RESOURCE CONSERVATION & MANAGEMENT ELEMENT

4.4 INTRODUCTION

Overview of Arcata's Natural Resources. Collectively, Arcata's natural resources are a significant component of the community. The forested hillsides, including the Arcata Community Forest and Jacoby Creek forests, the Arcata Bottom, baylands, tidelands, creeks, sloughs and wetlands are defining natural ecosystem features. They are as much a part of the community as homes, businesses, and schools. Goals and policies for conserving, enhancing, and managing the City's natural systems and features are critical ingredients of the General Plan.

Arcatans have demonstrated that natural resource conservation and management are civic responsibilities that can be met by emphasizing resource enhancement rather than resource depletion. By taking an ecosystem management approach, the City can evaluate natural resource interrelationships, and plan to maintain regional biodiversity when making resource conservation and management decisions.

> ***Biodiversity*** *- "The variety of organisms considered at all levels, from genetic variants belonging to the same species through arrays of species to arrays of genera, families, and still higher taxonomic levels; includes the variety of ecosystems, which comprise both the communities of organisms within particular habitats, and the physical conditions under which they live."*
>
> *Edward O. Wilson*
> *The Diversity of Life, 1992*

Overview of Arcata's watercourses, wetlands, baylands and tidelands. Arcata's nine named creeks and their associated sloughs provide flood control, freshwater habitat, riparian habitat, marine habitat, fish and wildlife habitat (e.g., fish spawning and migration, wildlife nesting, roosting, and foraging areas), scenic enjoyment, open space, recreation, educational opportunities, and groundwater recharge. The creeks also have tributaries with similar features and functions. Arcata's creeks and sloughs, including areas with tidal action, are illustrated in Figure RC-a, on the following page.

The City adopted a Creeks Management Plan in 1991 that contains policies for: creek zone and flood hazard management; erosion and sedimentation control; vegetation and wildlife protection; water quality protection; recreation; and public awareness. The Creeks Management Plan was adopted to address land uses that have significantly altered Arcata's creeks from their original condition, and to provide guidance for management of creeks that flow through Arcata in order to provide the fullest realization of the

creeks' beneficial uses. This guidance applies both to new and modified development along creeks, as well as existing development and practices in the creek zones, and includes both policies and implementation measures which allow for measurement of progress towards identified goals.

Figure RC-a

N

Mad River
James Creek
James Creek
Warren Creek
James Creek
S. Fork James Creek
Jolly Giant Creek
Campbell Creek
West Fork Grotzman Creek
East Fork Grotzman Creek
Butcher Slough
Cannon Slough
Beith Creek
Beith Creek
Beith Creek
North Jacoby Creek
Jacoby Creek
Monahan Creek
Rocky Gulch
Washington Gulch
Humboldt Bay

City of Arcata
Coastal Zone

Creeks

Class 1
Class 2
Class 3

0 0.5 1 Miles

Figure X.

Draft Figure RC-a

Created by Planwest Partners
Map Date: 6/24/2022

City of Arcata Protected Watercourses

City of ARCATA

Those past alterations resulted from stream courses being used for stormwater conveyance, and past land use practices that produced large amounts of sediment, that contributed to creek degradation. Alterations also included installation of structures such as tide gates that prevent or severely limit fish passage to all creeks except for Jacoby, Janes and Jolly Giant creeks.

The Resource Conservation & Management Element contains overall goals and policies for creek management, which are supported by the Creeks Management Plan policies and implementation measures. The Creeks Management Plan provides policy direction for new and modified development along creeks, and for existing activities in creek zones, in order to fully realize the creek's beneficial uses.

The City has implemented many dozens of stream restoration projects in the last thirty years to address habitat degradation and fish passage limitations, although many restoration opportunities remain. Additionally, the implementation of the City's Municipal Separate Storm System (MS4) Permit has helped to reduce pollutants from a variety of sources, including petroleum products from urban run-off and suspended sediments from soil erosion, from entering the City's creeks and riparian areas.

Jolly Giant Creek is one of Arcata's urban creeks. The headwaters of Jolly Giant Creek is in the Arcata Community Forest, and the creek flows through the urban downtown before becoming tidally influenced near Samoa Boulevard where its name changes to Butcher Slough. Butcher Slough flows into Humboldt Bay at the Arcata Marsh. As the City became urbanized, sections of Jolly Giant Creek were realigned and routed through culverts and paved over for road crossings and other forms of urban development. Restoration efforts in Jolly Giant Creek started in the 1980s and continue to the current day, with the goals of enhancing fish and wildlife habitat and reducing flooding by daylighting culverted sections of the creek, realigning sections of the creek channel, removing barriers to fish passage, planting native riparian and wetland vegetation, and establishing City protection zones/easements along the creek corridor. Throughout the Jolly Giant Creek watershed, the City has conducted invasive plant removal projects, (including reed canary grass and spartina removal), extensive riparian enhancements, fish passage and culvert improvements, and tide gate replacements.

Similar to Jolly Giant Creek, Janes Creek's headwaters is in the Arcata Community Forest adjacent to the Samuels Conservation Easement, and the creek flows through the urban neighborhoods of Arcata, west of Jolly Giant Creek, before becoming tidally influenced near Samoa Boulevard where its name changes to McDaniel Slough. McDaniel Slough flows into Humboldt Bay through the Arcata Marsh. The City has undertaken many restoration and enhancement projects in the Janes Creek watershed, including watershed-wide reed canary grass removal, installation of in-stream structures for fish habitat restoration, planting native riparian and wetland plants, channel realignment, culvert replacement to improve fish passage, and tide gate removal. The McDaniel Slough Project has been the City's largest project in the Janes Creek watershed; this project opened tide gates on McDaniel Slough in 2013, restoring tidal action to 212 acres of former tidelands. In 2021, the City completed a fish passage improvement project along Janes Creek under Alliance Road.

The Mad River's westernmost reach forms the northern boundary of Arcata's Planning Area. The river originates at the northern edge of the Yolla-Bolly wilderness area, in Trinity County, approximately 100 miles southeast of its outlet to the Pacific Ocean. The river's associated riparian corridor forms the northern portion of the City's perimeter greenbelt, and is a natural buffer between Arcata and the community of McKinleyville, to the north. The Mad River also serves as the source of drinking water for the City of Arcata.

Wetlands provide flood protection, groundwater recharge, water quality treatment, food production, and fish and wildlife habitat, which are valued by the community. Wetlands are highly productive, complex ecosystems, seasonally or permanently saturated with water, and support specially adapted vegetation. Wetlands are often found in transitional zones, or ecotones, between uplands and open water habitats. Arcata's marshes may be among the best examples of local wetlands and are reflective of pre-European conditions.

The Arcata Marsh and Wildlife Sanctuary encompasses 317 acres of diverse marshland, and is also home to the City of Arcata's innovative wastewater treatment facility. The Sanctuary includes freshwater marshes, salt marsh, tidal sloughs, grassy uplands, mudflats, brackish marsh, approximately five miles of walking and biking paths and an Interpretive Center. By integrating conventional wastewater treatment with the natural processes of constructed wetlands, Arcata has succeeded in turning wastewater into a resource. A portion of the Arcata Marsh and Wildlife Sanctuary is shown in the photo on the following page. The City implemented the McDaniel Slough Restoration Project that removed tide gates, deepened historic slough channels, and removed failing or obsolete levees to restore the former tidelands between Humboldt Bay and Samoa Boulevard.

The Aldergrove Marsh was a log pond that has since been reconstructed and significantly enhanced as a ten-acre freshwater marsh, as part of the Aldergrove Industrial Park development. In 2021, the City removed invasive aquatic vegetation, including reed canary grass, in approximately 0.6 acres to restore the open water habitat and restore biodiversity in the marsh.

Arcata Bay is part of Humboldt Bay, which is fourteen miles in length, from north to south; covers more than 17,000 acres; and is the second largest coastal estuary in California. A significant portion of the northerly waters of Arcata Bay are either owned or held in trust by the City, are within its City limit, and represent a significant natural, visual, aquacultural, tribal, and recreational resource for the community. The tidelands adjacent to the Bay include salt marshes and sloughs, except where they had been diked for use as pastureland.

Overview of agricultural resources. Agricultural lands represent an important natural resource within the City. Arcata's agricultural lands are currently used primarily for flowers, silage and hay production, food production, and livestock grazing. The Ferndale, Russ, and Loleta soil series are Arcata's most productive agricultural soils.

The agricultural lands in and around Arcata produce crops of raspberries, strawberries, lilies, daffodils, potatoes, corn, artichokes, hay (forage for cattle), and a number of other shallow rooted crops. There is community support for the continuation of dairy, beef, vegetable, fodder, and flower production in the City and the Planning Area, and recognition that protection of agricultural values, as well as open space and recreational values, is important.

Arcata's agricultural lands include diked former tidelands once owned by the State, that private parties acquired under the California Swamp and Overflowed Lands Act. These lands, now used primarily for grazing, were diked and drained (reclaimed) for agricultural use between about 1890 and 1910.

These diked former tidelands are below ten feet in elevation, have relatively impermeable soils, and retain run-off for long periods of time. These areas are no longer salt or brackish wetlands, but now function as freshwater wetlands, with meandering year-round creek and slough channels. Arcata's diked former tideland areas typically include the less productive types of Loleta and Bayside soils and are generally used for pasture.

Soil classifications are based on the most recent surveys. In the event that an updated soil survey is completed in the future, the classifications and associated mapping shall be changed accordingly.

Overview of forest resources. The eastern portion of Arcata is located on forested slopes of Fickle Hill Ridge. These slopes contain mostly second-growth conifer stands. These forested lands are both publicly- and privately held. The City of Arcata owns three separate tracts of forestland that comprise approximately 2,445 acres. The publicly owned Arcata Community Forest, which includes the Jacoby Creek Unit, Sunny Brae Unit, and Arcata Forest Unit, constitutes a significant ecological, recreational, economic, and educational resource for the citizens of Arcata and the surrounding region.

The City updated the *Arcata Community Forest Management Plan* in 2022. The 2022 Forest Management Plan replaces the *1994 Arcata Community Forest & Jacoby Creek Forest Management Plan,* by incorporating, updating, and revising much of the 1994 document. The 2022 Forest Management Plan update reflects updated information, recent research, and State Forest Practice Rule changes, thus providing management direction with a higher degree of environmental protection. The goal of the 2022 Forest Management Plan is to provide a flexible and adaptive management program that provides for protection and use of forest resources, addresses local and regional issues and concerns, and fulfills legislative requirements. The updated plan is fundamentally designed to restore and transition a relatively even-aged forest to a more structurally complex forest. The long-term goal is to develop late-seral or old-growth forest characteristics in the Arcata Community Forest. Tangible outcomes of this forest management approach include:

- Fostering and accelerating the transition to an old-growth forest stand structure through selective thinning that promotes light in the forest understory and stimulates recruitment of new tree age classes.
- Obtaining support from the community for management that includes timber harvests in close proximity to residential areas and recreational use areas.
- Protecting and enhancing biological diversity and rare species, including maintenance of northern spotted owl (*Strix occidentalis caurina*) nesting pairs.
- Contributing to the local economy by providing a source of wood products and jobs in the woods.
- Providing an opportunity for residents to be involved in forest planning, as well as on-the-ground activities, with volunteer workdays that amount to at least 5,000 volunteer hours per year.
- Providing opportunities for non-motorized recreation and contributing to the local tourism economy.
- Testing different silvicultural practices to protect and enhance water quality, as well as providing a network of connectivity between older seral forest habitat for species that require those conditions.

- Maintaining a climate resilient landscape within the city forestlands.

The 2022 Forest Management Plan provides direction and guidance for the managed uses of forest resources and non-timber resources with an emphasis on fish and wildlife habitat, recreation, watershed protection, demonstration and education, research, and timber management. The Resource Conservation & Management Element contains overall goals and policies for forest management, which are derived from the Forest Management Plan.

Wildlife Habitat Diversity and Resiliency Overview

The City applies certain practices from CDFW's Natural Community Conservation Planning (NCCP) approach to biological diversity planning.[1] This includes a city-wide ecosystems approach for protecting native plants, animals, and their habitats, while allowing compatible and appropriate economic activity. One of the key conservation practices for maintaining natural habitat diversity is invasive non-native species control. This includes control of Pampas grass (Cortaderia jubata), Himalayan blackberry (Rubus discolor), Scotch broom (Cytisus scoparius), blue gum eucalyptus (Eucalyptus globulus), English ivy (Hedera helix), English holly (Ilex aquifolium), reed canary grass (Phalaris arundinacea) and cotoneaster (Cotoneaster franchetii), which displace native plant species. These non-native species reduce natural diversity, biological integrity, and aesthetics.

The City's wildlife habitat planning accounts for current habitats, wildlife health, projected habitat changes due to climate change, wildlife conservation, furthering responsible development, and addressing growing human population needs. The City recognizes the importance of habitat connectivity and potential habitat threats from development pressures, habitat fragmentation and edge effects. The Resource Conservation & Management Element's focus on wildlife is consistent with the State Wildlife Action Plan, California Essential Habitat Connectivity Project, Regional Advance Mitigation Plans, the Federal Migratory Bird Act, and conservation plans developed by state and regional entities.

Energy Resources Overview

The City of Arcata is part of the Redwood Coast Energy Authority (RCEA) a joint powers authority (JPA) formed in 2003 representing all seven of the County's cities, the Humboldt Bay Municipal Water District, and Humboldt County. As a JPA, RCEA is the regional energy authority, and is governed by a board of representatives from each jurisdiction. RCEA's mission statement is:

> The Redwood Coast Energy Authority's purpose is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient, and renewable resources available in the region.

RCEA implements energy strategies through a Comprehensive Action Plan for Energy. This action plan is maintained by the RCEA Board. The City of Arcata also implements energy

[1] *https://wildlife.ca.gov/Conservation/Planning/NCCP*

conservation through policies and implementation measures. The Energy component of the Conservation Element promotes self-sufficiency, independence, and local energy management and supports diversity and creativity in energy resource development, conservation, and efficiency. This can reduce energy demands, stimulate the economy, and help meet greenhouse gas emission reduction targets. [*Summarized and adapted from Humboldt County General Plan, Chapter 12.*]

RCEA adopted the Humboldt County Comprehensive Action Plan for Energy (CAPE) in 2012, which is RCEA's primary guiding document. Expanding on the strategies outlined in the CAPE, RCEA initiated RePower Humboldt, a community-wide effort to define a vision and Strategic Plan for achieving energy independence and energy security in Humboldt County.

The City adopted a Community Greenhouse Gas Reduction Plan in 2006, and City Council priorities continue to emphasize energy conservation for City facilities, shifting towards a Green Fleet, and promoting alternative transportation options.

Climate Action Planning Overview

The City has participated in preparing the Humboldt Regional Climate Action Plan (CAP), a collaborative County and Cities regional approach to address climate change challenges. This regional approach enables improved county-wide coordination to maximize greenhouse gas (GHG) emissions reduction measures' effectiveness and improve the potential for future grant funding. The primary CAP goal is to reduce greenhouse gas emissions from local sources. There is scientific consensus that significant human-caused greenhouse gas emissions reductions are needed by the mid-21st century to prevent the most catastrophic effects of climate change.

Guiding Principles and Goals.

A. Protect, maintain and enhance natural ecosystem processes and functions in the region, in order to maintain their natural ecological diversity and tribal connection.
B. Restore and maintain the physical and biological integrity of Arcata's streams.
C. Protect, restore, enhance, and maintain riparian habitat on those lands subject to wetlands and streamside protection zone.
D. Recognize and protect wetlands as highly productive complex ecosystems that provide vital habitat and pollution filtration functions.
E. Restore and maintain the physical and biological integrity of publicly owned former tidelands subject to the Public Trust easement, resulting in a diversity of tidal, freshwater, and riparian habitats.
F. Protect and enhance prime agricultural lands for their food production, resource values, and aesthetic values.
G. Manage a sustainable production of both public and private forest products .
H. Manage water resources at the watershed level, to maintain high groundwater and surface water quality.
I. Manage surface water and groundwater resources to provide water quality and quantity adequate to support natural ecosystem processes and functions.

J. Conserve soil resources as the foundation of resource production and minimize erosion and other soil depleting processes.
K. Promote energy conservation, and development and use of alternative, non-polluting, renewable energy sources for community power, with an all-electric emphasis, in both the public and private sectors.
L. Maintain an active relationship with adjacent communities, tribal entities, and government agencies to encourage cooperative management of natural resources and ecosystems in Arcata's Planning Area.
M. Conserve natural resources through reduced materials consumption and recycling (see integrated waste management policies in the Public Facilities & Infrastructure Element).
N. Support the Wetlands & Creeks Committee and Forest Management Committee in providing recommendations to the City Council to continue to enhance the City's natural resources and to help maintain a compatible relationship between agricultural and non-agricultural activities and uses.

4.5 POLICIES

POLICY RC-1 NATURAL BIOLOGICAL DIVERSITY/ ECOSYSTEM FUNCTION

Objective. Set an overarching policy that emphasizes the value of biological diversity, and the optimal function of natural resources as part of a healthy ecosystem.

The following policies are included in the Resource Conservation and Management Element:

RC-1 Natural Biological Diversity/Ecosystem Function
RC-2 Streams Conservation & Management
RC-3 Wetlands Management
RC-4 Open Waters of Arcata Bay and Tidelands
RC-5 Agricultural Resources Management
RC-6 Forest Resources Management
RC-7 Water Resources Management
RC-8 Energy Resources Management
RC-9 Soils and Mineral Resources Management

RC-1a **Maintain biological and ecological integrity.** Maintaining ecological balance, system function, biological integrity, and natural diversity is the primary focus of the Resource Conservation & Management Element. Protecting the ecological functions of natural habitats, and natural drainage and infiltration processes, will enhance natural ecosystems in the Planning Area. Ecological functions and processes are maintained through the following measures:

1. The structure and composition of ecological systems within the City shall contain the same native plant and animal species, in the same relative abundances and proportions, that are found in the least-disturbed natural ecosystems in the Planning Area.
2. The ecological functions performed by ecological systems in the City shall resemble the functions of the least-disturbed natural ecosystems in the Planning Area.
3. Ecological systems and natural processes shall not be disrupted by non-native organisms to a significant degree.
4. Ecological systems and natural processes shall not be disrupted by land use activities to a significant degree (e.g., a culvert or other drainage device that restricts flow or blocks fish passage).

An "adaptive management" approach shall be used to maintain ecological and biological integrity, including monitoring the status of ecological systems in the City and adjusting

the City's implementation of this Plan, in order to more closely approximate the conditions provided in the Planning Area's least-disturbed natural ecosystems.

RC-1b **Non-native plant species.** Some non-native plant species, such as pampas grass (*Cortaderia jubata*), Himalayan blackberry (*Rubus discolor*), Scotch broom (*Cytisus scoparius*), blue gum eucalyptus (*Eucalyptus globulus*), English ivy (*Hedera helix*), English holly (*Ilex aquifolium*), cotoneaster (*Cotoneaster franchetii*), and reed canary grass (*Phalaris arundinacea)* are invasive and displace native species. The presence of these non-native species reduces the area's natural biodiversity, biological integrity and aesthetics. Only native plant species, or species demonstrated to be non-invasive, shall be used in public landscapes, and native plant species shall be strongly encouraged in private landscapes. The City shall provide public information on invasive plant species, maintain a program that recommends effective but non-toxic eradication measures for invasive plant species, and eradicate non-native plant species on public lands where they are displacing native species.

RC-1c **Protection of Environmentally Sensitive Habitat Areas.** Environmentally sensitive habitat areas (ESHA) shall be protected against any significant disruption of their habitat values, and only uses dependent on and compatible with maintaining those resources shall be allowed within ESHAs. Proposed development in areas adjacent to ESHAs shall be sited and designed to prevent impacts that would significantly degrade such areas, and must be compatible with the continuance of such habitat areas.

RC-1d **Identification of Environmentally Sensitive Habitat Areas.** The City declares the following to be ESHAs within the Planning Area:

1. Rivers, creeks, sloughs, and associated riparian habitats: Mad River; Jacoby Creek; Beith Creek; Fickle Hill Creek; Grotzman Creek; Campbell Creek; Jolly Giant Creek; Janes Creek; Gannon Slough; Butcher Slough; and McDaniel Slough.
2. Wetlands, estuaries, and associated riparian habitats: Arcata Bay; Mad River Slough; Liscom Slough; Butcher Slough; the Aldergrove marshes and ponds; and the Arcata Marsh and Wildlife Sanctuary.
3. Other important habitat areas: waterbird rookeries; shorebird concentration sites; habitat for all rare, threatened, or endangered species on federal or state lists; and vegetated dunes.
4. Public Trust lands such as = diked and drained former tidelands that are grazed.

RC-1e **Threshold of City review for sensitive habitat effects.** Development on parcels designated Natural Resource [NR] on the Land Use Plan Map, or within 250 feet of such a designation, or development potentially affecting a sensitive habitat area, shall be required to be in conformance with applicable habitat protection policies of this Element. All proposed development plans, including grading and drainage plans, submitted as part of a planning entitlement application for these areas, shall show the precise locations of all sensitive habitat areas on the site plan.

RC-1f **Sensitive habitat buffer requirements.** A setback shall be required separating all permitted development from adjacent sensitive habitat areas. The purpose of such setbacks shall be to prevent any degradation of the ecological functions provided by the habitat area as a result of the development. The following shall apply to such setbacks:

1. The minimum width of setbacks from development to streams and wetlands shall be as provided in policies RC-2 and RC-3, respectively.
2. The minimum width of setbacks from development to all other types of sensitive habitat shall be 100 feet, unless the designated setback would eliminate all reasonable use of the property.
3. A definition and map of sensitive habitat will be maintained by the City.

RC-1g **Sensitive habitat information required in development application review.** Where there is a question regarding the boundary, buffer requirements, location, or current status of an ESHA identified pursuant to General Plan policies, the public or private applicant shall provide the City with the following:

1. Base map delineating topographic lines, adjacent roads, and location of dikes, levees, culverts, flood control channels, and tide gates, as applicable.
2. Vegetation map, including identification of species that may indicate the existence or nonexistence of a sensitive environmental habitat area.
3. Soils map delineating hydric and non-hydric soils.
4. Census of animal species indicating the existence, or non-existence, of an environmentally sensitive habitat area.

This information shall be provided to the California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service, NOAA Fisheries (also known as the National Marine Fisheries Service), and other affected agencies for review and comment. Any comments and recommendations provided by these state and federal agencies shall be immediately sent to the applicant for their review. The decision concerning the boundary, location, or current status of the environmentally sensitive habitat area in question shall be based on the substantial evidence in the record and supported by written findings.

RC-1h **Habitat integration for ecological integrity and development of a protected habitat corridor system.** An ecological connection network plan for linking native habitats in the Planning Area, and all of the environmentally sensitive habitat areas identified in this Plan, shall be prepared. The network shall incorporate all existing large areas (or "nodes") of habitat for fish and wildlife species (such as marshes and forests) and "linkages" or "corridors" of natural habitat (such as stream zones and sloughs) for migration and species movement. The plan will link large "nodes" of natural habitat together with the “linkage” connections as a functioning ecological network. Nodes

and linkages shall include a "core" of natural ecosystem elements and shall provide a protected "buffer" along the outer margins of the core habitat that shall function to protect the ecological services in the "core" habitat.

RC-1i **Use of biocides and other compounds with biological consequences.** Pesticides, herbicides and insecticides (biocides); hormones and antibiotics (growth promoters); and hydrocarbon-based compounds, used both commercially and individually, can accumulate to toxic levels in biological organisms, including humans. Certain of these substances, even at low levels, can affect reproductive health.

The City shall maintain and make available a current list of alternative, environmentally-safe products for controlling unwanted vegetation and pests, growing crops and enhancing production of animal products. The use of substances and compounds that can accumulate to toxic levels is restricted by the City (Pesticide Ordinance).and the City shall develop a program for fostering the reduction of pesticides in private use.

POLICY RC-2 STREAMS CONSERVATION & MANAGEMENT

Objective. Enhance, maintain, and restore the biological integrity of entire stream courses (headwaters to mouth), and their associated riparian habitats, as natural features in the City's landscape.

RC-2a **Designation of protected streams.** The provisions of this policy shall apply to those streams shown on the Protected Watercourse Map (Figure RC-a). These watercourses and their associated riparian areas serve as habitat for fish and wildlife, provide space for the flow of stormwater runoff and flood waters, and furnish open space and recreational areas for city residents.

RC-2b **Environmental Buffer Area (EBA).** A streamside protection area is hereby established along both sides of the streams identified on the City Watercourse Map. The purpose of the EBA is to remain in a natural state in order to protect stream ecosystems and their associated riparian habitat areas. The EBA shall include:

1. In areas where existing development, as defined in the Zoning Code, is adjacent to the stream, the EBA shall be not less than 25 feet outward on both sides of the stream, measured from the top of bank.
2. In all other locations within the City, the EBA shall be not less than 100 feet outward on both sides of the stream, measured from the top of bank.
3. In locations within the City having significant areas of riparian vegetation exceeding 100 feet in width measured from the top of bank, the EBA shall be expanded to encompass all of the riparian vegetation, except in no case shall the EBA exceed 250 feet in width from the top of bank on either side of the stream.

EBAs outside of the City shall follow the policies in the Humboldt County Framework Plan, regarding Streamside Management Areas.

RC-2c **Allowable uses and activities in Environmental Buffer Areas.** The following compatible land uses and activities may be permitted in EBAs, subject to all other policies in this Element, including those requiring avoidance of impacts and other mitigation requirements:

1. Outside the Coastal Zone:
    a. agricultural operations compatible with maintenance of riparian resources;
    b. fencing along property boundaries and along EBA setback boundaries to prevent bank erosion and degradation of natural riparian vegetation by livestock;
    c. maintenance of existing roads, driveways, and structures;
    d. construction of public road crossings;
    e. forest management practices as permitted by the State of California or Arcata's Forest Management Plan;
    f. construction and maintenance of trails for public access;
    g. construction and maintenance of utility lines;
    h. resource restoration projects;
    i. emergency or preventive removal of sediment and vegetation for flood control purposes (only when authorized by the City of Arcata).
2. In the Coastal Zone:
    a. all uses and activities listed in (1) above;
    b. public coastal access improvements;
    c. boat launching facilities.
3. If the provisions herein would result in any legal parcel, not on Public Trust lands, created prior to the date of this plan, being made unusable in its entirety for any purpose allowed by the land-use plan, exceptions to the foregoing may be made to allow a reasonable economic use of the parcel, subject to approval of a conditional use permit. Any land use, construction, grading, or removal of vegetation that is not listed above shall be prohibited.

RC-2d **The Wetland and Stream Protection Combining (:WSP) Zone.** The :WSP zone of the Zoning Code shall be applied to all streamside protection areas. [The WSP zone should be a land use designation under the NR district, e.g., NR-WSP.]

RC-2e **Review and approval of projects affecting streamside protection areas.** Applications for development on any parcel that is located partially or wholly within an SPA shall be subject to the requirements of Policy RC-1 and RC-2.

RC-2f **Conservation easement.** Dedication of a conservation easement, or equivalent deed restriction, encompassing the area within the EBA shall be required as a condition of approval of any discretionary planning permit, including design review, when any

portion of the project site falls within an EBA. Such easements may be conveyed to the City of Arcata, or to another governmental agency that shall manage the easement to protect the EBA's functions, or to a mutually agreeable non-profit entity.

RC-2g **Maintenance of streams as natural drainage systems.** Arcata's creeks carry a significant amount of the City's stormwater runoff. Drainage controls shall be enforced through implementation of the Drainage Master Plan, to protect water quality, and to minimize erosion, sedimentation and flood impacts to City creeks. A comprehensive stream maintenance program shall be prepared to augment stormwater utility rehabilitation projects designed to maintain or improve flow capacity, trap sediment and other pollutants that impair water quality, minimize channel erosion, prevent new sources of pollutants from entering the stream, and enhance instream and riparian habitat.

RC-2h **Restoration of degraded creek resources.** Portions of Janes, Jolly Giant, Campbell, and Grotzman Creeks are culverted or covered, causing degradation of creek resources. Tide gates on creek systems can be barriers that prevent anadromous salmonids from accessing critical habitat. Furthermore, recreational use can degrade riparian vegetation along upland reaches of certain creeks (e.g., Jolly Giant, Campbell, and Jacoby Creeks) within Redwood Park and the Community Forest. Lack of vegetation along creek courses can cause erosion, resulting in water quality and air quality impacts. Restoration activities for improving degraded stream resources shall include:

1. Uncovering of creek courses in public rights-of-way, as part of public works improvement projects.
2. Encouraging landowners to restore degraded EBA and stream resources, including native riparian vegetation establishment and invasive species removal, as part of a new development or renovation.
3. Controlling uses that are damaging to upland reaches of creeks in the Community Forest and Redwood Park.
4. Removing or modifying barriers such as tide gates that prevent migrating anadromous salmonids which are federally listed endangered species from reaching their critical habitat.
5. Exclusionary fencing to keep livestock out of the EBA.
6. Identifying and addressing sources of pollutants that adversely impact water quality, if applicable.

POLICY RC-3 WETLANDS MANAGEMENT

Objective. To protect existing wetlands areas and their functional capacities and services, maintain a standard of "no net loss" of wetland area and services, restore degraded wetland

areas, enhance wetlands functions, and create additional wetland areas to replace historical losses.

RC-3a **Requirement for wetland delineation and study.** All proposed development applications shall include a site plan that shows the precise location of any wetlands that exist on the subject property. Any application for development on a parcel where wetlands may be present shall include a wetland reconnaissance or delineation report as follows:

1. The wetland reconnaissance or delineation report shall be based upon field investigations and shall be prepared by a professional or technical expert qualified in wetlands science.
2. For the purposes of this plan, wetlands shall include Coastal Zone lands where one or more of the following three wetland indicators are present or non-Coastal Zone lands where two or more of the following three wetland indicators are present:
   a. source of water (surface or subsurface) which is present for sufficient periods to promote hydric soils formation or growth of hydrophytic plant species;
   b. hydric soils; or
   c. hydrophytic plants.
3. Where a wetland reconnaissance indicates the probable existence of wetlands, a detailed wetland delineation shall be required, including a map with the best available contour information showing where each of the three wetland indicators are present, why the boundary was established with data sheets to back it up, and the precise boundaries of any areas that are determined to be wetlands.
4. If wetlands of any size are found to exist on the property, an analysis of the potential functional or habitat services of the wetlands shall be required.

RC-3b **Filling of wetlands.** The following shall apply:

1. Filling of wetlands shall be prohibited in the Coastal Zone, unless it can be demonstrated that:
   a. the wetland restrictions, if imposed, would render a parcel, not subject to the Public Trust, unusable for any use permitted by the land use plan;
   b. there is no feasible, environmentally less damaging alternative to wetland fill for development of a permitted use; and
   c. the fill is the least amount necessary to allow development of permitted uses.
2. Filling of wetlands outside the Coastal Zone may be permitted only when the following has been demonstrated by the project proponent:
   a. the fill is the least amount necessary to allow a reasonable and harmonious configuration of development on the parcel;
   b. the wetlands proposed to be filled are small and isolated, and have limited functional services when compared to larger, contiguous wetland areas.
3. Filling of wetlands shall only be authorized if appropriate mitigation, resulting in "no net loss" in the area and services of wetlands, is provided. Mitigation may consist of creating and maintaining a new wetland of equal or greater functional

capacity and services than the wetland proposed to be filled, restoration of previously degraded wetlands, or enhancement of existing wetland areas.

RC-3c **Designation of Environmental Buffer Areas for Wetlands.** An Environmental Buffer Area shall be established to separate all permitted development from adjacent existing wetlands that are to be preserved in a natural state, and from new wetland areas that are created as mitigation of wetland infill. The Environmental Buffer Area's purpose is to remain in a natural state in order to protect wetland ecosystems and their associated habitat areas from destruction or degradation. The extent of the Environmental Buffer Area shall be established based upon analyses and recommendations contained in a site-specific wetland delineation study but shall include the wetland area and a setback area that shall generally range from a 50-foot minimum to a 100-foot maximum width. Specific findings, based on evidence provided for City review, shall be required for setbacks less than 100 feet in width.

RC-3d **Allowable uses and activities in Environmental Buffer Areas for Wetlands.** The following compatible land uses and activities may be permitted in Environmental Buffer Areas for wetlands, subject to all other policies in this Element, including those requiring avoidance of impacts and other mitigation requirements:

1. Resource restoration or enhancement projects.
2. Farming, consistent with policy RC-3l.
3. Outdoor recreation activities, such as bird watching, hiking, boating, horseback riding, and similar activities.
4. Education, scientific research, and use of nature trails.
5. Drainage ditches when compatible with wetland function.
6. Minor modification of existing, serviceable structures.
7. Fencing to prevent livestock from degrading wetlands and riparian vegetation.

Any use, construction, grading, or removal of vegetation that is not listed above shall be prohibited.

RC-3e **Wetland and Stream Protection Combining (:WSP) Zone.** The :WSP zone of the City's Zoning Code shall be applied to all Wetland Protection Areas.

RC-3f **Review and approval of projects affecting Environmental Buffer Areas for wetlands.** Applications for development on any parcel that is located partially or wholly within an Environmental Buffer Area for wetlands shall be subject to the requirements of Policy RC-1 and RC-3.

RC-3g **Conservation easements.** Dedication of a conservation easement, or equivalent deed restriction, encompassing the area within the Environmental Buffer Area for wetlands shall be required as a condition of approval of any discretionary action, including design review, when any portion of the project site falls within an Environmental

Buffer Area. Such easements may be conveyed to the City of Arcata, or another governmental agency, or a City-approved non-profit entity that shall manage the easement to protect the Environmental Buffer Area's functions.

RC-3h **Designation of wetland protection zones.** The :WSP Zone shall be applied to wetlands, wetland setbacks, wetland buffer areas and modified wetland buffer areas, as defined in the City's Zoning Code, at the time of development review and approval.

A wetlands map, maintained by the City, will show the general location of wetlands, riparian corridors, and uplands within the City limits and urban services zone. All proposed development within or adjacent to the areas identified on the map as wetlands or riparian corridors shall comply with City Wetlands Development Standards and shall include the following in the development proposal:

1. A wetland delineation.
2. A mitigation plan for impacted areas.
3. Setback areas from delineated wetlands.
4. Easements for onsite delineated wetlands.
5. Permitted and protected uses and activities within delineated wetland areas.
6. Fencing to prevent livestock from degrading wetlands and riparian vegetation.

A Wetlands Buffer Area shall be required to protect the areas shown as wetlands on the Wetlands Map. All proposed development within the buffer areas shall comply with the Wetlands Buffer Area Development Standards of the Coastal Zoning Ordinance.

RC-3i **Management of Arcata Marsh for wetlands services as well as wastewater treatment.** The Arcata Marsh and Wildlife Sanctuary serves a variety of purposes and functions, including providing wetland habitat for a variety of species, wastewater treatment, and recreational use. These purposes shall be balanced for the benefit of all users.

RC-3j **Minimum mitigation requirements for wetland impacts.** Diking or filling of a wetland that is otherwise in accordance with the policies of this General Plan, shall, at a minimum, require the following mitigation measures, monitoring program, and funding.

1. A detailed restoration plan, monitoring program, and funding source for each site shall be required as part of the project application. The restoration plan shall include provisions for restoration to equal or greater wetland biological

productivity and contingencies for mitigation as appropriate. The monitoring program shall include reporting requirements that document mitigation success and contingency plans as determined necessary by staff. Dedication of the land to a public agency, purchase, or other stewardship method that permanently restricts the use of the site to habitat and open space purposes, shall be required. The site shall be dedicated, purchased, or other stewardship agreed upon, and mitigation funding shall be provided, prior to any permitted diking or filling.

2. Areas adequate to maintain functional capacity shall be opened to tidal action, or other sources of surface water shall be provided. This provision shall apply to diked or filled areas that themselves are not environmentally sensitive habitat areas, but would become so if, as part of a restoration program, they are opened to tidal action or provided with other sources of surface water. All of the provisions for restoration, purchase (if necessary), and dedication described under part 1 shall apply to any program or activity performed pursuant to this policy.
3. Mitigation shall, to the maximum extent feasible, be of the same type as the wetland to be filled (e.g., freshwater marsh for freshwater marsh, and saltwater marsh for saltwater marsh).
4. Where no suitable private or public restoration or enhancement sites are available, or where a wetlands mitigation bank in Arcata's Planning Area has been established that provides suitable replacement area, an in-lieu fee may be required to be paid. The fees shall be paid to an appropriate public agency for use in the restoration or enhancement of an area of equivalent productive value or surface area, or to the entity managing the wetlands mitigation bank.

RC-3k **Wetland functional capacity maintenance requirement.** Diking, filling, or dredging of a wetland or estuary shall maintain or enhance the functional capacity of these resources. Functional capacity means the ability of the wetland or estuary to be physically and biologically self-sustaining and to maintain natural species diversity. In order to establish that the functional capacity is being maintained, all of the following must be demonstrated:

1. Presently-occurring plant and animal populations in the ecosystem will not be altered in a manner that would impair the long-term stability of the ecosystem (i.e., natural species diversity, abundance and composition are essentially unchanged as the result of the project).
2. A species that is rare or endangered will not be significantly adversely affected.
3. Consumptive uses (e.g., fishing, aquaculture and hunting) or non-consumptive functions (e.g., water quality improvement and research opportunity) of the wetland or estuary ecosystem will not be significantly reduced.

RC-3l **Uses allowed in diked and drained reclaimed former tidelands.** Allowable uses and development in grazed or farmed wetlands are limited to uses compatible with the Public Trust doctrine. These uses are specified in Land Use Element Policy LU-6 and are summarized below.

1. Agricultural operations limited to accessory structures, apiaries, field and truck crops, livestock raising, greenhouses (provided they are not located on slab foundations and crops are grown in the existing soil on site), and orchards.
2. Farm-related structures, including barns, sheds, and farmer-occupied housing, necessary for the performance of agricultural operations. Such structures may be located on an existing grazed or farmed wetland parcel only if no alternative upland location is available for such purpose and the structures are sited and designed to minimize adverse environmental effects on Public Trust resources and uses. No more than one primary and one secondary residential unit shall be allowed per parcel.
3. Restoration projects.
4. Nature study, aquaculture, and similar resource-dependent activities compatible with Public Trust resources and uses.
5. Incidental public service purposes that may temporarily impact the resources of the area (such as burying cables or pipes).

Expanding farming operations into non-farmed wetlands, by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is viable for such purpose and the structures are sited and designed to minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required.

POLICY RC-4 OPEN WATERS OF ARCATA BAY & TIDELANDS

Objective. Maintain existing Bay wetlands and tide lands, protect them from urban and agricultural encroachments or degradation, and manage the open waters of Arcata Bay for their wildlife, fisheries, and ecological services, as well as navigation, recreation, and tourism uses.

RC-4a **Protection of open waters and tideland areas of Arcata Bay.**
The open water areas and tidelands of Arcata Bay constitute a fragile Public Trust resource and access shall be controlled to avoid resource degradation, while maintaining the public's right to navigation. Tidal marshes shall be enhanced and maintained, especially in the areas of McDaniel, Gannon, and Butcher's Sloughs, to protect wetland services.

RC-4b **Access to Arcata Bay.** The following bicycle and pedestrian routes are designated as Public Access Corridors, and shall be properly signed and identified as approved Bay access points.

1. "I" Street from Samoa Boulevard, south through the Arcata Marsh and Wildlife Sanctuary to the boat launching facility on Arcata Bay.
2. South "G" Street south of "H" Street, to Highway 101.
3. Humboldt Bay Trail from Samoa Boulevard (Highway 255), south to Bayside Cutoff and beyond.
4. Samoa Boulevard from Highway 101 west to Mad River Slough.

A system of foot trails and interpretive sites shall be established along the Arcata Bay shore westward to the City limit, subject to the following guidelines.

5. All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101, and that is identified as tidelands, former tidelands, wetlands or riparian corridor on the adopted Wetlands Map shall be reviewed by the Wetlands and Creeks Committee, and coordinated with California Department of Fish and Wildlife.
6. Development in the area bounded by Butcher's Slough and Gannon Slough shall occur in conjunction with management of the USFWS National Wildlife Refuge, Arcata Marsh and Wildlife Sanctuary and the Jacoby Creek Gannon Slough Wildlife Area.
7. Motorized vehicles shall be restricted to paved roads and parking lots.
8. Pedestrians shall be restricted to designated trails and facilities.
9. Valid scientific and educational studies of wetlands and tidelands are encouraged with a City Nature Area Entrance Permit.

RC-4c **Coastal-dependent and Public Trust uses of Arcata's tidelands.** Tidelands of Arcata Bay support a variety of wildlife, as well as human activities. The following provisions shall be made for managing tideland areas.

1..
2. Tidelands and open water areas of Arcata Bay shall be designated Natural Resource-Public Trust lands [NR], and identified as passive use recreational areas.
3. The Arcata Marsh and Wildlife Sanctuary shall be designated as Natural Resource [NR], and the recreational component of the project identified as a passive use recreational area.
4. The continued use of the tidelands for scientific and educational studies is encouraged.
5. The Arcata Marsh and Wildlife Sanctuary shall be maintained and any new facilities shall be built consistent with the Arcata Marsh and Wildlife Sanctuary plan adopted by the City Council.
6. The South "I" Street boat launch shall be enhanced or relocated to accommodate small watercraft and windsurfing.
7. The placement of interpretative sites along the Arcata Bay shore, including Nature and Wildlife Centers, shall be coordinated with other agencies, and serve as an educational focal point for Arcata's natural resource areas.

8. Access on the levee from the Arcata Marsh and Wildlife Sanctuary westward to the City limit shall be provided for passive recreation and nature observation.

RC-4d **Diking, dredging, filling, and shoreline structures.** Diking, dredging, or filling of Bay waters, wetlands, and estuaries is discouraged and only permitted where it has been demonstrated that the Public Trust resources and values are being protected, and mitigation measures have been provided, which minimize adverse environmental effects, for the following limited uses:

1. Incidental public service purposes including, but not limited to, burying cables and pipes, and maintaining existing dikes and public facilities.
2. Maintaining a channel adequate to serve the boat ramp at current levels of use.
3. Resource restoration purposes.
4. Nature study, aquaculture, or similar Public Trust resource dependent activities.
5. Agriculture as currently practiced within existing diked former tidelands but not including the expansion thereof.

In order to protect existing development, shoreline structures (such as dikes or tide gates) that may alter the natural shoreline, shall be permitted only when they do not adversely affect any federally listed endangered or threatened species; and no other feasible, less environmentally-damaging alternative is available, and only when the structures are not located within a wetland, unless the wetland will be the primary beneficiary of the structure.

The placement of dredge material on existing wetlands shall not be permitted unless such placement is necessary for either a Public Trust resource restoration project, or for the maintenance of existing agricultural operations in diked former tidelands. Wetland fill shall be allowed for aquaculture projects if it can be shown that it is necessary for the project, is required to be located within the wetland, and there is no other feasible, less environmentally-damaging, alternative.

RC-4e **Aquaculture use of coastal wetlands and tidelands.** To protect aquaculture activities in Arcata Bay, the City shall:

1. Ensure that its wastewater discharge does not exacerbate existing problems with coliform bacteria levels in Arcata Bay.
2. Take measures to reduce coliform loading of perennial streams within its jurisdiction, as part of a stream maintenance program. These measures shall include controlling identified sources of coliform loading such as septic tank leachate and runoff from agricultural operations.

Aquaculture shall not adversely impact natural ecological processes nor native wildlife or fisheries or their habitat in the Bay. No new aquaculture uses shall be permitted unless it can be demonstrated that adequate precautions will be taken to prevent new

adverse impacts to natural ecological processes. The City shall continue its management of:

1. Integrated wetland enhancement and wastewater treatment.
2. The tidelands, for commercial and native oyster harvesting.

RC-4f **Management of bayfront and marsh areas for coastal access, recreation, and tourism.** Tidelands and open water areas of Arcata Bay shall be designated Natural Resource-Public Trust land [NR-PT] and protected from uncontrolled access. The following guidelines shall be used when permitting access to these areas:

1. Motorized vehicles shall be restricted to paved roads and parking lots.
2. Pedestrians shall be restricted to designated trails and facilities.
3. Valid scientific and educational studies of the wetlands and tidelands shall be encouraged.

New development shall not restrict public access to the shoreline. Public access to the shoreline shall be required of new development. Where consistent with the Humboldt Bay National Wildlife Refuge's Management Plan, controlled public access to the Refuge's Jacoby Creek Unit shall be developed along Arcata Bay from the AMWS to the City's westward limit.

POLICY RC-5 AGRICULTURAL RESOURCES MANAGEMENT

Objective. Protect and enhance agricultural uses on prime agricultural lands within the City, and encourage more productive agricultural use of agriculturally suitable lands.

RC-5a **Promotion of and participation in agricultural production within the City.** Diverse and intensive agricultural production and increased participation in agricultural production, shall be promoted, in order to maintain the value of agricultural lands, improve the economic base, and increase employment and food production. The City does not, however, advocate more intensive agricultural uses and practices that would have adverse environmental impacts. Agricultural operations, such as Community Supported Agriculture (CSA) are strongly encouraged.

RC-5b **Community and farm protection.** Maintaining a compatible relationship between agricultural and residential uses shall be based on:

1. Recognizing the rights of owners of productive agricultural land to make agricultural use of their land.
2. Identifying and minimizing potential conflicts between agricultural operations and adjacent residential, commercial, and community facility uses.

RC-5c **Permanent protection for agricultural lands.** Protection of agricultural resources shall be secured through the purchase of conservation easements, development rights, and outright acquisition. The City shall work in conjunction with other entities such as land trusts, whenever possible, to preserve agricultural buffers and maintain and enhance agricultural uses on prime agricultural soils.

POLICY RC-6 FOREST RESOURCES MANAGEMENT

Objective. Protect and enhance private and public forest lands (e.g., the Arcata Community Forest Tracts) to maintain the resiliency and integrity of the ecosystem while protection timber production, recreation, habitat values, and opportunities for education and research.

RC-6a **Management of Arcata Community Forest.** The City's 2022 Forest Management plan includes the following policies:

1. **Recreation and aesthetics resource management** - The community forest will emphasize dispersed, day-use opportunities. Recreational use shall not be allowed to impact other resources such as fish, wildlife, or watershed.
2. **Timber resource management** - To ensure the sustainable and long-term production of forest products, the rate of harvesting must not exceed the rate of production. Long-term productivity refers to the continuing ability of the forest to produce timber while retaining the associated values of watershed, wildlife, soils, recreation and aesthetics. This is dependent upon the use of management practices that do not allow for the deterioration or impairment of soil productivity. For planning purposes, long term means that exceeding fifty years.
3. **Watershed resource management** - Water quality, soil, riparian, and aquatic biological productivity shall be maintained and enhanced through the application of City forest management standards and the implementation of watershed improvement projects.
4. **Wildlife resource management** - Wildlife habitat is managed to promote species diversity and to ensure that populations of indigenous species are maintained. This can best be achieved through the maintenance and enhancement of habitat values. Habitat values that lead to species diversity include the following elements: breeding, foraging, watering, rearing, hiding and thermal cover.
5. **Vegetation and botanical resources** - Maintain the native biodiversity of species found in a redwood forest habitat, both by controlling exotics and managing for a species mix that would naturally occur in a redwood forest habitat.

RC-6b **Management of Jacoby Creek Forest.** The management policies for the Jacoby Creek Forest are the same as those for the Arcata Community Forest, listed above, except that the Jacoby Creek Forest is not open to recreational use.

RC-6c **Allocation of forest funds.** Forest fund revenues, derived from timber harvest and carbon projects shall be deposited into a special revenue account within the City to be utilized for forest management purposes. Excess net forest fund revenues, when available, may be directed towards park acquisition, maintenance, and development. This can include acquisition of stream corridors, and riparian and greenbelt areas. These areas contribute to the diversity of parks and, in the case of linear parks along stream corridors, provide passive recreation areas compatible with the environment. The acquisition of open space shall be emphasized as an appropriate use for the remaining revenues.

RC-6d **Management practices for private timberlands.** The management of private timberlands shall be encouraged to use current principles of sustainable forestry for all aspects of forest use and function: recreation; timber production; biodiversity; air and water quality; and carbon storage. Timber owners are encouraged to apply for conservation easements, certified forestry, or compensation for carbon storage.

RC-6e **Timber harvest plans.** The City, in cooperation with California Department of Forestry, shall request review of all Timber Harvest Plans (THP) within the Planning Area. The City shall review THPs for measures that protect water quality, control erosion and flooding, and preserve the City viewshed. The city shall recommend that THPs that do not include these measures not be approved.

RC-6f **Urban conversions.** The sustainable management of timber resources, and related uses, shall be encouraged, so that the long-term economic return from productive timber production will provide sufficient incentives to prevent urban conversions. Urban conversions are discouraged within the Urban Services Boundary.

RC-6g **Setbacks.** Development adjacent to the Community Forest boundary shall be setback at least 150 feet, unless this would make the use of the parcel infeasible for its designated purpose. However, larger setbacks may be required to prevent exposure to potential hazards and to maintain forest integrity.

RC-6h **Monitoring.** Monitoring of forest practices, to ensure consistency with adopted management and harvest plans, shall be carried out as an implementation measure of this Element. The general objectives of the monitoring will be to:

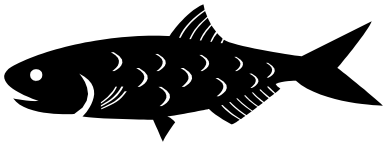
1. Determine the effectiveness of management practices at multiple scales (i.e., individual sites to watersheds).
2. Validate ecosystem functions and processes have been maintained as predicted.

POLICY RC-7 WATER RESOURCES MANAGEMENT

Objective. Manage Arcata's water resources from a watershed perspective, to maintain surface water and ground water quality and quantity. Runoff will be managed for the benefit of

aquatic habitats, native and non-invasive vegetation, and soil conservation, and to recharge groundwater.

C-7a **Protection of surface waters from point and nonpoint pollution sources.** The use of natural stormwater drainage systems, which preserve and enhance natural features, shall include the following:



1. Efforts to acquire land or obtain easements for drainage and other public uses of floodplains, where desirable to maintain stream courses in a natural state, shall be supported.
2. Recreational opportunities and aesthetics shall be considered in the design of stormwater retention, detention, treatment, and conveyance facilities.
3. Sound soil conservation practices shall be required, and impacts of proposed developments, with regard to water quality and effects on watersheds, wetlands and drainage courses, shall be carefully examined.
4. The quality of runoff from urban and suburban development shall be improved through use of appropriate and feasible Best Management Practices (BMPs) including, but not limited to, bioretention basins, artificial wetlands, grassy swales, oil/grit separators, with an emphasis on a Low Impact Development approach to stormwater management.
5. New development shall be required to minimize increases in stormwater peak flows and/or volume, to the extent feasible. Stormwater management measures shall take into consideration potential adverse impacts on the Mad River, Arcata Bay, and adjoining lands in the City and Planning Area.
6. New development projects shall be designed to minimize drainage concentrations, maximize permeable surfaces (such as unpaved parking areas) and maintain, to the extent feasible, natural site drainage conditions.
7. New development projects that may adversely affect the quantity and quality of stormwater runoff shall be required to allocate land necessary for detaining post-project flows and/or for incorporating measures to minimize water quality impacts from urban runoff. To the maximum extent feasible, new development shall not produce a net increase in peak stormwater runoff.
8. All development shall comply with the City's post construction stormwater management program (under the MS4 General Permit) which includes stormwater management measures for site design, source control, runoff reduction, stormwater treatment, and baseline hydromodification controls, as applicable based on project type and size.

RC-7b **Protection of groundwater sources.** Septic systems and onsite disposal of toxic substances are the leading causes of groundwater contamination. Septic systems within the Urban Services Boundary shall not be permitted, and incidents of onsite toxics disposal shall be referred to the appropriate county and state agencies.

RC-7c **Watershed and urban runoff management.** To protect structures, critical facilities, existing habitat values and water quality, flooding shall be managed on a watershed basis, using a combination of biotechnical solutions, flood protection practices, and Drainage Master Plan's management practices.

RC-7d **Water quality monitoring.** Water quality and quantity shall be monitored on a regular basis to ensure that City policies are being adhered to.

POLICY RC-8 ENERGY RESOURCES MANAGEMENT

Objective. Reduce energy use through conservation and efficiency practices, reduce energy costs to the city and its residents, and increase the percent of energy purchases from renewable sources; increase energy security and reduce our vulnerability to outages and increased price; increase public awareness of energy issues and encourage an energy conservation ethic.

The City will actively participate in Redwood Coast Energy Authority's primary guiding document the Humboldt County Comprehensive Action Plan for Energy (CAPE) and RePower Humboldt, a community-wide effort to define a vision and Strategic Plan for achieving energy independence and energy security in Humboldt County

RC-8a **Encouragement of appropriate energy alternatives.** The City will participate in Redwood Coast Energy Authority's Community Choice Energy (CCE) program, supporting renewable energy purchases over non-renewable sources.

RC-8b **Encouragement of energy efficiency and conservation.** The City shall disseminate Redwood Coast Energy Authority information to educate residents, property owners, and business operators about the need for and benefits of conserving energy. This includes information about building insulation; energy efficient appliances, lighting, and heating; other conservation measures and materials; and home power alternatives.

The City shall continuously seek and implement cost-effective steps to reduce City energy use. The City shall adopt national "Energy Star Program" goals (or its successor programs) for all City construction projects and all construction projects assisted by grants for which the City is an applicant. These goals include achieving a minimum of 15% greater energy efficiency than would a building designed with existing Title 24 standards.

Explore and, if appropriate, adopt energy efficiency standards for existing residential and commercial buildings upon substantial remodel. Consider requiring energy efficiency inspections, disclosure, and retrofits at change of ownership based on cost-effective and commercially available energy efficiency measures.

RC-8c **Promotion of energy efficiency in transportation.** Reduce motor vehicle trips within the city and between the city and other destinations, and reduce per-trip energy consumption; this policy applies to trips by residents, non-residents, and city staff. Such measures as bike and pedestrian paths, public transportation, shared parking, and alternative-fueled vehicles shall be used to make these reductions.

RC-8d **Restoration for Greenhouse Gases Absorption.** Foster and restore forests and other terrestrial ecosystems that offer significant carbon mitigation potential, consistent with the Humboldt County Climate Action Plan.

RC-8e **City Electrification Ordinance**. Prepare and pass an 'all electric' Ordinance that phases out natural gas infrastructure and use.

POLICY RC-9 SOILS AND MINERAL RESOURCES

Objective. Conserve and manage soil and mineral resources.

RC-9a **Erosion control measures on slopes and other areas of instability.** General Plan Public Safety Element Policy PS-3 - Other Geologic Hazards includes protections for steep and unstable slopes, to minimize erosion, sedimentation and landslides. This policy shall be followed as a safety precaution and also to conserve soil resources.

RC-9b **Protection of productive soils and soils with limitations.** Local soils range from productive soil types capable of supporting agriculture and forestry, to those susceptible to shrink-swell and erosion. Clay soils are the most susceptible to shrink-swell, caused by fluctuations in moisture content. According to available soils information, the Bayside series is the only soil type in the Arcata area with identified clay content. Building construction on this soil type shall include measures to avoid damage from shrink-swell.

Certain areas of the City have high liquefaction potential during seismic events. Policy PS-2 - Seismic Hazards, in the General Plan Public Safety Element, addresses mitigation of liquefaction hazards. This policy shall be followed as a safety precaution, and also to manage related soil limitations. Policy RC-5, relating to agricultural soils, shall also be followed to conserve productive soils. The continued research, identification, and protection of productive soils by the Natural Resource Conservation Service and educational institutions shall be encouraged.

RC-9c **Management of mineral resource (gravel) extraction, processing and transport .** Areas along the Mad River, within and upstream of the City's Sphere of Influence, are currently used for aggregate (i.e., gravel) resource extraction. The City shall encourage Humboldt County to limit the quantity of aggregate extracted to an amount that does not exceed the mean annual recruitment, and shall request that Policy RC-1and RC-2 be applied to protect natural biological diversity and ecosystem

functions along the river. The City shall also request that the County not approve or renew permits for commercial mineral resource extraction in A-E designated lands in the City's Planning Area. Mineral resource extraction operations shall not result in additional soil runoff, and shall be consistent with the City's seismic safety policies (see Policy PS-2 in Public Safety Element).

4.6 IMPLEMENTATION MEASURES

#	IMPLEMENTATION MEASURE DESCRIPTION	RESPONSIBLE PARTY	TIME FRAME
RC -1	**Creeks & Wetlands Management Plan** Update the City Creeks Management Plan to include wetlands and continue to implement current provisions for maintaining biological integrity of entire watercourses. The Creeks & Wetlands Management Plan will also include updated provisions for education and restoration programs for degraded creeks.	Environmental Services Dept./Wetlands & Creeks Committee	Every 5 years
RC -2	**Community Forest Management Plan** Update the Community Forest Management Plan, at least every ten years, to implement current provisions for managing recreation, aesthetic, timber, watershed, wildlife, and vegetation resources. The Management Plan will also include updated provisions for allocation of forest fund revenues and urban conversions, as well as setbacks from the Community Forest boundary and a monitoring program for forest practices.	Environmental Services Dept./Forest Management Committee	Every 10 years
RC -3	**Energy Efficiency and Conservation Program** Conduct a continuous program to identify and purchase appropriate energy supplies, implement and evaluate energy conservation measures, provide energy education and public information, and promote energy efficiency in transportation. Establish a funding mechanism to assure that a significant portion of the savings are used to fund energy programs and as a reward for savings.	Environmental Services Dept./ Energy Committee	Ongoing
RC -4	**Non-native Plant Species Removal Program** The City shall continue to provide public information that explains why invasive plant species are problematic. The City shall maintain a program that recommends effective but non-toxic eradication measures, for invasive species and eradicates non-native plant species on public lands where they are displacing native species.	Environmental Services Dept	Ongoing
RC -5	**Surface Water Quality Ordinance** Implement the City's Municipal Separate Storm Sewer System (MS4) requirements for post-construction activities including Ordinance No. 1463 that sets forth standards for discharge into the stormwater drainage facilities for the City of Arcata, and establishes a stormwater pollution control program in compliance with the Clean Water Act.	Environmental Services Department	Ongoing
RC -6	**Jacoby Creek Gannon Slough Wildlife Area Management Plan** Prepare a long-term management plan for the Jacoby Creek Gannon Slough Wildlife Area that includes habitat mapping, guidelines for management, and restoration goals and objectives.	Environmental Services Dept./Wetlands & Creeks Committee	Year 2

#	IMPLEMENTATION MEASURE DESCRIPTION	RESPONSIBLE PARTY	TIME FRAME
RC -7	**Sensitive Habitat Mapping** Using the sensitive habitat definition from Policy RC-1d, prepare and regularly update a map of sensitive habitat in the City.	Environmental Services Dept.	Ongoing
RC -8	**Pesticide Ordinance** Regularly update the City's Pesticide Ordinance.	Environmental Services Dept.	Every 5 years
RC -9	**Programs to Promote Alternatives to Pesticides** The City shall implement a program to foster the reduction in use of pesticides by the public. This shall include maintaining and making available a current list of alternative, environmentally-safe products to control unwanted vegetation and pests. The use of substances and compounds that can accumulate to toxic levels is restricted by the City (Pesticide Ordinance).	Environmental Services Dept.	Ongoing
RC-10	**Electrification Ordinance and Program** Prepare and adopt an electrification ordinance for new construction. Create an electrification program for phase out of natural gas including short-term, mid-term, and long-term actions, including educational and promotional materials.	Environmental Services Dept.	