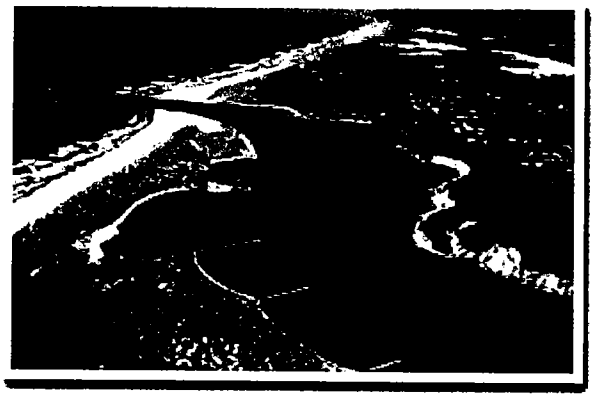
W.6.b

EPA Grant Application: West Coast Estuaries Initiative for Coastal Watersheds

Title: Siuslaw River Estuary Partnership: An Integrated, Multiple Objective Approach to Watershed Protection and Restoration



Watersheds Addressed

The watersheds to be addressed are the Lower Siuslaw River, HUC= 171002060804 (34,027 acres); North Fork Siuslaw River, HUC=171002060702 (19,471 acres); and Mercer Lake, HUC=171002050704 (14,475 acres). These boundaries include:

- Siuslaw River Estuary
- North Fork Siuslaw River
- North Florence Sole Source Dunal Aquifer boundary, which includes Clear Lake, Munsel Creek, all wetlands, upland and riparian areas, and 100 acres adjacent to and outside the UGB that is trust land of the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians. The land use measures in the project will focus on the portion of the Siuslaw River basin within the Florence city limits and Florence Urban Growth Boundary (UGB) (see Maps).

Nominee Contact Information

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Abstract

We propose a consortium of experts and stakeholders to shepherd creation of a Surface- and Ground-water Assessment and Monitoring Program; Source Water Protection Plan; Estuary Interpretive Trail; Stormwater Design Manual and Demonstration Project; Wetland, Riparian, and Upland Protection and Restoration Plan; Tidal Wetlands Restoration Projects; and Comprehensive Plan and Code amendments. The Siuslaw River, once the Oregon Coast's largest Coho-producing system next to the Columbia, produces 1% of historic levels. Florence's sole source aquifer comprises dunal sand, is unconfined, and is highly susceptible to contamination from surface activity. Florence is extending sewers to its growth boundary and projects population will almost double by 2030. This integrated, comprehensive approach will assess, monitor, and protect water quality and restore the estuary ecosystem as densification occurs. Measures will include low impact development and incentives to maintain and enhance the predevelopment hydrologic regime of urban and urbanizing areas in the UGB.

How We Learned of the Grant Opportunity

We learned of the grant from the League of Oregon cities' newsletter and Lane Council of Governments' staff contacts.

PROJECT NARRATIVE

I. DESCRIPTION OF THE WATERSHED

Florence, Oregon, a city of 9,400 people covering 5 square miles of land and 0.6 square miles of water along the Siuslaw River estuary and Pacific Ocean, is Lane County's major coastal town and the largest city in the watershed. The urban growth boundary (UGB) population is projected to grow to 17,200 by 2030, almost double (96% increase) the UGB population in 2000. This growth is expected to occur primarily through urbanization of "urbanizable" land within the UGB.

Land cover includes urban development within city limits and vacant and rural land uses outside. The Siuslaw River estuary, designated a Shallow Draft Development estuary under the Oregon Estuary Classification System, is managed for navigation and other public needs with jetties and a main channel maintained by dredging at 22 feet or less. The geomorphology of the area is that of a Drowned River Mouth estuary. The estuary's broad floodplain, numerous wetlands, and tidal islands, lead to the dunes along the coastal plain at Florence. Here the land is characterized by barren sand dunes interspersed with pine woodlands and deflation plain lakes or wetlands. Since the decline of the forest industry, most of the revenue generated in the area is from tourism, recreation, and commercial fishing. Local community members, both tribal and nontribal, engage in subsistence fishing for marine and stream resources.

The estuary watershed is a significant natural area that provides critical habitat for five threatened animal species, contains sensitive plant species, and provides valuable habitat for sensitive animal species (Oregon Natural Heritage Program). The bald eagle, western snowy plover, Oregon Coast coho salmon, smelt, and green sturgeon[1] are listed as threatened or potentially threatened under the federal and state Endangered Species Acts. The purple martin is listed as critical, and American marten as vulnerable, by Oregon. The common loon is possibly threatened in Oregon. Twelve plant species in the area are listed as threatened, endangered, or possibly extirpated from Oregon. The estuary also supports shellfish resources, including clams, crab, mussels, and shrimp. Large animals include black bear, black-tailed deer, and mountain lion. The watershed supports spawning runs of fall Chinook, chum, winter steelhead, Coho, and sea-run cutthroat. In all, about 23 species of fish, almost 200 species of birds, and 40 species of marine mammals use the estuary and the surrounding wetlands, lakes, riparian and upland areas. The estuary contains aquatic bed habitats, emergent marsh, scrub-shrub, and forested wetlands. There has been at least one winter count of more than 1,000 shorebirds. The estuary has been designated an Important Bird Area by the National Audubon Society.

The Siuslaw estuary has retained a relatively large proportion of its tidal marshes (310 hectares - 764 acres) and it receives significant waterfowl use. The South Jetty wetlands adjacent to the lower river are one of the two most important wintering areas for tundra swans on the Oregon coast. The Siuslaw system supports a variety of anadromous fish stocks. Diked former tidal marshes along the main river and North Fork have high potential for habitat restoration. The area's lakes (including Lily, Sutton, Mercer, Clear, Munsel, Cleawox, Woahink, and Siltcoos Lakes) and seasonal standing water in the deflation plains among the dunes provide substantial waterfowl and shorebird habitat, and many of the streams have significant fisheries values. The area also supports several nesting pairs of bald eagles and a number of nesting osprey. Snowy plovers nest in the North Dunes Area.

The 1996 "Florence Local Wetlands and Riparian Area Inventory" identified 270 wetlands, totaling 572 acres and about 315 acres of riparian area. The majority of the wetlands are of high quality, due to the proximity of a number of freshwater lakes, and the large areas of undeveloped land in the northern portion of the UGB. Plant communities with a high priority for conservation include three palustrine scrub-shrub assemblages and one palustrine forested assemblage. The majority of the

[1] Green sturgeon is found in estuaries on the Oregon Coast but do not spawn on the Siuslaw National Forest. It is a marine species that occasionally enters fresh water.

riparian areas were found to have high or moderate functional values for thermal regulation, erosion control, flood control/water quality, and wildlife habitat function. However, there are relatively few wetlands associated with the drainages, which decreases the floodwater storage potential of the system.

The North Florence Dunal Aquifer, designated a sole source aquifer by the EPA in 1987, is the only sole source aquifer in the State of Oregon. It encompasses the entire continuous body of sand north of the Siuslaw River and east of the Pacific Ocean, the primary discharge points for the aquifer. About 85 percent of the rain percolates into the water table. On a large scale, groundwater moves rapidly and almost uniformly toward a discharge point. Multiple seeps and springs occur along the coastline and riverbank, although the aquifer discharges mostly as underflow. Few streams cross the dunal area since most rainfall quickly infiltrates to the water table. Where streams flow across the sand, they are hydrologically connected with the groundwater system, as is Clear Lake, the only surface water source of drinking water. When the last comprehensive testing of the aquifer was done 23 years ago, the groundwater was of good quality "from a human health standpoint." The 1987 EPA Sole Source Aquifer Resource Document states, "Possible sources of aquifer contamination include fuel storage tank failure, accidental spills of hazardous material, septic tank effluent, storm runoff, pesticides, and chemical fertilizers."

Historically, the Siuslaw Basin was one of the most abundant anadromous fish producers in the Pacific Northwest. Once the Oregon Coast's largest Coho-producing system next to the Columbia, the Siuslaw River is estimated to be at 1% of historic salmon production levels. The lower Siuslaw River watershed health is degraded and a significant amount of restoration action is needed to improve watershed conditions (Oregon Watershed Enhancement Board, 2007). The watershed is limited by all factors in aquatic/instream areas, tideland, riparian, freshwater wetlands, and upland areas. The Siuslaw River is classified as Water Quality Limited under the Clean Water Act and is included on the state's 303(d) list of Impaired Waterbodies by the Oregon Department of Environmental Quality. The parameters of concern are: Dissolved Oxygen, Fecal Coliform, Habitat Modification, and Temperature, and potentially Alkalinity. Beneficial Uses impaired by these listed parameters include resident fish and aquatic life; salmonid fish spawning and rearing; anadromous fish passage; trout rearing and migration; and shellfish growing.

Urbanization of the UGB area and climate change will exacerbate long-term watershed changes caused by established land use patterns, including altered sediment and detritus deposition patterns, changed peak flows, water circulation patterns, flooding regimes, and surface and groundwater contamination, through seepage and over land flows. The presence and increased discharge of nitrates and other pollutants into the ecosystem through urban groundwater and surface water activities, and the loss of riparian and floodplain function, can be expected to further degrade the system. Another deleterious effect is increased erosion, which is already a problem in developed portions of the estuary and along Munsel Creek.

The Project Partners are favorably positioned to restore natural resource qualities already impaired and to protect functions and values of water resources in the future. Parts of the estuary are planned to be restored to tidal wetlands. The City has upgraded its sewage treatment plant and extended lines into the UGB, and has adopted a wetland and riparian inventory and stormwater BMPs, based on the Portland, Oregon model (which has not achieved desired environmental outcomes in Florence). The City is currently updating the Comprehensive Plan for compliance with Statewide Planning Goals for Estuarine, Shoreland, and Ocean Resources. The City, Lane County, and Heceta Water District have begun to cooperate on water quality assessment and monitoring, and the City has set aside funds for an on-going monitoring program. A Source Water Protection Plan and monitoring program are top City Council goals for 2009. City comprehensive plan policy calls for natural resource protection measures, including transfer of development rights and mitigation banking.

II. PROJECT NEED

Florence is the watershed's only major urban center and its entire UGB drains primarily to the estuary or the Pacific Ocean. Rapid infiltration rates into the sand cover, combined with a shallow water table, make the North Florence Sole Source Dunal Aquifer, and the hydrologically-connected wetlands, riparian, and estuarine system, highly susceptible to contamination from surface activity. These conditions, combined with the high habitat value of the area, and projected growth, make this "Integrated, Multiple Objective Approach to Watershed Protection and Restoration Project" a high priority project for the watershed.

The City's extension of municipal sewer will reduce the contamination threat from septic systems; and the need for monitoring is critical, due to extensive existing and pending development on septic systems, and due to urbanization and densification impacts that will introduce new environmental threats. Development impacts will accelerate through use of pesticides and fertilizers, increased impervious surface, fill and alteration of drainage patterns and destruction of wetlands and floodplain functions. These impacts, and the effects of on-going and future climate change, will have a dramatic cumulative effect on salmon and their associated aquatic habitat throughout the watershed.

Since the 1986 groundwater study was conducted, there has been a significant proliferation of residential development outside the Florence city limits, within the boundary of the North Florence Dunal Aquifer. Recent empirical data indicate a direct connection to surface and ground water contamination from human activities. In November, 2008, Oregon Shores Conservation Coalition and CoastWatch discovered suspected human waste on Heceta Beach; and, in December, CoastWatch took three grab samples at two locations from surface drainages in the area. Test results show high levels of coliform bacteria of 500 MPN/100 ml and 80 MPN/100 ml; testing of surface water in the vicinity of First Street on January 6, 2009, showed 20 MPN/100 ml and 208 MPN/100 ml; further testing on January 12, 2009 indicated E. coli Bacteria contamination of 10 to 30/100 ml; and, at one location, the test results indicated Nitrate at 1.3 mg/l. The EPA-funded Oregon Beach Monitoring Program (OBMP), administered by ODHS, tests marine waters for the bacterium enterococcus, which is an indicator of the presence of other illness-causing organisms. Enterococcus is present in human and animal waste and can enter marine waters from a variety of sources such as streams and creeks, storm water runoff, animal and seabird waste, failing septic systems, sewage treatment plant spills, or boating waste. In 2008, 2-3 test results at each of three testing locations in the North Jetty area showed fecal bacteria levels in the range of 10-50 orgs/100ml.

On-going and future climate change will have a dramatic cumulative effect on salmon and their associated aquatic habitat throughout the watershed. These effects would be expected to be evident as water yield, peak flows, and stream temperature are altered. As climate change progresses and stream temperatures warm, thermal refugia will be essential to persistence of many salmonid populations. According to the Siuslaw Watershed Council's 2005 report, "Tidal Wetland Prioritization for the Siuslaw River Estuary," (Green Point Consulting): "to restore tidal wetlands for salmon habitat functions, a landscape approach is needed, focusing on connectivity of habitats and restoration of the full continuum of habitats needed by rearing and migrating juveniles." The comprehensive, integrated, multiple objective approach of this project will meet this need.

Multiple objectives of the project and expected outcomes are:

1. **Collaboration and Scientific Investigation:** Form and convene an Inter-disciplinary Team and Stakeholder Group to guide all work elements. The Team and Group will shepherd the creation of mutually-agreed upon "Guiding Principles" that will tie each task together to ensure multiple objectives are met; provide input and feedback on all products and processes; and investigate and consider the latest scientific findings regarding climate change in the development of all plans, standards, policy, code, and monitoring programs.
2. **Surface and Ground Water Quality Monitoring and Protection:** Develop and implement a water quality monitoring program and Source Water Protection Plan, working with partner

agencies to develop scientifically-based standards; conduct an on-going monitoring program; identify sources of contamination; take remedial action; and plan for long-term protection measures.

3. **Public Education and Stewardship of Resources**: Propose an Estuary Interpretive Trail system that extends from the estuary through Old Town and along the North Fork of the Siuslaw River. The proposal will include site location, environmental impact analysis, design, and cost estimates. The trail, once completed, will enhance eco-tourism, passive recreation opportunities, and public education about the Florence ecosystem.
4. **Effective, Innovative (Non-mandated) Non-point Source Pollution Controls**: Propose a Stormwater Design Manual and construct a Demonstration Project adjacent to the estuary in Old Town that uses state-of-the-art BMPs that are tailored to the Florence climate, soils, and hydrology. The work proposed for funding is not required under a storm water discharge permit.
5. **Wildlife Habitat Protection and Restoration and Improved Floodplain Function and Connectivity**: Propose a "Wetland, Riparian, and Upland Protection and Restoration Plan" that updates the existing natural resource inventory to include wetlands previously omitted and delineations made since 1996, and expands it to include upland habitat; and includes policies and measures to protect the resources and to reduce barriers that restrict floodwaters from dispersing in floodplains. Comply with and exceed requirements of Oregon Statewide Planning Goal 5, Natural Resources, for the protection of wetlands, riparian areas, uplands, estuarine, and ocean resources and habitat.
6. **Tidal Wetlands Restoration**. Conduct preliminary site assessment for two tidal wetland sites totaling 240 acres and acquire one site to ensure permanent protection (locations subject to final negotiations).
7. **Comprehensive Plan and Land Use Code Amendments**: Update and propose modifications to Florence Comprehensive Plan to achieve multiple objectives; and propose modifications to Code to implement new policies and to include provisions to address environmental impacts related to erosion and embankment failure, low impact development regulations, and environmental incentives.

The long-term outcomes are land use and water management policies and practices that maintain suitable rearing, migration, and spawning habitat; conversion of rural lands to urban densities that do not impair water quality or result in dysfunctional stream conditions; enhanced floodplain functions and inter-connected wetlands and floodplain; and on-going surface and ground water quality monitoring and remedial action to prevent contamination. Ultimately, the natural resource economy will be re-invigorated. People will be drawn to the area with a renewed appreciation for its rich and complex ecosystem; and the area and the project will become a model for other small coastal cities faced with growth pressures.

III. PROJECT PLAN

The project will be conducted in three phases, each resulting in deliverables for ten Work Elements. Elements I and II, Inter-disciplinary Team and Stakeholder Group, ensure each element is coordinated and meets common objectives of natural resource and water quality protection and enhancement. Specific outputs of these Elements are a Surface- and Ground-water Assessment and Monitoring Program; Source Water Protection Plan; Estuary Interpretive Trail; Stormwater Design Manual and Demonstration Project; Wetland, Riparian, and Upland Protection and Restoration Plan; Tidal Wetlands Restoration Projects; and Comprehensive Plan and Code amendments. The monitoring program will ensure that the outcomes listed in Section II, above, are achieved.

IV. PROJECT COMPONENTS

The proposal is effective and innovative because it integrates protection with restoration; it is collaborative and multi-faceted; and the project partners will explore non-traditional methods and activities, including low impact development and environmental incentives for integrated environmental management, such as: design specifications and a demonstration project for on-site water

management systems that can adapt to sea level rise as well as changes in temperature and precipitation; wetland mitigation banking; and transfer of development rights.

Milestones/Outcomes	Work Elements
Phase I: Frame Integrated Water Quality Protection and Enhancement Partnership October 2009 through September 2010	
1. Agenda Packets and Meeting Notes 2. Guiding Principles Report 3. Baseline Monitoring Protocols Report 4. Research Reports on climate change and policy and practice alternatives and innovations.	**I. <u>Inter-disciplinary Team</u>** a. Form and convene Team and establish meeting, coordination, review, and consultation process b. Design and create City web page and links for project. c. Establish Guiding Principles d. Establish baseline monitoring protocols e. Study climate change and its effects relative to project area f. Conduct literature search and research broad range of policies and implementation measures
1. Agenda packets and meeting notes 2. Open House Report #1: Input on Guiding Principles, Project Design, and Research Reports	**II. <u>Stakeholder Group/Local Official Check-ins</u>** a. Form Group; establish e-mail and hard copy mail list b. Hold initial interactive meeting/open house c. Obtain input on goals and guiding principles and project design d. Provide monthly updates to Planning Commission, City Council, and Heceta WD Board
1. Technical Memoranda on Standards, Methods, Base Line Data, Sources of Contamination, and any Remedial Actions	**III. <u>Surface and Ground Water Assessment and Monitoring Program</u>** a. Develop scientific-based standards b. Develop methods for assessment and monitoring program c. Install ground water monitoring wells d. Install stream flow gauges at Munsel Creek e. Collect base line data and identify sources of contamination f. Take immediate remedial action for any identified contamination
1. Report on Protection Areas, Potential Risks, and Alternative Measures	**IV. <u>Source Water Protection Plan</u>** a. Identify/refine source water protection areas b. Identify potential risks to the aquifer c. Develop alternative policies and implementation measures
1. Location and Design Options Report	**V. <u>Estuary Interpretive Trail</u>** a. Identify alternative sites for potential acquisition of missing linkages in estuary trail b. Develop alternative design options
1. Policy and BMP Options Report	**VI. <u>Stormwater Best Management Practices Manual</u>** a. Identify policies to support guiding principles (connectivity, flood plain restoration and preservation, low impact development) b. Develop design BMPs for typical subdivision and infill development, tailored to Florence area climate, soils, topography, aquifer sensitivity
1. Stormwater Demonstration Project Acquisition Report	**VII.<u>Stormwater Demonstration Project</u>** a. Identify demonstration project area and acquire site (preliminary site identification work has begun for Interpretive Center/ stormwater BMP demonstration project east of Siuslaw River Bridge)
1. Inventory Report 2. Existing erosion control policies and measures gaps and conflicts analysis	**VIII.<u>Wetland, Riparian, and Upland Protection and Restoration Plan</u>** a. Update wetland and riparian area inventory, assess floodplain capacity and connectivity, and conduct upland inventory b. Analyze existing erosion control policies and measures for gaps and conflicts with guiding principles

Milestones/Outcomes	Work Elements
1. Tidal Wetlands Restoration Preliminary Site Assessment Report	**IX. Tidal Wetlands Restoration** a. Hire consultants b. Prepare and review site assessments
2. Preliminary List of Needed Plan and Code Amendments	**X. City Comprehensive Plan and Code Amendments** a. Describe needed amendments.
Phase 2: Alternatives Analysis, October 2010 through September 2011	
1. Agenda Packets and Meeting Notes 2. Guiding Principles Evaluation and Alternatives Report	**I. Inter-disciplinary Team** a. Convene Team (assumes monthly meetings) b. Evaluate all milestones for consistency with Guiding Principles c. Propose alternatives d. Review/revise Draft Reports
1. Agenda Packets and Meeting Notes 2. Open House Report #2: Input on Draft Plans and Reports	**II. Stakeholder Group/Local Official Check-ins** a. Convene Stakeholder Group to plan public outreach b. Send public notice and maintain web page c. Hold second meeting/open house to obtain input and feedback on all milestones d. Provide monthly updates to Planning Commission, City Council, and Heceta Water District Board
1. Report on Current Conditions and Feasible Alternative Solutions	**III. Surface and Ground Water Assessment and Monitoring Program** a. Problem-solve and remedy existing contamination incidents b. Develop and analyze alternative solutions to the range of contamination threats
1. Draft Source Water Protection Plan	**IV. Source Water Protection Plan** a. Continue to identify sources of contamination b. Test alternatives and monitor c. Develop protection strategies (land use planning, zoning, ordinances, public education, outreach, technical assistance) to help prevent releases that could degrade groundwater quality d. Prepare Draft Plan
1. Estuary Interpretive Trail Report on Site and Design Options: Environmental Impacts, Cost, and Protection Strategies	**V. Estuary Interpretive Trail** a. Analyze environmental and cost impacts of alternative site and design options b. Identify and analyze alternative strategies to retain trail as permanent open space for passive recreation
1. Draft Stormwater Best Management Practices Manual	**VI. Stormwater Best Management Practices Manual** a. Apply and evaluate design BMPs for typical subdivision and infill development b. Apply BMPs to demonstration project area(s) c. Analyze alternative policies and approaches based on lessons learned and refine BMPs
1. Demonstration Project Report on BMP design, installation, and impacts on estuary	**VII. Stormwater Demonstration Project** a. Prepare stormwater BMP design specifications b. Install stormwater system c. Monitor water quality and quantity impacts on estuary
1. Draft Wetland, Riparian, and Up-	**VIII. Wetland, Riparian, and Upland Protection and Restoration Plan** a. Identify opportunities/alternatives to achieve connectivity

Milestones/Outcomes	Work Elements
land Protection and Restoration Plan	b. Evaluate biological soundness and feasibility of restoration goals using baseline data and follow-up monitoring program. c. Determine appropriate protection strategy ("safe harbor" vs. ESEE analysis) d. Analyze policy alternatives identified in Phase I e. Prepare Draft Plan
1. Tidal Wetlands Restoration Final-Site Assessment Report	**IX. Tidal Wetlands Restoration** a. Review and comment on preliminary assessment b. Prepare final assessment c. Begin negotiations on acquisition of site #1.
1. Draft City Comprehensive Plan and code amendments	**X. City Comprehensive Plan and code amendments** a. Prepare draft City Plan and Code amendments.
Phase 3: Propose Policies and Measures and Submit for Adoption, Oct. 2011 thru Sept. 2012	
1. Agenda Packets and Meeting Notes 2. Integrated Water Quality Protection and Enhancement Project Final Report, including Proposed Evaluation and Monitoring Program	**I. Inter-disciplinary Team** a. Convene Team (assumes monthly) b. Continue to evaluate milestone consistency with Guiding Principles c. Review and revise proposed plans and reports d. Develop monitoring and on-going evaluation process for all milestones e. Review/revise final reports
1. Agenda Packets and Meeting Notes 2. Open House Report #3: Input on Final Draft Plans and Reports 3. Stakeholder Focus Group Report on Outcomes	**II. Stakeholder Group/Local Elected Official Check-ins** a. Convene Stakeholder Group to plan public outreach b. Send public notice and maintain web page c. Hold third meeting/open house to obtain input and feedback on all milestones d. Provide monthly updates to Planning Commission, City Council, and Heceta Water District Board e. Hold intensive focus group with Stakeholders in up to 10 meetings to fully explain all products and outcomes and obtain feedback. f. Modify proposals based on feedback.
1. On-going Groundwater and Surface Water Assessment and Monitoring Program Final Report (Program will include budget and staffing for on-going monitoring and response)	**III. Surface and Ground Water Assessment and Monitoring Program** a. Adjust monitoring program as needed b. Collect updated data and analyze results c. Continue to problem-solve and remedy contamination incidents d. Establish on-going monitoring program for periodic surface and ground water and stream flow monitoring to characterize natural conditions and ensure that unacceptable contaminants are not affecting water quality
1. Proposed Source Water Protection Plan 2. Proposed Source Water Protection Strategies	**IV. Source Water Protection Plan** a. Propose Plan b. Implement protection strategies (land use planning, zoning, ordinances, public education, outreach, technical assistance) to help prevent releases that could degrade ground and surface water quality c. Submit to local officials for adoption and Oregon Department of Human Services and DLCD for state approval.
1. Estuary Interpre-	**V. Estuary Interpretive Trail**

Milestones/Outcomes	Work Elements
tive Trail Final Report 2. Proposed Policy and Protection Measures	a. Propose trail location, design, and funding sources, including design for interpretive signage and wayside stands b. Propose policy and code provisions to retain trail as permanent open space
1. Proposed Storm-water Design Manual and Information Materials	**VI. <u>Stormwater Best Management Practices Manual</u>** a. Propose policies to support related goals and guiding principles (e.g., connectivity, flood plain restoration and preservation) b. Propose design BMPs for typical subdivision and infill development, tailored to Florence area climate, soils, and topography c. Evaluate effectiveness of BMPs where applied, including Demonstration Project d. Develop educational materials and design specification sheets with illustrations to make available to developers and builders
1. Stormwater Demonstration Project Final Report and BMP Design Modifications	**VII. <u>Stormwater Demonstration Project</u>** a. Modify stormwater system to address water quantity or quality problems identified in Phase II b. Revise stormwater BMP design specifications c. Continue to monitor water quality and quantity impacts on estuary
1. Proposed Wetland, Riparian, and Upland Protection and Restoration Plan and Implementation Measures	**VIII. <u>Wetland, Riparian, and Upland Protection and Restoration Plan</u>** a. Prepare Proposed Wetland, Riparian, and Upland Protection and Restoration Plan b. Prepare proposed implementation measures. c. Submit to local officials for adoption and DLCD for compliance with Statewide Planning Goal 5.
1. Fee title or easements recorded.	**IX. <u>Tidal Wetlands Restoration</u>** a. Acquire site #1, either fee title or easements, and record.
1. Proposed Comprehensive Plan and Code Amendments	**X. <u>City Comprehensive Plan and Code Amendments</u>** a. Draft all proposed Comprehensive Plan and Code amendments b. Submit to local officials for adoption and DLCD for compliance with all applicable Statewide Planning Goals c. Begin public hearing process.

V. PARTNERING

Partners that have agreed to participate are noted with an asterisk* (see attached letters of commitment):

<u>Local Governments, Tribes, and Non-Profits</u>
Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians*
Lane County
Heceta Water District*
Port of Siuslaw*
Siuslaw Watershed Council*
Siuslaw Water and Soil Conservation Service

<u>State Agencies</u>
Oregon Division of State Lands*
Oregon Departments of:
- Water Resources
- Fish and Wildlife*
- Land Conservation and Development*
- Environmental Quality*
- Human Services, Drinking Water Program*

Oregon Watershed Enhancement Board

<u>Federal Agencies</u> (no match)
U.S. Environmental Protection Agency
U.S. Geological Survey
U.S. Bureau of Land Management
U.S. Army Corps of Engineers*
National Oceanic and Atmospheric Administration, Marine Fisheries Service
USFS Siuslaw National Forest

VI. FINANCIAL INTEGRITY/BUDGET

See attached table.

VI. ANTICIPATED OUTPUTS AND OUTCOMES

Anticipated environmental results: see logic model, attached.

VII. MONITORING AND MEASURING ACOE

The Project will expand the preliminary Groundwater Flow Model that was developed by the Oregon Drinking Water Program in 2003 (which did not have data on aquifer-wide distribution of hydraulic head) and will install 30-35 shallow (<20 ft) monitoring wells throughout the aquifer boundary, including above and below Clear Lake. Well location will be designed to: 1) establish head data as function of location and in response to storm events, and 2) obtain baseline water quality data. Static water levels in wells will be monitored monthly and following major storm events; and these data will be used to calibrate the Model. Water samples will be collected to establish the variability of existing water quality. Up-gradient and down-gradient sites will be placed in various land use areas, e.g., residential, commercial/industrial, transportation corridors, golf courses, etc. Data analyses will be tailored to the dominant land use in the area monitored, e.g., fecal coliform, nitrate, common ions, water quality parameters, IOCs, VOCs, and SOCs. Monitoring for these will be quarterly the first year, and adjusted in subsequent years data results show need; testing for pharmaceutical by-products will be twice/year. The focus of this sampling will be for pathogenic microorganisms. The partners will continue to monitor marine testing by ACOE for sediments in estuary and by OBMP for bacteria on beaches and will encourage OBMP to add Heceta Beach back into the testing program (stopped in 2004). Additional surface water sampling of seeps and outflows of surface water will be conducted where water quality concerns have arisen. Stream flow gauges will be installed at Ackerley and Munsel Creeks, coordinated with the U.S. Geological Survey and Oregon Departments of Fish and Wildlife and Water Resources.

VIII. ENVIRONMENTAL RESULTS PAST PERFORMANCE

1. **Upgrades to the Municipal Wastewater Treatment and Extension of Collection System** (date – cost$). The City upgraded the treatment plant and, in 2009, is in the process of extending lines into recently annexed areas, making service available to the western half of the UGB.

2. **Amendment of Stormwater Utility and Policy** (2005-2008; $___ local funds) The City amended the requirement for stormwater management plans that demonstrate that post development flows not exceed pre-development flows; and use of the Portland, Oregon, BMP Manual. The City adopted these measures, but the City's experience with Portland Manual has not resulted in desired environmental outcomes due to Florence's specific soils, climate, hydrology, and topography. New BMPs are needed that are tailored to Florence.

3. **Update of Coastal Goals Chapters of Florence Comprehensive Plan.** ($15,000 City; $15,000 State) City is updating comprehensive plan and code for compliance with Statewide Planning Coastal Goals. Public hearings will be in March, 2009; adoption by June 2009.

4. **Comprehensive Plan Amendments:** (April 8, 2009; $40,000 City) City and County are adopting revised water quality and urbanization policies to prohibit land divisions in the urbanizable area until annexed and sewered and to require City-County cooperative water quality monitoring program (with Heceta Water District).

IX. PEER OUTREACH AND INFORMATION TRANSFER

Public outreach and involvement occurs in all phases of the project (see Section IV. Project Components, Work Elements I and II). The Stakeholder Group will be comprised of Project Partners, above, and all representative interests with a stake in the outcomes, including environmental groups,

rural and urban land owners, fisheries, agriculture, forestry, service providers, commercial and industrial interests, and others identified by the Project Partners. The Estuary Interpretive Trail will be a key public education outcome that will provide a link to the larger products and broaden public awareness of watershed protection needs and strategies.

X. PROGRAMMATIC CAPABILITY/TECHNICAL EXPERIENCE

City staff, consultants, and Project Partners have the technical and programmatic capability to complete the proposed work program. The City will comply with federal rules for hiring consultants. Personnel identified to date are listed below. For additional Team members, see Section V.

Florence Community Development Director/Project Manager: Sandra Belson, MURP, has over 18 years experience in planning management, environmental planning, comprehensive planning, and code development. Sandra will be responsible for overall project management, liaison with the City Management, Planning Commission, and City Council and will ensure that all grant obligations are met.

Florence Planning Consultant/Project Coordinator: Carol Heinkel, MURP, has 25 years planning/project coordination experience, including 20 years for LCOG where she managed 40 local, state, and federally-funded projects, including *Region 2050* ($800,000 over six years), *Eugene Comprehensive Stormwater Management Plan, Policy and Public Involvement*, *Springfield Drinking Water Protection Plan*, and EPA Projects: *Wetlands Interpretation in West Eugene, Oregon, December 1992*; and *Environmental Resource Protection in the Southern Willamette Valley, June 2004* ($53,000 CWA Sec 104(b)(3); Safe Drinking Water Act Sec 1442). http://yosemite.epa.gov/oarm/igms_egf.nsf/52f35d81cc937e5e85256fb6006df28e/2a928f6e63028b4a85256f3d001ba44f!OpenDocument. All products delivered on time, within budget, and in accord with EPA reporting. Carol will provide project coordination, grant administration support, facilitate the Interdisciplinary Team and Stakeholder Group, and will staff policy and public involvement efforts.

Florence Public Works Director: Mike Miller, has over 25 years experience managing public facility systems: new water system design, water supply and operations, wastewater, and stormwater management systems, including *City of Bend Integrated Stormwater Management Plan and BMPs*. He received the 2006 *Oregon Plan for Salmon and Watersheds Award* for special efforts to promote energy and water conservation that benefits watershed health. Under his leadership, the City of Bend Water Department received the *Premiere Water Facility and Operations Team Award of Excellence*. Mike will manage the technical components of the Water Quality Monitoring Program, Source Water Protection Plan, and Stormwater BMP Manual and Demonstration Project.

Heceta Water District Manager: Scott Meyer, has 29 years experience in the water industry and 20 years in managing water systems. Scott will assist in all areas of water related issues within the district and will manage the Clear Lake water quality monitoring and protection measures and other portions of the project pertaining to Clear Lake. He will serve on the Inter-disciplinary Team and provide a liaison between the team and the Heceta Water District Board.

GSI Water Solutions, Inc: Dennis Nelson, Senior Hydrogeologist, Florence Engineering Consultant, has over 30 years experience with water quality monitoring, data analyses and protection plans, and over 20 years as a staff hydrologist for the Oregon Department of Human Services Drinking Water Program. Dennis has expertise in geology, aquatic chemistry, geochemistry, hydrogeology, groundwater flow modeling, source water assessments, and source water protection. Dennis will perform the technical analyses for the water quality monitoring and source water protection plans and will serve as a member of the Inter-disciplinary Team, providing expertise and input on all aspects of the project.

Oregon Department of Fish and Wildlife: Dan Avery: (title)_____,. has __ years of experience in _____. Dan will serve on the Inter-disciplinary Team and provide technical expertise for all aspects of the project.

Siuslaw River Watershed Council: Liz Vullmer-Buhl, Coordinator, has expertise in _____. Liz will manage the ___ restoration projects and will serve on the Inter-disciplinary Team, providing technical expertise for all aspects of the project, and will manage Work Element IX. Tidal Wetlands Restoration.

Oregon Department of Environmental Quality: Jacqueline Fern, Natural Resource Specialist; Bill Mason, Senior Hydrologist. Jacqueline has expertise in Policy, Planning, and Environmental Science, drinking water quality and watershed protection and works with communities and individual water systems to help them develop and implement long-term drinking water protection strategies. Bill has expertise in hydrology, geology and remediation modeling and is involved in all aspects of environmental cleanup, emphasizing integrated cross-program (e.g., solid waste, water quality, and cleanup) remediation spanning hazardous and non-hazardous subtances.

Oregon Department of Land Conservation and Development (DLCD): Dave Perry, South Coast Regional Representative, Jay Charland, Coastal Permits, Steve Williams, Coastal Shores, and Amanda Punton, Natural Resources, will serve on the Inter-disciplinary Team and provide technical expertise and advice on all aspects of the project, particularly areas concerning climate change; erosion; estuary, ocean, and shoreland protection; and natural resource inventories, policies, and implementation measures.

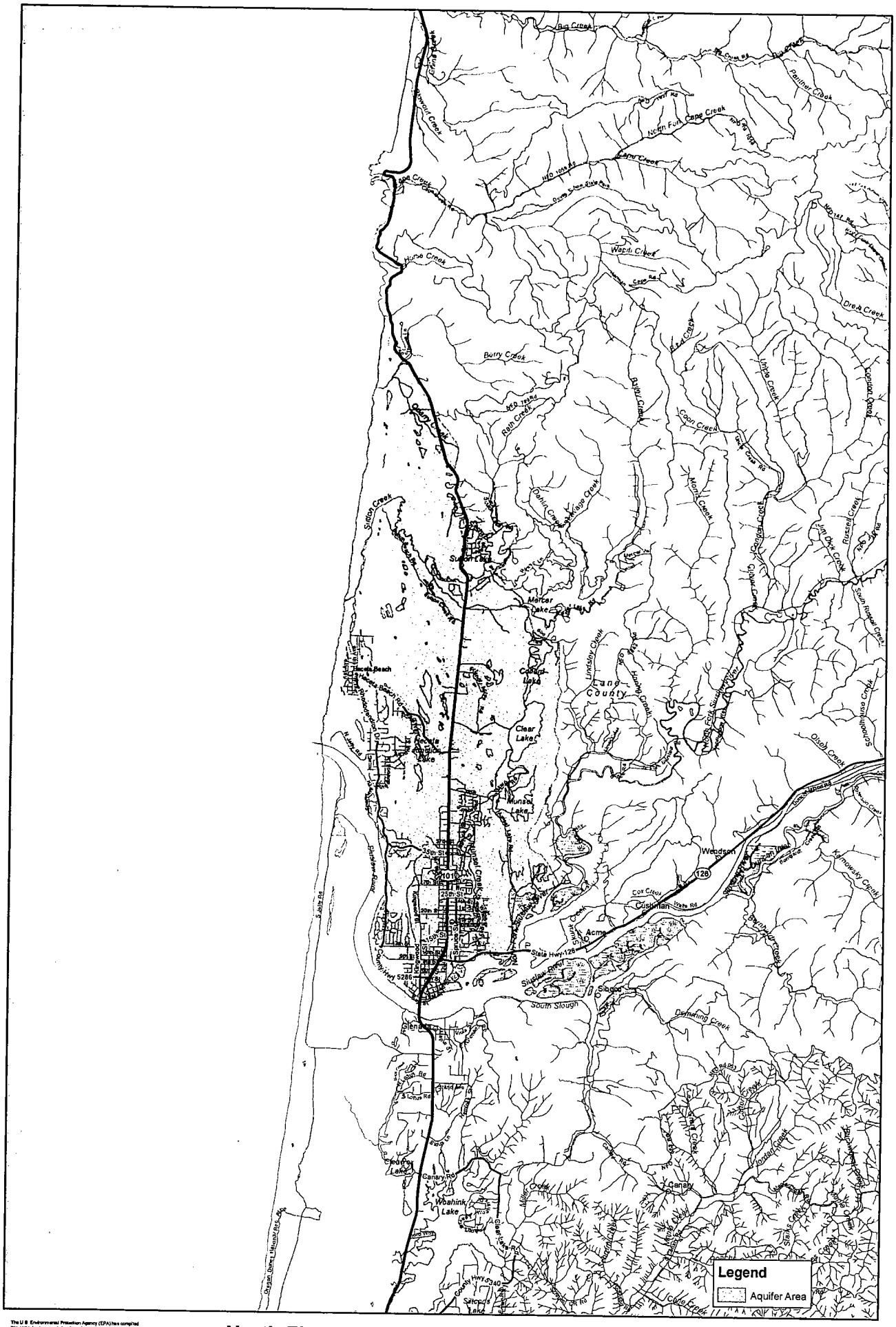
Lane County(insert staff name):

U.S. Army Corps of Engineers: Teena Monical, ___,. has expertise in _____. She will serve on the Inter-disciplinary Team and provide technical expertise and advice on aspects of the project related to _____.

Oregon Division of State Lands: Gloria Kiryuta, Natural Resource Specialist 3, has expertise in wetlands and waterways conservation, determining best use of water resources, and mitigation sequencing. She will serve on the Inter-disciplinary Team and provide technical expertise and advice on all aspects of the project.

Siuslaw Watershed and Coastal Lakes 6th Field Sub-Basins

Context Map



The U.S. Environmental Protection Agency (EPA) has compiled this computer representation from data or information sources that may not have been verified by the EPA. This data is offered here as a general representation only, and is not to be re-used without verification by an independent professional qualified to verify such data or information. The EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

North Florence Dunal Sole Source Aquifer

0 0.5 1 2 3 4 5 Kilometers

Map Created 12/04/2008 EPA Region 10

County Letterhead

DRAFT

February 18, 2009

Mr. Robert Willoughby, City Manager
City of Florence
250 Highway 101
Florence, Oregon 97439-7628

Dear Mr. Willoughby:

The Lane County Board of Commissioners fully supports the City of Florence's application to EPA for a West Coast Estuaries Initiative for Coastal Watersheds grant: *Siuslaw River Estuary Partnership: An Integrated, Multiple Objective Approach to Watershed Protection and Restoration.* Lane County will participate in, and be a sub-awardee on this project.

The Board is excited about the enormous potential for watershed protection and enhancement this grant project presents. Florence is the Siuslaw River Watershed's only major urban center and its entire UGB drains primarily to the estuary or the Pacific Ocean. Rapid infiltration rates into the sand cover, combined with a shallow water table, make the North Florence Dunal Aquifer, and the hydrologically-connected wetlands, riparian, and estuarine system, highly susceptible to contamination from surface activity. These conditions, combined with the high habitat value of the area, and projected growth, make this "Integrated, Multiple Objective Approach to Watershed Protection and Restoration Project" a high priority project for the watershed.

This project is needed to prevent development impacts which will accelerate through use of septic systems, pesticides and fertilizers, increased impervious surface, fill and alteration of drainage patterns and destruction of wetlands and floodplain functions. Cumulative effects of actions that destabilize fluvial systems are harmful to salmon. Growth and survival can be impaired when access to estuarine floodplains is blocked by dikes and levees, or these areas are filled for development. This project will also bring the Florence Comprehensive Plan and implementing land use codes into compliance with Statewide Planning Goal 5, Natural Resources. The assessment and monitoring program will create scientific-based standards, base line data, and processes that will ensure on-going evaluation of the effects of restoration and protection measures. The monitoring program will also signal early detection and trigger remedial action to minimize the effects of future contamination threats. This is of grave importance to the City and the County, especially given that the North Florence Sole Source Dunal Aquifer is an EPA-designated sole source aquifer, and is, in fact, the only aquifer so designated in the State of Oregon.

This project will serve as a model for other related projects the County is engaged in or is about to embark on. The work proposed for funding in this Florence grant is not required under a storm water discharge permit because the stormwater BMPs that will be developed and the stormwater demonstration project will apply within the Florence city limits and the City does not meet the size threshold for federal TMDL or NPDES requirements. The information and the

process will be helpful to the County when it begins work on meeting its federal requirements for these programs in the future.

Lane County staff will serve on the Inter-disciplinary Team and review and comment on all products and programs related to the area between the City limits and urban growth boundary (UGB) and outside the UGB within the boundary of the North Florence Dunal Aquifer. County staff will be involved in the water quality monitoring program, participating in the development of and agreement with, the monitoring protocol, the standards and criteria, and evaluation of the baseline standards. If there is any contamination of the aquifer within the County's jurisdiction, the County will help to ascertain the source of the contamination and help to problem-solve solutions. The County will be reimbursed for these services in an amount not to exceed $50,000, to be paid from the grant award, over the three-year grant period.

Sincerely,