

5. OPEN SPACE/CONSERVATION ELEMENT

Because the subject matter of the Open Space Element and the Conservation Element overlap, the Mt. Shasta General Plan combines these two required elements into a single Open Space/Conservation Element. Generally, the Open Space Element deals with parcels or areas of land or water that are devoted to open space use. Open space use includes lands used for natural resources, managed production of resources, outdoor recreation, and public health and safety. Open space lands are shown on the **General Plan Land Use Maps, Figure 3-1 and Figure 3-2**, as either Resource Lands or Public Lands. A Conservation Element focuses on the conservation, development and utilization of natural resources including forests, soils, rivers and lakes, fisheries, wildlife, minerals, and other natural resources.

California Government Code Section 65564 requires that every local open space plan shall contain an action program consisting of specific programs that the legislative body intends to pursue in implementing its open space plan. The General Plan policies and implementation measures set forth in this Open Space/Conservation Element constitute the City's program. Therefore, these policies are consolidated at the end of the Element under the heading of the "City of Mt. Shasta Open Space Action Plan". The City may consider additional open space action measures in the future, provided they are consistent with the policies of the General Plan.

A. Conservation of Natural Resources

1. Background

Wildlife and Botanical Resources

The diversity of wildlife and plant communities in the planning area is directly related to the wide range of habitat types found in the region. These habitat types are influenced by a number of factors including: elevation and climate; the geology of the area; the amount of water (streams, lakes and wetlands); and land use patterns.

The habitat types within the planning area have been mapped in a joint mapping exercise conducted by the California Department of Forestry and Fire Protection and the U.S. Forest Service called the "California Land Cover Mapping & Monitoring Program" (LCMMP). The purpose of the mapping program was to assess current vegetative conditions, monitor changes over time and determine land management options. Each polygon is assigned a map unit name according to the California Department of Fish and Game's Wildlife Habitat Relationships System, and a corresponding California Vegetation (CalVeg) vegetation classification system name. These classifications are depicted in **Figure 5-1, Wildlife Habitat Relationships**. The minimum habitat polygon size is 2.5 acres. The polygons were derived from satellite imagery and ground-truthing. The project was completed in 2001

and is scheduled to be redone every five years to monitor habitat change. The work was conducted across all ownerships.

The habitat types found within the planning area include annual grassland, barren, closed-cone pine-cypress, Douglas fir, eastside pine, Jeffery pine, Klamath mixed conifer, lacustrine, montane chaparral, montane hardwood, montane hardwood conifer, montane riparian, red fir, Sierran mixed conifer, urban, wet meadow and white fir. (A description of these habitat types can be found in the Environmental Impact Report for the Mt. Shasta General Plan Revision.)

The array of habitat types supports a variety of wildlife species including: large mammals such as black bear (*Ursus americanus*), black-tailed deer (*Odocoileus hemionus*), Pacific fisher (*Martes pennanti*), gray fox (*Urocyon cinereoargenteus*), mountain lion (*Felis concolor*), and Roosevelt elk (*Cervus elaphus*); small mammals such as American mink (*Mustela vison*), striped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), deer mouse (*Peromyscus maniculatus*) and several species of bat; and amphibians such as the Pacific chorus frog (*Pseudacris regilla*), Cascade frog (*Rana cascadae*) and the foothill yellow-legged frog (*Rana boylei*); and reptiles such as the northwestern pond turtle (*Clemmys marmorata*).

A variety of birds are also supported by the variety of habitat types in the planning area. These include the great-horned owl (*Bubo virginianus*), mourning dove (*Zenaida macroura*), band-tailed pigeon (*Columba fasciata*), and hermit thrush (*Catharus guttatus*). Hawks and owls (raptors) such as red-tail hawks (*Buteo jamaicensis*), sharp-shinned hawk (*Accipiter striatus*), osprey (*Pandion haliaetus*) and bald eagles (*Haliaeetus leucocephalus*) are also fairly common. Chaparral habitats support game birds like the California quail (*Callipepla californica*). Riparian and wet meadow areas support migratory songbirds and waterfowl.

Special-status wildlife and plant species are provided protection by the Federal Endangered Species Act, the California Endangered Species Act, and other discretionary policies such as the California Department of Fish and Game Code (e.g., Section 3503.5 concerning Raptor Protection). Special-status wildlife and plant species include taxa that are: (1) designated as threatened or endangered by the state or federal governments (i.e., "listed species"); (2) are proposed or petitioned for federal listing as threatened or endangered; or (3) are state or federal candidates for listing as threatened or endangered; or (4) other sensitive species, such as those identified by the National Marine Fisheries Service as Species of Concern and/or identified by the California Department of Fish and Game (CDFG) as Species of Special Concern and/or California Fully Protected Species. Special-status plant species also include plants that occur on the California Native Plant Society (CNPS) List 1A, 1B, and 2.

Investigations into occurrences of special-status plant and wildlife species, and sensitive plant communities/habitats, within the planning area were

conducted using database searches, consulting with resource agency personnel, performing reconnaissance-level site assessments for floral and faunal resources, and reviewing environmental documents and technical studies prepared for projects in the vicinity. The U.S. Fish and Wildlife Service maintains a database that lists special-status species for each USGS (United States Geological Survey) quadrangle within the jurisdiction of the Sacramento office. This database was searched to acquire a list of special-status plant and wildlife species that have the potential to occur on the site. Additionally, the California Natural Diversity Database (CNDDDB) was queried for records on the *City of Mt. Shasta* and adjacent USGS quadrangle maps. The CNDDDB is a state-maintained database consisting of historic observations of special-status wildlife and plant species and special plant communities. The CNDDDB is limited to reported sightings and is not a comprehensive list of floral and faunal species that occur in a particular area.

Figure 5-2, Known Special-status Animal Occurrences, shows the special-status animals that have been observed within the planning area and in adjacent habitats. Because the records only occur for the species that were reported to the California Department of Fish and Game, this figure likely does not represent all of the occurrences within the Planning Area. Because animals are able to move great distances over time, the data base search was conducted over the area covered by the City of Mount Shasta and eight adjacent U.S. Geological Survey quadrangle maps. The size of the circles represents the accuracy of the record; for example, a record for a Sierra Nevada red fox “on Mount Shasta”, creates a large circle around the mountain. More precise location information results in a smaller circle, dot or line.

Within the planning area, several special-status species have the potential to occur, or are known to occur. These include the following wildlife species: Foothill yellow-legged frog (*Rana boylei* – CSC¹), Cascades frog (*R. cascadae* – CSC), northwestern pond turtle (*Clemmys marmorata marmorata* – CSC), northern goshawk (*Accipiter gentilis* – FSC/CSC), tricolored blackbird (*Agelaius tricolor* – CSC), western yellow-billed cuckoo (*Coccyzus americanus occidentalis* – FC/CE), willow flycatcher (*Empidonax traillii* – CE, CA), greater sandhill crane (*Grus canadensis tabida* – CT, CA), bald eagle (*Haliaeetus leucocephalus* – FT/CE), osprey (*Pandion haliaetus* – CSC), pale Townsend’s big-eared bat (*Corynorhinus townsendii pallescens* – CSC), and Pacific fisher (*Martes pennanti* – FC/CSC).

In addition to the special-status wildlife species that occupy the Planning Area and surrounding habitats, the southern-most extent of the Planning Area is recognized as critical winter range for black tail deer. Deer utilize lower

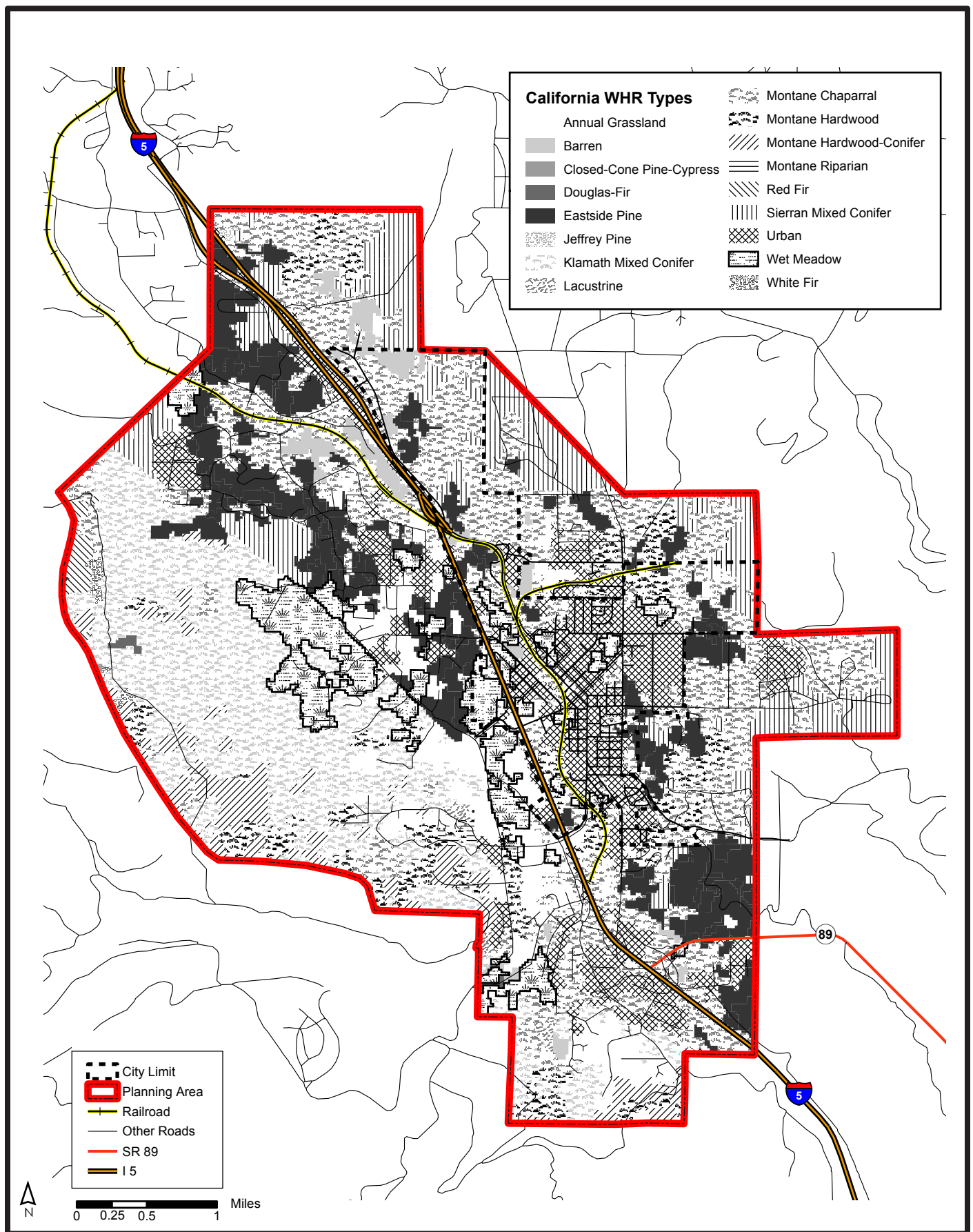
¹ FT = Federally Threatened; FC = Federal Candidate; CE = California Endangered; CA = California Fully Protected; FSC = Federal Species of Concern; CSC = California Species of Special Concern; CNPS = California Native Plant Society.

elevation habitats near the Sacramento River and north of the Planning Area because these areas provide sustaining winter browse and shelter from severe weather (i.e., shallower snow depths). In the spring, the local deer herd migrates out of the winter range into higher elevation fawning grounds. A portion of identified fawning grounds are located within the eastern-most area of the Planning Area. (See **Figure 5-2, Known Special-status Animal Occurrences**). Migration routes between winter range and the fawning grounds are not well understood, but the California Department of Fish and Game is initiating a movement study using radio collared deer. By 2007, this study is expected to provide global positioning system (GPS) data on whether specific migration corridors are used or whether the deer randomly travel between the two critical areas (Bob Schafer, Pers. comm.).

Concerning native plants, special-status plant species known to occur within the Planning Area include the following: Shasta chaenactis (*Chaenactis suffrutescens* – CNPS 1B²), aleppo avens (*Geum aleppicum* – CNPS 2), broad-nerved hump-moss (*Meesia uliginosa* – CNPS 2), marsh skullcap (*Scutellaria galericulata* – CNPS 2), three-ranked hump-moss (*Meesia triquetra* – CNPS 2), and showy raillardella (*Raillardella pringlei* – CNPS 1B) (See **Figure 5-3, Known Special-status Plant Occurrences**). Like the list for wildlife species, however, this list only includes plant species that have been observed and reported to the California Department of Fish and Game. The nine USGS quadrangle map data base query identified many additional special-status plant species that are known to occur in the region. Because the database only reports historic observations of special-status plants, and because plant species are able to disperse into areas previously surveyed, one should assume that if suitable habitat is available in an area, there is the potential for special-status plant species to occur.

Because the planning area has a significant amount of acreage in wetland habitat that is difficult to develop (discussed below), these biologically rich habitats are generally protected. The large amount of surrounding lands in federal ownership and large, privately-owned parcels designated as “Resource Lands” also reduces development pressures on habitats important for the survival of wildlife and plant species. In areas that are designated for development, there may still be need and opportunities for protection and enhancement of habitat features, which will need to be addressed on a site-specific basis.

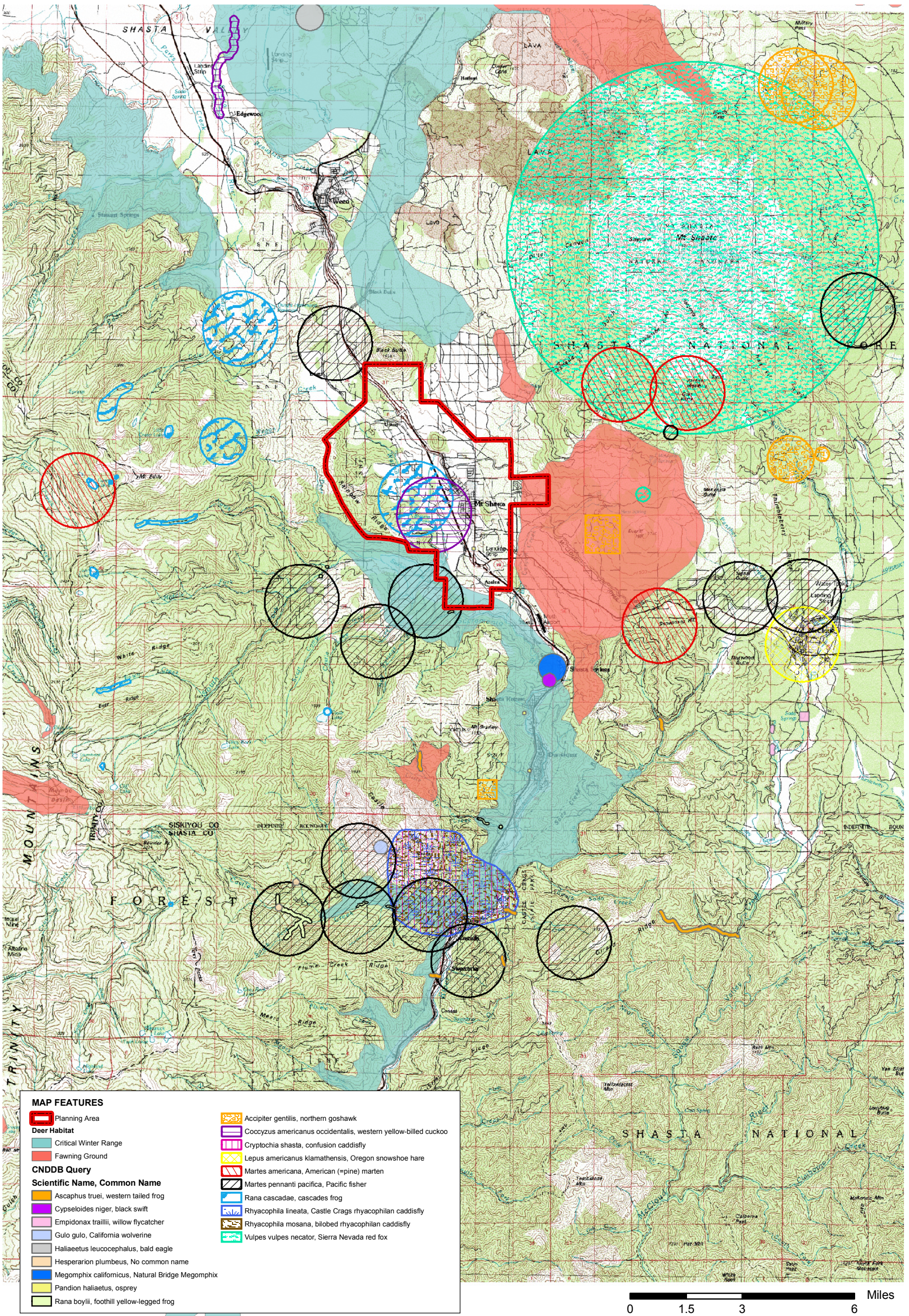
² CNPS = California Native Plant Society; CNPS 1B = Rare, Threatened or Endangered in CA and Elsewhere; CNPS 2 = Rare, Threatened or Endangered in CA, but more common elsewhere.



Source: North State Resources, Inc.

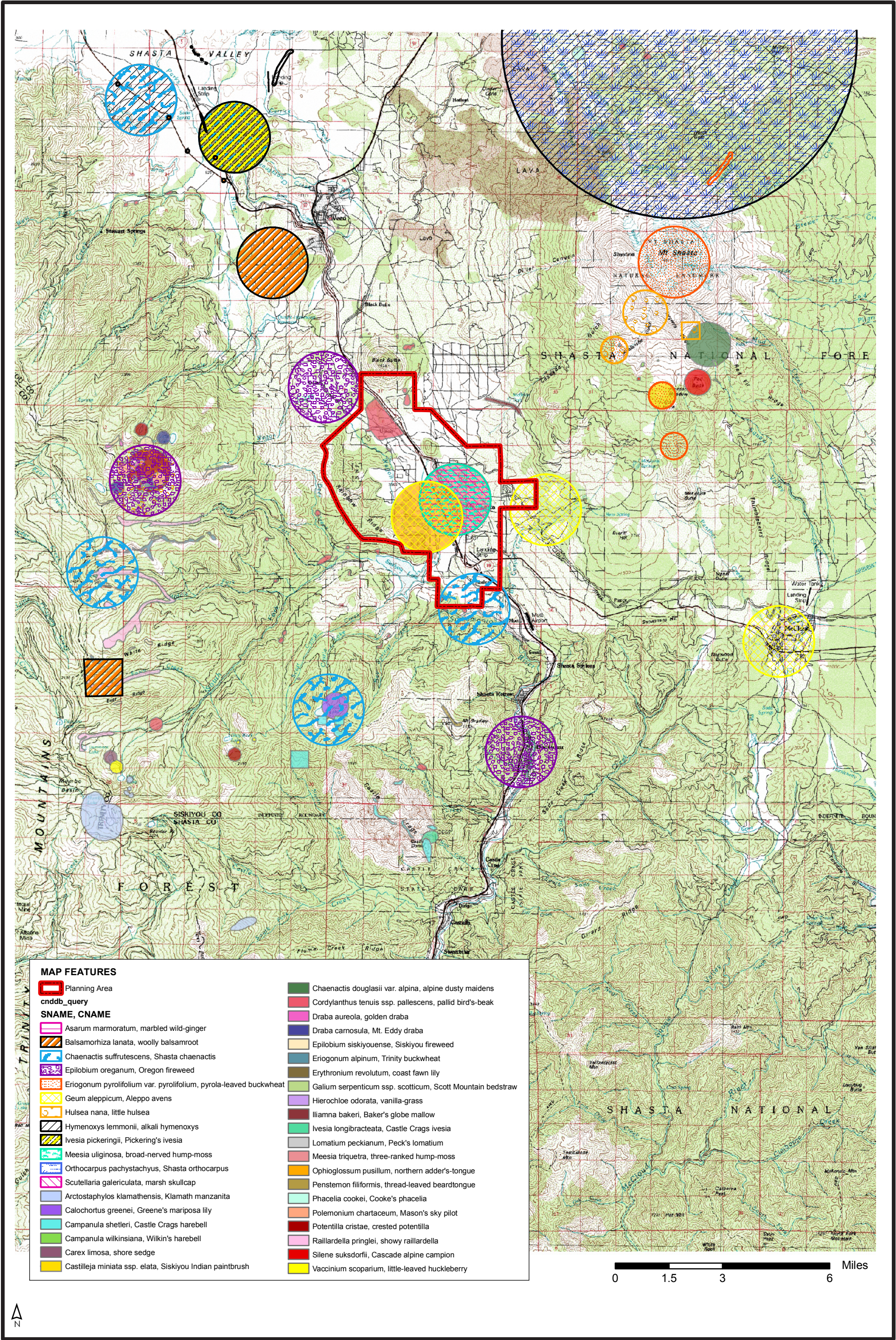
FIGURE 5-1

WILDLIFE HABITAT RELATIONSHIPS



Source: North State Resources, Inc.

FIGURE 5-2
KNOWN SPECIAL-STATUS
ANIMAL OCCURRENCES
PMC



Source: North State Resources, Inc.

FIGURE 5-3
KNOWN SPECIAL-STATUS
PLANT OCCURRENCES
PMC

Whether or not species are endangered or threatened, the diversity of wildlife in the area is an important part of the ecological and recreational environment. As development occurs in the area, balance is needed between accommodating the needs of population growth and maintaining habitat area for wildlife and biological resources. There are methods by which some non-endangered species can flourish in developed settings. Identification of special habitat resources and consideration of these resources in the design of projects to protect habitat should be an important aspect of overall development review.

Fishery Resources

Streams and other surface water resources in the planning area support resident fisheries of varying size and quality. These water resources include the Sacramento River, Lake Siskiyou, Wagon Creek, Big Springs Creek and their tributaries. The Upper Sacramento River and Lake Siskiyou are popular recreation destinations for many anglers, residents and visitors alike, and represent important attractions related to the recreational facets of the area's economy.

Big Springs and Wagon Creeks have native rainbow (*Oncorhynchus mykiss*) and brown trout (*Salmo trutta*). The State Fish Hatchery, established in 1888, raises rainbow, brown, brook (*Salvelinus fontinalis*) and Eagle Lake trout (*Salmo gairdnerii aquilarum*). Occasionally, these fish escape from the hatchery and are found in nearby Big Springs Creek. Beyond Big Springs Creek, several fish passage barriers (fish screens) exist that make dispersal nearly impossible. It is therefore highly unlikely that fish that escape from the hatchery could enter Lake Siskiyou or the Upper Sacramento River above Lake Siskiyou (Jim Adams, Pers. comm.). The California Department of Fish and Game stocks Lake Siskiyou with native rainbow trout and brown trout.

Non-native game fish species [(e.g., black crappie (*Pomoxis nigromaculatus*)] have been inadvertently introduced by sportsman who loose bait minnows or from private stocked fish ponds overflowing their banks during storm events. Non-game native species occurring in the lake include riffle sculpin (*Cottus gulosus*), Sacramento sucker (*Catostomus occidentalis*), Sacramento pike minnow (*Ptychocheilus grandis*), hardhead (*Mylopharodon conocephalus*) and California roach (*Hesperoleucus symmetricus*).

Non-native invasive species that are inadvertently introduced to area streams via overflowing privately-stocked fish ponds is a problem that could have devastating impacts for native species in the region. For example, during the 1997 El Niño storms, Brown's Lake overflowed and grass carp (*Ctenopharyngodon idella*) escaped into Wagon Creek and then into Lake Siskiyou. The California Department of Fish and Game caught a grass carp in the lake that was four feet long and weighed about 35 pounds. This raised concern that, if the species had somehow made its way around the Box Canyon Dam (e.g., by an osprey or raccoon), it could have entered the Sacramento River system, reproduced and potentially have had detrimental effects on native species found in the watershed (Larry Hanson, Pers. comm.). In this example, the

Department initiated a species-specific eradication program in the affected waters.

No special-status fish species currently exist within the planning area. Historically, the Upper Sacramento River likely supported steelhead trout (*Oncorhynchus mykiss* – FT¹). More specifically, this species could be classified as the Central Valley ESU (evolutionarily significant unit) steelhead trout. The Upper Sacramento River also likely supported the Central Valley Spring-run, winter-run and fall/late fall-run chinook salmon (*Oncorhynchus tshawytscha* – FT/CT, FE/CE, FC/CSC respectively), bull trout (*Salvelinus confluentus* – extinct in California) and possibly the green sturgeon (*Acipenser medirostris* – FC/CSC). Currently, these species occur in the Sacramento River below Keswick Dam, approximately 65 miles downstream from the planning area.

While most development occurs outside of the flood zones surrounding the Sacramento River, Browns Creek, Big Springs Creek and their tributaries, thereby avoiding direct impacts to fishery resources, indirect impacts such as erosion/sedimentation and pollutant-loaded stormwater runoff in the watershed that enter surface waters can be harmful to water quality and fish habitat. To maintain the water quality and, thereby, protect fishery resources, strict adherence to construction and operational “best management practices” should be required for development projects to limit the levels of sedimentation and pollutants that enter the river and creeks. Naturally occurring wetlands should be maintained for their important role in filtering out pollutants before they enter surface waters, and stormwater detention facilities need to be maintained to reduce the likelihood of significant erosion events and associated deposition of substantive sediment loads into surface waters. Lastly, it is advised that stocking non-native fish species in private ponds be discouraged and, if possible, prohibited.

Water Resources

Groundwater resources within the planning area originate with snowmelt and rainfall, especially on the upper slopes of Mount Shasta. The direction of groundwater movement through the area is generally down-slope and southwesterly, turning southerly near the center of Strawberry Valley. Significant amounts of high-quality groundwater resources are found in the area.

The planning area is located entirely within the Sacramento River watershed. Surface waters include the Sacramento River, on which Box Canyon Dam and Lake Siskiyou are located, as well as several tributary streams that drain Strawberry Valley to the River via Lake Siskiyou. Wagon Creek, Big Springs Creek, Cold Springs Creek, Old Mill Creek and several intermittent streams flow through the planning area. Cold Springs is one of the principal sources of water for the City of Mt. Shasta. (**Figure 5-7** indicates local water courses.)

¹ FT = Federally Threatened; CT = California Threatened; FE = Federally Endangered; CE = California Endangered.

Effective watershed conservation practices are important to assure continued high-quality water resources for people living in the area, as well as for the maintenance of fish and wildlife habitat. Maintenance of slope stability to control erosion and the retention of vegetation, particularly riparian habitat, is important for the protection of the watershed. Also, the prevention of water pollution and the regulation of land uses in and near stream channels are necessary to protect groundwater and surface water resources. Grading management and erosion control programs are effective means for providing these protections.

Wetlands

While the traditional image of a wetland may be a swamp or marsh, many other types of habitat meet the technical definition of a “wetland”. Within the planning area, these habitats range from small seasonal wet areas on vacant parcels to an extensive wet meadow and fresh emergent marsh. “Other waters” of the

KEY WETLAND DEFINITIONS

Wetlands. Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adopted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” (33 CFR 328.3b)

Waters of the United States. Summarized here, waters of the United States are rivers, including their tributaries and lakes, which are or were used in interstate or foreign commerce. Waters of the United States generally have an ordinary high water mark and evidence of scour and deposition of sediment. (See 33 CFR, Part 328 for the full definition). Waters of the United States do not necessarily contain hydrophytic vegetation due to the scouring action of the flowing water.

Hydric soil. A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (Env. Lab., 1987).

Wetland hydrology. The sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation (Env. Lab., 1987).

The General Plan reflects that if these definitions change in Federal law, the Plan automatically will use the new definitions.

United States are creeks, ditches and rivers that convey perennial or intermittent flows. For the purpose of this General Plan, all “Waters of the United States”, including wetlands, are generically considered as “wetlands”.

The process of formally identifying and mapping (i.e., delineating) wetlands follows the methodology prescribed in the *Wetland Delineation Manual* (Environmental Laboratory, 1987) and is based on finding evidence that, at some time during the spring to fall growing season, the area has prevalent hydrophytic (water loving) vegetation, hydric soils and wetland hydrology (see Key Wetland Definitions sidebar). A wetland delineation can be prepared by individuals, environmental consultants, or agency personnel, but the U.S. Army Corps of Engineers must verify the delineation and issue a formal jurisdictional determination letter defining the boundaries of wetlands on the site.

Due to soil types and the pattern of runoff from the highlands north and east of the City toward and onto the valley floor, both perennial and seasonal wetlands occur in the

planning area (see **Table 5-1**). Seasonal wetlands are typically dry by mid-summer. Also, many wetlands have been altered by development activities and no longer look like typical wetlands. These sites may still exhibit all three wetland parameters (vegetation, soils and hydrology). All three parameters must be present at some point during the growing season for the habitat to be classified as a wetland.

**Table 5-1
Common Wetland Types in the Planning Area**

<i>Type</i>	<i>Description</i>
Seasonal wet meadow	Water from precipitation events or snowmelt saturates the soil and the habitat is generally dominated by hydrophytic grasses and forbs. Seasonal wet meadow habitat dries out by mid-summer.
Riparian wetland	Associated with intermittent or perennial streams or other permanent wetland types. The vegetation community consists of willow (<i>Salix</i> sp.), cottonwood (<i>Populus</i> sp.) and blackberry (<i>Rubus discolor</i>).
Fresh emergent wetland	Soils are saturated for most of the year, often by high ground water, and the vegetation community is dominated by cattails (<i>Typha latifolia</i>), sedges (<i>Carex</i> sp.) and rushes (<i>Juncus</i> sp.).
Ditch	Ditches can be vegetated wetlands or "other waters" with no vegetation due to scour. They are typically man-made with an ordinary high water mark and evidence of scour and deposition.
Perennial stream	Rivers or creeks that flow year-round. The water sources may be springs, seeps, and/or a high water table.
Intermittent stream	Rivers and creeks that only flow during or shortly after storm events. The water source is tied to precipitation events and flows within the feature cease when the rains stop.
Open water	Open water habitats greater than six feet deep.

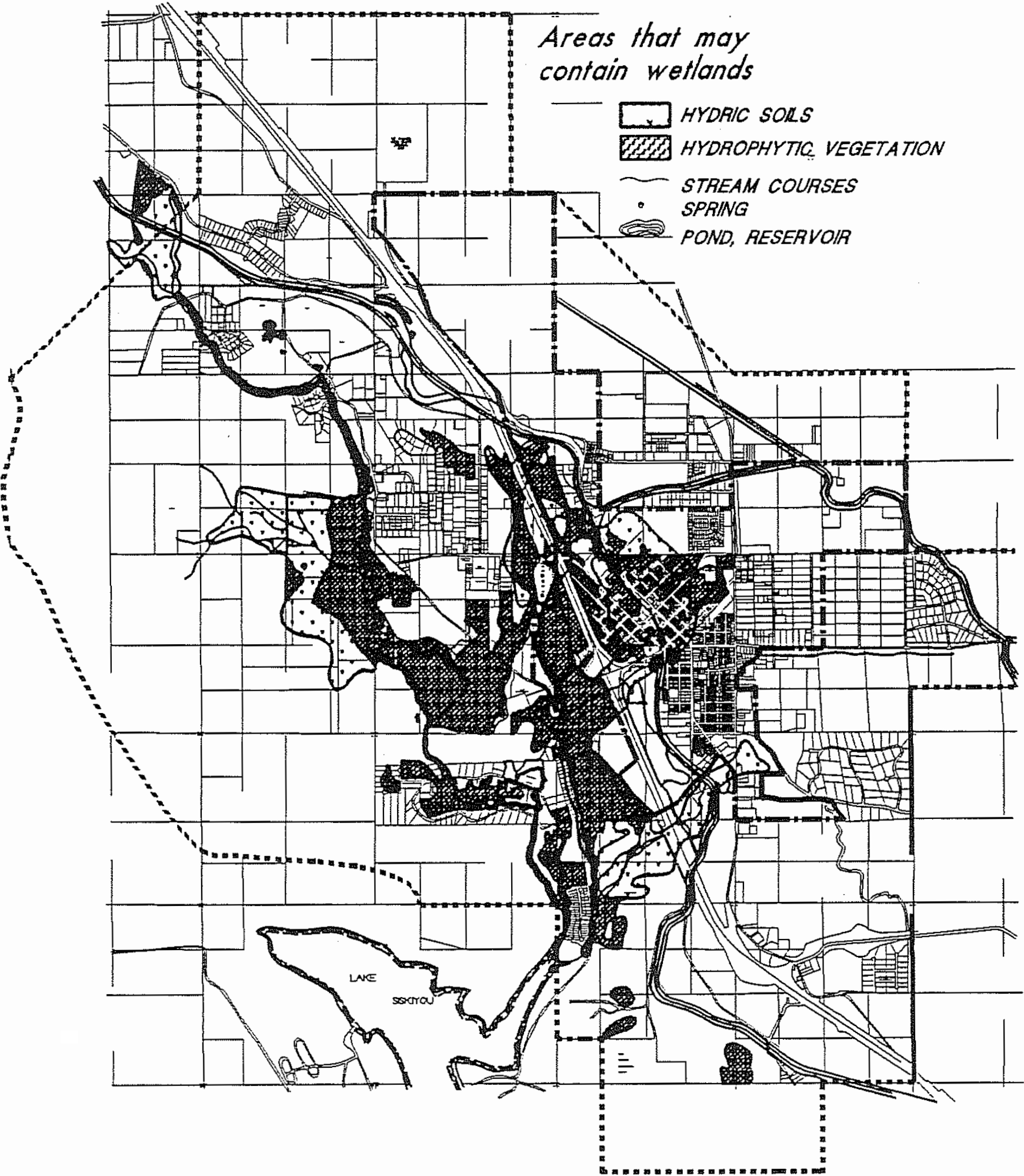
Source: North State Resources

A wetlands study of the planning area was prepared for the City of Mt. Shasta in September 1990 by Karen Theiss & Associates. The resulting wetland map was based on field investigations, aerial photograph interpretation, review of existing literature (e.g., U.S. Soil Conservation Service soil survey), and agency consultation. This study was intended to map prospective wetlands at a "planning level" of detail and not to produce a "project level" wetland delineation. The resulting wetland maps were not verified by the U.S. Army Corps of Engineers. For these and other reasons, the boundaries of wetlands depicted on the maps that resulted from the study should only be considered as areas having the potential of containing wetlands.

Figure 5-4, Potential Wetland Areas, in this General Plan is a general depiction of the findings of that study. This figure is included to generally illustrate the extent of the planning area that has sites that may be classified as wetlands. By law, all development projects that impact wetlands must have a formal wetland determination, or verification, letter from the U.S. Army Corps of Engineers to support the issuance of a dredge and fill permit.

Development within, or that would impact, wetlands is regulated nationally by a variety of state and federal agencies, depending on the circumstances.

Potential Wetlands Areas



Source: City of Mt. Shasta

Regulatory agencies include: the U.S. Army Corps of Engineers; the U.S. Environmental Protection Agency for matters related to Section 404 of the Clean Water Act; and the Natural Resources Conservation Service for wetland matters on agricultural lands for the purpose of administering the Food Security Act. In California, wetlands are also regulated directly by the State Water Resources Control Board and the California Department of Fish and Game. Indirectly, the California Department of Forestry and Fire Protection may be involved in regulation. The Mt. Shasta planning area is located within the San Francisco District of the U.S. Army Corps of Engineers.

Development pressure has encroached into wetlands across the United States, significantly reducing the aerial extent of wetland habitat. In response, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency have instigated a national “no net loss” policy. Compliance with this policy requires that projects avoid or minimize impacts to wetlands to the maximum extent practicable and that compensatory mitigation (creating wetlands to replace those impacted) be provided for any unavoidable impacts to wetland habitat. To do this, project proponents who may impact wetland habitat must first attempt to avoid discharging dredge or fill material into wetlands. If this is not possible, they may seek authorization to place dredge or fill material into wetlands, but the permit requirements will require documentation of how wetland impacts have been minimized and how unavoidable impacts are being mitigated.

Mitigation must be provided for any loss of wetland habitat. Mitigation may be in the form of on- or off-site wetland creation or restoration. To comply with the no-net loss policy, the regulatory agency (typically the U.S. Army Corps of Engineers) may require mitigation ratios of impacted wetland to created wetland habitat greater than 1:1 (e.g., 1:1.5) to ensure that there is adequate replacement of the disturbed wetland even if a portion of the “new” wetland fails to successfully function as wetland habitat. In determining the mitigation ratio requirements, the U.S. Army Corps of Engineers considers whether the creation is of the same type of wetland as that being impacted (e.g., wet meadow for wet meadow), whether it is being created on the impacted site or off-site, the likelihood that the new wetland will be successfully established, and other similar factors.

Another option for mitigating impacts to wetland habitat is to purchase credits at a wetland mitigation bank. Wetland mitigation banks can be established on private or public lands and they can be managed by non-profit or for-profit organizations. They typically consist of a substantial acreage of created wetlands (often greater than 25 acres), and they have an approved accounting system that allows for wetland creation credits to be sold to a developer whose project requires the filling of wetlands elsewhere in the approved mitigation bank service area. The establishment of a mitigation bank involves careful planning and approval by numerous federal and state agencies, depending on the issues being mitigated. At present, there are no wetland mitigation banks servicing the City of Mt. Shasta and vicinity.

Permits under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, as amended, are required for the placement of dredge or fill materials into all waters of the U.S., including wetlands. Projects are permitted under either individual or nationwide permits. Specific applicability of permit type is determined by the Army Corps of Engineers on a case-by-case basis. There are many conditions attached to these federal permits including, but not limited to, the following: soil erosion and sediment control plans; minimal or no impediments to aquatic life (e.g., fish) movements; obtaining a Clean Water Act Section 401 water quality certification; no impacts to federally listed species without “take” authorization from the USFWS or National Marine Fisheries Service; no impacts to historic properties without Section 106 authorization from the California State Office of Preservation; that all projects provide mitigation for impacts to wetland habitat; and special regional conditions from the regional office of the regulatory agency. The permit may also require the preservation and maintenance of vegetated upland buffers surrounding stream habitat. The buffers range from 25 feet to 50 feet in width. This is a partial list. More information can be obtained by reviewing the federal guidance for issuance of Nationwide Permits (67 FR 2020–2095). All nationwide permits are scheduled to be reauthorized in 2007 and, at that time, the general conditions for each permit may change.

The California Department of Fish and Game has jurisdiction over aquatic resources associated with rivers, streams, and lakes under the California Fish and Game Code (Sections 1600-1616). The Department must be notified when any person, business, state or local government agency, or public utility proposes an activity that will: divert, obstruct, or change the natural flow or the bed, channel or bank of any river stream or lake; use material from a streambed; or result in the disposal or deposition of debris, waste, or other material where it can pass into any river, stream, or lake. If the Department determines that the proposed project or activity could have substantial adverse effects on fish or wildlife, a Streambed Alteration Agreement is required. Streambed Alteration Agreements may also have special conditions including required upland setbacks ranging from 25 feet to 100 feet from the aquatic habitat.

The California Regional Water Quality Control Board, Central Valley Region, is responsible for enforcing water quality criteria and protecting water resources in the Planning Area. Their regulatory authority falls under Section 401 of the Clean Water Act and the water quality certification is the “dredge and fill” permit they issue. The Board is responsible for controlling discharges to surface waters of the state by issuing waste discharge requirements or by issuing conditional waivers to the waste discharge requirements. A request for water quality certification by the Board is required if the project requires a Section 404 permit (authorizing the fill of wetlands) from the Army Corps of Engineers. The Board also has regulatory authority over stormwater, pollutant, and waste discharge permits.

The natural functions and values that are provided by wetlands, as well as the regulatory restrictions associated with impacting them, provide incentives for protecting and preserving wetlands. Generally, the larger the wetland, the greater the function and value provided. Therefore, to protect the most valuable wetland resources, jurisdictions should prioritize development to occur in upland settings instead of in wetland habitat. Most of the areas with wetland potential depicted on **Figure 5-4** are relatively large and provide a variety of environmental benefits. These wetland features should be regarded as having extremely low suitability for development. Generally, development of small wetlands that are relatively isolated from other large wetland habitats could, after obtaining the necessary permits from regulatory agencies, be developed without having a major impact on the overall function and value of the area's wetlands.

2. General Plan Objectives and Programs: Conservation of Natural Resources

Goal OC-1: Conserve lands that support important fisheries, wildlife and botanical habitat, and wetlands.

Policy OC-1.1: Limit development on lands that provide important fisheries, wildlife and botanical habitat, and wetlands to agriculture and rural density residential.

Implementation Measures:

OC-1.1(a): In areas identified as important fisheries, wildlife and botanical habitat, allow a maximum density of not more than one dwelling unit per ten acres of gross land area.

OC-1.1(b): In the deer wintering and deer fawning areas, establish a maximum density of one dwelling per twenty acres of gross land area.

Policy OC-1.2: Encourage public-private programs to conserve important fishery, wildlife and botanical habitat, and wetlands.

Implementation Measures:

OC-1.2(a): Encourage Federal and State agencies as well as non-profit conservation organizations to work with private land owners to establish programs to enhance and conserve important fishery, wildlife and botanical, and wetland habitats.

OC-1.2(b): Encourage voluntary recordation of protective easements by private property owners for projects located in important fishery, wildlife and botanical,

and wetland habitats in concert with the provisions of the Open Space Easement Act of 1974. Any plan derived from this implementation measure should include detailed descriptions of what land uses are appropriate within the easement and a management plan to optimize the land's potential to maintain the resources or habitats being protected.

Policy OC-1.3: Require flexibility in development standards to balance both private property rights with the need to conserve fishery, wildlife and botanical habitats, and wetlands.

Implementation Measures:

OC-1.3(a): When proposals are submitted for development in important fisheries, wildlife and botanical habitats, or wetlands, encourage the use of clustered development in conjunction with open space easements to conserve or protect sensitive areas.

OC-1.3(b): Consider the Theiss 1990 wetland report and the documented identification of the California Department of Fish and Game's deer wintering and fawning grounds as initial steps in identifying important fishery, wildlife and botanical, and wetland habitats in the planning area. Recognize and reference new, credible information as it becomes available.

Goal OC-2: Protect riparian habitat along streams in the Planning Area.

Policy OC-2.1: Require erosion control protection as a part of grading and development plans.

Implementation Measures:

OC-2.1(a): Develop a grading ordinance that will, at a minimum, incorporate:

- Standards related to heavy equipment operating within stream channels;
- Sediment and surface runoff management;
- Erosion control contingency plan;
- An enforcement component to ensure adherence to the ordinance;

- References to state and federal rules applicable to protecting riparian habitat (e.g., grading setbacks from riparian habitat); and
- Provisions to cooperate with state, federal and private land managers to establish a mitigation bank within the planning area so that mitigation resulting from impacts to riparian habitat within the planning area provides local benefits for retaining riparian resources.

Goal OC-3: Conserve wetland areas.

Policy OC-3.1: Work to satisfy state and national wetlands policy.

Implementation Measure:

OC-3.1(a): Submit copies of applications and environmental documents to the U.S. Army Corps of Engineers and the California Department of Fish and Game when development is proposed on parcels identified as containing wetland potential.

Policy OC-3.2: Encourage property owners of lands with wetlands to design projects to avoid or mitigate wetland impacts.

Implementation Measures:

OC-3.2(a): When applications are submitted for development on parcels that are identified as containing wetlands potential, require the preparation and submittal of a wetland delineation report for verification by the Army Corps of Engineers.

OC-3.2(b): If the development will result in the deposition of dredge and fill material into wetland habitat, before the start of work require that the developer submit copies of all relevant state and federal wetland permits, including but not limited to a Clean Water Act Section 404 dredge and fill permit from the U.S. Army Corps of Engineers, a Clean Water Act Section 401 water quality certification from the Regional Water Quality Control Board, and a Fish and Game Code Section 1602 streambed alteration agreement from the California Department of Fish and Game.

B. Managed Production of Resources

1. Background

Forest Lands

Managed timber resources in the planning area are located on National Forest lands and private lands in the eastern and western fringes of the planning area. (See **Figure 5-5, Open Space Lands.**) National Forest timberlands are located primarily on Rainbow Ridge, northeast of Springhill and northeast of the Interstate 5/Highway 89 interchange. Isolated areas of federal timber are located south and southeast of Black Butte.

Private timber stands are also located on Rainbow Ridge. Small tracts of timber are found in the vicinity of Abrams Lake Road and along Big Springs Creek south of Lassen Lane. Within the City, private timber resources are limited to the area north of Ream Avenue and south of the shopping center.

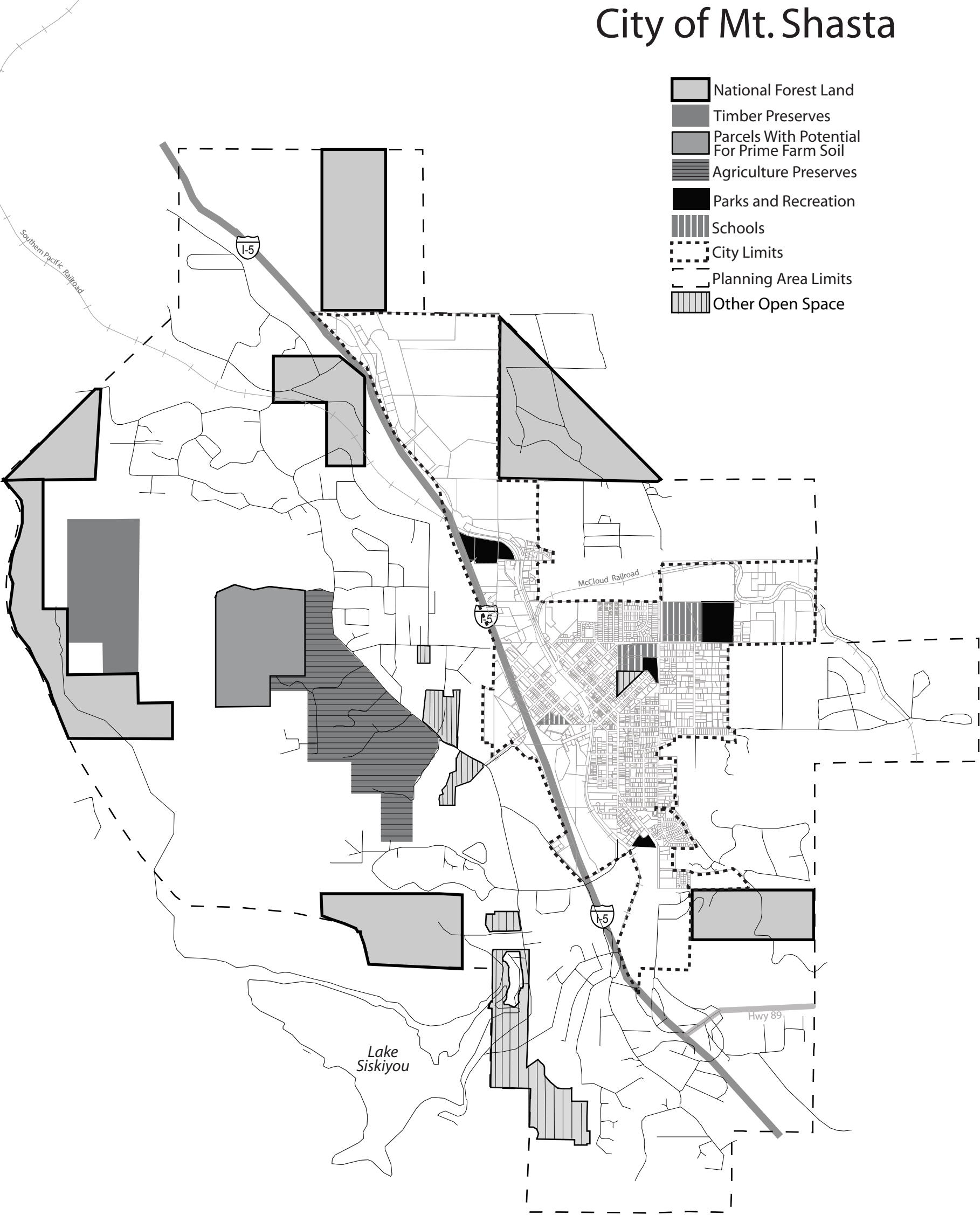
On lands east of the City, large areas of brush resulting from past wildfires are located in areas that once offered more extensive timber resources. Timber resources are gradually recovering in these areas.

The Timberland Productivity Act of 1982 (California Government Code Section 51100 *et seq.*) established the state program that is most directly focused on maintaining forest lands. The Timberland Productivity Act encouraged counties to designate Timberland Production Zones (TPZ) containing conifer timberlands. Since property taxes on forest lands zoned TPZ are based on their timber production value, the landowners receive a substantial tax break. In return for this incentive for landowners to keep their lands in production, local TPZ ordinances restrict non-forest development projects on TPZ lands. Land owners may remove their lands from TPZ by paying taxes according to a formula and receiving an “immediate” rezone, or by applying for a phased ten-year out from the zoning.

There are no TPZ-zoned lands in the City. There are some TPZ tracts located in the western portion of the Planning Area.

City of Mt. Shasta

- National Forest Land
- Timber Preserves
- Parcels With Potential For Prime Farm Soil
- Agriculture Preserves
- Parks and Recreation
- Schools
- City Limits
- Planning Area Limits
- Other Open Space



Source: City of Mt.Shasta

The California Forest Practices Act and its administrative rules establish timber harvest regulations and other requirements that are intended to assure that productivity of timberlands is restored, enhanced, and maintained where feasible. One goal expressed in the Forest Practices Act is to achieve maximum sustained production of high-quality timber products, “while giving consideration to values relating to recreation, watershed, wildlife, range and forage, fisheries, regional economic vitality, employment and aesthetic enjoyment.” (California Public Resources Code, Chapter 8, Section 4513).

The California Department of Forestry and Fire Protection (CDF, also known as “Cal Fire”) has enforcement responsibility for requirements of the Z’berg-Nejedly Forest Practice Act of 1973, as amended. CDF is also the lead agency for those parts of projects involving the scope of the Forest Practices Act. There are basic resource management policies of the Board and Forestry and Fire Protection and CDF concerning the removal of timber resources that apply to both Local and State Responsibility Areas:

1. If any timber operations (as defined by California Public Resources Code (PRC) Section 4527) are involved with a project, they must be approved by CDF prior to undertaking operations. A Timber Harvesting Plan (THP) may be required. A Timberland Conversion Permit (TCP) may also be required.
2. If a proposed project will result in the conversion of greater than three acres of timberland to non-timber use, a TCP is required prior to undertaking any conversion operations. Provisions and procedures for filing an application for a TCP are found in the PRC (Article 9, Division 4, Chapter 8).
3. PRC Section 1104.2 “Exemption for Conversion of Non-TPZ Land for Subdivision Development” allows for timber operations for the conversion of land not in TPZ for subdivision development exemptions from the TCP rules. A Notice of Exemption from Timberland Conversion Permit for Subdivision form is required.

Agricultural and Range Lands

Agriculture in Mt. Shasta during the early 1900’s was an important economic endeavor. Strawberries, apples, peaches and cherries were cultivated in the area. Today, agricultural operations are limited in both diversity and the extent of land use. The uses of land in the planning area for grazing of livestock is very limited. Only a few hundred acres of land remains devoted to livestock grazing in the western portion of the planning area.

A few orchards are also located within the area. Small portions of the planning area are classified into three categories by the state: “prime farmland, farm of local importance and grazing lands.”

Similar to Timber Production Zones for timberlands, protection zones with tax incentives are available to qualifying grazing and agricultural lands through the

Williamson Act. Land used for agriculture or for open space may be eligible for tax relief by entering into contracts where the property owner states that their land will be available for agricultural production and related uses for at least ten years. Lands under this act are referred to as "Agricultural Preserves." There are a number of Agricultural Preserves within the Mt. Shasta planning area. (Refer to **Figure 5-5, Open Space Lands**).

Conflicts between agricultural and residential uses have become an issue in parts of Siskiyou County. Noise, dust and chemical use associated with agricultural operations can cause conflicts with residential development. Local planning policies can assist in assuring that residential uses do not infringe upon existing agricultural practices. "Right-to-farm" ordinances generally place a priority on preserving properly operating agriculture uses and businesses. They establish a constructive notice for non-agriculture property owners that pre-existing agriculture use is a protected use and the non-agriculture use is considered an intrusion. Right-to-farm ordinances have been used throughout California to protect agriculture uses from nuisance lawsuits and from pressure to eliminate farm practices that are not compatible with residential uses. The purpose of such ordinances is to establish that residential uses are secondary uses in agriculture areas.

Newer trends in agricultural production provide opportunities for smaller-scale farms that may produce food and fiber on smaller parcels with greater attention to organic or other farming methods. These types of agricultural pursuits generally do not have the scope of impacts that corporate or other large-scale agriculture operations have with traditional farming practices that utilize heavy equipment and large quantities of chemicals. It makes it feasible to maintain a commercial-scale herb garden, orchard or berry farm on a parcel that is not only designated Resource Lands but also, in some cases, on lands designated for Low Density Residential use.

Mineral Resources

The only noteworthy mineral resource in the planning area is aggregate. The Spring Hill Mine, owned and operated by Sousa Ready Mix, is located within the city limits east of Interstate 5 at the north end of the City. Sousa Ready Mix also owns and operates the site known as the Upton Pit, outside the city limits on the west side of Interstate 5, south of Abrams Lake Road. The Upton Pit has been mined for aggregate for many years and the facility imports and processes aggregate from the Spring Hill Mine. The Upton facility contains the operation's concrete batch plant and crushing, screening and washing facilities.

The Spring Hill Mine is approximately 98 acres in size. A permit to mine was obtained from the County in 1980 before the site was annexed to the City. Excavated aggregate is hauled by dump truck from the mine on a private road to Abrams Lake Road and across Interstate 5 to the Upton site. Excavation of aggregate involves the use of a variety of heavy equipment including scrapers, loaders, dump trucks, dozers, and water trucks. Portable crushing and screening plants have been used at the mine to process aggregates. Most of the work at the mine is conducted during the summer months. The operators of the

aggregate mine have expressed concern that encroachment of residential and certain types of commercial uses near their facilities may increasingly impose constraints to the operation.

There are no publicly-known, economically viable deposits of precious metals in the Planning Area. The State does not identify the Planning Area as containing mineral deposits of statewide significance.

2. General Plan Objectives and Programs: Managed Production of Resources

Goal OC-4: Encourage and conserve lands for agricultural purposes.

Policy OC-4.1: Allow agricultural production lands to remain available for agriculture and rural uses.

Implementation Measures:

OC-4.1(a): Establish maximum residential densities of not more than one dwelling per ten acres on agricultural lands.

OC-4.1(b): Encourage retaining lands in agricultural uses through the execution of Williamson Act contracts to create Agriculture Preserves.

OC-4.1(c): Incorporate “right-to-farm” provisions into the revised Development Code for the City, and work with the County to enact similar provisions for lands in the unincorporated area.

Policy OC-4.2: Encourage small-scale farms and commercial gardens in the Planning Area.

Implementation Measures:

OC-4.2(a): In the Land Development Code, allow as permitted uses in Rural Residential lands small scale farms that do not use heavy equipment, chemical sprays, or result in noise generation exceeding acceptable residential standards, or generate traffic in excess of a normal home business.

OC-4.2(b): Include provisions in the Municipal Code to permit small-scale horticulture as a home occupation in low density residential districts, with criteria to ensure that such uses are compatible with the residential neighborhood.

Goal OC-5: Encourage and conserve lands for timber purposes.

Policy OC-5.1: Allow timber production lands to remain available for the harvest and replanting of timber resources, as well as rural and recreation uses.

Implementation Measures:

OC-5.1(a): Establish maximum residential densities of not more than one dwelling per twenty acres on private timber production lands which are not within a Timber Protection Zone (TPZ).

OC-5.1(b): Encourage retention of timber lands through the execution of contracts to create Timber Preserves and Timber Preserve Zoning under the provisions of the Z'Berg-Warren-Kline-Collier Forest Taxation Reform Act of 1976, which establish a basic 160-acre maximum density for residential development.

Goal OC-6: Ensure an adequate supply of construction minerals and aggregate in the Mt. Shasta area, and support the economic viability of existing mining and processing operations.

Policy OC-6.1: Allow mineral and aggregate resource lands at appropriate locations to be commercially developed for purposes of providing construction material and industrial minerals for the area.

Implementation Measures:

OC-6.1(a): Conserve mineral resource lands and support production at existing aggregate facilities by avoiding urban density residential development on surrounding parcels.

OC-6.1(b): Ensure the beneficial reuse of mined lands through the approval and implementation of a reclamation program.

OC-6.1(c): Reclamation plans approved by the City shall be carried out on a phased basis – not deferred to the conclusion of the mining activities – as identified in the application for a mining permit and reclamation plan approval.

OC-6.1(d): No new permits shall be issued nor expiring permits renewed without approval of or update to a reclamation plan.

OC-6.1(e): Residences and commercial uses having overnight accommodations (e.g., hotels, motels) should be

required to obtain a conditional use permit if proposed to be located within 300 feet of the property line of a parcel on which there is a permitted mining or related processing operation.

C. Scenic Areas, Cultural and Historical Resources, Parks and Recreation

1. Background

Scenic Areas

The City of Mt. Shasta is located in an area of substantial scenic variety and beauty. The landscape includes numerous features of significant aesthetic value, including the glacial-carved features of Mount Shasta, Castle Crags, Mount Eddy and the Eddy range. The mountain slopes are densely forested. The slopes gradually, and in some cases abruptly, make a transition to the meadow areas of the Strawberry Valley floor.

Views of these mountainous features can be seen from many locations along Interstate 5, Highway 89, Everitt Memorial Highway and other local roads, as well as at stationary positions within the Mt. Shasta planning area. Other scenic features, more immediate to the planning area, include Spring Hill, Quail Hill and Black Butte.

The section of Interstate 5 from the City of Weed to the State Highway 89 interchange has been designated as part of the Volcanic Legacy Scenic Byway All American Road by the Federal Highway Administration. Highway 89 is also designated as part of this All American Road.

Rainbow Ridge to the southwest of the City is a noteworthy scenic feature, largely because of its close proximity to the City, its high visibility from Lake Street (one of the primary gateways to the City), and its prominence near recreational resources including Lake Siskiyou and the Mount Shasta Resort. Rainbow Ridge defines the western rim of the City's General Plan planning area.

Not only are the mountains and forested ridges around the City of Mt. Shasta very scenic, there are valuable picturesque resources in and around the City on a smaller scale. The pastoral setting of Strawberry Valley and other areas, even though largely intermixed with low-density residential and other development, provides a visually pleasing environment.

In the City itself, the urban landscape in most cases has replaced the natural environment with a built environment dominated by buildings, streets and parking lots, and non-indigenous landscaping. The urban landscape also has scenic and aesthetic values. Within Mt. Shasta, visual resources in the foreground primarily consist of pavement, buildings and architectural features, landscaping and a variety of evergreen and deciduous trees, especially brilliant in Fall. Open space areas, including parks and recreation fields, contribute to the local landscape. Some "natural" areas within and around the City still exist because wetlands have been a physical and regulatory (under environmental

law) constraint to development. Additionally, significant stands of native trees remain due to steep slopes and lower-density development.

Architectural guidelines and other provisions to address the visual impacts of development in the City are considered elsewhere in this General Plan. The discussion below addresses the objective of protecting scenic resources on hillsides that face the planning area and proposes a strategy to accomplish this objective. This area of concern includes Rainbow Ridge. Since most of these areas are outside the city limits and in the land use jurisdiction of Siskiyou County, a major issue concerns how the City can work with the County to protect the scenic quality of these areas.

Related Siskiyou County Policies

There are several provisions in the Siskiyou County General Plan that call for protection of scenic resources. The Conservation Element of the County's General Plan (page 110) includes the objective: "To conserve, preserve and maintain the scenic lands of Siskiyou County." Under that objective the Conservation Element has "recommendations" that include the following two:

1. Continue to work for the conservation of Siskiyou County's scenic beauty.
4. Develop and apply zoning and building regulations designed to preserve the scenic areas of the county.

The Land Use Element of the County's General Plan contains policies pertaining to land development. However, as discussed in the Land Use Element of the City's General Plan, the County's Land Use Element does not include specific land use designations. Instead, it relies primarily on a series of "overlay maps" that are intended to recognize development constraint areas. The Land Use Element also contains various goals, objectives and policies pertaining to the development of various land uses in the context of the recognized development constraints.

Almost all private land in the unincorporated portions of the planning area is indicated as having "Woodland Productivity" constraints according to the County's General Plan Land Use Element Map 11. It might be assumed that the concept of "Woodland Productivity constraints" is analogous to the City's "Resource Lands" designation. However, the County's Land Use Element Policy 31 concerning Map 11, Woodland Productivity, states that the minimum parcel size shall be one acre on 0-15% slopes and 5 acres on 16-29% slopes. Furthermore, Policy 32 describes permitted uses as, "Single family residential, light commercial, light industrial, open space, non-profit and non-organizational in nature recreational uses, commercial/residential uses, and public or quasi public uses only may be permitted." (Siskiyou County Land Use Element, Page 28.)

In terms of conserving scenic resources, there is little correlation in the County's General Plan Land Use Element that the recognition of lands having Woodland Productivity constraints and related development policies will necessarily support protection of scenic resources in the Mt. Shasta planning area. This is primarily because Policy 31 allows very small parcels and Policy 32 allows many forms of development in areas that would otherwise be inferred to be designated primarily for resource conservation.

The Siskiyou County General Plan also contains a "Scenic Highways Element", adopted in 1975. The Scenic Highways Element is primarily intended, as described therein, to serve as a means of continuing coordination between the county planning functions and the State Division of Highways in the development of a county-wide system of scenic routes, appropriate portions of which, it was expected, would be adopted or expanded upon by each city and the state. The plan, consisting of a continuous county-wide scenic route system, was intended to serve as a guide to local jurisdictions for development of more detailed scenic route plans to supplement the county plan. (Siskiyou County Scenic Highways Element, Page 1)

The Siskiyou County Scenic Highways Element includes a "Scenic Route Element", which consists of text and maps that are, "designed to serve as a guide for establishment of programs and legislation dealing with the development of a system of scenic routes and the preservation and enhancement of scenic qualities, and of natural scenic areas to and visible from scenic routes." (Page 2) Section IV of that Element is entitled "Scenic Routes of Siskiyou County". Among the sections of highways recognized as "State Scenic Highway Master Plan Designated Routes in Siskiyou County" are Interstate 5 from its confluence with Highway 97 in Weed to its confluence with Highway 89 south of Mt. Shasta, and Highway 89 from Interstate 5 east to the Shasta County line. (These sections of highway eventually became part of the Volcanic Legacy Scenic Byway All American Road as recognized by the Federal Highway Administration.)

In the Siskiyou County Scenic Highways Element (Section V, Principles), policies are outlined to protect scenic characteristics. These policies are formatted with concern to land use and design issues along the identified scenic routes in: 1) the right-of-ways; 2) the scenic route corridors; and 3) the range of visibility from the scenic routes. For example, under "The Scenic Route Corridor" is the following principle: "6. Limit highway business and commercial development to necessary facilities to accommodate the traveling public." The Scenic Highways Element should be consulted for a complete discussion of relevant principles and implementation measures.

Proposed Viewshed Strategy

One of the issues that was particularly recognized for consideration in the 2007 update of the Mt. Shasta General Plan was to expand upon ways to protect scenic resources.

The three biggest threats to the loss of scenic quality in the hills around the City of Mt. Shasta are:

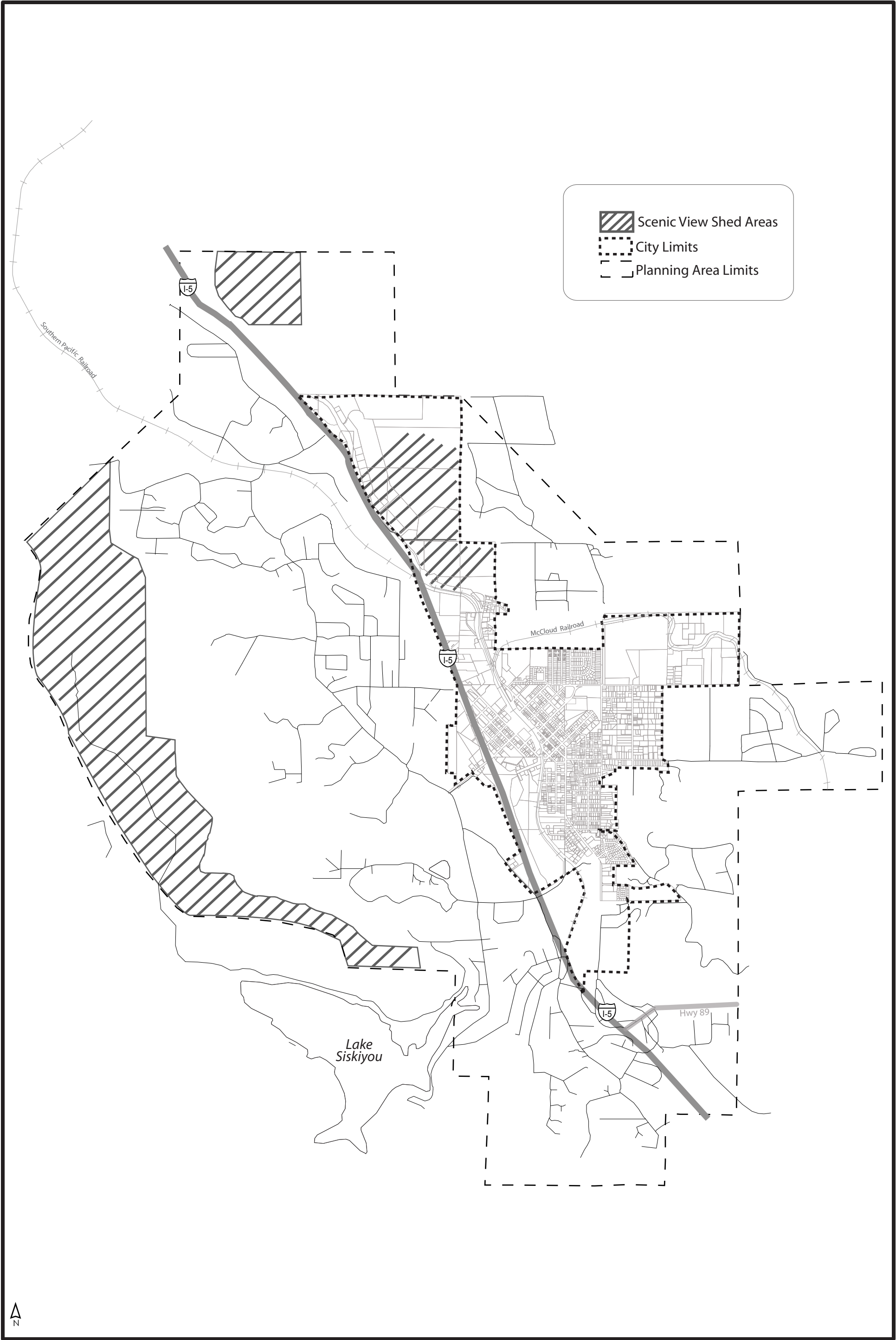
- Wildfires that burn off large areas of forested lands.
- Large-scale timber harvesting that clears large areas as opposed to selective, low-impact timber management and harvesting practices.
- Development of housing and access roads in sensitive viewshed areas that remove large amounts of vegetation, require extensive grading, and introduce glare and lights at night in areas that are naturally dark.

An initial strategy by which the City can work with the County to protect the viewshed resources of the hills around the City are to:

1. Identify important scenic areas as Scenic Viewsheds around the City. These are areas where development would have significant adverse impacts on scenic resources as viewed from the City.
2. Identify the Scenic Viewshed areas that are also designated in the Mt. Shasta General Plan as “Resource Lands”, and that are designated in the County General Plan as “Woodland Productivity Areas”.
3. Request that the County rezone these lands to an appropriate zoning district that will not allow development that is inconsistent with the objectives and policies of the County’s General Plan to conserve resources and protect scenic resources. Areas designated both “Resource Lands” in the City’s General Plan and “Woodland Productivity Lands” in the County’s General Plan should be zoned to preclude creation of small parcels (less than 20 acres in size) that are contrary to resource management and conservation objectives. The County should also regulate the permitting of structures that would adversely impact visual resources in these areas such as development on hill tops and ridge lines.
4. The City will need to be prepared to respond to development proposals and timber management plans in the vicinity that would significantly diminish the value of scenic resources within the City’s General Plan planning area. Concerning timber management, the City should encourage selective, low-impact management practices that reduce visual impacts. It should also be an objective of timber management practices in the area to periodically and selectively reduce the amount of forest fuels that contribute to high fire hazard potential.

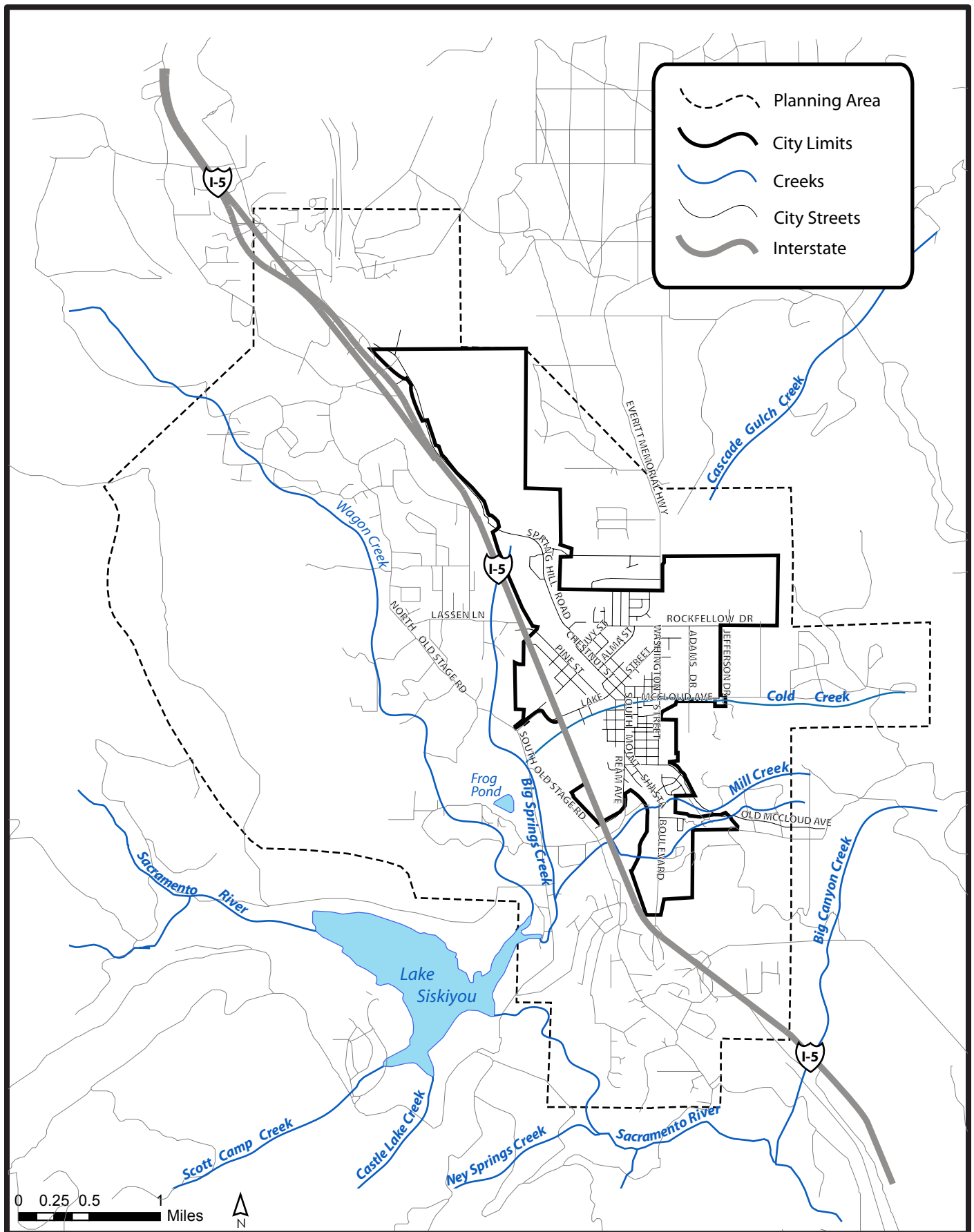
To support implementation of this strategy, **Figure 5-6, Scenic Viewshed Areas**, of this General Plan identifies notable viewshed areas, primarily as perceived from the City of Mt. Shasta. This figure is an adaptation of the Scenic Viewsheds that were identified in Figure 19 of the 1993 Mt. Shasta General Plan.

The City's General Plan contains a policy that calls for the County to rezone parcels in identified Scenic Viewshed areas into a zoning district that provides for resource conservation and management and precludes the creation of parcels less than 20-acres in size. It is not intended that this zoning would prohibit the construction of a single-family home and reasonable use of the property consistent with the County's General Plan, but it calls for the zoning to be consistent with related policies of the City's and County's general plans, including policies related to protecting scenic resources, and would discourage development that would be contrary to those policies.



Source: City of Mt. Shasta

FIGURE 5-6
SCENIC VIEW SHED AREAS



Source: PMC, 2007

FIGURE 5-7
MOUNT SHASTA WATERCOURSES
PMC

City Trees

The City of Mt. Shasta is fortunate to have many beautiful trees throughout the community. Trees are a valuable resource not only because of their contribution to the community's scenic resources, but for a variety of natural resource benefits as well as economic benefits related to tourism.

The City has been recognized for several years as a "Tree City USA" by the National Arbor Day Foundation. To qualify as a Tree City USA, a town or city must meet standards established by The National Arbor Day Foundation and the National Association of State Foresters. These standards were established to ensure that every qualifying community would have a viable tree management plan and program. The standards include an Arbor Day observance and a proclamation that recognizes the benefits of trees in a community setting. The proclamation recognizes that trees in a city increase property values, enhance the economic vitality of business areas, and beautify the community. It also states that trees can reduce the erosion of precious topsoil by wind and water, moderate the temperature and cut heating and cooling costs, clean the air, produce life-giving oxygen, and provide habitat for wildlife.

The City maintains a City Tree Ordinance. The stated purpose of the ordinance has been for the control, management, conservation, and planting of City trees to enhance the appearance of the City, and to protect related economic and environmental resources. The Tree Ordinance has only been applicable to trees in the public right-of-way in commercial and industrial zones. A related concern has been how street trees should be managed in residential districts.

Protecting trees in the City, and determining when trees should be removed for public safety and other purposes, are on-going concerns. An issue that receives periodic debate is the relationship between the objectives of maintaining street trees and what to do when tree roots are damaging the sidewalks around them, or, in the case of large, older trees, when limbs may present a safety hazard. Other issues concern: the definition of "heritage trees" or other special status trees that require special consideration; the list of tree species that should or should not be planted as street trees; how business owners should be consulted when a street tree is proposed to be planted or removed in front of their property, and; determination of who is financially responsible when sidewalk repairs are needed because of damage caused by tree roots.

It is expected that the City will periodically revisit the Tree Ordinance and work toward more comprehensive goals, objectives, and standards for management of this valuable resource. The City is also expected to consider the measures it will take over time to conserve and enhance trees in the community.

Cultural and Historical Resources

Prehistoric archeological sites have been found in the planning area along flat terraces of the major water courses in the area. This includes Wagon Creek, Big Springs and Cold Creek, and the now-inundated area of Lake Siskiyou once known as Rainbow Valley. Prehistoric sites have also been found in the foothills above the valley floor.

The archeological record of the native population is sparse. It is known that, at the time of European “discovery”, the area was settled by the Okwanuchu Indians and used primarily for winter hunting. The native population declined during the Gold Rush era.

The first documented Europeans to reach the Mt. Shasta area were members of the Hudson’s Bay Company. They were engaged in exploration and trapping expeditions in the 1820’s. Others followed in the 1830’s and 1840’s, often associated with government-sponsored surveys.

The impetus for development in the area occurred during the gold rush, even though gold was not found in the area until the 1890’s. The area served as a stopover for gold seekers who traveled down the Old Oregon trail through Shasta Valley. Settlers homesteaded the lush valleys of the mountains. The valley west of what is now the City of Mt. Shasta was named Strawberry Valley after the abundance of wild strawberries. The community that became “Mt. Shasta” was also known in the past as “Berryvale.”

Mt. Shasta’s second wave of growth was initiated with the coming of the Central Pacific Railroad in 1886. Early businesses in the area included a tavern, railroad depot, hotel, restaurant, store, blacksmith shop, brewery, and many saloons. In 1896, the town experienced a major fire. Very few original buildings of the era stand today because of this and subsequent fires in the community.

In the late 1800’s and into the 1900’s, the area became a center for rapid growth of the lumber industry. Many private sawmills were in operation in the 1850’s with larger operations occurring later.

In 1887, the town was called “Sisson” after J.H. Sisson, the owner of a local lodge. The City was incorporated as Sisson in 1905, but the name was changed to its current name by a vote of residents in 1922.

Historic sites (i.e., non-archeological sites) are not expected to date earlier than the 1820’s. The most likely historic sites would include old sawmills, wagon roads, historic foundations and other remnants of the early settlement period of Mt. Shasta.

Areas along streams such as Wagon Creek, Big Springs Creek and Cold Creek are generally considered to have a higher probability and sensitivity for containing prehistoric and cultural resources. Sensitivity is expected to be low

in the higher, eastern portions of the planning area and low to moderate throughout the remainder of the area.

Proposed development projects are subject to review under the California Environmental Quality Act (CEQA), and impact on cultural resources is one of the subjects that must be addressed in the environmental review process. Site-specific surveys are often required to determine the existence of cultural resources. CEQA Guidelines Section 15064.5 provides guidance in determining the significance of impacts on historical and unique archaeological resources. The lead agency for the project is required to identify potentially feasible measures to mitigate significant adverse changes to a cultural resource. A “substantial adverse change” includes demolition, destruction, relocation or alteration of historical resource or its immediate surroundings such that the significance of the resource would be materially impaired. A historical resource is considered significant if it meets one of the following criteria:

- The resource is listed in, or determined to be eligible for listing in, the California Register of Historical Resources.
- The resource is included in a local register of historical resources or identified as significant in an historical resource survey.
- The resource is determined by the lead agency to be historically significant, provided the determination is supported by substantial evidence. Generally, a resource shall be considered by the lead agency to be historically significant if it meets the criteria for listing on the California Register of Historic Resources.

Parks and Recreation

The vicinity of Mt. Shasta is fortunate to have an abundance of public open space and recreational lands. The Shasta Trinity National Forest, State parks and local parks offer an assortment of outdoor recreational opportunities.

Public parks are shown as Public Lands on the General Plan Land Use Maps in the Land Use Element.

Lands managed by the Shasta Trinity National Forest near the City provide thousands of acres of public open space. These lands are managed for multiple purposes including recreation, timber production, wildlife habitat and other resource uses. National Forest lands offer areas for hiking, fishing, cross-country skiing, hunting, sight-seeing, and other outdoor recreation uses. Recreation areas in the National Forest include: the Mt. Shasta Wilderness Area; McBride Spring, Castle Lake and Gumboot Lake Campgrounds; Bunny Flat, Sand Flat and the “Old Ski Bowl” recreation areas; and numerous other lakes, streams and recreation sites. Trails in the National Forest near Mt. Shasta include the Black Butte trail and various access routes up to Mt. Shasta from Bunny Flat, Sand Flat and the Old Ski Bowl. Refer to **Figure 5-5**,

Open Space Lands, for the location of National Forest lands in the planning area.

State Parks in the area include Castle Crags State Park, located south of Dunsmuir. Castle Crags State Park provides camping, picnicking, sight-seeing, hiking, and climbing opportunities. Within the planning area, there are approximately ten acres of land located north of the Fish Hatchery off of Old Stage Road that is managed by the California Department of Fish and Game. This site has a small parking area and a trail through a forested area.

Lake Siskiyou is a 430-acre lake developed in 1970 when Box Canyon Dam was constructed by the County. The lake property is managed by the Siskiyou County Flood Control District. Recreational development around the lake includes a concessionaire-operated campground with camping facilities, a boat ramp, boat rentals, a swimming beach and picnic facilities. The north shore of the lake is open for swimming, fishing and hiking. The County owns substantial undeveloped acreage around the lake. The Lake Siskiyou Trail is being developed to eventually serve as a complete trail system, approximately seven miles long, that will circle the lake.

An eleven-acre site near Lake Siskiyou off of North Shore Road is owned and maintained by the Siskiyou County Office of Education as a nature area. In addition, the Siskiyou Land Trust purchased the Sisson Meadows property in January of 2003 to protect a 7.5 acre wetland parcel near the center of town. This property is adjacent to Sisson Elementary School, and offers a unique opportunity to develop trails and boardwalks for environmental and educational opportunities.

Public recreation facilities and programs in the City of Mt. Shasta are administered by the Mt. Shasta Recreation and Parks District (MSRPD). The MSRPD operates as a special district with a service area that covers approximately 91,000 acres surrounding and including the city. Within the City the MSRPD operates the following parks: City Park, Shastice Park, the "Sports Park", and Sisson Field. The *Mt. Shasta Recreation and Parks District Facilities Master Plan* was completed in 2003.

The Mt. Shasta City Park consists of approximately 26 acres. The park facility includes five buildings that are utilized for meetings, social events, classes and other gatherings. The park also includes playground facilities, picnic areas, nature trails, a performance gazebo, restrooms and a grassed area used for passive use, community music events and other gatherings. The site of Big Springs, which is considered by some to be the headwaters of the Sacramento River, is located within the City Park. Portions of the park site are undeveloped.

Shastice Park consists of about 39 acres of land on the northeast side of the City. Park facilities include the Siskiyou Ice Rink, baseball fields, soccer fields,

tennis courts, playground equipment, outdoor restrooms, a concession building and storage buildings.

The area known as the “Sports Park” consists of about three acres of land owned by the City of Mt. Shasta and Sisson Elementary School and leased to the MSRPD. The existing park facilities include baseball fields, ball fields, a concession/restroom building and storage buildings.

The Sisson Field, adjacent to the Sports Park, consists of approximately six acres owned by the Mt. Shasta Union School District and leased to the MSRPD. The parcel is used as a multipurpose athletic field.

The *Mt. Shasta Recreation and Parks District Facilities Master Plan* identifies a number of short-term improvement needs as well as priorities and financial opportunities for such improvements. The Master Plan also includes a long-range plan for improvements such as a new aquatic facility and swimming pool, a skateboard park and a roof for the existing ice rink.

Table 5-2 below provides an inventory of public open spaces in the City:

Table 5-2 Open Space Areas in Mount Shasta	
<i>Open Space Area</i>	<i>Acres</i>
Mount Shasta City Park	26.4
Shastice Park	39.23
Sports Park	3.0
Sisson Field	5.9
Sisson Meadows	7.5
TOTAL	83.03

Standards for parks and recreation facilities are offered by the National Recreation and Park Association (NRPA). Over time, the commonly accepted minimum standard for the amount of park and recreation facilities needed in a community has been expressed as 10 acres per 1,000 people. The Mt. Shasta General Plan continues to express its ratio standard as:

1. A ratio of not less than five acres of neighborhood parks land per one thousand City population. [Implementation Measure OC-9.2(b)], and:
2. A ratio of not less than five acres of community park land per one thousand City population.[Implementation Measure OC-9.2(c)]

These two ratios together amount to a ratio of 10 acres per 1,000 in City population. It should be recognized, however, that the parks in the community are maintained by a district that is larger than the city limits and, therefore, the true ratio acreage of parks to population should be based on the population of the district's service area and not just the population of the City. The District's Facilities Master Plan projects a district service population of 11, 806 by 2010 and a population of 13,340 by 2020. The master plan notes that with increased population comes increased park usage and that, if using the figure of 10-acres per 1000 population, an acquisition of 40 acres would need to occur to meet the standard acre to population ratio from the NPRA. (District Facilities Master Plan, page 14.)

Facilities on school grounds provide some recreational opportunities for the general public, but the District's master plan expresses caution that school facilities cannot completely fill the need for public recreation since public access is restricted, especially during school hours.

Certainly, community needs in terms of park and recreation facilities are based on more than just acreage. The design and service features of resources and facilities are critically important. The District's Facilities Master Plan states, for example: "Based on the NRPA standards and District facility usage (due to popularity of individual sports), the Mt. Shasta District most needs a swimming pool, football field (multi-use field), volleyball courts, and a lighted basketball court." (District Facilities Master Plan, page 26)

The District's Facilities Master Plan addresses needed and proposed improvements of its main facilities, which may be described as "community parks". In addition to the community parks, there will be need to consider the establishment of neighborhood parks, especially as land use development progresses at the north and south ends of the city.

Neighborhood parks serve as the recreational focus of a neighborhood or residential area within an approximate 10-minute walking distance. They provide a balance within the overall park system by providing informal, unstructured recreation opportunities close to home and, as opposed to larger community parks, serve a specifically local recreation need. They should be designed to accommodate a wide variety of age and user groups living in the service area including children, teens, adults, elders, and people with physical disabilities. The layout of neighborhood parks should take advantage of natural on-site features to help create an appealing and unique amenity to the residential areas in which they are located.

Although park features will vary according to the opportunities of each site, the typical site characteristics and amenities listed below in Table 5-3 describe features that are often included in neighborhood parks. (These features were adapted from the Redding Parks, Trails, and Open Space Master Plan – 2004.)

**Table 5-3:
Typical Neighborhood Park Site Characteristics**

Size:	1 acre to 10 acres
Access:	Smaller parks are sited within residential subdivisions or neighborhoods; larger sites are best located with access from collector or arterial streets. Each site should be accessible from throughout its service area by way of interconnecting trails, sidewalks, or low-volume streets. Ideally, service areas are uninterrupted by non-residential roads and other major physical barriers.
Service Area:	½ mile radius
Parcel Shape:	Should have regular shape with sufficient level terrain to accommodate various types of sports activities.
Landscape:	<p>Irrigated turf; ornamental plants; shade trees; may contain natural features such as streams, ponds, wetlands or unique vegetation.</p> <p>Amenities that are typically developed at a neighborhood park may include:</p> <ul style="list-style-type: none"> • Tot lot (1-5 yrs.) • Play lot (6-12 yrs.) • Walking paths that can accommodate wheelchairs, bicycles and tricycles. • Open play turf areas or, on larger sites, a multi-purpose sports field (e.g., 200' x 200' in size) • Full basketball court/multi-purpose court • Bicycle racks • Shaded picnic areas • Signage/ information kiosk • Appropriate and accessible site furnishings including trash receptacles, benches, drinking fountains. • On-site parking contiguous to site • Security lighting • Restroom facilities should be required for parks 10 or more acres in size, or where practice fields and/or group picnic areas are provided.

Optional amenities in a neighborhood park may include:

- Barbeque facilities
- Tennis or volleyball courts
- Special game areas
- Backstops
- Water play area
- Community garden areas

Recognizing that recreation and park services in the planning area are provided by the Mt. Shasta Recreation and Parks District and not the City of Mt. Shasta, the City, in the context of its General Plan, needs to address the aspects of recreation and open space that are not within the purview of the District. This includes land use designations for parks and recreation areas, as well as policies that require or otherwise facilitate the provision of land and facilities for those purposes. Such policies are directly related to residential development.

The Mt. Shasta General Plan includes a land use designation of “Public Land and Parks” for the area, approximately 11 acres in size, around the old mill pond at the north end of the Roseburg Property. Initial design proposals have been to restore, to some extent, a pond on the site with a walkway around it and amenities for fishing, including handicapped access and fishing platforms. The pond might also serve as a storm water detention facility. The walkway would connect with a network of trails leading downtown and west under Interstate 5 to connect with Old Stage Road. A neighborhood park has also been proposed nearby. One challenge for developing a neighborhood park in this area is to provide a safe pedestrian crossing of South Mt. Shasta Boulevard from the residential areas on the east side of the street.

Given that there are no recreation facilities at the north end of the city at this time (i.e., 2007), a large neighborhood park and possibly one or more smaller parks will be needed as the Spring Hill Area develops. This need is also addressed in the Land Use Element concerning future development of the Spring Hill Area.

If it can be accepted that an overall mutual goal of both the Recreation and Parks District and the City concerning public recreation is to ensure optimum amounts and quality of recreation and open space resources for the residents of their respective service areas, then it is incumbent upon both entities to work together on this common goal. An important issue is to ensure that, once parks have been developed, there is adequate funding to maintain the facilities. The District has often expressed concern that, although it would be good to develop new parks and trails in the community, the District is already challenged to maintain existing facilities and make the proposed improvements that are already recognized in its Facilities Master Plan with its limited funding sources. The District maintains that proposals for new facilities

need to include funding mechanisms for on-going maintenance before the District can commit to assuming additional responsibilities.

To close this discussion of parks and recreation resources, more can be said about the Sisson Meadows project. In 2002, the Siskiyou Land Trust, a local non-profit corporation, secured funding and purchased the property that is now known as "Sisson Meadows", located south of Sisson School and bordered by Lake and Castle Street. The property is 7.5 acres in size and includes grasslands, two creeks, and wetlands. Proposed projects to enhance this valuable piece of open space in the heart of the city includes: restoration of the creeks on the property; landscape restoration with removal of non-native species and planting of native species; creation of a small pond; construction of walking trails and boardwalks through the wetland meadow; and development of an interpretive and environmental education center.

Quimby Act

Local governments in California provide an important role in the establishment of parkland and open space for recreational purposes. The 1975 Quimby Act (California Government Code Section 66477) authorized cities and counties to pass ordinances requiring developers to set aside land, donate conservation easements, or pay in-lieu fees for park improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of existing park facilities, although they may be used for park rehabilitation.

The intent of the Quimby Act was to assist local municipalities in providing adequate open space for their citizenry by requiring developers to mitigate the impacts of residential development projects. The provisions give authority for passage of land dedication ordinances only to cities and counties. However, if an agency other than a city or county is responsible for providing park and recreation services (as is the case with the Mt. Shasta Recreation and Parks District), the park agency ultimately is the recipient of the land dedication and/or in-lieu fees.

In 1982, the Quimby Act was substantially amended to: further define acceptable uses of, or restrictions on, Quimby funds; provide ratio standards for recreation acreage and population; and provide formulas for determining exactions. Local Quimby Act ordinances must include definite standards for determining the proportion of land to be dedicated and the amount of the fee to be paid.

Chapter 17.42 of the City of Mt. Shasta's Municipal Code implements the Quimby Act by establishing standards for the dedication of open space and/or in-lieu fees and defining how Quimby Act monies can be used. The provisions of that chapter establish exemptions, standards for improvements and credits for private park areas, and address the transfer of dedicated land.

2. General Plan Objectives and Programs: Scenic Resources, Cultural Resources, Parks and Recreation

Scenic Resources

Goal OC-7: Protect the scenic resources of the Mt. Shasta area.

Policy OC-7.1: Promote the protection of the scenic beauty of the Mt. Shasta area through appropriate zoning, development standards, and the development review process involving lands in both the City and outside the city limits. The County is encouraged to support and help implement this policy.

Implementation Measures:

OC-7.1(a): Locate new development outside of scenic vistas and off of prominent slope exposures and ridge lines, except when land in such areas is specifically zoned and planned for development, in which case special design standards shall be required to reduce visual impacts.

OC-7.1(b) Establish and enforce standards for new development to protect visible hillsides and ridges. These standards will address screening, design, and setbacks from the tops of ridges.

OC-7.1(c): Establish and enforce standards for outdoor lighting to reduce light pollution.

OC-7.1(d): Require undergrounding of all new utilities wherever practical. Encourage other agencies and entities to underground their facilities. Where undergrounding is impractical, aboveground lines shall be located to minimize impacts on sensitive scenic areas.

OC-7.1(e): Recognizing the visual sensitivity of the former Roseburg mill property, including views from Interstate 5, the City will continue to exercise special care in reviewing and approving design plans for improvements on the site, consistent with the provisions of the property's overall development plan.

Policy OC-7.2: To protect scenic viewsheds and related natural resources, the City shall maintain the policy position that, within the

City's General Plan planning area, the County should not allow the creation of parcels less than 20-acres in size on lands designated in the County's General Plan as a Woodland Productivity constraint area unless the County first amends its General Plan to designate the site for a specific development-type of land use (e.g., rural residential, commercial, etc.).

Implementation Measure:

OC-7.2(a): The City shall encourage the County to rezone land that is within Woodland Productivity constraint areas, as identified in the County's General Plan Land Use Element, and that is also in a scenic viewshed area and "Resource" land use designation as recognized in the City's General Plan, to zoning districts that prohibit division of property to less than 20-acres, and otherwise restrict development that will significantly impact resource values.

Policy OC-7.3: Conserve and enhance public street trees and trees on public property, with effective policies to allow for trimming or removing trees that present a substantial safety hazard. Encourage voluntary conservation and enhancement of tree resources on private property.

Implementation Measure:

OC-7.3(a): The City shall develop and maintain ordinances that provide comprehensive standards to support the conservation and management of tree resources.

OC-7.3(b): The City will continue to participate in the "Tree City USA" program, including the annual observance of Arbor Day and the related planting of trees.

Cultural Resources

Goal OC-8: Preserve areas of significant cultural resources.

Policy OC-8.1: Ensure that appropriate measures are taken concerning protection or study of significant cultural resources.

Implementation Measures:

- OC-8.1(a): When projects are proposed on lands identified as having High Cultural Resource Sensitivity, the application shall be accompanied by a Cultural Resources Reconnaissance and Archival Report conducted and compiled by a qualified archaeologist. If there is the likelihood that cultural resources are present on the site, the City may require field study to determine the location, potential for disturbance, and scope of mitigation.
- OC-8.1(b): When projects are proposed on lands identified as having Medium Cultural Resource Sensitivity, the application shall be accompanied by an Archival Report compiled by a qualified archaeologist. If there is likelihood that cultural resources are present on the site, the City may require a field reconnaissance or other similar study to determine the location, potential for disturbance, and scope of mitigation.
- OC-8.1(c): The scope of mitigation shall conform to the requirements of the California Environmental Quality Act with an emphasis on avoiding, if feasible, disturbance of the cultural resource. Avoidance may be accomplished by capping the site, if appropriate.
- OC-8.1(d): When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or architectural remains be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with an appropriate specialist (e.g., archaeologist or architectural historian). The project proponent shall be required to implement mitigation necessary for the protection of cultural resources.

The City and the project applicant shall consider mitigation recommendations presented by a qualified archeologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

OC-8.1(e): When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

OC-8.1(f): When approving construction projects, the City shall incorporate the following mitigation measures, or similar measures that would fulfill the intent: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement mitigation necessary for the protection of paleontological resources.

The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place,

excavation, documentation, curation, data recovery, or other appropriate measures.

Parks and Recreation

Goal OC-9: Provide park and recreation facilities to meet the growing population of Mt. Shasta.

Policy OC-9.1: Strive to provide neighborhood parks to meet the needs of developing areas.

Implementation Measures:

OC-9.1(a): Require developers of residential projects to contribute land for park sites and/or pay in-lieu fees to improve parks in the vicinity at the maximum rate allowed by law.

OC-9.1(b): Maintain the land development code to reflect the appropriate play area/ neighborhood park contribution requirement.

Policy OC-9.2: Continue to meet community park and recreation needs.

Implementation Measures:

OC-9.2(a): Encourage community and non-profit organizations to develop or operate locally-oriented park and recreation facilities using funds collected through Quimby Act or developer impact fees.

OC-9.2(b): Maintain a ratio of not less than five acres of neighborhood parks per one thousand City population.

OC-9.2(c): Maintain a ratio of not less than five acres of community park land per one thousand City population.

OC-9.2(d): Utilize the provisions of the Subdivision Map Act and the City Municipal Code to collect park capital improvement and acquisition fees from new residential development pursuant to the Quimby Act.

OC-9.2(e): The City shall encourage the County to require that new residential development projects outside the city limits but within the Mt. Shasta

Recreation and Parks District provide a “fair share” contribution (similar to the City’s Quimby Act requirements) to help support the provision of district recreation facilities.

D. Public Health and Safety Open Space Issues

Some of the subjects addressed in the following section are more fully discussed in the Safety Element of this General Plan. Those subjects include seismic hazards, slope instability, fire hazards and flood plains. The discussion of those and other public health and safety issues in the context of the Open Space/Conservation Element relates primarily to whether specific open space policies should be considered to address related concerns

1. Background

Seismic Hazards

Seismic issues are addressed in the Safety Element. There are no identified earthquake rupture sites in the planning area. Because seismic hazards in the area are of general and relatively low risk, it is not necessary to set aside open space lands for seismic hazard protection. Site-specific issues concerning proposed development projects are addressed by the City and the County in project review processes pursuant to the California Environmental Quality Act.

Slope Instability

Topography with the potential for landslide hazards exists west of Interstate 5 near the Shasta-Trinity National Forest along Rainbow Ridge and Box Canyon. Steeper areas such as Quail Hill and south of Old McCloud Road may also be subject to slope instability. Mud and debris flow channels (with the potential to be related to a combination of slope instability and volcanic activity) exist within the planning area as identified in the Safety Element, **Figure 6-2, Potential Mud Flow Channels**. These issues are addressed in the Safety Element. The City has determined that there is no need for open space to be specifically designated for reasons of potential slope instability. When projects are proposed, the California Environmental Quality Act requires site-specific consideration of the potential for slope instability and other geologic hazards.

Fire Hazards

Fire hazards within the planning area include the potential for wildland and structural fires. The high risk of wildland fires exists in several portions of the planning area, including the timbered areas west of North Old Stage Road and areas on the east side of the City that are intermixed with or adjacent to timber and brush lands. This issue is addressed in the Safety Element. Land use densities and fire safety requirements address the issue of public safety and fire hazards without requiring designation of additional open space.

“Defensible space” around homes and other structures may be required, but this is not classified as “open space”.

Flood Plains

Flood hazards in the area are primarily limited to areas along local streams, at Lake Siskiyou and in Box Canyon. Stream flooding occurs during periods of seasonal high flows and is restricted to the immediate vicinity of streams. A narrow fringe area around Lake Siskiyou is shown for possible flooding during periods of high precipitation. Also, the Box Canyon area below the lake is subject to flood hazards from excessive precipitation and the potential for structural failure of the dam. These issues are adequately addressed in the Safety Element.

Water Quality

The preservation of water quality is important for community use as well as for the protection of fish and wildlife resources. Domestic water supplies in the planning area are primarily derived from spring-fed and groundwater resources. Water quality is also discussed above in this Element as a natural resource under the topic, Water Resources.

The quality of groundwater is largely determined by the geologic formation from which the water is derived. Wells located in alluvial, morainal and glacial outwash deposits generally range in depth from 50 to 150 feet and produce water of good quality. Water derived from dense, deeper volcanic deposits often produce higher quality water. Water quality sampling in the planning area has indicated very good water quality with low mineral content, hardness, conductivity and dissolved solids.

The water quality of streams in the area varies. The 1993 General Plan reported that the upper reaches of Big Springs Creek is known to have outstanding water quality characterized by cold temperatures, high dissolved oxygen, a near-neutral pH and very low dissolved constituent levels. However, the lower reach of the creek was found to experience periods of fecal coliform contamination and increased levels of sedimentation from upstream development, construction and other forms of disturbance. The California Department of Fish and Game has expressed concern regarding these periods of reduced water quality and their impacts upon the Hatchery.

Wagon Creek is relatively clear and cold most of the year. This stream, according to the 1993 General Plan, has experienced periods of high iron, dissolved solids, and occasionally high fecal coliform counts.

Setbacks from water courses are generally required by both the City and the County for development activity, including the installation of septic tanks. Although not formally designated as “open space”, these setback requirements result in a form of open space along water courses and help protect riparian habitat as well as water quality.

Provisions to protect the City's valuable spring water resources are addressed in the Land Use Element. See Policy LU-18.5 and related implementation measures.

Air Quality

Although the issue of air quality does not necessarily involve the subject of "open space", it is an important conservation issue. Healthy air is a highly valued resource.

The planning area is located within the Northeast Plateau Air Basin. Air quality issues in the Planning Area are under the jurisdiction of the Siskiyou County Air Pollution Control District (APCD). An air quality monitoring station is located along North Old Stage Road within the vicinity of the City of Mt. Shasta. Fine particulate matter is measured at this monitoring station. Ozone levels are measured at an air quality monitoring station located in Yreka, approximately 35 miles north of the City of Mt. Shasta.

The County is in attainment of national and state air quality standards for all criteria pollutants. In the past, the County has been in non-attainment for fine particulate matter (Pm10). Sources of particulate matter include major forest fires, slash burning, wood stove use, dust from unpaved roads and sand and gravel operations. Stationary sources of air pollution are regulated by the APCD through a permit process. Regulations are in effect regarding the emissions produced by new wood stoves.

Vehicular emissions are one of the primary sources of ozone. Ozone is also generated by the use of cleaning solvents, paints, and other volatile organic compounds. The critical period for ozone is in the summer months when hot and dry conditions favor formation of ozone.

Concerning the subject of woodstoves and particulate matter, the Environmental Protection Agency (EPA) maintains and periodically updates its list of certified wood stoves and wood heating appliances. To be certified, the appliance is tested by an accredited laboratory to meet particulate emission limits. EPA's mandatory smoke emission limit for woodstoves is 7.5 grams of smoke per hour (g/h) for non-catalytic stoves and 4.1 g/h for catalytic stoves.

All wood heating appliances subject to the New Source Performance Standard for Residential Wood Heaters under the Clean Air Act offered for sale in the United States are required to meet these emission limits.

Local jurisdictions sometimes adopt ordinances to regulate the installation of new woodburning appliances to reduce sources of particulate matter. They may, for example, specify that only pellet-fueled wood heaters or new EPA certified wood heaters and fireplaces may be installed in new residences and commercial buildings. When a community has such an ordinance, applicants planning to install a woodburning appliance are typically required to provide documentation indicating that the appliance meets these requirements. In

addition, woodburning appliances may be required to be brought into compliance with the ordinance if they are reconstructed or if additions, alterations, or repairs are made to the appliance.

Although all woodstoves and fireplace inserts, and some factory-built fireplaces, sold in the United States now must meet EPA standards, there will continue to be a number of older stoves that do not meet current standards. According to EPA, as few as 20 old non-certified woodstoves can emit more than one ton of fine particulates into the area in one year. EPA promotes, and many communities have implemented, a program called a “Woodstove Changeout Campaign”. This is a voluntary program designed for areas with special particle pollution problems whereby incentives are offered, including cash rebates (e.g., \$500), to encourage the replacement of old non-certified stoves with new certified appliances that burn more cleanly and efficiently. The replacement may be EPA-certified wood-burning stove or a pellet, gas or propane appliance. In some communities the program is co-sponsored by the local utility company.

2. General Plan Objectives and Programs: Public Health and Safety

Water Quality

Goal OC-10: Protect the drinking water of Mt. Shasta residents.

Policy OC-10.1: Maintain a safe drinking water supply.

Implementation Measure:

OC-10.1(a): Comply with drinking water standards.

Policy OC-10.2: Protect the City’s drinking water sources from contamination.

Implementation Measures:

OC-10.2(a): When reviewing development proposals for projects with the potential to contaminate drinking water supplies, ensure that the environmental and project review process incorporates appropriate measure to avoid drinking water contamination.

OC-10.2(b): Enforce provisions of the building code requiring anti-siphon devices on non-residential structures to prevent backflow of contaminated water into the drinking water supply.

Air Quality

Goal OC-11: Strive to maintain clean air in the planning area.

Policy OC-11.1: Work with the County to maintain attainment status in the planning area.

Implementation Measures:

OC-11.1(a): Send copies of applications for projects that produce air emissions for review and comment by the Siskiyou County Air Pollution Control District.

OC-11.1(b): Work with the Siskiyou County Air Pollution Control District to implement programs designed to maintain attainment standards.

OC-11.1(c): If a wood-burning appliance (e.g., a woodstove) is proposed, an EPA-certified appliance will be required to aid in reducing cumulative effects from wood smoke emissions. For existing structures having older, non-certified wood stoves, encourage the change-out of the non-certified stoves with newer certified stoves or other clean-burning heating appliances.

OC-11.1(d): To limit the adverse air quality impacts of outdoor burning that affect surrounding property owners, the City will encourage the adoption and enforcement of standards, including standards that would need to be adopted by the County Air Pollution Control District, to significantly reduce outdoor burning (e.g., leaves, pine needles and other yard material) within and in the vicinity of the City.

OC-11.1(e): To help reduce outdoor burning and the disposal of organic waste in the local transfer station, the City will encourage expanded community and/or commercial operations for composting or otherwise recycling lawn, garden and other suitable organic material.

E. Energy Resources

1. Background

Energy Sources

PacifiCorp is the primary electric power service provider for development in the City of Mt. Shasta and the planning area. According to its website, PacifiCorp is one of the West's larger utilities, serving more than 1.6 million customers in six western states. PacifiCorp was formed in 1984 when its electric utility, natural resource development and telecommunications businesses grew into full-fledged enterprises. In 1989, it merged with Utah Power & Light and continued doing business as Pacific Power and Utah Power. The company was acquired by Mid-American Energy Holdings Company in 2006. Today, PacifiCorp consists of three business units, aggregating up to PacifiCorp: PacifiCorp Energy, containing the electric generation, commercial and energy trading functions, and the coal-mining operations of the company, is headquartered in Salt Lake City, Utah; Pacific Power, which delivers electricity to customers in Oregon, Washington and California, is headquartered in Portland, Ore.; and Rocky Mountain Power, which delivers electricity to customers in Utah, Wyoming and Idaho, is headquartered in Salt Lake City, Utah. PacifiCorp is headquartered in Portland, Ore.

PacifiCorp provides power from a variety of sources including coal, hydro-electric, natural gas, biomass, wind and geothermal. The company's generating plans have the capacity to provide 8,470 megawatts of power from 69 generating plants. The company's website indicates that the company intends to invest in more renewable power generation with a goal of generating 400 megawatts from renewable resources by the end of 2007. Company literature also indicates a goal of generating 1,400 megawatts of power through renewable resources in the next ten years. Currently, approximately 219.9 megawatts of power is generated from four wind farms and one geothermal plant.

The company also operates a program entitled "Blue Sky", which allows consumers to "purchase" clean, wind energy in 100 kilowatt-hour (kwh) increments, called blocks. Once a consumer enrolls in Blue Sky, PacifiCorp buys renewable energy on their behalf equal to the Blue Sky purchase and helps develop small-scale renewable energy projects in the communities they serve. The customer can buy an unlimited number of blocks. Nine blocks per month covers 100 percent of an average California home's electricity use.

While there is one hydroelectric power generation plant within the planning area at Siskiyou Lake, this facility is not operated by PacifiCorp but by Synergics Incorporated. The power plant generates up to five megawatts or

approximately 18,364 megawatt hours.¹ The California Energy Commission shows that, as of 2001, there were ten operating renewable energy generation plants in Siskiyou County and with several more being planned.

Energy Consumption and Conservation

A typical California resident uses 6,732 kilowatt hours (kWh) of electricity on an annual basis.² Using the Department of Finance estimate of 2.101 persons per unit, the average home in Mt. Shasta would be expected to consume approximately 14,144 kWh per year. During the planning horizon of this General Plan, it is anticipated that 824 single family homes will be built within the planning area. This amounts to an increase need of 11.65 gigawatts (GWh) per year.³ There are a number of factors that must be considered when addressing energy and energy conservation. New homes, for example, meet building code requirements for insulation and have new appliances that are usually part of the Energy Star® program. Heating and cooling systems for new homes are more efficient, as are windows and doors. Older structures, with their aging systems, present the best opportunity for energy savings through renovation and refit programs. As older homes are often part of the affordable housing inventory, investment in these structures often provides double benefit for the community: energy savings and cost savings, which is especially beneficial for low or very-low income residents.

Structure design also plays a part in energy consumption. Since 1974, the average size of a single family home has increased from 1,695 square feet to over 2,349 square feet, while the occupants per structure has dropped from 3.1 persons per unit in 1974 to 2.1 persons in 2004. Even though homes are more energy efficient, the increase in building size and decrease in numbers of occupants means that more energy is used per capita.

Conservation of energy can only address part of the future energy demand that growth will place on California and the City. Increases in energy costs will affect everything from the cost of construction materials to the cost of shipping materials to the community and the development of roads and building design. More efficient and higher density design also reduces the cost to residents. Being able to walk or bike to jobs, recreation or shopping reduces the need to drive. With energy costs in the area being much higher than the national average, the reduction of even one or two vehicle trips a day will be noticed by residents.

It is inefficient, and therefore expensive, to provide municipal services to very low density homes. Consider the simple act of patrolling in a police car. Homes that are farther apart take more gasoline to patrol than homes that are closer together because the vehicle must travel farther to serve the same

¹ *California Renewable Technology Market and Benefits Assessment*, California Energy Commission, November 2001.

² http://www.energy.ca.gov/electricity/us_percapita_electricity_2003.html

³ $14,144 \text{ kWh} * 824 = 11,654,656 \text{ kWh} / 1,000,000 = 11.65 \text{ GWh}$

number of residents. This makes the cost-per-resident served higher in very low density residential areas than in higher density development. The same holds true for water lines, wastewater collections systems, storm drainage facilities and nearly every other public service provided. More efficient design reduces the overall cost of constructing and maintaining services.

Increasing the number of housing units on a given area of land (i.e., increasing density) is not the only answer. Simply grouping housing units closer together can also have a negative effect on the neighborhood and the community. Good neighborhood design is essential. Increasing density will require that open space and other smart design features be built into the project from the onset, rather than added as a function of the approval process.

Energy Efficiency

The US Green Building Council implements the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™, which is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The LEED program is a rating process intended to evaluate design. By establishing a rating system, the process of rating a building will influence design and result in better planned and implemented projects. Because LEED relies on emerging technology, in its current form LEED buildings are typically more expensive to construct but less expensive to operate over time. As such, LEED buildings are often government, educational or large corporate structures, although homes are starting to meet the standards. Over time construction costs are expected to drop, making LEED Certified Buildings affordable for smaller projects and individual homes.

The US Green Building Council has also produced a pilot version of neighborhood design called LEED-ND. Intended to enhance and foster more sustainable neighborhoods, many of the LEED-ND principles can be integrated into project design without adding cost. These include:

1. Encouraging and implementing a more compact urban form with a mix of uses.
2. Paying attention to the orientation of homes emphasizing the southern exposure.
3. Appropriate planting of landscape features (for example, planting deciduous trees on the south exposure to give shade in the summer but allow solar exposure in the winter).
4. Encouraging PacifiCorp to keep retro-fitting programs for older buildings.

5. Encourage appropriate, and correctly installed, on-site energy generation.
6. Provide connectivity to walking and bicycle paths.
7. Encourage and support recycling programs.
8. Support community gardens and local agriculture.
9. Encourage use of drip irrigation and timers to make effective use of water.
10. Investigate and support the use of reclaimed wastewater for irrigation of open space.

These concepts are supported in the policies of the Mt. Shasta General Plan and will be implemented through the zoning and design manuals that follow adoption of the plan.

As noted in the discussion on Green House Gas emissions, the State of California will be establishing goals for the reduction of emissions in the next few years. It is likely that these goals will also address energy conservation methods in an effort to use less fossil fuel. At the time the state guidelines are enforced, many agencies may need to either update their general plans, or adopt energy elements to implement the guidelines. The following goals, objectives and implementation measures are intended to help encourage energy efficiency within the Mt. Shasta General Plan Area:

2. General Plan Objectives and Programs: Energy Resources

Goal OC-12: Strive to conserve energy resources.

Policy OC-12.1: Promote incentives for the use of site planning techniques, building orientation, building materials, and other measures that will reduce energy consumption.

Implementation Measures:

OC-12.1(a): Where feasible, require all new buildings and subdivisions to be designed and oriented in such a way as to take maximum advantage of the sun and winds for natural heating and cooling.

OC-12.1(b): In addition to enforcing the energy efficiency requirements of state law and the Uniform Building Code, encourage the incorporation of additional energy conservation techniques, such as innovation building construction, high-efficiency HVAC systems, etc. in new construction.

OC-12.1(c): Work with energy providers to develop and implement programs to reduce electrical

demand in residential, commercial and industrial developments.

OC-12.1(d): Work with energy providers to educate the public in energy conservation techniques and products.

OC-12.1(e): Support weatherization retrofit and other incentive programs designed to replace inefficient heating and cooling systems with more efficient systems.

OC-12.1(f): Continue to support recycling efforts.

OC-12.1(g): Evaluate use of treated wastewater for irrigation of open space.

Goal OC-13: Encourage the development of sustainable energy sources.

Policy OC-13.1: Work with individuals and companies to correctly site, connect and operate alternative energy systems such as wind, solar, hydro, and other sustainable sources.

Implementation Measures:

OC-13.1(a): Support the development of alternative sources of energy such as roof-mounted solar panels, fuel cells or new technology.

OC-13.1(b): Publicize and support energy conservation incentive programs offered by utility companies, such as rebates to consumers who replace appliances with more energy-efficient models.

OC-13.1(c): Support appropriately located and operated co-generation facilities.

OC-13.1(d): Encourage and support alternative fuel sources such as bio-diesel.

Goal OC-14: Focused community planning concerning efficient energy use and conservation, and local energy production.

Policy OC-14.1: The City shall prepare a General Plan Energy Element when the City has adequate resources and is prepared to initiate such a project.

F. Climate Change

1. Background

Scientific consensus supports the conclusion that humans are impacting global climate by increasing greenhouse gases (GHG) in the atmosphere. There is a vast body of credible scientific evidence to support the fact that global climate change is real. The Intergovernmental Panel on Climate Change (IPCC), a body created by the World Meteorological Organization and the United Nations Environment Program, was created to assess peer reviewed scientific and technical studies and reports in order to present “comprehensive, objective, open and transparent” information on climate change. (reference – *Principles Governing IPCC Work*, 1998 and amended 2003) According to the latest scientific research available at the time of this General Plan, the IPCC Fourth Assessment Report made the following statement:

“Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture.”⁴

The Report goes on to state that “warming of the climate system is unequivocal” and scientists agree that there is a very high confidence (9 out of 10 chance of being correct) “that the globally averaged net effect of human activities since 1750 has been one of warming.” This assessment is based upon peer reviewed scientific studies from a body of international scientists, which have taken into account changes in the climate system due to natural causes such as solar energy variations from the sun. These natural variations do not explain current rates or levels of warming or atmospheric concentrations of GHG.

California ranks 12th in the world in GHG emissions, but has taken the lead in creating stringent GHG emissions reduction policies. Assembly Bill 32 (adopted in 2006) will require the implementation of measures to reduce the state’s GHG emissions to 1990 levels by 2020 – an expected 25% reduction. The main source of atmospheric carbon dioxide in California is the burning of fossil fuels, comprising 98% of gross carbon dioxide emissions.⁵

Climate change is a global problem, and GHGs impact the global atmosphere. This means that activities that take place in one part of the world

⁴ Contribution of Working Group I to the Fourth Assessment Report of the IPCC. *Climate Change 2007: The Physical Science Basis*. February 2007.

⁵ California Environmental Protection Agency. *Climate Action Team Report*. March 2006.

impact the entire atmosphere, unlike criteria pollutants that have an impact on local air quality.

The City of Mount Shasta would be prudent to mitigate and prepare to adapt to climate change within the timeframe of this General Plan and into the future. Quantifying, managing and reducing GHG will help protect the health of the community, ecosystems, and biodiversity from dangerous climate changes. Reducing GHG also contributes to the achievement of various municipal goals such as improving air and water quality and fostering economic development.

For the purposes of this General Plan, most climatologists agree on the following:

1. Northern California will experience an increase in individual storm intensity.⁶
2. Mountain areas, including Mount Shasta, will likely see an increase in precipitation, though the snow/rain mix is likely to change toward more rain and less snow.⁷
3. California as a whole will experience hotter summers and possibly wetter winters.⁸
4. The potential for wildfires will increase.⁹

There are many other impacts that will likely occur as a result of climate change, but the above represent the most immediate and direct impacts on the City that are within the scope of this General Plan and EIR to address.

Increase in Storm Intensity

Some of the shifts in climate will be relatively easy to accommodate within the existing development review process. For example, the City is familiar with large winter storms and the need to remove snow and possibly store snow until the spring thaw. What is different is that there is reason to expect that heavy snow fall in the new climate may be followed more quickly by rain resulting in rain on snow events. This would affect storm drainage systems and storm drain design as warmer rain on snow would increase the amount of stormwater flow. An example of this potential was experienced by the City as a result of the New Year's Day storm of 1997. The City sustained damage as some storm drainage systems were unable to meet the peak storm demand, and some roadways were damaged as they were unable to

⁶ California Climate Change Center. *Our Changing Climate: Assessing Risks to California*. July 2006.

⁷ California Climate Change Center. *Scenarios of Climate Change in California*. February 2006.

⁸ Union of Concerned Scientists, *Confronting Climate Change in California*, October 2006.

⁹ California Climate Change Center. *Scenarios of Climate Change in California*. February 2006.

accommodate rapidly moving stormwater runoff. The 1997 event was characterized as a 25 year storm event. As a matter of course, and implementation of General Plan policies LU-19.1, SF-1.1 and SF-1.2, new development is designed to accommodate or avoid impacts from a 100-year storm event. Newer areas of the community, constructed consistent with these policies, were relatively undamaged during the 1997 storm event. Obviously, as the climate changes, the definition of what constitutes a 100-year storm event will likely change and design standards will need to be revised.

The changes in climate will also affect how project design is considered. More intense snow storms will require places to store snow, or procedures to remove it to another location. An increase in rain will lead to more runoff and the need to improve storm drainage facilities to accommodate the additional runoff. Both of these factors must be considered during the design review process.

More Rain and Less Snow

While individual storm events may be more severe, resulting in more snow and rain within an individual storm, the increase in temperature will result in less snow and more rain at this elevation. As the City already requires design for storm drainage, this impact will be less of a concern. The reduction of snow events may result in savings over time as the need to plow streets may be reduced. From a regional perspective, the reduction in snow may have a negative effect on outdoor winter activities that could, in turn, result in a loss of winter revenue to the community. (For example the City would lose transient occupancy and sales tax if the Mt. Shasta Board and Ski Park had insufficient snow to sustain operations for an extended period.) The reduction of snow, and of snow melt, will likely be of interest to the downstream water users. The City can expect increased pressure to reduce water usage and conserve the amount of water used to allow more of the commodity to be available downstream.

Hotter Summers and Wetter Winters

Hotter summers suggest that efficient use of water resources should be considered with each new project. As energy costs increase, and water resources become strained, wider use of treated effluent for irrigation of open space areas might be appropriate. Many homes in the region do not have air conditioning as current summer temperatures rarely stay high enough to warrant the cost of installation and operation. As temperatures during the summer increase between 5 and 10 degrees, more homes will be likely to install air conditioning. This will increase energy demand. Building design, orientation of the building on the lot and effective landscaping can help offset the need for air conditioning and, if not eliminate the need, at least reduce the days during the summer when air conditioning is needed.

Increase in Wildfire Danger

As summers become hotter and drier, the always present risk of wildfire begins to increase. Policies in the plan require the provision of defensible space, maintained buffer areas and close coordination with the Forest Service and CDF in review of new development. The Plan also calls for the implementation of many provisions of the *Mt. Shasta Area Community Wildfire Protection Plan*, when appropriate. (see Policy SF-4.1) Access for fire fighting equipment, and the ability to evacuate homes during fire events, is also important. Policy SF-4.2 establishes requirements for at least two points of access for subdivisions. This may result in some properties being unable to develop, or to develop at a much lower density if multiple access points cannot be provided.

Mitigation

AB 32 (226) amended the Health and Safety Code to add Section 38500, which requires the California Air Resources Board to develop a plan to ensure that GHG emissions from non-mobile sources in 2020 do not exceed 1990 levels. The provisions of the code require a rapid determination of 1990 levels and suggest several types of mitigation strategies. The approach is directed toward a state-wide effort to reduce GHG emissions. The legislation requires cities and counties to participate in the final mitigation strategy. As the mitigation strategy has yet to be developed, the General Plan may need to be revised once it is available in order to meet its mandate.

One of the primary sources of GHG emissions is the personal automobile. Regulation of automobile emissions is within the jurisdiction of the California Air Resources Board. Regulation of how vehicle trips occur and what options are available to the community is, to some extent, within the jurisdiction of that community. In urban areas, increased use of mass transit, or light rail, car pools, etc., can substantially reduce the number of vehicle trips and thereby decrease emissions. This is possible because there is a large number of persons for any given area, and many of them are headed toward common destinations. In rural areas like Mt. Shasta, reducing the use of the personal automobile is a little more complicated.

The existing development pattern in the City and surrounding area is not dense enough to support a mass-transit system. Many of the jobs in the area require driving, either for the job itself, or to reach the place of employment. The sprawling nature and extremely low density of homes in the region discourage walking except as a means of recreation. Because of limited selection, lack of sales tax in Oregon, and other factors, major shopping is often done on a bi-weekly or monthly basis at stores in locations far from the City. Weather, topography and the lack of a connected trail or route system, discourage general use of bicycles, skateboards, roller skates or other personal transportation methods. These factors all work together to support a culture and community that requires personal transportation to function.

Despite these realities, there are actions that the City can take locally to help reduce GHG emissions, many of which are already addressed in the City's General Plan. These include:

1. Encourage higher density and land use diversity in residential projects. This means a movement toward urban densities and smaller individual lot sizes. This also supports an increase of non-traditional housing types like condominiums, townhouses, etc., and the mixing of appropriate professional, medical and commercial uses within the residential project to reduce trips.
2. Encourage mixed use live-work units in the downtown and other appropriate areas and also allow an appropriate expansion of home occupations. Particularly in the downtown where there is a history of residential uses atop commercial space, live work units could be encouraged. These units could also be encouraged in other areas of the community as appropriate. Obviously, potential neighborhood nuisances, such as dust, noise, deliveries, customers, etc., would need to be addressed within the implementing code structure.
3. Support and encourage green building design and principles in the preliminary design phases and during design review. The US Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating SystemTM, or other green building programs, can be suggested or even required to promote efficient buildings, resulting in reduced energy use, healthier indoor air quality, reduced water use and more efficient use of resources. As a first step, the City can resolve to utilize green building practices for all municipal buildings and affordable housing in order to lead by example. Doing so will reduce energy and water use along with their associated expenses, which promotes fiscal responsibility and improved indoor and outdoor environments.
4. Support a reasonable trail and/or bicycle and pedestrian route system that connects shopping, schools, employment and residential uses. This would move trails from being perceived as a recreational amenity toward being another mode of transportation similar to a roadway system. (See Goal CI-8)
5. Encourage large employers to have bicycle parking and possibly locker rooms available for employees to shower and change.
6. Encourage a diverse business environment to discourage the need for shopping out of town.
7. Encourage in-fill development to occur at a higher density than the surrounding area. (See LU 4.1)
8. Support and expand local recycling efforts. (See LU-15)

9. Plant and maintain trees.

10. Encourage the use of renewable energy and alternative fuel vehicles.
Take active steps towards increasing alternative fuel vehicles in the City's fleet.

Implementation of the above measures will assist in creating a compact urban form that encourages walking by placing most of the uses within walking distance. If these measures reduce "trips" of a single family residence by a single trip per day, the effort would have reduced greenhouse emissions from that house by approximately 10 percent. (Traffic engineers estimate that the average home owner makes eight to ten vehicle trips a day. Reducing one unnecessary trip per day would be approximately a ten percent reduction.)

2. General Plan Objectives and Programs: Climate Change

Goal OC-15: Be prepared for and respond to the impacts of climate change.

Policy OC-15.1: The City will consider the potential factors of climate change in planning community infrastructure and services.

Implementation Measure:

OC-15.1(a): The City will stay informed on the scientific evaluation of trends in climate change to determine if and how plans for community infrastructure and services may need to be adjusted accordingly.

REFERENCES:

Beck, Eldon. Siskiyou County Air Pollution Control District. *Personal conversation*. August 19, 2005.

California Department of Fish and Game. 2006. *California Natural Diversity Database* (CNDDB).

City of Mount Shasta. 1992. *City of Mt. Shasta General Plan: Planning and Environmental Data Base*. City of Mt. Shasta.

City of Mt. Shasta, *General Plan*, 1993.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, Mississippi: U.S. Army Engineer Waterways Experiment Station.

Mayer, K. E., and W. F. Laudenslayer Jr., eds. 1988. *A Guide to Wildlife Habitats of California*. Sacramento: California Department of Forestry and Fire Protection.

Mt. Shasta Recreation and Parks District, District Facilities Master Plan, 2003.

Redding, City of. *Parks, Trails, and Open Space Plan, 2004.*

Sawyer, J. O., and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. Sacramento: California Native Plant Society.

Schlumpberger Consulting Engineers, Inc. *The Mt. Shasta Recreation and Parks District Facilities Master Plan. 2003.*

Schneider, C., and S.W. Sprecher. 2000. *Wetlands Management Handbook*. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

Siskiyou County, *General Plan Land Use Element, 1980.*

Siskiyou County, *General Plan Scenic Highways Element, 1975.*

Contribution of Working Group I to the Fourth Assessment Report of the IPCC. *Climate Change 2007: The Physical Science Basis*. February 2007.

California Environmental Protection Agency. *Climate Action Team Report*. March 2006.

California Climate Change Center. *Our Changing Climate: Assessing Risks to California*. July 2006.

California Climate Change Center. *Scenarios of Climate Change in California*. February 2006.

Union of Concerned Scientists, *Confronting Climate Change in California*, October 2006.

City of Mt. Shasta

Open Space Action Plan

California Government Code Section 65564 requires that local open space plans contain an action program consisting of specific programs that the legislative body intends to pursue in implementing its open space plan. The goals, policies and implementation measures of the Open Space/Conservation Element are consolidated below and constitute the City's Open Space Action Plan. The City may consider additional open space action measures in the future, provided they are consistent with the policies of the General Plan.

BIOLOGICAL RESOURCES

Goal OC-1: Conserve lands that support important fisheries, wildlife and botanical habitat, and wetlands.

Policy OC-1.1: Limit development on lands that provide important fisheries, wildlife and botanical habitat, and wetlands to agriculture and rural density residential.

Implementation Measures:

OC-1.1(a): In areas identified as important fisheries, wildlife and botanical habitat, allow a maximum density of not more than one dwelling unit per ten acres of gross land area.

OC-1.1(b): In the deer wintering and deer fawning areas, establish a maximum density of one dwelling per twenty acres of gross land area.

Policy OC-1.2: Encourage public-private programs to conserve important fishery, wildlife and botanical habitat, and wetlands.

Implementation Measures:

OC-1.2(a): Encourage Federal and State agencies as well as non-profit conservation organizations to work with private land owners to establish programs to enhance and conserve important fishery, wildlife and botanical, and wetland habitats.

OC-1.2(b): Encourage voluntary recordation of protective easements by private property owners for projects located in important fishery, wildlife and botanical, and wetland habitats in concert with the provisions of the Open Space Easement Act of 1974. Any plan derived from this implementation measure should include detailed descriptions of what land uses are

appropriate within the easement and a management plan to optimize the land's potential to maintain the resources or habitats being protected.

Policy OC-1.3: Require flexibility in development standards to balance both private property rights with the need to conserve fishery, wildlife and botanical habitats, and wetlands.

Implementation Measures:

OC-1.3(a): When proposals are submitted for development in important fisheries, wildlife and botanical habitats, or wetlands, encourage the use of clustered development in conjunction with open space easements to conserve or protect sensitive areas.

OC-1.3(b): Consider the Theiss 1990 wetland report and the documented identification of the California Department of Fish and Game's deer wintering and fawning grounds as initial steps in identifying important fishery, wildlife and botanical, and wetland habitats in the planning area. Recognize and reference new, credible information as it becomes available.

Goal OC-2: Protect riparian habitat along streams in the Planning Area.

Policy OC-2.1: Require erosion control protection as a part of grading and development plans.

Implementation Measures:

OC-2.1(a): Develop a grading ordinance that will, at a minimum, incorporate:

- Standards related to heavy equipment operating within stream channels;
- Sediment and surface runoff management;
- Erosion control contingency plan;
- An enforcement component to ensure adherence to the ordinance;
- References to state and federal rules applicable to protecting riparian habitat (e.g., grading setbacks from riparian habitat); and
- Provisions to cooperate with state, federal and private land managers to establish a mitigation bank within the planning area so that mitigation resulting from impacts to riparian habitat within the planning area provides local benefits for retaining riparian resources.

Goal OC-3: Conserve wetland areas.

Policy OC-3.1: Work to satisfy state and national wetlands policy.

Implementation Measure:

OC-3.1(a): Submit copies of applications and environmental documents to the U.S. Army Corps of Engineers and the California Department of Fish and Game when development is proposed on parcels identified as containing wetland potential.

Policy OC-3.2: Encourage property owners of lands with wetlands to design projects to avoid or mitigate wetland impacts.

Implementation Measures:

OC-3.2(a): When applications are submitted for development on parcels that are identified as containing wetlands potential, require the preparation and submittal of a wetland delineation report for verification by the Army Corps of Engineers.

OC-3.2(b): If the development will result in the deposition of dredge and fill material into wetland habitat, before the start of work require that the developer submit copies of all relevant state and federal wetland permits, including but not limited to a Clean Water Act Section 404 dredge and fill permit from the U.S. Army Corps of Engineers, a Clean Water Act Section 401 water quality certification from the Regional Water Quality Control Board, and a Fish and Game Code Section 1602 streambed alteration agreement from the California Department of Fish and Game.

AGRICULTURAL RESOURCES

Goal OC-4: Encourage and conserve lands for agricultural purposes.

Policy OC-4.1: Allow agricultural production lands to remain available for agriculture and rural uses.

Implementation Measures:

OC-4.1(a): Establish maximum residential densities of not more than one dwelling per ten acres on agricultural lands.

OC-4.1(b): Encourage retaining lands in agricultural uses through the execution of Williamson Act contracts to create Agriculture Preserves.

OC-4.1(c): Incorporate “right-to-farm” provisions into the revised Development Code for the City, and work with the County to enact similar provisions for lands in the unincorporated area.

Policy OC-4.2: Encourage small-scale farms and commercial gardens in the Planning Area.

Implementation Measures:

OC-4.2(a): In the Land Development Code, allow as permitted uses in Rural Residential lands small scale farms that do not use heavy equipment, chemical sprays, or result in noise generation exceeding acceptable residential standards, or generate traffic in excess of a normal home business.

OC-4.2(b): Include provisions in the Municipal Code to permit small-scale horticulture as a home occupation in low density residential districts, with criteria to ensure that such uses are compatible with the residential neighborhood.

TIMBERLAND RESOURCES

Goal OC-5: Encourage and conserve lands for timber purposes.

Policy OC-5.1: Allow timber production lands to remain available for the harvest and replanting of timber resources, as well as rural and recreation uses.

Implementation Measures:

OC-5.1(a): Establish maximum residential densities of not more than one dwelling per twenty acres on private timber production lands which are not within a Timber Protection Zone (TPZ).

OC-5.1(b): Encourage retention of timber lands through the execution of contracts to create Timber Preserves and Timber Preserve Zoning under the provisions of the Z’Berg-Warren-Kline-Collier Forest Taxation Reform Act of 1976, which establish a basic 160-acre maximum density for residential development.

MINERAL RESOURCES

Goal OC-6: Ensure an adequate supply of construction minerals and aggregate in the Mt. Shasta area, and support the economic viability of existing mining and processing operations.

Policy OC-6.1: Allow mineral and aggregate resource lands at appropriate locations to be commercially developed for purposes of providing construction material and industrial minerals for the area.

Implementation Measures:

OC-6.1(a): Conserve mineral resource lands and support production at existing aggregate facilities by avoiding urban density residential development on surrounding parcels.

OC-6.1(b): Ensure the beneficial reuse of mined lands through the approval and implementation of a reclamation program.

OC-6.1(c): Reclamation plans approved by the City shall be carried out on a phased basis – not deferred to the conclusion of the mining activities – as identified in the application for a mining permit and reclamation plan approval.

OC-6.1(d): No new permits shall be issued nor expiring permits renewed without approval of or update to a reclamation plan.

OC-6.1(e): Residences and commercial uses having overnight accommodations (e.g., hotels, motels) should be required to obtain a conditional use permit if proposed to be located within 300 feet of the property line of a parcel on which there is a permitted mining or related processing operation.

SCENIC RESOURCES

Goal OC-7: Protect the scenic resources of the Mt. Shasta area.

Policy OC-7.1: Promote the protection of the scenic beauty of the Mt. Shasta area through appropriate zoning, development standards, and the development review process involving lands in both the City and outside the city limits. The County is encouraged to support and help implement this policy.

Implementation Measures:

OC-7.1(a): Locate new development outside of scenic vistas and off of prominent slope exposures and ridge lines,

except when land in such areas is specifically zoned and planned for development, in which case special design standards shall be required to reduce visual impacts.

OC-7.1(b) Establish and enforce standards for new development to protect visible hillsides and ridges. These standards will address screening, design, and setbacks from the tops of ridges.

OC-7.1(c): Establish and enforce standards for outdoor lighting to reduce light pollution.

OC-7.1(d): Require undergrounding of all new utilities wherever practical. Encourage other agencies and entities to underground their facilities. Where undergrounding is impractical, aboveground lines shall be located to minimize impacts on sensitive scenic areas.

OC-7.1(e): Recognizing the visual sensitivity of the former Roseburg mill property, including views from Interstate 5, the City will continue to exercise special care in reviewing and approving design plans for improvements on the site, consistent with the provisions of the property's overall development plan.

Policy OC-7.2: To protect scenic viewsheds and related natural resources, the City shall maintain the policy position that, within the City's General Plan planning area, the County should not allow the creation of parcels less than 20-acres in size on lands designated in the County's General Plan as a Woodland Productivity constraint area unless the County first amends its General Plan to designate the site for a specific development-type of land use (e.g., rural residential, commercial, etc.).

Implementation Measure:

OC-7.2(a): The City shall encourage the County to rezone land that is within Woodland Productivity constraint areas, as identified in the County's General Plan Land Use Element, and that is also in a scenic viewshed area and "Resource" land use designation as recognized in the City's General Plan, to zoning districts that prohibit division of property to less than 20-acres, and otherwise restrict development that will significantly impact resource values.

Policy OC-7.3: Conserve and enhance public street trees and trees on public property, with effective policies to allow for trimming or removing trees that present a substantial safety hazard. Encourage voluntary

conservation and enhancement of tree resources on private property.

Implementation Measure:

OC-7.3(a): The City shall develop and maintain ordinances that provide comprehensive standards to support the conservation and management of tree resources.

OC-7.3(b): The City will continue to participate in the “Tree City USA” program, including the annual observance of Arbor Day and the related planting of trees.

CULTURAL RESOURCES

Goal OC-8: Preserve areas of significant cultural resources.

Policy OC-8.1: Ensure that appropriate measures are taken concerning protection or study of significant cultural resources.

Implementation Measures:

OC-8.1(a): When projects are proposed on lands identified as having High Cultural Resource Sensitivity, the application shall be accompanied by a Cultural Resources Reconnaissance and Archival Report conducted and compiled by a qualified archaeologist. If there is the likelihood that cultural resources are present on the site, the City may require field study to determine the location, potential for disturbance, and scope of mitigation.

OC-8.1(b): When projects are proposed on lands identified as having Medium Cultural Resource Sensitivity, the application shall be accompanied by an Archival Report compiled by a qualified archaeologist. If there is likelihood that cultural resources are present on the site, the City may require a field reconnaissance or other similar study to determine the location, potential for disturbance, and scope of mitigation.

OC-8.1(c): The scope of mitigation shall conform to the requirements of the California Environmental Quality Act with an emphasis on avoiding, if feasible, disturbance of the cultural resource. Avoidance may be accomplished by capping the site, if appropriate.

OC-8.1(d): When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, or

architectural remains be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with an appropriate specialist (e.g., archaeologist or architectural historian). The project proponent shall be required to implement mitigation necessary for the protection of cultural resources.

The City and the project applicant shall consider mitigation recommendations presented by a qualified archeologist for any unanticipated discoveries. The City and the project applicant shall consult and agree upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

OC-8.1(e): When approving construction projects, the City shall incorporate the following mitigation measure, or a similar measure that would fulfill the intent: If human remains are discovered, all work must stop in the immediate vicinity of the find, and the County Coroner must be notified, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the coroner will notify the Native American Heritage Commission, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed.

OC-8.1(f): When approving construction projects, the City shall incorporate the following mitigation measures, or similar measures that would fulfill the intent: Should any potentially unique paleontological resources (fossils) be encountered during development activities, work shall be suspended and the City Planning Department shall be immediately notified. At that time, the City will coordinate any necessary investigation of the discovery with a qualified paleontologist. The project proponent shall be required to implement mitigation necessary for the protection of paleontological resources.

The City and the project applicant shall consider the mitigation recommendations of the qualified paleontologist for unanticipated discoveries. The City and the project applicant shall consult and agree

upon implementation of a measure or measures that the City and project applicant deem feasible and appropriate. Such measures may include avoidance, preservation in place, excavation, documentation, curation, data recovery, or other appropriate measures.

PARKS AND RECREATION

Goal OC-9: Provide park and recreation facilities to meet the growing population of Mt. Shasta.

Policy OC-9.1: Strive to provide neighborhood parks to meet the needs of developing areas.

Implementation Measures:

OC-9.1(a): Require developers of residential projects to contribute land for park sites and/or pay in-lieu fees to improve parks in the vicinity at the maximum rate allowed by law.

OC-9.1(b): Maintain the land development code to reflect the appropriate play area/ neighborhood park contribution requirement.

Policy OC-9.2: Continue to meet community park and recreation needs.

Implementation Measures:

OC-9.2(a): Encourage community and non-profit organizations to develop or operate locally-oriented park and recreation facilities using funds collected through Quimby Act or developer impact fees.

OC-9.2(b): Maintain a ratio of not less than five acres of neighborhood parks per one thousand City population.

OC-9.2(c): Maintain a ratio of not less than five acres of community park land per one thousand City population.

OC-9.2(d): Utilize the provisions of the Subdivision Map Act and the City Municipal Code to collect park capital improvement and acquisition fees from new residential development pursuant to the Quimby Act.

OC-9.2(e): The City shall encourage the County to require that new residential development projects outside the city limits but within the Mt. Shasta Recreation and Parks District provide a "fair share" contribution (similar to

the City's Quimby Act requirements) to help support the provision of district recreation facilities.

WATER QUALITY

Goal OC-10: Protect the drinking water of Mt. Shasta residents.

Policy OC-10.1: Maintain a safe drinking water supply.

Implementation Measure:

OC-10.1(a): Comply with drinking water standards.

Policy OC-10.2: Protect the City's drinking water sources from contamination.

Implementation Measures:

OC-10.2(a): When reviewing development proposals for projects with the potential to contaminate drinking water supplies, ensure that the environmental and project review process incorporates appropriate measure to avoid drinking water contamination.

OC-10.2(b): Enforce provisions of the building code requiring anti-siphon devices on non-residential structures to prevent backflow of contaminated water into the drinking water supply.

AIR QUALITY

Goal OC-11: Strive to maintain clean air in the planning area.

Policy OC-11.1: Work with the County to maintain attainment status in the planning area.

Implementation Measures:

OC-11.1(a): Send copies of applications for projects that produce air emissions for review and comment by the Siskiyou County Air Pollution Control District.

OC-11.1(b): Work with the Siskiyou County Air Pollution Control District to implement programs designed to maintain attainment standards.

OC-11.1(c): If a wood-burning appliance (e.g., a woodstove) is proposed, an EPA-certified appliance will be required to aid in reducing cumulative effects from wood smoke emissions. For existing structures having older, non-certified wood stoves, encourage the change-out of the non-certified

stoves with newer certified stoves or other clean-burning heating appliances.

OC-11.1(d): To limit the adverse air quality impacts of outdoor burning that affect surrounding property owners, the City will encourage the adoption and enforcement of standards, including standards that would need to be adopted by the County Air Pollution Control District, to significantly reduce outdoor burning (e.g., leaves, pine needles and other yard material) within and in the vicinity of the City.

OC-11.1(e): To help reduce outdoor burning and the disposal of organic waste in the local transfer station, the City will encourage expanded community and/or commercial operations for composting or otherwise recycling lawn, garden and other suitable organic material.

ENERGY RESOURCES

Goal OC-12: Strive to conserve energy resources.

Policy OC-12.1: Promote incentives for the use of site planning techniques, building orientation, building materials, and other measures that will reduce energy consumption.

Implementation Measures:

OC-12.1(a): Where feasible, require all new buildings and subdivisions to be designed and oriented in such a way as to take maximum advantage of the sun and winds for natural heating and cooling.

OC-12.1(b): In addition to enforcing the energy efficiency requirements of state law and the Uniform Building Code, encourage the incorporation of additional energy conservation techniques, such as innovation building construction, high-efficiency HVAC systems, etc. in new construction.

OC-12.1(c): Work with energy providers to develop and implement programs to reduce electrical demand in residential, commercial and industrial developments.

OC-12.1(d): Work with energy providers to educate the public in energy conservation techniques and products.

OC-12.1(e): Support weatherization retrofit and other incentive programs designed to replace inefficient heating and cooling systems with more efficient systems.

OC-12.1(f): Continue to support recycling efforts.

OC-12.1(g): Evaluate use of treated wastewater for irrigation of open space.

Goal OC-13: Encourage the development of sustainable energy sources.

Policy OC-13.1: Work with individuals and companies to correctly site, connect and operate alternative energy systems such as wind, solar, hydro, and other sustainable sources.

Implementation Measures:

OC-13.1(a): Support the development of alternative sources of energy such as roof-mounted solar panels, fuel cells or new technology.

OC-13.1(b): Publicize and support energy conservation incentive programs offered by utility companies, such as rebates to consumers who replace appliances with more energy-efficient models.

OC-13.1(c): Support appropriately located and operated co-generation facilities.

OC-13.1(d): Encourage and support alternative fuel sources such as bio-diesel.

Goal OC-14: Focused community planning concerning efficient energy use and conservation, and local energy production.

Policy OC-14.1: The City shall prepare a General Plan Energy Element when the City has adequate resources and is prepared to initiate such a project.

CLIMATE CHANGE

Goal OC-15: Be prepared for and respond to the impacts of climate change.

Policy OC-15.1: The City will consider the potential factors of climate change in planning community infrastructure and services.

Implementation Measure:

OC-15.1(a): The City will stay informed on the scientific evaluation of trends in climate change to determine if and how plans for community infrastructure and services may need to be adjusted accordingly.