

IV. THE RESOURCE ELEMENTS

THE RESOURCE ELEMENTS are a combination of the mandatory and optional elements related to natural and physical resources in the Ukiah Valley. The Elements in this Chapter are Open Space and Conservation, Safety, Noise, and Energy.

1 OPEN SPACE AND CONSERVATION

1.01 General principles

THE CONSERVATION portion of the Open Space and Conservation Element overlaps provisions found in the Open Space, Land Use, Safety, and Circulation Elements. The conservation portions of the Open Space and Conservation Element differ from other portions of the General Plan in that the emphasis is towards natural resources. The conservation component stresses the conservation, development, and utilization of resources.¹ *Open space lands* differ from conservation activities. Open space lands are essentially undeveloped lands in public and private ownership that are designated for a land use that allows the land to appear rural or open. Lands that are currently open space may include property that will be developed for a resource use, such as agriculture or mineral resources.

Explanation IV.1-1: Definition of Open Space from California law

*Open-space land means any parcel or area of land or water which is essentially unimproved and devoted to an open-space use as defined in this section, and which is designated on a local, regional or state open-space plan as any of the following:

- *(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries, and coastal beaches, lake shores, banks of rivers and streams, and watershed lands.
- *(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground water basins, bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
- *(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value, areas particularly suited for park and recreation purposes, including access to lake shores, beaches, and rivers and streams, and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
- *(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality." Government Code §86500(g).

¹General Plan Guidelines, pp. 117-118.

Policy GP-29.3: Promote public transportation, services within walking distance in neighborhoods, and any other feasible means of preventing needless vehicle use and pollution.

Goal GP-30: **Protect existing agriculturally zoned lands in the City's Planning Area.**

Policy GP-30.1: Recognizing the irreversibility of conversion from agricultural to other uses, require within city limits and urge within the Planning Area that all such conversions be subject to a citizen review process.

Policy GP-30.2: Work cooperatively with citizens and organizations to ensure that the siting and design of schools, and local State and Federal facilities minimizes the use of, and impact on, agricultural lands.

Goal GP-31: **Identify ways to replace wasteful practices that imprudently use resources.**

Policy GP-31.1: Establish programs to reduce motor vehicle dependency.



1.01.01 Summary of major findings

Human, physical and spiritual health depends upon the understanding of and living within the interrelationship of living systems. The community at large can enjoy the open space effect of private property but must recognize and respect that it is private property when implementing policies. The City can combine development and open space through incentives for innovative projects to preserve vegetation, make wise/frugal use of resources, and generally enhance the environment. Because of the relationship between the overall Ukiah Valley and the incorporated City area, it is intended that the Open Space and Conservation Element apply to both lands within the City limits and the unincorporated area.

While most publicly-owned lands that are designated as open space will remain in a public use or undeveloped state, privately-owned lands that may be shown as open space are not generally available for public access without the property owner's permission.

1.01.02 General Plan goals, policies, and implementing programs

Goal OC-1: Recognize private property rights when designating open space lands.

Policy OC-1.1: Identify all current privately-owned undeveloped parcels within the City's Planning Area so that the larger public is aware of their locations.

Implementation Measure OC-1.1(a): Ensure that the undeveloped lands inventory is updated each year. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning]

Implementation Measure OC-1.1(b): Provide information to people interested in learning about how undeveloped lands can be acquired as a means of preserving open space. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

Implementation Measure OC-1.1(c): When private organizations or public groups seek to acquire open space, provide staff support to answer questions and supply supporting information as needed. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

Policy OC-1.2: New residential, commercial, and industrial development shall include open space as defined in the Land Development Code.

Implementation Measure OC-1.2(a): The revised Land Development Code² shall include standards for maintaining open space and green areas within new developments. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Planning Agencies]

Policy OC-1.3: Coordinate landscaping of public and private development with preservation and restoration of open space and native vegetation.

²The "Land Development Code" is an umbrella term that refers to ordinances enacted to specify development, building, and subdivision standards.

Implementation Measure OC-1.3(a): In the Land Development Code or design standards,³ incorporate requirements for enhancing native vegetation. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Planning Agencies]

Goal OC-2: The City of Ukiah shall support the conservation of agricultural lands through formation of a land trust.

Policy OC-2.1: Support the formation of a non-profit private *Land Conservation Trust*.

Implementation Measure OC-2.1(a): During the short-term planning period, the City shall facilitate acquisition of open space by the *Land Conservation Trust*. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: General Services]

Goal OC-3: Encourage clustering of residential development wherever possible to preserve continuous, unfragmented natural habitat.

Policy OC-3.1: Establish incentives which promote clustered development as a means of maintaining natural habitat.

Implementation Measure OC-3.1(a): Amend the Land Development Code to incorporate incentives, such as density bonuses, for cluster housing to conserve critical natural habitat. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Planning Agencies]

Implementation Measure OC-3.1(b): Ensure that the Land Development Code incorporates subdivision design standards to plan for shared or clustered driveways. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Planning Agencies]

Goal OC-4: Encourage continuous public participation to monitor the Open Space and Conservation Elements.

Policy OC-4.1: Encourage participation of organizations established for purposes of open space conservancy.

Implementation Measure OC-4.1(a): Using community relations programs, provide notice and an opportunity for groups to participate in the annual General Plan report to provide views concerning the implementation of the Open Space and Conservation elements. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Planning Agencies]

Goal OC-5: Provide a system to catalog natural resources within the Planning Area.

Policy OC-5.1: Develop a resource inventory by coordinating available sources.

Implementation Measure OC-5.1(a): Evaluate and prepare an inventory of existing natural resources on a periodic and systematic basis during the life of the General Plan. The inventory may include encouraging other trustee or responsible agencies to take

³Design review standards will either be included in the Land Development Code or adopted as a separate policy-regulatory program.

the lead in developing an inventory in areas of appropriate responsibility, it may include sponsorship of studies found by the Council to be of immediate importance to the City, or it may include City contributions in kind or monetarily, if appropriate, to assist in funding such studies. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Planning]

Implementation Measure OC-5.1(b): During the short-term planning period, prepare a list of resources to be included in the inventory. This list shall be utilized to develop the systematic program for preparing the inventory. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning]

Implementation Measure OC-5.1(c): The City shall strive to start an inventory of at least one resource identified on its list or in its program every two fiscal years. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning]

Goal OC-6: Utilize natural resource guidelines in future planning and development decisions.

Policy OC-6.1: To create a balance between the natural habitat and area development, provide guidelines to encourage development styles and techniques that respect the natural terrain, topography, and habitat.

Implementation Measure OC-6.1(a): The Land Development Code shall include provisions for review of the site terrain and natural characteristics as a part of site design and development. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Planning Agencies]

1.02 Russian River

1.02.01 Summary of major findings

The Russian River is a vital recreation resource for the public as well as critical to agricultural use in the Ukiah Valley. Conflicts between these uses shall not be avoided by preventing public uses. Rather the City of Ukiah, Mendocino County and other public agencies shall simultaneously encourage reasonable public use and access and protection of agricultural and other private uses from trespass and vandalism. The Russian River is a significant fisheries habitat, the major flood control channel, and the major source of water for supply and distribution as well as resupply for the underlying aquifer. Historically and today, the river has been a major source of reeds and willows that were gathered by the native American inhabitants of the area, and fabricated into the unique baskets that are now world-famous.

Continued urbanization of the Russian River flood plain may result in impacts to the free flow of flood waters, increase exposure of persons and property to flooding, and cause deterioration or destruction of natural riparian habitats. The development patterns within the Valley have also resulted in the conversion of streams and creeks to channelized and tunneled drainage facilities. This destroyed natural habitat has not been replaced. Additionally, the channelization disrupted natural drainage patterns, which can result in increased flooding as more impermeable surfaces are created in the Valley. The implementation program in the Plan provides mitigation that is applied to development proposals.

The Russian River is a major identified floodway with expansive floodplains on each side of the river's channel. Its historic course has moved from time to time following major floods. The drainage of the river results in the deposit of gravel into the river bottom and along the floodway which provide opportunities for mineral extraction. Mining the Russian River has impacts in terms of changes to the depth of the river, disruption of river flows, and shifts in the banks or course of the channel.

The City of Ukiah has direct interest in the quality and protection of the Russian River. The river provides the City's water supply. It serves as a recreation resource. The river is also critical as a part of the City's wastewater treatment system.

Agricultural interests, property owners, and governmental agencies all have claims on portions of the river's stream flows for municipal, agricultural, and industrial uses. The river is regulated by the California Department of Water Resources. The Russian River carries significant volumes of water used outside of the Ukiah Valley.

1.02.02 General Plan goals, policies, and implementing programs

Goal OC-7: Ensure the health and viability of the Russian River and its tributaries.

Policy OC-7.1: Maintain river bed and banks for flood control, water delivery, and fish habitat.

Implementation Measure OC-7.1(a): Working cooperatively on an ongoing basis with the affected property owners, the Russian River Flood Control and Water Conservation Improvement District (RRFC&WCID), Mendocino County, and other responsible and trustee agencies, develop and support programs to maintain the riverbed for flood control, fishery habitat, and water delivery. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council, Board of Supervisors, Mendocino County Water Agency]

Policy OC-7.2: Take measures to prevent further deepening of the channel.

Implementation Measure OC-7.2(a): Working cooperatively on an ongoing basis with affected property owners, the RRFC&WCID, Mendocino County, and other responsible and trustee agencies, establish a program to set a minimum riverbed elevation above mean sea level along its route within the Ukiah Valley and participate in project review to ensure that the channel elevation is maintained. [Timeframe for completion: Short-term planning period ♦ Measure applies to: County ♦ Agency/Department responsible: Board of Supervisors, Mendocino County Water Agency]

Policy OC-7.3: Limit gravel harvesting to levels that do not exceed resupply of river gravel.

Implementation Measure OC-7.3(a): During the short-term planning period, work with the affected property owners, County of Mendocino, Department of Fish and Game, and California Division of Mines and Geology to determine the resupply levels of river gravel. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: County ♦ Agency/Department responsible: Mendocino County Water Agency]

Implementation Measure OC-7.3(b): When reviewing permit applications for mineral resource harvesting from within the river channel, ensure that permit conditions maintain a maximum harvest volume that will not, when combined with other extraction permits, exceed the resupply levels for river gravel. [Timeframe for completion:

Ongoing planning period ♦ *Measure applies to:* County ♦ *Agency/Department responsible:* Planning Department]

Policy OC-7.4: Take measures to lessen flooding resulting from runoff.

Implementation Measure OC-7.4(a): The revised Land Development Code shall incorporate standards for retention or volume reduction of stormwater flows as a means of reducing flood potential from surface runoff from large paved areas. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* Public Works Departments and Planning Departments]

Policy OC-7.5: Maintain the Russian River as a natural riparian corridor.

Implementation Measure OC-7.5(a): Incorporate design standards in the Land Development Code to integrate riparian habitat into project design as a means of avoiding potential impacts of river sedimentation and lessening the effects of erosion. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* Planning Departments]

Implementation Measure OC-7.5(b): Review project landscaping proposals, working with proponents, to avoid removal or damage to riparian habitat and develop programs to avoid or manage sedimentation and erosion of river channels and tributaries. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* Planning Departments]

Implementation Measure OC-7.5(c): The Land Development Code shall include either specified setbacks from the Russian River based on precise criteria or site-specific performance standards for each zoning district. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* County ♦ *Agency/Department responsible:* Department of Planning and Building Services]

Goal OC-8: Public or commercial recreational use shall be preferred to residential, general commercial, or industrial development on riverfront property.

Policy OC-8.1: Prohibit conversion of riverfront agricultural land to residential, general commercial, or industrial use.

Implementation Measure OC-8.1(a): No lands within the one hundred year flood plain of the Russian River shall be converted from agricultural use to residential, general commercial, or industrial development. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* County ♦ *Agency/Department responsible:* Planning]

Implementation Measure OC-8.1(b): Establish land development programs that place an emphasis on public or commercial recreation development of riverfront property, for lands converted from agricultural uses. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* County ♦ *Agency/Department responsible:* Planning]

1.03 Creeks and streams

1.03.01 Summary of major findings

Creeks and streams provide spiritual, aesthetic, and material sustenance to human and other resident species and must be preserved, or where necessary, restored as corridors of riparian vegetation and habitat within both the urban and rural areas. Creekside greenbelts can be used to contain and define city neighborhoods and enhance air quality. The creeks provide drainage channels for groundwater recharge, domestic and agricultural water supply, flood mitigation, fish and other aquatic life.

Streams need to operate as natural waterways because the bottoms, edges and banks each serve a specific function. Stream banks and their riparian vegetation serve to filter runoff water as it enters the stream channel. Without these buffer zones, impurities can enter stream waters via storm runoff more directly.

The strip of trees such as cottonwood, alder, willow and valley oak which commonly grow along the Russian River and its tributaries is referred to in scientific literature as a riparian woodland, forest or scrub. This riparian strip provides essential habitat for water-related birds, mammals, amphibians and reptiles. The strip is an important "filtering zone" for runoff-water approaching the river, and the strip helps hold the river banks in place.

As development is proposed within or near stream and creek corridors, site-specific considerations may result in a need to establish an area on a parcel on which construction is limited. The limitations would be to provide protection of riparian vegetation and streambanks. There are many methods of accommodating both the natural riparian habitat and site development requirements. More detailed site plan review within stream and creek corridors can result in attractive projects that serve both the needs of the property owner and provide a benefit to the community as a whole with an attractive stream or creek corridor. This objective can be accomplished in several different ways. In some communities, development codes may specify fixed setback distances from streams as mitigation. The ultimate direction of the Plan is to determine the need for setbacks and precise distances on a project-by-project basis.

1.03.02 General Plan goals, policies, and implementing programs

Goal OC-9: Conserve and enhance channels for creeks and waters flowing through the Planning Area.

Policy OC-9.1: Establish a *Stream and Creek Restoration Master Plan* for each creek flowing through the City limits.

Implementation Measure OC-9.1(a): In the short term planning period, the City shall establish a citizen's task force for the *Stream and Creek Restoration Master Plan* and provide staff and technical assistance. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-9.1(b): The task force's final plan shall include recommendations for private and public funding sources and incentives ⁴ to property owners to

⁴Incentives are to be addressed in the development code. Appropriate incentives include flexibility in setbacks, trade-offs for parking, and similar concepts.

accomplish stream or creek restoration. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

Policy OC-9.2: Develop maintenance programs, ecosystem analysis, and hydrological studies for stream channels for creeks and waters through the Planning Area.

Implementation Measure OC-9.2(a): When maintaining creek and stream channels, the City shall be cognizant of the natural conditions, restoring them whenever possible. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Public Works]

Implementation Measure OC-9.2(b): During the short-term planning period, wherever feasible and safe, remove barriers and impediments to fish passage following appropriate study of the channel. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Public Works]

Implementation Measure OC-9.2(c): The City shall maintain information available to the public about the use of riparian plants and vegetation for landscaping, including sources of plant material. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning]

Implementation Measure OC-9.2(d): Ensure that grading and development codes incorporate measures to protect and enhance fish habitat including riparian vegetation protection and restoration and erosion and sediment control measures. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works, County Department of Planning & Building]

Implementation Measure OC-9.2(e): Development plans shall be reviewed to ensure that proposals are coordinated with adjoining development in design to maintain or enhance contiguous riparian corridors. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works, County Department of Planning & Building]

Implementation Measure OC-9.2(f): Support efforts of appropriate agencies to ensure instream water flows adequate to maintain and protect historic fisheries in the streams and creeks within the Planning Area. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Utilities, County Fish and Game Commission]

Implementation Measure OC-9.2(g): Work with the California Department of Fish and Game and community groups to inventory spawning streams in the Planning Area and establish population counts for important fish species. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: County ♦ Agency/Department responsible: County Fish and Game Commission]

Implementation Measure OC-9.2(h): During the intermediate and long-term planning period, the Redevelopment Authority shall consider among its projects the restoration of creeks within its jurisdiction. [Timeframe for completion: Intermediate and long-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Redevelopment Authority]

Implementation Measure OC-9.2(i): The City shall develop and implement a review procedure with the California Department of Fish and Game which provides each local agency

the opportunity to comment on all proposed Streambed Alteration Agreements in the Planning Area. The focus of this review shall be upon the protection and enhancement of stream and creek natural resources, including fish and riparian vegetation. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning Department]

Implementation Measure OC-9.2(j): The City Planning Department shall develop a review and comment procedure with the City Engineer and the Building Official which ensures that all public and private projects in or adjacent to a City stream or creek are designed and approved in a manner which preserves and enhances fish habitat, riparian vegetation, and the natural water course. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning Department]

Policy OC-9.3: Creek restoration programs shall not interfere with the existing and future floodwater carrying capacity of creek channels.

Implementation Measure OC-9.3(a): As a part of stream restoration and maintenance programs, the City and County shall ensure that floodwater carrying capacity has not been significantly reduced or damaged.⁵ [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works]

Implementation Measure OC-9.3(b): Whenever possible, riparian vegetation shall be used for streambank protection in conjunction with natural materials or appropriate structural material to achieve a natural-looking appearance. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works]

Policy OC-9.4: Develop a stream access plan.

Implementation Measure OC-9.4(a): Working cooperatively between the City, County, and private landowners during the short-term and intermediate-term planning periods, develop pedestrian access along creeks flowing through the City. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

Implementation Measure OC-9.4(b): During the short- through intermediate-term planning periods, develop *pocket parks* along creek channels on public lands where feasible. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Parks and Recreation, County Administration]

Policy OC-9.5: Establish water course protection areas with construction limits to provide protection for riparian vegetation and streambanks.

Implementation Measure OC-9.5(a): The Land Development Code shall include either specified setbacks from streams based on precise criteria or site-specific performance standards for each zoning district. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

⁵Revision responses to Caltrans comment.

Policy OC-9.6: Establish a *Stream and Creek Restoration Master Plan* for each creek flowing through the City limits.

Implementation Measure OC-9.6(a): In the short term planning period, the City shall establish a citizen's task force for the Stream and Creek Restoration Master Plan and provide staff and technical assistance. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-9.6(b): The task force's final plan shall include recommendations for private and public funding sources and incentives to property owners to accomplish stream or creek restoration. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

1.04 Hillside development

1.04.01 Summary of major findings

Preserving the hills on the western side of the Ukiah Valley will provide environmental benefits to the Valley. Additionally, the hillsides are an aesthetic and visual resource fundamental to Ukiah residents and to the tourist industry and they add economic value to property throughout the valley. Policies related to aesthetics and viewsheds are established in the Community Design Element.

More specifically, the hills help establish the identity of Ukiah and the Valley. The resource value of these hills is dependent on (1) fire protection, (2) minimizing landslide risks, (3) maintaining a healthy habitat for wildlife and (4) providing the condition for a healthy watershed. Scattered public ownership within the hills provide opportunities for the city and county to work with other public and private agencies to acquire or seek out easements to facilitate public access of the hills, trails, and other passive recreation resource values.

The eastern hills of the Ukiah Valley, due to exposure of the afternoon sun, provide a different habitat and vegetation cover than that of the western hills. The eastern hills contain a number of drainage channels and small canyons which result in nearly continuous extensive oak woodland habitat. Ensuring that a continuous habitat remains is an important community value for wildlife conservation and aesthetics. The use of flexible siting and development standards provide opportunities for efficient cluster development and maintenance of open space corridors. These are some of the methods available to conserve continuous habitat.

Open space programs for public health and safety are incorporated in the General Plan's Safety Element in Chapter IV.4.

1.04.02 General Plan goals, policies, and implementing programs

Goal OC-10: Conserve the natural woodlands environment of the area hills.

Policy OC-10.1: Prepare a "Habitat Conservation Plan" for conservation of hillside environment.

Implementation Measure OC-10.1(a): During the short-term planning period, a "Habitat Conservation Plan" shall be developed in cooperation with the California Department of Fish and Game for the purpose of conserving valuable grounds in

prime habitat areas. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Policy OC-10.2: Roads and structures shall be designed and sited to conserve or avoid damage to the natural hillside resources where feasible.

Implementation Measure OC-10.2(a): Utilize the Land Development Code to establish road and structure siting standards in the area's hills which conform to the Habitat Conservation Plan. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Public Works Departments, County Department of Planning & Building]

Implementation Measure OC-10.2(b): Site and design development to minimize impacts on views from the Valley. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning, County Department of Planning and Building]

Implementation Measure OC-10.2(c): Clearings for roads, buildings, and fire protection zones shall be sited in the least visible and ecologically damaging locations possible and screened with vegetation where feasible. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning, County Department of Planning and Building]

Policy OC-10.3: Before build-out makes it infeasible within the Planning Area and City, identify appropriate areas for trails along the ridge line that can be connected to trails in the valley.

Implementation Measure OC-10.3(a): Prior to the conclusion of the short-term planning period, establish a citizen committee appointed by the City Council and Board of Supervisors to identify and select locations within the hills which would be appropriate sites for future public acquisition. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

Implementation Measure OC-10.3(b): The City and County shall work to identify for ridge-line areas found to be suitable for general public use for possible acquisition. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-10.3(c): Provide points of connecting access from the ridge-top trails into the Valley in any plans or programs for trail development. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

Goal OC-11: Conserve coastal oak woodlands in the hills.

Policy OC-11.1: Provide areas for development and areas for conservation in the hills.

Implementation Measure OC-11.1(a): Utilize the existing natural resource inventory combined with the Habitat Conservation Plan as a basis for allocating areas for development and areas for conservation. [Timeframe for completion: Ongoing planning period ♦

Measure applies to: City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-11.1(b): Lands designated for conservation shall be developed with onsite density transfer provisions such as cluster housing. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-11.1(c): Utilize the provisions of the Land Development Code to allow density transfer within parcels that create cluster development to provide a balance between open space retention and the need to maintain a growing housing stock. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-11.1(d): Density transfer shall be utilized as part of a project's subdivision review through provisions in the revised Land Development Code. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-11.1(e): Residential development density shall be allocated in relation to the availability of services and facilities to serve the property in the land use element. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Policy OC-11.2: Development shall incorporate open space reserved for wildlife habitat and hiking.

Implementation Measure OC-11.2(a): When new residential development is proposed in the hills, provide incentives to encourage cluster development as a means of maintaining and enhancing natural areas and public hiking access. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

1.05 Water resources

1.05.01 Summary of major findings

1.05.01(A) Surface water runoff

Surface water runoff is generated by precipitation that cannot be absorbed into the ground in the period following a storm. The surplus of water moves downhill into drainage channels, forming creeks, streams, and ultimately entering the Russian River. The amount of surface run-off is a factor generated by the precipitation in the storm, ground saturation, and the available permeable ground surface. When land is developed, ground is compacted or covered with paving. These surfaces are called *impermeable surfaces*. "Permeability" is

Explanation IV.1-II: Storm water discharge measurements
 Stormwater runoff is measured using two calculations: volume and velocity. Volume is the quantity of water that is discharged from a site. For purposes of measuring flooding, it is sometimes calculated as a change in the elevation of floodwater or as cubic feet of water.
 Velocity is the speed at which the water moves from a site.

the measure of how quickly water can penetrate a surface area.

When there is a limited amount of permeable area or high ground saturation, water runoff increases in both volume and velocity. When an entire drainage system has its capacity exceeded, the water begins rising within the channel and overtops the banks. This is called "flooding." When impermeable surfaces are created, consideration must be given to the control and management of the surface waters generated by new development. In the past, the City managed surface run-off by "engineering" and "channelizing" creeks passing through the Downtown area.

Paved areas with overflow pond areas can be developed to simultaneously provide groundwater recharge, limit flooding, and protect creek habitat. This works by avoiding unnaturally rapid and large runoff from urban areas. Lands that could be utilized as replacement habitat for the vernal pools and wetlands may be available within public ownership or available for public acquisition or conservation easements. The use of replacement habitat as a conservation program has become popular in California during the early 1990s. The concept is that in exchange for the ability to develop or use a parcel that may be considered critical resource — such as a wetland — another location is selected in which a replacement habitat is created or restored. The California Department of Fish and Game, the Nature Conservancy, and other organizations have prepared standards and criteria that provide a consistent method for seeking replacement habitat and creating a new wetland or vernal pool.

As more paved surfaces are developed within the Planning Area, the potential for contamination of surface water increases. With normal use, vehicles in parking lots may have leaks of oil, fuel, or coolant. This material accumulates on the surface of driveways and parking lots during dry weather. Although evaporation causes much of the liquid to aerate, the contaminants remain as a stain or on the surface of the paved area. During storms, the contaminants may be carried from the parking lot into the stormwater. The contaminated water combines with other surface water and drains into streams, creeks, and ultimately the Russian River. The contamination can be reduced through the use of various construction techniques. One common technique is to utilize a trap called a "dry-well." Surface water from a parking area drains into the well before exiting the property. Because petroleum-based contaminants float on water, a gravity system is used to separate oils and fuels from the water before it enters the drainage system.

Another surface water quality issue centers on containing the storm surge. The City and County drainage systems can only accommodate a certain volume of water at one time. As construction of *impervious surfaces* increases, the volume and velocity of water draining in response to storms increases, thereby increasing the storm surge and likelihood of flooding. Risks can be reduced by designing drainage controls which retain major storm waters on-site until peak flows have passed.

For many years, the pear orchards and vineyards along the river have served as the de facto detention basis and floodwater storage area for the City's and County's urbanized land uses. Neither agency has appropriately planned or managed stormwater runoff, because the agricultural uses along the river have always been a convenient flood control measure. As the Ukiah Valley continues to grow, it becomes more important for the City and County to manage stormwater run-off and retention so that the agri-industries suffer less from flooding impacts increased by urbanization.

Constructed ponds, dry wells, retention basins, and sediment traps are just a few of the techniques that can be used to delay the discharge of stormwater during major storms. In addition to increasing the load on the drainage system, stormwater runoff also can carry sediment and debris that clog and reduce drainage system capacity. This may result in flooding on tributaries, overflow at culverts and storm sewers, or overflows and discharges into the Russian River from the sewage disposal facility.

1.05.01(B) Points of potential contamination

There are two terms that apply to water pollution — *point* and *non-point sources* of pollution. Point sources are those that can be “pinpointed” to a specific location. Non-point sources of pollution originate over broad areas from which no single place of beginning can be identified. Between 1991 and 1993, the California legislature updated many of the State’s laws related to clean water. The regulations cover many methods of management, remediation, and enforcement. Some of the regulations assign responsibility to County Health Departments, however, most are assigned to the California Water Quality Control Board.

In 1992 and 1993, the Congress updated and renewed the Federal Clean Water Act. Most management, responsibility, and enforcement has been assigned to the United States Environmental Protection Agency (EPA). Federal regulations address similar standards as California regulations. States are permitted to enact laws with more stringent standards than those applied by the Federal government but not standards which are less stringent. All public and private development in the Ukiah Valley will need to ensure protection of water sources — the Russian River, its tributaries, and the groundwater system.

For many years, treated and untreated water from municipal sewage disposal systems were discharged into water systems. Urban sewer plants were among the earliest targets for clean water actions and improvements. Sewage disposal methods are constantly improving, and reclaimed water can enhance conservation efforts by providing an alternative water source for certain uses, such as landscaping. Additionally, it may be possible to achieve an aesthetic enhancement of treatment ponds.

The emphasis for preventing surface water contamination is being placed on the individual. When surface water and stormwater runoff is controlled, the volume of contamination entering the Russian River system is reduced. Onsite management allows the City and County to cut down on the costs of containment through construction of less complex systems. Stormwater controls to cut down on contamination is a City-wide system that is needed.

The City of Ukiah owns a landfill located on Vichy Springs Road east of the Russian River. The landfill is part of the overall waste management system for Mendocino County. At the present time, there have been concerns about the potential for groundwater contamination from the landfill. Landfills must be designed to contain any water that touches the fill area. Surface water is contained through collection ponds designed to trap any excess flow of water so that it cannot leave the landfill site. These issues must be resolved as part of the permit process.

1.05.01(C) Water supply and demand

Water supply is not constant in the Ukiah Valley. The amount of water available for use varies with precipitation, and intensity of water use. The right to use the available water is divided into three broad categories. Approximately forty percent of the more than 20,000 acre feet of water rights in the basin is controlled by “Pre-49” Water Rights, considered to be the preeminent water right. Another forty percent is held in various distribu-

Table IV.1-1: Water storage capacity, Russian River system

Basin	Unit	Average Specific Yield (%)	Depth zone (feet)	Area (Acres)	Usable storage Capacity (Acre Feet)
Potter Valley	Alluvium	5%	10-50	4,500	9,000
Ukiah Valley	Alluvium	20%	10-50	4,500	35,000

Source: California Water Resources Agency, Department of Water Resources, Table of Water Resources and Future Water Requirements — North Coastal Hydrographic Area Volume 1, Southern Portion

tion rights that date after 1949. The remaining twenty percent represent other uses and diversions. At present, during "normal" rainfall years, about 12,000 acre feet are used during the year. During a drought year, some of the "Post '49" water rights are suspended. In order for those who held the "younger" rights, the unused portions of the "Pre-'49" water rights are used to offset the drought-reduced volume of water.

1.05.01(D) Regional water data

The Ukiah Valley groundwater basin is the northernmost basin in the Russian River water system. The groundwater basin is about twenty-two miles long and averages three miles in width. It underlies an area of over sixty square miles. The groundwater basin was created geologically in a depression formed by faulting.

Geologically, the sediments of *continental deposits* and recent alluvium layers are the strata in which water is contained. This is evident as the gravel in the Russian River. The depth of the gravel impacts the volume of water in the channel. These strata are located on top of the non-waterbearing consolidated rocks. The thickness may range from eight feet in the alluvium to potentially two thousand feet within the deposits. With the building of Coyote Dam, the flow of gravel was interrupted from the East Fork of the Russian River. Consequently, the depth of the gravel zone has been reduced as the river bed depth has decreased. Table IV.1-1 provides information from the Department of Water Resources about the Ukiah-area aquifer.⁶ Figure IV.1-E shows the distribution of Valley water rights.

1.05.02 General Plan goals, policies, and implementing programs

Goal OC-12: Protect groundwater recharge.

Policy OC-12.1: Establish a program to maintain quality and quantity of groundwater in the recharge area.

Implementation Measure

OC-12.1(a): If it is determined that a development proposal may result in a significant reduction in groundwater recharge areas or water quantity, the developer shall be required to analyze the areas of new impermeable surfaces to

provide information as to whether the potential impact is significant. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/De-

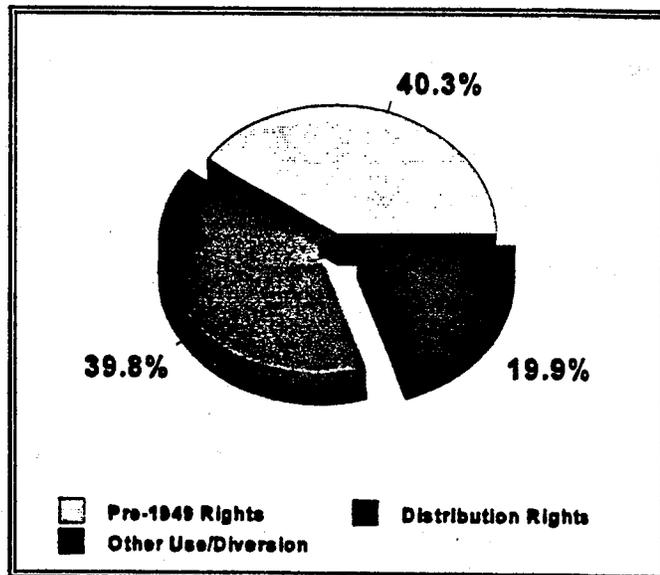


Figure IV.1-E: Sources of water rights

⁶April 6, 1993 California Water Resources Agency—Department of Water Resources, *Water Resources and Future Water Requirements, North Coastal Hydrographic Unit, Volume 1: Southern Portion* (Sacramento: State of California, 1985), Bulletin 142-1, pp. 318-322.

partment responsible: City Planning Department and County Department of Planning and Building]

Goal OC-13: Protect the Valley's groundwater system.

Policy OC-13.1: Maintaining long-term sustained yield of the Valley's groundwater system shall be the standard for evaluation for groundwater protection programs.

Implementation Measure OC-13.1(a): During the intermediate term planning period, assemble available baseline information describing the Valley's groundwater system — physical and natural characteristics, quality and quantity, and demand and resupply. [Timeframe for completion: Intermediate-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and Mendocino County Water Agency]

Implementation Measure OC-13.1(b): Compile information necessary to prepare a comprehensive evaluation of potential impacts and standardize mitigation measures and project conditions related to groundwater protection. [Timeframe for completion: Intermediate planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department, County Department of Planning and Building and Mendocino County Water Agency]

Implementation Measure OC-13.1(c): When development proposals are received, ensure that there is adequate information from the baseline study, and the standardized impact analysis and mitigation program to determine whether the proposed project will result in a significant change in the Ukiah Valley aquifer. [Timeframe for completion: Ongoing (following completion of the groundwater studies) planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-14: Strive to keep local water resources for local use and avoid water export.

Policy OC-14.1: Support actions to retain water in the Ukiah Valley.

Implementation Measure OC-14.1(a): Participate with other area agencies in hearings and petitions before state or federal agencies to oppose transfer of water rights or Ukiah Valley-source water from within the Ukiah Valley to other areas. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Mendocino County Water Agency]

Goal OC-15: Protect surface and groundwater from adverse impacts from chemicals and soil sediments found in urban and agricultural runoff.

Policy OC-15.1: Protect water quality from adverse impacts of urban and agricultural runoff.

Implementation Measure OC-15.1(a): Adopt grading regulations for purposes of reducing erosion and sedimentation. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Public Works and County Building and Planning]

Implementation Measure OC-15.1(b): Support public and private land management programs which aim to reduce erosion and agricultural run-off. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and County Board of Supervisors]

Goal OC-16: Design parking facilities to reduce runoff and surface water contamination.

Policy OC-16.1: Protect surface water supplies from water generated in parking lots.

Implementation Measure OC-16.1(a): Parking lot design shall be reviewed to ensure that there are adequate containment features to separate contaminated surface water from storm water run-off. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works Departments]

Implementation Measure OC-16.1(b): Utilize appropriate technology to delay storm surges from running off parking areas and potentially overburdening the drainage system. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works Departments]

Policy OC-16.2: Manage stormwater flows to reduce the hazard of flooding from increased stormwater volumes.

Implementation Measure OC-16.2(a): Review all proposed projects to ensure that the calculated volume and locations of surface water discharges do not exceed the capacity of area drainage systems. If the drainage system is exceeded, improvements can be required through Appendix 70 of the Uniform Building Code. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City and County Public Works Departments]

Implementation Measure OC-16.2(b): During the intermediate-term planning period, develop a stormwater management program for urbanized areas in the Valley to prevent damage to agricultural areas from conveyance of flood capabilities waters. [Timeframe for completion: Intermediate planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: Public Works]

1.06 Agriculture

1.06.01 Summary of major findings

Agriculture is a basic industry in the Ukiah Valley. Agriculture actually defines the Valley and its overall character and quality of appearance. It makes a valuable contribution to the local economy and to the quality of life. The encroachment of incompatible uses into agricultural areas must be prevented. Although the California Land Conservation Act (Williamson Act)⁷ (Agricultural Preserves) promotes conservation of agricultural lands, a higher priority must be placed on maintaining the economic health of the agricultural industry in the Ukiah Valley. Ensuring the economic viability of agriculture is the most effective method of conserving agricultural lands. Agricultural land is much more than "open space land." Agricultural land has its own specific needs in order to remain such. A responsible "open space" policy must recognize agricultural land as an active land use and all the needs of agriculture as an operating business.

⁷"Agriculture Preserves" are contracts between the landowner and the County for special tax incentives to retain land for productive agriculture use in ten year periods. The contract renews automatically each year, so that it is a rolling ten year contract. In order to be released from the Agriculture Preserve requirements, a "notice of non-renewal" must be filed. The land then comes out of the preserve at the termination of the ten year period. The provisions for this method of preservation of agricultural land is contained within a state law called the "Williamson Act."

Widespread public interest exists in preserving agricultural uses as economic, visual and environmental resources. Protective programs with public and private financing or facilitation, including land trusts, open-space easements, and transfer of development rights could assist in conserving this valuable resource.

Due to the combination of soils and climate, California agricultural lands are often noted as a natural resource of worldwide significance. In the Ukiah Valley, in addition to the prime soils on the valley floor, many of the bench lands are highly productive for grapes. Residents of the valley hold a position of trust and stewardship for the remaining agriculturally suitable areas within the valley. Absent drastic changes in circumstances, the large, contiguous areas presently zoned for agriculture will not be removed from agricultural use. This includes portions of the area west of Highway 101 north of Ackerman Creek and on the east side of the freeway into the Ukiah Valley. Other productive agricultural parcels should not be converted to urban uses while developable land remains that is unsuited for agriculture.

Economic stability and sustainability in any industry is fostered by diversification and experimentation. Mendocino County has one of the largest concentrations in the state of organic farmers.

As the Ukiah Valley continues to grow, there will be an increased need for lands to urbanize. Agricultural lands are scattered throughout the Valley. Much of the "prime" agriculture lands are not classified as Agriculture Preserves with Williamson Act contracts. The interest in agricultural preserves waned following enactment of Proposition 13, because property taxes were substantially reduced.⁸ Some of the lands within the Ukiah Valley designated for agricultural use are too small for viable commercial agriculture. These parcels are scattered throughout the Planning Area.

In addition to conserving prime agriculture lands in order to maintain a basic industry in the Ukiah Valley, policies to conserve agricultural lands are an important method of maintaining a rural appearing community and providing a rural quality of life. Policies for these latter two purposes should be subject to exceptions for land use conversions necessary to accommodate future populations and to accommodate existing scattered parcels too small for viable commercial agriculture.⁹

Long-term, programs to provide protection for existing commercial agriculture from encroaching residential development is important. The use of "right-to-farm" regulations — combined with the required CEQA assessment of the impact of proposed development on adjoining agriculture uses — are among the methods that can be used as a means of protecting existing agriculture from incompatible uses.

⁸Mendocino County General Plan, page I-10.

⁹"Commercial agriculture" means an agricultural enterprise that generates enough net income annually to cover the proprietor's living expenses and the operation's equipment repair and replacement (Source: Steven Taylor, Pacific Coast Farm Credit).

Explanation IV.1-III: "Right-to-Farm" regulations

As urban development has moved further from cities and into rural and agricultural areas, established agri-business areas are experiencing emotional and legal conflicts between the business of agriculture and the desire of families to live on "their acre in the country."

To protect agri-business, many cities and counties have enacted ordinances that provide a pre-eminence or higher value on agriculture businesses over residential uses. The "right-to-farm" regulations ensure that when residential developments move next to agriculture, the rights of the industry override the newly established residential uses.

1.06.02 General Plan goals, policies, and implementing programs

Goal OC-17: Recognize agriculture as a basic industry in the Ukiah Valley.

Policy OC-17.1: The encroachment of incompatible uses into agricultural areas shall be avoided.

Implementation Measure OC-17.1(a): Land use designations shall avoid conflicts between agricultural uses and adjoining land uses. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Policy OC-17.2: Utilize the Williamson Act as one means to promote conservation of agricultural lands.

Implementation Measure OC-17.2(a): Encourage the use and renewal of Williamson Act contracts for agriculture lands in the Valley. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: County ♦ Agency/Department responsible: Board of Supervisors]

Implementation Measure OC-17.2(b): Encourage the County to approve requests for qualifying lands to enter into Williamson Act contracts. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: County ♦ Agency/Department responsible: Board of Supervisors]

Policy OC-17.3: Enact a right-to-farm ordinance consistent with the County's right-to-farm ordinance.

Implementation Measure OC-17.3(a): Within six months of initial General Plan adoption, enact the County Right-to-Farm ordinance or a more stringent right-to-farm ordinance. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Planning Department]

Goal OC-18: In concert with the County, preserve the economic viability of agriculture lands.

Policy OC-18.1: Investigate protective programs to conserve agriculture lands.

Implementation Measure OC-18.1(a): Utilizing methods such as public and private purchase of development rights, or other tradeoffs, including land trusts, open-space easements or transfer of development rights, work with the County to implement a program during the short-term planning period designed to remove or reduce development pressures on agricultural lands. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-19: Maintain existing agricultural areas.

Policy OC-19.1: The large, contiguous areas presently classified for agriculture are to remain classified as agricultural land.

Implementation Measure OC-19.1(a): Work with the County to provide for zoning that will permit establishment of small-sized, specialized, intensive farming operations or necessary accessory uses. [Timeframe for completion: Ongoing planning period ♦ Mea-

sure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-19.1(b): Require parcel sizes created by new subdivisions¹⁰ to be sufficient in size to be compatible with adjoining agriculture areas. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-19.1(c): A land use classification and overlying zoning district could be changed from an agricultural classification to a non-agricultural classification only when all of the following have been substantiated:

- The application includes either a proposed Specific Plan meeting the requirements of California law, or meets the requirements for a Master Plan Area and land development regulations;
- Included in the application is a letter from the source of funding for the project that the funds have been committed and approved for the proposed development. This document may be considered confidential and not a part of the public record, however, lead agency officials shall be required to attest to its authenticity;
- The development plan shows how infrastructure shall be provided. The project shall not result in a need for premature expansion of infrastructure;
- Along with the application, proof must be provided that no other locations within the Planning Area could meet the project's objectives;
- The General Plan amendment must achieve the long-range goals of the General Plan as it exists prior to amendment;
- The application shall not have a significant adverse effect on adjoining agricultural uses;
- The subject land is substantially unuseable for agricultural purposes due to encroaching adjacent nonagricultural uses. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-20: Allow agriculturally-compatible uses on non-viable agriculture lands.

Policy OC-20.1: Ensure that development parcels on which commercially-viable agriculture is not feasible is compatible with agricultural uses.

Implementation Measure OC-20.1(a): Permit residential land use on agricultural lands at parcel sizes compatible with commercial agricultural uses on lots that are not feasible for commercial-scale agricultural use. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-20.1(b): Utilize provisions of the Land Development Code to ensure that there is a suitable separation between commercial agriculture uses and non-compatible uses such as residential. The responsibility for providing the separation shall be borne by the non-agricultural use. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

¹⁰For purposes of the General Plan, *subdivision* means the division of any land into two or more saleable or buildable parcels.

Implementation Measure OC-20.1(c): Ensure that the "right-to-farm" ordinance or Land Development Code includes appropriate performance standards for agricultural-residential separation on agricultural lands. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Goal OC-21: Support diversified farming for local benefits and food supply.

Policy OC-21.1: Organic farming shall be encouraged as an economic and knowledge resource, as well as to promote self-sufficiency of local food supply.

Implementation Measure OC-21.1(a): Lend support on an ongoing basis to programs which encourage organic and sustainable farming. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department, County Department of Agriculture and Farm Advisor]

1.07 Native plants and animals

1.07.01 Summary of major findings

Valley oaks are a species of special concern to the California Department of Forestry and the California Department of Fish and Game. These trees are common within the climate and habitat of the Ukiah Valley. The City has enjoyed generations of beauty, sun protection, and summer cooling from its ever-maturing trees. The trees' health and ability to grow and reproduce must be protected as more development occurs in the City. To the extent possible, the "new" suburb look which can occur when mature trees are removed entirely and replaced with young nursery stock should be avoided.

As part of a diverse local ecology, there is a need to encourage desired birds and wildlife by landscape design and plantings. The local environment and habitat can be managed, for example, to encourage the population of bats for insect and mosquito control. An emphasis on native or indigenous species in landscaping, especially in public projects and for street trees, can enhance the area's ecosystems. Plant vegetation in interrelated communities can be used to enhance wildlife use. At the same time, consideration needs to be given to discourage undesirable species by using vegetation that is unattractive to such species or present nonconductive habitat. Native plant landscaping is an important option available for new development.

New growth needs to mature into vegetation matching the City's existing landscape. Much of the Ukiah area is attractively shaded by a variety of stately trees of various maturities including oaks, elms, fruit trees, sycamores, cedars and evergreens.

There are three categories of City or developed-area trees for which interest in protection has been expressed through the visioning process of the General Plan.¹¹ The first category deals with "street trees." These are the trees that are located between the edge of pavement and beginning of private property. Trees are defined as street trees because of proximity to streets and roads, although in some situations, the tree may be located on private property that extends to the edge of pavement or the centerline of the street.

¹¹Trees used for agricultural production, such as the Valley's pear trees, are expressly exempt from this discussion. This discussion also is not addressing the oak woodlands discussed in Section IV.A.4 on page 11.

The second category involves "park trees." These trees are located on public property in the various City- or County-owned parks throughout the Planning Area. Trees located on other publicly-owned lands, such as school playgrounds or Mendocino College, are also classified as "park trees."

The third category covers mature or "stately trees", located entirely on private property, such as the proverbial "old oak tree" in the back yard. The vision of the General Plan focuses on conserving or enhancing these trees as part of project design rather than an unmitigated removal for convenient construction.

Explanation IV.1-IV: Oak woodlands¹²

Nationwide and around the world, people's typical idea of California is oak forests and woodlands, and these plant communities have historically had economic importance for livestock grazing, fuel, recreation, and timber resources. Due to climate and geography, the Ukiah Valley historically supported a uniquely rich diversity of oak communities. The valley oak is the official emblem of the city of Ukiah, and oaks are frequently used in commercial advertising as representing our regional identity.

Oaks are important to the local environment. The State Department of Fish and Game reports that oak forest and woodlands support more diverse wildlife species than any other California habitat, and are indispensable for creek and river habitats and fish populations. In addition, oaks stabilize soils on sloping ground, minimizing flooding, and help maintain water quality. They absorb noise, deflect wind, and filter dust and pollutants from the air.

Research conducted in other counties has shown that livestock forage production is greater under blue oaks than between them, has greater nutritional value, and remains greener into the dry season; the trees modify the microclimate and improve rangeland soils. Acorns as well as foliage provide food for domestic livestock and native species. Overgrazing by domestic livestock, wildlife, and insect populations threaten oak seedlings and saplings and long-term survival of woodlands.

Oaks increase the value of land for residential and other development. According to the International Society of Arboriculture, individual trees can be worth thousands to tens of thousands of dollars. Research conducted in the Ukiah Valley and Sonoma County substantiates an increase of 27% in the value of land for large-lot subdivision, as compared to cleared land. Unfortunately, subdivision often results in loss of individual trees as well as the overall mix of plants required for wildlife habitat. Tree stands are often thinned and under story removed for building construction or landscaping with all nonnative plants. Individual trees are damaged or killed by irrigation, paving, trenching, and grade changes. Regeneration is prevented by weed clearing and incompatible landscaping. Lot lines and house siting that fails to take into account the survival and regeneration of woodlands results in fragmented stands that cannot support wildlife diversity.

Citing continuing severe losses statewide of oak woodlands and related wildlife habitat, the State Board of Forestry in May 1993 called for local governments to include protection of hardwood habitat in the general planning process, noting that if local planning efforts do not solve the problem, more restrictive state regulations will follow. A recent report of hardwood ownership and reserve status by the forest and Rangeland Resources Assessment Program of the State department of Forestry and Fire Protection ranks Mendocino County among the worst in the state in protecting hardwood rangelands.

¹²Prepared for the General Plan by Stephanie Hoppe, July 8, 1993.

The Ukiah Valley was once entirely oak forest. Within approximately one-quarter mile of the Russian River and other waterways, valley oaks grew in a continuous canopy with a dense undergrowth of varied plant species. farther from the creeks and river, but where the water table was sufficiently high, valley oaks grew in more open woodlands and savanna. Black oaks grew on drier ground, and mixed oak woodlands covered the western hills, including blue oak, interior live oak, Oregon white oak, and canyon live oak. Even the chaparral community, a complex of trees and shrubs, includes oaks: shrub interior live oak, scrub oak, and leather oak.

At the present time, no valley oak woodland remains in the Ukiah Valley. The few individual trees and groves that remain may not suffice to assure the survival of the genetic strains unique to this region. A few patches of valley oak riparian woodland can still be found on some of the area creeks, for example Dolan Creek west of Helen Avenue, but this plant community no longer exists along the Russian River in the Ukiah Valley. Interior live oak woodland remains in the eastern hills of the valley. The westerly portions of the City of Ukiah and the western hills contain healthy stands of black oak woodland.

The long-term survival of oak woodlands depends on assuring that human and development activities take habitat needs into account. Survival of birds, fish, and other wildlife require that the natural diversity of trees and associated under story plant species be retained or restored. Valley oak woodlands and riparian communities could be replanted and on publicly owned property along the Russian River (such as the city water and sewer facilities) and elsewhere on the valley floor in conjunction with appropriate design of new development.

Within the urban area, valley oaks (or black oaks on drier ground) are highly appropriate for street trees, parks, and commercial and residential landscaping, as they are suited to the soil and climate, resistant to disease and pests, and conserving of water. A useful model is the city of Visalia, which like Ukiah was built in what was originally a large and majestic valley oak forest; Visalia has for many years successfully promoted the use of valley oaks for street and park planting. The commonly expressed concern about falling limbs applies only the mature trees of 200 or 300 years age, a problem easily circumvented by assuring a continuing population of younger trees as these old ones are removed for safety reasons. Few if any nonnative trees will live so long and be so free of disease.

1.07.02 General Plan goals, policies, and implementing programs

Goal OC-22: Conserve and replenish valley oaks in the Valley.

Policy OC-22.1: Maintain, protect, and replant stands of Valley Oaks.

Implementation Measure OC-22.1(a): When reviewing proposals for development, require that all valley oaks on the project area be identified, and ensure that all reasonable efforts have been undertaken to protect the trees. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-23: Native plant landscaping shall be encouraged.

Policy OC-23.1: Define standards that include native plant landscaping.

Implementation Measure OC-23.1(a): Provide information about native plant landscaping to developers.

Implementation Measure OC-23.1(b): Develop landscaping standards which use native plant landscaping for all new development and redevelopment projects. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-23.1(c): Landscaping standards for new development and redevelopment projects shall be applicable to all but individual single-family residential development.¹³ Compliance with landscaping standards shall be required as a condition of discretionary approvals or a condition of issuing a building permit. This implementation measure does apply to single family residences located within planned developments or subdivisions for which landscaping standards were incorporated as conditions of project approval. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-24: Replace aging trees with new trees.

Policy OC-24.1: Develop a program to ensure continued healthy tree propagation.

Implementation Measure OC-24.1(a): Implement the program to replace aging trees giving preference to native species. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

Goal OC-25: Maintain and enhance the City's canopy of shade trees.

Policy OC-25.1: Protect existing healthy mature trees to maintain shade and area attractiveness.

Implementation Measure OC-25.1(a): During the short-term planning period, utilize the Land Development Code or enact an ordinance identifying important shade tree areas and providing for their long-term management and health. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: City Planning Department]

Implementation Measure OC-25.1(b): Establish a requirement for public notice and hearing when trees are to be removed from undeveloped public, private, and redeveloped property — except for recreational purposes or in relation to agriculture — as part of the design review program. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Redevelopment Agency]

Goal OC-26: Restore river fisheries.

Policy OC-26.1: Prohibit fishing access to spawning riffles and fishing of newly released fish.

Implementation Measure OC-26.1(a): Establish restricted or no access points to areas where fish are known to spawn. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and Fish and Game Commission]

¹³Applicability of design and landscaping standards are defined in the Community Design Element, Chapter VI.2 of the General Plan. Generally, individual single family homes on individual parcels — unless part of a planned unit development, Master Plan Area, or Specific Plan — are exempt from design and landscaping standards identified in the Plan. If a home is part of a planned unit development, Master Plan Area, Specific Plan, or if it was part of a subdivision with landscaping conditions, then individual homes may be subject to design review.

Goal OC-27: Limit public access where necessary to protect important fish habitat.

Policy OC-27.1: Establish preserves for typical or endangered fish species and habitats.

Implementation Measure OC-27.1(a): During the intermediate-term planning period, identify areas for acquisition or dedication as easements for purposes of wildlife preserves. [Timeframe for completion: Intermediate-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Fish and Game Commission]

1.08 Scenic corridors

1.08.01 Summary of major findings

First impressions of the Valley are important to Valley residents and in attracting visitors. One of the leading contributors to a positive first impression is an attractive series of highway corridors entering and leaving the Valley. Scenic corridors need to be identified and their attractiveness enhanced or preserved.

Within the Valley, there are local streets and roads that provide a respite from developing urban views. The roads serve as attractive corridors for residents traveling from home to work or business districts. Local scenic streets and highways are also in need of assurances that the views will remain attractive.

Highway 101 through the Ukiah Valley is a local General Plan Scenic Corridor which provides visitors and residents access to the beauty of this valley. It would enhance the environment of the Ukiah Valley if the appearance of the Highway 101 corridor were improved.

The Chamber of Commerce developed a beautification program along Highway 101 in 1990, resulting in the planting of trees in an area between Burke Hill Drive and Lake Mendocino Drive. The system is irrigated by an experimental solar-operated drip irrigation system. The trees and other plantings have added to the beautification of the Highway 101 corridor.

1.08.02 General Plan goals, policies, and implementing programs

Goal OC-28: Visually enhance the Highway 101 corridor through the Planning Area.

Policy OC-28.1: Upgrade the visual appearance of the corridor along Highway 101.

Implementation Measure OC-28.1(a): Utilize the Land Development Code to require new construction, permits for remodeling, and replacement of landscaping to meet current landscaping standards to ensure an upgraded appearance through the Ukiah Valley. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-28.1(b): During the short-term planning period, enhance the appearance of the Highway 101 corridor and Caltrans right-of-way with additions to the recently planted tree and flower plantings. The emphasis shall be to favor native species. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department]

1.09 Urban open space

1.09.01 Summary of major findings

Open space within the City is very limited. Urban open space needs to be defined within the Planning Area. The established residential neighborhoods — particularly the West Side with its mix of residents and housing types and its extensive mature trees and landscaping — give the city its character as a pleasant place to live. Increasing pressure to remove stately trees and preempt yard areas for larger houses and additions should be offset by in lieu fees or off-site substitution of landscaped areas or public gardens in neighborhood park districts, lot coverage limits, and other measures. Community gardens, which are touched on in this section, are addressed in detail with supporting policy programs in the Parks and Recreation Element in Chapter V.2 of the General Plan.

1.09.02 General Plan goals, policies, and implementing programs

Goal OC-29: Maintain and enhance the “urban forests” which create a sense of urban space.

Policy OC-29.1: The development review process shall incorporate measures to maintain and enhance the urban tree canopy.

Implementation Measure OC-29.1(a): The Land Development Code shall incorporate measures to maintain and enhance the urban tree canopy. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: City Planning Department]

Implementation Measure OC-29.1(b): Review construction and landscaping site plans to ensure that healthy trees are not removed unnecessarily. [Timeframe for completion: ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City planning Department and County Planning and Building Services Department]

Policy OC-29.2: Cultivate an understanding of and appreciation for the social, environment, and aesthetic values of trees.

Implementation Measure OC-29.2(a): Make available information on sound urban forest management practices. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: City Planning Department]

Goal OC-30: Showcase the Civic Center area as an urban park and gathering place.

Policy OC-30.1: Connect the Civic Center to the Courthouse through landscaping.

Implementation Measure OC-30.1(a): During the short-term planning period, redesign the Civic Center grounds/Seminary Avenue corridor as an urban park gathering place. Landscape the corridor that connects downtown to the Courthouse area via School Street. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

Implementation Measure OC-30.1(b): Maintain Seminary Avenue as a tree-lined boulevard. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

Policy OC-30.2: Utilize undeveloped City-owned parcels as community gardens.

Implementation Measure OC-30.2(a): Parcels of land that are owned by the City but undeveloped, shall be made available to interested groups as community gardens as feasible. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: General Services Department]

Implementation Measure OC-30.2(b): During the short-term planning period, promote the location of potential community garden sites. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City ♦ Agency/Department responsible: Parks and Recreation]

1.10 Air quality

1.10.01 Introduction and setting

The Ukiah Valley is located in south-central Mendocino County, about 25 miles inland from the Pacific Ocean. The Valley lies at about 39 degrees north latitude and 123 west longitude. With an average elevation of about 630 feet, the Valley has surrounding hills ranging up to about 3000 feet. The Valley runs north-south for about 9 miles, with a maximum width of about 3 miles. The Russian River enters the Valley at the north end, and runs south along the Valley floor. Soils are composed of fertile alluvium, and many pear and grape orchards flourish along the east side of the River. Residential and commercial land uses predominate on the west side of the river. The railroad right-of-way and Highway 101 also parallel the river through the Valley. The roughly 28,000 people inhabiting the Ukiah Valley own about 23,500 on-road motor vehicles, which represent the largest source of air pollution.

Mendocino County's climate is considered Mediterranean, with warm, dry summers and cooler wet winters. Along the coast, mild temperatures predominate, moderated by the influence of the Pacific Ocean. This maritime effect diminishes inland by physical distance and intervening mountain ranges. Consequently, inland valleys experience a much wider range of temperatures.

1.10.02 Summary of major findings

1.10.02(A) Meteorology

A persistent high pressure area off the Humboldt coast, called the East Pacific High, dominates weather over most of California. Seasonal variations in the strength and position of the high pressure cell cause changes in the weather patterns of the Ukiah Valley. The East Pacific High generally remains fixed several hundred miles off the coast from May through September, diverting storms and creating a dry summer climate. In late fall, the high pressure cell dissipates and winter storms can sweep in from the Gulf of Alaska.

Warm, dry summers and cool, wet winters typify Ukiah Valley weather. Summer high temperatures average in the 90's, while very warm days can exceed 105 degrees. Summer low temperatures often range between 50 and 60 degrees. Winter high temperatures generally range in the 50's and 60's, and can fall to 12 degrees at night. The average annual temperature is 58 degrees, and the frost-free period is about 220 days annually. Rain falls primarily during the winter months, with a long-term annual average of about 35 inches. Monthly rainfall can reach 8 inches in winter months.

Winds disperse air pollution emissions away from their sources, reducing concentration by diluting with cleaner air. Pollution dispersion can occur vertically as well as horizontally. Under "ideal" dispersion conditions, pollution moves away from its source in all directions, unimpeded by physical

barriers, rapidly diluting and dissipating so that no health hazard remains. Conversely, still air often allows pollution levels to build up near where emission occur.

Frequently in the Ukiah Valley, a phenomenon known as a "temperature inversion" occurs. During inversion conditions, a layer of warm air covers a cooler layer near the ground, trapping air and restricting vertical mixing. The base of these inversions usually occurs at 1500 feet or lower, well below the tops of surrounding hills. Data from the California Air Resources Board (ARB) shows that an inversion is present 98% of mornings, and it is ground-based 85% of the time¹⁴. The result is that pollutants emitted in the Ukiah Valley are effectively trapped, and cannot disperse vertically or laterally. Compounding this trapping effect, calm (near zero mph) surface winds occur about 50% of the time.

Two processes form surface-based inversions in the Ukiah Valley. During summer, warmer inland temperatures tend to create a low pressure zone, which pulls cooler marine air inland. This intrusion of cool marine air into the Valley near the ground lifts warmer air, creating an inversion on most summer days. Inversions also form nocturnally as air cooling on surrounding hills flows down canyons, pooling on the Valley floor.

During winter, strong local inversions form as cold air sinks from surrounding hills. This happens on most nights in stable weather between storms. During these periods, pollution build-up from automobiles and stationary sources is often compounded by significant quantities of PM₁₀ (smoke) from open burning and wood burning appliances. The Ukiah Valley's strong, persistent winter inversions, coupled with little wind (between storm periods) allows pollution to build for a period of days, with each day's new emissions added to the residual from the day before. At such times, violations of the state PM₁₀ standard can occur.

Prevailing strong summer winds come from the northwest. However, winds can come from the south and east under several short-lived conditions. First, when a storm front approaches Northern California from the north-west, winds near the surface blow toward the storm front (an area of low pressure). These southerly winds usually last no more than a day, and as soon as the storm passes, winds again are still or blow from the north-west. Very hot weather in the upper Sacramento Valley can also cause cooler marine air to flow up the Russian River, causing weak to moderate south winds along the Valley floor.

In early autumn, strong, dry offshore winds may occur for several days in a row. These winds, called "Santa Anas" in southern California, are usually caused by a large mass of cold air aloft subsiding over southern Utah and northern Arizona. As this air mass sinks, it compresses the air below it, causing heating and surface air movement toward the Pacific coast. During either of these regimes, air pollution created in the Sacramento Valley, Santa Rosa Plain, or even San Francisco Bay area may move into the Ukiah Valley.¹⁵

1.10.02(B) Air Quality Management

Responsibility for controlling air pollution rests with the Mendocino County Air Quality Management District. The County Board of Supervisors governs the District. The District's mission is to protect public health and welfare from the effects of air pollution. The District protects public health by maintaining all

¹⁴Personal communication with David Faulkner, Executive Director of the Mendocino County Air Quality Management District (MCAQMD), July 29, 1994.

¹⁵Personal communication with Phil Towle, MCAQMD, and Wilson Goddard PhD, Consulting Engineer, July 29, 1994.

applicable air quality standards. Controlling odors and nuisances, protecting sensitive agricultural crops, and limiting damage to material goods from air pollutants protect public welfare. The District also maintains an air monitoring program.

The District issues permits for stationary sources to emit specified quantities of pollution, construction of new emission sources, and open burning. District enforcement staff conduct compliance inspections of stationary sources, respond to odor and nuisance complaints, and enforce open burning regulations. The District also receives reports of toxic emissions from stationary sources, enforces applicable regulations on these emissions, and conducts continuous ambient air monitoring in Ukiah, Willits and Fort Bragg.

The District reviews larger new residential and commercial projects under the California Environmental Quality Act. The District also comments on General and Specific Plans and works with local planning agencies to develop land use and zoning programs beneficial to air quality. In this process, the District provides technical information, prepares or reviews emission modeling, determines significance of predicted emissions, and recommends mitigation and alternatives.

The Mendocino County Air Quality Management District is part of the North Coast Air Basin, which includes Del Norte, Humboldt, Trinity, Mendocino counties and part of northern Sonoma county. The first three counties named are in the North Coast Unified Air Quality Management District, Mendocino County is a separate air district, and Northern Sonoma is a separate air district. Districts of the North Coast Air Basin cooperate to develop rules and regulations, and to share engineering, monitoring and other resources.

1.10.02(C) Air Quality Standards

Ambient Air Quality standards consist of three elements: a compound (example, carbon monoxide), a concentration (example, 9.0 parts per million), and an averaging time (example, 8 hours). Hence, the allowable level of carbon monoxide is 9.0 parts per million measured over eight hours.

Both the state and federal governments have set ambient air quality standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM10 (particulate matter 10 microns or smaller), and lead. Additional pollutants present a problem in some areas (e.g., near sources of sulfur compound emissions), and the state has set standards for sulfates and hydrogen sulfides. There is also a California ambient air quality standard for visibility reducing particulate matter.

The table below shows standards which air districts must maintain:

Table IV.1-2: National and California Ambient Air Quality Standards (1994)

Air Pollutant	Averaging Time	Units	California Standards	National	
				Primary Standards	Secondary Standards
Ozone	1 hour	ppm	0.09	0.12	
Carbon Monoxide	8 hour	ppm	9.00	9.00	
	1 hour	ppm	20.00	35.00	
Nitrogen Dioxide	Annual	µg/m ³	-	100.00	
	1 hour	ppm	0.25	-	-

Air Pollutant	Averaging Time	Units	California Standards	National	
				Primary Standards	Secondary Standards
Ozone	1 hour	ppm	0.09	0.12	-
Sulfur Dioxide	Annual	ppm	-	0.03	-
	24 hours	ppm	0.05	0.14	-
	1 hour	ppm	0.25	-	-
PM10	Annual	$\mu\text{g}/\text{m}^3$	30.00	50.00	-
	24 hours	$\mu\text{g}/\text{m}^3$	50.00	150.00	-
Lead	30 Day Average	$\mu\text{g}/\text{m}^3$	1.50	-	-
	Calendar Quarter	$\mu\text{g}/\text{m}^3$	-	1.50	-
Sulfates	24 hour	$\mu\text{g}/\text{m}^3$	25.00	-	-
Visibility Reducing Particulate matter (state only) ¹⁶ *	8 hour	-	-	-	-
Hydrogen Sulfide (H ₂ S)	1 hour	ppm	0.03	-	-

Scientists express concentration of ambient air contaminants in the following units: ppm refers to parts per million by volume, and $\mu\text{g}/\text{m}^3$ is micrograms per cubic meter. The federal government sets National Primary Standards at levels necessary to protect public health. Similarly, National Secondary Standards protect public welfare from any known or anticipated adverse effect of a pollutant.

For all pollutants except as noted, California Standards must not be equaled or exceeded. For carbon monoxide and sulfur dioxide (1-hour averaging period) standards can reach the limit shown but must not exceed that level. For ozone levels of 0.10 or above, the state Air Resources Board uses a statistical computation to determine if the district becomes "non-attainment." The respirable particulate matter standard must not be exceeded.

National standards, other than for ozone and those based on annual averages or annual geometric means, must not be exceeded more than once a year. The federal ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one over a three year period. For respirable particulate matter, the federal annual standard is based on the arithmetic mean and the state annual standard is based on the geometric mean.

¹⁶In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

1.10.02(D) Ozone

The most important air pollutant in urban areas of California is ozone. Ozone is a secondary pollutant, formed by a reaction of several compounds in the presence of sunlight. The two most important pollutants creating ozone are oxides of nitrogen (NOX) and certain hydrocarbons, called reactive organic gases (ROG). Carbon monoxide (a product of incomplete combustion) and other pollutants may play a secondary roll in ozone formation. The primary sources of ozone precursors in the Ukiah Valley (as throughout California) are automobiles in summer and wood stoves in winter.

Ozone is a colorless gas with a pungent odor, and it has a profound detrimental effect on human health. At concentrations near the state standard, sensitive people (those with asthma, emphysema and other respiratory problems) become uncomfortable. At higher concentrations, almost everyone's breathing is impaired and vigorous activities are not recommended. Long term exposure produces permanent damage in both humans and plants. State and federal standards are set to protect society from the harmful effects of this pollutant.

Ozone concentrations at 0.06 ppm and above damages sensitive plants such as leafy vegetables and citrus. The long-term exposure to ozone at existing levels damages crops such as grapes and reduces harvests. In 1988, the state estimated that ozone cause a reduction in Mendocino County grape yields of 0% to 10%. Statewide, ozone is estimated to cause about \$3 billion annual losses to crops and material. Health costs are more difficult to estimate, but one study in the Los Angeles basin found combined ozone and particulate pollution impacts of about \$3 billion in 1990 alone.

1.10.02(E) Respirable Particulate Matter (PM10)

Particulate matter is composed of small bits of unburned fuel, dust, ash, soot, soil and other material. Secondary particulate matter forms when gaseous pollutants combine, creating solid material such as nitrates and sulphate. Particulate matter irritates the human respiratory tract. Recent epidemiological studies indicate that particulate matter poses a greater threat to human health than ozone. Initial air standards were set for Total Suspended Particulate (TSP). In 1986, state and federal agencies revised standards to collect samples of particulate matter. Only particulate matter smaller than 10 microns in diameter reaches the lung and has significant adverse health impacts. The present ambient air quality standard for particulate matter reflects this, and applies only to such particles, sometimes called PM₁₀. It is likely the state will require air districts to develop plans to attain the PM₁₀ standard during the tenure of this General Plan.

1.10.02(F) Air Quality Monitoring

In Ukiah, the District operates a PM₁₀ sampler located on top of the City library, at the corner of Perkins and Main streets. The District conducts continuous measurement of ozone, carbon monoxide, nitrogen oxides, and weather data at 306 E. Gobbi Street. Ambient concentrations of carbon monoxide and nitrogen oxides remain well below state standards. However, PM₁₀ and ozone pose a continuing problem.

Tables IV.1-3 and IV.1-4 provide a summary of ozone and PM₁₀ monitoring to date. The data in the tables show attainment of the state ozone standard of 0.09 ppm, projected growth of automobile traffic could cause unhealthful levels of ozone to develop.

Particulate matter air monitoring began in Ukiah in 1971, with installation of a Total Suspended Particulate (TSP) instrument in the downtown area. National ambient standards for TSP were violated in

1972, '74, '75 and '76 (no data available for 1973). More restrictive stationary source rules reduced emissions sufficiently to meet the standard through 1986. PM₁₀ monitoring replaced TSP in 1987. These PM₁₀ measurements, which provide a better indication of actual human health impacts, show standard violations almost every winter to date.

1.10.02(G) Sources of Emissions

Ozone occurs as a secondary pollutant formed in the atmosphere from precursors: Reactive Organic Gases (ROG) and Nitrogen Oxides (NOx). ROGs come from vehicle fueling and exhaust, paints and solvents, industrial processes, and biogenic sources. The main source of NOx is combustion, whether in an open burn, a boiler or an automobile engine. Ozone also contributes to formation of nitrogen dioxide, an acrid, highly irritating pollutant which gives the reddish-brown color to urban smog.

Table IV.1-3: Ozone Data for the Ukiah Valley 1980-1993 (ppm)

Year	Average Daily Maximum/Hour	Yearly Max/Hour
1980	0.033	0.08
1981	0.029	0.08
1982	0.032	0.08
1983	0.027	0.07
1984	0.033	0.07
1985	0.037	0.07
1986	0.041	0.07
1987	N/A	N/A
1988		0.09
1989	N/A	N/A
1990	N/A	N/A
1991	N/A	N/A
1992*	0.034	0.05
1993	N/A	0.08

*Started in October, 1992

Particulate matter emissions occur from a variety of stationary and mobile sources. The ARB estimates that over 27 tons per day of PM₁₀ emissions come from motor vehicles (entrained road dust and exhaust) in Mendocino County. This represents about 75% of daily emissions during the dry months.¹⁷

The California ARB prepares estimates of daily pollution emissions within the state's air basins, as required by state law. 1991 represents the most recent emission inventory for the county, (published in January, 1994). The District provided point source emission estimates, while ARB staff estimated emissions for area sources and motor vehicles. "Area sources" is a term for the many small stationary sources (i.e., water heaters, consumer solvents) that the District does not permit. Emission estimates for some sources, (such as residential wood combustion), need further review because the ARB probably applied generalized factors to this county which may not reflect actual conditions. Many times these generalized emission estimates undergo refinement by air districts, based on better local knowledge of emission sources (such

as surveys of homes relying solely on wood heat).

Table IV.1-5 shows estimated emissions of air pollutants from various sources in Mendocino County, based on the Air Resources Board's emission inventory for 1991.

¹⁷California Environmental Protection Agency, Air Resources Board, Technical Support Division. Emission Inventory 1991. Published January 1994.

There are several factors to be considered when reviewing the information in the Air Quality Chapter. The numbers represent the entire annual emissions of a given compound, but some activities exhibit a seasonal nature. For example, almost all PM₁₀ emissions from residential wood combustion occurs in just a few months (winter). These emissions, coupled with adverse meteorology described above, means that almost all Ukiah Valley PM₁₀ violations occur in winter. Consequently, this plan contains policies designed to reduce ambient woodsmoke levels.

Table IV.1-4: Ukiah Valley TSP and PM₁₀ Data (µg/m³)

Year	Annual Maximum* (# over 50 µg/m ³)	Yearly Average ^b
1971 - TSP	N/A	58
1972 - TSP	N/A	61
1973 - TSP	N/A	*
1974 - TSP	N/A	87
1975 - TSP	N/A	63
1976 - TSP	N/A	68
1977 - TSP	N/A	59
1978 - TSP	N/A	57
1979 - TSP	N/A	58
1980 - TSP	N/A	53
1981 - TSP	N/A	48
1982 - TSP	N/A	48
1983 - TSP	N/A	43
1984 - TSP	N/A	37
1985 - TSP	N/A	45
1986 - TSP	N/A	41
1987 - PM10	64 (10)	29
1988 - PM10	88 (6)	24
1989 - PM10	70 (8)	29
1990 - PM10	59 (3)	20
1991 - PM10	58 (3)	22
1992 - PM10	46 (0)	N/A
1993 - PM10	54 (1)	23

*State PM10 Standard is 50 µg/m³, 24 hour average
 *Federal TSP Standard was 80 µg/m³ (Annual Geometric Mean)
 Current State Standard PM10 is 30 µg/m³ (Annual Geometric Mean)

Future estimates of auto emission may be significantly higher than shown in Table IV.1-4. Because Mendocino County currently meets state ozone standards, local auto owners do not have to participate in the biennial smog check program. The 1991 Mendocino County Emission Inventory is based on state average emission rates for fleets exempt from smog checks, which may not truly represent emissions from the mix of vehicles in Mendocino County. More importantly, the entire state program for estimating motor vehicle emissions is undergoing revision; because recent tests of "on-road" automobiles revealed serious flaws in current laboratory testing.

New ARB emission factors due for release in late 1994 will probably incorporate the following changes:

- CO emissions will double
- ROG emissions will increase by 60% to 70%
- NOX emissions will increase by 10% to 25%

Therefore, the motor vehicle portion of the emission inventory shown in the table will probably increase substantially, as will estimated emissions from new development projects.

Valley-wide, motor vehicles create the largest amount of ozone precursor pollution. This situation is not likely to change during the period of this General Plan. Even though new vehicles have more strict emission standards than existing vehicles, the growth of driving may overwhelm technical advances.

Caltrans reports that, between 1985 and 1992, driving on local streets and roads increased 4% per year (from 275,421,000 AVMT to 345,010,000 AVMT).¹⁸ During the same period, county population grew at only 1.9% per year (County Census data). Therefore, local auto traffic has grown twice as fast as population.

Caltrans reports that statewide, vehicle use is increasing at about 5% a year, while congestion is increasing at 15% per year. In 1994, the state estimates that fully 25% of all gasoline burned in the Los Angeles basin is wasted by vehicles idling in traffic. In 1993, average traffic speeds for all roads in the Los Angeles area was about 35 mile per hour. With increasing congestion, this speed will fall to about 18 miles per hour by 2010. While Caltrans has not performed such refined estimates for the Ukiah Valley, the trends are clear.

Table IV.1-5: Summary Annual Emission Inventory for Mendocino County (1991)

CATEGORY	ROG	CO	NOX	SOx	PM10
STATIONARY					
Fuel Combustion	511	6,205	511	219	1,022
Waste Burning	73	1,022	37	-	110
Solvents	1,095	-	-	-	-
Industrial Processes	37	-	-	-	-
Miscellaneous Processes	146	402	-	-	1,460
Total Stationary Sources	1,862	7,629	548	219	2,592
MOBILE					
Entrained Road Dust	-	-	-	-	9,855
Petroleum Marketing	475	-	-	-	-
On-road Vehicles	2,701	26,280	3,139	219	256
Other Mobile	1,387	7,665	4,015	1,059	219
Total Mobile Sources	4,563	33,945	7,154	1,278	10,330
TOTAL	6,425	41,574	7,702	14,978	12,922

This General Plan forecasts a 60% increase in Valley-wide population over the next 30 years. If current documented trends continue, this would result in traffic increasing by 120% over present levels. Can serious congestion be far behind? With congestion comes a significant increase in motor vehicle emissions, as cars create high emission levels under acceleration (common in stop-and-go traffic).

An analysis of some of the current causes of traffic growth can help one understand the problem. Much of the growth in motor vehicle use is caused by developing new housing in locations far from shopping, jobs, schools, childcare, and the other day-to-day necessities. Additionally, pedestrian, bicycle,

¹⁸California Department of Transportation, District 1. Letter from Linda Goff-Evans to MCAQMD. March 7, 1994.

and transit facilities are lacking, unsafe, or inadequate for the average person's needs. Therefore, most new housing requires daily use of an automobile for almost all trip purposes.

An oversupply of cheap or free parking throughout the Valley also encourages driving. One example of how free parking encourages single occupant vehicle commuting can provide some explanation. A large study of employer trip reduction programs conducted by researchers at UCLA showed that charging the market rate for parking (\$2.50 per day) was a bigger incentive to employee carpooling than an offer of free gasoline!

The City of Ukiah reports that the average downtown parking space is worth about \$10,000. However, drivers pay only a tiny fraction of the true value of the resource, resulting in a major subsidy to the private automobile. Additionally, zoning codes require commercial development to provide an excess of parking spaces, resulting in a loss of large areas of downtown to other productive uses. Large paved areas also present a powerful disincentive to walking, hence the common practice of shoppers to move their cars to just a few blocks.

This Plan can start to solve the problems outlined above. Land use decisions can help locate jobs, housing, and shopping in close proximity. The Circulation Element can also speed development of an integrated system of safe bicycle and pedestrian paths, and reduce parking requirements. It can also price parking in a way that encourages carpooling, transit use, and other non-polluting modes of travel. An aggressive effort to implement these actions will reduce the growth of vehicle trips and miles traveled, thus controlling the growth of air pollution.

Other benefits can accrue as well. According to a growing body of research, "By creating environments that are more conducive to alternative transportation modes such as walking, biking and transit, we can create more 'liveable' communities -- communities with reduced congestion, increased personal mobility, and cleaner, healthier air."¹⁹ Research also shows that this type of growth promotes the fiscal health of communities too, partly by avoiding expensive road widening and maintenance costs.

1.10.02(H) *The Challenge of Growth and Air Quality*

Mendocino County is designated non-attainment for the state PM₁₀ standard, based on the measurements summarized previously. Most exceedances occur during winter months, although summer levels can occur near the standard. Residential wood combustion is probably the primary source of winter time emissions, although automobiles, construction and agricultural operations, open burning (outside City limits) and wood processing contribute to the problem.

Policies recommended in this Plan address new PM₁₀ emission sources, such as limiting new residential fireplaces, enhancing insulation requirements, and orienting new homes to utilize solar space heating in winter months. The District has also recently adopted many new procedures such as restricting burn days and enhancing enforcement activities. Major industrial sources of respirable particulate matter have also reduced emissions, (example, all "tee-pee" wood waste burners have shut down permanently).

Most urban areas of California violate the state ozone standard in summer months. Ozone levels in the Ukiah Valley reach a level at or just below the state standard almost every summer. Even small increases in primary ozone precursors (10% to 15%) would likely result in violation of the state ozone standard. If the Ukiah Valley violates state ozone standards, the ARB would designate the county non-

¹⁹California Air Resources Board, Office of Air Quality and Transportation Planning. *The Land Use - Air Quality Linkage, how Land Use and Transportation Affect Air Quality*. 1994

attainment. In addition to public health consequences, non-attainment status could have serious repercussions for local business and citizens.

The 1988 California Clean Air Act²⁰ mandates ozone non-attainment districts to develop plans to achieve the state standard by the earliest practicable date. Each district plan must achieve emission reductions of at least five percent per year, or 15% averaged over three years. Among the required actions by air districts for attainment plans are:

1. Implement a permitting program for new stationary sources with potential to emit 25 tons per year designed to achieve no net increase.
2. Require stringent control technology for existing sources.
3. Adopt control programs for area-wide and indirect sources.
4. Develop a sophisticated emission inventory and analytical capabilities.
5. Develop public education programs to reduce emissions from transportation and area-wide sources.

Additionally, the state will impose programs independent of local district actions, such as imposing mandatory biennial smog check for all vehicles, county-wide. This program alone would cost Mendocino county residents approximately \$4.5 million per year.

Clearly, the City's residents will benefit from maintenance of state ozone standards by reducing emissions from all new development projects, and continuing to reduce pollution from existing sources. The policies provided in this element, along with supporting policies in the rest of the General Plan, provide a very important tool for maintaining air quality.

1.10.03 Summary

At a recent conference in San Francisco, Mary D. Nichols, Assistant Administrator for Air Quality with the Federal EPA was asked, "Now that the Bay Area's air quality almost meets EPA standards, what could we have done to achieve these standards sooner?" She replied, "If there is one area where I have some disappointment, it is that we weren't able to bring together local governments, through their land use and transportation planning agencies, sooner. Working with air regulators, they might have been able to develop plans that would have knitted together the transportation systems and land use plans of the region in a way that would have facilitated some of the efforts to maintain air quality in the region. It is a lot harder to come back after the fact and try to take people's cars away, make it more expensive for them to drive, or otherwise limit people's choices when, if we had planned better to begin with, we might have made it easier for everybody to rely less on driving than they do today."

1.10.04 General Plan goals, policies, and implementing programs

Goal OC-31: Reverse present deterioration of Valley air quality to maintain agricultural viability and human health.

Policy OC-31.1: Concentrate development to encourage mass transit and limit automobile use.

Implementation Measure OC-31.1(a): Utilize the revised Land Development Code as a means of promoting improved siting of development to reduce vehicle emissions. [Time-frame for completion: Ongoing planning period ♦ Measure applies to: City and County ♦

²⁰California Health and Safety Code §40918 et seq.

Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-31.1(b): Consider measures to reduce traffic in other parts of the community to offset emissions (or traffic) not mitigated by site-specific measures. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-31.1(c): Develop traffic management measures that are designed to discourage through-traffic as a means of reducing emissions. [Timeframe for completion: Short-term planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* Public Works departments]

Goal OC-32: Develop standardized air quality mitigation measures.

Policy OC-32.1: The City and County shall require all air quality mitigation measures to be reasonable, effective, feasible, measurable, and implementable concurrent with project development.

Implementation Measure OC-32.1(a): The City and County shall consult with the MCAQMD regarding the effectiveness of mitigation measures proposed by the applicant in developing a mitigation monitoring and reporting program. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-32.1(b): When using mitigation measures suggested by the MCAQMD, consideration shall be given to site-specific factors which may make a measure unnecessary or infeasible. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Goal OC-33: Standardize analysis of air quality impacts with uniform guidelines.

Policy OC-33.1: Support the creation of Air Quality Impact Guidelines.

Implementation Measure OC-33.1(a): During the short-term planning period, the City and County shall work with the Air Quality Management District to support the preparation of basin-wide Air Quality Impact Guidelines that will provide standard criteria for determining (1) thresholds for significant environmental effects; (2) a uniform method of calculating project emissions; and (3) a list standard mitigation measures. [Timeframe for completion: Short-term planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* Mendocino County Air Quality Management District]

Goal OC-34: Coordinate project review with the Air Quality Management District.

Policy OC-34.1: Submit all discretionary applications to the MCAQMD for review and comment.

Implementation Measure OC-34.1(a): The City and County shall consult with the MCAQMD during CEQA review for all discretionary projects. [Timeframe for completion: Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department and County Department of Planning and Building]

Implementation Measure OC-34.1(b): City and County project applications shall include a recommendation that applicants meet with the MCAQMD prior to submitting applications for processing if it appears that the proposed project may meet or exceed MCAQMD emissions thresholds. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Implementation Measure OC-34.1(c): Conduct a pre-application air quality review with MCAQMD to identify issues or problems that might require redesign or major alterations of the project and recommend applicants submit formal air quality impact analyses to the District for adequacy review. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department and County Department of Planning and Building]

Goal OC-35: Support air quality and transportation modeling programs.

Policy OC-35.1: Work for the creation of a Valley-wide Geographic Information System for modeling air and traffic impacts.

Implementation Measure OC-35.1(a): In the short-term planning period, the City and County shall cooperate with the AQMD when developing transportation, air quality and other resource modeling, and when establishing geographic information system (GIS) technology. This policy supports data sharing with County, Regional, and State agencies and avoids redundant tasks. [Timeframe for completion: Short-term planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Council and Board of Supervisors]

Goal OC-36: Support and participate in the air quality education programs of the MCAQMD.

Policy OC-36.1: Work with the MCAQMD to create public awareness and education programs about air quality issues.

Implementation Measure OC-36.1(a): The City and County shall assist the MCAQMD in educating developers and the public on the benefits of pedestrian and transit friendly development. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department, County Department of Planning and Building, and the Mendocino County Air Quality Management District]

Implementation Measure OC-36.1(b): Jointly develop and promote seminars on planning that enhances air quality and other community values. [Timeframe for completion: Ongoing planning period ♦ Measure applies to: City and County ♦ Agency/Department responsible: City Planning Department, County Department of Planning and Building, and the Mendocino County Air Quality Management District]

Implementation Measure OC-36.1(c): During the short term planning period, the City and County shall develop employee education programs about the possibilities of reducing air pollution through personal life-style choices. This program may include the importance of using wood burning appliances appropriately, developing employee rideshare matching, and programs to encourage employees to use non-polluting modes for commuting. [Timeframe for completion: Ongoing planning period]

♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department, County Administration, and the Mendocino County Air Quality Management District]

Goal OC-37: Support programs to reduce PM₁₀ emissions.

Policy OC-37.1: Work with appropriate agencies to create programs to assist the agri-business community in developing programs to reduce ranch- or farm-generated dust.

Implementation Measure OC-37.1(a): During the short-term planning period, work with the Farm Bureau, the University of California, the MCAQMD and farm organizations on educational programs designed to share knowledge and techniques of reducing agri-business generated PM₁₀. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City Planning Department, County Department of Planning and Building, and the Mendocino County Air Quality Management District]

Policy OC-37.2: Work to reduce particulate emissions from construction activities.

Implementation Measure OC-37.2(a): Include paving requirements in the Land Development Code. [*Timeframe for completion:* Short-term planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City and County Public Works]

Implementation Measure OC-37.2(b): In the Land Development Code, require measures to reduce particulate emissions from road and site construction, grading, and demolition to the maximum extent feasible. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City and County Public Works Departments]

Implementation Measure OC-37.2(c): The Land Development Code shall require that new access roads and parking areas shall be covered with pavement or other appropriate material to reduce or eliminate dust. [*Timeframe for completion:* Ongoing planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City and County Public Works Departments]

Implementation Measure OC-37.2(d): Utilize recommendations from the MCAQMD on appropriate dust-control activities, suitable for soil, wind, slope, and other site particulars. Provide for regular inspection of the project's dust-suppression measures. Incorporate dust-control enforcement provisions in all construction permits, and consult with District enforcement staff if a nuisance issue arises from project earth-moving or construction-equipment exhaust. [*Timeframe for completion:* On-going planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City and County Public Works]

Policy OC-37.3: Reduce dust emissions from City and County roads.

Implementation Measure OC-37.3(a): During the short-term planning period, the City and County, in consultation with the District, shall develop a program to reduce PM₁₀ emissions from City and County maintained roads. [*Timeframe for completion:* Short-term planning period ♦ *Measure applies to:* City and County ♦ *Agency/Department responsible:* City and County Public Works Departments]

Goal OC-38: Reduce air impacts from space heating.