a water recycling and reuse system in its casino. Opportunities for water recycling and improved technology should not be overlooked.

Land Use Planning/Watershed Planning

By definition the ICWMP promotes an integrated, watershed-based approach to land use planning. Planning in the Trinidad area has been on a watershed basis since 1978, as Trinidad adopted the State's first approved Local Coastal Plan (LCP). The ICWMP will be incorporated into the City's updated General Plan, allowing the General Plan to be truly watershed-based. The City will also be commenting on and coordinating with the County on their General Plan update to incorporate the principles and projects outlined in this document.

Outreach efforts, such as producing educational brochures and hosting a "State of the Bay" conference, will improve the public's awareness of ecological issues facing Trinidad Bay and its tributary watersheds. As a result, it is hoped that local landowners and land use decision-makers will be more inclined to adopt a holistic view of planning and the watershed-wide environmental impacts of human activities.

NPS Pollution Control

Results of water quality sampling have indicated unhealthy levels of pollutants in coastal waters and other surface waters in the Trinidad-Westhaven area, particularly bacteria and sediment. This is considered to be nonpoint source (NPS) pollution because it does not come from a single, traceable source. Instead, it results from a number of factors including leakages from inadequate OWTS and erosion caused by land use practices and natural processes. Repairing and upgrading OWTS in the planning area will directly lead to reductions in the amount of sewage effluent that carries bacteria and nutrients into surface waters and groundwater. Promoting Best Management Practices for road maintenance and other activities will reduce the amount of sediment entering local waterways. Additionally, improvements to stormwater drainage and retention systems in the planning area will reduce the amount of pollutants washed into creeks and bays by stormwater runoff.

Surface Storage

There are no major surface reservoirs in the planning area other than the storage tanks of the public water supplies. There was previously a small dam and reservoir on Mill Creek that served as the City's water supply; it has now completely filled in with sediment. The Westhaven Community Service District has two standby surface water storage reservoirs with a capacity of approximately 500,000 gallons each on the upper end of the south fork of Two Creek. Additional reservoir construction has not been considered as a management strategy due to financial prohibitions and the potential adverse impacts to streams and riparian habitats.

Water and Wastewater Treatment

As discussed above, wastewater treatment in the study area will be improved through the repair and/or upgrade of individual septic systems. Construction of a sewage treatment plant for the region has been discussed but does not have a great deal of public support at this time due to its potential growth-inducing impacts and significant costs for a small population base. Additionally, the feasibility of a sewer system is limited due to the large distance between communities in the watershed and prohibition of any new discharges into the ASBS. It is expected that properties in the study area will remain on individual sewage treatment systems as long as they do not continue to be detrimental to water quality. A scenario is possible under which the State will intervene and require construction of a sewage treatment plant to alleviate water quality problems.

As a result of AB885, the State will eventually adopt stricter standards for all new and upgraded OWTS with additional requirements near impaired waterbodies. Waste diversion efforts, described in Chapter 6, may include the promotion of pre-treatment measures for household waste. This will improve the quality of wastewater that is delivered to OWTS and thus minimize the potential hazard to surrounding water resources in case of leakage.

Wetlands Enhancement and Creation

There are no known wetlands within the project area other than riparian corridors. The reduction of sediment delivery to wetland, riparian, and streamside habitats will enhance the ecological values of these areas. Wetland creation is a viable implementation tool for controlling sediment and stormwater runoff and treating discharge from OWTS. Future projects involving wetland creation will be considered as implementation measures that are consistent with the ICWMP.

4-2 Strategies That Are Not Applicable

Flood Management

Flood management is not a priority issue for the planning area. Most of the City of Trinidad itself has not been mapped by the Federal Emergency Management Agency. However, there is very limited potential for flooding due to the small size of the watersheds and steep slopes. Additionally development is required to be at least 100 feet from any creek to protect the riparian zone. A small portion of lower Mill Creek is mapped as having a 100-year flood plain. Most of this area is zoned Open Space by the City or Resource Protection by the County, precluding any future development. The remainder of the planning area is designated as flood zone 'C': areas of minimal flooding. The main flooding concerns would be from high groundwater tables during the winter in flat areas and flooding along the immediate coastline as a result of a tsunami. Flooding is not addressed by this Plan.

Conjunctive Use

Conjunctive use is defined as: *The coordinated and planned management of both surface and groundwater resources in order to maximize the efficient use of the resource; that is, the planned and managed operation of a groundwater basin and a surface water storage system combined through a coordinated conveyance infrastructure. Water is stored in the groundwater basin for later and planned use by intentionally recharging the basin during years of above-average surface water supply* (from the CA Dept. of Water Resources Groundwater Glossary available on-line). The benefits of conjunctive use include: optimization of groundwater and surface water resources; protection of groundwater from overdraft and subsidence; prevention of saltwater intrusion; enhancement of natural recharge of groundwater basins; and provision for emergency storage. This strategy is not applicable in the Trinidad-Westhaven region, as there is no major groundwater aquifer that could be overdrawn or used for storage. The water suppliers in the area are individuals and small public systems that do not include any major infrastructure.

Desalination

Desalination is not under consideration as a supplemental water source for local water suppliers. The Trinidad-Westhaven region is abundant in freshwater resources, eliminating the need to utilize seawater for domestic or commercial purposes. Furthermore, the process of desalination is cost-prohibitive and would have adverse environmental effects on the Trinidad Head ASBS.

Imported Water

Importing water to the Trinidad-Westhaven region has not been identified as necessary in any previous local studies or stakeholder meetings. There has generally been significant resistance by the community to hook up to Humboldt Bay Municipal Water District outside of the project area for water supplies. Water conservation measures should be implemented before imported water is considered as a supplement to local water resources.

Water Transfers

Water transfers allow suppliers with excess water supplies to sell their water to those agencies in need. Water transfers provide reduced vulnerability to water shortages resulting from drought, catastrophic events and system security breaches. This has not been identified as a need for water suppliers in the Trinidad-Westhaven watershed. Promoting water conservation measures is a more feasible and desirable strategy for addressing potential water shortages.

4-3 Integration of Strategies

This section describes how the selected management strategies work together to address the key management issues identified in Chapter 3. The management strategies discussed in Section 3-1 are interconnected in many ways and often overlap in the Plan objectives that they attempt to achieve. (See Table 2.)

Table 2. Integration of selected management strategies

Key Management Issue	Applicable Water Management Strategies	Linkages Between Strategies
Water quality	<ul style="list-style-type: none">▪ Ecosystem restoration/ environmental and habitat improvement▪ Stormwater capture and management▪ Water conservation▪ Water quality protection and improvement▪ NPS pollution control▪ Water and wastewater treatment▪ Wetlands enhancement and creation	<ul style="list-style-type: none">▪ Strategies have a shared goal of reducing pollution levels in surface water▪ Strategies address different stages in the cycle of water usage
<p>The Plan utilizes a variety of management strategies to address the need for improved water quality in the region. Integrated strategies are necessary to ensure that benefits achieved in one area will not be canceled out by continuing degradation in another area. For example, riparian habitat restoration undertaken in parts of the watershed may lead to localized water quality improvements but will not benefit domestic water users upstream. Also, some strategies such as habitat restoration may not be feasible in all locations; therefore it is best for regional stakeholders to have a range of strategies available for consideration. The particular strategies</p>		

<p>listed above are interrelated in their goal of reducing surface water pollution and its effects on water users. However, each one addresses a different aspect of water quality.</p>		
<p>Water supply</p>	<ul style="list-style-type: none"> ▪ Water supply reliability ▪ Groundwater management ▪ Water conservation ▪ Water quality protection and improvement ▪ Water recycling ▪ NPS pollution control ▪ Water and wastewater treatment 	<ul style="list-style-type: none"> ▪ Strategies protect quality and quantity of surface and groundwater supplies ▪ Water recycling functions as a form of water conservation ▪ Greater understanding of groundwater flows enables an understanding of impacts on the quality of this resource
<p>Water supply protection involves a complex variety of factors that are best addressed by multiple management strategies. Different strategies affect different aspects of the issue including supply, demand, and quality. Maximum benefit can be achieved through increasing supply, reducing demand, and increasing quality. Supply will be increased through both water conservation and water recycling. Demand will be decreased through water conservation efforts. The quality of water supplies will be increased through groundwater management and protection, nonpoint source pollution control, water and wastewater treatment, and water quality protection and improvement. The mix of strategies proposed by the Plan will address both surface water and groundwater supplies. For example, road treatments will reduce sedimentation of surface water supplies, while OWTS repairs will reduce the occurrence of wastewater leakage that may affect private wells nearby.</p>		
<p>Stormwater management</p>	<ul style="list-style-type: none"> ▪ Stormwater capture and management ▪ Land use planning/ watershed planning ▪ Wetlands enhancement and creation 	<ul style="list-style-type: none"> ▪ Wetlands provide stormwater capture and filtration ▪ Land use policies promote stormwater management strategies for new development
<p>The proposed mix of strategies will ensure that both infrastructure and land use activities are oriented toward sound stormwater management. All of those strategies may be integrated with each other in order to be most effective. Trinidad’s long-term land use planning, for instance, will promote stormwater management and strive to make it easier for landowners to carry out stormwater projects. Wetland enhancement and creation projects will provide stormwater capture benefits in addition to habitat and water quality benefits. On-the-ground projects for stormwater improvement will be most effective if there are strong land use policies to support them, such as policies requiring the direction of drainage away from sensitive areas.</p>		
<p>Watershed management</p>	<ul style="list-style-type: none"> ▪ Ecosystem restoration/ environmental and habitat improvement ▪ Recreation and public access ▪ Land use planning/ watershed planning 	<ul style="list-style-type: none"> ▪ Management for recreation and public access leads to preservation of landscapes and ecosystems ▪ Ecosystem-based approaches to land use planning promote overall watershed health
<p>Watershed management is a complex task involving both natural and human-related factors, all of which are interconnected. Management strategies should be used in conjunction with one</p>		

<p>another to ensure maximum benefit for the Trinidad-Westhaven region. Ecosystem restoration and improvement cannot be done effectively unless land use plans and watershed plans (such as this one) promote and allow for these types of activities. Thorough land use planning is also tied to sound recreation and public access management; the Trinidad General Plan, for example, restricts access and recreation in areas of particular ecological importance. Recreation, planning, and ecosystem restoration all work together in this Plan with the common goal of improving watershed health.</p>		
Groundwater management	<ul style="list-style-type: none"> ▪ Water quality protection and improvement ▪ NPS pollution control ▪ Water and wastewater treatment 	<ul style="list-style-type: none"> ▪ Strategies have a shared goal of reducing the occurrence of contaminants that enter groundwater aquifers ▪ All three strategies are exemplified by OWTS repairs program
<p>The ICWMP integrates a number of strategies with the aim of improving groundwater management. All of the strategies mentioned above are illustrated by the proposed OWTS repairs program. Reducing the occurrence of OWTS leakages will decrease nonpointsource pollution, improve wastewater treatment, and help to protect the quality of nearby surface waters and groundwater. Maximum protection of groundwater supplies can be achieved through a combination of strategies, all of which affect, in different ways, the quality of water that influences nearby aquifers.</p>		
Ecosystems and habitat	<ul style="list-style-type: none"> ▪ Ecosystem restoration/ environmental and habitat improvement ▪ Stormwater capture and management ▪ Water conservation ▪ Water quality protection and improvement ▪ Land use planning/ watershed planning ▪ NPS pollution control ▪ Wetlands enhancement and creation 	<ul style="list-style-type: none"> ▪ Strategies related to water quality and quantity ensure sufficient clean water to support ecosystem functioning ▪ Habitat restoration projects benefit water quality by improving ecosystems' ability to capture and filter stormwater runoff ▪ Watershed-based planning ensures that ecological effects of development are considered
<p>Successful ecosystem management requires a multi-faceted approach that accounts for biotic, abiotic, natural and man-made factors. All the management strategies listed above are employed by this Plan to address interconnected natural elements. Water quality improvement (through OWTS management, sediment reduction, and other projects) supports environmental and habitat improvement through the provision of clean water for essential ecosystem functions. Conversely, habitat improvement projects lead to better water quality by improving vegetative cover, which provides stormwater capture and filtration. Any type of ecosystem improvement project will have a better chance of success if it is supported by appropriate zoning and land use policies, such as those being developed in the Trinidad General Plan Update.</p>		
Recreation and public access	<ul style="list-style-type: none"> ▪ Stormwater capture and management ▪ Water quality protection and 	<ul style="list-style-type: none"> ▪ Using a combination of appropriate water quality improvement strategies

	improvement <ul style="list-style-type: none"> ▪ NPS pollution control ▪ Water and wastewater treatment ▪ Land use planning / watershed planning 	protects safe public access and recreational opportunities. <ul style="list-style-type: none"> ▪ Land use planning strategies can improve public access and protect beneficial uses
<p>The ICWMP utilizes recreation and public access as a management strategy closely tied to water quality improvement, watershed planning and other strategies. Pollution control and water quality protection are vital to the public’s enjoyment of beaches, trails and streams. Land use planning alone can ensure that adequate area is set aside for recreational purposes, but it will not ensure that these areas are unpolluted and safe for public use. Projects such as OWTS repairs and stormwater improvement measures will maximize the recreational values of the Trinidad-Westhaven area by reducing environmental degradation and minimizing public health risks.</p>		

4-4 Benefits of Multiple Management Strategies

There are several benefits to using multiple management strategies. Since the ICWMP has a variety of objectives, multiple management strategies are necessary to successfully implement the Plan. Projects that use strategies to achieve multiple benefits are also more likely to receive funding than projects that are narrowly focused. Comprehensive projects are more effective in addressing multiple stakeholder interests. Furthermore, using a multi-disciplinary approach to Plan implementation means that people with many areas of expertise will be involved in watershed improvement projects. A more thorough understanding of watershed issues is gained when multiple management strategies and disciplines are involved.

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5. REGIONAL PRIORITIES

The purpose of Chapter 5 is to identify short-term and long-term priorities for implementation of the Plan, and to describe the process for modifying those priorities as needed.

5-1 Regional Priorities

As described earlier in this Plan, water quality protection and improvement is the highest-priority management issue for the watershed. Through the ICWMP process it was determined that three water quality influencing factors needed the most attention: wastewater, stormwater and sediment. The reasons for giving these factors high priority were described in Section 3-2. ICWMP priorities can be modified from time to time as new information becomes available and as stakeholder concerns change. Ongoing community and agency involvement is critical to keeping the ICWMP up-to-date and relevant. Each stakeholder in the area has an independent set of priorities for water quality and watershed management. The purpose of this Plan is to address those issues raised by local stakeholders as well as issues that are broader in scope. Establishing regional priorities facilitates the prioritization of currently proposed projects, and provides a framework for prioritizing future projects as new ideas arise. Furthermore, establishing priorities that are regional in scope, rather than site-specific, enables all interested parties to see how a variety of watershed issues are interconnected.

The overarching priority for the Trinidad-Westhaven region is to reduce nonpoint source pollution affecting the Trinidad Head ASBS and Critical Coastal Area. This is consistent with the Basin Plan for the North Coast Region. All lower-level priorities, such as erosion control and habitat improvements, flow from and connect back to this primary objective. Wastewater, stormwater, and sediment management are directly linked to these objectives as well. Most of the specific ICWMP objectives identified in Chapter 3 are clearly related to these three regional priorities.

5-2 Project Identification and Prioritization Process

The projects presented in this Plan are the result of three separate planning processes that have been integrated into the ICWMP. A Wastewater Management Action Plan was developed by STREAMLINE Planning Consultants. A Stormwater Action Plan was developed by Winzler & Kelly Consulting Engineers. A Watershed Assessment/Sediment Action Plan was developed by Redwood Community Action Agency-Natural Resources Services. Each of these plans includes a list of proposed projects that meet Action Plan objectives as well as broader watershed management objectives. The project identification processes are described briefly below.

Wastewater management projects were identified based on the following objectives: 1) identify problem areas and prioritize action alternatives for reducing OWTS pollution of surface water and groundwater systems, and 2) educate property owners about proper care for and maintenance of OWTS and the effects of OWTS on water quality. Projects considered included regulatory measures, incentive-based programs, monitoring and public outreach. A mix of incentives and regulations was considered especially important as this would elicit greater cooperation than

regulations or voluntary programs alone. Many of the projects identified are described at a conceptual level and will be developed more fully upon application for funding.

Stormwater management projects were identified based on the following objectives: 1) identify problem areas where public land ownership allows for implementation of potential projects, and 2) prioritize action alternatives based on their ability to reduce stormwater quantity and improve stormwater quality to reduce the pollutant loading delivered. Projects considered included redirection of stormwater flows to areas where more infiltration could be utilized, implementation of a combined set of Best Management Practices in areas near streams and the ASBS, regulatory measures, monitoring, and public outreach.

Sediment reduction projects were identified based on the following objectives: 1) identify subwatersheds contributing high concentrations of suspended sediment to the Trinidad Head ASBS; and 2) develop a priority list, treatment prescriptions, and cost estimates for treating sources of road-derived sediment. Individual sites were identified for treatment to prevent sediment from entering the stream system. These sites included erosion emanating from stream crossings, cross drains, road drainage systems, road surface, cutslopes, fillslopes, and erosional feature associated with the road. Prioritization was based on an assessment of the quantity of sediment delivered to the stream network, the cost effectiveness of treatment, combined with a logical approach that groups sites within close proximity on road segments. Treatments are aimed at reducing the delivery of sediment to creeks in the project area. Treatments to reduce the production of sediment were also considered, but; however, reducing sediment delivery is less expensive than preventing sediment production.

Projects have been given short-term or long-term priority. Prioritization was based on the level of pollution found in the target area, anticipated funding availability, relationship to State and other requirements, achievement of watershed management objectives, and relationship to other processes with established timelines. Short-term (high) priority was given to projects that target areas showing high pollutant concentrations, projects that may have funding immediately available, projects that facilitate compliance with legal requirements, and projects that are influenced by upcoming deadlines (such as General Plan updates). Long-term (medium to low) priority was given to projects that are not financially viable at the present time, projects that target areas of lower pollution, and projects that need further conceptual development. These types of projects will be reviewed as funding becomes available in the future.

5-3 Priorities for Implementation

Short-term priorities are based on urgency and/or anticipated immediate funding availability. Long-term priorities based on future funding availability or achievement of broad, long-term watershed management goals. The projects listed here are further described in Chapter 6.

Short-Term Priorities

- Develop a Trinidad Bay water quality monitoring plan and water quality information database
- Offer incentives to property owners for OWTS inspection, repair and maintenance

- Implement regulatory standards for new and replaced OWTS in accordance with State Assembly Bill 885
- Develop public outreach programs to increase watershed residents' awareness of water quality-related issues
- Support the activities of the voluntary, collaborative Trinidad Bay Watershed Council
- Implement road treatments at selected sites in the Mill Creek, Parker Creek, McConnahas Mill Creek, Luffenholtz Creek, Joland Creek, and Two Creeks watersheds
- Promote Best Management Practices for stream crossing management
- Establish contacts with local media outlets to increase public awareness of Trinidad Bay and its tributary watersheds
- Distribute educational materials on watershed stewardship and develop a list of volunteer opportunities
- Implement stormwater improvement projects in the Trinidad and Luffenholtz watersheds
- Develop grading standards for the City of Trinidad
- Cooperate with the Tsurai Ancestral Society to reduce bluff erosion and improve water quality at the Tsurai Study Area
- Integrate ICWMP objectives and riparian habitat protection measures into the City of Trinidad and Humboldt County General Plan updates
- Update the 1977 ASBS Report in order to reassess the ecological health of Trinidad Bay

Long-Term Priorities

- Maintain a database of OWTS information in order to monitor OWTS performance
- Promote Best Management Practices for road maintenance and construction activities
- Develop a water conservation program targeting residential and commercial water users
- Install water meters on unmetered buildings and water mains in Trinidad to identify where water losses are occurring
- Develop a regular "State of Trinidad Bay" watershed conference
- Promote watershed education efforts at local schools
- Develop a comprehensive stormwater management plan for the City of Trinidad including Low Impact Development options
- Develop new City regulations to reduce coastal bluff erosion
- Carry out a groundwater modeling study for the City of Trinidad
- Assess the need for and scope of a recreation management plan for Trinidad Bay and its tributary watersheds, with the input and collaboration of other vested stakeholders
- Assess the impacts and benefits of Trinidad Bay harbor and marine related activities
- Remove barriers to salmonid migration in local streams

5-4 Process for Priority Modification

This ICWMP utilizes an adaptive management approach to addressing local watershed issues. A Project Review Subcommittee will be assembled to monitor and assess implementation measures and respond appropriately. Additional projects will be considered as new information becomes available. The process for prioritizing future projects or re-prioritizing current project proposals will be as follows:

1. Evaluate the results of any ongoing studies, monitoring efforts and data collection activities.
 - a. Ensure that new or updated data are entered into the appropriate databases.
 - b. Refine area maps which reflect resource inventories, if needed.
2. Review and, if necessary, revise objectives and management priorities to ensure that the evolution of knowledge about conditions in the watershed (or derived from external factors such as global warming) are reflected.
3. Review projects developed by watershed stakeholders and coordinate with the Project Review Subcommittee to re-rank the overall project list as necessary.
4. Identify and facilitate the coordination of multi-stakeholder and multi-objective projects for the coming year, in coordination with the Project Review Subcommittee.
5. Revise the Plan document as necessary to respond to evolving conditions within the watershed, emerging consensus topics and requirements of new funding opportunities.

The City of Trinidad will have primary responsibility for coordinating ICWMP reviews and updates, possibly with additional support from the Trinidad Bay Watershed Council and other interested parties.

6. IMPLEMENTATION

The purpose of Chapter 6 is to describe the specific projects that are recommended to achieve Plan goals and objectives.

6-1 Project Categories

A list of potential watershed/water quality improvement projects was developed as part of the ICWMP process. To make the Plan easier to use, these proposed projects are placed into categories as described below. Table 3 shows the relationship between projects and ICWMP objectives. In this chapter the projects are presented in their conceptual stage. The project list (see Table 4) is meant to provide stakeholders, officials and resource managers with a number of options that may be further developed as grant funding becomes available. In most cases, without current funding available to pursue research, design and implementation, the details will need to be finalized at a later time.

Water Quality Monitoring Projects

Several water quality monitoring efforts have already been implemented within the project area and baseline conditions have been at least partially established. Continued water quality monitoring, both in Trinidad Bay and in the surface waters of the region, is necessary to measure the success of ICWMP implementation. Monitoring in the bay will also be necessary to support the City's request for an exception to a State prohibition on waste discharges into the ASBS. To that end, the ICWMP proposes to establish a comprehensive water quality monitoring plan for Trinidad Bay, including the creation of a database for storing quality information. The monitoring project should include a review of past monitoring efforts, identification of known pollutants of concern, identification of data gaps, and possible development of bio-indicators that can serve as a "measuring stick" for water quality and overall ecological health. Water quality monitoring is further described in Chapter 9 – Data Management.

Also see individual action plans for more specific monitoring information (Appendices F-H)

OWTS Management Projects

The OWTS management component has been developed and included as an appendix to the ICWMP (see Wastewater Management Action Plan). Implementation of an OWTS ordinance and permitting program is already underway in the City of Trinidad. For unincorporated portions of the planning area, incentive- and education-based measures are proposed to be the primary means to achieve proper OWTS functioning. Financial incentives will be pursued to encourage property owners to get their systems inspected, repaired or upgraded and to enter long-term maintenance agreements. Outreach will be an important component of these projects, as property owners should be informed of the importance of proper OWTS maintenance. Outreach could be in the form of workshops, brochures, or other avenues. Collaboration with landowners to identify and resolve OWTS issues is preferable to more stringent regulation and enforcement options. The City recently received a Prop 50 Clean Beaches Grant that will implement these proposals on a small scale. The project includes money to source track problem using Health Department

file information, GIS and a fluorometer. Residents within these identified areas will be offered free or discounted inspections and money is included to upgrade failing systems on an income qualifying basis. The Trinidad Rancheria is also in the process of developing a Septic and Leachfield Maintenance Program. Baseline OWTS information has already been compiled and the feasibility of various management options is being considered.

Regulatory measures are another option. It is recommended that the applicable local General Plans be updated with policies to promote water quality protection through proper OWTS siting and maintenance. More stringent enforcement of existing County sewage disposal regulations is also a possibility, though not within the scope of authority of the various ICWMP stakeholders. A special services district could be formed to oversee OWTS operation in Westhaven and surrounding areas; this has not been formally proposed by any of the project partners but may be considered in the future if other measures prove ineffective in improving water quality. Monitoring of OWTS improvement measures will also be useful, and could be achieved through the establishment of a database of OWTS information for parcels throughout the planning area.

For more detail see Appendix F.

Road-Related Sediment Reduction Projects

The sediment reduction component has been included as an appendix to the ICWMP (see Watershed Assessment Action Plan). Road-related projects include the implementation of Best Management Practices for road maintenance and stream crossings, which may be undertaken by private road maintenance associations or by public agencies with jurisdiction over area roads. Also proposed are a number of site-specific road treatments to reduce sediment problems where they are most urgent. Treatments may include upgrading drainage patterns, replacing culverts, decommissioning stream crossings, etc. A number of these identified high-priority sites are located on private timber land, where Green Diamond Resource Company retains the authority to carry out road maintenance and repairs, but who is willing to provide cost-sharing for implementing some of the proposed projects. There are also public roads that should be considered, particularly Scenic Drive, which is located along bluff tops and is in continual need of maintenance and prone to failure. The Rancheria, the City and the County all cooperate to maintain and improve this roadway and in future consideration of an alternative access to the Rancheria. In residential parts of the watershed where roads are privately owned, funding for road-related projects may not be available unless road maintenance associations are formed. Public outreach will also be an important factor in implementing this component of the ICWMP. Educational efforts are proposed to inform property owners and construction managers about protecting waterways from sedimentation.

For more detail see Appendix H.

Public Outreach Projects

Public outreach is an essential component of all the proposed projects. Community support will be needed for effective implementation, and education is a key to gaining that support. Outreach efforts will focus on general watershed stewardship issues as well as specific issues that affect

water quality in the region. The two main purposes of public outreach are to increase the general awareness of water quality and watershed management, and to inspire individuals to participate in watershed improvement. Potential measures include making contact with members of the local press, establishment of a regular “State of the Bay” conference in Trinidad, promotion of watershed-based curricula in local schools, and development of brochures and other materials to be circulated among watershed residents. There could also be opportunities for hands-on education in the form of voluntary restoration work, tours of project sites, and nature hikes. The Trinidad Elementary School, HSU Marine Lab and Trinidad Rancheria already have some ongoing public education programs that could be expanded upon.

Also see individual action plans for more specific information on proposed public outreach efforts (Appendices F-H)

Water Conservation Projects

Water conservation is important for a variety of reasons: 1) to ensure that adequate supplies remain available to water users during periods of high turbidity, emergencies, and other situations in which the City of Trinidad’s water plant is at peak production or has exceeded its treatment capacity; 2) to minimize ground saturation and drainage problems; 3) to reduce energy use and other costs associated with water consumption. Voluntary approaches to water conservation may be achieved through incentive-based means such as offering rebates for the installation of water-saving appliances. Public outreach will be a crucial component, as homeowners and business owners should be made aware of water-saving options. In Trinidad, City staff is aware that significant leaks are present in some water mains; the ICWMP recommends that water mains be metered so these leaks can be more readily located and repaired. Another option for reducing water consumption in the City of Trinidad is the implementation of a variable water rate structure as an alternative to the current flat-rate structure, in which all users are charged a base rate with no incentive to conserve water. The Westhaven Community Service district implemented an increasing block rate structure in 2003 that has resulted in a 20% reduction in consumption on an annual basis. Water recycling already occurs within Trinidad Rancheria and additional future options should be considered.

Also see the Wastewater Action Plan (Appendix F) for more detailed information.

Stormwater Management Projects

A Stormwater Management Action Plan has been prepared and attached as an appendix to the ICWMP. Major infrastructure improvement projects are proposed for the City of Trinidad and the Luffenholtz Creek watershed (Westhaven area) to capture, detain, treat, and reroute stormwater runoff. These projects will include installation of bio-retention and infiltration components. The purpose is to reduce the volume and loading of pollutants that are carried by stormwater into streams and coastal waters. Private property owners can play a part in improving stormwater filtration by incorporating Low Impact Development alternatives in new construction. Regulatory measures applicable to the City of Trinidad are another option for reducing the effects of stormwater runoff on the bay and coastal bluffs. Other suggested projects include updating the City’s Grading Ordinance, adopting a comprehensive stormwater

management plan for the City, and installing permeable paving on roads and parking lots. The Trinidad Rancheria will be developing a Watershed Based Plan to address non-point source pollution.

For more detail see Appendix G.

Erosion Control Projects

Erosion control is another important aspect of protecting surface waters from sedimentation. It is also related to the prevention of coastal bluff erosion, which is particularly crucial to the Tsurai Village site in Trinidad. Proposed measures include the adoption of erosion and sediment control standards at the City of Trinidad, pursuit of drainage improvement projects and promoting water conservation on parcels adjacent to the Tsurai Study Area, and general support for implementation of the Tsurai Management Plan to reduce bluff erosion and improve water quality within the Tsurai Study Area.

Collaborative Watershed Planning

The only project currently belonging to this category is the formation of a Trinidad Bay Watershed Council, a volunteer group that has been established to discuss watershed issues, carry out watershed improvement projects, and provide policy guidance to City and County decision-makers. This effort has grown out of the community meetings held during the ICWM Planning process and involves a diverse group of stakeholders including local residents, regulatory agencies and non-profits. Public outreach (above) and General Plan updates (below) also promote collaborative watershed planning.

General Plan Updates

Both Trinidad and Humboldt County are currently in the process of updating their General Plans and implementing (zoning) ordinances. The recommendations contained in the ICWMP should be incorporated into General Plan policies to provide institutional support for erosion control, OWTS repairs, stormwater management, riparian habitat protection, and a watershed-based approach to land use planning. Appropriate regulations should be added to local zoning ordinances to ensure effective implementation of ICWMP-related policies.

Other Projects

Several of the projects discussed above also serve to further the listed objective to support ecosystem restoration and habitat improvement projects in the watershed. In addition, a variety of other measures are suggested that address ICWMP objectives but may not clearly fall under any of the above categories. Recreation and harbor-related activities may have ecological impacts on the Trinidad Bay watershed, but have not been analyzed as part of the ICWMP process. The harbor master at Trinidad Bay has cooperated with City authorities in finding ways to minimize the impacts of boating on the bay ecosystem; these efforts will continue as a result of the City's General Plan Update. The Trinidad Rancheria is in the process of seeking funding to replace the old creosote and pressure treated wood pier with a concrete pier that will reduce

pollution and stormwater runoff into the ASBS. In addition, they received a Prop 50 Clean Beaches grant to provide public restrooms and improve wastewater treatment at the Trinidad Harbor. It is recommended that a recreation management plan be considered for Trinidad Bay in the future if the need arises.

Another potential project is the development of volunteer opportunities for watershed restoration and monitoring. It is expected that volunteer positions will be created after implementation plans are developed and specific opportunities for watershed restoration are defined. Restoration activities may include the removal of barriers to salmonid migration, a project that is recommended to free up additional stream habitat for threatened and endangered anadromous fish species. Another activity related to salmonid habitat restoration is riparian habitat protection, which will be addressed during the Trinidad General Plan Update.

Table 3. Relationship of implementation projects to ICWMP objectives (see Chapter 4)

<i>Project Category</i>	<i>ICWMP Objective</i>							
	#1 WQ monitoring	#2 OWTS pollution	#3 Road sediment	#4 Public awareness	#5 Water consumption	#6 Stormwater drainage	#7 Erosion control	#8 Tsurai bluff
Water Quality Monitoring	X							
OWTS Management		X						X
Road-Related Sediment Reduction			X					
Public Outreach		X	X	X	X		X	
Water Conservation					X			
Stormwater Management						X		X
Erosion Control			X				X	X
Collaborative Watershed Planning								
General Plan Updates		X	X					
Other				X				X

Table 3 (continued)

<i>Project Category</i>	<i>ICWMP Objective</i>						
	#9 Watershed council	#10 GP updates	#11 Groundwater	#12 Restoration and habitat	#13 Recreation	#14 Trinidad Harbor access	#15 Harbor pollution
Water Quality Monitoring						X	X
OWTS Management		X					X
Road-Related Sediment Reduction		X					
Public Outreach	X			X			
Water Conservation							
Stormwater Management		X					X
Erosion Control		X					X
Collaborative Watershed Planning	X			X			
General Plan Updates		X		X			X
Other		X	X	X	X	X	X

6-2 Timelines and Responsibilities

General oversight for Plan implementation will be provided by the City of Trinidad, with additional support from the Trinidad Bay Watershed Council and Trinidad Rancheria. The City has acted as lead agency throughout the ICWMP process and is committed to achieving the water quality goals and objectives outlined in this Plan. Trinidad citizens have also shown a great deal of support for development and implementation of water quality improvement projects, ensuring that City officials will be held responsible for achieving the goals set forth during this collaborative planning process. The City will establish a regulatory framework for Plan implementation by incorporating the ICWMP into the Trinidad General Plan Update, and by recommending that the County of Humboldt adopt appropriate policies as part of its General Plan update process. In some cases the City will also have responsibility for carrying out individual projects, as described below. Projects that occur outside City boundaries will need to be undertaken by private stakeholders or by agencies with jurisdiction in those areas.

A timeline cannot be established for overall achievement of ICWMP goals, because the ICWMP is a working document and goals and projects may be modified from time to time. Specific start and end dates for the proposed projects will depend on the availability of grant funding. Some projects that are already being implemented in whole or in part have some more specific information included.

Explanation of Table 4

Table 4 provides specific information, to the extent possible, about proposed and planned implementation activities. The “Cooperators” column indicates the agency(ies) or group(s) that will likely play a role in the project’s implementation. Many projects take place in multiple jurisdictions and therefore have several components undertaken by different agencies. Common responsible entities include the following:

<i>Agency / Entity</i>	<i>Abbreviation</i>
City of Trinidad	Trinidad
Westhaven Community Services District	WCSD
Trinidad Rancheria	Rancheria
Tsurai Ancestral Society	Tsurai
Trinidad Bay Watershed Council	TBWC
Humboldt County Division of Environmental Health	HCDEH
Humboldt County Planning Department	Co. Planning
Humboldt State University	HSU
Private citizens / organizations	Private
Redwood Community Action Agency	RCAA
California State Parks Department	State Parks

The “Status” column indicates the current phase being undertaken for a project. A status of “recommended” is given to projects in their most preliminary phase. This indicates that a project is being suggested by the ICWMP, but details have not been developed yet and the project is not necessarily under consideration by applicable agencies.

R = recommended
UC = under consideration
IP = in progress
SF = seeking funding

The “Duration” column indicates the estimated amount of time it will take to implement a project. This is presented as a number of years. In many cases a project’s timeline will be ongoing (O), as in five years or longer, or is unknown (U). These timelines are preliminary and may be changed as projects are further developed. As mentioned above, specific start and end dates cannot be provided until funding for each project becomes available.

The “Priority” column indicates a project’s priority level. Priority levels are generally based on need and financial and technical feasibility. (Prioritization processes were described in Chapter 5.) High-priority projects are conceptually well developed and will be implemented as soon as possible. Medium- and low-priority projects will be implemented as funding becomes available. Priority levels are likely to be modified during periodic review of the ICWMP.

H = high priority
M = medium priority
L = low priority

The column labeled “NPS Management Measure(s) Addressed” indicates whether a project implements certain nonpoint source pollution management measures recommended by the State Integrated Regional Water Management Planning Grant Program. Only the State-defined codes (such as 1A, 1B, and so on) are presented in the table. The management measures corresponding to these codes are presented in Appendix I.

Projects in Progress or Already Completed

Table 4 indicates a number of projects that are already in progress.

1a. Comprehensive water quality monitoring plan for Trinidad Bay

As part of the City’s Prop 50 Coastal Watershed Planning effort, a comprehensive monitoring plan for the Trinidad ASBS was developed and implemented to provide preliminary data and support for an ASBS discharge exception request. The data was used to submit a complete application and has been accepted by the SWRCB. Data showed that, in general, water quality was fairly good in most sampling locations and for most constituents. The biggest problems were found in the lower portion of the City where stormwater accumulates. Bacteria and copper were the only constituents that exceeded standards.

1b. Water quality information database

Although a formal database has not been started, a significant amount of water quality data has been compiled through various efforts of the City and other stakeholders. The most current and comprehensive data is now available as Appendices to this document and provides a baseline for future effectiveness monitoring. More work is need though to compile the rest of the data into a usable and comparable document. There should not be data compatibility problems as all the

data collected within the past approximately 5 years has been SWAMP comparable and conducted under a State approved QAPP.

1c. Data collection to support ASBS discharge exception request

This project was started with 1a above. Funding has been requested under the Prop 84 ASBS grant program to accomplish the monitoring that will be required as part of conditions on an ASBS discharge exception request, consistent with the Special Protections of the CA Ocean Plan.

1d. Trinidad Rancheria Surface Water Monitoring Program

This is an ongoing program developed and maintained by the Rancheria since 2002. This program was implemented to assess the impact of onsite and offsite activities on its water quality interests and to establish a baseline of water quality data. The program samples for indicators of possible petroleum contamination from boating activities, sediment discharge to streams from land-use practices, and surfacing leachfield effluent from onsite or offsite facilities. Additionally other water qualities indicators such as suspended solids, temperature, pH, dissolved oxygen, and conductivity/salinity are also measured in this program. The geographic distribution of sampling sites includes monitoring in the Trinidad Bay directly, and monitoring sites for seeps and tributary streams into the Bay including McConnahas Mill Creek, and several un-named drainages that drain the majority of the Rancheria, Casino, and Westhaven housing areas.

2a. Regulatory standards for new and replacement OWTS in the City of Trinidad

The City has spent several years developing a comprehensive OWTS Management Program that will address permitting, construction and operation of all new and existing OWTS within the City. Although the regulations have not been updated from what the County currently uses, the City's OWTS ordinance and guidelines set for standards and criteria for requiring replacements and upgrades of existing systems. The City will be working with the County to update the regulations consistent with AB 885. It is expected that the City Council will hold public hearings on the proposed ordinance in September 2008.

2b. Offer financial incentives for system inspection and repairs

The City was awarded a Clean Beaches grant to reduce bacterial contamination on local beaches. Since OWTS are suspected of being the primary cause, the grant award included money to inspect and upgrade systems in problem neighborhoods with risers and in-line filters. Part of the project also includes the demonstration of a relatively new and fast method of source tracking human / OWTS bacterial pollution. In addition, there is money to completely replace up to 10 failing or non-functioning systems on an income qualifying basis.

2c. Operating permits for existing OWTS in the City of Trinidad

Also see description under 2a above. Operating permits for every system in town is one of the main components of Trinidad's OWTS Management Program. Each system will require regular inspections by a qualified service provided and will be given a performance rating. Future maintenance requirements and inspections intervals will be determined based on the performance rating and Homeowner Questionnaire. Upgrades and repairs will generally be required for non-functioning systems, at the time of property sale or development permit approvals. An ordinance has been developed and has gone through several public review and comment processes and is

awaiting scheduling for a future City Council meeting, probably in September 2008. The ordinance is supplemented by Guidelines and Regulations.

2e. Effectiveness monitoring for OWTS management measures

Since the OWTS management measures have not been implemented, no effectiveness monitoring has been completed. However, a significant amount of baseline data has been collected for future effectiveness monitoring.

2g. Trinidad Rancheria Septic and Leachfield Maintenance Program

A septic and leachfield maintenance program is underway at the Trinidad Rancheria, which has installed risers on 90% of residential tanks, completed an inspection and baseline assessment for existing conditions, and is in the process of determining how best to fund and implement a preventive maintenance program.

4a. Public outreach on OWTS repair and maintenance

Several public outreach efforts have been implemented. The City created a brochure for property owners explaining both Trinidad's pending OWTS Management Program and some basic do's and don'ts for OWTS operation and maintenance. As part of the Prop 50 Integrated Coastal Watershed program, the City and partners put on several workshops for the community, most of which included some aspect of property owner education. Staff has also attended the Trinidad Fish Festival and other community events with posters and other education materials. OWTS tips have also been included as part of the "Trinidad Notes" column in the local, weekly newspaper.

4i. Trinidad Rancheria Tribal Community Environmental Education Program

The Trinidad Rancheria has an ongoing Tribal Community Environmental Education Program covering a variety of issues including water conservation, energy conservation, global climate change, pollution prevention, solid waste reduction, and recycling. This program engages community members in one-on-one interaction and education and community wide education at Community Council meetings. A Tribal Youth Environmental Education Program will be starting in mid 2008.

5b. Implement variable water rate structure.

Westhaven CSD has already implemented a dual base-rate billing structure to help encourage water conservation. The City is in the process of analyzing water use patterns and considering various alternative variable rate structures.

7c. Parker Creek / Tsurai Village Drainage Improvements

The City is preparing to construct improvements near the Tsurai Village site, with Coastal Conservancy funding, to redirect some drainage back into Parker Creek that is now saturating the site from an existing driveway cut.

8a. Trinidad Bay Watershed Council

Local individuals, agencies and organizations have begun the process of forming the Trinidad Bay Watershed Council (TBWC), with the purpose of working collaboratively to improve and maintain the watersheds, coastal waters, and communities in the Trinidad and Westhaven area for the benefit of all community members, businesses and other stakeholders. The watershed

council effort brings together members of the Trinidad Head Critical Coastal Area Pilot Project Team, residents and other interested parties.

9a. Integration of ICWMP into Trinidad General Plan Update

The City is currently in the process of updating its General Plan. Recommendations from the ICWMP have been compiled into a policy document for consideration for addition into the draft General Plan. It was also found that many of the ICWMP recommendations were already included in some form in the draft General Plan policies.

10d. Integration of riparian habitat protection into Trinidad General Plan Update

Policies protecting riparian habitat from development within 100 ft of a creek have been included in the Draft General Plan.

10e. Reduction of harbor-related impacts on Trinidad Bay

Trinidad Rancheria was awarded a Clean Beaches grant to install public restrooms within the Harbor area and to make significant improvements to the sewage disposal system accommodate the new restrooms, existing restaurant and a future fish cleaning station. The new restrooms will replace an existing porta-potty near the boat launch that is at risk of being inundated by winter waves.

10f. Trinidad Harbor Wastewater Improvement Project

In the Harbor area, the Trinidad Rancheria is developing a wastewater improvement project to replace the existing septic systems, construct a public restroom and install fish cleaning station. As there are currently no public restrooms and fish cleaning station at the Trinidad Harbor, this project will help reduce the disposal of untreated waste in the area.

Table 4. Project list and status

<i>Project</i>	<i>Cooperators</i>	<i>Status</i>	<i>Duration</i>	<i>Priority</i>	<i>NPS Management Measure(s) Addressed</i>
1. Water quality monitoring					
1a. Establish comprehensive water quality monitoring plan for Trinidad Bay	Trinidad HCDEH TBWC Rancheria	IP, SF IP UC IP	1-2 years	H	4A.3
1b. Maintain water quality information database	Trinidad HCDEH TBWC	SF IP UC	Ongoing	M	4A.3
1c. Collect data to support ASBS discharge exception request	Trinidad Rancheria	IP IP	Ongoing	H	4A.3
1d. Trinidad Rancheria Surface Water Monitoring Program	Rancheria	IP	Ongoing	H	4A.3
2. OWTS management					
2a. Implement regulatory standards for new systems and replacements	Trinidad HCDEH State of Calif.	IP UC IP	< 1 year	H	3D.1
2b. Offer financial incentives for system inspections and repairs	Trinidad	SF	1-2 years	M	3D.2
2c. Issue operating permits for existing OWTS (City of Trinidad)	Trinidad	IP	1-2 years	H	3D.1
2d. Develop maintenance contracts / maintenance agreements	Unknown	UC	2-3 years	L	3D.1, 3D.2
2e. Monitor effectiveness of OWTS management measures	Trinidad HCDEH Rancheria	IP, SF UC UC	Ongoing	M	3D.1, 3D.2
2f. Form special service district / assessment district for OWTS management	Trinidad WCSD	R	Unknown	L	3D.1, 3D.2
2g. Septic and leachfield maintenance	Rancheria	IP	2-3 years	M	3D.1, 3D.2
3. Road-related sediment reduction					
3a. Implement Best Management Practices for	Private TBWC	R	< 1 year	H	3E.5, 3E.6, 2D

road maintenance					
3b. Carry out road treatments on high-priority sites	U TBWC RCAA	SF UC IP	2-3 years	H	2D, 3E.6
4. Public outreach					
4a. OWTS repairs and maintenance outreach	Trinidad HCDEH	IP, SF IP	Ongoing	H	3F.1
4b. Road maintenance outreach	Trinidad TBWC	SF SF	Ongoing	H	2D, 3E.5
4c. Erosion control outreach	Trinidad TBWC	SF SF	Ongoing	H	3B.1, 3F.1, 2L
4d. Sediment source reduction outreach	Trinidad TBWC	SF SF	Ongoing	H	3F.1, 2L
4e. Stormwater management outreach	Trinidad TBWC	SF SF	Ongoing	H	3F.1
4f. Water conservation outreach	Trinidad WCSD	R, SF UC	< 1 year	H	3F.1
4g. Establish / maintain contacts with local media outlets	Trinidad TBWC	R R	Ongoing	M	3F.1, 6D, 5D.1, 4C.1
4h. Sponsor a "State of the Bay" conference for Trinidad Bay	Trinidad TBWC	R R	Annual	M	3F.1, 6D, 5D.1, 4C.1
4i. Promote general watershed stewardship / water quality education	Trinidad TBWC Rancheria	R R IP	Ongoing	M	3F.1, 6D, 5D.1, 4C.1
4j. Develop newsletter for watershed residents	TBWC	R	Ongoing	L	3F.1, 6D, 5D.1, 4C.1
4k. Promote watershed education at local schools	TBWC	R	Ongoing	L	3F.1, 6D, 5D.1, 4C.1
5. Water conservation					
5a. Offer financial incentives for water-saving measures	Trinidad TBWC	IP, SF SF	1-2 years	L	--
5b. Implement variable water rate structure	Trinidad WCSD	R, SF R	?	H M	--
5c. Install water meters on City and other buildings	Trinidad	R	< 1 year	M	--
5d. Meter Trinidad water mains to identify leaks	Trinidad	R	< 1 year	H	--
6. Stormwater management					
6a. Trinidad / Mill Creek watershed drainage improvements	Trinidad TBWC	SF	2-3 years	H	3C
6b. Luffenholtz Creek watershed drainage	Trinidad TBWC	SF	1-2 years	M	3C

improvements					
6c. Promote Low Impact Development options for new construction	Trinidad TBWC Co. Planning	R, SF R R	Ongoing	M	3B.1
6d. Support adoption of a comprehensive stormwater management plan	Trinidad	IP	< 1 year	H	3A, 3B, 3C
6e. Develop permeable paving project (City of Trinidad)	Trinidad Rancheria	UC UC	< 1 year	H	3C
6f. Promote CASQA compliant City and County regulations to reduce stormwater runoff	Trinidad Co. Planning	R	1-2 years	M	3A, 3B, 3C
7. Erosion control					
7a. Update erosion and sediment control standards for the City of Trinidad	Trinidad	R	1-2 years	L	3B.1
7b. Support recommendations of the Tsurai Management Plan	Trinidad Tsurai	SF	Ongoing	H	3C.1, 3A.2, 3A.3
7c. Carry out drainage improvements on parcels adjacent to Tsurai village site	Trinidad Tsurai	IP	Ongoing	H	3A.2
7d. Develop regulations to reduce coastal bluff erosion (City of Trinidad)	Trinidad State Parks	R	1-2 years	M	3B.1
8. Collaborative watershed planning					
8a. Establish a voluntary Trinidad Bay Watershed Council	TBWC	IP, SF	Ongoing	H	3F.1, 6D, 5D.1, 4C.1
9. General Plan updates					
9a. Integrate ICWMP recommendations into City of Trinidad General Plan	Trinidad	IP, SF	< 1 year	H	All
9b. Integrate ICWMP recommendations into Humboldt County General Plan	Co. Planning	R	1-2 years	M	All
10. Other					
10a. Evaluate need for a recreation management	U	R	4-5 years	L	4A.2, 4C.1

plan for Trinidad Bay and tributary watersheds					
10b. Compile bibliography of scientific literature related to Trinidad Bay	HSU	IP	1-2 years	L	4A.3
10c. Promote volunteer opportunities in watershed restoration and water quality monitoring	Trinidad	R	Ongoing	M	3A.1, 3C.1, 3F.1
10d. Integrate riparian habitat protection into General Plan and Zoning Ordinance updates	Trinidad	IP	< 1 year	H	6B
10e. Explore measures to reduce harbor-related impacts on Trinidad Bay	Rancheria Trinidad	IP, SF	Unknown	H	4A.2, 4B.4, 4C.1
10f. Remove barriers to salmonid migration on local streams	TBWC	R	Unknown	M	5A.2
10e. Assess groundwater conditions in planning area	Unknown	R	1-2 years	M	--
10f. Trinidad Harbor wastewater improvement project	Rancheria	R	1-2 years	H	4A.2, 4A.7, 4B.2
10g. Trinidad Pier Reconstruction Project	Rancheria	IP, SF	1-2 years	H	4A.2, 4A.5

6-3 Linkages Between Projects

Many of the proposed projects are linked by a public outreach component. Outreach efforts for wastewater, stormwater, sediment, watershed stewardship and other elements of this Plan will be coordinated wherever possible to avoid duplicate efforts. Other projects are linked by achievement of common objectives. These linkages can be seen in Table 3, where implementation activities are listed according to objective. Also, some projects are linked because they benefit the same geographic area. In particular, many of the projects identified target the Luffenholtz Creek watershed because Luffenholtz Creek is a Critical Water Supply and has been found to have high levels of bacteria and other pollutants; it is also the largest watershed in the project area. Efforts such as OWTS repairs, stormwater system improvements, and road treatments will target this area and work together to reduce pollution in Luffenholtz Creek.

6-4 Economic and Technical Feasibility

Wastewater-related projects proposed by the ICWMP generally require simple and readily available technology, such as Geographic Information Systems (GIS), which will be used to monitor OWTS in the planning area. Through previous efforts, there is already trained and experience personnel with appropriate equipment to conduct much of the proposed monitoring. A grant proposal has been submitted under the Prop 84 ASBS funding program to implement a comprehensive monitoring program consistent with the Ocean Plan Special Protections. Repairs and replacements of non-functioning OWTS will be undertaken by qualified professionals using grant funding, some of which has already been secured. Voluntary and regulatory efforts toward compliance with OWTS operation and maintenance standards are economically feasible. Overall, projects aimed at reducing wastewater pollution will be focused on public outreach and incentive-based solutions. No financial investment will be required other than what is necessary to cover the costs of OWTS inspection, repair, and replacement for landowners who qualify for incentives and rebates. The City of Trinidad has already secured grant funding for its OWTS management program, and additional grant funds are expected to be available for implementing similar measures in other parts of the planning area. The City has already developed its ordinance for implementing an OWTS Management Program that is currently being reviewed by the City Manager and City Attorney prior to City Council hearings.

Stormwater-related projects listed in the ICWMP and action plan (Appendix G) are based on commonly used technology, Best Management Practices, and a combination of commonly used construction techniques. As such, the solutions presented are technically feasible. The associated costs for each alternative vary depending upon the scale of the project, with larger projects providing more improvement impact. Two stormwater proposals have been submitted for consideration under the Prop 84 ASBS grant that include facilities to reroute stormwater away from bluffs, retain and treat and treat it in various areas of the City.

The sediment source road inventory identified general road maintenance guidelines and individual sites for treatment. Treatment prescriptions and costs were determined for each site delivering sediment to the stream system. The sites were ranked for treatment based on the potential to deliver sediment to the stream system or negatively affect water quality (turbidity),

the cost of treatment, and technical feasibility of fixing the site. A cost/benefit analysis was used to determine the economic feasibility for each project. Projects that would have the most benefit in preventing sediment from entering the stream system and reducing turbidity at a low cost were given a high priority ranking. Likewise, those projects where the treatment was deemed cost-prohibitive for the given sediment savings and water quality benefits were given lower priority rating. A majority of the sediment source reduction projects involved improvement to existing structures. None of the projects/treatments include new or unusual technologies that would be cost prohibitive. A grant proposal towards this road-related sediment reduction work has been submitted under the Prop 84 ASBS program.

7. IMPACTS AND BENEFITS

The purpose of Chapter 7 is to describe, at a screening level, the positive and negative effects of Plan implementation.

7-1 Potential Benefits and Impacts

Overview

The primary benefit of ICWMP implementation will be an improvement of overall water quality and aquatic habitat in the planning area and in the Trinidad Head ASBS. The ICWMP will result in better management of State-recognized sensitive environments (Trinidad Head ASBS and Critical Coastal Area) and domestic water supplies, and better land use planning. Specific benefits of this project will include the following:

1. Reduction of sediments in Luffenholtz Creek, which is the water supply for the City of Trinidad, the Rancheria and other individuals. The reduction in turbidity will reduce the City's water system operating costs and can reduce the potential formation of disinfection by-products.
2. Reduction of sediments discharged into the Trinidad Head ASBS from coastal watersheds.
3. Collection of data that can be used to support focused on-the-ground surveys in areas with the greatest sediment or bacteria concentrations.
4. Reduction of biological and nutrient contamination in surface water, springs, and wells that supply water to residents in the Westhaven-Moonstone community. Monitoring of water resources in this area will be used to quantify impairments and identify management strategies.
5. Reduction of biological and nutrient contaminant discharges into the Trinidad Head ASBS.
6. Reduction of stormwater and pollutant discharge into the ASBS.
7. Increased public awareness of water supply and water quality issues and community buy-in to improving water quality and protecting shared resources.
8. The development of guidelines to be included in the City of Trinidad and Humboldt County General Plans to further reduce or control impacts to the watershed, groundwater, and surface waters, and the Trinidad Head ASBS.
9. The development of draft regulations for the City of Trinidad concerning OWTS, construction practices, and City maintenance practices that will reduce and/or control

impacts to the watersheds, groundwater and surface waters, and the Trinidad Head ASBS.

10. Ongoing stakeholder involvement in comprehensive watershed planning and restoration projects.

The potential environmental impacts of ICWMP implementation will be analyzed in the project's environmental analysis. In some cases it may be necessary to obtain CEQA compliance for implementation projects, especially those that involve earthwork and other types of construction. The requirement of CEQA documents for each proposed implementation project will be evaluated. As currently envisioned, implementation activities will likely be conducted under existing Best Management Practices and will not have the potential to adversely affect the environment. An EIR or equivalent document are being prepared for both the County and City General Plan updates.

Benefits of Wastewater Management

Implementation of the proposed wastewater management activities will result in benefits to water quality, public awareness, and landowner-government cooperation and will lead to cost savings. No adverse impacts are expected.

Water quality improvements will result from better-performing OWTS. Non-functioning OWTS that are found to be currently contributing to NPS pollution of groundwater and surface waters will be repaired and/or replaced, thereby preventing discharges. Currently functioning systems will be upgraded whenever possible through the addition of risers and effluent filters, reducing the risk of future failures and making routine inspections easier. Maintenance agreements signed by property owners are also expected to reduce the occurrence of OWTS failures because landowners will be obligated to have their systems inspected regularly.

Reductions in NPS pollution will lead to better water quality in surface waters and thus in the Trinidad ASBS. This will improve wildlife and plant habitat in the bay and increase compliance with the California Ocean Plan, as described in Chapter 2.

Public outreach programs will lead to better education for landowners about OWTS and water quality issues. The more property owners are educated, the more likely they will be to take proper care of their OWTS over the long term, because they will be able to spot problems before they become major issues. Increased awareness will also encourage residents to pay attention to potential OWTS problems in their neighborhoods.

These activities will promote better relationships between government agencies and private landowners. Water quality improvements will be achieved through cooperative efforts. Landowners will learn about how their actions can have a positive effect on watershed health, and will have the opportunity to interact with agency officials on a non-confrontational basis. Similarly, relations between different government agencies will be improved through these cooperative efforts. Efforts will involve officials from the County Department of Environmental Health, the City of Trinidad, the Westhaven Community Services District, the Trinidad

Rancheria, the Tsurai Ancestral Society and possibly others. Working across jurisdictional boundaries and public-private boundaries requires each party to consider the others' interests and work toward a common goal.

Cost savings will be achieved through implementation of OWTS repairs and water conservation measures, as discussed above. Inspecting and repairing septic systems is much less expensive than replacing them after they begin to fail. This will result in money savings for private landowners, but government savings will result from the program as well. Currently, the City of Trinidad and the County of Humboldt must spend staff time responding to complaints of failing septic systems. In some cases, nuisance abatement is pursued and the government is not always able to recover the costs incurred. Long-term improvements in OWTS performance and maintenance will reduce the number of system failures and hence the number of complaints to which the government must respond. Long term management of OWTS to reduce failures and pollution will also save costs by eliminating the potential need to build a centralized sewage treatment system.

Benefits of Sediment Management

Implementation of projects for treating road-derived and erosion-based sediment sources will benefit stream and ocean water quality, stream habitat, road maintenance costs, and public awareness. Domestic and municipal water supplies will benefit from decreased siltation of their stream-based drafting points and a reduction in turbidity. This will increase the reliability of water sources for the City of Trinidad and private citizens while reducing the water provider's operating costs. Aquatic organisms in the stream system will benefit from lower turbidity and fine sediment deposition, which change channel morphology and degrade aquatic habitats. Species found in the watershed include steelhead trout, residential rainbow trout, and cutthroat trout. The Trinidad Head ASBS will benefit from a reduction of nonpoint source pollution entering the bay and detrimentally affecting the kelp beds. The ICWMP and Action Plan will be used to seek funding, both private and from grant sources, to implement treatments designed to reduce sediment input into the streams draining the Trinidad terraces. No adverse impacts are expected.

The public outreach will bring together landowners to discuss the process and results of turbidity monitoring and sediment source assessment for sharing information and to provide a feedback mechanism for local residents to share their knowledge of sediment sources and other situations that may be affecting water quality. This public outreach will not only have benefits to the project, it will also benefit the landowners by getting them together to discuss roads, sediment issues, and water quality issues. These meetings can be used to help residents form road associations and neighborhood associations to address problems in their watersheds and to develop a mechanism and process for working together to solve common problems. There will be some overlap of interests and areas targeted for outreach between the sediment source assessment and the OWTS assessment that is also part of the ICWMP project. Whenever feasible, education/outreach meetings will be combined to reduce the organizational effort and to maximize public participation.

Benefits of Watershed Planning

A watershed-based approach to land use planning will be promoted by implementation of the ICWMP. This approach will create a long-term vision for the watershed, including water quality standards to be achieved, and will require that future development projects be reviewed based on this standard. It recognizes the idea that development does not affect only one piece of land or one neighborhood, but may have impacts throughout the watershed. Updating the Trinidad General Plan to reflect these ideas will add to the regulatory framework and provide a direction for future decision-making.

Through the formation of the partnership for developing the plan, residents and landowners in the Trinidad-Westhaven area will be brought together to discuss land use, stormwater runoff, road maintenance, wastewater issues, and sediment production. These discussions and recommendations derived from them will be submitted to the Humboldt County Planning Department to assist them in updating the Trinidad Area General Plan.

Benefits of Stormwater Management

Implementation of stormwater management projects will indirectly benefit the water quality of Trinidad Bay and will also benefit the public and City Public Works staff. The use of Best Management Practices (BMPs) for construction activities, post-construction stormwater control, and “good housekeeping” will reduce the volume of stormwater runoff entering Trinidad Bay and minimize the amount of pollutants contained in that runoff. Stormwater runoff control will reduce the volume of sediment, nutrients, bacteria, hydrocarbons and other constituents that may harm the ecosystem of Trinidad Bay. City staff will be educated on storm drain maintenance, construction site inspections, and other issues so they will be better able ensure effective erosion control. Members of the public, including homeowners and business owners, will benefit from educational efforts informing them of pollution prevention practices. Such practices include ensuring that improper wastes, such as motor oil, do not enter the storm drain system. Improved stormwater management within the City may also reduce the volume of water flowing through the streets during storm events, which poses a hazard and inconvenience.

Benefits to Disadvantaged Communities

As discussed above in Section 3-1, benefits from virtually all of the implementation activities will benefit both environmental and disadvantaged community members. Benefits include improvements in drinking water reliability and quality, maintained and/or restored beneficial uses of coastal resources such as recreation, fishing, shellfish and seaweed collecting, cultural and economic activities. All these benefits result in improved health, safety, economic opportunities and protection of cultural and community values.

Potential Negative Impacts

The potential negative impacts of implementing the plan are far fewer than the negative impacts of not implementing the plan. In some cases it may be necessary to obtain CEQA compliance for implementation projects, especially those that involve earthwork and other types of construction.

Potential negative effects will be analyzed in those CEQA documents. The requirement of CEQA documents for each proposed implementation project will be evaluated. As currently envisioned, implementation activities will likely be conducted under existing Best Management Practices which have low potential to adversely affect the environment. Environmental Impact Reports are being prepared for both the County and City General Plan updates.

7-2 Advantages of an Integrated Coastal Plan

The main advantage of having an integrated planning document is the utilization of multiple management strategies to achieve a variety of objectives, as described in Chapter 4. An ICWMP is a working document that may help stakeholders in the future to identify and problem-solve for issues and areas for which no projects have yet been proposed. This is accomplished by compiling relevant information about the watershed into a single document and highlighting problem areas that are currently identified.

7-3 Environmental Justice Considerations

Both economic and cultural factors play into environmental justice considerations in the planning area. As described in Section 2-5, the community of Westhaven and the Trinidad Rancheria are classified as “economically disadvantaged.” Many residents in these areas are unable to afford necessary OWTS inspections and repairs, thus exacerbating water quality problems that may be resulting from effluent seepage. Offering incentives for OWTS repairs in these areas will enable members of the Westhaven and Rancheria communities to experience better water quality without excessive financial burden. Incentive-based programs are the main emphasis of the wastewater management portion of this Plan.

As described in Section 2-4, the planning area includes a historic village site of the Yurok Tribe. This site, called Tsurai Village, is part of the Tsurai Study Area located on a coastal bluff within the City of Trinidad. Erosion has consistently been a problem at this site due to the presence of steep slopes and runoff and seepage from upland sources. Cultural artifacts, as well as natural resources, are put at risk when erosion occurs at these bluffs. Stormwater management and sediment and erosion control measures proposed by the ICWMP will reduce the impact of watershed activities on the Tsurai village site and reduce the potential for the loss of cultural resources. Trinidad Rancheria, consisting of several tribal groups, including Yurok, is one of the project partners in this effort who will benefit from implementation of this plan.

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8. TECHNICAL ANALYSIS AND PLAN PERFORMANCE

The purpose of Chapter 8 is to describe the methods that were used to analyze watershed conditions and reach the findings presented in Chapter 3, and to identify standards by which the Plan's success will be measured.

8-1 Data and Methods Used in Plan Development

OWTS Water Quality Sampling

Water quality sampling was conducted according to a Quality Assurance Project Plan (QAPP) that was approved by the City and the State and Regional Water Quality Control Boards. The QAPP describes in detail the project and data use objectives, data rationale, quality assurance goals, and requirements for sampling and analysis activities. It also describes the sampling and data collection methods that were utilized for this project and was developed in accordance with SWAMP guidance documents. Please see the QAPP for additional details beyond the summary included below.

Samples of surface and groundwater runoff as well as ocean water were collected for analysis of various contaminants related to OWTS that may potentially affect water quality and the Trinidad kelp beds. Samples were collected from these sources during, or immediately following, three storm events in 2007 during the wet weather seasons. Sampling occurred according to specific criteria as specified in the QAPP. Early-, mid-, and late-season storm events were sampled along with an abbreviated (no field "vital sign" measurements) late-summer dry season event. Some follow-up samples between major events were also taken.

Sampling included measurement of pH, conductivity, temperature, and turbidity at each sample site during specified storm events (see below). At the same time as sampling for vital signs occurred, samples were collected for bacteria (total coliforms, fecal coliforms [*E. coli* and *enterococcus*]) and taken to the Humboldt County Public Health Laboratory for testing. Samples were also collected to perform nutrient tests at the offices of STREAMLINE Planning Consultants. Samples were analyzed for nutrient content through use of test strips or color ampoules that included Ortho-phosphate, Nitrate N and Ammonia N. Measurements of temperature, pH, conductivity and turbidity were taken in the field and recorded on data sheets with the name of the sampler, the date, time, and location. Refer to Appendix D for sampling results.

Data were evaluated to assess water quality, to help prioritize where OWTS education and correction efforts should be focused, and to provide baseline data to be used to gauge success of future management activities. The two major objectives of this monitoring program were: 1) to establish baseline water quality conditions in the Trinidad-Westhaven Coastal Watershed Planning Area; and 2) to prioritize and begin to track problem areas and identify the most likely areas that are sources of contamination. As part of these source tracking efforts, fluorescence levels were also measured for each water sample to detect optical brighteners from failing septic systems. Products of this assessment include water quality data, which will be used to establish current baseline water quality. Current water quality data were used to determine which

constituents may be causing alteration of water quality within the ASBS. For contaminants that have been identified at concentrations of concern (mainly bacteria), measures have been recommended to reduce or eliminate those constituents caused by OWTS.

Applicable water management strategies: Water quality sampling is related to the following State-recommended management strategies: water quality protection, water and wastewater treatment. Analysis of water samples promotes a better understanding of water quality issues, and identification of pollutants that are traceable to OWTS will lead to the pursuit of better wastewater treatment options.

OWTS Permit Assessment

Permits for OWTS are issued by the Humboldt County Division of Environmental Health (DEH). Permit files from DEH were available for fewer than half of all properties in the study area. Files from the Westhaven area were analyzed first, followed by files from outlying areas within the watershed. The files were assessed for the most recent information available regarding the OWTS on each property. A variety of data were pulled from each OWTS permit file including system type, system capacity, tank size, location on the parcel, and date of approval or repair/upgrade. The results were tabulated and added to the parcel information available in GIS format. In this way, the location of old or failing systems could be identified and used to delineate problematic areas in the watershed. Refer to Appendix E for a summary of the data collected.

Progress in this task was hampered by a lack of complete file information for most parcels. In some of the older files it was noted that a septic system existed, or was repaired or upgraded at some point, but no details on the system were available. In many cases it was unclear if and when an OWTS was approved. Furthermore, without field investigation it is unknown whether existing systems have been built according to the original plans. The advantage of assessing permit records was to provide a general idea of where problematic OWTS (old systems, undocumented systems) may be located and how many exist.

Applicable water management strategies: OWTS permit assessment is related to the following State-recommended management strategies: water and wastewater treatment, NPS pollution control. Analysis of existing wastewater disposal permits enables a broader understanding of wastewater treatment in the region and can reveal areas where improvement is needed. Permit analysis aids in NPS pollution control by revealing individual wastewater disposal systems that could be contributing pollutants to nearby surface waters.

GIS Analysis

ArcGIS was used to analyze land use distribution, lot sizes, and impervious surfaces in the watershed. A parcels layer from Humboldt County Community Development Services, last updated in August 2007, was used as the basis for analyzing land use and parcel sizes in unincorporated areas. The parcels layer used as a base for the City of Trinidad was created by STREAMLINE Planning Consultants (City of Trinidad Planning Dept.) using source data from

the County parcels layer and City land use maps. Watershed boundaries were obtained through ArcHydro analysis performed by STREAMLINE Planning Consultants. An impervious surfaces layer was created using an aerial photo of the region (photo date: 2006). These processes are described briefly below. Analyses were performed for the study area as a whole, the nine watersheds of interest, and areas along the coastline that lie outside significant watershed boundaries.

Land use information was obtained directly from the Humboldt County parcels layer, in the field labeled “EXLU4” (Existing Land Use). According to the County, these land use categories were created using an interpretive method involving zoning designation, ownership, use codes, and other information. The parcels layer was trimmed to match the study area boundary and then to match the boundaries of each of the nine watersheds. The amount of land falling under each use category was calculated for each area of interest. Land uses were then further grouped as follows:

Land Use Category	County Existing Land Use (2005)	City Zoning Designations
<i>Timber</i>	Timber production	--
<i>Commercial</i>	Commercial	Commercial
<i>Open Space</i>	Open space/parks	Open Space, Special Environment
<i>Public Facilities/Tribal</i>	Public, tribal	Public & Religious, Visitor Services
<i>Roads/Other</i>	Road, highway	--
<i>Vacant</i>	Rural residential – vacant, single family residential – vacant, multifamily residential – vacant, commercial – vacant	Any residential or commercial parcels marked as vacant
<i>Urban/Suburban Residential</i>	Single family residential, multifamily residential	Urban Residential, Suburban Residential, Planned Development
<i>Rural Residential</i>	Rural residential	--

In order to determine average lot sizes, it was necessary to account for entire parcels rather than fragments of parcels that lie within watershed boundaries. Therefore, calculations included each parcel whose centroid (approximate center) is located in the area of interest. The parcels were grouped according to land use category, as discussed above. The data calculated for each watershed included overall average lot size, average lot sizes for timber vs. nontimber uses, and average lot size per land use category.

The impervious surfaces layer was created by tracing the outlines of rooftops, paved roads, driveways, and parking lots that were apparent on the aerial photo. This resulted in a set of polygons for which area (in square feet) was calculated. The resulting layers were trimmed to match the boundaries of each of the eight watersheds of interest. For each watershed, the total amount of impervious land was calculated and expressed as a percentage of watershed area. Refer to Appendix B for a summary of land use and impervious surfaces documentation.

Much of the forested eastern portion of the watershed was omitted from the impervious analysis under the assumption that it contains few to no buildings or paved surfaces. This is labeled as the “permeable region” on Figure 10. The region was outlined using the boundaries of parcels that

are recorded in the Humboldt County parcels layer as having no improvement value, i.e. parcels that are assumed to be vacant.

Applicable water management strategies: GIS analysis is related to the following State-recommended management strategy: land use planning/watershed planning. Using GIS technology to evaluate current land use in the Trinidad-Westhaven watershed will lead to better-informed planning decisions. Effective planning cannot occur without a basic understanding of existing conditions.

Turbidity Monitoring

Methods:

Turbidity monitoring was used to quantify relative sediment contributions from streams in the project area. Turbidity samples were collected during winter storm events in Joland Creek (tributary to Luffenholtz Ck) at Westhaven Drive, Luffenholtz Creek at Westhaven Drive, Dead Man's Gulch at Scenic Drive, McConnahas Mill Creek at Scenic Drive, Parker Creek at Scenic Drive, and Mill Creek at Stage Coach Road. These locations were selected to reflect water quality conditions at the closest discharge point to the Trinidad kelp beds, with the exception of the Joland and Luffenholtz Creek sampling locations. Joland Creek is a tributary to Luffenholtz, with the confluence downstream of Scenic Drive, approximately 200 feet upstream from the ocean. In order to assess the relative sediment contributions from the industrial timber lands (represented by Luffenholtz Creek at Westhaven Drive; Mill Creek at Stage Coach Road, McConnahas Creek at Scenic Drive) and from the rural residential areas (represented by Joland Creek at Westhaven Drive; Dead Man's Gulch at Scenic Drive; Parker Creek at Scenic Drive), samples must be taken at the first viable opportunity to collect samples downstream of the sources representing commercial timber lands and residential areas. Collection of turbidity samples was coordinated so the samples would represent similar antecedent moisture and rainfall conditions. Data was summarized and analyzed to determine the relative turbidity contributions of the streams in the project area.

Analysis:

Results of turbidity monitoring were used to quantify relative sediment contributions from streams in the project area. Sediment sources in subwatersheds with elevated turbidity readings received treatment priority. See Appendix H.

Applicable water management strategies: Turbidity monitoring is related to the following State-recommended management strategies: water supply reliability, water quality protection and improvement, NPS pollution control. Turbidity sampling enables a more thorough understanding of water quality issues in the region and can reveal areas where erosion control and other measures are most needed to curb NPS pollution. This is particularly important for the Trinidad water supply, since turbidity reduction would allow the water treatment plant to work more effectively and perhaps prevent it from being shut down during the winter storm season.

Road Inventory and Assessment

Methods:

A road inventory and assessment was conducted on approximately 80 miles of roads within the project area. Roads in industrial timber lands and rural residential area were inventoried and individual sites were identified. All stream crossings, including Class 3 streams on all main roads, secondary roads, and abandoned roads were included as sites. Erosion sites (road fill failures) were included if they delivered sediment to a water course.

The inventory focused on roads in watersheds with the highest turbidity measurements. Aerial photograph analysis was conducted to identify dirt and gravel roads, landslides, and other potential sources of sediment. Sediment source inventory data was collected using a protocol developed by Pacific Watershed Associates (PWA). These field inventories included an assessment of sediment produced by: road surfaces, stream crossings, crossing fill, road fill, cross drains, landings adjacent to streams, and other sediment sources (i.e., landslides). The drainage pattern of the road was also noted for potential to transport sediment to the stream network. Data collected in the field was entered into a data base program which will be used for data storage, analysis, and presentation.

Analysis:

Individual sites were assessed and treatment prescriptions were developed to identify management actions that could be implemented to prevent sediment from entering the stream system. All stream crossings were included as sites regardless of the need for treatment. Treatment sites included erosion emanating from stream crossings, cross drains, road drainage systems, road surface, cutslopes, fillslopes, and erosional feature associated with the road. Prioritization was based on an assessment of the sediment impacts on water quality in the stream network, the cost effectiveness of treatment, combined with a logical approach that groups sites within close proximity on road segments.

Stream crossings were analyzed by examining site-specific data organized into four categories:

- **Culvert hazard** – the likelihood of culvert capacity being exceeded, referred to as culvert failure;
- **Fill hazard** – the likelihood of the stream crossing fill failing;
- **Consequences** – the erosional effects of culvert failure, and;
- **Impacts** – the effects of culvert failure on downstream resources.

Using these factors and professional judgment, stream crossing sites were then identified as high, medium and low treatment priority sites. The volume of potential sediment delivery to streams (“sediment saved”) was estimated for all sites requiring treatment. Stream crossing sites in need of maintenance were also identified and mapped in the field

Stream crossing volumes were calculated using a program (Winroads) developed by Redwood National Park. The program uses field measurements to compute the fill volume and can also be used in designing and estimating the costs of culvert replacements

The potential for stream crossing failure during high flow events was based on the capacity of the culvert to convey flood flows and associated debris. Field indicators (geomorphic indicators of channel width, depth, flood terraces), were used to determine the adequacy of the culvert at each site. Treatment recommendations were based on the risk and quantity of sediment delivery to the stream network in the event of a stream crossing failure.

Cross drains were inventoried if they posed a sediment delivery threat to the stream system. The assessment of cross drain sites was based on the failure potential of the site and delivery potential of sediment to the stream network. Cross drains were evaluated as a potential high or medium priority treatment site when the outlet gully was connected to a stream, inlet was plugged or crushed, pipe was damaged by rust, roadbed was saturated, excess gravel in ditch, or ditch was not routing water properly. Information on contributing ditch length was collected and used in the analysis of road segments.

Recommended treatments to prevent direct sediment delivery to the stream course will be made. Cost estimates were determined for all sites with treatment prescriptions. A priority list for treatment was developed based on the cost effectiveness of the treatment in reducing sediment production and input to water courses flowing into the ocean from the project area. See Appendix H.

Applicable water management strategies: Road inventory and assessment is related to the following State-recommended management strategies: water quality protection and improvement, NPS pollution control. This task was conducted for the purpose of discovering which road sites in the watershed may be adversely affecting water quality by contributing NPS pollution to nearby streams.

8-2 Performance Evaluation Measures

Specific indicators and measures will be developed to assess the performance of individual projects. Overall Plan performance will be evaluated based on achievement of or contribution to ICWMP objectives. Evaluations will consider individual projects as well as the cumulative effect of implementation of multiple projects. Some examples of performance criteria and/or indicators that will be developed for each ICWMP goal are outlined below. It is expected that measurable benchmarks and targets can be developed and utilized in conjunction with existing and future water quality monitoring and habitat assessment efforts. Individual Project Evaluation and Assessment Programs (PAEPs) will be developed as specific projects are implemented. Some examples of expected outcomes are included below for each key management issue identified (see Chapter 3).

Water quality goal: *Improve water quality in the Trinidad Head ASBS and its tributaries; reduce nonpoint sources of pollution; comply with State and federal water quality standards and discharge requirements; ensure safe drinking water; sustain beneficial uses in local waterways*

Desired results:

- Measurable improvements in water quality in Trinidad Bay and tributary streams (e.g. reduced levels of bacteria, nutrients, optical brighteners and suspended sediment)

- Easy-to-use water quality database for Trinidad Bay and tributaries
- Practical understanding of water quality problems, sources of pollution and primary loading routes to Trinidad Bay and tributary streams
- Preliminary list of prioritized projects to reduce sources of contaminants. This list should be updated as the long-term monitoring program uncovers new information
- Recommendations for NPS Management Measures, Best Management Practices, and restorative actions to improve water quality in Trinidad Bay and tributary streams
- Increased frequency of OWTS inspections
- Measurable improvements in the turbidity of stream systems and ocean within the Trinidad Head ASBS
- Reduced suspended sediment quantities at municipal and domestic water supply sites
- Higher percentage of permitted, upgraded and maintained septic systems

Water supply goal: *Ensure safe and reliable drinking water supplies for all communities within the planning area*

Desired results:

- Measurable improvements in the quality of drinking water sources
- Increased participation in water conservation activities
- Lower per capita water use

Stormwater management goal: *Reduce the quantity of contaminated stormwater runoff entering the Trinidad Head ASBS; reduce erosion of bluffs at the Tsurai village site and other coastal areas; meet objectives of the Clean Beaches Initiative and California Ocean Plan*

Desired results:

- Reduction of stormwater peak flows
- Measurable improvements in stormwater quality

Watershed management goal: *Promote a comprehensive, watershed-based approach to local land use planning; promote collaboration among watershed stakeholders*

Desired results:

- Creation and dissemination of watershed education materials to communities in Trinidad using different media on a regular basis
- Development and maintenance of a website to facilitate education and information sharing about Trinidad Bay and its watershed
- Sustained community participation and interest in the Trinidad Bay Watershed Council's watershed planning activities
- Increased support and capacity for implementation of NPS Management Measures and Best Management Practices on private and public lands in the watershed
- Residents that are more knowledgeable about water quality and watershed issues, BMPs, and OWTS maintenance

Groundwater management goal: *Understand existing groundwater conditions and flow patterns in the planning area; protect groundwater quality and supplies*

Desired results:

- Usable groundwater flow model for the City of Trinidad and adjacent areas
- Increased availability of groundwater quality data

Ecosystems and habitat goal: *Restore and preserve the integrity of natural habitats and native communities within the planning area*

Desired results:

- Population growth in diminished native species
- Improved management and containment of invasive, non-native species
- Measurable acreage of improved or restored habitats
- Improved aquatic habitat in stream and ocean environments

8-3 Adaptive Management

As project and plan performance evaluations are completed, and additional monitoring information and other data become available, evaluation criteria and procedures will be adapted to reflect changing conditions and the outcomes of ICWMP implementation. Projects will be modified, if necessary, to better address the Plan objectives. This adaptive management process will also aid in the development and selection of future projects.

9. DATA MANAGEMENT

The purpose of Chapter 9 is to describe how data relevant to this project have been and will be collected, stored, and distributed.

9-1 Data Management and Dissemination

Data management will occur in methods already being implemented by the City. Collection and management of data associated with specific projects will occur as described below. The Trinidad Planning Department and City Clerk's Office will have primary responsibility for storing and managing data. Information dissemination will occur as described in the public education and outreach components described in Chapter 6 and in the individual Action Plans. Information distribution tools will include public meetings, the City's webpage and local newspapers. Besides standard filing systems, the Geographic Information System (GIS) will be the primary tool for data management. This data will be standardized so that it can be used in a statewide GIS. Data gathered as part of the ICWMP will be filtered into a database management system. Database strategies have been incorporated to allow collection and storage of data into the same system during the development of the ICWMP and during the implementation phase. In addition, the system would allow for data to be easily distributed to statewide databases and other information dissemination and exchange entities.

OWTS Monitoring

Monitoring will take place to ensure that necessary OWTS repairs are carried out and that OWTS remain in proper condition and are not contributing to water quality problems. As a first step, OWTS information will be entered into a Geographic Information System (GIS) database. Data will include age of system, date of last inspection and/or repair, system type, and other pertinent details. Maintaining and regularly updating this information in GIS format will allow the monitoring agency to see the location of parcels where OWTS still need to be inspected or repaired. Property owners who are due for service can then be sent a reminder.

Turbidity Monitoring

Turbidity measurements at each sample location were recorded onto a data sheet. These results were transferred to an Excel database. The watershed assessment coordinator was responsible for collecting data sheets, photocopying data sheets, checking data sheets for accuracy and completeness, and entering the data.

Turbidity data for each stream were compared to determine which streams contributed the highest levels of turbidity. The data were used to prioritize road assessments in the watersheds that produced the highest levels of turbidity. Turbidity served as a surrogate for sediment and it was assumed that high turbidity was a good indicator of sediment production.

Road Inventory

The road inventory data were entered into field forms. The project coordinator collected all field forms and reviewed them for completeness and accuracy at the end of each day. Field forms were given to a data entry person who photocopied each field form, entered the information from the field form into the data base program, and filed the field forms and photocopies in two separate locations. Data will be stored on a server and backed up on compact disks.

The action plan (Appendix H) includes a summary report of the findings of the road assessment, a map of site locations, a table summarizing site by priority ranking, and a table of turbidity monitoring results with a map showing turbidity data collection locations. The table of priority sites includes a brief description of the site, the problem, the prescribed treatment, and the cost estimate for implementation.

All data sheets will be kept on file at Redwood Community Action Agency's office in Eureka. Field data forms will be kept for a minimum of 5 years after completion of field surveys. Electronic data will be stored on the hard drive of the project manager's computer. Backup files will be copied onto a file server at the end of each week of activity. Copies of all files will be recorded onto compact disks at the end of the project and archived in the RCAA library at the conclusion of the project. Copies of all electronic files and hard copies of reports will be provided to the City of Trinidad. Reports will be archived in the RCAA library. Don Allan will be responsible for maintaining records.

9-2 Existing and Needed Monitoring

A short-term water quality monitoring effort is currently taking place in the Trinidad Head ASBS. The City of Trinidad is in charge of this monitoring and results have not yet been compiled into report format. Periodic comprehensive monitoring of the ASBS will be required as part of any granting of a discharge exception request by the SWRCB under the California Ocean Plan. Total Maximum Daily Load (TMDL) standards are also under development for Trinidad State Beach and Luffenholtz Beach and are expected to be complete in 2019. Additional water quality data for these areas, which receive inputs from Mill Creek and Luffenholtz Creek respectively, will be available once the TMDL is complete.

Monitoring will need to take place for the pollutants described elsewhere in this Plan in order to evaluate the effectiveness of Plan implementation. Reductions in OWTS-related pollution will be monitored using source tracking, which is used to indicate the presence of optical brighteners in local waterways. Lower levels of optical brighteners should indicate that any bacteria present in the water can mostly be attributed to non-human sources. Any additional monitoring will help differentiate water quality trends in terms of timing and location of the worst problems. With just the sporadic monitoring that has taken place thus far, it is difficult to do any meaningful statistical analysis with such a small data set. Water quality sampling in additional locations and during different times of the year and storm events will help to define the problem areas and help to focus future efforts. It will also indicate the best times to sample to get the most information.

The primary difficulties in analyzing previous water quality sampling data are a lack of the ability to track sources and differentiate human sources (and therefore public health threats) of bacteria indicators from background levels. Another difficulty lies in isolating the areas contributing the greatest pollution in order to focus future implementation efforts. Current approaches to OWTS pollution prevention react to systems one-at-a-time as they fail or malfunction and cause obvious problems. The proactive approach proposed herein, on the other hand, will provide a means of fixing many systems on a priority basis to provide immediate reductions in bacteriological contamination.

For OWTS repairs and replacements, post-construction effectiveness will be measured by optical brightener (OB) levels coupled with bacteriological indicator sampling. Post-construction monitoring is expected to show a reduction of water quality exceedances (<4%) in the surf zone along with a reduction in human-induced bacteria levels at the beach. This will be verified through monitoring OB levels; the target is a reduction of OB reading by 20% in the surf zone and impacted contributing waters. OB monitoring should indicate that bacteria present can mostly be attributed to non-human (wildlife) sources.

Turbidity monitoring should be continued in the future to assess the effectiveness of project implementation. Turbidity monitoring is recommended for Luffenholtz Creek, Joland Creek, the north fork of Parker Creek, and Two Creek. Automatic recording turbidimeters are recommended.

A long-term, comprehensive monitoring program for the Trinidad ASBS will be developed by building on the preliminary data obtained and the organization already established. The program will likely involve multiple sampling events per year to coincide with different periods of the rainy season, and have multiple years of monitoring to allow the evaluation of progress in improving water quality. Additional indicators that will be monitored include pH, temperature, dissolved oxygen, conductivity, etc. Bio-indicators will also be developed in order to better assess conditions in the bay and tributary streams. With the participation of the Humboldt State University Marine Laboratory, it is hoped that a long-term monitoring station will be set up to evaluate on a regular basis the health of the kelp beds and associated marine species.

9-3 Data Gaps

Data gaps are expected to be more fully identified upon development of a water quality monitoring plan. Following is a list of deficiencies that have been identified to date:

Table 5. Data gaps

<i>Management Strategy</i>	<i>Data Gaps / Analysis not Performed</i>
Ecosystem restoration / environmental and habitat improvement	<ul style="list-style-type: none"> ➤ Knowledge of the impact or extent of invasive species ➤ Invasive/exotic species surveys ➤ Feasibility of removing barriers to upstream salmonid habitat ➤ Identification of specific opportunities for habitat

	restoration
Water supply reliability	<ul style="list-style-type: none"> ➤ Precise capacity of Trinidad water system to allow new hookups ➤ Number of watershed residents with private vs. public water supply ➤ Future water demand
Groundwater management	<ul style="list-style-type: none"> ➤ Information on groundwater quality and flow patterns
Recreation and public access	<ul style="list-style-type: none"> ➤ Ecological impacts of recreation on Trinidad Bay and tributary streams
Stormwater capture and management	<ul style="list-style-type: none"> ➤ Knowledge of groundwater flow patterns to design appropriate infiltration ➤ Source of polluted stormwater
Water conservation	<ul style="list-style-type: none"> ➤ Cause of unusual spikes in water usage ➤ Location of leaks in Trinidad water system
Water quality protection and improvement	<ul style="list-style-type: none"> ➤ Comprehensive analysis of monitoring data collected to date ➤ Circulation and flow patterns and extent of external inputs to the ASBS
Water recycling	<ul style="list-style-type: none"> ➤ Feasibility of water recycling for individual users
Land use planning / watershed planning	<ul style="list-style-type: none"> ➤ Precise location of watershed boundaries and stream courses
NPS pollution control	<ul style="list-style-type: none"> ➤ Ability to differentiate between human and non-human sources of bacterial pollution ➤ Identification of sediment sources from private lands where access permission was not obtained ➤ Turbidity data from small sub-drainages to isolate sediment sources within sub-watersheds ➤ Sediment source analysis from watersheds adjacent to Trinidad Bay
Water and wastewater treatment	<ul style="list-style-type: none"> ➤ Complete information on OWTS in the watershed ➤ Source tracking individual failing systems
Wetlands enhancement and creation	<ul style="list-style-type: none"> ➤ Opportunities for creating wetland habitat in the watershed
Flood management	<ul style="list-style-type: none"> ➤ Complete flood mapping
Conjunctive use	<ul style="list-style-type: none"> ➤ Not applicable
Desalination	<ul style="list-style-type: none"> ➤ Not applicable
Imported water	<ul style="list-style-type: none"> ➤ Feasibility of using imported water supplies
Surface storage	<ul style="list-style-type: none"> ➤ Not applicable
Water transfers	<ul style="list-style-type: none"> ➤ Availability of water from suppliers outside the planning area

9-4 Support of Statewide Needs

Water quality data collected during the ICWMP process will support the State's Critical Coastal Areas program by documenting nonpoint source (NPS) pollution information for the Trinidad Head CCA. Data and information compiled through this process will contribute to a collaborative, watershed-based management strategy to reduce and prevent impairment of the Trinidad Head ASBS and CCA. Additionally, ongoing collection of stormwater quality data will directly support the Pathogen TMDL monitoring efforts for Trinidad State Beach and Luffenholtz Beach and will provide additional data to review success in achieving TMDL levels. Plan implementation will also contribute to the objectives of the State's Regional Water Management Initiative, as described in Section 11-2.

9-5 Data Integration into SWRCB Surface Water Ambient Monitoring Program and Groundwater Ambient Monitoring Assessment

The Quality Assurance Project Plans (QAPPs) that were developed and approved as part of this project all outline standardized procedures, protocols and methods used in this project to guarantee the quality of data generated for water quality testing. These QAPPs utilized SWAMP comparable, standardized procedures and methods, to guarantee the quality of the data generated from water quality monitoring. In this way, conclusions may be drawn from the data with the confidence that the data are accurate. The QAPPs facilitated the consistent sampling and analysis of surface water, ground water, and stormwater to determine the extent of contamination related to OWTS, sediment, stormwater and other sources. The individual QAPPs describe the project and data use objectives, data rationale, quality assurance goals, and requirements for sampling and analysis activities, describes the sampling and data collection methods that will be utilized during this project. These documents were developed in accordance with SWAMP guidance documents.

Stormwater, surface and groundwater quality measurement and collection of field parameter values have been in accordance with approved protocols including those of SWAMP. These parameters include pH, electrical conductivity, dissolved oxygen, temperature, turbidity, nutrients, bacteria, discharge, 24-hour rainfall (from existing gauges within the watershed), annual cumulative rainfall (from existing gauges within the watershed), and salinity.

Data were entered on field data sheets at the time of sample collection. Data were then entered into an Excel data file and stored at individual consultant offices as well as transferred to the City of Trinidad storage files. Hard copies of all reports will also be filed with individual offices and at the City of Trinidad. The stormwater quality data will be submitted to the SWRCB's SWAMP database using a template developed by the SWRCB's Water Quality Division.

Although the GAMA program has not been implemented in Humboldt County, all water quality sampling, including groundwater monitoring will be conducted according to accepted standards. One of the recommended projects and identified data gaps is a groundwater study to determine flow patterns within the project area. Such a study will further the goals of the GAMA project. The wastewater element of this project is closely tied with well water quality issues and

implementation of this plan will increase public awareness of these issues and contribute to additional well monitoring.

10. FINANCING

The purpose of Chapter 10 is to describe, generally, how implementation measures proposed by this Plan will be financed.

10-1 Funding Sources and Beneficiaries

Funding Sources

The ICWMP will be used to seek funding, both private and from grant sources, to implement the proposed activities. Potential sources include, but are not limited to the following:

- State Prop. 50 and Prop. 84 grants (and others)
- Whale Tail Grants
- State Revolving Loan Fund
- Foundations (e.g. Humboldt Area Foundation, Ford and Packard Foundations)
- Technical Assistance – Critical Coastal Areas Pilot Project, Rural Communities Assistance Corporation
- National On-site Demonstration Program (EPA)
- City of Trinidad OWTS permit fees
- Cost shares for road maintenance and improvement projects
- Cost shares for OWTS maintenance or improvement

In most cases, specific project costs and projected funding matches from local sources are unknown and will be determined as implementation measures are developed in more detail and specific funding opportunities become available. Like most rural areas in California, the local implementers, including the City of Trinidad, the County of Humboldt, and the WCSD the Trinidad Rancheria have very limited resources, and depend heavily on grant funding for implementing necessary projects.

Beneficiaries

Direct beneficiaries will include those agencies, organizations and individuals who are responsible for implementation as described in Chapter 6. The City of Trinidad, the Westhaven Community Service District, and the Trinidad Rancheria all serve disadvantaged communities. Indirectly, all residents, stakeholders and visitors benefit from implementation of the ICWM Plan.

10-2 Ongoing O&M Support and Financing

Ongoing operating and maintenance support and financing will be specified for each project. It would most likely be the lead agency or one of the cooperators, though private property improvements would generally be operated and maintained by the landowner. For example, the City of Trinidad will be responsible for operating and maintaining the stormwater infrastructure.

The only new facility construction proposed by the ICWMP involves the installation of stormwater drainage and capture systems in the Trinidad and Luffenholtz watersheds. Ongoing operations and maintenance of these improvements would be funded through the City of Trinidad's and County of Humboldt's General Funds. Proposed projects are generally low-maintenance to avoid future funding problems. The proposed water quality monitoring program will be funded by a variety of sources, including grants and the City's proceeds from Operating Permit fees under the OWTS Management Program.

Other ICWMP projects consist of public outreach, support of new standards and regulations, Best Management Practices and minor habitat restoration/land or stream improvements, which would not result in significant ongoing O&M costs. In some cases, projects that remove culverts and fish barriers may eliminate future costs associated with maintaining culverts. Implementation of Best Management Practices for erosion control, sediment reduction and stormwater management may require maintenance and/or monitoring at cost to private landowners. Implementation of BMPs will occur on a voluntary basis.

11. STATEWIDE PRIORITIES

The purpose of Chapter 11 is to describe how implementation of the Plan will contribute to statewide and State agency priorities for water management.

11-1 Overview

The State Department of Water Resources and Water Resources Control Board have established a set of priorities regarding water supply, water quality, and environmental issues. During the review process, the DWR and SWRCB will give consideration to proposals that assist in meeting Statewide Priorities, which are as follows:

- Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues;
- **Implementation of Total Maximum Daily Loads that are established or under development;**
- **Implementation of Regional Water Quality Control Board (RWQCB) Watershed Management Initiative Chapter, plans, and policies;**
- **Implementation of the SWRCB's Non-point Source (NPS) Pollution Plan;**
- Assist in meeting Delta Water Quality Objectives;
- Implementation of recommendations of the floodplain management task force, desalination task force, recycling task force, or state species recovery plan;
- **Address environmental justice concerns;** and
- Assist in achieving one or more goals of the CALFED Bay-Delta Program.

The ICWMP assists in meeting at least four of these priorities, denoted in boldface above and described in Section 11-2.

11-2 ICWMP Contribution to Statewide Priorities

Implementation of Total Maximum Daily Loads

A Pathogens TMDL is under development for Trinidad State Beach and Luffenholtz Beach. Repair, upgrade and replacement of non-functioning OWTS in the study area will significantly reduce the amount of pathogens entering the waters that affect these two beaches. Improved stormwater management will also reduce the amount of bacteria and other pollutants that are discharged into local surface waters. Pathogens will also be reduced through water conservation and waste diversion efforts, which will decrease the risk of OWTS failures.

Implementation of RWQCB Watershed Management Initiative

The State Water Resources Control Board Watershed Management Initiative (WMI), which is a key component of the SWRCB Strategic Plan, promotes a watershed management approach for water resources protection. The WMI was developed to help State and Regional Boards meet their goal of providing water resource protection, enhancement, and restoration while balancing

economic and environmental impacts. The North Coast Regional Water Quality Control Board (RWQCB) WMI identifies 12 high-priority activities for the region, five of which are addressed by the ICWMP. Implementation of this Plan will contribute to the following regional priorities:

- Developing a monitoring strategy for the region and integrating SWAMP with TMDL monitoring
- Improving outreach and community involvement in decisions
- Fostering watershed groups and citizen monitoring
- Protecting Critical Coastal Areas
- Promote water recycling activities

Implementation of the State’s Non-Point Source Pollution Plan

The vision of the State’s (NPS) Pollution Control Program is to “...reduce and prevent NPS pollution so that the waters of California support a diversity of biological, educational, recreational, and other beneficial uses.” Beneficial uses that are proposed to be protected through ICWMP implementation include drinking water supply, recreational values (local beaches), and biological and educational values (Trinidad Head ASBS). Nonpoint source pollution is anticipated to be significantly reduced through OWTS repairs, sediment delivery reduction and improved stormwater drainage and treatment. The ICWMP also addresses a number of State-recommended NPS management measures, as indicated in Table 3 (see Chapter 6).

Address Environmental Justice Concerns

The federal Environmental Protection Agency defines “environmental justice” as follows: *The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies* (EPA 2008). See Sections 3-1 and 7-3 for a discussion of the ICWMP’s relationship to environmental justice.

11-3 ICWMP Support of Critical Coastal Areas Program

The Critical Coastal Areas (CCA) program, part of the State’s Nonpoint Source Plan, is a non-regulatory planning tool to coordinate the efforts of multiple agencies and stakeholders, to ensure that effective management measures are implemented to protect or restore water quality in CCAs. The CCA Committee provides guidance to local watershed groups in preparing management plans to address nonpoint source pollution. The ICWMP functions as an Action Plan identifying the steps required to address NPS impacts and improve water quality conditions in the CCA’s watershed. Table 4 (see below) identifies how the ICWMP incorporates the required elements of an NPS Action Plan.

Table 6. ICWMP relationship to CCA Nonpoint Source Action Plan requirements

NPS Action Plan Section	Corresponding ICWMP Section
Statement of problem	<i>Chapter 2: Suitability for Integrated Coastal Watershed Management; Water Quality</i> <i>Chapter 3: Key Management Issues</i>
Identification of goals and specific objectives	<i>Chapter 3: Plan Objectives</i>
Description of the project's methodology	<i>Chapter 8: Data and Methods Used in Plan Development</i>
Identification of management measures and actions to address site-specific NPS pollution	<i>Chapter 6: Table 6-1</i>
Discussion of opportunities and constraints for suite of actions	<i>Chapter 6: Economic and Technical Feasibility</i> <i>Chapter 13: Potential Obstacles to Plan Implementation</i>
Recommendations	<i>Chapter 5: Priorities for Implementation</i> <i>Chapter 6: Implementation Projects and Plans</i>
Description of metrics for measuring project's success, and success criteria	<i>Chapter 8: Performance Evaluation Measures</i>
Description of process for review and adaptive management of Action Plan	<i>Chapter 5: Process for Priority Modification</i> <i>Chapter 8: Adaptive Management</i>
Summary	Executive Summary

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12. RELATION TO LOCAL PLANNING

The purpose of Chapter 12 is to identify linkages between the ICWMP and other local planning efforts.

12-1 ICWMP Relationship to North Coast IRWMP

The Trinidad-Westhaven ICWM Plan is a subregion within the boundaries of the North Coast Region as defined by the North Coast Integrated Regional Water Management Plan (NCIRWMP). The Trinidad-Westhaven ICWMP is consistent with the objectives of the NCIRWMP. The City of Trinidad has been participating in NCIRWMP meetings, and the ICWMP will likely be included in the North Coast Plan in the next plan update.

North Coast Integrated Regional Water Management Plan Phase I Objectives:

1. Conserve and enhance native salmonid populations by protecting and restoring required habitats, water quality and watershed processes
2. Protect and enhance drinking water quality to ensure public health
3. Ensure adequate water supply while minimizing environmental impacts
4. Support implementation of Total Maximum Daily Loads (TMDLs), the North Coast Regional Water Quality Control Board's (NCRWQCB) Watershed Management Initiative, and the Non-Point Source Program Plan.
5. Address environmental justice issues as they relate to disadvantaged communities, drinking water quality and public health
6. Provide an ongoing, inclusive framework for efficient intra-regional cooperation, planning and project implementation

12-2 ICWMP Relationship to Local Plans, Documents and Programs

The development of the watershed-based Action Plan provides a direct link between the data collected and analyzed for the development of the plan and the City of Trinidad's land use planning documents. The City's past General Plan included integration of watershed planning into its land use documents. The City seeks to promote watershed-based planning more formally into the land use components of its General Plan and into its Zoning Ordinance. The data collected and the analysis done as part of this project can be used by the other cooperating agencies and groups in the region for their own internal planning as well. Further, Humboldt County is in the process of updating its General Plan. Through development of this plan, Trinidad has compiled information on a large area surrounding the City itself in much greater detail than the County would be able to accomplish. The County will be able to incorporate the data collected into its planning documents for the Trinidad-Westhaven area.

The plan also implements the North Coast Regional Water Quality Control Board's chapter of the State Water Resources Control Board Watershed Management Initiative (WMI), which promotes a watershed management approach for water resources protection. The WMI was developed to help State and Regional Boards meet their goal of providing water resource protection, enhancement, and restoration while balancing economic and environmental impacts.

Local and regional planning documents reviewed in preparation of the ICWMP included the Tsurai Management Plan, North Coast Region Basin Plan, City of Trinidad existing and draft General Plans, and the Humboldt County General Plan and Trinidad Area Local Coastal Plan, various past studies and reports. The ICWMP seeks to achieve a harmonious balance between local and regional planning activities to maintain consistency and reduce overlap, while respecting the roles and processes of local and regional jurisdictions and their planning and regulatory efforts. It is intended to serve as a unifying document for previous local and regional planning efforts. It is not intended to supersede any of these documents, but to combine them into one overarching regional planning document that can serve as the next increment of coordinated regional planning. As a unifying document with multiple participants and stakeholder involvement, it combines previous planning efforts with new broader objectives and priorities, making the ICWMP consistent with established local and regional plans of the Trinidad-Westhaven planning area.

12-3 Integration with Other Local Projects

Several independent projects are taking place, or have been proposed, to help improve water quality and watershed health in the Trinidad-Westhaven area. These projects, described below, are not directly tied to the ICWMP but contribute to some of the ICWMP objectives. It is anticipated that more projects will be undertaken in the future under the guidance provided by the ICWMP.

Green Diamond Resource Company, the largest property owner on the Plateau, owns over half of all the land on the Plateau and has pledged their support for this proposed plan. Green Diamond is cooperating in the planning effort and is funding ongoing maintenance to reduce sediment production on its lands. Green Diamond also contributed a cost share for the ICWMP development.

The Tsurai-Parker Creek Drainage Project has been developed and initiated through the efforts of the Tsurai Ancestral Society and the City of Trinidad to begin restoration of the natural drainage pattern of Parker Creek and to reduce saturation and erosion of the Tsurai Village site and leading to improved bluff stability. This project is part of the Tsurai Management Plan, which includes a number of recommendations that are indirectly supported by the ICWMP (see Table 4).

The Trinidad Pier Reconstruction Project has been developed and initiated by the Trinidad Rancheria with support from the Coastal Conservancy and coordination with the City of Trinidad. In this project, the existing wooden pier and pilings will be replaced with a concrete pier and pilings in order to eliminate creosote contamination of the surrounding waters. Stormwater runoff from the pier will be diverted to the pier parking lot for treatment.

The Trinidad Pier Parking Lot Project is currently being developed by Winzler & Kelly in association with the Trinidad Rancheria for the purpose of treating and or eliminating stormwater runoff from the parking lot, and receiving and treating stormwater runoff from the City of Trinidad, the Trinidad Pier, and the Marine Laboratory. This will result in the elimination of four

existing stormwater discharges to the Trinidad Head ASBS. The Rancheria is also seeking funding for a permeable paving project at the Trinidad Pier parking lot.

12-4 Coordination with Local Agencies

See Chapter 14.

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13. STAKEHOLDER INVOLVEMENT

The purpose of Chapter 13 is to identify the stakeholders who participated in the planning process and describe how they were involved.

13-1 Stakeholder Identification

The City of Trinidad began working with local entities and the Trinidad Head Critical Coastal Area (CCA) Pilot Project advisors to identify agencies and organizations with an interest in water management issues. Representatives from these organizations have been meeting since 2005 in a cooperative effort to identify regional water priorities. During these meetings, it became apparent that regional water issues related to water supply, groundwater and wastewater management, stormwater runoff, ecosystem restoration, and water quality needed to be addressed through a regional management plan. After the effort received funding to develop an ICWM Plan, a more formal outreach program was initiated, geared mainly to building public and community involvement in the project.

The stakeholders involved in development of the Trinidad-Westhaven ICWM Plan include all local agencies with jurisdiction in the project area and other organizations that expressed interest in water related issues. Prior to initiation of the ICWM planning process, many of these stakeholders convened as local partners in the Trinidad Head CCA Pilot Project.

The CCA Pilot Project participants formed the initial ICWM Plan stakeholder group, consisting of local stakeholders and the CCA Pilot Project Advisors. (See Table 6.) When additional major stakeholders are identified through outreach or self-identification, they have been invited to join the Advisory Committee. The ICWM Plan coordinator has been responsible for communication with the local stakeholders, including local and county government agencies. The CCA Pilot Project Coordinator has been responsible for communication with state and federal government agencies, the CCA Pilot Project Advisors.

The ICWM Project Team consists of the ICWM Project Director, Project Coordinator (administrator), and the CCA Pilot Project coordinator, plus the cooperating entities: Redwood Community Action Agency, Streamline Planning Consultants, and Winzler & Kelly Consulting Engineers. The project team has been responsible for completing the ICWM Planning Grant contract tasks.

The Regional Agency (Trinidad Regional Water Management Working Group) is composed of local public agencies, private organizations and community members.

Table 7. Trinidad-Westhaven Coastal Watershed Project Participation Structure

Participant Category	Regional Agency	Local Stakeholders	State & Federal Agencies	Project Participants
Participants				
Project Team				
City of Trinidad	•	•		
Redwood Community Action Agency	•	•		
Streamline Planning Consultants	•	•		
Winzler & Kelly Consulting Engineers	•	•		
Critical Coastal Area Pilot Project Advisor				
Stakeholders				
Green Diamond Resource Co.	•	•		
County of Humboldt	•	•		
HSU Marine Biology Lab	•	•		
Center for Integrative Coastal Observation, Research & Education (CICORE)	•	•		
Trinidad Rancheria	•	•		
Tsurai Ancestral Society	•	•		
Westhaven Community Services District	•	•		
Yurok Tribe	•	•		
Humboldt North Coast Land Trust		•		
Trinidad property owners & residents				•
Westhaven property owners & residents				•
Interested Businesses				•
Interested Organizations				•
Other interested parties				•
CCA Pilot Project Advisors				
North Coast Regional Water Quality Control Board			•	
CA Coastal Commission			•	
CA Coastal Conservancy			•	
CDF/CalFire			•	
CA State Parks			•	
CA Department of Fish & Game			•	
CA State Water Resources Control Board			•	
CA Department of Transportation			•	
U. S. Bureau of Land Management			•	
NOAA Fisheries			•	
U.S. Fish and Wildlife Service			•	

13-2 Stakeholder Process

Stakeholder involvement is at the heart of the ICWM Plan development and implementation. The processes of stakeholder collaboration and participation by the general public provide valuable

information, knowledge and perspectives and generate the social networks, resources and political will necessary to implement the plan. Participants develop a broader, more long-term perspective and gain knowledge and understanding about the other participants and conditions. The ongoing interactions involved in collaborative efforts build shared understandings and trust among participants, as well as building community and agency capacity to address coastal watershed issues in a coordinated manner.

Various stakeholders representing the planning area have been invited to take part in the development and implementation of the ICWM Plan. The City of Trinidad is coordinating the local effort with support from the Trinidad Rancheria, the Westhaven Community Services District, the Humboldt State University Marine Lab, the Yurok Tribe, the Tsurai Ancestral Society, Green Diamond Resources Company, and community members from the Trinidad-Westhaven coastal watershed.

Community members from the City of Trinidad and the disadvantaged communities of Westhaven and the Trinidad Rancheria have been included in the water management decision-making process through participation in project activities. These activities, described below, range from outreach and education to participation in community and advisory meetings, and include the mechanisms and processes to facilitate involvement in planning and implementation. The community public outreach and education program (Community Program) is designed to meet the needs of Trinidad, Rancheria and Westhaven community members and other interested parties, including disadvantaged community members. The Advisory Committee Program provides a mechanism for local stakeholders and agency advisors to exchange information and engage in focused discussions of plan development and implementation. Stakeholders and the public can influence decisions regarding water management through participation in meetings and other activities.

Many of these local stakeholders and agencies have begun the process of forming the Trinidad Bay Watershed Council. During meetings in Spring 2008, the group created a draft mission statement and goals, discussed membership stakeholder representation and boundaries.

Participants of these meetings have agreed to work collaboratively to improve and maintain the watersheds, coastal waters, and communities in the Trinidad and Westhaven area for the benefit of all community members, businesses and other stakeholders. A set of goals has been developed that further define the scope of the TBWC:

- Participate in the development, implementation and evaluation of the Trinidad-Westhaven Integrated Coastal Watershed Management Plan (ICWM Plan)
- Make decisions based on data and sound science, rather than unexamined assumptions.
- Provide input and participate in the updates of the Humboldt County General Plan and the City of Trinidad General Plan.
- Foster partnerships and coordination with local stakeholders, state and federal agencies, and other local & regional water resource related efforts.

- Develop and support opportunities for economic and community development that improve well-being for residents, the community, local businesses and the coastal ecosystem.
- Promote stewardship of the land, natural and cultural resources in the Trinidad Bay coastal area through education, outreach, and technical and financial assistance.
- Promote improvement and maintenance of public and private roads in the Trinidad Bay Watersheds through work with the County, the City of Trinidad, landowners, businesses and community members.

Public Outreach and Education

Collaborative and integrated efforts often feature a variety of groups, organizations, projects and programs, which can be confusing and lead to misunderstandings. Early in the planning process, the project team and advisory committee agreed to refer to the Integrated Coastal Watershed Management Planning effort as the Trinidad-Westhaven Coastal Watershed Project. The name reflects inclusion of the City of Trinidad, the Rancheria and the Westhaven community, as well as describing the scope of the effort in a general way.

During the development of the ICWMP, community members in the watersheds have had access to project information and activities through City's web site, via e-mail or in print at Trinidad Town Hall. The informational materials identify meetings and other opportunities for involvement. The implementation of management strategies will provide additional opportunities for watershed groups, private citizens and government agencies to continue to be involved. The stakeholder process to be used in this planning effort will address environmental justice issues by making clean water a priority for everyone whether rich or poor, large landowner or small, renter or owner. The process is designed to give a voice to all residents.

Community members are encouraged to become involved in the Trinidad-Westhaven Coastal Watershed Project. Opportunities for involvement include:

- Attending community meetings
- Getting on the project contact list
- Joining the Trinidad Bay Watershed Council
- Reviewing plans or project proposals
- Providing input on project planning and implementation
- Developing an implementation project
- Volunteering for monitoring and implementation activities
- Adopting best management practices
- Making property improvements to reduce sources of pollution

All those inquiring about the ICWM Planning project are invited to get on the project contact list so they can receive project information, updates and notices of upcoming project activities. In order to make this information accessible to the widest group possible, communication occurs

via the website, email, mail, by phone, press releases to the local press and flyers posted in Trinidad and Westhaven.

Public Education Materials

A project web page is the primary vehicle for dissemination of public education materials for this project. Information in the form of pamphlets, reports, and links are provided through the webpage as well as notices of workshops and hearings. Public education efforts associated with the proposed ICWMP implementation measures, as well as general information on the Trinidad Head ASBS, will be accessible through the City's website. The site will also link to the Coastal Commission, SWRCB, RWQCB, and Department of Water Resources websites. During the plan development phase, the City of Trinidad's website (Trinidad.ca.gov) hosted all the project information. In response to feedback from community members, the project team decided to post the Trinidad-Westhaven Project information to a page on the North Coast Integrated Water Management Plan website, and use the City of Trinidad website only for project information specific to City residents, such as the OWTS ordinance. The City of Trinidad has jurisdiction only within City limits, not in the greater planning area; therefore, regulations and projects proposed or implemented within the City of Trinidad are generally not applicable in Westhaven.

The dissemination of information to the public is vital to successful project management. Many sources of sediment, stormwater runoff and wastewater contamination occur on private property. Informing and educating community members about preventing water pollution and improving water quality is essential to achieve the water quality goals of this project. One specific public education goal is that all improved properties within the project area will be provided with sources of OWTS literature, and additional materials will be placed on the project's webpage. The City's website currently explains some of the OWTS highlights.

The Trinidad-Westhaven Coastal Watershed Project publications provide information about the project purpose, goals, activities, ways to get involved, accomplishments and project participants. These publications are available at the Trinidad Town Hall, the project webpage, at community meetings, and by request.

Community Meetings

During the ICWM Plan development phase, stakeholders, community members and other interested parties have been invited to a series of watershed planning/awareness meetings where watershed issues, problems and solutions are discussed. The community meetings are held periodically during the planning period at easily accessible locations in both Trinidad and Westhaven. These meetings are held on weekdays in the evening to allow working people to attend. Meetings are widely publicized to the community through coverage in the local weekly and daily newspapers, posting of meeting and project information on the City of Trinidad website, posting flyers in the community, email, mail and phone invitations to everyone on the contact list.

The agenda for each meeting includes project updates, time for questions and comments, and opportunities to talk informally with other meeting participants. Materials available at each meeting include handouts with updated project information.

Involvement in the ICWM planning process promotes support from all participating parties. Based on attendance at recent community meetings in the area regarding watershed issues, excellent participation is expected to continue. Two initial community meetings (one each in Trinidad and Westhaven) were held to introduce the ICWMP concept, cooperating entities, and opportunities for involvement. The next two meetings covered project updates and findings and the draft Action Plans for sediment reduction, wastewater management and stormwater management. An additional meeting was held to discuss the draft ICWM Plan prior to its formal adoption.

CCA Pilot Project Meetings

Local stakeholders and agency advisors also participated in periodic meetings to discuss the project progress and development of the ICWM Plan. These meetings are usually held in conjunction with community meetings for the Trinidad-Westhaven Coastal Watershed Project. In this way, the project team and stakeholders can incorporate into the discussion any issues raised at the community meetings.

Trinidad Bay Watershed Council Meetings

Stakeholders began meeting in February 2008 to form the Trinidad Bay Watershed Council. TBWC meetings will become the primary forum for the ICWMP in the future, possibly hosting community meetings and the CCA Pilot Project meetings.

13-3 Partnerships Developed During ICWMP Process

Several entities are closely collaborating in the overall watershed management planning effort. These include the City of Trinidad, Westhaven Community Service District, Trinidad Rancheria, Humboldt State University Marine Laboratory at Trinidad, Green Diamond Resource Company, and Redwood Community Action Agency. In addition, state agency advisors for the Trinidad Head Critical Coastal Area pilot include representatives from the Coastal Commission, SWRCB, RWQCB, California State Parks, Department and Fish and Game, and the California Coastal Conservancy.

Numerous stakeholders were also involved in the development of the ICWMP framework, and will take part in the planning process. Many community members have served as volunteers for sample collecting and handling. Groups and individuals participating and /or supporting this effort include the district County Supervisor, the County Department of Health and Human Service, Humboldt North Coast Land Trust, the Yurok Tribe, the Tsurai Ancestral Society, Humboldt State University Center for Integrative Coastal Observation and Education (CICORE), State Senator Wesley Chesbro and Assembly Woman Patti Berg.

As a result of the collaborative ICWM planning process, a variety of productive partnerships have developed. These include relationships between entities promoting data sharing, collaborating on joint projects, and other efforts.

Green Diamond Resource Company, the largest property owner on the Plateau, owns over half of all the land on the Plateau and has pledged their support for this proposed plan. Green Diamond is cooperating in the planning effort and is funding ongoing maintenance to reduce sediment production on its lands. Green Diamond also contributed a cost share for the ICWMP development.

Local individuals, agencies and organizations have begun the process of forming the Trinidad Bay Watershed Council (TBWC), whose mission is to work collaboratively to improve and maintain the watersheds, coastal waters, and communities in the Trinidad and Westhaven area for the benefit of all community members, businesses and other stakeholders. The watershed council effort brings together members of the Trinidad Head Critical Coastal Area Pilot Project Team, residents and other interested parties.

The Tsurai Ancestral Society, Yurok Tribe, the City of Trinidad and the Coastal Conservancy are working together to implement the Tsurai Management Plan, which includes a number of recommendations that are indirectly supported by the ICWMP (see Table 4).

The Trinidad Rancheria, the City of Trinidad, the HSU Marine Lab and the Coastal Conservancy have been cooperating on improvements to the Trinidad Harbor area to reduce pollutants discharged to the ASBS.

13-4 Disadvantaged Communities and Environmental Justice

Within the proposed planning area, most lands outside the City of Trinidad itself are considered disadvantaged communities under the grant program guidelines. As is discussed in Attachment 4, Disadvantaged Community Supporting Documentation, the census areas of Westhaven-Moonstone the Trinidad Rancheria and Humboldt County are considered disadvantaged communities. Much of the Westhaven area is part of the Westhaven Community Services District (WCSD). Their general manager is involved in the ICWM Plan. An introductory outreach meeting was held in the Westhaven area in addition to one in the City of Trinidad.

The community of Westhaven obtains much of its water supply from springs within the Luffenholtz Creek watershed. The density and pattern of development within this sensitive watershed creates the potential for bacteria, nutrients and other pollutants to degrade water quality. Since Luffenholtz Creek is the largest watershed in the planning area it will be a focus for identifying sources of pollution and management strategies to improve water quality. In addition to addressing water supply issues in the Westhaven area, the proposed plan will also include an evaluation of on-site septic systems through water quality sampling and review of septic permits in those areas exhibiting OWTS pollutants. The Trinidad Rancheria receives its drinking water from the City of Trinidad and will benefit from improvements to the City water supply and quality.

Management strategies applicable to the Westhaven area are included in the ICWM Plan. Information about how to implement the management strategies will be available to Westhaven community members through the project webpage or by request. In addition, the ICWMP for the Trinidad ASBS will be used to obtain funding to implement OWTS management measures for Westhaven area similar to those already being implemented in the City of Trinidad.

13-5 Potential Obstacles to Plan Implementation

Potential obstacles to plan implementation include funding issues, jurisdictional issues, community/agency capacity and adequate level of trust between residents and agencies. The City of Trinidad has been relatively successful in obtaining funding for water related projects; however, implementation of the ICWMP will require additional resources. The County of Humboldt has limited resources to address pressing water related issues in Westhaven and many other communities within its jurisdiction. Maintaining this collaborative effort will require the ongoing support of the stakeholders and project partners.

14. AGENCY COORDINATION

The purpose of Chapter 14 is to describe the involvement of State and federal agencies in the planning process.

14-1 State and Federal Agencies Involved

California's Critical Coastal Areas (CCA) Program

California's Critical Coastal Areas (CCA) Program fosters collaboration among local stakeholders and government agencies, to better coordinate resources and focus efforts on coastal watersheds in critical need of protection from polluted runoff. The California Coastal Commission coordinates the Statewide Critical Coastal Areas Committee, which is comprised of representatives from 15 state agencies, plus NOAA, U.S. EPA, and the Ocean Conservancy. The Committee identified 101 Critical Coastal Areas adjacent to coastal waterbodies, including Trinidad Head ASBS. Identification criteria reflect the dual goals of improving degraded coastal water quality, and providing extra protection from polluted runoff to marine areas of high resource value. The CCA Program's goal is to ensure that effective long-term non-point source (NPS) management measures (MMs) are implemented to protect or restore water quality in these coastal watersheds.

In 2005, the Statewide CCA Committee selected one Pilot CCA in each of the four regions of the coast, and one within San Francisco Bay. Beginning with the five Pilot CCAs, the CCA Program is assisting in the formation of teams of local stakeholder (watershed groups, special interest organizations, and community members) and government agencies (state, federal, and local) to develop community-based NPS Watershed Assessment and Action Plans for addressing polluted runoff that threatens coastal resources within these CCAs. The lessons learned from these Pilot CCAs will be made available to help CCAs throughout the coast develop and implement their own NPS watershed assessment and action plan.

Trinidad Head CCA was selected as the North Coast Pilot CCA. The state agency advisors for the Trinidad Pilot CCA include the California Coastal Commission, North Coast Regional Water Quality Control Board, State Water Resources Control Board--NPS Program, State Water Resources Control Board--Ocean Unit, California Department of Health Services, California State Parks, California Department of Fish and Game, Caltrans, California Department of Forestry & Fire Protection, and California Coastal Conservancy.

The Trinidad CCA state advisors are members of the Trinidad ICWMP team, and have participated in numerous ICWMP stakeholder team meetings. The CCA state advisors have been available to provide technical assistance for the project, to help focus the attention of responsible agencies, and to coordinate with other relevant water quality protection programs to help guide development of the Trinidad ICWMP. When the ICWMP implementation begins, CCA state agency representatives will be called upon for their expertise and guidance.

Involved federal agencies include the US Fish and Wildlife Service, NOAA Fisheries, Bureau of Land Management, and U.S. Army Corps of Engineers.

14-2 Regulatory Support

Regulatory support and agency involvement is essential to the eventual implementation of projects identified in this plan. In the future, some projects will require permits from different agencies in order to construct facilities, install improvements and/or work within stream channels, or to undertake restoration and habitat enhancement programs. Typical permits and approvals that may be required include, but are not limited to:

- **California Department of Fish and Game** – Streambed alteration agreements for improvements and/or alterations within streams
- **North Coast Regional Water Quality Control Board** – Water Quality 401 Certification and Waste Discharge Requirements and/or waivers to WDRs; responsibility for ensuring OWTS compliance with State AB 885 requirements
- **Humboldt County Planning Department** – Coastal Development Permits and/or Use Permits for certain types of projects outside the City of Trinidad
- **Humboldt County Division of Environmental Health** – Sewage disposal system permits for OWTS repairs, modifications and upgrades
- **City of Trinidad** – Coastal Development Permits, Use Permits and/or Encroachment Permits for certain types of projects
- **California Coastal Commission** – Coastal Development Permits for certain types of projects within the Coastal Zone, including the Trinidad Harbor Area of Deferred Certification; appeal authority for some CDPs issued by City or County
- **U.S. Army Corps of Engineers** – Section 404 authorizations for work in wetlands or waters of the U.S.
- **NOAA Fisheries** – Consultations for listed salmonid species and marine mammals
- **U.S. Fish and Wildlife Service** – Consultations for threatened and endangered species

Projects that may require permits from the above agencies include OWTS upgrades, road treatments, stormwater system improvements, drainage improvement projects and implementation of certain Best Management Practices. No major facility construction or upgrades are proposed except for new stormwater drainage, infiltration and retention components in the Trinidad and Luffenholtz Creek watersheds.

One implementation measure proposed by this Plan is to promote interagency coordination in order to streamline permitting processes, which will help environmental restoration and other projects to be successful.

Table 8. State and federal agencies involved in the ICWMP

Agency	Jurisdiction
CA Coastal Commission	Coastal planning and resource protection
State Water Resources Control Board	ASBS / Ocean Plan discharge prohibition
North Coast Regional Water Quality Control Board	Water quality standards
CA State Parks	Property owner
CA CSU Humboldt	Property owner
CA Coastal Conservancy	Coastal resource protection; potential funding source
CA Dept. Fish & Game	Fish and wildlife resources
U.S. Bureau of Land Management	California Coastal National Monument
U.S. Army Corps of Engineers	Wetlands, streams, shoreline
U.S. Fish and Wildlife Service	Endangered species, migratory birds
National Marine Fisheries Service	Endangered species (salmonids), marine resources

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