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Vision

Palo Alto will meet today's needs without compromising the needs of future generations. Palo Alto will respect and manage natural resources in a way that sustains the natural environment and protects our foothills, baylands, creeks, parks, wildlife and open space legacy. A substantial portion of the City will remain as open space. Even in built-up areas, a network of parks will provide access to nature and an urban forest will provide ecological benefits and a source of beauty for residents. Palo Alto will strive for cleaner air and cleaner water. Its policies and programs will foster energy and water conservation. Finally, the City will maintain a sustainable water supply for the future, and facilitate the implementation of climate change adaptation strategies. .

Introduction

The Natural Environment Element addresses the management of open land and natural resources in Palo Alto and the protection of life and property from natural hazards. It is one of the broadest elements of the Comprehensive Plan, encompassing three of the seven elements mandated by the State. The Element satisfies the State requirement for an Open Space Element by including policies describing the use of open space for the preservation of natural resources, the managed production of natural resources, outdoor recreation, and public health and safety. It satisfies the State requirement for a Conservation Element by including policies pertaining to creeks and riparian areas, wetlands, the urban forest, water resources, wildlife, air quality, hazardous materials, solid waste disposal, and energy. Finally, it satisfies the Noise Element requirement through policies that reduce exposure to undesirable levels of noise in the community.

The remainder of the Element consists of goals, policies, and programs. The text is organized into ten topics, each with a corresponding goal. Background information on each topic is included following the goal statements. It should be noted that the Natural Environment Element does not include policies relating to mineral resources because Palo Alto does not contain any mineral deposits of regional significance.

1. OPEN SPACE

GOAL N-1. Protect, Conserve and Enhance Palo Alto’s Citywide System of Open Spaces, Including Connected Natural and Urban Habitats, Ecosystems, and Natural Resources, Providing a Source of Beauty and Enjoyment for Palo Alto Residents.

POLICY N1.1 Preserve, protect and enhance public and private open space and ecosystems of Palo Alto from the foothills to the baylands, respecting the role that natural and landscaped areas within the urbanized part of the City play in a resilient, interconnected ecological c [Previous Policy N-4] [N1]

Program N1.1.1 Develop Comprehensive Resource Conservation Plans for the Baylands, Pearson Arastradero Preserve, Esther Clark Preserve, and Foothills Park to steward the protection of local ecosystems. [PTC] [NEW PROGRAM] [N2]

Program N1.1.2 Protect wildlife in natural and open space areas by improving litter collection, restricting the use of non-recyclable plastics, and prohibiting the feeding of wild and domestic animals. [PTC] [NEW PROGRAM] [N3]

Program N1.1.3 Promote and support existing natural ecosystem protection and environmental education programs in Palo Alto. [PTC] [NEW PROGRAM] [N4]

POLICY N1.2 Maintain a network of parks and urban forest that provides access to nature and ecological benefits for all residents, from the urban center to the foothills. [NEW POLICY] [N5]

POLICY N1.3 Carefully manage access and use of environmentally sensitive areas, including the baylands, foothills and riparian corridors, to protect habitats and wildlife from the impacts of humans and domesticated animals. . [previous Program N-3, per PTC] [NEW POLICY] [N6]

Program N1.3.1 Examine and improve existing management practices including the provision of access to open space for City vehicles and equipment, to ensure that natural resources are protected. [Previous Program N-2] [N7]

POLICY N1.4 Provide recreation opportunities in public lands and easements where they are compatible with established conservation goals and can be safely integrated into the physical landscape. [PTC] [NEW POLICY] [N8]

Program N1.4.1 Review and map existing easements and maintenance roads for potential trails and trail connections. [PTC] [NEW PROGRAM] [N9]

POLICY N1.5 Encourage the management of private open space areas, including agricultural land, golf courses, yards, and land that provides habitat for wildlife in a manner that protects and enhances habitat and wildlife and reinforces natural corridors, consistent with the Parks, Trails, Open Space and Recreation Master Plan, as periodically amended. [Previous Policy N-1, per PTC] [N10]

Program N1.5.1 Work to maintain Williamson Act agricultural preserve contracts within the City. [Previously Program N-5] [N11]

POLICY N1.6 Protect special-status species and plant communities, including those listed by State and federal agencies and recognized organizations from the impacts of development and incompatible activities. [Previous Policy N-3] [N12]

Program N1.6.1 Regularly update the list of special status species in Palo Alto in accordance with the California Natural Diversity Database. [NEW PROGRAM][N13]

Program N1.6.2 Explore the feasibility of expanding the use of the Site and Design (D) Review Combining District or similar development review and restriction tools to protect special-status species and their habitats from development. [NEW PROGRAM][N14]

POLICY N1.7 Minimize impacts of any new development on the open space character and the natural ecology of the hillsides. [Previous Policy N-6] [N15]

POLICY N1.8 Preserve and protect the Bay, marshlands, salt ponds, sloughs, creeks, and other natural water or wetland areas as open space, functioning habitats, and elements of a larger, interconnected wildlife corridor, consistent with the Baylands Master Plan, as periodically amended. [Previous Policy N-8] [N16]

Program N1.8.1 Maintain the value of local wetlands as habitats by ensuring adequate flow from the Bay and monitoring treatment plant effluent to areas such as Renzel Marsh and ITT Marsh. [PTC] [NEW PROGRAM] [N17]

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- POLICY N1.9 Preserve and protect the foothills and hillside areas, recognizing their unique value as natural ecosystems and interconnected wildlife corridors. [NEW POLICY] [N18]
- POLICY N1.10 Support regional and sub-regional efforts to acquire, develop, operate, and maintain a seamless open space system, including habitat linkages and trail connections extending from Skyline Ridge to San Francisco Bay. [Previous Policy N-2] [N19]
- Program N1.10.1 Use City funds and seek additional sources of funding, including State and Federal programs, to finance open space acquisition, maintenance or conservation. [Previous Program N-4] [N20]*
- Program N1.10.2 Explore the creation of a mechanism to monitor, assess and respond quickly to land acquisition opportunities that would expand or connect the City's system of parks and open spaces. [NEW PROGRAM][N21]*
- POLICY N1.11 Work with Stanford University, Santa Clara County, Santa Clara Valley Water District and regional organizations to create multi-use trail connections between urban areas and open space, including creeks and rights-of-way, while ensuring that the natural environment is protected. [PTC] [NEW PROGRAM] [N22]Work with Stanford and Santa Clara County to preserve Stanford's foothill property northeast of Highway 280. Act as an advocate to Santa Clara County to preserve open space links between Stanford, the urban area, and the foothills. [Previous Policy N-5] [N23]
- POLICY N1.12 All development in the foothill portion of the Planning Area (i.e., above Junipero Serra Boulevard) should visually blend in with its surroundings and minimize impacts to the natural environment.[Previous Policy N 7][N24]

2. CREEKS AND RIPARIAN AREAS

GOAL N-2. Conservation of Creeks and Riparian Areas as Open Space Amenities, Natural Habitat Areas, and Elements of Community Design.

- POLICY N2.1 Recognize that both the natural creek segments in the open space areas and the natural and channelized urban creek segments are valuable resources that need different conservation and enhancement strategies. [NEW POLICY] [N25]

POLICY N2.2 Protect natural riparian corridors from the impacts of future buildings, structures, impervious surfaces and ornamental landscaping and preserve their function as habitat connectivity corridors. [NEW POLICY] [N26]

Program N2.2.1 Revise the development regulations of the Stream Corridor Protection Ordinance, with stakeholder involvement, to meet the following objectives:

- *Establish appropriate setback requirements that reflect the varying natural and urban conditions along Palo Alto's creeks.*
- *Limit the development of recreational trails to one side of natural riparian corridors*
- *Carefully design any lighting within natural riparian corridors to avoid impacts on wildlife.*
- *Address the use of mulch to minimize impacts on ground-nesting species.[NEW PROGRAM] [N27]*

POLICY N2.3 Recognize that natural riparian corridors are valued environmental resources whose integrity provides vital habitat for fish, birds, plants and other wildlife, and carefully monitor and preserve these natural corridors. [Revision of previous Policy N-12 into NEW POLICY] [N28]

Program N2.3.1 Develop a community creek stewardship program designed to promote existing creek clean-up days, organize new events, and increase appreciation of Palo Alto's riparian corridors. [NEW PROGRAM] [N29]

POLICY N2.4 Maximize the ecological value of natural creek corridors through the preservation of native plants and the replacement of invasive, non-native plants with native plants. [Previous Policy N-12][N30]

POLICY N2.5 Discourage bank instability, erosion, downstream sedimentation, and flooding by minimizing site disturbance and nearby native vegetation removal on or near natural creeks and by reviewing grading and drainage plans for development near natural creeks and elsewhere in their watersheds. [Previous Policy N-13] [N31]

Program N2.5.1 Replace invasive and non-native plants with native vegetation. [PTC] [Revision of previous Policy N-12 into NEW PROGRAM] [N32]

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Program N2.5.2 Review and update the Grading Ordinance, to ensure that it adequately protects creeks from the erosion and sedimentation impacts of grading. [Previous Program N-12] [N33]

POLICY N2.6 Avoid fencing, piping, and channelization of natural creeks when flood control and public safety can be achieved through measures that preserve the natural environment and habitat of the creek. [Previous Policy N-9] [N34]

POLICY N2.7 Allow passive or intermittent outdoor activities and pedestrian, equestrian, and bicycle pathways along natural creeks where there are adequate setbacks to protect the natural riparian environment, consistent with the Stream Corridor Protection Ordinance, as amended. [Previous Program N-7] [N35]

POLICY N2.8 Work with the Santa Clara Valley Water District, San Francisquito Creek Joint Powers Authority and other relevant regional and non-governmental agencies to enhance natural riparian corridors, provide compatible low-impact recreation, and ensure adequate flood control by use of low impact restoration strategies. [Previous Policy N-10] [N36]

Program N2.8.1 Participate cooperatively in the San Francisquito Creek Joint Powers Authority (JPA) to achieve increased flood protection, habitat preservation, enhancement and improved recreational opportunities along San Francisquito Creek. [Previous Program N-9] [N37]

POLICY N2.9 Work with the Santa Clara Valley Water District, San Francisquito Creek Joint Powers Authority and other relevant regional and non-governmental agencies to prevent further urbanization, restore the natural conditions of urban riparian corridors where possible, and allow public access to increase connectivity, recognizing that channelized creeks may serve multiple functions as storm drain and flood control facilities, potential habitat areas, and elements of community design. [NEW POLICY] [N38]

Program N2.9.1 Work with the Santa Clara Valley Water District to develop a comprehensive riparian corridor restoration and enhancement improvement program for urban and channelized creeks that identifies specific stretches of corridor to be restored, standards to be achieved, and sources of funding. Include provisions for tree planting to enhance natural habitat, where feasible. [Previous Program N-11] [N39]

Program N2.9.2 Work with the Santa Clara Valley Water District to establish guidelines for the maintenance of urban creek channels that encourage preservation of riparian habitat where it exists, including vegetation that provides shade to creek bottoms. [Previous Program N-10][N40]

Program N2.9.3 Encourage the restoration of privately-owned creek banks with incentives and assistance programs. [PTC] [NEW PROGRAM] [N41]

3. URBAN FOREST AND UNDERSTORY

GOAL N-3. A Thriving Urban Forest That Provides Public Health, Ecological, Economic, and Aesthetic Benefits for Palo Alto.

POLICY N3.1 Use the Urban Forest Master Plan, as periodically amended, to guide City decisions related to all elements of Palo Alto’s urban forest, from its understory habitat to canopy cover. [PTC] [NEW POLICY] [N42]

Program N3.1.1 Periodically update the Urban Forest Master Plan and Tree Protection Ordinance to ensure policies and regulations remain relevant. [PTC] [NEW PROGRAM] [N43]

POLICY N3.2 Recognize the importance of the urban forest as a vital part of the City’s green infrastructure network that contributes to public health, resiliency, habitat values, and an attractive visual character and should be protected. [NEW POLICY] [N44]

Program N3.2.1 Explore ways to prevent and ameliorate conflicts between trees and tree roots with above and below ground infrastructure and buildings. [NEW PROGRAM] [N45]

POLICY N3.3 Enhance the ecological resilience of the urban forest by increasing and diversifying native species in the public right-of-way, protecting the health of soils and understory vegetation, encouraging property owners to do the same, and discouraging the planting of invasive species. [PTC] [NEW POLICY] [N46]

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POLICY N3.4 Partner and coordinate with organizations and individuals dedicated to the health of Palo Alto’s urban forest. [NEW POLICY, ADPATED FROM PTC PROGRAM N3.3.7] [N47]

Program N3.4.1 Work with local non-profits to establish tree planting programs that are consistent with the UFMP, and seek to achieve canopy cover equity across the City with no net loss of canopy at the neighborhood level, with a focus on locally native, resilient species. Review existing tree planting guidelines to ensure they achieve this objective. [Previous Program N-19] [N48]

Program N3.4.2 Provide on-going education for City staff, property owners, and developers regarding landscape, maintenance, and irrigation practices that protect the urban forest and wildlife species. [PTC] [Previous Policy N-16] [N49]

Program N3.4.3 Cooperate with the Palo Alto Unified School District, Stanford University, Caltrain, Caltrans, PG&E, and other public and private entities to ensure that their tree planting, tree removal, and maintenance practices are consistent with City guidelines. [NEW PROGRAM] [N50]

POLICY N3.5 Protect, revitalize, and expand Palo Alto’s urban forest through public education, sensitive regulation and a long-term financial commitment that is adequate to protect this resource. [Previous Policy N-14] [N51]

Program N3.5.1 Maintain, irrigate, and replace trees in parks, open space, parking lots, and City rights-of-way. [Previous Program N-17] [N52]

Program N3.5.2 Actively pursue funding for tree planting to increase canopy cover significantly across the city. [Previous Program N-18] [N53]

Program N3.5.3 Evaluate the possibility of leveraging the fact that Palo Alto’s urban forest alleviates climate change by capturing and storing carbon dioxide from the atmosphere. [NEW PROGRAM] [N54]

Program N3.5.4 Continue to invest in the care, irrigation and monitoring of street trees during drought conditions. [NEW PROGRAM] [N55]

Program N3.5.5 Develop a transparent and publicly accessible street tree removal and replacement schedule. [NEW PROGRAM] [N2]

POLICY N3.6 Require new commercial, multi-unit, and single family housing projects to provide street trees and related irrigation systems. [Previous Policy N-15][N57]

POLICY N3.7 Minimize removal of, and damage to, trees due to construction-related activities such as trenching, excavation, soil compacting, and release of toxins. [NEW POLICY] [N58]

Program N3.7.1 Increase awareness, severity and enforcement of penalties for tree damage. [NEW PROGRAM] [N59]

POLICY N3.8 Preserve and protect Regulated Trees, , such as native oaks and other significant trees, on public and private property, including landscape trees approved as part of a development review process. [Previous Policy N-17] [N60]

Program N3.8.1 Update the Tree and Landscape Technical Manual to provide criteria for making site-specific determinations of trees that should be protected. [NEW PROGRAM] [N61]

POLICY N3.9 Coordinate City review, particularly by the Planning, Utilities, and Public Works Departments, of projects that might impact the urban forest. [Previous Program N-20][N62]

POLICY N3.10 In order to protect, enhance and augment the urban forest along El Camino Real, Page Mill Road and Oregon Expressway, periodically revisit existing maintenance agreements with Caltrain and the County of Santa Clara. [PTC] [NEW POLICY] [N63]

POLICY N3.11 Continue to require replacement of trees, including street trees lost to new development, recognizing the particular value of mature trees. [NEW POLICY, ADAPTED FROM PREVIOUS PRGRAM N-16][N64]

Program N3.11.1 Develop a program for using the City's Urban Forestry Fund to replace trees lost to public improvement and infrastructure projects, with replanting occurring onsite or

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*as close to the original site as is ecologically appropriate.
[NEW PROGRAM] [N65]*

POLICY N3.12 Protect soils in both urban and natural areas as the foundation of a healthy urban forest. Recognize that healthy soils are necessary to filter air and water, sustain plants and animals, and support buildings and infrastructure. [NEW PROGRAM] [N66]

4. WATER RESOURCES

GOAL N-4. Water Resources that are Managed to Sustain Plant and Animal Life, Support Urban Activities, and Protect Public Health and Safety.

POLICY N4.1 Reduce pollution in urban runoff from residential, commercial, industrial, municipal, and transportation land uses and activities. [Previous Policy N-21] [N67]

Program N4.1.1 Work with regulatory agencies, environmental groups, affected businesses, and other stakeholders to monitor and implement evolving opportunities for reducing water pollution. Examples include state-of-the-art best management practices (BMPs), land use planning approaches, and construction of modern stormwater management facilities. [Previous Program N-27] [N68]

Program N4.1.2 Continue public education programs on water quality issues, including best management practices for residents, businesses, contractors, and City employees. [Previous Program N-28] [N69]

Program N4.1.3 Implement swift and rigorous spill response, cleanup, and follow-up investigation procedures to reduce the impacts of toxic spills on the City's creeks and San Francisco Bay. [Previous Program N-31] [N70]

Program N4.1.4 Increase monitoring and enforcement of existing prohibitions on materials and practices known to impact local water quality, such as use of copper, in the design and construction industries. [NEW PROGRAM] [N71]

Program N4.1.5 Revise the City’s Tree and Landscape Technical Manual to include stronger requirements for least-toxic practices into the landscape permitting process. [NEW PROGRAM] [N72]

Program N4.1.6 Promote the value of toxin-free home and landscape management, and educate residents about the impacts of common household toxins on local water quality. [NEW PROGRAM] [N73]

POLICY N4.2 Encourage Low Impact Development (LID) measures to limit the amount of impervious surface in new development and increase the retention, treatment and infiltration of urban stormwater runoff. Include LID measures in major remodels, public projects and recreation projects where practical. [Previous Policy N-22] [N74]

Program N4.2.1 Promote the use of permeable paving materials or other design solutions that allow for natural percolation and site drainage through a Storm Water Rebate Program and other incentives.[Previous Program N-34] [N75]

Program N4.2.2 Promote landscape design that optimizes soil volume, porosity, structure and health, as well the location, shape and configuration of soil beds. [NEW PROGRAM] [N76]

POLICY N4.3 Conduct regular street-sweeping to collect trash and road surface pollutants before they enter stormwater runoff. [Previous Program N-30] [N77]

Program N4.3.1 Evaluate neighborhoods where parking controls may impact implementation of street sweeping and recommend any changes that are needed. [NEW PROGRAM] [N78]

POLICY N4.4 Work with other neighboring jurisdictions and communities to protect ground water. [PTC] [NEW PROGRAM] [N79]

Program N4.4.1 Support the Santa Clara Valley Water District as needed to implement their mandate to protect groundwater from the adverse impacts of urban uses. [Previous Policy N-18] [N80]

Program N4.4.2 Work with the Santa Clara Valley Water District to identify and map key groundwater recharge and stormwater management areas for use in land use planning and

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*permitting and the protection of groundwater resources.
[Previous Program N-22] [N81]*

POLICY N4.5 Reduce the discharge of residential basement dewatering and other excavations into the Bay, [NEW POLICY] [N82]

Program N4.5.1 Explore appropriate ways to monitor dewatering and establish fees based on the amount of water that is not recharged into the aquifer, into all dewatering and excavation projects. [NEW POLICY] [N83]

POLICY N4.6 Retain and utilize rainwater on site to the extent possible. Use native or simulated natural drainage systems for buffers and filtration to the extent possible. [NEW POLICY] [PTC] [N84]