

Memo

To: General Plan Update Steering Committee
From: Neal Toft, Planning & Building Director
Leonard Charles, Planning & Environmental Consultant
Date: 10/29/2018
Re: Review of Draft Natural Environment and Resources Element: General Plan Update Steering Committee Study Session on October 30, 2018.

The Citizens Advisory Committee (CAC) adopted a Draft 2030 General Plan (dated 12/16/11) for eventual review and approval by the City Council. The draft contains all General Plan Elements as edited and recommended by the Citizen Advisory Committee for the General Plan Update (CAC). The CAC recommended revised language to update the goals, policies, and action programs contained in the 1990 General Plan relative to current community values, consistent with their charge from the City Council.

Staff has since continued review of effort to begin refinement of the draft and to provide updates relative to respond to changes in regional and local conditions as well as State Law and other regulatory mandates. The City is largely a built-out community, seeks to retain much of its existing layout and character, and has experienced little growth since 2011. As such, staff anticipates that the Draft General Plan Update can establish a new 20-year horizon, with adoption in 2019-2020.

Draft Community Natural Environment and Resources Element GPUSC Version 1

It should be noted that the Draft General Plan combines the state mandated Open Space Element and Conservation Element into one Natural Environment and Resources Element, which is the topic of this study session. As previously discussed, staff will be presenting the CAC draft to the GPUSC in a “track-changes version” with occasional comment bubbles to provide clarity on any edits that do not seem self-explanatory. Staff’s primary focus in editing the draft is threefold:

1. To update the document to recognize and address changes to local and regional conditions and plan, as well as new State mandates.
2. To apply phrasing in a proactive manner (where possible), minimize and follow appropriate grammatical conventions for the sentence structure of goals, policies, and actions, and reduce extraneous words and phraseology.

3. To ensure internal consistency between goals, policies, and action programs in all Elements, as mandated by State law.

Staff anticipates that the best approach to this exercise may be to simply review the document in order, line-by-line, after review of the following specific topics of discussion:

- OPR Guidelines. The Steering Committee will note that staff has added language into several sections to provide more consistency with the General Plan Guidelines for Open Space and Conservation elements, as applicable to the City of Larkspur. In some cases the language added is somewhat redundant to other policies and/or programs, but it is designed to remain consistent with the direction of the overriding goals of the CAC draft and does not conflict with current plans or practices. The OPR guidelines are provided as attachment 2 for reference. Of particular note are policies and programs for urban woodlands, open space for protection of archeological and cultural sites, and open space to meet public health and safety needs. Staff has noted where language is added specifically for this purpose.
- Mitigation (off-sets) for tree removal. Under action programs ENV -1.2F and ENV-1.5, staff has added language to develop a program to provide funding for a tree planting in public spaces as an alternative to replacement planting, where replacement planting of trees is either impractical or infeasible.
- Programmatic protection of special status species and habitat. Staff is considering policy ENV-1.6 and the following program to develop standard practices and conditions of approval to provide for protection of wildlife (e.g. Northern Spotted Owl) in conjunction with minor public projects and private permits, to address relatively common issues that may be otherwise generate CEQA review.
- Water Resources Protection and Conservation Area Ordinance. The original language for Policy ENV-2.1, establishing an ordinance for protections of shoreline, stream, wetland, and riparian corridors was modeled somewhat after the language adopted in the 2007 Marin Countywide Plan. Staff has edited language somewhat to clarify when studies are needed and who has responsibility for requiring and reviewing them. We took out language that requires some form of specific report. Nonetheless, the language provides a combination of specific requirements and standards that are somewhere between a general plan level policy and program document, and a specific regulation and standards. Given that Larkspur is largely a built-out community, there is a need to address protection on existing developed sites in relation to maintenance, upgrades, and redevelopment, as opposed to focusing largely on new development.

Staff has provided a list of similar streambank and/or wetland protection policies from other communities. It is not exhaustive but provides some examples of a more straightforward approach to policy and programs for these purposes. The Novato General Plan has some very straightforward policy and program language, with comprehensive ordinances for both riparian and wetlands protections. Staff will provide alternative suggestions at the upcoming meeting.

- Rezone areas to Open Space. Action program ENV-3.2.b is suggested as a tool to create an open space zoning category to apply to open space areas including the Blithedale Ridge which is primarily comprised of MCOSD lands. The language would carry-over Residential Master Plan standards to address any potential development of privately owned remnant parcels in these locations. There are also several city-owned parcels in the open space areas which should

be deed over to MCOSD for maintenance purposed. Staff will provide a visual aid for the Committee at the meeting.

- Background Section. The Background Section has been updated to reflect changes in conditions and mandates. Updates on Sea level Rise and substantial detail on the MMWD water management plan have been provided for compliance with the OPR Guidelines.

Attached:

1. Examples of Stream and Wetland Protection Policies
2. OPR Guidelines for Conservation Element and Open Space Element

GPUSC Study Session: Natural Environment and Resources Element
Examples of General Plan Policies Related to Stream and Wetland Preservation

The following are examples of stream-setback and protection policies from nine general plans. Where these policies are also reflected in the municipal code, we have included the Muni Code language.

1. Corte Madera General Plan

POLICY RCS-6.6

Restore and enhance riparian corridors.

Implementation Program RCS-6.6a: Riparian Corridor Restoration

As a condition of approval for appropriately located development proposals require riparian corridor restoration. Restore riparian corridors as part of flood control and other public infrastructure projects as deemed appropriate.

Implementation Program RCS-6.6.b: Riparian Corridor Plan

Cooperate with responsible agencies to plan and implement an integrated management plan for the long-term conservation and restoration of riparian corridors within Town limits.

2. San Rafael General Plan

CON-6. Creek and Drainageway Setbacks.

Require development-free setbacks, except for specific access points as approved per policy CON-7 (Public Access to Creeks), from existing creeks and drainageways that will maintain the functions and resulting values of these habitats. Appropriate erosion control and roadway crossings may encroach into the development setback. In the absence of vegetation, promote new growth of natural habitat.

a. Creek Setback. Maintain a minimum 25- foot development-free setback from the top of creek banks for all new development (including, but not limited to, paving and structures), except for Miller Creek and its tributaries, where a minimum 50-foot setback shall be maintained. Setbacks up to 100 feet may be required on lots or development projects two or more acres in size where development review determines a wider setback is needed to maintain functions and resulting habitat values and in areas where high quality riparian habitat exists

The City may waive this requirement for minor encroachments if it can be demonstrated that the proposed setback adequately protects the functions of the creek to the maximum extent feasible and resulting values to the satisfaction of the City after review by the appropriate regulatory agencies.

b. Drainageway Setbacks. Drainageway setbacks shall be established through individual development review, taking into account existing habitat functions and resulting values.

3. Mill Valley General Plan

NE.2-5 Preserve the ecological integrity of watersheds and creek corridors that support riparian resources by preserving or restoring native plants and removing invasive non-native plants; developing “pools,” “riffles,” “cover,” and “slow flow” areas; and removing or providing alternatives to barriers to fish movements.

NE.2-6 Develop a Creek Master Plan and management guidelines for maintaining and enhancing all identified creeks within the city limits, identify flood control measures, determine preferred stream bank protection techniques, establish a more precise and functional “creek setback” and related development standards, and identify public access and park development opportunities.

NE.2-7 Preserve and protect wetland resources in compliance with applicable regional, state, and federal regulations and to provide a buffer to sea level rise.

Muni Code

20.76.020 *Creek* setback requirement.

No structures are permitted within 30 feet of the top bank of the following creeks within the City of Mill Valley: Warner Canyon, Corte Madera Del Presidio, Sutton Manor *Creek*, Cascade *Creek*, Old Mill *Creek*, Reed *Creek* (the “*Creek* Setback Area”). (Ord. 1211 § 2, December 5, 2005)

4. Novato General Plan

Policy EL 1: Ecology of Creeks and Streams. Preserve and enhance the ecology of creeks and streams, including riparian vegetation. Prohibit further degradation and require restoration of previously-degraded riparian areas as a condition of development approval when restoration is feasible, taking into account the project’s size and cumulative impacts.

EL 1a: Waterway and Riparian Protection. Ensure that new development complies with the requirements of the Waterway and Riparian Protection ordinance in the Zoning Code for watercourses shown on Figure EL-1.

EL 1b: Update Definitions. Update definitions of protected creeks, streams and significant tributaries in the Zoning Code where appropriate.

EL 1c: Update Creek/Stream Map. Update Figure EL-1 utilizing best available data to designate protected creeks, streams and significant tributaries.

EL 6: Wetlands Ecology. Preserve and enhance wetlands ecology.

EL 6a: Wetland Protection. Ensure that new development complies with the requirements of the Wetland Protection and Restoration ordinance in the Zoning Code.

Novato Municipal Code

DIVISION 19.35 - WATERWAY AND RIPARIAN PROTECTION

19.35.020 - Applicability.

A. Stream Protection Zone. The standards *and* requirements of this Division shall apply to all lands adjoining or encompassing watercourses shown on EN Map 1 of the General Plan *and* their significant tributaries as determined by the Director. A Stream Protection Zone shall be established, which shall include the stream bed, the stream banks, all riparian vegetation *and* an upland buffer zone at least 50 feet wide, measured from the top of the channel bank. The Stream Protection Zone shall be expanded based on individual site evaluations to encompass the existing riparian vegetation *and* adjacent habitat areas including upland buffers or may be reduced if physical conditions so warrant through the adoption of the Stream Management Plan.

B. Waiver/Non-Applicability. In developed areas where the existing site *and* upstream *and* downstream conditions preclude the establishment the Stream Protection Zone or where the watercourse is owned, managed, *and* maintained by a qualified public agency *and* adequate stream buffer areas are provided, the Director may waive the required Use Permit *and* Stream Management Plan (SMP) *and* shall establish a minimum stream buffer area/setback requirement *and/or* development standard as a condition of approval. The Director may require the applicant to submit documentation to support the waiver *and* define an appropriate setback or development standard. Routine stream management *and* maintenance activities authorized or carried out by qualified public agencies are exempt from these provision

A. Uses permitted within the Stream Protection Zone shall be limited to native landscaping, fencing, maintenance roads, utilities, storm drains, trails *and* passive (low-impact) recreation. Fencing *and* structures shall be set back to provide for unobstructed flow of flood waters *and* continuous wildlife migration corridors along the riparian areas.

B. The area within the Stream Protection Zone may be used to calculate allowable residential densities or applied to the landscape area requirements for non-residential uses in accordance with provisions of the primary zoning district.

C. Encroachments of parking areas, access roads, bridges, structures *and* other uses may be conditionally permitted by the Review Authority where the following findings are first made:

1. The proposed use, structure or encroachment cannot be feasibly located outside the Stream Protection Zone or such location would have a more adverse effect on the stream environment; *and*
2. Measures are included that provide adequate protection of wildlife habitat, water quality *and* in-stream habitat, *and* capacity for flood management; or
3. The strict application of these limitations would result in a taking of the property without just compensation.

(Ord. No. 1576, § 2 (Exh. A, amd.), 10-23-2012)

· 19.35.060 - Watercourse Protection Standards *and* Design Criteria.

Proposed developments, uses, alterations or encroachments within or near watercourses shall comply with the following standards *and* design criteria:

A. Stream Buffer Zone. A Stream Buffer Zone shall be established for preservation, restoration or enhancement of riparian vegetation *and* adjacent upland habitat. The Stream Buffer Zone shall include adjacent upland habitat for sensitive species *and* wildlife migration, as well as, providing for filtration of sediment *and* contaminants in storm runoff *and* allow infiltration of rainfall to maintain an adequate water budget to support the riparian *and* wetland habitat. Upland buffers shall consist of grasses *and* native shrubs to be maintained in a natural state.

1. Removal of existing riparian vegetation shall be avoided to the maximum extent feasible *and* limited to the minimum amount necessary, except for exotic, invasive species or other vegetation identified on an approved SMP.

2. Grading, fill, earthwork, or soil compaction, within the Stream Protection Zone shall be avoided or minimized to the maximum extent feasible. During construction, protective fencing shall be installed along existing riparian vegetation to include a buffer area extending beyond the dripline of the tree canopy to protect the root structure. The extent of the buffer area shall be determined based upon the tree species. If encroachment within the root zones of significant trees cannot be avoided, then a certified arborist shall be retained to provide recommendations for less damaging construction practices *and* long-term maintenance.

3. Root zone areas of native oaks *and* riparian vegetation shall be maintained in a natural state. All turf areas, irrigation *and* drainage shall be designed to drain away from valley oaks *and* creek corridors to avoid long-term impacts of irrigation *and* chemical use of pesticides *and* herbicides.

4. In disturbed areas, the stream buffer zone shall include area for restoration or enhancement of riparian vegetation to provide for a continuous riparian corridor connecting habitat areas.

5. Fencing may be required along the Stream Buffer Zone to separate public or private use areas from the creek corridor *and* prevent encroachment in habitat areas. Fencing shall be designed to permit emergency *and* maintenance access. Fencing shall not obstruct wildlife migration corridors *and* shall be designed 6-inches above the ground to allow for passage of small mammals *and* other species.

B. Alterations of Stream Channel or Banks. The streambed *and* stream banks shall not be filled, graded, excavated, or obstructed by any development, construction, or activity associated with such development, nor shall vegetation in the streambed or on the stream banks be cut or removed, except for the following circumstances:

1. Placement of City-approved storm drain *and* irrigation outflows. Such outflows *and* the associated drainage facilities shall be designed so as to eliminate or minimize increases in the rate *and* amount of storm or irrigation water discharge.

2. Placement of public *and* non-public utility lines.

3. Construction of bridges *and* their connecting roadways.

4. Maintenance activities necessary to prevent flooding, reduce siltation, or otherwise provide for the public health *and* safety.

5. Work identified in an approved SMP.

C. Slope Protection *and* Bank Stabilization. In areas with bank failure or high scour potential, slope protection *and* biotechnical bank stabilization measures, designed by a qualified registered engineer, may be required *and* incorporated into the SMP.

D. Alterations Within the Stream Buffer Zone. The stream protection zone shall not be filled, graded, excavated, or obstructed, nor shall vegetation in the riparian zone be cut or removed, except for the following circumstances:

1. Construction of facilities for low intensity, passive recreation (e.g., pedestrian *and* bicycle trails *and* paths, *and* foot bridges), nature study or conservation uses approved by the Director.
2. Restoration, enhancement *and* maintenance activities, including removal of debris when necessary to protect the public health *and* safety, or minor weed abatement activity necessary to protect life or property.
3. Work identified in an approved SMP.

E. Mitigation, Restoration *and* Enhancement. Any use or encroachment within the stream Protection Zone shall require mitigation in order to offset the intrusion of human use *and* limit flood hazards. Mitigation measures shall be incorporated into the SMP to address the existing site conditions *and* provide additional buffering of wildlife corridors, connect habitat areas *and* maintain adequate capacity for flood flows. Revegetation program *and* planting plans shall use indigenous plants in accordance with the City's Stream Management Guidelines.

F. Erosion Control. All work within stream protection zones shall be kept to the minimum amount necessary to accomplish the goals of this Division. The SMP shall include erosion control *and* a Stormwater Pollution Prevention Plan utilizing the following best management practices:

1. Earth work within the Stream Protection Zone shall be permitted only between April 15 *and* October 15. When necessary, extensions of this time period may be granted by the City Engineer on a case-by-case basis.
2. Disturbed areas shall be revegetated by October 15. When necessary, extensions of this deadline may be granted by the City Engineer on a case-by-case basis.
3. Where needed to prevent erosion, exposed soil surfaces shall be hydromulched or stabilized by other erosion control measures prior to October 15. When necessary, extensions of this deadline may be granted by the City Engineer on a case-by-case basis.
4. Special care shall be taken to avoid removal of vegetation immediately adjacent to the stream banks except for exotic, invasive species or other vegetation identified in the approved SMP.

H. Long-Term Maintenance/Management. As a condition of approval for any project subject to the requirements of this Division, provision for long-term management *and* maintenance shall be provided along with a funding mechanism. Long-term maintenance *and* management plans shall include annual inspections *and* provisions to maintain hydraulic capacity of the stream channel, as well as protect, restore *and* enhance aquatic *and* riparian habitat. Management plans may include provisions for debris *and* sediment removal, clearing of brush *and* other vegetation that trap sediment, *and* shall specify methods to preserve, enhance *and* restore riparian vegetation.

The City may allow dedication to the City, the Marin County Flood Control District, Marin County Open Space District or other appropriate public or private entity, of a conservation easement or fee interest for long-term preservation *and* management of the Stream Protection Zone as determined necessary for flood control, water quality, *and* wildlife habitat.

6. Albany General Plan

Policy CON-1.9: Riparian Corridors

Maintain special development regulations for areas within 100 feet of Codornices Creek, Cerrito Creek, and Village Creek which ensure that riparian and littoral habitat is conserved, flood impacts are reduced, and the creeks are enhanced for their aesthetic and ecological value. Watercourses on private property should be kept free of trash, debris, excessive vegetation, and obstacles to the flow of water.

Action CON-1.B: Watercourse Combining District

Review the Watercourse Combining District zoning regulations to ensure that they sufficiently protect riparian habitat, reduce erosion and flooding hazards, and mitigate impacts of development on creek ecology. Compliance with all applicable state and federal regulations also shall be required for any project that could potentially impact the city's creeks.

7. Sebastopol General Plan

Policy COS 3-7: Preserve the existing and future floodwater carrying capacity of creeks and channels during creek restoration.

Policy COS 3-8: Require new development to include maintained and managed setbacks and buffers along creeks, wetlands, riparian corridors, and adjacent to sensitive habitat.

Policy COS 3-9: New development adjacent to creeks and streams should include opportunities for beneficial uses, such as flood control, ecological restoration activities, public access trails, and walkways.

Policy COS 3-10: As appropriate, consult with State and Federal agencies during the development review process to help identify wetland and riparian habitat that has candidacy for restoration, conservation, and/or mitigation. Focus restoration and/or conservation efforts on areas that would maximize multiple beneficial uses for such habitat.

Action COS 3b: Continue to implement the Wetlands District protection requirements in the Sebastopol Municipal Code in order to preserve and protect environmentally sensitive waterways and/or wetland areas. Review all development applications for consistency with the requirements of this Chapter, including use restrictions and development criteria established to protect surface water quality.

Action COS 3c: Continue to implement Creek Setback requirements of the Sebastopol Municipal Code in order to protect water quality, riparian habitat, and bank stability for all projects adjacent to creeks within the City.

Action COS 3l: Preclude development that would adversely affect the natural vegetation, wildlife habitat,

Muni Code

17.60.050 Creek setback.

A minimum setback of 30 feet from top of bank shall be provided for any buildings, mobile homes, garages, swimming pools, storage tanks, parking spaces, driveways, decks more than 30 inches above natural grade, retaining walls, or other similar structures for property adjacent to Zimpher Creek, Calder Creek, or Atascadero Creek. Any grading within the creek setback area shall be subject to the review and approval of the City Engineering Director, who shall review the application in regards to its potential effects on the waterway and native plants. Where the

top of bank is not defined, the Engineering Director shall determine the appropriate setback area. Bridges and utilities may cross through, over, or under a waterway setback area, provided permits are obtained from relevant State and Federal agencies, and the project has received all necessary City approvals. Storm drainage, erosion control, and creek bank stability improvements that have been approved as required by law by the governmental agencies having jurisdiction over them shall not be subject to this section. (Ord. 1103 (Exh. A), 2017. Formerly 17.96.050)

8. Fairfax

Policy CON-3.1.2: The Town of Fairfax shall protect and restore riparian habitat and ensure natural channel process in the San Anselmo Creek and Fairfax Creek watersheds.

Program CON-3.1.2.1: Develop a Creek Master Plan, with implementing programs and funding sources, for restoring the creeks and protecting habitat in the Planning Area.

Program CON-3.1.2.2: Establish a creek-side development zone, and as a condition of approval for development applications within the zone, require a riparian corridor restoration and management plan and a drainage plan.

Muni Code

17.040.040 SETBACKS; STRUCTURES ADJACENT TO FAIRFAX AND SAN ANSELMO CREEKS.

(A) No building, accessory building, structure or swimming pool shall be constructed closer to the top of the stream bank of the Fairfax and San Anselmo creeks than 20 feet or two times the average depth of the bank, whichever is greater, without authorization by variance, except for retaining walls and bulkheads which replace failing structures and which do not increase the height, width, length or configuration of the original structure.

9. Tiburon

OSC-22: In its review for applications for development, the Town shall require open space buffers of at least 50 feet on each side of the top of the bank of perennial, intermittent, and ephemeral streams on properties less than five acres and of at least 100 feet on each side of the top of bank on properties greater than five acres, to minimize disturbance of natural vegetation and maintain the environmental and scenic attributes of the corridor.

Conservation Element

Introduction

The conservation element describes the jurisdiction’s natural resources: land, water, ecosystem services and living resources, and the benefits that these resources provide to the community. The conservation element establishes goals and policies for their retention, enhancement and development. The [open space element](#) and the [land use element](#) should work in coordination with the conservation element to guide conservation and development, balancing community needs with environmental preservation and the effects of [climate change](#). All three of these mandatory elements must be consistent with the others.

Conservation of environmental and agricultural resources is one of the State’s three planning priorities, and helps to achieve the State’s climate goals. Land conservation policies may have many benefits. Agricultural land conservation can be a foundation for more permanently preserving lands at the edge of cities for their intrinsic open space values. As agricultural activities produce self-sustaining revenue, agricultural conservation can be amongst the most cost-effective means of protecting open space and promoting [infill](#) development. By maintaining a buffer zone between urban developments, agricultural lands can reduce sprawl and help to preserve the unique cultural character of separate communities. Prime agricultural lands also help to conserve key environmental values, including quality soil, air, and water. Finally, agricultural lands can provide a critical role in planning strategies to maintain connectivity of conserved lands, successfully preserving wildlife corridors and wetlands.

This section describes the required components of the conservation element, and provides links to suggested policies and tools to help communities in their updates and help to achieve the State’s goals.

CORRELATIONS AMONG ELEMENTS

	Land Use	Circulation	Housing	Open Space	Noise	Safety	EJ
Conservation	■	■	■	■		■	

■ Identified in statute ■ Closely related to statutory requirements

Government Code section 65302(d):

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the

discussion and evaluation of any water supply and demand information described in [Section 65352.5](#), if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

- (A) The reclamation of land and waters.
 - (B) Prevention and control of the pollution of streams and other waters.
 - (C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
 - (D) Prevention, control, and correction of the erosion of soils, beaches, and shores.
 - (E) Protection of watersheds.
 - (F) The location, quantity and quality of the rock, sand, and gravel resources.
- (3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

Completeness Checklist

Local agency staff can use the following checklist to help ensure that the draft conservation element addresses all required issues. Please note that use of this checklist is purely advisory, and only contains issues that are legally required and the optional issues listed in [Government Code section 65302\(d\)\(2\)](#). Conservation elements may address additional issues at the discretion of the local government. Because general plan formats may vary, this checklist suggests identifying where the particular government code provision is satisfied.

Statutory Citation	Brief Description of Requirement
Gov. Code, §§ 65302(d)(1), 65352.5	Water and its hydraulic force
Gov. Code, § 65302(d)(3)	Floodwater Accommodation
Gov. Code, § 65302(d)(1)	Forests
Gov. Code, § 65302(d)(1)	Soils
Gov. Code, § 65302(d)(1)	Rivers and other waters
Gov. Code, § 65302(d)(1)	Harbors
Gov. Code, § 65302(d)(1)	Fisheries

Statutory Citation	Brief Description of Requirement
Gov. Code, § 65302(d)(1)	Wildlife
Gov. Code, § 65302(d)(1)	Minerals
Gov. Code, § 65302(d)(1)	Other natural resources
Gov. Code, § 65302(d)(2)	Reclamation of land and waters (optional)
Gov. Code, § 65302(d)(2)	Pollution of streams and other waters (optional)
Gov. Code, § 65302(d)(2)	Land use in stream channels and other areas (optional)
Gov. Code, § 65302(d)(2)	Erosion (optional)
Gov. Code, § 65302(d)(2)	Protection of watersheds (optional)
Gov. Code, § 65302(d)(2)	Rock, sand, and gravel resources (optional)

Required Contents

The conservation element **must address** the “conservation, development, and utilization of natural resources including

- Water and its hydraulic force
- Forests
- Soils
- Rivers and other waters
- Harbors and fisheries
- Wildlife
- Minerals, and other natural resources

The Government Code further requires the conservation element to “consider the effect of development within the jurisdiction, as described in the [land use](#) element, on natural resources located on public lands, including military installations” ([Gov. Code § 65302\(d\)\(1\)](#)). Evaluation of a jurisdiction’s natural resource systems based on sound science and ecological principles is an important first step in preparing the conservation element. One role of the conservation element is to establish policies that reconcile conflicting demands on those resources. In recent years, some jurisdictions have adopted policies related to mitigation banking, conservation easement programs, and the state and federal Endangered Species acts in their conservation elements. Other local jurisdictions have incorporated policies related to regional [greenprints](#) or [Natural Community Conservation Planning \(NCCP\)](#) programs. Both of these methods present a broad-based approach to the regional protection of plants and animals and their habitats while allowing for compatible and appropriate economic activity. The [California Department of Fish and Wildlife](#), [Department of Conservation](#), [Natural Resources Agency](#), and [Department of Water Resources](#) are some of the many resources available for examining current and future conservation needs. In addition, resource data is available for jurisdictions through the [General Plan Mapping tool](#). Jurisdictions should assess the current condition of their natural resource systems, the ecological processes and compatibilities upon which they depend and their sustainability based on anticipated uses. Analysis of the sustainability of resource uses should take into account changing burdens on local ecosystems as a result of a changing

climate or other environmental conditions, and should measure the values that these resources contribute to the community and state (see above sidebar on nature’s services). In their evaluation of natural resources, local governments should identify priority areas to conserve that offer the most effective and efficient protection of the natural resource systems, and focus policies on those resources or areas. **Greenprints**, or sustainability plans seeking to balance conservation with growth, are one example of incorporating “green infrastructure” into general plans (see more in text box).

Local governments can dramatically impact the type and amount of water used and conserved within their jurisdictions through land use decisions. For example, requiring more compact development types can significantly reduce per capita water use. Limiting new impervious cover in key recharge areas can protect groundwater supplies. **Low impact development** strategies such as green roofs, bioretention, and soil amendments, can redirect storm water from sewer lines to recharge areas, and thereby enhance water supplies. The **California Water Plan** provides strategies, resources, and tools for water management and conservation throughout the State.

The following sections include descriptions of each of the requirements with links to model policies and useful information. Some of the requirements will not be locally relevant for all communities. For example, a land-locked county with no river ports would likely not need to address harbors in its conservation element. It is up to the jurisdiction to choose how to arrange their treatment of the various required issues, which may overlap with one another when addressed in the conservation element’s goals and policies.

Water and Its Hydraulic Force

Requirement Description:

The discussion of water in the conservation element must be prepared in coordination with “any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared,” and must include any information on water supply and demand (**Gov. Code § 65302(d)(1)**).

Planning with conservation in mind can create thriving spaces in the community



Image by Urban Advantage, Community Design + Architecture

Specific information must be shared with groundwater agencies. The [Sustainable Groundwater Management Act \(SGMA\)](#) allows local jurisdictions to customize groundwater plans based on their specific needs. Discussion of water should analyze water needs for domestic, agricultural, ecological and industrial uses, and provide for the conservation of water supplies and protection of aquatic ecosystems as a beneficial use. Land use choices affect water demand long into the future. When evaluating the feasibility of possible land use patterns, cities and counties should work with water agencies to consider projected available water resources under a changing climate, and water conservation measures to ensure a sustainable water supply, rather than simply

Natural Resources as Nature's Benefits; Greenprints and Conservation

A conservation element can include a quantification and explanation of the benefits that the community obtains from their surrounding ecosystems. Communities' well-being depends on the benefits that nature provides for free, every day and everywhere. For example, we depend on ecosystems such as forests and wetlands, for clean water, fertile soils, food, fuel, storm protection, minerals and flood control.

These benefits, often called "nature's benefits," are commonly categorized into four broad categories. Provisioning benefits include the production of food and water, while regulating benefits include the control of climate and disease. Supporting benefits include nutrient cycles and crop pollination. Lastly, cultural benefits include spiritual and recreational opportunities. To help inform planning decisions, these benefits can be [assigned economic values](#), values that measure other non-monetary benefits to the community, and values that demonstrate the benefits gained when various natural resources mutually reinforce each other. These benefits and services can be expressed in a "Greenprint," such as those developed under the [federal sustainable communities initiative](#), which can help local governments to analyze and plan for these cross-cutting and community-supporting benefits in their general plan updates and apply innovative and successful strategies for implementation. For more information on ecosystem services see

<http://www.fs.fed.us/ecosystems-services/>

<http://www.nature.org/science-in-action/ecosystem-services.xml>

deferring to water agencies to meet any projected demand. Jurisdictions may want to form joint committees to synchronize planning timelines between water and land use, coordinate with local [integrated regional water management plans \(IRWM\)](#), consider using watersheds as their planning area, or explicitly acknowledge their relationship to an existing watershed. Smaller urban development footprints (i.e. concentrated development) protect and enhance the watershed, improving water supply, flood management, and water quality. The [California Water Plan](#) currently projects diminishing reliability in water supplies of 3-5% in the next twenty years. Existing water sources may also become less reliable due to climate change and development. The conservation element is inextricably connected to the [land use](#) and [open space](#) elements.

The decision in [County of Amador v. El Dorado County Water Agency](#) helps to further clarify the relationship between availability of water and development: "in determining whether and where to permit development, a county must necessarily

consider the availability of consumptive water supplies. If additional water supplies are available, growth and development are feasible. Conversely, if that water is not available, growth is necessarily limited.” The Government Code and Water Code additionally require water supply districts to prepare water supply verifications and assessments for some large-scale projects, including subdivisions of over 500 dwelling units (*Gov. Code § 66473.7*). When amending its general plan, a jurisdiction shall coordinate with any public water agency pursuant to *Government Code section 65352.5* to analyze available water supply information and identify adequate water for anticipated growth. Additionally, *Urban Water Management Plans*, where required, rely on build-out data from general plans, highlighting the importance of consistency and communication between agencies. For specific projects, the water supply verification comes at the final approval stage of project development, and a subdivision cannot be approved if adequate water supplies do not exist at this stage. (*Gov. Code § 66473.7(b)(1)*).

National Flood Insurance Rate Program maps, dam failure inundation maps, information available from the *California Department of Water Resources*, *U.S. Army Corps of Engineers*, the *Federal Emergency Management Agency* and historical data on flooding all provide useful information for identifying flood-prone areas for floodwater management purposes. Aspects of floodwater management must also be addressed in the *land use* and *safety* elements, and local governments may want to consider combining these discussions in their general plans (*Gov. Code §§ 65302(a), 65302(g)(2)*). The Government Code also provides further requirements on development in flood hazard zones as defined in *Government Code section 65007(d)* in the Sacramento-San Joaquin Valley (*Gov. Code §§ 65302.9, 65860.1, 65865.5, 65962, 66474.5*).

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Assessment of existing and projected demands on water supply sources	Inventory of quality and boundaries of watershed, aquifer recharge areas, groundwater basins, and other water resources
Risk assessment for flooding	Flood maps
Examination of ability to align policies, zoning, and goals regarding housing built	Number of housing units allocated through SCS
Assessment of potential housing developments	Documented interest by developers and landowners

Forests

Requirement Description:

The conservation element must provide for the management, enhancement, protection, and potential modification of the current agroforestry practices for wildlife protection, watershed protection, recreation, and aesthetic purposes. Possible topics to address include protection of oak woodlands and urban forests, analysis of possible future development within resource areas, the need for suitable and predicted-to-be suitable habitat management for the mitigation of climate change, precipitation retention for watershed management and attenuation of flood waters, aesthetics, cultural use, commercial value of forests, and protection of timber resources subject to timberland production zoning (*Gov. Code § 51104(e-g); 51110-51119.5*)

California’s forests are valuable assets and their conservation provides many benefits to the natural and built environments. As trees grow and develop, their value to the forest ecosystem and climate change mitigation increases. Older trees sequester significantly more carbon than young trees and are necessary for nutrient cycles for nitrogen and phosphorous. These nutrients

are limited, and without proper maintenance, could eventually deplete the soil. Trees and source wood left on site significantly contribute to the abundance of biodiversity and the prevention of habitat loss and displacement. Trees in forest and urban areas act as micro and macro climate buffers by moderating temperatures and moisture.

Conservation of forests should be balanced with the proper action to prevent risk from wildfires (see the [safety element](#) for more information). As [climate change](#) persists and temperatures rise, wildfires will continue to grow in size, frequency, and total area burned. Throughout its history, California experienced frequent fires by lightning and burning regimes, critical in developing the composition, structure, and pattern of vegetation throughout the state's landscapes.

In order to prevent destructive wildfires and restore and maintain resilient landscapes, policies should be developed that are appropriate for local conditions to mitigate potential losses due to wildfire. Policies for mitigating potential losses should also consider approaches to maintain healthy forests, including prescribed burns, fuel breaks, wildfire protection zones, and forest thinning and grazing. Fuel treatment manipulates and removes fuel to reduce fire intensity with methods such as lopping, chipping, crushing, piling, and burning. Fuel treatment is critical to enhance protection of forests as well as develop resilience. As a guiding resource, OPR's [Fire Hazard Planning Technical Advisory](#) includes a detailed discussion about how to incorporate and comply with the fire hazard requirements in a general plan.

Forest conservation practices also present the opportunity to conserve species in their native habitat. Collaboration with local tribes, resource conservation districts, non-government conservation organizations, and other government entities may help determine the best tools for ecosystem restoration, wildfire prevention, and wildlife habitat enhancement.

The management and protection of forests should take into account anticipated changes in coming decades in temperature, the viability or presence of particular wildlife populations in response to warming trends, and the impact on forestry resources of increased extreme weather events and more intense forest fire seasons. For reference, visit <http://www.fs.fed.us/maps/>.

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Analysis of conservation needs	Type, location, amount, and ownership of forests by category
Reduce risk of wildfire and post-fire mitigation needs	Fire hazard zone maps

Soils

Requirement Description:

Soils provide the fundamental resources necessary for the production of food, fiber and other agricultural products. Healthy soil resources, rich in soil organic matter, are essential to crop production, watershed functioning, carbon sequestration, and the support of vegetation. Highly productive soil resources that support agricultural production and ecosystem services are a finite resource; thus requiring long-term conservation. [Soil management and conservation practices](#), such as cover cropping, crop rotation, mulching, and nutrient management, may help support healthy soils and conservation goals.

The [Official Soil Series Descriptions \(OSDs\)](#) and the [Storie Index](#) provide useful tools for assessing and inventorying farmland soils, as does the [Farmland Mapping & Monitoring Program](#) of the state Department of Conservation. Consultation with the city or county’s local [Resource Conservation District](#) may also be helpful in assessing soil resources and developing policies focused on the management of agricultural soils; consistent with the Resource Conservation District’s broader agricultural strategy. The conservation element should identify soils necessary for agricultural production and include policies that promote the conservation of these resources. Preservation of prime agricultural land, and identification of water availability for that land, can be a foundation for improving and maintaining soil while more permanently preserving lands, improving the economy, and preserving biological resources, and should be coordinated with the [land use element](#). Local governments should identify areas included in agricultural preserves under the [Williamson Act \(Gov. Code § 51200\)](#). Additionally, conservation easements on agricultural lands, working with willing landowners and land trusts, can also serve to protect soil resources and constitute feasible mitigation to lessen impacts on agricultural resources, including highly productive soils. The soils section may also identify areas subject to slides and erosion and include policies focusing on erosion prevention, one of the optional issues listed in [Government Code section 65302\(d\)\(2\)](#).

Daylighting Existing Waters

Cities and counties across California and the country are recognizing the potential benefits of revitalizing rivers, streams, and creeks long hidden by previous development. Waterways have historically been covered, especially in urban areas, to quickly redirect stormwater, create more room for commercial districts, and enable automobile transport. In the past decade, however, planners have begun to note the possible advantages of daylighting and restoring waterways, including:

- Reducing flooding
- Conserving groundwater
- Reducing heat island effects
- Providing greenspace for the community
- Activating urban spaces

Examples of programs to restore urban waterways include the [LA River](#) in Los Angeles, Strawberry Creek in Berkeley, and San Luis Obispo Creek in San Luis Obispo.

Rivers and Other Waters

Requirement Description:

The rivers and other waters requirement examines water quality in local bodies of water. As with water and its hydraulic force, any discussion of water in the conservation element must be prepared in coordination with “any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have

developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared,” and must include any information on water supply and demand prepared pursuant to [Government Code section 65352.5 \(Gov. Code § 65302\(d\)\(1\)\)](#). Topics to address include identification of existing and potential water pollution sources, the benefits that water resources provide to the community, opportunities for protection and restoration, and identification of water sources for which reclamation is feasible. Policies should take into account the impacts of future development on water bodies and aim to protect or improve water quality. Preservation of flood plains and innovative methods of flood control, such as making “room for the river,” can have positive benefits for related elements of the plan. Certain areas may also be important for groundwater recharge.

Rivers, lakes, streams, bays, harbors, estuaries, marshes, and reservoirs might be affected by climate change impacts such as decreased snow pack, changes in precipitation, and sea level rise. Cities and counties should consider taking these projected impacts into account when planning for the protection of their water bodies.

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Compliance with total maximum daily load (TMDL) regulations	Current loads, expected project impact

Harbors and Fisheries

Requirement Description:

The harbors and fisheries requirement addresses the development and improvement of port, harbor, and waterway facilities. This issue has significant overlap with the [circulation element](#), and may be combined with it at the local government’s discretion. Policies in general plans should be consistent with harbor and port master plans developed under the [California Coastal Act \(Pub. Resources Code § 30000 et seq.\)](#).

Fisheries are an important [component](#) of California’s economy, and their careful management ensures their viability into the future. Possible topics to address in the fisheries section include evaluation of existing and projected future water quality; temperature; sources of contaminants in bodies of water used for subsistence, recreational, and commercial fishing; expected impacts of [climate change](#) on habitat and [fisheries](#) and policies that protect and rehabilitate those water bodies; existence and purpose of marine protected areas (MPAs); and preservation of riparian, tidal, and wetland habitat connected to waterways.

Wildlife

Requirement Description:

California is home to a diverse array of wildlife, and the conservation element should provide plans for the protection and preservation of these populations and their habitats. This must include wildlife that is classified as a rare, threatened, or endangered species under state and federal law ([Fish & G. Code § 2050 et seq.](#); [16 U.S.C. § 1531](#)). Planning for wildlife habitats should account for current habitats, health of wildlife, projected changes in such habitat due to climate change, wildlife conservation, furthering responsible development and addressing the needs of a growing human population,

habitat connectivity and potential threats to such habitat from development pressures, fragmentation and edge effects. The conservation element's focus on wildlife should be consistent with the [State Wildlife Action Plan](#), [California Essential Habitat Connectivity Project](#), [Regional Advance Mitigation Plans](#), conservation plans developed by the state and regional entities, Habitat Conservation Plans (e.g. [California Endangered Species Act \(CESA\)](#), [California Environmental Quality Act Review \(CEQA\)](#), [Lake and Streambed Alteration Program \(LSA\)](#), [Timberland Conservation Program](#), [Natural Community Conservation Planning \(NCCP\)](#), [Conservation and Mitigation Banking](#), [Invasive Species Program](#), [Native Plant Program](#)) and other management plans, and should include coordination with other government agencies involved in wildlife preservation. Due to the considerable overlap between habitat lands and agricultural lands, multiple benefits for wildlife and agriculture may be gained by coordinating conservation plans and strategies. The [California Agriculture Vision Document](#) highlights relationships between habitat and agricultural conservation, and presents strategies for the conservation of both.

The [Marine Life Protection Act of 1999 \(MLPA\)](#) recognized the need to safeguard the long-term health of California's marine life. By establishing a statewide network of [marine protected areas \(MPAs\)](#) designed, created, and managed using sound science and stakeholder input, MLPA aimed to protect the diversity and abundance of marine life, the habitats they depend on, and the integrity of marine ecosystems in California. MPAs are named, discrete geographic marine or estuarine areas designed to protect or conserve marine life and habitat. Potential interactions between MPAs and planned land uses may affect wildlife, harbors and fisheries, and other considerations related to conservation and [open space](#) in some communities. Cities and counties should consult the interactive [MarineBIOS map](#) available from the [Department of Fish and Wildlife](#), or the [General Plan Mapping Tool](#) to examine MPAs around their communities.

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Identify specific tools and approaches to restore natural areas to benefit fish and wildlife as part of a sustainable flood management plan	DWR Conservation Strategy
Project impacts on critical habitat for listed species	Map of critical habitats
Analysis of existing conservation projects	SGC Review of Conservation lands

Minerals and Other Natural Resources

Requirement Description:

According to [California Public Resources Code section 2005](#), minerals “means any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum.” While not explicitly required, local governments may also want to consider geothermal, petroleum, and natural gas in their assessment of mineral resources as appropriate. The minerals section should locate and inventory mineral resources designated by the [State Mining and Geology Board](#) under the Surface Mining and Reclamation Act ([Pub. Resources Code § 2710 et seq.](#)), and include policies that plan for the protection, use, and development of mineral resources. This section should also locate and plan for the protection, use and development of rock, sand and gravel resources, one of the optional issues listed in [Government Code section 65302\(d\)\(2\)](#) if those resources are found in the jurisdiction.

‘Other natural resources’ may include agricultural resources, wetlands, urban forestry, air, and energy producing resources. Some cities and counties also include paleontological and archaeological resources in this section. Model policies include those that assess [air quality](#) and coordinate with other agencies and jurisdictions to improve it; identify agricultural resources using the [Natural Resources Conservation Service’s](#) land inventory and monitoring criteria inventory; include plans for the preservation of wetlands; and inventory energy resources including wind, solar, hydroelectric, and biomass resources. [Air quality](#) policies should be consistent with regional [air quality and transportation plans](#).

Floodwater Management

Requirement Description:

To address floodwater management in the conservation element, the city or county should collect information concerning its flood plains and its watershed. [DWR](#) has updated its [Best Available Maps](#) to display the latest floodplains. [DWR](#) has expanded the floodplains to cover all counties in the State and to include 100, 200, and 500-year floodplains. The [Office of Emergency Services \(OES\)](#) and [DWR](#) have information on past floods and flood levels. Local levee districts and resource conservation may also have information to share.

[DWR](#) also completed the 2012 [Central Valley Flood Protection Plan \(CVFPP\)](#), which provides a guide for state participation with managing flood risk along the Sacramento River and San Joaquin River. The CVFPP provides data and analysis that include the locations of flood hazard zones; goals, policies, and objectives based on that data and analysis; and feasible implementation measures designed to carry out these goals, policies, and objectives. The CVFPP includes a [Groundwater Recharge Opportunity Analysis](#), which can also be useful. This document summarizes an evaluation of groundwater recharge project types and general locations that could be used to integrate groundwater recharge and groundwater storage with the flood management system to increase both flood management flexibility and water supply reliability.

[DWR](#) also recommends working with applicable agencies to incorporate improvements in flood control channels that provide opportunities for stormwater retention and groundwater recharge, when major upgrades and/or reconstruction are required. [Low impact development](#) strategies may also help protect communities from floodwater by redirecting stormwater.

For additional data and analysis related to flood safety, see the [safety element](#). For data and analysis related to identification and annual review of areas subject to flooding, see the [land use element](#).

Optional Issues

Pursuant to [Government Code section 65302\(d\)\(2\)](#), the conservation element may also cover the reclamation of land and waters; prevention and control of the pollution of streams and other waters; regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan; prevention, control, and correction of the erosion of soils, beaches, and shores; protection of watersheds; protection of habitat connectivity, and the location, quantity, and quality of rock, sand, and gravel resources. Local governments might choose to integrate these optional issues into their analyses of and policies for the mandatory requirements.

OPR Recommended Policies

These policies are an example of recommended policies adopted by varying jurisdictions, to be modified and used as appropriate. A full list of recommended policies can be found [here](#):

Sample Policy	Example of Application	Relationship to Other Elements
[City, county] shall identify and develop a coordinated biological preserve system that includes Pre-Approved Mitigation Areas, Biological Resource Core Areas, wildlife corridors, and linkages to allow wildlife to travel throughout their habitat ranges. Avoid adverse impacts to wildlife movement corridors and nursery sites (e.g., nest sites, dens, spawning areas, breeding ponds).	San Diego County, Yolo County	Land use, open space, climate change
[City, county] shall allow for appropriate public access to open space lands for recreation activities while protecting and restoring the natural ecosystem and minimizing environmental damage, as appropriate	Redwood City	Land use, open space, circulation, equitable and resilient communities, economic development
[City, county] shall in conjunction with new development located along existing creeks and streams and where appropriate, incorporate daylighting for culverted portions or other bank naturalizing approaches for channeled sections as a means of creek and stream restoration.	Redwood City	Land use, open space
[City, county] shall establish a coherent and logical pattern of urban uses that protect and enhance open space and agricultural uses by providing a clear and permanent boundary for urban uses with the [city, county]'s planning area.	City of Livermore	Land use, circulation, housing, conservation, safety, climate change, economic development

Open Space Element

Introduction

“California legislative policy strongly favors the preservation of open spaces” (*Gisler v. County of Madera* (1974) 38 Cal. App. 3d 303, 307; see also Cal. Const. art. XIII, § 8). Together with the [conservation element](#), an open space element identifies areas that provide value in an essentially undeveloped condition and creates a plan to preserve such areas. The open space element reinforces the [conservation element](#) by guiding the comprehensive and long-range preservation of open space lands that are important to the conservation of the State’s natural resources. The conservation element should be used to inform and support both the open space element and the [land use element](#), guiding the identification of resource areas that should remain undeveloped and those that are appropriate for future development. Open space is defined as any parcel or area of land or water that is essentially unimproved and devoted to open-space use ([Gov. Code § 65560\(b\)](#)). Such lands or waters may provide value related to, among other things, recreation, health, habitat, biodiversity, wildlife conservation aesthetics, economy, climate change mitigation and adaptation, flood risk reduction, managed natural resources production, agricultural production, and protection from hazardous conditions.

Because open space issues are broad in nature and overlap those of several elements, consistency among elements must be considered carefully. The open space element is interrelated with other elements, overlapping with the [conservation element](#) when referring to open space dedicated to the preservation of natural resources and the managed production of resources; the [safety element](#) when considering open space for public health and safety; and the [housing](#) and [land use](#) elements when determining the suitability of sites for future development.

CORRELATIONS AMONG ELEMENTS

	Land Use	Circulation	Housing	Conservation	Noise	Safety	EJ
Open Space	■	■	■	■	■	■	■

■ Identified in statute ■ Closely related to statutory requirements

Government Code Section 65560

- (a) “Local open-space plan” is the open-space element of a county or city general plan adopted by the board or council, either as the local open-space plan or as the interim local open-space plan adopted pursuant to Section 65563.
- (b) “Open-space land” is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional, or state open-space plan as any of the following:

- (1) Open space for the preservation of natural resources, including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays, and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.
- (2) Open space used for the managed production of resources, including, but not limited to, forest lands, rangeland, agricultural lands, and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers, and streams that are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
- (3) Open space for outdoor recreation, including, but not limited to, areas of outstanding scenic, historic, and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas that serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
- (4) Open space for public health and safety, including, but not limited to, areas that require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds; areas presenting high fire risks; areas required for the protection of water quality and water reservoirs; and areas required for the protection and enhancement of air quality.
- (5) Open space in support of the mission of military installations that comprise areas adjacent to military installations, military training routes, and underlying restricted airspace that can provide additional buffer zones to military activities and complement the resource values of the military lands.
- (6) Open space for the protection of places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code.

Completeness Checklist

Local agency staff can use the following checklist to help ensure that the open space element addresses all required issues. Please note that use of this checklist is purely advisory, and only contains issues that are legally required by [Government Code section 65560 et seq.](#) Open Space elements may address additional issues at the discretion of the local government. Because general plan formats may vary, this checklist suggests identifying where the particular government code provision is satisfied

Statutory Citation	Brief Description of Requirement
Gov. Code § 65563	Long range and comprehensive
Gov. Code § 65563	Plan for preservation and conservation of open space lands, including the following:

Statutory Citation	Brief Description of Requirement
Gov. Code § 65560(b)(1)	<p><i>Open Space for Natural Resources</i></p> <ul style="list-style-type: none"> ▪ Areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; ▪ Areas required for ecologic and other scientific study purposes; ▪ Rivers, streams, bays and estuaries; and ▪ Coastal beaches, lakeshores, banks of rivers and streams, and watershed lands
Gov. Code § 65560(b)(2)	<p><i>Open Space for Managed Production of Resources</i></p> <ul style="list-style-type: none"> ▪ Forest lands, rangeland, agricultural lands (reflecting Department of Conservation agricultural resources maps and inventory) and areas of economic importance for the production of food or fiber; ▪ Areas required for recharge of groundwater basins; ▪ Bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and ▪ Areas containing major mineral deposits, including those in short supply
Gov. Code § 65560(b)(3)	<p><i>Open Space for Outdoor Recreation</i></p> <ul style="list-style-type: none"> ▪ Areas of outstanding scenic, historic and cultural value; ▪ Areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and ▪ Areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors
Gov. Code § 65560(b)(4)	<p><i>Open Space for Public Health and Safety</i></p> <ul style="list-style-type: none"> ▪ Areas which require special management or regulation because of hazardous or special conditions such as <ul style="list-style-type: none"> o Earthquake fault zones, o Unstable soil areas, o Flood plains, o Watersheds, o Areas presenting high fire risks, o Areas required for the protection of water quality and water reservoirs and o Areas required for the protection and enhancement of air quality
Gov. Code § 65560(b)(5)	<p><i>Open Space for Military Support</i></p> <ul style="list-style-type: none"> ▪ Areas adjacent to military installations, ▪ Military training routes, and ▪ Areas underlying restricted airspace
Gov. Code § 65560(b)(6)	<p><i>Open Space for Tribal Resources</i></p> <ul style="list-style-type: none"> ▪ Public land containing any Native American <ul style="list-style-type: none"> o Sanctified cemetery, o Place of worship, o Religious or ceremonial site, or o Sacred shrine ▪ Native American historic, cultural, or sacred sites, that are listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1 ▪ Tribal consultation is required to determine the level of confidentiality needed (§ 65562.5)
Save El Toro Assn. v. Days (1977) 74 Cal. App. 3d 64, 73 Gov. Code § 65560(b)	<p>Inventory of the above lands</p> <ul style="list-style-type: none"> ▪ Include any parcel that is essentially unimproved (i.e., need not be completely vacant)
Gov. Code § 65562(a)	Policies provide that open space “must be conserved wherever possible”
Gov. Code § 65562(b)	Co-ordinated with state and regional plans
Gov. Code § 65564 ▪ § 65566 ▪ § 65567 ▪ § 65910	<p>Action plan</p> <ul style="list-style-type: none"> ▪ Acquisition and disposal of open space must be consistent with the open space plan ▪ Building permits, subdivision maps and zoning must be consistent with the plan ▪ Open-space zoning pursuant to § 65910 (e.g., exclusive agriculture zones, large-lot zones, overlay zones for hazards areas, etc.) must be consistent with the plan

Required Contents

The [Government Code § 65560](#) requires an open space element to contain detailed information about [several](#) categories of undeveloped land. Specifically, the open space element must inventory the following broad categories of open space:

- Open space for natural resources
- Open space for managed production of resources
- Open space for outdoor recreation
- Open space for public health and safety
- Open space for military support
- Open space for tribal resources

The inventory should be reflected on maps, and policies must provide for conservation of such areas wherever possible ([Gov. Code § 65562\(a\)](#)). The [General Plan Mapping Tool](#) is a useful tool to help communities identify existing resources, including natural resources, roads, buildings, and demographics, and develop open space inventories accordingly. The tool pulls data from multiple state and federal sources, and allows supplemental data layers from local jurisdictions. The tool allows mapping of known resources, assets, and needs of the community. The local open space plan, together with state and regional plans, must form a comprehensive open space plan ([Gov. Code § 65562\(b\)](#)). Every city and county must prepare, and submit to the Secretary of Natural Resources, an open space plan for comprehensive and long-term preservation of open spaces ([Gov. Code § 66563](#)). The plan must include an [action program](#) with specific programs to implement the plan ([Gov. Code § 65564](#)). These specific requirements are described in greater detail below.

Inventory

Requirement Description:

The open space element must contain an inventory of specified categories of open space resources (*Save El Toro Assn. v. Days* (1977) 74 Cal.App.3d 64, 73). The inventory must include any parcel in one of the listed categories that is: (1) “essentially unimproved” and (2) designated on any local, regional or state open-space plan ([Gov. Code § 65560\(b\)\(1\)](#)). Note that a particular parcel need not be completely vacant to be included in the inventory. Also, categories of open space are defined in very broad terms in the statute. Thus, designations in local, regional and state plans need not actually use the words “open space” in order to be included in the inventory. In general, a plan should err on the side of inclusion.

Examples of regional and state plans that could include open space designations include, among others:

Sustainable Communities Strategies and alternative planning strategies adopted by metropolitan planning organizations in regional transportation plans

Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs)

Regional greenprints

Regional conservation assessments

Regional park district plans

Agricultural lands designated on Department of Conservation farmland maps

The specific categories of open space that must be included in the inventory are set forth below.

Open space for natural resources

Requirement Description:

The inventory must identify open space for natural resources, including, but not limited to:

Areas required for the preservation of plant and animal life, including habitat for fish and wildlife species. Such areas may include:

- Areas designated in HCPs and NCCPs
- Critical habitat identified pursuant to the Endangered Species Act (ESA)
- Conservation easements
- Marine protected areas (MPAs)
- Areas identified in greenprints and Regional Conservation Assessments (RCAs)
- Parks and trails
- Areas designated by federal, state, regional and local agencies and governments as important habitat
- Existing forest and woodland areas set aside for mitigation
- Areas important for habitat connectivity

Areas required for ecologic and other scientific study purposes. Such areas may include preserves, parks and other land used by universities to study agricultural systems, wildlife habitats, and other natural systems.

Rivers, streams, bays and estuaries; riparian areas; and coastal beaches, lakeshores, banks of rivers and streams,

Simple improvements can create better spaces for recreation and activity



Image by Urban Advantage, Canopy

and watershed lands. Virtually all waters within a jurisdiction should be identified in the open space element. Upland areas connected to such waters should also be identified. Such areas may be identified in basin plans, watershed plans, and other planning documents produced by the State Water Resources Control Board, Regional Water Quality Control Boards, and other regional entities.

SAMPLE OF OPR RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Identification of protected areas to preserve	Marine protected areas (MPAs), critical habitat areas, areas identified in local conservation plans
Potential effects of development on water sources	Watershed maps

Open Space For Managed Production Of Resources

Requirement Description:

The inventory must include lands that are used for the production, enhancement, or maintenance of natural resources.

Forest lands must be maintained in an efficient way to support the continued cultivation of timberland ([Gov. Code § 51101, § 51102](#)). With an increasing state population, these forest areas need to be protected against encroaching development to preserve their ecological services as well as economic vitality. Timberland Production Zones are designated for the production of timber or compatible uses and should not be converted for urban services.

Forest and rangelands information is available from the California Department of Forestry and Fire Protection's [California Forest and Range Assessment](#). Information regarding agricultural lands is available from the Department of Conservation's [maps and inventory](#), [California Protected Areas Database](#), [CCED - California Conservation Easement Database](#), [National Conservation Easement Database \(NCED\)](#), and [Conservation Easements Registry](#).

Many local governments also produce their own information regarding locally important lands.

Areas required for recharge of groundwater basins: Information regarding groundwater recharge should be available from urban water management plans and integrated water resource management plans. Cities and counties must also confer with any locally designated groundwater sustainability agency ([SGMA](#)).

Bays, estuaries, marshes, rivers and streams that are important for the management of commercial fisheries: Information on fisheries is available from the [Department of Fish and Wildlife](#).

Areas containing major mineral deposits, including those in short supply: Information regarding mineral resources is available from the [Department of Conservation](#).

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Identification of areas to protect in order to maintain groundwater management	Groundwater supply agency, DWR, urban water management plans

Open Space For Outdoor Recreation

Requirement Description:

The open space inventory must reflect open space currently used or planned for outdoor recreation. A city or county should consult with any regional park and open space district in identifying such areas. Jurisdictions should inventory existing recreational space, including marine protected areas adjacent to landside parks, and assess present and future demand based on population, demographic, and development trends. Including existing and planned open space for recreation on the land use map can help coordinate future development with anticipated recreational needs.

Access to open space for recreation impacts individual and community health, and should be planned equitably and with accessibility considerations, to ensure underserved communities are included.

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Determine level of access to open space facilities	Transit, bike, and pedestrian paths and routes leading to open space centers
Ensure equitable distribution of recreational open space facilities	Demographic information alongside maps of current and planned open space

Open Space for Public Health and Safety

Requirement Description:

Clean air and water, recreational and natural spaces, farms, ranches, and open spaces conducive to active transportation and healthy lifestyles foster health benefits for communities. The inventory should include areas that require special management or regulation because of hazardous or special conditions. These areas are important for protection or enhancement of public health. Hazardous conditions specifically identified in the statute are:

- Earthquake fault zones
- Unstable soil areas
- Flood plains
- Watersheds
- Areas presenting high fire risks
- Areas required for protection of water quality and water reservoirs
- Areas required for protection and enhancement of air quality

(Gov. Code 65560(b)(4)). Information about those areas is available through the State of California [Geoportal site](#). Much of the information and policies related to hazards will also be relevant to the [safety element](#). For additional ideas on data and analysis, see the [healthy communities](#) section and [safety element](#).

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Risks associated with designated open space areas	Earthquake fault zones, flood plains, and fire risk areas mapped alongside open space
Identification of areas for enhancement or protection of air quality	Air quality levels by area, circulation maps, inventory of trees and greenery

Open Space for Military Support

Requirement Description:

The open space element must identify military installations and training routes. It should include policies for areas adjacent to or related to military activity. For additional information please review the [California Advisory Handbook for Community and Military Compatibility Planning](#).

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Identify areas to protect from development for military purposes	Mapping of military installations and training routes

Open Space for Tribal Resources

Requirement Description:

Consultation with the appropriate tribes is essential to both accurately identify those areas needing protection, and to protect the confidentiality and dignity of sensitive resources. Jurisdictions must consult with Native American tribes during an amendment or update to a general plan ([Gov. Code § 65352](#)). The [Native American Heritage Commission](#) can help identify the appropriate tribes to engage in consultation. The following are categories of tribal resources that should be included in the open space element and the inventory of open space resources ([Gov. Code § 65560\(b\)\(6\)](#)); also see adjacent box):

- Public land containing any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine. The Native American Heritage Commission can provide access to such information.
- Native American historic, cultural, or sacred sites that are listed or may be eligible for listing in the California Register of Historic Resources pursuant to [Public Resources Code Section 5024.1](#).

Before the adoption or any amendment of a city or county's general plan, the city or county must conduct consultations with California Native American tribes that are on the contact list maintained by the Native American Heritage Commission for the purpose of preserving or mitigating impacts to places, features, and objects described in Public Resources Code Sections [5097.9](#) and [5097.993](#) that are located within the city or county's jurisdiction ([Gov. Code § 65352.3\(a\)\(1\)](#)). From the date on which a city or county pursuant to this subdivision contacts a California Native American tribe, the tribe has 90 days in which to request a consultation, unless a shorter timeframe has been agreed to by that tribe ([Gov. Code § 65352.3\(a\)\(2\)](#)).

Government Code § 65560(b)(6):

- Public land containing any Native American
 - » sanctified cemetery,
 - » place of worship,
 - » religious or ceremonial site,
 - » sacred shrine,
 - » burial sites,
 - » historic or prehistoric ruins, or
 - » Native American inscriptions or rock art
- Native American historic, cultural, or sacred site that is listed or may be eligible for listing in the California Register of Historic Resources pursuant to Public Resources Code Section 5024.1
- Tribal consultation is required to determine the level of confidentiality needed (Gov. Code § 65562.5)

Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Government Code Section 65040.2, the city or county shall protect the confidentiality of information concerning the specific identity, location, character, and use of those places, features and objects. (Gov. Code § 65352.3(b)).

In addition, if new areas containing tribal resources are designated as open space after 2005, Government Code Section 65562.5 requires additional consultation. When consulting tribes, refer to Section V of the 2005 Tribal Consultation Guidelines, Supplement to the GPG:

On and after March 1, 2005, if land designated, or proposed to be designated as open space contains a place of cultural significance, and if an affected tribe has requested notice of public hearing under Government Code §65092, then local governments must consult with the tribe. The purpose of this consultation is to determine the level of confidentiality required to protect the specific identity, location, or use of the cultural place, and to develop treatment with appropriate dignity of the cultural place in any corresponding management plan (Gov. Code §65562.5).

SAMPLE OF OPR-RECOMMENDED DATA FOR CONSIDERATION IN ANALYSIS OF THIS ELEMENT

Intent of Analysis	Recommended Data
Identification of Tribal resources to be protected	Inventory of locations and descriptions of resources, obtained through Tribal consultation

OPR Recommended Policies

These policies are an example of recommended policies adopted by varying jurisdictions, to be modified and used as appropriate. A full list of recommended policies can be found [here](#)

Sample Policy	Example of Application	Relationship to Other Elements
[City/county] shall work with the Park District to seek locations for and the development of neighborhood parks in those neighborhoods which lack park acreage.	City of Citrus Heights	Land use, conservation, healthy communities
[City/county] shall establish an open space acquisition program that identifies acquisition area priorities based on capital costs, operation and maintenance costs, accessibility, needs, resource preservation, ability to complete or enhance the existing open space linkage system and unique environmental features.	City of Riverside	Land use, conservation, economic development, safety
[City/county] shall maximize public benefits in the reclamation of mineral extraction and sanitary landfill areas	City of Rialto	Land use, conservation, safety, climate change
[City/county] shall maintain habitat corridors to connect conservation areas such as parks, [marine protected areas], and open space, protect biodiversity, accommodate wildlife movement and sustain ecosystems	City of Citrus Heights	Land use, conservation, climate change
[City/county] shall develop, wherever possible, recreation facilities that have multi-use capabilities and high degree of adaptability to more intensive use or uses as recreation demand changes and/or population density increases	City of Brea	Land use, conservation, equitable and resilient communities, economic development, healthy communities