

GPAC Open Space and Natural Resources Workgroup Report

Workgroup: John Shribbs, Bill Rinehart, Mary Dooley, Janice Cader Thompson

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Introduction

The Open Space and Natural Resources (OSNR) Workgroup was tasked with reaching out to organizations and activists who are mission-driven with regards to Petaluma's Open Space and Natural Resources. Two Listening Sessions were held and the participant list of approximately 18 people total is provided below with meeting notes and submitted statements.

GPAC OSNR Tasks:

- Read current General Plan and submit recommendations +/- based on GP sections.
- Help prioritize current and proposed projects and initiatives by ranking locations and needs.
- Help identify locations and needs that have been overlooked in past years.

GPAC OSNR Goals

- Recommend changes to current General Plan to align it with new Vision.
- Create a list of current and proposed projects and initiatives in order of priority.
- Identify resources (grants, people) for projects and initiatives.

General Plan Guiding Principles related to this topic:

1. Achieve carbon neutrality by 2030 and equitably foster a sustainable and resilient community in which today's needs do not compromise the ability of the community to meet its future needs.
2. Preserve and enhance Petaluma's natural environment and surrounding open spaces.
3. Protect and restore the natural function of the Petaluma River and its tributaries while expanding complementary recreational, entertainment, and civic opportunities.

4. Promote social and economic justice to address structural social and economic inequities and racism.
5. Ensure the health and wellness of all residents.
6. Physically and psychologically integrate and connect the East and West sides of town.
7. Create a welcoming, affordable, accessible, and age- and family-friendly city.
10. Enhance Petaluma's historic downtown by preserving its historic character, expanding pedestrian and bicycle access and safety, providing public gathering spaces, and promoting a diverse mix of uses.
11. Honor, celebrate, and preserve Petaluma's heritage and historic character and its place in the modern city.
13. Ensure infrastructure supports infill development and addresses the impacts of climate change.
14. Advance Petaluma as a hub for the arts, creativity, and innovation.
15. Advance a forward-looking economic development strategy that focuses on diversity, opportunity, innovation, and resilience.
16. Be a leader in advancing these guiding principles within the region and beyond.

Sections of the prior 2025 General Plan pertinent to this topic were copied into the appendix of this report for easier correlation. The prior Plan had many good ideas consistent with current values discussed in this workgroup. Many were not fully realized and we need to revisit prior goals to emphasize their importance and raise them in priority in the new Plan.

Existing Documents

Petaluma River Access and Enhancement Plan 1996. See:

<https://cityofpetaluma.org/documents/river-access-and-enhancement-plan/>

Petaluma Water Ways (~2010)

http://petalumasmallcraftcenter.org/wp-content/uploads/2012/11/Petaluma_Water_Ways_11x17_Brochure_0212_Compressed.pdf

Petaluma Watershed Enhancement Plan, 2015. See:

<https://sonomarc.org/wp-content/uploads/2017/06/Petaluma-Watershed-Enhancement-Plan-2015.pdf>

Parks Existing Report, 2022. See:

<https://static1.squarespace.com/static/5ea880f6d9a2075c7b7f54af/t/61674599938bc024a3246bda/1634157980900/Petaluma+Parks+and+Facilities+ECR+FINAL.pdf>

Listening Sessions and Submissions Process

The General Plan Update process included several months of listening sessions and input events for the public. Members of this workgroup participate as listeners while consultants facilitated most of these. We included many of the input ideas in our recommendations. We also reached

out to over 45 known stakeholders for more detailed input. We conducted two listening sessions and asked all stakeholders to submit written statements to ensure documentation of their input.

We asked the following questions in the outreach invitation to over 45 known stakeholders:

- Who are you and what is your/your organization's mission/goals/vision?
- What do you see missing in the Petaluma General Plan that would make an impactful change towards your goal or mission?
- What else is missing?
- What needs to be implemented?
- What should get the highest priority?

We heard from active and knowledgeable participants involved with the protection and creation of open space throughout our City including the participation of Christopher Bolt and Gina Benedetti-Petnic from Public Works.

[See Supplemental Materials and Appendix for meeting notes, link of recorded second listening session, submitted statements, brainstorm session topics and ideas, County Land Resiliency Strategy Plan, prior General Plan items related to open space and natural resources, and long-term watershed strategies.](#)

Summary of Citizen Input

Preservation of Open Space was the main topic in the listening sessions with large parcels of land and river floodplains and creek corridors being the focus. The open spaces discussed were from all compass directions from the Corona and Denman Reach in the north to Shollenberger Park and Dutra Property in the south, from the Helen Putnam Park, West Hills, La Cresta Ridge, and Paula Lane Open Space on the west, to historic downtown's McNear Peninsula and the Petaluma River Park and Fairgrounds in center of the city, to Lafferty Ranch and Sonoma Mountain watershed and Petaluma Airport fly zone on the east side. We also heard about a proposed city limit expansion north of Corona Road to the northeast which is coordinated with the proposed SMART station. Large undeveloped combined parcels were the focus areas of these stakeholder's interests. Their concerns and goals expressed had consistent overlapping goals – flood responsiveness, habitat protection, restoration and preservation of biodiversity, maintained wildlife corridors, and new connections and linkages for wildlife and people to access natural open spaces that were slated for development in the previous general plan. Many citizens have raised concerns about the amount of trees being cut down and not replaced, esp. redwoods and oaks. There was applause for the 150 recently planted trees with a goal of an urban forestry program served by purple pipes (recycled water) to all parks and new tree planting. All participants expressed opposition to the Dutra Asphalt Plant and car-based roadway crosstown extension over the river. All were advocates of preserving the

Corona/Rainier Reach in its natural state and the promotion of restoration efforts. There were strong and consistent recommendations to keep development out of any and all floodplains informed by updated flood maps now underway. Incorporation of natural systems and following natural processes was presented as the direction for undertaking any project with measurable goals. Currently, city staff is split into several departments, each having separate missions on environmental issues so solutions have not been applied with cohesion and persistence so it was proposed the City create and staff a Natural Systems Department moving towards ecological and community health as well as respond to the Governor's 30 x 30 Challenge to buy landscape to turn into open space and parks.

Workgroup Insight on Citizen Input

The GPAC OSNRC interacted separately after each stakeholder session, finding common ground with the participants and prior public input. There has been shared interest in the development of a base map that includes multiple no-build zones for the discussed larger open spaces in Petaluma. There was enthusiasm for the vision of a linear river-walk/bike path/open space zone from Denman Reach north of the city to Ellis Creek south of the city along the Petaluma River as the centerpiece of our town. The Petaluma River Enhancement and Access Plan needs to be revisited and actively pursued. There are numerous outdoor wellness groups expanding throughout town. Existing and expanded open space should be free and accessible for the population of Petaluma with new linkages to trails for active and passive activities in thriving natural environments. The current General Plan has many good recommendations and objectives but many were not installed or moved forward (see Appendix with excerpts) and we need to evaluate why they were not and how to make all these great ideas come to life.

Defining Open Space

In general, "Open Space" in Petaluma includes all outdoor areas, whether public or private, natural or developed, urban or rural. These are the places where ecological systems, wildlife, and people interact. They include intact riparian corridors, ball fields, urban plazas, parking lots, and everything in between. For the purposes of the General Plan, various categories of open space have been defined and are described later in this document.

Open space also plays an important role as developed land allows light, sun and air to create healthier places to work, play and live. The focus of this workgroup is on the undeveloped land, land to be re-developed, and existing public open space to identify places, find linkages, and to create a climate responsive balance for a growing population and developing city. The focus is on well-being that is holistic which means biodiversity, access, preservation, remediation, habitat health, activities and stronger connections between people and nature.

Previous general plans offer a single Land Use Designation for Open Space and have limited goals and objectives. Our new general plan should have expanded land use definitions and

include goals, objectives, and policies to provide a broader range of public and ecological benefits.

Defining Natural Resources

“Natural Resources” are all living and organic materials and organisms that contribute to local and global environment and ecological systems. They may be naturally occurring, installed, or have migrated from outside the region. These include, but are not limited to the flora, fauna, soils, waters, and people of Petaluma.

We live in a valley defined by two different mountain ranges and we need to embrace our geolocation and natural system with a long term strategy like the Indigenous People did for over 10,000 years.

The Workinggroup recommends the City also preserve, protect, and manage our natural resources besides natural landscapes. These include:

- River and tributaries including water, habitat, wildlife
- Petaluma Marsh and Wetlands
- Groundwater
- Water Supply
- Flood Management
- Sea Level Rise protections
- Our Urban Forest including both public and private land
- Street Trees
- Urban Ecosystem including air, water, land, biota, people, transport systems, buildings
- Reduced night lights to lessen disturbance of night wildlife
- Clean air, esp. protection from wildfire smoke
- Quiet air, esp. transportation noise from freeway and acoustic and raceway noise from fairgrounds
- Green Energy production and access (wind and solar energy in open spaces)
- Agricultural businesses and local food production (esp. Bounty Farm, local coops)

Recommendations and Priorities

Preserve, Restore, Plant and Connect open spaces and the urban forest within the city to the greatest extent possible across public, private, natural, developed, and agricultural lands by following objectives set down by Sonoma County “Resiliency Lands Strategy ” (recent draft published for public review)

- Focus early actions on areas with the greatest potential for carbon sequestration, climate risk reduction, and biodiversity enhancement.
- Participate in forum(s) for coordinated action on climate resilience in Sonoma County.
 - Advocate more for County attention, esp. for the Petaluma River, its tributaries and watershed zones, and Petaluma Marsh and connected Wildlands.
- Reduce fragmentation of the natural lands system by adding to conserved spaces, increasing connections and corridors, and working with private landowners to develop shared management strategies.
- Partner with Native American tribes within Sonoma County to advance traditional ecological knowledge and preserve tribal cultural resources and tribal cultural properties.
- Identify funding and financing strategies from the county, state, and federal governments, as well as private funding sources, to advance this innovative and bold plan. Identify new concepts for funding and financing sources as well.
- Prioritize equity and climate justice approaches that are measurable and clear.

Create Dedicated Chapter/Section in new General Plan for Open Space and Natural Resources

- We encourage GP policy to express value for environmental and ecological categories and benefits by creating a separate section that supports the shift to using environmental resources and hazards as our base map and reframes human centric development to integrate it into natural systems.
- Create enforceable, objective standards and policies to implement ideas contained here-in
- Recreation, Music and Art are overlapping but separate sections from Open Space and Natural Resources so think about creating separate sections. Keep Parks in Open Space.
- Our new general plan should have expanded land use definitions and include goals, objectives, and policies to provide a broader range of public and ecological benefits.
- Multiple categories of Open Space ranging from “Sportsfield” to “Wildlife Mobility Corridor”. Some or all of which can be applied to parcels in order to create a hierarchy

of use intensity, and to allow or restrict development to meet the needs of the community and improve urban ecology.

- Recognize the role of natural resources, open spaces and the urban forest in creating a healthy and liveable environment, and reversing climate change.
- Elevate the importance of open space and natural resources so they are considered at every level of planning and policy
- Identify and promote development strategies which are beneficial to urban ecology while prohibiting or discouraging those which are not.
- Growth, development, and urbanization must not be exclusive of ecologically beneficial resources (trees, useful landscapes, wildlife corridors, etc.)
- Use land use designation/overlays to Establish corridors that can be connected over time, as parcels are re-developed
- Do not over-regulate landscapes. Create goals, guidelines, standards, but allow for creativity and experimentation

Elevate Parks/Natural Resources Department to have equal footing with Public Works/Utilities

- Open Spaces and Natural Resources become “infrastructure” equal to streets and utilities.
- Allow them to share resources, personnel, and have common, equal priorities
- PW/U and Parks Dept do not have to compete for budget, can have common goals and take responsibility for maintenance, and monitoring and management of trees and natural resources
- An Open Spaces and Natural Resources Department in the City organization would provide more consistent long range implementation of policies recommended by this workgroup due to overlap and integration with many other General Plan topics
- Street trees are maintained by well trained city staff and not left to homeowners
- Establish an Urban Forestry Officer and staff
 - Conduct a City wide tree inventory
 - Develop new standards and strategies for weed abatement
 - Develop and publish a palette of successful, wildlife supporting plant species, with specific landscape purposes
 - Full time staff for Gator-bag filling / street tree irrigation and maintenance
 - Heritage tree survey, mapping and designation
 - Invasive species control / eradication
 - Integrated Pest Management Plan for city parcels and publish BMP’s for private landowners
 - Education and outreach for residents to promote healthy urban ecology
 - Manage urban Forestry Web page interface with public

- Shift city policy to using environmental resource and hazard policy throughout all departments as basis of decision making. Planning and Land Use Policies need to be reframed with natural systems approach
- Tree Ordinances Update to require arborist advice before removal of all large trees on both public and private lands (city council priority 2022-23)
- Tree ordinance to require mitigation (replacement trees or fees) for removal of all trees greater than 4" caliper d.b.h. (similar to Santa Rosa and many other communities)
- Urban Forest Management Plan (in development)
- Parks Plan (In development)
- Require plans for future construction of both buildings and transport systems to include open space and trees/vegetation that tie in with Natural Systems Approach
- Provide city staff to coordinate and manage a corps of volunteers to work with local nonprofits for both maintenance and construction programs and initiatives
 - local nonprofits such as Daily Acts, Friends of Petaluma River, Petaluma Wetlands Alliance, ReLeaf Petaluma, Rebuild Together Petaluma, River Park Foundation, Petaluma People's Services, Rotary, Kiwana, Bicycle Clubs, Sierra Chapter
 - place based groups like Sunrise Community Garden, La Tercera Community Garden, Petaluma Bounty, church gardens
 - Function based groups for cleaning up graffiti, trash and litter pickup, and restoring benches
 - school programs working with students such as Interact and Environmental clubs

Use Climate Change Actions/Strategies in all policy decisions for Open Space and Natural Resources

Climate Change is happening sooner than expected with greater impact locally so we need to put more effort into being prepared and take adaptive actions as well as corrective actions. We need to recognize the city is part of a larger ecosystem as well as larger civilization and our human centered systems need to be in balance and be part of the larger natural system.

Acknowledge Prior Inhabitants of our Land and Follow Their Long Perspective

We need to acknowledge that our Industrial lifestyle and values have dramatically changed the landscape that was nurtured by Indigineous Peoples and other species who lived here for many thousands of years before Eurpeans arrived 150 years ago. A key element of decision by consensus amongst leaders was the question: "Is it good for 7 generations from now?" Think long term, not just 20 years. We should do what we can to restore sustainable ecology.

Incorporate Natural Systems Approach in All Future Planning

- Our natural resources and environment form the base map for city planning
- Look at Long Term Strategies (see addendum article) to protect entire watershed and cooperate with county, bay area, state, and federal government agencies and environmental nonprofits to improve city life as well as our natural systems

- Air, water, land, biota (all living organisms) need to be considered for all projects and initiatives so human centered interests do not conflict or cause harm considering the numerous benefits: social, physical and mental wellbeing, ecology, biodiversity, protection from fire and flooding, personal and city-wide economics
- Stormwater management BMP's must not supplant or displace real tree plantings
- Buildings and businesses along the river and open spaces should face the river and open spaces to emphasize our relationship to the river and natural world/ecosystem
- Develop landscape GUIDELINES with a palette of appropriate plants with associated bioregions
- Petaluma UGB puts us in the middle of a defined watershed so movement of water and wildlife needs to be considered before any development occurs
 - Create ecologically beneficial landscapes such as vernal pools or dense stands of trees in otherwise inaccessible open space (Highway interchanges, Fallow farmlands)
 - Ensure livestock fencing does not prohibit mobility of wildlife species
 - Ensure livestock waste does not directly drain into watershed or river
 - Remove all barriers to terrestrial and aquatic migration
 - Map existing wildlife corridors and identify gaps. Develop strategies to connect/bridge corridors across private lands
- Increase Tree Canopies throughout town. Trees provide multiple benefits including heat island reduction, safer roads, added economic values, and improved health and need to be included in parks, transport corridors, wildlife corridors, parks, and private land
- Protection from natural hazards such as polluted land, water, and air
 - Further develop and implement pollution prevention policies and strategies at all levels (litter, sedimentation, sanitation, chemical/hazmat, groundwater...)
 - Identify and eliminate all sources of river and riparian corridor pollution
- Evaluate BAASMA (Bay Area Stormwater Management Agencies Association) BMPs (Best Management Practices). Prioritize strategies that use biological treatment controls over mechanical systems, develop additional BMP's, and allow for site-specific custom solutions.

Rethink Water Sources and Use

- Undertake large-scale water retention systems during flood years to store water for drought years.
- Ensure we meet future water needs given required housing by state, supporting new and old businesses, expanding population, limited water supply from SCWA, variable groundwater systems, regulated water rates and fees, competition from other growing cities
- Consider consolidating management of all Water resources (potable, storm, river...)
- Promote rainwater harvesting from rooftops and impervious surfaces
- Encourage installation and maintenance of rain gardens, bioswales and permeable paving
- Promote use of greywater irrigation systems, provide standard details and instructions

- Encourage agriculture in watershed to construct or improve water catchment ponds and use land management BMPs for increasing infiltration to groundwater
- Plan for drought and flooding since both will be more intense and duration in future.
- Improve flood water sewer system (with trash collection)
- Study (in progress) using winter excess Russian River water in winter months to recharge local groundwater supplies by pumping down with current city well system and retrieve in summer when needed using same pumps
- Construct more water tanks or reservoirs for storage
- Dig new wells for direct water sourcing
- Prioritize irrigation of trees during drought
- Restrict planting and irrigation of turfgrass lawns to public or quasi-public accessible landscapes. Prohibit use of turf for ornamental landscape purposes
- Provide recycled water to all neighborhoods and parks.
- Provide recycled water filling stations for all citizens to use for irrigation in small open spaces and tree watering during drought on both public and private properties.
- Conserve water use and irrigation during drought - increased education, incentive programs and regulations/fees (Water-wise House Calls, Mulch Madness, etc.)
 - New neighborhoods to be dual-plumbed and provided for efficient for street tree irrigation
 - Allow for landscape metering or sub-metering to deduct wastewater fees for irrigation
 - Increase capacity for water recycling and distribution
 - Identify alternative water sources, recharge strategies
 - Consider additional water storage infrastructure
 - Develop city standards for rainwater harvesting
 - Develop city standards for private use of greywater and black water
 - Develop standards for residential stormwater management BMPs
 - Prioritize stormwater management BMP's that facilitate groundwater recharge

Create More Open Spaces and Improve Existing Open Spaces

- Identify existing Open Spaces and natural resources on private lands that significantly contribute to the health of our Urban forest. Develop planning tools to protect these
- Develop overlay zones for various social and ecological benefits that can be applied to private parcels to allow development while providing wildlife corridors and trees
- Evaluate our more urban parks and plazas for ways to improve environmental quality with natural resources (adding trees, replacing un-sustainable landscapes)
- Develop River Park (McNear Peninsula) and improve Steamer Landing Park
- Develop Lafferty Ranch into improved watershed and accessible park
- Improve all parks with local community input (e.g. see suggestions in S. Kirks letter of 8-5 and M. Sullivan letter on Fairgrounds)
- Create teams of park and trail stewards from local neighborhoods and increase neighbor participation in upkeep such as workdays

- Identify and designate opportunities to add micro-parks and plazas downtown and within shopping centers or parking lots and spaces, such as parklets, to provide usable outdoor space, accessible to anyone. May need a new classification for this scale of open space.
- Create more seating, signage, interpretation with help from NParks/Trails Stewards
- Identify neighborhoods lacking open space, and parcels within which can be “Converted”, to include pocket parks and street parklets and/or neighborhood services and retail (with outdoor gathering space and trees)
- identify a list of low-water-use, durable, weed suppressing, wildlife friendly groundcover plants, and plant these in unmanageable weed-patches within existing parks and plazas
- replace un-sustainable, thirsty landscapes with sustainable plants as described above.
- Identify parcels for potential 30x30 acquisition
 - Parcels in upper river area N and S of Outlet Mall
 - Kelly Creek Extension for Helen Putnam Park in cooperation with County
 - 10 acre parcel next to Arroyo Park
 - Stuart St. Pocket Park purchase from Caltrans
 - Adobe Golf Course and parcel next to PGE substation
 - Fairgrounds
 - Strips of undeveloped land adjacent to Eastside walkway
 - Parcels on Adobe Creek
 - 18 acre Parcel next to Casa Grande High School
- Reimagine Adobe Golf Course and Open Space between it and PGE substation and ensure whatever redevelopment occurs includes open space and possibly neighborhood services which will enable adjacent residents to not use their cars Consider possibilities outside the box, for example:
 - reset zoning and density and policy
 - as a new food forest
 - multi use area for recreation, park, neighborhood services, affordable housing, energy production and storage
 - maybe start a new development integrating the 15 minute neighborhood concepts with habitat for biodiversity or
 - develop large green energy production and storage in cooperation with PGE
- Allow/support neighborhoods to create community spaces and gardens
- Create pocket park and street parklet system so neighborhoods can create shared space
 - eg. Caltrans removed 2 houses on Stuart Dr. which neighbors want to turn into a pocket park/playground/solar array
 - eg. remove one car park space, dig out asphalt, add trees for shade and benches for people
- Reinvent Fairgrounds into a plan that maintains and promotes local agriculture including small farms, nurseries, and ranchettes. Create a city park. Reduce noise pollution by:
 - a central food forest and community vegetable garden

- Build enclosed auditorium for music venues that can also house many other events including vehicle races and sports events
- Create a year round agricultural unit with 4-H and PHS Ag Dept. with an active farm and dairy that students can see, touch, and learn agriculture.
- I support something similar to this, but not as stated. suggest removing or discussing an alternate recommendation

Create more Wetlands and Improve Waterways

- Improve floodplain near Outlet Mall and restore with wetland vegetation and using BMPs for wetland restoration
- Construct rainwater catchment basins in upper river and tributaries
- Work with RCD, County, landowners, and other agencies for reducing erosion, sediment, and trash in creeks and watershed
- Increase effort to clean out trash, debris, large objects along river and creeks, e.g. Corona Creek has several abandoned vehicles and highly eroding near school grounds
- Increase setbacks for construction on properties along river and creek corridors
- Improve downtown river with Boat House in development, maintained docks, and restored river banks with wetland vegetation for erosion control and wildlife habitat
- Sea Level Rise adaptations, esp. in downtown area
- Create regional solution to dredging and dike management for sea level rise
- Build flood protections using nature based systems and flood walls if needed
- Prohibit development in the upper reach area - create North River Park and Open Space between north river and freeway, use for water catchment and infiltration
- Prevent the construction of an asphalt plant opposite Shollenberger Park
- Apply stormwater management BMP's and pollution prevention measures to existing storm drain inlets

Improve our Urban Canopy and Ecology and Heat Island Reduction

- See recommendations listed under "Merge Parks and PW/U departments" listed above
- Inventory trees in city (part of Urban Forestry Management Plan grant)
- Create UFMP
- Identify and protect heritage trees and significant stands of established or naturally occurring trees
- Support 10,000 Tree Initiative stated by ReLeaf Petaluma to provide multiple benefits
- Add trees along existing streets and corridors
- Partner with shopping centers and large parking lot owners to add shade trees and irrigation in parking lots
- Trees should be considered "infrastructure" equal to sidewalks, streetlights, signs, signals, benches, etc.
- Support Food Coops, Community Gardens and front yard neighborhood food gardens
 - support Bounty Farms
 - support Daily Acts effort to transform front lawns into sustainable landscapes
 - support local farm to table restaurants

- Prohibit “Filterra” or other types of stormwater management devices type stormwater management devices that displace real street trees
- Create more under road space for tree roots using modern techniques
- Identify areas of expansive pavements
- Work with property owners to add trees on private parcels
- Add/replace street trees where they do not exist or have been removed
- place utilities under roads and trails so they do not interfere with street trees
- All transportation, road and development projects maximize inclusion of trees
- Monitor establishment and maintenance of new trees
- Develop a list of recommended trees for uses (not just street trees)
- Have a webpage on the City's website dedicated to trees and the urban forest, with management practices, lists of recommended trees, featured heritage trees, permit requirements and info...
- All new pavements are required to include trees. Develop standards and allow for off-site mitigation, or in-lieu fee
- Establish mitigation standards and in-lieu fees for tree removals which go into a city account dedicated to planting and maintaining trees (similar to Santa Rosa)

Select and use appropriate plant materials

- Select and install plant species to maximize potential environmental, ecological, social and aesthetic benefits, such as: carbon sequestration, micro-climate control (wind, shade, glare), habitat creation, biodiversity support, heat island reduction, traffic calming, pedestrian protection, visual mitigation, etc.
- Plants should be chosen which are best suited to the specific conditions in which they are to be installed (soils, exposure, available space, surrounding conditions)
- Petaluma has a variety of soil types and ecologies. Plants “native” to certain areas of our bioregion are not necessarily appropriate in all areas, or for all situations.
- Prioritize “native” plants when appropriate and when considering characteristics of the specific location
- There are also many acceptable non-native species and cultivars that are well suited to Petaluma, are adaptable to harsh urban conditions that don’t support some sonoma county natives, and have the capability to provide great ecological benefit.
- Domestic landscapes must be symbiotic with natural landscapes
- Invasive species must not be used (refer to Cal IPC)
- Be conscious of management/maintenance strategies when selecting plants (water, pest management, ultimate growth habit)

Perform Wildlife Surveys and Education, Maintain and establish wildlife corridors

- Inventory our wildlife corridors by species and update maps, use this information to develop base map
- Create Habitat Map to illustrate locations, corridors, and pockets where wildlife occurs
- Over 230 species of birds have been surveyed at Shollenberger Park and ECWRF and we need to create a similar list for our urban forest
- More education is needed to illustrate the diversity of species in our urban ecosystem including natural environment web pages on city website
- Create zoning overlays, land-use designations, other tools to establish, protect, and maintain wildlife corridors on public and private lands.
- remove unnecessary barriers to wildlife mobility
- Tree canopy can mitigate barriers in some instances, for some species.
- Use a multi-tiered approach including Trees, shrubs and groundcovers where appropriate.
- Encourage planting of ecologically beneficial plant materials. Develop a “Wildlife Friendly Plant List” and make available to public
- Develop integrated pest management strategies and educate residents to avoid use of harmful pesticides.
- Strengthen pollution prevention measures through education and other reminders (“no dumping, flows to creek” signs, watershed education in schools)

Increase Access to Open Space, Wetlands and Waterways

- Enhance the river habitat, beautify the downtown section, and prepare for sea level rise using natural systems approach
- Create more Open Space with access esp. river and creek corridors, River Park, North River Open Space, Fairgrounds, Helen Putnam Park, Lafferty Park/Watershed
- River Enhancement and Access in Downtown area - revisit prior report and prioritize
- River Access points and path along entire riverfront from Petaluma Marsh to Cotati including bike path entire length of Petaluma River
- Develop our transport system away from car centric roads toward ped, bike, and micro-mobility including trails and paths in natural settings and especially use Rainier underpass and trail system to connect Lynch Creek trail and Petaluma Blvd. and Corona Rd. and Denman Reach area.
- Create city wide Bike and Ped Paths and Trails with WayFinding and with rideshare systems so entire city becomes more ped, bike and micro-mobility centric shifting away from our car centric policies which will not only reduce our carbon footprint but also improve air quality and overall citizen health and also include bench maintenance and addition to all paths so pedestrians can rest and enjoy their surroundings
 - Create a well-connected network of alternative transportation corridors which include trees, veg, and bike/ped routes

- Identify tree-less corridors and strategies for retro-fitting to add street trees
- Re-envision existing street network to identify corridors needing transformation
- Allow/Encourage businesses to create parklets where appropriate and include trees and vegetation (must be open to the public when on public land)
- Consider creating a walking mall on Kentucky St. as community space
- Renovate Historic Trestle and improve Water St. to create continuous public open space along the river including walkway, bikeway, restaurant seating, art display

Sources of funding

- Shift some of city staff/time/budget to Parks, Open Space, River, and Natural Resources
- Regional, State, and Federal Agencies, eg. 30% by 2030 Initiative (30x30)
- Nonprofits working in county such as Ag and Open Space, Sonoma Land Trust
- Foundations with grant opportunities
- Carbon Trade and Cap Funds, Mitigation Funds

Constraints to Future Actions

- Staff trained in Nature Based Solutions and making Environment a higher level priority
- Disagreements, conflicting views on prioritizing initiatives and projects
- Prioritizing and integrating natural systems over or into human based systems
- General US Economy and source of grants to do nature based solutions
- Uncertainty of future (growth, expectation, City Council makeup,
- Certainty of Sea Level Rise, Atmospheric Rivers causing flooding, Climate Change
- Meeting state housing requirements and water supply/use expectations
- Including social and environmental justice issues in decisions

Natural Resource - Water

Climate Change can also be called “Water Cycle Disruption”. Water is and will remain our limiting factor in the foreseeable future. Consider water in the global water cycle (hydrologic cycle). Annual precipitation influences watershed processes, ecology of riparian habitats, runoff, groundwater recharge, storage quantity of fresh water, flooding, sea level rise, and drought. We are not in full control of water in, across, and out of our human or natural systems.

Citizens are very concerned about our fresh water supply during droughts, flooding during atmospheric river storms, and future impact of sea level rise.

Many citizens are not comfortable with the increasing amount of housing development in our city and cities using SCWA water. The state requires an increase in housing. SCWA is limited in the amount of water it can store and allocate to the many cities and agencies in Sonoma and Marin Counties while

cities are asked to balance or rather juggle these two competing elements. Petaluma is currently under using its allotment from SCWA and does have some room for growth, but long term drought with radically different rainfall patterns puts this into question. All the local cities are growing at their own pace and determination so we will need regional cooperation on water use in future.

Current information is not satisfying or justifying how we will be distributing fresh water in future. More data and transparency is needed in discussing the future. Citizens are put off by being told to conserve while cities continue expanding housing and commercial properties. General statements of “we will be OK” are not being received well. We need a clear view of what the population in 2050+ will be with total water needs by homes, businesses, and agriculture during a long drought and how water will be rationed. Citizens want to know exactly in what situation and when higher levels of water conservation, e.g. level 5 or 6, will be put into place. How much water will each household be allowed to use in long term drought? Healdsburg was already under the 75 gal./person/day requirement after a 2 year drought, increasing concerns if the drought continues for another 2 or more years.

It is acknowledged that the Petaluma Basin Groundwater Sustainability Agency is constructing a monitoring system and seeking improved groundwater recharge. A study is in progress to evaluate using winter excess Russian River water to pump down into the aquifer for future reuse. Recycled water use is expanding into vineyards and parks, saving groundwater and potable water respectively.

Citizens have also asked to have access to recycled water similar to Marin County. We can set up public stations at the McDowell station or ECWRF or at one of the larger recycled water users such as Kaiser, CGHS, or golf courses, or Wiseman Park. Citizens would like to fill up small tanks so they can water their street trees during drought conditions. Expand access to recycled water.

Supporting Materials

County Land Resiliency Report

Sonoma County recently released a draft of their [Climate Resilient Lands Strategy](#) in cooperation with Ag and Open Space and it reflects our current philosophy and has abundant examples, strategies, and funding sources. The main issue is Petaluma Watershed does not fit prominently in this document with other areas raised in priority. Petaluma City needs to advocate more for County attention, esp. for the Petaluma River, its tributaries and Petaluma Marsh. See the [Executive Summary](#).

Similarly, Our City Climate Resilient Lands Strategy should aim to address similar objectives:

- Conserve, manage, and restore as much of the city as possible across public, private, natural, developed, and agricultural lands.
- Focus early actions on areas with the greatest potential for carbon sequestration, climate risk reduction, and biodiversity enhancement.
- Provide a forum for coordinated action on climate resilience in Sonoma County.

- Reduce fragmentation of the natural lands system by adding to conserved spaces, increasing connections and corridors, and working with private landowners to develop shared management strategies.
- Partner with Native American tribes within Sonoma County to advance traditional ecological knowledge and preserve tribal cultural resources and tribal cultural properties.
- Identify funding and financing strategies from the county, state, and federal governments, as well as private funding sources, to advance this innovative and bold plan. Identify new concepts for funding and financing sources as well.
- Prioritize equity and climate justice approaches that are measurable and clear.

Response Statement to County [Climate Resilient Lands Strategy](#) From John Shribbs

Comment to County Open Space Committee concerning recent Land Resiliency Report
Date: 7/15/2022

Greetings County Staff,

I am the coordinator for Open Space and Natural Resources Workgroup on the General Plan Advisory Committee. The RCD is finishing a new Watershed Enhancement Plan that I was involved with. I am also on Petaluma Basin GSA advisory committee and President of Petaluma Wetlands Alliance.

I am working now on a local Open Space document for Petaluma that reflects all the principles and values stated in the Land Resiliency Strategies. I value all the work that went into this document and agree with importance of open space, needed by both people and wildlife. I was a little disappointed that Petaluma Valley and Watershed does not get the attention it deserves in this document. So I want to remind the county staff that we are the second largest city in the county with a huge contribution to local economy.

First, I agree with Moira's letter below. The north river area is our highest priority right now to preserve and restore as well as use for flood management and groundwater recharge. SFEI wrote a historical wetland document for the Petaluma watershed with maps showing wetland loss and maps recommending where work can be done. The north river area, including all the tributaries need to be included in the resiliency plan for the county, even more area than Moira mentions in her letter. Please include the SFEI report and maps and recommendations in your report.

Second, we do have wildlife corridors to consider and the Petaluma Watershed is a critical zone of movement. Please listen to Susan Kirks when she talks about this need. We may need to limit the expansion of vineyards (especially if fenced) since these are expanding on the eastern hills and may interfere with wildlife movement. Although adequate now, the groundwater situation will get worse with climate change and extended drought periods. Wildlife and plants in nature depend on groundwater also and this is one of the missing elements in the GSA plans.

Third, the three parks next to each other, Shollenberger, Alman Marsh, and ECWRF did get identified as a RAMSAR site and deserves special mention as a birding hot spot. The Petaluma Marsh south of Petaluma to the bay is shared with Marin County and the two counties need to work together closely to save this marsh from sea level rise. It will become a large mudflat if we do not start work now on tidal and sediment management.

Fourth, the entire length of the Petaluma River, actually a tidal slough that has been heavily transformed by human effort over the last 120 years, needs attention for SLR protection, flood management, sediment deposition, bank restoration, and beautification in the downtown area with native plants. It may not be as large or as important as the Russian River but does deserve higher level treatment in your document. Please work with the RCD on both river and watershed enhancement in the Petaluma Valley. Katie Robbins is in the RCD and working on the document.

Fifth, the planned Dutra asphalt plant will be upstream of land water and air that is critical to our Petaluma Marsh which is a major feeding and resting spot in bird migration. Please find a way to transfer this land designated for industry to a wetland and open space category. We need to reduce our car centric/dominant society and slow down road construction for cars and build more (safe) paths for micro-mobility, bikes, and peds.

Sixth, I fully support the River Park Foundation and working toward a central park that is filled with native plants and art on the McNear Peninsula. Please upscale this initiative in importance since it will provide a major resource to our community for walking in nature.

Seventh, I have walked the Scott Ranch and agree it is a very important addition to Helen Putnam County Regional Park. Even though a no housing plan would be most desirable, I do agree with the compromise that has been reached for the low number of 28 houses that are uphill of the riparian corridor. This plan is the best practical outcome and hastens the opportunity for this property to be managed by professional environmentalists (Parks and Foundation working together) with opportunity to preserve and enhance the natural environment on that site while also giving access to citizens.

Eighth, I am also a leader in ReLeaf Petaluma and recently helped plant 150 native trees at Wiseman Park and helped the city get grants for an Urban Forestry Management Plan and tree planting for 6 more parks using recycled water system. The county is on the right track to preserve as many oaks and oak woodlands as well as supporting all the work Ag and Open Space, the RCD, Laguna Foundation, and LandPaths are doing to preserve large tracts of land with improve forest management. We need more forest management in both our wildlands and in our urban ecosystem. Please consider upping the value of trees in the county by creating a Natural Resources Dept. that can look at all plans and actions with an environmental eye and have a say in all planning decisions as well as promote our natural resources which have higher economic value that ever before. More tree protections are needed in both city and rural areas and also landscape management for wildfire needs to be included as well. Let's find a balance that does both fire protection and ecosystem enhancement.

Ninth, please be aware that all new vehicles for residents will be electric within next 7 years and our current economy will create a market for micro-mobility and ebikes so that our transport systems can be transformed into a human-electric powered paradigm that will be made more accessible and desirable if pathways are both safe and eco-friendly with shade from native trees and views into open spaces. Let's build a transport system for our future. Paths along Open Spaces will serve us well into the future.

The GPAC consulting team is building maps with Environment and Natural Resources/Hazards as the base map so it becomes the most important factor in planning. Please consider this Natural Systems Approach in all that you do. I included our city planners in the CC above since I feel it is important that the County work closely with cities in decisions for local land management.

John Shribbs, PhD
Research Biologist and Environmental Teacher (Retired)

Response Statement to County [Climate Resilient Lands Strategy](#) From Moira Sullivan

Comment to County Open Space Committee concerning recent Land Resiliency Report
Date: 7/14/2022

Dear Stuart Tiffen and Sonoma County Staff,

Thank you for the opportunity to review the Climate Resilient Lands Strategy and to provide feedback. I am deeply grateful that the county is undertaking this effort. It is critically needed. We are in a period of catastrophic climate change and facing the twin crisis of ecological collapse. Where Northern CA is a global biodiversity hotspot this is especially catastrophic, as we are one of only 5 Mediterranean regions in the world. The U.N. has said an area the size of China must be rewilded over the next decade (stemming land degradation is the key to keeping temp rise below 2 degrees Celsius), and Governor Newsom has passed his 30 x 30 executive order prioritizing waterways such as wetlands, rivers, and streams, which act as critical refugia for wildlife. We in Sonoma County need to act **BOLDLY**.

Sonoma's Resilient Lands Strategy calls for, "conserving and restoring those natural lands with the greatest potential for carbon sequestration, climate risk reduction, and biodiversity enhancement". It rightly mentions the Petaluma River as one of 3 rivers that traverse Sonoma County, and mentions Willow Brook Creek as a priority for protection because it constitutes important habitat for salmonids. The only area in addition to Willow Creek that this document mentions as a "protected area", within Petaluma, is Scott Ranch.

It is vitally important that the upper Petaluma River riparian corridor, and its associated ecosystems of seasonal wetlands (wet meadow and vernal pools) and oak savannah, be added to your priority areas for conservation/restoration. This riparian corridor and its associated

seasonal wetlands and oak savannah grasslands meet all of the Resilient Lands criteria: carbon sequestration, climate risk reduction (flooding, wildlife refugia), and biodiversity enhancement. Numerous scientific experts at the local, state and federal level have already weighed in on the unique (and irreplaceable) value of these natural upper Petaluma River lands over many, many years now.

Our State Coastal Conservancy (SCC), which recognizes the importance of the Petaluma River as “one of the State’s principal biological and recreational water resources”, funded a study of the upper Petaluma River region in 1991 (The Petaluma River Access and Enhancement Plan). The SCC study identified this upper section of the Petaluma River as “the largest and most environmentally sensitive of the Petaluma River’s six segments”. A large number of experts were consulted for this SCC study. The Technical Advisory Committee was comprised of the following agencies: State Lands Commission, USFWS, CDFW, Bay Conservation and Development Community, RWQCB, USACE, NMFS, USEPA, Sonoma County Planning, Sonoma County Public Works, USDA Soil Conservation Service, CA Dept of Mines/Geology, CDOT, Toxic Substances Control Division, Audubon Society, Dept of Health Services, State Water resources Board, CA Dept of Parks & Recreation, SCWA, United Anglers of California, and the Sonoma State Dept of Anthropology, amongst others. This “River Plan” was adopted as major Petaluma City policy in 1996 and lists as one of its specific goals, “Preserve and protect the Petaluma River and streams in their natural state as open spaces, natural resources and habitats”. Many of these rare and irreplaceable sensitive habitats (riparian, wetland, grassland) are under imminent threat of development and in need of conservation protections and restoration before these trust values are forever lost, including vital flood and ecological services.

Petaluma’s upper river region, often referred to as the Denman and Corona Reaches, remains largely undeveloped and comprises over 100 acres of floodplain and > 10 acres of wetlands. In comparison to the Scott Ranch area, this riparian corridor is far larger with the capacity to sequester far more carbon; its exclusion makes no sense and ignores all of the science and scientific experts that have characterized the trust values these Petaluma River lands represent. This segment of the Petaluma River includes the last remaining matrix of wet meadow, vernal pools, mature forest and instream habitat of the main stem Petaluma River. The SCC-funded River Plan states that it, “seeks to protect these aquatic and riparian habitats as they play a crucial role in the preservation of sensitive species in the area”. In addition to acting as carbon sinks, riparian corridors provide important ecological functions such as wildlife habitat, bank stability, and channel shading, vital for the survival of aquatic and semi-aquatic animals to escape predators and to stay cool (these species will be severely challenged as is by the increasing drought and higher temperatures associated with climate change). During our long dry seasons, our Petaluma River riparian corridor and associated wetlands and grasslands provide refuges for wildlife, and support biodiversity.

In the Resilient Lands Strategy document, you mention the need for wetland restoration and wetland conservation (as carbon sinks, to allow for habitat migration, and to maintain natural flood protection). Per the 2018 SFEI/RCD Petaluma Valley Historical Hydrology and Ecology Study (funded by USEPA), 98% of the Petaluma Valley's seasonal wetlands have been lost (wet meadow has declined by 98%, from 10,180 acres to 190 acres and vernal pool complexes have declined by 95%, from 970 acres to 50 acres). This represents an incalculable loss of sensitive habitat in the Petaluma Valley Watershed, as is. There are over 10 acres of seasonal wetlands in the upper Petaluma River (again, far more than at Scott Ranch). We must conserve all remaining acreage. The loss of any further lands and habitat in the riparian portions upstream represents a potential significant and permanent loss to restoration in *all* parts of the watershed.

The Petaluma River is home to more than 500 species of birds, mammals, fish and insects. These sensitive riparian, wetland and grassland habitats in Petaluma's upper river area provide high-value habitat for diverse species, including the gray fox and red-shouldered hawk. Where Petaluma's upper River area supports a number of USFWS/CDFW threatened and endangered bird, amphibian, and fish species, including the California Clapper Rail, Steelhead Trout, Chinook Salmon, Salt Marsh Harvest Mouse, Western Pond Turtle, and Red-Legged Frog, this represents prime natural land to conserve for biodiversity. (This portion of the river is also included in the designation of the Critical Habitat of Central California Coast ESU Steelhead Trout). The award-winning non-profit UACG fish hatchery here in Petaluma focuses on restoring salmon and steelhead trout in the Petaluma watershed, including nearby Adobe Creek. In August 2021, thousands of endangered Coho salmonids were moved from Lake Sonoma to this hatchery. Regards "identifying suitable locations" for conservation, the Resilient Lands document says that, "riparian areas and streams and the presence of salmonids in streams should be prioritized".

These natural upper Petaluma river lands also function as a critical native and migratory wildlife corridor. This stretch of the river has been described in both Petaluma's River Plan, and by Senior Biologist Ruth Pratt at USFWS as, "the most pristine examples of riparian habitat along the river corridor".

With regards to restoration, the SFEI/RCD study states that, "Opportunity areas for restoring riparian forest and wetlands along the mainstem Petaluma River and major tributaries include relatively undeveloped areas within the FEMA 100-year floodplain (refer to Figure 7.2 of the SFEI/RCD document). These areas are currently inundated during very large flood events, at a minimum, and could therefore have the appropriate hydrology and hydraulics to support native riparian forests similar to what existed historically. As with freshwater wetlands, these areas exist in upland reaches and reaches within the tidal-terrestrial transition zone". It further states that, "Some of the best opportunity areas are located along the Petaluma River upstream of downtown Petaluma".

Petaluma's SCC-funded River Plan states that the upstream segment of the river, "contains remnants of an extensive riparian forest...the remaining groves of trees are recognized as unique resources and should be protected and enhanced, and will supply the stock from which a continuous riparian forest will be re-established along the greenway". It also states that, "Valley Oaks in the Corona Reach were once part of an extensive riparian forest typical of the freshwater above downtown. The River Plan encourages preservation and expansion of these natural resources".

Per Petaluma's River Plan, "almost all banks in the river corridor are candidates for restoration treatment". Restoration and bank stabilization would contribute significantly to the wildlife and fishery habitat values and the water quality of the greenway. Further that, "To enhance the freshwater riparian habitats upstream of Lynch Creek, riverbanks and banktops should be restored with a wide variety of native shrubs and trees. Enhancement would largely consist of removal of exotic trees and shrub species and planting more open areas with riparian trees and shrubs to close the canopy and create a more diverse and dense multi-story riparian habitat. Minor modifications to the streambed should also be made to improve fish habitat. The riparian forest should gradually open to woodland then savannah areas of Live oak, Buckeye and scattered Valley oak where width of the buffer allows. Establishment of a complex mosaic of understory and overstory species of deciduous and evergreen plants is desirable in this area to provide a rich wildlife habitat with diverse food and cover sources throughout the year".

One of the stated goals of the Resilient Lands Strategy is to "reduce fragmentation of the natural lands system by increasing connections and corridors". This upper Petaluma River area (Denman/Corona Reaches) sits just below Willow Brook Creek, which you've identified as a priority for protection. To thusly separate Willow Brook Creek out from the larger Petaluma River makes no (ecological or climate) sense. The SF Estuary Institute has said biodiversity declines rapidly when green spaces are < 10 acres. We want to save large tracts of land like these 100 acres of riparian corridor/wetlands/floodplain. Petaluma's SCC-funded River Plan lists under its policies, "Encourage habitat continuity linkages to enable safe passage for wildlife between the downstream salt marshes and the upstream freshwater riparian areas. It is important for the overall health of both aquatic and terrestrial areas to promote continuous and effective riparian habitat". Indeed, where water bodies such as the Petaluma River are *hubs* for biodiversity, we should not just conserve them but also acquire adjacent parcels to increase their effective size (via easements, land use restrictions, purchasing via Open Space District, land trusts, SCC grants, etc).

Petaluma's General Plan recommends coordination/partnership with a series of agencies for resource protection. To, "Coordinate with Sonoma County's Agricultural Preservation and Open Space District (SCAPOS), Permit and Resource Management Department [permit Sonoma], and Water Agency [SCWA] to protect riparian corridors and critical biological habitats". SCAPOS's Expenditure Plan specifically calls out the Petaluma River as, "an area of biotic

significance which may be adversely impacted by development and incompatible land use” as well as listing the Petaluma River as an example of an open space project meriting restoration and stating that, “preference will be given to acquisition and development projects which affect watercourses”, *with the Petaluma River listed as an example.*

As the second largest City in Sonoma County, Petaluma’s taxpayers are substantive contributors to SCAPOSD. Other potential fiscal partners could include: Sonoma County Parks, Land Trusts, Prop 1 monies from the Coastal Conservancy and/or Wildlife Conservation Board, mitigation funds from CalTrans, California Office of Emergency Services (OES), FEMA Hazard Mitigation Assistance Program and other flood mitigation funds, National Park Service Rivers, Trails and Conservation Assistance Program (RTCA), Petaluma River Watershed Collaborative (through RCD), Rose Foundation, Coddling Foundation, Sonoma Community Foundation, The Nature Conservancy, Trout Unlimited, Patagonia Foundation, Outdoor recreation funds (private and non-profit sources), private donors, and the City of Petaluma. In addition to funding the Petaluma River Plan, the CA Coastal Conservancy has previously funded restoration and enhancement projects along the lower reaches of the Petaluma River.

Regarding climate risk reduction, where Petaluma is built on a watershed, bisected by the Petaluma River, and has seen significant infrastructure losses, we need to greatly strengthen our climate resilience and preserve the flood storage capacity of our remaining river floodplain. The Resilient Lands document mentions that, “The Petaluma River already floods during multi-day storms” (pg. 90). In the early 2000s, the US Army Corps of Engineers (USACE) built a \$100 million dollar floodwall in the Payran section of Petaluma. This was after Petaluma taxpayers paid out \$28 million in uninsured losses. The USACE Flood Control Plan is one of the City of Petaluma’s major policy documents. The Corps FEIR states, “Do not build upstream of the transition weir, it will degrade flood protections”. Petaluma just paid out \$1.4 million dollars so far *this year* for flood damage related to the October 24, 2021 atmospheric storm. Per Scripps and USACE, Sonoma County sits at the peak of landfall for atmospheric storms and Sonoma County is #1 out of 11 Western States and 414 counties in flood losses, to the tune of \$5 billion dollars. The Dept of Energy has said that EVERY major flood event in Sonoma County in the past 10 years is due to precipitation falling on the land (*i.e.*, severe weather events like atmospheric storms, which are predicted to increase in both frequency and severity). On top of that is sea-level rise, and the State of CA has said that tidal sloughs will be more impacted than other bodies of water. As you note in the document, Petaluma is one of 3 cities required to form a Groundwater Sustainability Agency due to insufficient groundwater. Maintaining the flood storage capacity of our floodplain by conserving our river wetlands and grasslands reduces the magnitude of floods by decreasing water velocity (peak flows), improves groundwater recharge, and cleans our water. A triple win for Petaluma’s citizens and biodiversity.

It is critical that Sonoma County uphold the goals of the Petaluma General Plan, SCC-funded River Plan, USACE Flood Control Project, and Petaluma’s Climate Action Commission, and

protect these vital and irreplaceable land trust values and their associated ecological and flood functions. Petaluma's upper river area is a prime candidate for strengthening the climate resilience of this natural land to achieve a wide range of objectives, from enhancing biodiversity, to climate risk reduction, and carbon sequestration. Rivers are also important to disrupt the spread of wildfire (US Forest Service) and to provide for a cool microclimate.

Thank you for your attention to this vital issue, and for following in the work of the hundreds of scientists and other experts who've weighed in over many decades on the critical importance of conserving these upper Petaluma River lands. Let's turn our attention to getting this done to protect our citizens/infrastructure from catastrophe and stave off accelerated loss of our native biodiversity and wildlife habitat.

Sincerely,
Moirá Sullivan, M.S.
(State of CA Scientist)

Land Management Categories - Natural Systems Approach

How can Goals, Policies, Land-use Designations, etc. be crafted and applied to foster natural systems and symbiotic relationships between built environments and the natural ecologies in and around the city limits. Define expanded land use categories/designations, to be supported by Zoning overlays requiring mitigation measures and provisions to support all of the above.

The General Plan and processes tend to be focused on resources that an owner can identify but future needs require that we focus on resources that are under indirect management or managed by other organizations such as county, state or federal organizations or nonprofit institutions. Petaluma needs to connect with and engage in the discussions and decisions in our watershed even if outside our UGB. Many of the nature-based solutions used outside the UGB can be linked to solutions used inside the UGB. This is a systems approach rather than an individual parcel approach.

Places under direct control of an owner: parks, golf courses, school playing fields, fairgrounds, undeveloped (vacant) lots, larger private parcels, parklets, large parking lots, landscape assessment districts (LADs), street tree medians and strips, common areas in multifamily housing units, plazas in commercial projects, docks on river, etc.

Systems under indirect management: urban forest as ecosystem, river, river banks, creeks, flood channels, wetlands and floodplain along river, riparian corridors, groundwater retention basins, transition zone at urban growth boundary (UGB), wildlife corridors inside and around UGB, wildfire protection zones, earthquake fault zones and soil interactions, sea level rise, etc.

Ownership and maintenance is everything when defining where the money comes from and what can be regulated. “Private and Quasi-public” vs. “Public” or “Publicly maintained private land” are appropriate distinctions here (re-sort lists above under these categories)

Land Areas of Interest

(Includes lands outside Sphere of Influence, UGB)

Waters

Petaluma River (all reaches, waters, and banks)

All tributaries (mapped blue-lines vs identified seasonal drainages?)

Petaluma Marshes

Corridors on river and all tributaries/flood channels

North River floodplains including Rainier, Corona, and Denman Reaches

River Park/McNear Peninsula/Steamer Landing

Shollenberger Park/Alman Marsh/ECWRF

Vernal Pools

Groundwater

Reservoirs

Pools

Westside

West Hills area

La Cresta Ridge

Paula Lane Open Space

Helen Putnam Park and proposed expansion area

Petaluma Country Club Golf Course

Eastside

Fairgrounds

Rooster Run and Adobe Golf Courses

Area near PG&E substation

Lafferty Ranch

Sonoma Mountain watershed

Open space (land and air) around Petaluma Airport

Eastern green belt with path (Casa Grande Rd to Corona)

Adobe State Park

CalTrans 101 Fwy corridor and sides, esp. tree mitigation

Stuart St. parcels owned by CalTrans next to FWY interchange

Whole city area

All City Parks, Landscape Assessment Districts (LADs), Plazas

Landscapes of larger complexes such as apartment complexes and business parks
Bike trails and bike/ped paths with open space views and tree shade
Street medians, roundabouts, and sides
Freeway Corridor
Agricultural lands surrounding city limits
Greenbelt of hills surrounding watershed
Urban Growth Boundary
Potential annexation parcels
Schools - Need to engage school districts and figure out how to incorporate Open Space and Natural Resource Goals into operations and maintenance of school district lands
Drainage corridors: City and SCWA (County) controlled lands and infrastructure

Open Space Brainstorm/Parking Lot

The following is a brainstorming list of important considerations, questions, categories for open space and natural resources. We intend to expand on these topic areas and reorganize the content in the coming months.

Below are ideas to include in this framework.

1. Petaluma is located in a valley surrounded by two mountain ranges with a river running through it
 - Petaluma's bioregion can be defined by the Petaluma river watershed and all of its tributaries north of the county line
2. Connection to watershed and its natural systems
3. Connection to Petaluma Marsh downstream and its natural systems
4. Urban ecology
 - multiple benefits of increased urban canopy
 - i. biodiversity, habitat
 - ii. reduce vast heat islands created by roadway corridors, parking lots and large buildings
 - iii. improved street surface longevity
 - iv. slower and safer traffic
 - v. Encourages walking and alternative transportation
 - vi. economic value
 - vii. removal of air pollutants, esp. near freeway, high traffic zones
 - viii. improved physical and mental health
 - ix. Greater opportunities for outdoor community interaction and social development
 - x. Microclimate control
 - xi. Wind reduction
 - Expand our plant life wherever possible

- i. use native plant species where appropriate
 - ii. use nonnative vegetation if it provides more durability, survival, biodiversity,
 - iii. remove invasive nonnative plants using IPM (integrated pest management), weed control BMPs using Invasive Plant Council and UC Extension recommendations
- Green Roofs - support development, esp. new large buildings
- Downtown area needs more tree canopy, community spaces
- Improve Air quality, esp. near freeway corridor
- Urban Forestry department
- Front and back yards used to grow food, insects, birds, etc.
- Loss of wetlands affecting soils, water movement, temperature
- Fungi and other soil biota are important for soil health and supporting above ground trees and wildlife
- Carbon sequestration

5. Wildlife

- habitat
 - i. Preserve and create, all scales
 - ii. Established habitats
 - iii. Providing habitat in new development
- mobility/corridors
 - i. public and private lands
 - ii. barrier removal
 - iii. no new barriers in established corridors
- Species diversity
 - i. Plants
 - ii. Animals
 - iii. Special Status/listed spp.
- Food chain
- Pest Management / IPM
- loss of larger wildlife forms due to urbanization, earlier hunting, agricultural practices
- animals, plants, fungi, and bacteria live in soil so soil health is important to support trees and wildlife, air quality and carbon sequestration

6. Hydromorphology

- river and tributaries have been highly modified
- Storm/Flood management including sediment, pollution runoff
- Preservation of eco resources, especially intact riparian corridors
- Repair / regenerate degraded riparian corridors
- Water Quality
- Groundwater

- NPDES (Point Source Pollution, Nonpoint Source Pollution)
- Erosion / Sedimentation
- Groundwater - Depth, quality, availability

7. Geology

- Petaluma is in a valley confined by two very different raised ground structures
- base layers a mix of various formations over geologic time
- Highly expansive clay soils throughout low-lands
 - i. Very low infiltration / percolation rates
 - ii. Structurally weak and unstable
 - iii. Do not support healthy “Native” landscapes without modification
- diverse soils, some become jello during earthquake (liquefaction)
- erosion and sediment movement
- we live over a network of faults with over 30% probability of a 7+ magnitude quake in next 50 years so we need to up our earthquake hazard preparedness

8. Mobility/Transportation

- Transportation corridors to shift to human powered and electric micro-mobility
- Near-term need to better provide for all forms of mobility
- Add trees along existing streets and corridors
- New/redefined roadway classifications (parkways, boulevards, trails...)
- New/Stronger standards for incorporating natural resources (trees, parkway plantings)
- Street tree maintenance/protection/education.
 - i. Trees should be considered “infrastructure” equal to pavements, streetlights, signs, signals, etc.
- Trails:
 - i. Motorized vs non-motorized vehicles
 - ii. hierarchy network for both Transportation and recreation

9. Agriculture, local food: City should fund and/or manage Petaluma Bounty (or similar) to facilitate local small scale food production such as

- Small Farms
- Community Gardens including neighborhood shared food growing
- Home gardening/farming
- Food Coops
- local organic farm to table restaurants and delivery services
- Integrated Pest Management

10. Recreation

- Existing GP is very good about quantifying and providing for active and team recreation programs and facilities on a per capita basis
- Open Space land use designations may be categorized as appropriate for Active AND/OR Passive rec. The same level of detail should be provided for more passive forms of recreation

- Schools - Need to engage school districts and figure out how to incorporate Open Space and Natural Resource Goals into operations, maintenance, and use of school district lands

11. Public Health

- Human connection to nature with access, education, experience, holistic systems, social and environmental justice
- Wildfire hazard: preparation and prevention
- Earthquake hazard: preparation and prevention
- Flooding hazard: preparation and prevention
- General: Provide/designate flexible open spaces suitable for emergency relief.
 - i. Temporary shelter structures
 - ii. Emergency Op's staging
 - iii. Evac

Topics of Interest

10,000 Tree Initiative

- SK comment: Increasing tree canopy in Petaluma is a valiant focus. At the same time, Petaluma Valley historically has been open grassland and understanding this, including for open and green space, and preserving such areas, esp. related to wildlife and bird habitat, seems relevant and an interface for overall balance.

Lafferty Ranch/Sonoma Mtn. Park/watershed/

- Lafferty Ranch: "The City of Petaluma's Lafferty Ranch, 270 acres of diverse lands on the upper slopes of Sonoma Mountain with stunning views of the Bay Area and Pacific Ocean, headwaters of Adobe Creek, has been designated as a future park in City and County plans since the early 1960s."

Petaluma Reservoir(s) and connected watersheds

Rainier Crossing and land between FWY and river

- The majority of the nearly five dozen public comments prior to the start of Monday's meeting urged city officials to preserve and protect what they called Petaluma's old growth heritage forest, a stretch creekside habitat that runs along Lynch Creek and the North Petaluma River. These trees would most likely be affected by an installation of a Rainier Avenue crosstown connector, which has yet to reach full approval after decades of debate. "We cannot meet our carbon sequestration (goals) without this extraordinary Old Growth Forest," said Kathleen Bradley in a letter to the city. "Please save it now." Barrett suggested a moratorium on development along Lynch Creek, gaining the subsequent support of council member D'Lynda Fischer and Vice Mayor Pocekay.

Trestle downtown

- Petaluma’s trestle, which runs along the riverfront near Water Street, served as the main freight rail line for Petaluma and Santa Rosa dating back to 1922. No longer in service, it’s been since used as a main promenade for restaurant- and event-goers. But with much-needed updates to its infrastructure, much of the walkway has been blocked off in recent years due to safety concerns. With its rehabilitation at the top of the priority list, council members would look to get the project “shovel ready” and secure funding by the end of the year. Council members King, Healy, McDonnell, Barnacle, and Mayor Barrett voiced full support for the project at Monday’s meeting.

Paula Lane

- (from SK) The Paula Lane 11.22 acre open space has contiguous and adjacent parcels to total 7 added acres, to make the Preserve 18.22 acres. This is one of the most sensitive areas for birds and wildlife in South Sonoma County, including a natal territory (only one of two identified) for the special status American Badger. Designating these two add'l properties as open space, within the UGB but in unincorporated SoCo, will enhance the chances of acquisition and conservation. One property owner may object when public meetings occur, but developing those 4 acres would be extremely challenging even under the best of circumstances. I can provide parcel numbers for the sake of mapping.

Helen Putnam Park Extension/Kelly Creek Conservation

La Cresta Ridge and Ravine (with water tanks)

Fairgrounds - park, raceway, events, future

Land Trusts between Petaluma and Cotati/Pennngrove (SK suggestion to add)

101 redwood tree mitigation and replacement

Requiring tree canopy in new developments

Requiring trees and/or solar panels in large parking lots

Protecting all trees above 4 inch dbh on private land

Increasing fees and penalties during drought for water use/misuse

Water Tanks/Reservoirs

- The City of Petaluma’s water system originated in the late 1800s, to meet the growing demand as development occurred in the downtown area. The City’s original water source was the headwaters of Adobe Creek. In 1910, the City constructed Lawler Reservoir in the hills east of Petaluma to boost water supply. In 1937, stream diversion facilities and a water treatment plant were constructed at Lawler Reservoir to supplement surface water supply.

- City has two water tanks on the outer east side. One on Harden Lane and the second tank is on Manor Lane. The tanks are used to stabilize water pressure for the east side. City water lines connect to those tanks. They are filled using the city's potable water, water from the Sonoma County Water Agency.
- City has X tanks behind Oak Hill Park

Landscape design

Tree protections on public and private land - tree ordinances

- Walking hand in hand with its carbon-neutral goals and climate change initiatives, a new city tree ordinance would more strictly preserve and protect existing tree canopy, and replace those that were removed due to property development and street maintenance. This comes as ReLeaf Petaluma introduced its "10,000 Trees" plan which looks to increase the city's tree population by 10%. Public comments during Monday's meeting also presented concerns that some city trees have been recently removed without necessary reasoning, which clashes with climate change initiatives.

Wildlife corridors

Irrigation during drought

Transit corridors – landscape, trees, view,

Parks master plan

- A "Parks Master Plan" would develop a 10-year vision for the future of public parks and open space throughout Petaluma, expecting a December 2023 completion. Council members voicing support for a parks plan implementation included Fischer, Barnacle and McDonnell.

Noise pollution from raceway, outdoor concerts, park parties, SMART

Flood management

Groundwater (GW) management

Water catchment, GW recharge

Sea level rise (SLR)

Open space surrounding city with UGB interface

Wildfire protection, prevention

Earthquake preparation

River enhancement and access

River Paths, WayFinding, Trails

Path around city near UGB

- SK comment: **Urban separator path** should not be included in the new GPAC. This was a term invented by Pam Tuft in the last GPAC to try and put "something" along the west rural edge of the UGB to portray some kind of buffer. It was not feasible or possible then, and Pam was advised of this, as the location was directly in sensitive habitat as well as on private lands. Urban separator could be a standard definition with a 300' minimum width - consistently. Evaluating existing urban separators can hopefully support non-encroachment except for maintained green space and habitat enhancement.

Turning Basin Floating Boat House

Docks on river - access points

Old docks on river falling apart

River banks downtown

Watershed management

Riparian habitat

Place based education

Local Urban Planning in school curriculums

PCS Steering Committee on Environmental Education

City gateway landscapes

Community separators

Ring Trail, Bike/PED Trails

Air quality

Local native and nonnative species of importance

Cooperation with Environment oriented nonprofits

Downtown beautification

Questions:

How do we include watershed management into city management?

- We tell them that watershed management is important and it needs to be part of the overall budget.

Can any open space be used for energy production, storage, transmission?

- Perhaps this is a clarification that protects open space from single use solutions like alt energy which is the opposite of biodiversity and interactive natural spaces. We want multi use wherever we consider alternative energy. Buildings, playing fields with turf, parking garages or lots are places for alt energy. Not the open space we are discussing.

Can we expand/add parks large and small? Add staff to maintenance?

- Staff maintenance has been a shut down for certain parks expanding, but I think we are in a new era of management and should not worry about the 'how', but the 'what'. We are focusing on what we want to see.

Can we subsidize tree plantings in low income neighborhoods?

- Great idea and it's the how not the what. Just add trees wherever there is a diminished tree canopy. Isn't that the work of Releaf?

Can we map our heat islands to prioritize tree planting and park improvements?

- Seems like a good idea, but wonder if it's necessary next to common sense. Maybe heat mapping holds more sway than looking at a park and seeing it's roasting. Or that asphalt parking lots are hot. I think Releaf uses basic technology to achieve this information. I need more education here.

Are we prepared for fire, flood, earthquakes?

- Floods are Petaluma's key issue. We cannot continue to build in wetlands or block water courses or pave them over and shoot them out of culverts. Our stronghold needs to be the upper reach and the area between north Lucky and the highway and any location that can improve the watershed and slow it down.
- We can use the green belt as our protection against wildfires
 - golf courses, vineyards, mowed fields, oak savannas provide buffers
- For earthquakes, (over 30% probability in 50 years) we need to prepare
 - Would like more community awareness, education on how to prepare, which sections of watershed are in greatest hazard zone, where to go, emergency response systems, etc.
 - may be outside our area but not in any other workgroup either
 - Where can people go - we have Fairgrounds, need process/procedures
 - water access will be important for most who shelter in place for a long time

Can we regulate trees on private land?

- It may be something that has language around preservation just like trees on public property and allow some extenuating circumstance so there is not extreme hardship on an owner.

Notes Taken during Meetings

Stakeholder listening session #1 on 22-04-19

Working Group Members:

John Shribbs
Janice Cader Thompson
Mary Dooley
Bill Rinehart

Attendees:

David Powers, ReLeaf Petaluma
iPhone: Sherri Fabre-Marcia, Petaluman's for Responsible Planning
Susan Kirks, Paula Lane Action Network
Maxene Spellman,
Seair Lorentz, Petaluma River Park
Ann Baker, Climate Action Commission
Gina Benedetti-Petnic (PWU)
Christopher Bolt (PWU)
Dennis Rossatti

Comments:

John Shribbs: Kick-off intro to discussion topics

Committee Member Introductions

David Powers- ReLeaf Petaluma 6:44

PowerPoint Presentation

Engage community to plant trees and shrubs to improve community health

Wiseman Park 150 trees planted by volunteers 4/9/22

PPSC COP Rebuilding together partnered

Move the needle on climate change

GP needs to elevate the significance of open space

4 key points:

1. Environmental Equity
 - 1.1. Purple pipe enabled the project to happen
 - 1.2. 6 parks connected but not served
 - 1.3. 60% of east side parks not on line

- 1.4. Cities policy favors ag land for recycled water use, should increase storage and deliver to residents and parks
- 2. Riparian Corridors
 - 2.1. GP should set policy to prohibit development/runoff in North Reach. Should instead encourage native plantings
- 3. Stormwater Management and Rainwater Harvesting
 - 3.1. GP needs to include trees as stormwater management tool, natural infrastructure
- 4. Preservation and expansion of urban tree canopy
 - 4.1. Current gP includes 72 references to tree ordinance, yet it has not materialized
 - 4.2. GP must create Urban Forestry Program
 - 4.3. Trees are only part of infrastructure which increase in value as they age.

Maxene Spellman 6:51

Friends of Petaluma River

Similar goals to ReLeaf

Planning a River Parkway from Lynch Creek up to Corona

Last beautiful riparian corridor is upper reach – Needs Protection

Threatened by Raineer

Eliminate Barriers to public access restoration, flood control, climate change

Work with Landowners

Supports ReLeaf and Wetlands Alliance, similar Goals

6:54

Ann Baker – Climate Action Commission and several ad-hoc committees

Last best opportunity to plan for healthy ecosystems

Enabling natural systems to follow their own natural processes

6th great extinction needs to turn around

Analysis of (E) stormwater system (from ECR) relative to changing conditions (SLR, increased Storms) – How can natural systems alleviate/mitigate

We are beneficiaries of SF Estuary Study

Consult Miwok historical ecology

Go Larger with tree department – create “Natural Systems Department”

We need measurable goals and targets for metrics of Ecological Health of our natural systems

30% preservation by 3030 (Governor’s challenge)

Protect Petaluma’s archetypal ecologies and habitats

6:59

John talks about green infrastructure and engineering and introduces

C Bolt and GB Petnic

Susan Kirks 7:01 Paula Lane Action Network,

Susan has extensive experience with advocacy groups

Preserve open space, protect corridors

American Badger and other Special Status Spp.

Provided link to SF Chronicle Article about Gov's 30 by 30 plan:

<https://www.sfchronicle.com/bayarea/article/bay-area-parks-17089275.php>

Comments are measured because Staff is Present

Does not see staff Presence as constructive

Concerned about habitat destruction

Wildlife corridor mapping project

"Together Bay Area"? member (formerly Bay Area Open Space Coalition)

Thanks to Maxene and JCT for work toward securing Ellis creek

President of Madrone Audubon Society

Supports Petaluma Wetlands Alliance

Priorities: conservation of open space that connect habitat

3 areas specifically deserve Protection:

KCP, Paula Lane Property, North River area

All are in the Same "Wildlife Corridor"

Support's AB comment about looking broadly at historical ecology, what can we learn?

Connect to equity and History

Greg Saris, author of "Becoming Story" , should be invited to speak.

Seair Lorentz ED and co-founder of Petaluma River Park foundation (2019)7:10

Presentation

Mission: to Buy the 24 ac. Peninsula designated "open Space"

RAEP 1996 designated

Create Public Open Space (though it is privately held)

Urgency to protect Open Space

Looking to improve access to parks and open space in central Petaluma

Bring 24 Ac. of OS to heart of city

Very accessible site

GP update : how can we make this a new central park for Petaluma, Connect amenities and transportation corridors

Central Park will Connect People Art and Nature

"Park for People" is central to Mission

How do we couple efforts toward open space with others and create the vision together?

Has done baseline studies, Site is not deemed sensitive environment (additional studies pending)

Peninsula is manmade earthwork (dredge spoils)

Demonstration Site for Restoration, Maintenance and ecology

7:19

John talks about his 15 years of experience with Schollenberger

Taryn Obaid 7:20

Lives next to Flood wall (1967 subdivision)

Involvement dates to 2019 Sid Commons proposal

6 creeks converge "Ground Zero" for Petaluma valley watershed

Development proposed in 2019 should not be approved
Not every city has a river running through it
Her Neighborhood is in a big bend, marked by engineered channelized river to south, North of Weir is last segment of virgin Petaluma River
Home to 3 special status species:
Chinook Salmon, red legged frogs(?), Western Pond Turtles, old growth oak woodland
Sid Commons not appropriate for this location
River Access and Enhancement Plan (RAEP) identifies Sid Commons as land to be preserved
Campaign to raise awareness of what is along this reach (Old Growth Forest)
500 people have toured the forest with her
Friends of the Petaluma River access the area, but most people do not.
Benefit of open space highlighted during Covid Lock Down
within 1/8 mile are 5 separate low-income projects, south are 5 more, to east is senior housing
Heat Island
Need Moratorium on development
Save as Northern reach and create Northern extension of Petaluma River Park
River is a treasure
Embrace it
Preserve Animal Habitat
Rainier underpass should not be used for cars, use for bike and ped only
Need NE-SW connections and SE-NW (all directions)

John introduced Petaluma Wetlands blog And His YouTube channel

Janice will share photos of view from water in Northern Reach (property south of factory outlets), showing severe landslides and sedimentation

John is impressed by the variety and number of many organizations and diversity of proposals involved in Bay Area management and which organizations have control and responsibility for Sea Level Rise preparations and adaptations. There is a broad overview agency for the entire SF BAY oversight now. The RCD is working on a River/Watershed Enhancement Plan and recommending 10 projects to prioritize.

iPhone: Sherri Fabre-Marcia, Petaluman's for Responsible Planning
Mission to protect green space at D and Windsor (18 years)
43 living species
Kelly Creek
Seeking One United Voice to Pursue open space
Enforce environmental laws
Enjoyed working with planning to understand complexity of process
Volunteers/Citizenry should not be charged with protecting OS
Public questions integrity of city officials and government
Can't cave in to Threat of lawsuits
Shouldn't cut trees and plant new ones

Suggestions:

Clearly identify land in Petaluma to be Protected

Rate land by ecological value vs development value

Experts need to be retained by city, not developer

David vs Goliath

Have clear Fire Policy for lands that are at risk of fire

Roads are not legitimate fire breaks

Need to create clear traffic policy to show patterns, to protect citizens

Shouldn't count on private developers to improve our streets.

Highest priority: make GP strong enough so Deep Pocket developers cannot exploit Petaluma.

Dennis Rossatti 7:39

Parks and environmental advocate

Connectivity is important (seamless opens space)

Scooters and Micro-mobility

Demonstration of Bird Model Scooter

Davidon project has benefits (Dennis is consultant)

More walking trails paths

Development deal

Fire Ecology plan for KCP is "Model" for WUI

Follow-up Comments and Questions:

John

Groundwater, flood control, are additional issues that need to be addressed

Susan K. 7:43

Fairgrounds is large open space in middle of Petaluma

Bird Life (Canada Geese) and others

Environmental value

Sensitivity to habitat and protecting land

Open Space does not necessarily mean "Park" There is funding for other open spaces and we need to access it and apply it.

Petaluma has a High-Use Low-Impact Design Model Project

Seair Lorentz

Question regarding Adobe Creek and Rooster Run opportunities?

John states Adobe Creek is derelict, Rooster Run under renewed lease, hopefully more trees will be planted

Mary Dooley

Fairgrounds is shown as open space or park on last GP

Other previously designated open spaces: Lafferty, Kenilworth (Target), Petaluma Golf and Country Club, Pomeroy/Riverfront

Need to preserve, enhance, and connect natural systems

Ann Baker

Where is previously proposed plan for River Path (Petaluma Waterways Plan or River Access and Enhancement Plan)?

Maxene

River Path from Lynch Creek to Corona needs to be city goal
Update River Access and Enhancement Plan
Has done parcel Study up to Outlet Mall
Hoping for funding from Coastal Conservancy
Davidon is good compromise

Taryn Obaid

Connectivity all the way to Denman reach on Both Sides is important
San Anselmo – really smart people did not zone it as Open Space so that State does not up-zone
Need different land use designation to protect from taking of open space for housing
Cedar Grove?
E Washington overcrossing (East Corner) created remnant open Space, what is goal?

Christopher Bolt

Loves Petaluma moved here 7 months ago
Excited to hear about things like River Park
Environmental Stewardship
Good Engineering integrated with natural process
Recycled water storage
Conservation and resource protection
Urban Forestry and natural habitat should be a municipal department
Wants to work with team to find money to clean-up community

Gina B. P.

Loved hearing great ideas and visions
Petaluma Waterways Map needs updating should be extended North
Will share Map and Petaluma Waterways Plan

Chat room dialog:

From S Kirks to Everyone 06:45 PM

<https://www.sfchronicle.com/bayarea/article/bay-area-parks-17089275.php>

From Christopher Bolt - Public Works & Utilities Director to Everyone 06:58 PM

Great comments so far - thank you! Just a quick note to let you all know that Petaluma Public Works is here and listening closely. 😊

Both myself and Gina are here: Director and Asst. Director. 💪

From Seair Lorentz (she/her), Petaluma River Park to Everyone 07:01 PM

I'm happy to go next

From Ann Baker to Everyone 07:03 PM

Glad we have the leadership of DPW here at the meeting! Nice to meet you and thanks for engaging with us

From Christopher Bolt - Public Works & Utilities Director to Everyone 07:05 PM

Our pleasure!

From Gina Benedetti-Petnic, Petaluma PW&U to Everyone 07:07 PM

Janice and John, Thank you for the intro. Christopher and I are here to listen, not talk, to hear about your concerns, visions, and the important work that you all are doing. We are simply genuinely interested.

Thank you for allowing us to listen in!

From David Powers/ReLeaf to Everyone 07:08 PM

Glad you both made the effort to sit in. Much appreciated.

From Janice Cader Thompson to Everyone 07:23 PM

Christopher and Gina thank you for attending this meeting!

From Seair Lorentz (she/her), Petaluma River Park to Everyone 07:27 PM

Aquas Cafe and PRP are co-hosting a River People Community Mixer in May. I think many of you would be interested to join us--please do!

<https://www.petalumariverpark.org/events/mixer>

From Seair Lorentz (she/her), Petaluma River Park to Everyone 07:52 PM

I really like the idea about the City establishing a framework about conservation / access. I think Sonoma Land Trust is doing good work / thinking in this area.

I would also say that Ag & OS should be involved in this conversation and process as they hold a number of easements in town .

From Taryn Obaid to Everyone 07:52 PM

Western Pond Turtle just discovered at Sid Commons, filed with Fish & Wildlife

From Seair Lorentz (she/her), Petaluma River Park to Everyone 07:59 PM

I second for making Cedar Grove a park!

From Taryn Obaid to Everyone 08:00 PM

Other point: get smarter about what truly is habitat restoration because Sid Commons is proposing to destroy river calling it restoration . Crazy!

From Ann Baker to Everyone 08:01 PM

Is Cedar Grove along the river opposite the Clover facility? If so, yet that would make a fantastic park!

From Taryn Obaid to Everyone 08:02 PM
yes, opposite clover dairy

From Gina Benedetti-Petnic, Petaluma PW&U to Everyone 08:02 PM
I believe that Ann was referring to the Petaluma Water Ways map - a 2008 effort aligned with the General Plan 2025 and the River Access and Enhancement Plan. I can make that available to anyone interested. It focuses on a 3-mile reach of trail planning (both sides of river) from Ellis Creek/Shollenberger to Water Street North. I'd love to see this embraced and extended north to the Corona Reach and Denman trails.

From Taryn Obaid to Everyone 08:02 PM
they want to build a bridge there and more housing

From Ann Baker to Everyone 08:03 PM
Yes Gina if you could share that map I would love it! landarches@gmail.com

From mary dooley to Everyone 08:04 PM
Gina - please send to John and it will be part of our data base.

From Taryn Obaid to Everyone 08:04 PM
John has terrific wetlands map of our valley;

From Seair Lorentz (she/her), Petaluma River Park to Everyone 08:04 PM
hard work. Thank you!

Stakeholder listening session #2 22-0517

Meeting notes

Meeting is being recorded, John will post on-line, David will post link on GPAC website
link to recording: <https://youtu.be/JAQIO8GzJZo>

Working Group Members:

John Shribbs
Janice Cader Thompson
Mary Dooley
Bill Rinehart

Attendees:

David Keller FOER
Lydia Schindler
Joan Cooper
Seair Lorentz
Susan Kirks

Meghan Walla-Murphey
Andy Eber
Darren Racusen
Taryn Obaid

Committee Member Introductions

John
Bill
Janice
Mary

Comments/Intro:

John Shribbs:

Each person will have 5-6 min's to present your sales pitch, what you want the GP to do to support your mission

Open discussion up until 8:00

What is OSNR?

What does it mean to you?

How can we help each other?

What can we do with GP?

Joan Cooper +/- 6:39 founder of Friends of Schollenberger (12/08) w/D Keller

Inspired by Dutra Proposal

Save the River from noxious industrial operation

Encouraged CC to issue letter to B.O.S.

Engaged Attorney

Lost 3-2 to BOS

Appealed 2+ times and lost

Privileged to meet so many people with love of OS, diversity

"The Power of Open Space"

Bill Kortum said "what do you see?" project delayed even though appeals lost

Dutra intended to supply aggregate for 101

Marin plant was max' d out

Dutra Engaged Union, but thwarted by citizens of Petaluma

GP is only as strong as elected officials

Dutra project is in 100 yr. flood plain

BOS Chose to follow select language in GP and re-zone to higher use

Let's make GP as strong as possible real power is in election

Lydia Schindler 6:47 (reading)

West Petaluma Hills (Cal Water)

Includes natural fresh water marshes, red legged frogs,
proximity to Putnam

3 private parcels 30 Ac total: Cal Water (14 Ac) English Hill, Hayes Lane (5 ac)

Thousands of people enjoy

Open Space with Gray designation (zoned R1)

Several reasons for preservation as open space:

1. Connection to Open Space
2. Health benefits
3. Groundwater
4. Wildlife protection and migration
5. Preservation of complex eco system mitigate climate change
6. GP goals (GP 2025)
7. Wildfire break to counter toxin release
8. Habitat/Biodiversity/maintenance of Species diversity

Avoid simplification of complex natural systems by developing

Preserve These lands

David Keller 6:56

60K plus residents

Very short on Parks and Open Space

Need to advance purchases, leases, etc.

Open Lafferty

Expansion of existing Parks

Add New Parks

Gap in ridgetop parks, Bay area ridge trail?

River Parks – We are a River City

Need Upstream River open space

Dutra property

Washington creek to Corona, or further

River Access and Enhancement Plan: Council restricted designation to only immediate river adjacent parcels, need to add tributary

101 Corridor attractive to development but includes River/riparian areas that deserve protection

Flood Map updates with SLR and CC projections show this is irresponsible

Need to get funding for purchase, conservation easements

Army CORPS policy: If you don't have to be in the flood plain, stay out, should also be our city policy

Thompson Creek/Westridge Knolls Condiotti wanted to bury CC OK. Citizens rejected

Neighborhood Pocket parks (short on Eastside)

Need to take area out of circulation

Revisit COA requiring only single-family homes on all parcels. Can City acquire parcels for retail and pocket parks?

RiskFactor.com: Coming soon, including Parcel by Parcel mapping including fire risk and Flood risk

Seair Lorentz

Presented last month

Just here to listen

Susan Kirks

Was at last meeting
Introduced two organizations then
Submitted written comments today
Expanding and clarifying:
Weaknesses in COP process
Madrone Audubon was co-plaintiff against Dutra Requested by Attorney Richard (?) Drury
La Cresta Ridge is area Lydia was talking about
One OS Grant had to be returned
Was Mis-represented previously
Need integrity of process and accurate descriptions, Honesty
LA Cresta Ridge not in West Hills
Paula Lane
Badgers not documented on La Cresta ridge, only one seen away from...

(BR notes he has seen a badger at Putnam)

Meghan Walla-Murphey Wildlife ecologist, animal tracker (North Bay Bear Collaborative-Nonprofit, coalition) UC I-Naturalist system

Thanks to all
Working with many tribes
Open Space and Habitat Connectivity
Important to keep space “open” in order to build diversity
Biodiversity is most important thing to battle climate change
Biodiversity feeds Cultural Diversity
Adaptability and resiliency
Fire and storm patterns changing
Mendocino County drought more severe (relatively) than southern California
Major threat to biodiversity
Need to calibrate to anticipated climate
Open Space Outreach and Education are instrumental to building relationships and
Open Space is one of most important mitigators (reduce heat islands)
Percolation and soil moisture
Water is greatest coolant
Glass Fire Bear Activity: left home and moved seven miles south then returned within a month (using open space natural mobility)

Darren Racusen 7:18 Accounting and Tax preparer, runs “Mushroom Hour”

Fungi are central to ecosystem health
Wondering about authority and utility of General Plan
Can GP incorporate “Hard-Code” to preserve eco-systems
Petaluma stands out for having protected natural systems which makes it “attractive”
Include Language including “hidden Kingdom or Queendom of Fungal ecology
Massive underground system and network with 95% of vascular terrestrial plants
Diversity of Mycorrhizal partners

Protect plants against drought
Triumvirate : Flora Fauna Fungi (needs to add Fungi to lexicon)
300,000? species documented not including other similar organisms (up to 30 million spp.)
Fungal Diversity surveys on I-naturalist surveys
Protect endangered fungal spp.
Need to map before we can protect

Andy Eber 7:26

Not there

Taryn Obaid 7:27

Spoke last time
How to add more value to this group
Interest Goes beyond Old Growth
What You Can't See
Integrity
Encourage thinking in terms of 3d chess board when plotting steps to take toward evaluating open space
Scoring all considerations
Private land protections
Cedar Grove: Private, does have cultural resources, need to be covered and not developed
Is that \$\$ well spent? What is risk vs opportunity, land may not even be developable, so why spend city \$\$ if it's not eligible for development
Contextual Zoning that cannot be overturned (AB 3194) or up-zoned
7:32

Andy Eber 7:32

Not there

John S: Kick of open discussion

What is Open Space
Attended "Blue Zone" meeting (with many CC and non-profits, workshops all day tomorrow at New Life Christian Church)
Blue Zones defined...
Cool Cities
Open discussion, questions for others

Darren R

Wasn't sure what Blue Zones are
Curious about Zoning being overturned
Subversion due to
How effective is zoning

John describes Blue Zones

David K

David K weighs in on General Plan importance
"Shall" Vs "May" General Plan Amendments
Shall Get Rid of Rainier
No Study has shown value
Riparian corridors extend beyond banks
Rainier destroys any ability to manage flooding in Petaluma

Susan

Asks that we all keep in mind bigger picture of Petaluma Valley and how it fits into North Bay Area
When looking at maps keep in mind Petaluma's relationship to other areas, How and Why
Wildlife Corridor Mapping reveals that Petaluma is an important area connector

Mary

Dredging
Not talked specifically about the river
Need to dredge under Turning Basin
River (under water) is open space that is not getting enough attention
Supports importance of Biodiversity
Our job is to listen and coalesce
Connect Denman to Ellis Creek with a public way to make river the center piece

Janice

Intrigued listening to Meghan
1000-foot river setback is not unreasonable,
Have been working on this since '90's
"Shall" does matter
Anderson Guns shop/slaughterhouse properties must include Native American Artifacts
Needs to be explored as part of this GP process
Need to go for highest setback on River (important corridor, when its gone, its gone)
Re-establishment of native landscapes (Deer Creek as example)

Darren

Rainier: 5/9 budget workshop still includes \$70 for FY 27-28!
He is also a pm for environmental firm
Running for Planning Commission

John

Clarifies that "Moratorium" of construction in floodplain concept was deferred to GP process

Joan

Supports what Mary said regarding big-picture and the river being centerpiece of town
River has 2 sides! All the way to Ellis Creek
GP should consider Dutra property as Gateway and be restored

GP should focus on whole river, both sides and public acquisition of private land

JOHN: Need to get city and county involved in entire marsh and Bay, we are part of the entire bay, need to be included in partnerships

Chat:

From Seair lorentz (she/her) Petaluma River Park to Everyone 07:34 PM

I'm sorry but I have to go do bedtime with the kiddo. Thanks to everyone. Keep up the good work.

From Meghan to Everyone 07:34 PM

Thanks so much for all of your time and energy that you each contribute to our non human world. I am signing off now, but please feel free to reach out if you have specific questions. I can be contacted through my website- www.meghanwallamurphy.com

From Taryn to Everyone 07:39 PM

State RHNA housing targets can take open space zoned land from a City. Interestingly, that is not a risk when zoned park, I believe. San Anselmo has lead the way in being smart about how to really protect open space with strategic approach to zoning.

From Lydia Schindler to Everyone 07:39 PM

John, as a retired family physician I totally agree human increased activity, especially in natural space improves quality of life.

From Darren Racusen to Everyone 07:44 PM

followup bit on Rainier after may 9th budget workshop

From Taryn to Everyone 07:49 PM

What are u referring to Darren?

Yes, overall River "shall" be prioritized to address regular dredging and cleaning it up (it's the most polluted river in the region). Great idea: River as OS!

From S Kirks to Everyone 07:54 PM

to reach out.

offered to share at some point.

Air Pollution, Degradation of landscape, heart disease

Look for opportunities

Submitted Statements

From Moira Sullivan, June 13, 2022

Dear GPAC members,

Per Petaluma's General Plan (GP), "new parks and open spaces are needed to meet the City's adopted parkland standards" (to meet the community's recreational demand). Our City is far short in acreage of parks, walkways, riding and cycling paths. As we've grown over the past 35 years to a population over 60,000 (with the recent exception of the Central River Park), there have been no additional parklands that are not sports fields. That's inconceivable. 35 years.

The Lafferty Ranch open space has never come to pass, the Petaluma River pedestrian/bike trail (the 6.5 mile length of the river corridor connecting to regional trails to the North), first laid out in our City's River Access and Enhancement Plan policy doc 25+ years ago (!), has never come to pass. At the time Helen Putnam Park was "created" in 1985, the population of Petaluma was ~ 35,000 people. At 216 acres in size, Putnam Park hasn't changed in acreage, despite our now having a population nearly twice that, at 61,000. And we have a large 60-acre parcel in the middle of our town, the fairgrounds, that is open and not sequestering carbon (or providing shade, or helping our native biodiversity). And, catastrophically all the while, we are cementing in our riverbanks and tidal marshes (e.g, McNear channel) with countless new developments.

With the large increase in our population, coupled with the fact that every single census tract in Petaluma is adversely impacted by traffic emissions (Raimi + Associates), Petaluma needs to become a much more bikeable/walkable community. And, at the same time that we're in great need of more open space and parks that our townspeople can safely bike and walk to, we are undergoing a period of catastrophic climate change, accompanied by the twin crisis of ecological collapse (which many scientists consider a far greater catastrophe even than climate change itself). Urbanization is the #1 cause of species loss, and many species are in catastrophic decline. Humans are occupying all of the landmass and driving other species to extinction. Governor Newsom has thusly passed his 30 x 30 executive order that directs cities to prioritize the preservation of waterways - wetlands, rivers, creeks - to protect CA's native biodiversity. In response to climate change, the City of Petaluma has declared a climate emergency and formed a Climate Action Commission.

Critically, both from an ecological and safety perspective, we are a town built on a river watershed - and our town is bisected by the Petaluma River, a major tributary of San Pablo Bay. The California Coastal Conservancy (SCC), which funded one of our major City policies, The Petaluma River Access and Enhancement Plan (aka "River Plan"), recognizes the Petaluma River as "one of the State's principal biological and recreational resources". One of the *guiding* principles of our GP is to, "Preserve and enhance Petaluma's natural environment and distinct

setting in the region. Advantages that Petaluma offers, that distinguish it from other Bay Area communities, include access to the Petaluma River, an inviting physical setting”.

Indeed, our river is the most significant unifying feature of the City of Petaluma, as well as our most *destructive*. We are a town that regularly floods and, in the early 2000s, the US Army Corps of Engineers (USACE) built a \$100 million dollar flood wall in the Payran area, also known as the Corona Reach section of our river. Nevertheless, our town just paid out \$1.4 million for flood damage from the Oct 2021 atmospheric storm. And model predictions are that flooding is going to get much, much worse. For too long, Petaluma has turned its back on the river. Our River Plan states that, “Degradation and loss of the natural habitats, and abandonment of the city’s connection to the river have coincided with a sense that Petaluma may be losing its unique identity”.

Creating Smart Parks/Open Space

One of the major things Petaluma can do to mitigate climate change impacts and help meet our stated climate goals, is to create a number of new, climate-smart parks/open space. These are green infrastructure, carbon-free zones within our City that will encourage more walking, biking, picnicking, recreating – and get people out of their cars. Climate-smart parks can provide shady green spaces that reduce the urban heat island effect and reduce summer energy use. Climate-smart parks buffer cities from the effects of rising seas, severe weather events such as atmospheric storms and flooding because these *water-smart* parks absorb rainfall, reduce flooding, filter contaminants, and recharge groundwater, a limited, scarce resource in Petaluma which improves water flow and protects sensitive habitat/species. By creating intelligent and sensitive, native-landscaped parks that are drought tolerant, that support and enhance our native biodiversity, and that preserve our non-renewable land trust values (*i.e.*, riparian corridor, wetlands, grasslands, and native forests), we can help our citizens *and* our native biodiversity weather significant climate change impacts.

Park/Open Space Locations

Priority areas for climate-smart parks should include the upper river segment, and our fairgrounds. Both areas are in close proximity to tens of thousands of Petalumans and could thus bring “the experience of open space to a populous area through creation of minimally-developed recreational, educational and community gathering spaces that also offer natural resource restoration and enhancement” (Sonoma County Open Space District).

Upper River

One of the most critical places we need to focus on creating a (sensitive) climate-smart nature park and pedestrian/bike trail is in our upper river area, in the river segment known

as the Corona Reach. Per our GP, the Corona Reach is, “the largest and most environmentally sensitive segment of the river . . . the last remaining vestige of the Petaluma River’s oak woodlands and other mature riparian trees can be found in this area”. This area is under imminent threat of development and if these rare land trust values are lost, we will forever lose the irreplaceable flood and ecological functions this land currently provides: the storage capacity of our floodplain, our wetlands and grasslands that sequester carbon, provide habitat, filter our water, and recharge our groundwater.

Designation and approval of the Petaluma River Corridor trail and, “the acquisition of unique parcels to be set aside for the permanent restoration and protection of resources”, is the City of Petaluma’s adopted land use and public policy. We would be following up on the proposals for acquisition, improvement, and trail access as *originally outlined* in our GP and River Plan, as well as subsequent Petaluma government plans (Petaluma City Goals and Priorities 2019-2021, USACE River Flood Control Plan, Petaluma’s Climate Action Commission). Our large City policy plans call for preserving and enhancing Petaluma’s natural environment and open space, and call for the creation of a publicly-accessible continuous river trail and greenway along the 6.5 mile section of the Petaluma River within the City limits from “Ely Road in the North to the downtown”, on either one or both sides of the river. Both documents refer to this as, “A High Priority”. This trail would provide carbon-free transportation and link residents to popular destinations (*e.g.*, Petaluma creek trails, Corona SMART Station, Historic Downtown Center, regional trails to neighboring towns of Penngrove and Sebastopol, potential ballfields at the Auction Yards at Corona, where this area is frequently inundated with flood waters), as well as connect the east and west sides of Petaluma to one other. The Cosumnes River Preserve could serve as a possible prototype <https://www.cosumnes.org>

Petaluma’s River Plan (pg. 235) also calls for “identifying unique parcels which could be acquired and set aside for the permanent restoration and protection of resources”. Section 2-12 of Petaluma’s GP specifically calls out the Johnson’s site and states, “Explore the feasibility of using floodplain areas for public spaces and recreational uses, such as on the Johnson Property”. Page 63 of the River Plan shows the Johnson’s site as seasonal wetlands, and the River Plan states, “Provide a short spur trail to points of special interest, such as the wetland north of the Oak Creek Apartments, taking care not to disturb sensitive habitat” (pg. 80). This is the Sid Commons site.

The creation of this river trail is listed as a “high priority” for the City. In 25 years, this GP Goal has not been achieved. Creation of a nature/demonstration park, and implementation of a pedestrian walkway and bike path in the Corona Reach section of the Petaluma River trail (to connect to existing trails to the North and South) would provide a tremendous inner-city recreational and nature resource for the Petaluma community. No community gathering space currently exists in Petaluma’s midtown, and the path between the upstream and downstream

segments of the river corridor have never been completed in this neighborhood. The GP states that it is imperative that this path be completed to link the two segments.

The 2nd major component of the City's River Plan concerns preservation of our river's natural resources. Both our GP and River Plan call for promoting resource protection within the Petaluma River Watershed to protect wetlands, riparian areas, and oak woodland as, "significant resources which should be protected, preserved, restored and enhanced". The stretch of the river that includes the Corona and Denman Reaches have been described in Petaluma's River Plan, and by Senior Biologist Ruth Pratt at USFWS as, "the most pristine examples of riparian habitat along the river corridor". Specifically, the Corona Reach segment of the river includes the last remaining matrix of wet meadow, vernal pools, mature forest and instream habitat of the main stem Petaluma River. Per the River Plan, "The remnant oak woodlands in the upstream reaches at one time extended for several hundred feet into the floodplain on each side of the river. Preservation of the remaining woodlands, restoration, and teaching about this ecosystem are important objectives of the River Plan".

Per the SF Estuary Institute, 98% of the Petaluma Valley Watershed's wetlands are already gone. This represents an incalculable loss of sensitive habitat. We must conserve our remaining wetland acreage. Wetlands are some of the largest carbon reservoirs on earth; critical for helping achieve the climate goals of our CAC. Wetlands exceed all other land types in terms of wildlife productivity. The movement of water in and out of wetlands delivers nutrients, sediment, and organic matter, creating the rich soils that support so much wildlife. Many of our native bird and fish species are dependent on wetlands for their survival. It is important to understand that the loss of any further lands and habitat in the riparian portions upstream represent a potential significant and permanent loss to restoration in *all* parts of the watershed.

Preservation, restoration and enhancement of the river corridor and its associated wetland, grassland, and oak savannah habitats is vital to the survival of our local biodiversity. This upper segment of the river contains freshwater which differs from the estuarine waters below the Army Corps transition weir. These sensitive habitats support a number of USFWS/CDFW Special Status Bird, Amphibian, and Fish Species, including the federally-listed threatened Chinook Salmon, the Western Pond Turtle, and the California Red-Legged Frog. The upstream segment of our river is also included in the designation of the Critical Habitat of Central California Coast ESU Steelhead Trout. The river also serves as an important native and migratory wildlife corridor. Thusly where our upper river, especially, comprises land with high-value habitat, it constitutes a priority site for acquisition, and for the careful development of a sensitive trail and nature park that protects the extant wetlands and other ecosystems in this area, and can serve as a refugia for our native wildlife in the face of climate change impacts.

Preservation of the upstream segment of our Petaluma River would greatly assist with our City's climate action goals, including carbon sequestration and reducing VMT, and would also fulfill the policy goals of a number of our City major City policies/plans. Per the USACE Final Environmental Impact Statement (FEIS, 1995), Petaluma's GP states 3 objectives to manage flood risks for the community including, "continue to preclude new developments from compounding or impacting the potential for flooding along the Petaluma River and its tributaries". Petaluma's GP recommends coordination/partnership with a series of agencies for resource protection. To, "Coordinate with Sonoma County's Agricultural Preservation and Open Space District, Permit and Resource Management Department [SCAPOSD], and Water Agency [SCWA] to protect riparian corridors and critical biological habitats".

SCAPOSD's Expenditure Plan specifically calls out the Petaluma River as, "an area of biotic significance which may be adversely impacted by development and incompatible land use", as well as listing the Petaluma River as an example of an open space project meriting restoration and stating that, "preference will be given to acquisition and development projects which affect watercourses", with the Petaluma River listed as an example.

The SFEI/RCD study, funded by the USEPA, states that, "Opportunity areas for restoring riparian forest and wetlands along the mainstem Petaluma River and major tributaries include relatively undeveloped areas within the FEMA 100-year floodplain. These areas are currently inundated during very large flood events, at a minimum, and could therefore have the appropriate hydrology and hydraulics to support native riparian forests similar to what existed historically. As with freshwater wetlands, these areas exist in upland reaches and reaches within the tidal-terrestrial transition zone". The study further states that, "Some of the best opportunity areas are located along the Petaluma River upstream of downtown Petaluma".

Preserving our upper river from development would save our town tens of millions of dollars in infrastructure losses, at a minimum, over the long-term. To date, Petaluma has paid out tens of millions of dollars for flooding in the Payran and Lakeville areas. Sonoma County has paid out \$5 billion in flood losses over 30 years because our country sits at the peak of landfall for atmospheric storms. Flood models show that the situation is going to get far worse. The upper river parcels have a number of development constraints due to expansive soils, wetlands, heritage oaks, special status species, and risk of severe flooding. Acquiring this land and taking it out of the path of harm would save our City considerably in terms of flood losses and, critically, prevent our historic downtown from being damaged.

Fairgrounds

Per USDA's Tree Canopy maps, Petaluma has sparse tree canopy cover. That translates to a lot of heat islands, higher energy use, poorer air quality, and has significant repercussions for our native biodiversity. Per National Geographic, trees can reduce temperatures by up to 35 degrees! Shaded streets and parks encourage people to walk and bike, which helps

mitigate climate impacts/traffic emissions. Native trees and understory plants provide essential food and shelter for our native species. Northern CA is a global biodiversity hotspot – with many species found nowhere else in the world.

In light of climate change impacts, including that the climate is getting hotter and drier and we are facing ecological collapse, it's more important than ever that we *create new habitat within our watershed* – and especially because areas that typically support wildlife (e.g., Helen Putnam Park) will see the loss of a lot of native flora (and subsequently fauna) due to rising temperatures and prolonged drought. Importantly, the SF Estuary Institute has said parcels > 10 acres in size are needed to protect biodiversity. Governor Newsom's 30 x 30 EO calls for more tree planting, more parks, and conserving sensitive lands. The U.N. has said that an area the size of China has to be rewilded over the next decade (stemming land degradation is the key to keeping temperature rise below 2 degrees Celsius).

Our fairgrounds provides us a unique opportunity, with this immense 60-acre parcel, to achieve a number of critical ends, including helping to meet our City's climate goals. We could create a large, nature-based central park at the fairground's center, *featuring a dense canopy of native trees and understory plantings*, which would provide invaluable relief from the congestion of our growing City. Parks are the first and best line of defense against climate change. They cool and clean the air, regulate precipitation, mitigate the impact of heat islands, and serve as refuges for people and biodiversity.

We could design the layout along the lines of the historic Sonoma and Healdsburg plazas, which are heavily-treed (green focused). Historically, town squares were community gathering spaces where members went to converse, shop and enjoy entertainment. They were built to be the heart of their communities, with surrounding colorful shops and cafes. ***See images below.***

Sonoma Plaza is ranked as the #1 attraction to visit in Sonoma. It's an 8.5 acre park, created in 1835. It's a pedestrian paradise. It has an immense tree canopy creating a lush setting for picnics, cultural activities and farmer's markets. An eclectic mix of restaurants, hotels, tasting rooms, cafes, artisan boutiques, galleries and even a vintage movie house, surround the central plaza. Within a short distance, one can access wildflower hikes and hilltop vistas.

Healdsburg Plaza was named one of the most beautiful town squares in the US (shade trees, fountains, diagonal walkways) and is considered one of the most perfect in the eyes of urban designers. Nearby buildings, with varied heights of 1-3 stories, create a sense of an outdoor room. Concerts are held there. The 55-room Healdsburg Hotel has meeting and event spaces and they partner with LandPaths and Russian Riverkeepers and offer the chance for groups to create/clear trails, enhance streams, or paddle the river.

Here are yet a few more examples. The town of Windsor has a 4.5 acre town green at its center. It serves as a civic space for public events (*e.g.*, summer theater and concert series, holiday celebrations) and as park space for informal socializing and recreation. Shops are locally-owned and run. The Barlow in Sebastopol is a 12-acre outdoor market district with pop-up shops, craft and artisan workshops, live music and many happy hour events - and features organic, edible landscaping. It features local food and drinks and crafts made onsite by local artisans.

Bidwell Park in Chico, CA is a large municipal park. It is Chico's crown jewel. Lower Bidwell Park has multitudes of picnic sites, a swimming pool, both paved and unpaved paths, a playground, horseshoe pits, and a nature center. Here in Petaluma, we could have our own crown jewel of a park at the fairgrounds.

If we're going to reach our climate goals, the paradigm has to be that we localize our economy and that we be climate resilient (*e.g.*, help create a local food shed so that supply line disruptions don't threaten our local food supply, and avoid building on sensitive habitats and cementing in our river wetlands and grasslands). We don't want sprawl and to gobble up our open spaces, especially those that comprise sensitive habitats. Whatever decisions we make in regard to our fairgrounds, going-forward, they have to be based on current facts, our climate reality and biodiversity loss. Unless we come from that stance, this incredibly significant site within our town will be yet another lost opportunity, as has happened with so many other sites in our town (*e.g.*, Target Center, Deer Creek which were to have been mixed-use).

Sonoma Plaza – aerial view



Sonoma Plaza, Pedestrian-eye view



Healdsburg Town Plaza



Bidwell Park, Chico, CA



Bidwell Park, Chico, CA



From Daniel Bleakney

Date: 6/14/2022

To: Petaluma General Plan Advisory Committee Open Space & Natural Resource Workgroup

From: The Members of the Sonoma County Food System Alliance

Re: Public comment re community food production & urban ag for the City of Petaluma

General Plan Update

We submit this public comment to the Petaluma General Plan Advisory Committee on behalf of the Sonoma Food System Alliance, a coalition of diverse stakeholders working to envision and create a healthy, sustainable, local food system through leadership and collective action. Our members bring a broad base of experience and knowledge to advance our local food system and community. We urge the City of Petaluma to support community food production in their general plan update. We welcome you to use as a resource the goals outlined in the Sonoma County Healthy and Sustainable Food Action Plan, created by the Sonoma County Food System Alliance (SCFSA) and endorsed by Sonoma County Board of Supervisors in October 2012

Urban agriculture is one of the many facets of sustainable community food production. Urban agriculture consists of the cultivation, processing, and distribution of agricultural commodities (goods) in city and suburban settings. Urban agriculture does not have a singular look but can take many forms including school, backyard, rooftop and community gardens in open spaces like parks or empty lots, hydroponic facilities, and vertical production. Urban agriculture projects work to enhance the environmental, economic, and social health of the communities they serve.

Farmers and community members collaborate to create a local, sustainable, and self-reliant food economy that improves access to adequate, nutritious, and affordable foods. These efforts contribute to a community's economic development through food and agriculture-related businesses that create jobs. Community collaboration within urban agriculture production has the ability to educate residents on their local ecosystem and creates the opportunity to be an active and direct participant in the food system.

Urban agricultural production fosters community resilience by actively working to combat community food insecurity by enhancing the accessibility of local food options. Access to healthy whole foods improves diets and nutrition which is critical in promoting public health and the prevention of diet-related diseases like obesity and diabetes.

Local food production serves as a security net to food access as we face climate change-related vulnerabilities. Sustainable community food production can reduce our carbon footprint by increasing carbon sequestration and can cut down transportation-related greenhouse gas emissions. These same efforts encourage local biodiversity that can provide pollinator habitat, groundwater recharge, climate regulation, and soil regeneration which all contribute to ecosystem services.

It is the responsibility of local governments including the City of Petaluma to advocate for the well-being of their constituents. Supporting community food production like urban agriculture

commits to providing adequate, nutritious, affordable, and culturally appropriate foods to its residents. The benefits of local food production encourage the economic, social, and environmental vitality of a given community. Advocating for community food production is a pledge to community members and future generations that ensures a just, secure, and sustainable food system.

From John Crowley, 6-13-22

Hi Everyone,

I'm sorry that we're not able to participate in these meetings. I know they are important. I've got a full plate. I appreciate that you are doing this.

As you know, I am involved with Cool Cities, activating individuals to connect with their neighbors in creating a grid of over 300 'Cool Blocks' throughout Petaluma. This program facilitates people coming together to get connected, prepare for emergencies and learn about lowering our carbon footprint. While our focus is not specifically targeted on open space or natural resources, there are several ways in which our interests overlap.

Our goal is to build a strong and resilient community that is prepared for emergencies, creates less stress on our local environment, eases pollution, encourages healthy lifestyles, conserves resources and saves energy.

The following are some of the examples of how our goals align with the preservation of natural resources and open space and provide excellent opportunities to educate and engage people to get involved.

- Information and resource gathering, water and energy saving techniques and practices, clean energy, biking/walking and zero emission vehicles, safe blocks/streets.
- Managing water shortages, learning about drought tolerant and native landscaping to conserve water usage and provide habitat.
- Promoting the benefits of mature tree maintenance and tree planting (where possible) to cool blocks to reduce heat islands.
- Encouraging plant-forward eating to lower carbon footprint, save water, reduce emissions, increase public health and reduce the burden on public healthcare.
- I hope to collaborate to mobilize outreach in support of preserving open space, protecting riparian corridors, improving the quality of our watershed and better protect and preserve our environment for the health and wellbeing of our community.

John Crowley, Aqus Café & Community Foundation, Cool Cities Program Mgr., Blue Zones Steering Committee

From Diane Gentile

Hello,

Thank you for your leadership and for eliciting input. I support the many outstanding comments made previously and will therefore try not to be redundant.

Petaluma is indeed at a critical juncture. If we are to protect our open spaces, natural resources, remaining habitat and quality of life, we must adopt the most stringent restrictions on development at any cost while carving out as many more possibilities for carbon sequestration as possible.

Setting new goals that are not human-centered but that take into consideration the well-being of all life on earth will be our greatest challenge. To this end, I offer the following:

The development of Grassland and Riparian Restoration Project teams – Whereas restored swaths of land are critical in combating climate change and the planting of native deep-rooted grasses and shrubs have been shown to combat erosion, sequester carbon and provide critical habitat for wildlife and insofar as Petaluma has declared a climate emergency, any development that threatens and/or encroaches on these natural habitats must not be permitted. Restoration teams should be formed to focus on the planting of native grasses and shrubs to improve existing ‘untouched’ areas as well as privately-owned properties, such as the Davidon site.

Converted green spaces - In thinking about privately owned buildings, we should look at incentivizing programs like [Green Roofs for Healthy Cities](#). Any structure large or small such as business buildings, big lot stores, warehouses, etc., offer tremendous opportunities to turn hot spots into oxygen-producing, carbon-sequestering gardens and green spaces. The addition of pollinator parks wherever possible would also be a tremendous environmental upgrade to pocket parks, empty lots, etc., and cement or concrete areas that do not need to be ADA compliant could be replaced with water permeable surfaces (i.e., crushed granite, mulch, bark) wherever possible to lower temperatures and protect natural resources.

Protecting and growing our Tree Canopy - In support of comments made previously regarding tree ordinances and having just returned from a visit to Stanford, CA I strongly support new ordinances regarding the cutting and removal of trees on residential, commercial and all city properties. Saving our existing canopy should be a top priority; Mature trees must be given legal protections and strict enforcement put into place to safeguard our climate. Further, business, government and commercial centers with large parking lots, such as the Target center, should be required to create and maintain maximum tree canopy to counter the extreme heat they produce. City trees should also be maintained for maximum shade. Espalier pruning should be prohibited where applicable to allow for the full-scale growth of large trees. Urban centers such as those in San Luis Obispo and Palo Alto serve as models for maintaining miles of continuous dense shade canopy. They have figured out how to have mature trees without sacrificing smooth roads and sidewalks. I hope we can do the same.

Contoured planting - The implementation of planting rows of trees on level terraces along slopes to cool temperatures, protect from erosion, create habitat and enhance wildlife-friendly corridors. When done properly, these terraces intersect rainwater runoff, trap eroding soil, and build terraces of fertility over time. They could also greatly enhance the river banks all up and down

city limits and especially address the loss of trees on the North side of the Turning Basin. There is a great reference for this at <https://contourlines.org/>.

Finally, I am submitting the following comments sent to the Sonoma County Dept of Fish & Wildlife from Laura Cunningham, CA Director of Western Watersheds Project. These comments provide a summary of concerns facing the N. Petaluma River 'Corona Reach' area and emphasize the importance of protecting and restoring this open space and watershed.

In this letter, L. Cunningham states:

All undisturbed reaches of the Petaluma River should be protected for the conservation and restoration of:

- Fish and wildlife habitat
- Rare plant communities
- Native vegetation
- Habitats for imperiled and special status species
- Hydrologic function
- Public health and opportunities for education of urban youth

Salmonid Fisheries

Loss of riparian vegetation which helps cool salmonid habitat needs to be addressed as well as sediment input to the river from the proposed urban development. Further, development would significantly impact imperiled steelhead trout and chinook salmon present in this area.

Rare Plants & Native Vegetation Communities – There exists a diversity of intact and thriving native plant communities, including riparian vegetation, oak woodlands, oak savanna, grasslands, seasonal wetlands, wet meadows, vernal pools, and freshwater and brackish marsh remnants and other communities worthy of protection.

Rich Biodiversity of Native Species – This area could provide suitable foraging habitat for the white-tailed kite (*Elanus leucurus*), a CDFW fully protected species (DEIR, at 6-34) which is continuing to decline due to recurrent severe droughts.

Urban development in this area may impact the following taxa (DEIR, 6-36 to 6-37):

- California red-legged frog (*Rana draytonii*), federally threatened.
- Northwestern pond turtle (*Actinemys marmorata*), state Species of Special Concern.
- Central California Coast steelhead Distinct Population Segment (*Oncorhynchus mykiss*), federally threatened.

- Southern green sturgeon Distinct Population Segment (*Acipenser medirostris*), federally threatened. The Petaluma River feeds into San Pablo Bay, which is designated Critical Habitat for this fish ^[1].
- Sacramento splittail (*Pogonichthys macrolepidotus*), a CDFW Species of Special Concern, endemic to the San Francisco Estuary and Central Valley waters.

Floodplain – Development of this area would create sediment that will cause erosion and sediment input into the river which could significantly impact fish habitat. Turning a current natural streambank into a flood-control basin is not compatible with species recovery nor conservation of these rare fisheries, wildlife habitats, and natural vegetation communities.

Imperiled chinook salmon and steelhead habitat will be significantly impacted and altered by this streambank alteration...

Wetlands - The vast majority of the Petaluma Valley's wetlands have been lost. Conservation of these remaining seasonal wetlands is important, including vernal pools, swales, creeping wildrye meadows, and marshes.

Mitigation measures for loss of wetlands will not be able to replace or restore similar rare wetlands elsewhere to fulfill a No Net Loss policy.

Thank you again for your work on our open space and natural resources!

Diane Gentile

Outreach and Advocacy

[Western Watersheds Project](#) & [The Coalition to Save Point Reyes National Seashore](#)

[1] <https://www.fisheries.noaa.gov/action/critical-habitat-designation-southern-distinct-population-segment-north-american-green>

From Suzi Grady

Date: 9/29/21

To: City of Petaluma Planning Director; Citizen Advisory Council (City Clerk in lieu of Advisory Council's direct emails)

CC: City Council Members, Mayor Barrett, & City Manager

In re: Prioritizing Community Food Security and Food Growing for Community Benefit within the City Limits

Problem Statement:

Community food security, defined as “a situation in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice” (Hamm and Bellows, 2003), is a key tenant of Petaluma Bounty’s work. It is at the nexus of community health, community resilience, and climate readiness and yet the draft General Plan does not mention food or food access in relationship to health, community resilience, or disaster. This oversight must be addressed as we face climate change related disasters, vulnerabilities and failures within the long distribution chains of our conventional food system, and a local food system and economy under distress.

As a visionary document of the City of Petaluma, there are some crucial value statements and actions that can be taken to address some immediate concerns as well as lay the foundation for future zoning, code, funding, and programmatic updates to reflect our shared commitment to our wonderful city.

Values Statements to be Incorporated into General Plan:

- Review the 2016 City Council endorsement of the Sonoma County Food Action Plan
- Review the Climate Emergency Framework and incorporate food growing as a key activity for community resilience in the face of climate change disasters
- Reach out to the Sonoma County Food System Alliance for a multi-stakeholder perspective on additional recommendations
- Consider a Health Element such as Santa Clara adopted to incorporate health, food, climate and community resilience, and environmental justice

Specific concerns and actions:

Recently, a farm was forced to cease operation within the city limits of Cotati since the zoning code did not allow for such activities. Even though there was overarching support on the City Council and within the updated General Plan, the lack of appropriate codes made growing food an unallowable activity.

This caused several community operations to review their zoning codes within their jurisdictions with some surprising results. Currently, Petaluma Bounty Community Farm, several community gardens, and home-based gardens are being cultivated on land not currently zoned for agriculture. Thus, there exists the potential that a challenge by a neighbor to present zoning ordinances and land use could cause the termination of operation of several crucial sources of food for community benefit.

Recommendation:

Thus, it is the recommendation of Petaluma Bounty and our supporters for the following to be incorporated into the general plan:

Community Food Producers (as defined below by California State Law) are to be allowed to

grow food for sharing, donation, or sale in all zones within the city limits unless there is a noted public health concern, hazard, or conflict with other priority land use such as conservation. Or, in other words, Community Food Production shall be allowable unless otherwise explicitly stated.

“A Community Food Producer is a producer of agricultural products on land that is not zoned for agricultural use but is otherwise in compliance with applicable local land use and zoning restrictions, including, but not limited to, restrictions governing personal gardens, community gardens, school gardens, and culinary gardens. The law allows Community Food Producers to sell whole agricultural products, including uncut fruits and vegetables, and up to 15 dozen unrefrigerated shell eggs per month if they meet specified requirements.” (California Retail Food Code, § 113752)

Community Food Producers are still regulated by County Health Departments, California Retail Food Code, Federal Food Safety Modernization Act, Health and Safety Code § 114376(c), and the CDFSA Small Farm Food Safety Guidelines. Thus, by utilizing this definition, the City of Petaluma is not creating a loop-hole for commercial agricultural operations but instead inserting a catch-all category of food growing (hobby, personal use, community benefit, or limited quantity production) that can make that activity allowable within city limits unless otherwise specified.

The benefits of local, community food production are well documented and reinforce our local community’s understanding and valuing of commercial agriculture as crucial to our collective futures. Additionally, Community Food Production (also referred to as Urban Agriculture) aligns critically with priority concerns related to climate change, drought, community health and other longer-term values discussed above. For those interested in learning more, we suggest the University of California Agricultural & Natural Resources website and resources section related to urban agriculture and community food production:
<https://ucanr.edu/sites/UrbanAg/Research/>

Thank you for considering these requests. For more information, background documentation, or to discuss any concerns mentioned within, please connect with Suzi Grady, Director of Petaluma Bounty suzi@petalumabounty.org (707) 364-9118.

Sincerely,
Suzi Grady + Petaluma Bounty Staff and Board

From Maxine Spellman, 4-21

Hello John,

Thank you for the opportunity to relate to the General Plan Open Space and Natural Resources workgroup, the Friends of Petaluma River's vision for a trail and restoration of properties north of Lynch Creek extending along both sides of the river to Corona. As expressed by me and others at the meeting this stretch of river contains Heritage oaks, valuable and unique riparian habitat, and wildlife corridors. It also has sites where erosion appears to be causing sedimentation. Friends has already completed a

parcel study and intends to apply for a grant to fund the planning to create a recreational trail and implement projects to control erosion and restore sensitive habitats. And, yes, as mentioned by one of the participants, there are protected species along this corridor (as our parcel study points out).

Thank you again for including Friend's input to the Open Space and Natural Resources workgroup.

Sincerely,

Maxene Spellman

Friends of Petaluma River

From Susan Kirks, 4-26-22

Hi Mary,

Thanks for your email. The info described in the article I sent is a culmination of several months of collaboration among members of Together Bay Area (TBA), the regional open space coalition.

The collaboration has been intended to bring to the forefront projects reflecting how to realize 30 x 30. PLAN's project, which I cited, is included, as PLAN is a member of Together Bay Area, along with many other districts, organizations and parks entities. The wildlife corridors and crossings project is based on over 20 years of accrued reports and sightings to document how wildlife move in our area, as well as the Sonoma County coast to inland and Marin County inland and coastal areas.

I'm uncertain if I provided the link to the web page for TBA's projects that are described in the SF Chronicle article. It's below this email.

The Sonoma County projects within the web page reflect projects of TBA member groups who are coordinating for 2022-23 State budget funding coming to the Bay Area. Each year, project reviews and progress will be ascertained to relate to the following year's State budget. I'm a member of the TBA Policy Committee so have been working with the committee over these months with the end result being the info contained within the web page and an intention to advocate for sufficient funding for TBA's projects..

This is the regional approach to 30 x 30 with cooperation among a large number of TBA member groups - which is how a project gets on a list or is included through Together Bay Area.

Depending upon where funding from the State comes and what larger organization in the Bay Area may be responsible for holding funding, reviewing applications for projects

and ascertaining funding consistent with 30 x 30 objectives, Petaluma or an organization could submit an application to request funding. I know the advocates for the North River property rep'ing Sid Commons submitted an application for Open Space funding a couple of years ago - the application was not approved. The lawsuit regarding the development was a factor in terms of the availability of the property to be conserved and the unknown overall status.

The PLAN project of wildlife corridors and crossings as part of TBA's projects does include some of the North River lands as well as highway crossing areas.

West Petaluma, including the Kelly Creek property, Paula Lane and the northern grassland areas of the Corona Reach and Denman Reach are all in a connecting wildlife corridor.

A moratorium on development in sensitive habitat areas as part of the City's 2022 goals and priorities appears to be making its way through the process as possibly one of the goals to be decided on May 2. The Climate Action Commission review of that goal included expanding areas to include sensitive habitat, grassland and wildlife corridors, I believe, rather than just the North River parcels, which are important, but are not the only areas of sensitivity and need to strong consideration for protection instead of development.

Hope this helps.

Susan (see link below).

[30x30 Projects - TOGETHER Bay Area](#)

From Susan Kirks, 5-17-22

Hi Mary,

I did not hear back from you following what I understand was a pretty lengthy response to your question about how Petaluma can get on a list of 30x30 projects or potential avenues of funding.

You mentioned the North River parcels as a situation of urgency and ideal for funding.

I agree these parcels, which connect to the wildlife corridor that connects Paula Lane with Kelly Creek are deserving, for sure, of conservation. Moira Sullivan recently shared a suggestion of creating something similar to the Cosumnes River Preserve

(50,000 acres). I think that is a bit of a stretch, and in reality the natural features of the North River tidal slough area, including species, trees and vegetation, documented as they need to be, could lead to a similar vision we created for the Paula Lane Nature Preserve. I believe litigation regarding Sid Commons is still in process, so that process likely needs to complete as a vision is created. I do not believe any funder would consider the North River area while active litigation over the primary property exists. Some agreement among the property owners and the litigants might change that.

It's interesting that no one in that North River group ever mentions Paula Lane open space - an actual achieved conservation with a \$1,000,050 grant back in 2012 - the only one in Petaluma - and the connection between Paula Lane and the North River area. This is material and is important.

Before the North River parcels would be placed in a mix of 30 x 30 priorities, certainly, the facets of the whole - the City Council, the Mayor, the 2nd District Supervisor, organizations and individuals - would need to be aligned and supportive of this pathway. I view that as possible and agree with you the area is deserving of conservation without building and have always felt this. It is not just about "not building in the flood plain."

Also, the Cosumnes River Preserve is not an equivalent for the North River properties, although I understand the motivation in making a big suggestion. The Corona Reach area also contains the slaughterhouse and processing facility where hundreds of animals are slaughtered, right at the edge of some of the North River parcels. It might be good for the Work Group to consider and discuss this - how to facilitate a change related to that business and all that it represents. The slaughterhouse and processing facility could transition out and that property on Petaluma Boulevard North would be appropriate to redevelop for possible housing, green space and trees, away from the River area and the other properties. In California, for funding purposes, this needs to be addressed and is unique to Petaluma. I know of no other city or community with open space/nature preserve types of acquisitions and conservation where an animal slaughterhouse and processing facility are right there in the midst of lands desiring to be conserved. The Auction Yard close to that slaughter facility is another facet of this area that needs to be considered for transitioning away from this type of "agricultural" business and supporting plant-based agriculture that is gentler and not abusive in general. I do understand some in Petaluma don't want to approach this topic, but it is necessary when looking at the future. I also know of no other community or city with an auction yard, prodding animals into fenced areas and selling them for meat or other "product" related purposes that would be adjacent to a conserved Nature Preserve or similar, as Moira had suggested. We really cannot ignore this reality. Well, I guess we could, but applying for conservation funding and speaking about the North River, etc.,

while not seeing the whole reality is not necessarily a best path for the greater community.

The Petaluma Poultry operation on Lakeville Hwy also takes up a lot of space and is adjacent to Shollenberger/Alman, but there's a bit of a buffer zone between that business and the actual conserved lands. Still, that operation would be well positioned to be transitioned out of operation and redeveloped into affordable housing and green space, including a location for tree planting, again supporting a future Petaluma where less slaughter of animals and birds occurs and gentler actual open and green spaces become integrated into our way of life. If we are looking out 20-30-40 years into the future, the intersection of JOBS for workers at these slaughter facilities, along with life-long therapy if needed, is also relevant, to help people, often from marginalized communities, seek better green jobs with a living wage that would not involve killing for hours during a day as a profession.

In looking at open space and green space acquisition and conservation, it would also be relevant to understand Petaluma's history compared to other Sonoma County cities and communities in this area.

That history includes the role a City Council, Mayor, 2nd District Supervisor, City Management and Legal Dept. fulfill as well as the role of a Parks and Recreation Department, and other organizations and the general public. Petaluma is weak in this area.

That's not a judgment, it's just a fact. I have been privy to interacting dynamics of these facets of the whole and could share information. I believe we need to understand where we have been in order to have a context for where we are - and then how to move forward - *with integrity and cohesiveness, for the higher good of the whole community.*

Petaluma's politics and an absence of awareness with a desire for a "quick fix" and for the City to "do it" are at the root of not understanding a sustained process with perseverance and what it actually takes to acquire and conserve land and then manage and maintain it - the root of our Petaluma situation.

Tonight may be an exploration session, but at some point being honest about our Petaluma circumstances and considering how to best approach our future, in my experience, would be a best path.

I do understand and appreciate your enthusiasm and support for the North River parcels and area to be conserved. And I always acknowledge I could be mistaken. There may be funders who would embrace funding for land that is adjacent to an auction yard and a slaughterhouse and processing facility. I just have not experienced this and my reach

is pretty broad in the Bay Area region for relationships and knowledge about open space and green space funding opportunities.

Susan

From Susan Kirks 8-05-22

Hello Work Group members.

I'd shared with you my disappointment in the somewhat incomplete experience of contributing to the GPAC Work Group. If I understood accurately, the work group sessions may be over and you all were writing a report of some kind for the GPAC and consultants.

I'd appreciate having this email with accompanying photos included. At least, the GPAC members will be able to read about and see what is contained in the Climate Action Framework relating to the approach to new parks and open and green spaces in Petaluma.

High Use-Low Impact (HULI) refers to awareness of sensitive habitat with likely multiple species in a setting where there may also be public access and human presence. The priority is understanding, supporting and enhancing habitat and then determining the type of human activity and public access that would be appropriate - low impact. The priority is the environment.

The resulting experience can be one of true connection with Nature for humans, one of respite, healing and renewal. Volunteer and education programs directly relate to community service and being able to quietly be in a setting, doing ecosystem restoration and enhancement.

Each situation would be distinct for that land area, habitat type and species. The elements are examples of a whole, connected Project and can be excerpted, combined or duplicated.

This project, the Paula Lane Nature Preserve, created by Paula Lane Action Network, has unfortunately been decimated by the City of Petaluma. But, fortunately, the almost complete Project was photo-documented and is described in a management plan as well as in progress reporting.

Here is a list of the Project elements with photos to accompany. Please let me know if you have any questions.

Paula Lane Nature Preserve

Main Preserve Sign - part of the actual fence line with an opening for wildlife movement off-site and on-site under the sign. The sign is waterproof and graffiti proof and is to specs of the Open Space Matching Grant Agreement. The sign is in a hand-sculpted redwood frame.



Sunset View Area - Hand-carved redwood bench featuring badger tracks, blending with landscape, OUTSIDE habitat and fence, for viewing wildlife and sunsets, available 24/7. Also in this area is an interpretive wildlife tracks sign for deer, fox and badger and carved into a large redwood post the actual tracks. This also is OUTSIDE habitat, educational and facilitates a tactile experience and discovery to learn about the native wildlife of the area as well as how to identify tracks.



Perimeter Fence Replacement - A redwood post theme with wildlife friendly two-tiered tensile wire continues the wildlife theme - demonstrating wildlife friendly fencing to allow for wildlife movement. A fundraising program for perimeter fence replacement has also been part of long-term planning, with community connecting to the land, donating funds for a redwood post and having the post personalized with a carved wildlife track of the donor's choice.



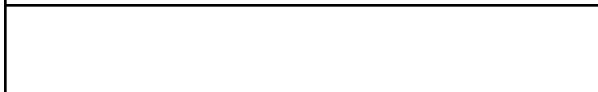
Sustainable Agriculture - Within the Building Envelope, the already human impacted area, two small agricultural areas have been planned. One was planted and thriving up to 2019, but then almost completely destroyed by the City of Petaluma. Raspberries were the most successful planting and a plan for partnership with Chez Panisse in Berkeley to become a raspberry supplier, with revenue being reinvested into the property and project has also been planned. Agriculture plantings included fig bushes, elderberry, fruit trees, raspberries, blueberries, mulberries, and hedge row plantings of coffee berry and toyon. Two irrigation systems were installed in 2015 to support the agriculture and habitat restoration plantings.

A second **agricultural** area has been planned, with new open space and ecosystem restoration plantings where one of the rental residences exists, with that structure to be demolished. It is also adjacent to the interior trail.



Habitat/Ecosystem Restoration and Enhancement - For this property, with species identified for support, huckleberry, salmonberry, coffee berry and toyon plants were selected for cover and nutrition for the area wildlife.

Rental Residence - A cottage on-site is rented and provides sufficient annual revenue to fund project management and property maintenance.



Preserve Entrance - Hand-carved redwood posts with badger tracks and a flexible hemp rope gate to allow for wildlife passage and indicate "closed" after hours.




Hummingbird/Butterfly/Bee Garden - Often described as a "pollinator garden," we preferred the actual description of species that would benefit from this primary Project element, planted in 2013, added to, cultivated and installed along an interior trail into the property. This is a primary project element both to support species and pollination, but also for education and enjoyment.



Interior Trail - An interior trail from the entrance passes by a bicycle rack, a path to one of the agricultural areas, and the hummingbird/butterfly/bee garden as well as past an Interpretive Kiosk, hand-carved, with badger tracks, intended to feature environmental information and open space and volunteer activities. The interior trail leads to two wildlife viewing areas, one with a bench.

Perimeter Trail - A perimeter trail outside the fence line along Sunset Drive, the north edge of the land, OUTSIDE habitat, offers visitors the opportunity to view the personalized fence posts over time and enjoy a stroll down Sunset Drive. Most people walk on this private street, rather than use a trail or on the sidewalk, but the perimeter trail access outside the fence line is intended as a feature of the Project.

<p>Shed Barn - An existing shed barn on the property has been intended for volunteer and storage use.</p>	<p>.Trees - The clustered trees and other mature trees of the Paula Lane land were carefully mapped and documented by PLAN with the consulting arborist, also a wildlife biologist, with tree maintenance planned and performed annually. This is an integral part of habitat support for the over 100 avian species and for general enjoyment.</p>
<p>Wildlife Viewing Area #1 - This area features a hand-carved redwood memorial bench for Ken Miller, with nearby plantings of California Wild Rose, a California Lilac Bush, Hummingbird Sage and wildflowers. The area overlooks the western portion of the property, again for quiet enjoyment and respite. It is a central feature of the Preserve and is within the Building Envelope, outside habitat, with a view of habitat.</p>	
<p>Wildlife View Area #2 - The interior trail traverses uphill to the south property boundary, with a nice vista to enjoy and an experience of the wildlife corridor in which the Paula Lane land exists. Then, visitors can turn and walk downhill and back to the entrance of the property.</p>	

Signage - Many of the signs for the Paula Lane Nature Preserve are hand-carved redwood signs, small and blending into the landscape while also providing information. The redwood theme is carried throughout the project and wood sculpting and art are also parts of the beauty of this Nature Preserve Project, with all work completed with great care and reverence for the land.



I hope you find this Project information interesting and perhaps inspiring for other areas of Petaluma. Using any or a combination of these elements, small nature preserves could be created, with volunteer support for care and maintenance, in Petaluma.

Such amenities would protect habitat while offering respite and a place for quiet enjoyment for residents.

Of course, at this time, the ecosystem has collapsed, the badgers have been displaced, and all of the volunteer and service provider dedication and care given to implement the Preserve Project basically trashed. But, we continue to focus on what is in the interest of the greater community as well as the devastating impacts to the habitat and wildlife that must be reversed. Much dis- and misinformation regarding this land and project as well as PLAN have been circulated in Petaluma. It is important to provide the true context as well as the hundreds and hundreds of hours of care and dedication to creating the actual amenity for Petaluma. This property recv'd a \$1,000,050 matching grant from the Open Space District and by June 2019, over \$500,000 toward a required 1:1 match had been documented, over 50% of that in volunteer in-kind contributions. The Project was TEN years ahead of the Project budget schedule. It is my intention to continue to seek a change in the dysfunction and harm that have occurred, so the intended amenity can be provided and managed long-term by the dedicated PLAN volunteers who are responsible for the acquisition and conservation of this land.

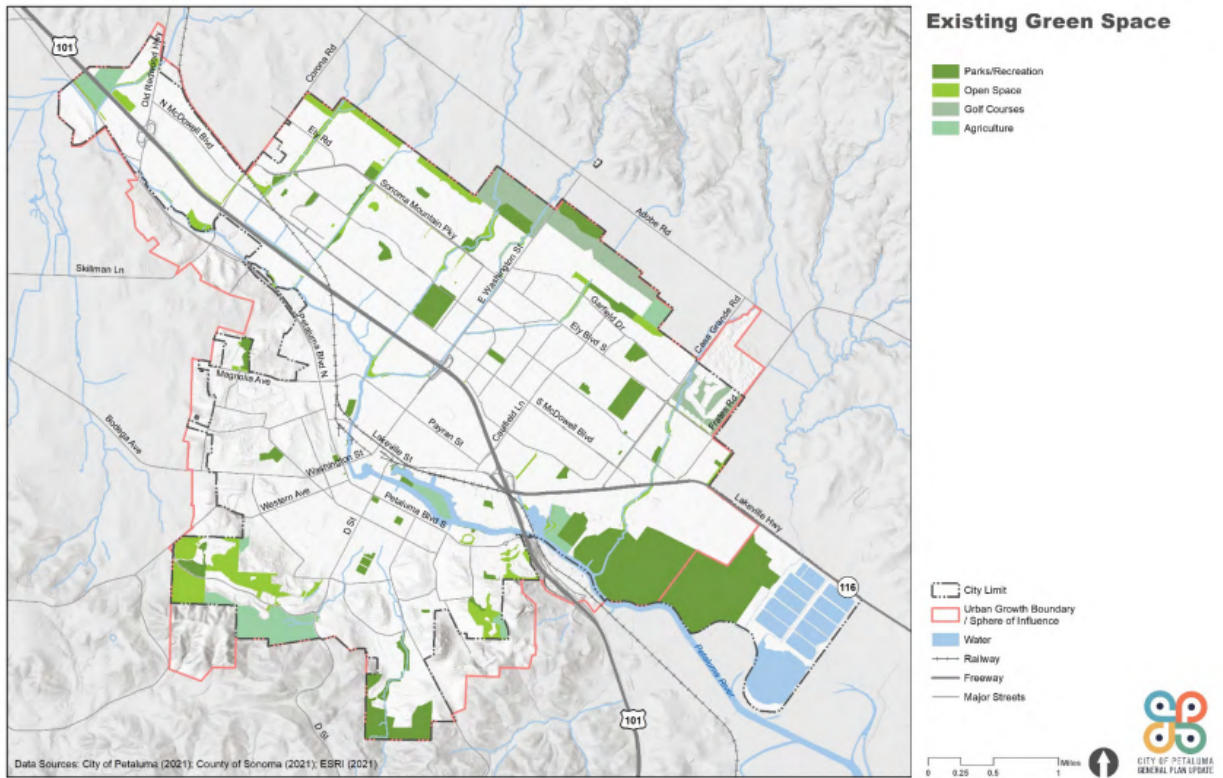
Susan Kirks, Naturalist
PLAN

Appendix

Petaluma Water Ways (2010)

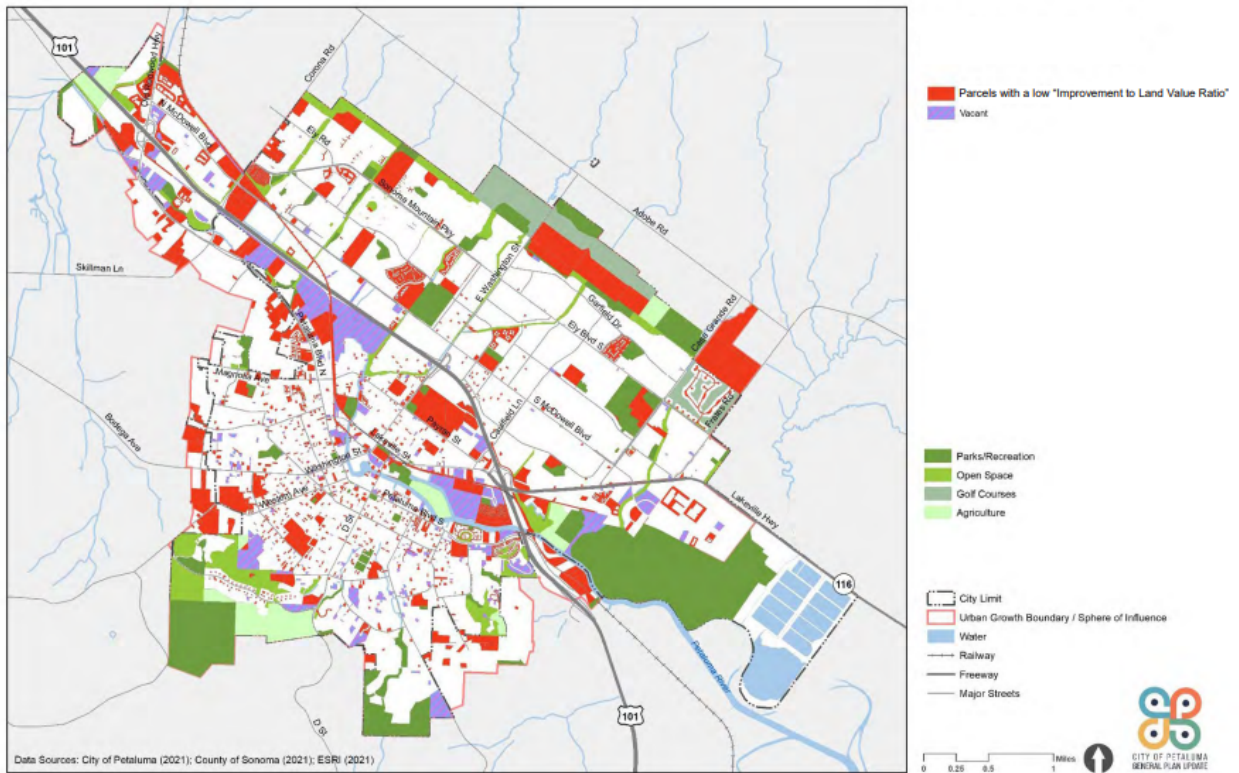
Existing Report: Green Space Map (2022)

Figure 10. Existing Green Space



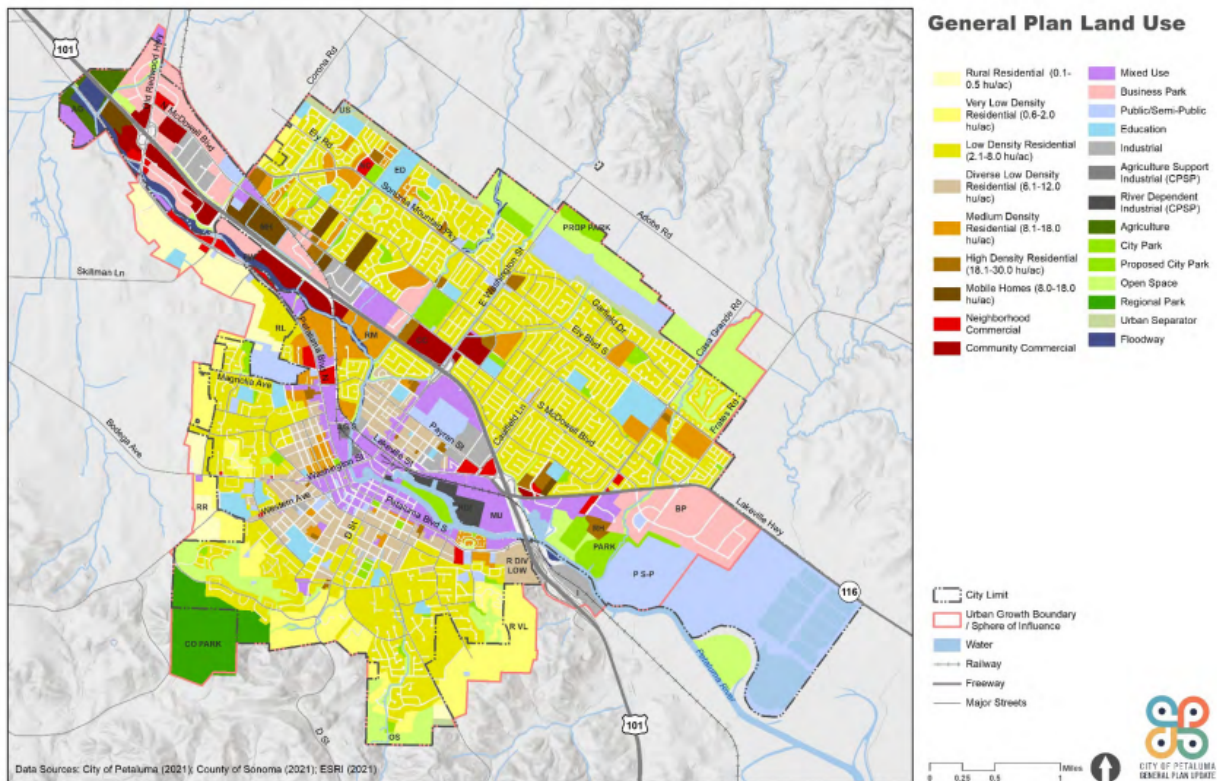
Existing Report: Vacant and Underutilized Spaces (2022)

Figure 12. Vacant and Underimproved Parcels



Existing Report: Land Use Map

Figure 13. General Plan Land Use Designations



City General Plan 2025 (parts relevant to OSNR)

Water Resources. (pg. i-6)

Public workshops on water resources identified common themes regarding management of surface water systems (i.e., creeks and rivers), including restoring wildlife habitat, keeping rivers and channels clean and free flowing, providing bicycle and walking paths along creeks and rivers, and minimizing flooding potential by providing greater capacity within and adjacent to the river channel. The City has and continues to put forth significant efforts, including the adoption and implementation of the Petaluma River Access and Enhancement Plan (May 1996). The limited supply of water and the maintenance of an aging water distribution system were analyzed to insure the ability to meet the future demands of the community. In 2001, the City Council directed the preparation of Water Resource Master Plans in conjunction with the new General Plan. Those work efforts have framed the preparation of the Water Resources Element (Chapter 8) of the General Plan. The Element provides the general objectives to insure all city

water systems meet the present and future needs of the community, in an environmentally sensitive manner.

Guiding Principles (pg. i-7)

3. Preserve and enhance Petaluma's natural environment and distinct setting in the region—a community with a discrete edge surrounded by open space. Petaluma's built environment is shaped and influenced by its larger natural setting, which has long shaped the community's image and sense of place. Views of Sonoma Mountain on the northeast and the hills on the west, The Petaluma River and creeks, and the Petaluma Marshlands to the south are all distinctive elements of this setting. Ensuring that the city's surroundings are maintained in open space is more than an aesthetic issue; given the history of flooding, it is vital to the city's survival. Petaluma's Planning Referral Area encompasses the entire 113 square mile Petaluma River watershed within Sonoma County. The General Plan reinforces the City's commitment to sustainable development patterns by ensuring all future growth results from infill, and land outside the UGB is maintained primarily in agricultural and rural land uses, and open space. 1. 2.

4. Enhance the Petaluma River corridor while providing recreational and entertainment opportunities, including through active implementation of the Petaluma River Access and Enhancement Plan. The city's economic and development patterns have closely been associated with the river, and the River Plan acknowledges the central and multi-faceted role that the river plays in Petaluma's life. It also recognizes that the future economic, social, cultural, and environmental health of the city is intertwined with the river. The General Plan reinforces the city's identity as a river town, and incorporates the recommendations of the Petaluma River Access and Enhancement Plan, including accessibility, open space, habitat conservation, as well as riverfront uses, activities, and developments.

5. Stimulate and increase public access and use of pathways as alternative transportation routes by providing a safe, efficient, and interconnected trail system. Petaluma has an evolving pathway system centered on creeks, the Petaluma River and Urban Separator parcels. The General Plan calls for an expanded system of interconnected pedestrian and bicycle facilities to serve alternative transportation and recreational needs.

6. Provide for a range of attractive and viable transportation alternatives, such as bicycle, pedestrian, rail, and transit. With support for regional rail, an expanded trail and bikeway system, and conversion of two of the city's principal spines—East Washington Street and Petaluma Boulevard South—to pedestrian oriented "boulevards," the General Plan seeks to increase alternative transportation choices. Establishment of minimum densities, promotion of infill development, and provisions for a mix of uses in all neighborhoods will also minimize auto dependency and support transit.

City Plans and Programs (i-17)

The **Petaluma River Access and Enhancement Plan** provides a framework for preservation and restoration of the Petaluma River corridor. Adopted in May 1996, the Access and Enhancement Plan addresses corridor improvements, land uses, and accessibility along the 6.5-mile section of the Petaluma River within the city limits. Its four major components include restoration of the river's natural resources, construction of a multi use trail, a vibrant waterfront district adjacent to Downtown, and mixed uses along the river corridor. The Plan also introduced the concept of constructing flood terraces along the River to increase its carrying capacity and reduce localized flood levels. The General Plan assumes sensitive development patterns along the river corridor that allow integration of land uses, recreation, and preservation/restoration goals.

Land Use Classification System (1-8)

Park and Open Space City Parks. City Parks are City-owned lands whose primary purpose is recreation. Neighborhood parks are intended to typically serve the daily recreational needs of people living or working within a half-mile radius, while community parks are intended to serve the entire city. Proposed park facilities are identified with a special symbol; acreage of proposed parks is site-specific and addressed within the Recreation, Music, Parks, and the Arts Element.

Open Space. This designation includes unimproved sites devoted to the preservation of natural and cultural resources, outdoor recreation, or public health and safety.

Urban Separator. The Urban Separator includes open space lands within and/or directly adjacent to the Urban Growth Boundary that are intended to serve as the outer boundary of urban development, as designated by the City of Petaluma. They provide an edge that buffers agricultural fields from urban land, may serve as a recreational area, and act as a key component of the city's open space system. On lands with development potential, the Urban Separator allows transferability of development potential to the remaining portion of the same property.

Floodway. Floodway delineates the channel of the Petaluma River or other watercourse and the adjacent land areas that must be reserved in order to discharge the "base flood" without cumulatively increasing the water surface elevation more than one foot. No new development is allowed. The boundary of the Floodway is determined by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM); amendments to the FIRMs will be subsequently reflected on the City's General Plan Land Use Map. The Petaluma River Access and Enhancement Plan (adopted 1996) and the future Surface Water Master Plan address the Floodway and Floodplain areas in greater detail than the General Plan.

Overlays

Floodplain. The Floodplain represents lands subject to periodic inundation in a 100-year storm event, as defined by the FEMA Flood Insurance Rate Maps. The Floodplain delineation is intended as an overlay for informational purposes and to distinguish properties subject to regulations outlined in the Development Code.

Petaluma River Corridor. Areas determined to be needed for the implementation of the adopted Petaluma River Access and Enhancement Plan (1996) and to provide for future floodplain management projects. Development potential may be transferable, subject to other applicable policies and regulations.

Urban Separator Path. Identifies locations where the fee title dedication of an Urban Separator may not be feasible but provision of an improved pathway for connectivity is desired and/or appropriate.

Symbols

Transit. A transit station site for the regional transportation system (rail, light rail, trolley, and/or bus) existing or proposed along the highway or existing railroad right-of-way, or an existing or proposed vehicular and bicycle park-and-ride facility.

Gateway. A Gateway indicates public and private property that serves as an important entrance to the city. It is intended that treatment of these gateways, through signs, landscaping, and/or public amenities will provide a sense of introduction and entry into Petaluma.

County Designations

County Park. The County Park classification delineates Sonoma County's Helen Putnam Regional Park, located along the southwestern edge of Petaluma's Urban Growth Boundary.

Community Separator. The Community Separator includes lands located outside of the Urban Growth Boundary that are intended to serve as a buffer between adjacent cities, as designated by Sonoma County and the City of Petaluma. Land uses are permitted on these lands under the Sonoma County General Plan. Cooperation between the City and County could lead to development of public amenities such as surface water detention basins and/or low intensity open space uses.

Land Use Goals (pg. 1-15)

1-P-14 Require provision of street trees, landscaping, parking and access features to help integrate land uses and achieve an effective transition between uses of disparate intensities.

Goal 1-G-2: Hillsides/Ridgelines Preserve the essential scenic and natural resources of the open ridgelines and hillsides that help define the unique character of Petaluma.

GOAL 1-G-3: Land Use. Maintain a well-defined boundary at the edge of urban development.

Goal 1-G-5: Petaluma River. Develop land uses in proximity to the Petaluma River that insure the restoration of the natural River corridor, provide for adequate storm flow capacities, and enable public access and stewardship.

Policies and Programs: See also Chapter 4: Natural Environment, and Chapter 8: Water Resources – Surface Water goals and policies.

1-P-40 An area shown as the Petaluma River Corridor (PRC), along the Petaluma River, shall be set aside for the creation of flood terraces where appropriate; preservation, expansion, and maintenance of flood storage capacity of the floodplain; habitat conservation; and public access.

1-P-41 The Petaluma River Corridor (PRC) shall be irrevocably offered for dedication to the City, improved and maintained in perpetuity by the development as adjacent development occurs. A. Design Standards shall be developed for the Petaluma River Corridor. B. Maintenance of the PRC, not covered by maintenance in perpetuity by adjacent development, shall be assured through the creation of a funding mechanism such as citywide surface water utility fee or Landscape Assessment District.

1-P-42 Development on lands affected by the PRC designation shall be subject to a discretionary review process beyond that required by CEQA.

1-P-43 Development shall incorporate the River as a major design focal point, orienting buildings and activities toward the River and providing water access, to the extent deemed feasible.

1-P-44 Develop the Petaluma River as a publicly accessible green ribbon, fronted by streets, paths, access points, and open spaces, by implementing the Petaluma River Access and Enhancement Plan within the context of the PRC Design Standards.

1-P-45 Development along the River shall include the creation and maintenance, in perpetuity, of public access sites. Amenities provided may include ramps, steps, docks or other means of access to the water.

1-P-46 New development shall acknowledge, preserve, protect, and enhance the ecological and biological health and diversity of the Petaluma River.

GOAL 1-G-7: Trees and the Built Environment Recognize that trees are a community asset, an essential element in the interface between the natural and built environment, and part of the urban infrastructure. Policies and Programs:

1-P-49 Preserve existing tree resources and add to the inventory and diversity of native/indigenous species. A. Review and update existing tree regulations and development procedures relating to trees, including: • Standardize submittal requirements and design review procedures for development and redevelopment projects. • Create a manual or reference guide outlining all tree-related guidelines, standards, and specifications; including, but not limited to: Requirements for design review and construction permit submittals; protection measures for trees in or near construction areas; monitoring requirements for trees during construction; guidelines for injury mitigation and replacement values; and guidelines for planting and maintenance. B. Develop and adopt an Ordinance for Tree Preservation and Management Regulations. C. Designate an official City Arborist(s). Role to include, but not be limited to: Review of all development and redevelopment project applications with regard to trees and

subsequent project monitoring; Educate citywide staff on tree issues relating to each development; Provide a central authority for the coordination, review, and development of tree related policies and program; Promote a healthy urban forest and encourage supporting practices.

1-P-50 Preserve and expand the inventory of trees on public property, by undertaking the following: A. Develop a program, and associated costs, to monitor and maintain all trees on public property. B. Develop Street Tree Master Plan(s) for neighborhoods and downtown districts. C. Assist and encourage private property owners to plant street trees (e.g.: no fee permits for concrete removal, neighborhood tree planting programs). D. Allocate funding for the planting and long term care of trees.

Chap 2. City Form, Design

Open space. In addition to landmarks and unique districts, community workshop participants named many of the city's open space resources as special places. Among the most frequently mentioned include urban separator areas, Luchessi, Prince and McNear parks, the Petaluma River and floodplain, and Shollenberger Park. Open space areas within and around the city contain natural vegetation and habitat lending to the area's ecological diversity (marshlands, river and creek corridors, floodplains, grasslands, and oak woodlands) and contribute to its identity as a close-knit town surrounded by countryside. Open space is addressed in greater detail in Chapter 6: Recreation, Music, Parks, and the Arts and Chapter 4: The Natural Environment.

GOAL 2-G-1: City Form and Identity Preserve Petaluma's setting as an urban place surrounded largely by rural land uses and densities, agriculture and open space

2-P-6 Create a strong sense of entry into the city at key locations, identified as Gateways. Each gateway should be considered individually with some requiring architectural and/or landscape treatments and others more simply protecting/ enhancing what already exists (e.g. cultural landscapes and ecological diversity) to provide a sense of transition or entry to Petaluma.

2-P-7 Encourage creation of a street tree planting program in existing residential areas and industrial areas undergoing revitalization. Such a program may include: • Examples of appropriate tree species to reflect local growing conditions. • Standards for the placement of trees to ensure successful growth and limit impacts to infrastructure from roots. • A privately funded mechanism for replacing, maintaining, and expanding the inventory of street trees. Petaluma contains a sizable amount of residential stock dating from after the 1950s. Streetscape improvements will enliven the character of such areas as South East, Payran-McKinley, and Washington Core, which currently have relatively barren streetscapes with few trees and dominant driveway frontages. See also Element 1, Goal 1- G-7 Trees and the Built Environment.

GOAL 2-G-10: Petaluma River. Incorporate the River as a focal point for development along the Boulevard. Policies and Programs:

2-P-57 Foster connections to the river from surrounding areas and ensure that new development adjacent to the river is oriented toward it.

2-P-58 Use the Petaluma River Access and Enhancement Plan as the tool to implement the Petaluma River Corridor by maintaining setbacks; creating natural flood terraces where appropriate; and enhancing floodplain and habitat conservation areas and other open spaces along the river utilizing an ecologically-based design approach.

2-P-59 Promote greater accessibility and views to Petaluma River through road extensions, bikeways, and trails, including: Requiring new development to be oriented to the river, and provide continuous public access parallel to the riverfront. Extending Industrial Avenue south of Corona Road. Requiring a new pedestrian/bicycle connection to the river east of Jessie Lane and intersecting with Petaluma Boulevard North. Requiring a new street connection to the river at, or near, the intersection of Gossage Avenue. Requiring paths from the area of Jessie Lane southwest toward Magnolia Avenue to link with existing neighborhoods. Enhancing the ecological diversity of the riparian corridor. Requiring development to enhance the natural ecology along the river.

Chapter 4. Natural Environment (pages 4-1 to 4-9, too much to add here)

This element outlines policies related to the river, biological resources, air quality, energy, and solid waste. Detailed background information about the natural environment in Petaluma is provided in the Biological Resources Review (Appendix F-3, Volume 4 of Technical Appendices).

Chapter 6. Recreation, Music, Parks and Arts (pages 6-1 to

Recreation programs, city and county parks, music opportunities, and the arts are significant contributors to Petaluma's quality of life. They provide opportunities for Petaluma residents to experience and develop their physical, mental, creative, and social abilities in an atmosphere that promotes individual achievement, satisfaction, self-esteem, and community pride. This element outlines the City's policy approach to developing parks, open spaces, and trails. Policies for preserving and enhancing opportunities in the fields of music and the arts are also included.

Creek Fronts and the Riverfront. Creeks and the Petaluma River help to define Petaluma's character and culture, and supply the community with important recreational opportunities. Trails along several of the city's creeks and portions of the Petaluma River provide pleasant pedestrian and bicycling corridors that are also used as alternative transportation routes. The Petaluma River, in particular, offers numerous recreational amenities and holds the possibility of offering more. The Petaluma River Trail, when fully implemented, will link residential and commercial uses along the riverfront outward to neighborhoods through the creek trail system. Implementation of the Petaluma River Access and Enhancement Plan will further enhance the

riverfront environment and its relationship to the surrounding community. The city currently (2005) offers approximately 216 acres of creek and riverfront recreation areas. In addition to riverfront trails, the Petaluma River offers a unique opportunity for residents and visitors to enjoy and experience the community from the River itself. Providing access points for hand-launched, human-powered watercraft is an important component of realizing this opportunity. Access sites can include locations with developed amenities (ramps, steps, roads, docks, or other improvements) or sites that provide natural features (e.g., beaches, riverbanks, rock outcrops, banks adjacent to bridges, etc.) to reach the water or hand-launch a small boat.

Urban Separators. The City of Petaluma has obtained title to 157 acres of urban separator lands adjacent to the Urban Growth Boundary. These urban separators serve as open space areas designed to buffer agricultural lands from urban lands as well as providing opportunities for recreation. In areas where an Urban Separator seems infeasible due to existing development or topography, an Urban Separator path (easement) could provide a means to allow bicycle and pedestrian connections without requiring fee title dedication.

Community Separators. Community separators in Sonoma County are intended to retain separate, identifiable cities and prevent corridor-style urbanization by preserving rural lands between developed areas.

Landscape Assessment Districts. Landscape Assessment Districts (LADs) have been used as a financing tool for new residential subdivisions. The LADs fund the provision and maintenance of amenities on public lands within the subdivisions. Costs for the provision and maintenance of amenities are spread equally among all of the private parcels within each district. The City Council sets the annual assessments each July at a noticed public hearing.

Sonoma County Agricultural Preservation and Open Space District. The Sonoma County Agricultural Preservation and Open Space District is an independent special district formed under Government Code Section 65562 et seq. of the California Public Resources Code, and utilizes a dedicated sales tax for the purchase of conservation easements to protect agricultural lands and preserve open space. The District is also authorized to purchase fee title for open space resources. The Sonoma County Agricultural Preservation and Open Space District's Acquisition Plan 2000 describes several different open space designations in Petaluma. Agriculture. The entire Planning Area south of the city's UGB is designated for coastal agriculture, while all lands north of Adobe Road are designated for greenbelt agriculture. Agricultural areas can include grazing land, active ranches and/or cropland, or community agricultural operations (e.g., farmers market, co-ops). Greenbelts. All lands north of Adobe Road and east of the city limits are designated as priority greenbelt. Priority greenbelts are defined as highly visible open spaces and agricultural lands, prominent viewsheds, important scenic lands, and greenways along creek channels. Natural Resources. The Petaluma Marsh Wildlife Area, located south of the UGB along the Petaluma River, is identified as a priority biodiversity area.

The Rivermouth is a designated wetland to prevent urban encroachment on sensitive areas home to multiple threatened and endangered species.

Parks and Open Space Standards The City has adopted a citywide parks standard of 5 acres of parkland per 1,000 residents and as of October 2005, the City was providing 5.1 acres of parkland per 1,000 residents. (The parkland ratio was calculated using community, neighborhood, and pocket parks as well as several urban separators. Urban separators included in the parkland acreage are those that provide recreational amenities such as playing fields and/or multi-use trails.)

Future Parks Needs The buildout population under the General Plan estimates a population increase of approximately 16,000 residents between 2005 and 2025. In addition to other new community services and facilities, new parks and open space will need to be provided to meet the City's adopted parkland standards. The addition of approximately 16,000 residents generates the need for approximately 80 additional acres of new parkland. As detailed in Tables 6.1-2 and 6.1-3 above, the City is proposing approximately 103 acres of new parkland to be constructed under the General Plan, which results in a total of 370 acres of parkland (existing plus proposed) at buildout. With a projected population of 72,707 residents by the year 2025, the City will be providing 2.53 acres of parkland per 1,000 residents. Table 6.1-7 summarizes the existing and future parkland conditions and provides a comparison with parkland ratios provided in 1985. As Table 6.1-7 demonstrates, the City has made considerable progress toward providing recreational space for its citizens during the last 20 years and will continue its aggressive program to meet the community's recreational demand. Table 6.1-9 illustrates the full range of recreational assets available to the community within the Urban Growth Boundary at buildout. The combination of parks, open space lands, joint-use facilities, etc. total over 1,400 acres of land, or 19.5 acres/1,000 residents.

New Parks under the General Plan. The new parks will be fully integrated with the surrounding community and connected to other parks and public facilities through pedestrian trails and bicycle routes. Proposed parks are listed in Tables 6.1-2 and 6.1-3 and are summarized in Table 6.1-8. Approximate locations for these parks are shown in Figure 6-1.

Chapter 8 Water Resources

Goal 8-G-11: Sustainable Site Planning Improve natural hydrologic functions and water quality through sustainable site planning. Policies and Programs: 8-P-39 Consider, to the extent practicable, requiring sustainable site design practices as outlined in the 'Sustainable Site Planning' text box contained herein.

Sustainable Site Planning. Sustainable site planning practices—sometimes also referred to as Low-Impact Design (or LID)—are designed to maintain or restore the natural hydrologic functions on a site with the goal of reducing the impact of development. The goal is to structure the development of a site—through arrangements of buildings, roads, parking areas, site

features, and stormwater management plans—to detain, filter, treat and reduce runoff, and reduce urban heat island impacts. By reducing water pollution and increasing groundwater recharge, sustainable site design helps to improve the quality of receiving surface waters and to stabilize the flow rates of nearby streams, potentially minimizing flooding impacts and benefiting wildlife habitats. Sustainable site design exploits every surface in the infrastructure—natural and hardscape—to perform a beneficial hydrologic function. The surfaces are used to retain, detain, store, change the timing of, or filter runoff in a number of different configurations and combinations through techniques including¹ (see Water Resources Element for additional guidance and policies): Reduce imperviousness by limiting building footprint, and using permeable paving or landscaping to break up expanses of impervious surfaces. Cluster development on sites to minimize disturbance. Use canopy trees to absorb rainwater and slow water flow. Direct runoff into or across vegetated areas to help filter runoff and encourage groundwater recharge. Preserve, or design into the infrastructure, naturally vegetated areas that are in close proximity to parking areas, buildings, and other impervious expanses in order to slow runoff, filter out pollutants, and facilitate infiltration. 1. Modified and adapted from www.wbdg.org • • • • Reduce street widths for internal circulation. Remove curbs and gutters from streets, parking areas, and parking islands, where appropriate, to allow storm water sheet flow into vegetated areas. Use devices such as bioretention cells, vegetated swales, infiltration trenches, and dry wells to increase storage volume and facilitate infiltration. Grade to encourage sheet flow and lengthen flow paths to increase the runoff travel time in order to reduce the peak flow rate. Disconnect impervious areas from the storm drain network and maintain natural drainage divides to keep flow paths dispersed. Disconnect roof downspouts and direct storm water into vegetated areas or into water collection devices. Install cisterns or sub-surface retention facilities to capture rainwater for use in irrigation and non-potable uses. Install “eco-roofs” (vegetated or garden roofs). Use native plants (or adaptable species) to establish an adaptable and low maintenance landscape that requires less irrigation and are appropriate for the climatic conditions. Use naturally occurring bio-chemical processes in plants located in tree box filters, swales, and planter boxes. Divert water away and disconnect from the storm drain using correctional drainage techniques.

Chapter 10. Health and Safety

10.1 Natural Hazards.

Geologic Hazards. In the Petaluma Planning Area, the composition of geologic material, topography, and groundwater conditions affect geologic hazards. The main hazards confronting development in Petaluma include slopes and landslide potential in the foothills, and expansive soils along the River valley. Other hazards include soil erosion, subsidence, and settlement.

Seismic Hazards. In Petaluma, as in much of California, earthquakes are a constant threat to life and property. Two active faults— the San Andreas Fault and the Healdsburg-Rodgers Creek Fault—can be expected to affect the Petaluma Planning Area. The major fault zones of the San

Andreas Fault System have been the source of almost all the earthquakes felt in Petaluma and are expected to be the sources of future felt earthquakes.

10.2 Noise Noise. can be defined as a sound or series of sounds that are intrusive, irritating, objectionable and/or disruptive to daily life. Noise varies widely in its scope, source, and volume, ranging from individual occurrences such as a barking dog, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on Highway 101.

10-P-3 Protect public health and welfare by eliminating or minimizing the effects of existing noise problems, and by minimizing the increase of noise levels in the future.

GLOSSARY OF TERMS

Community Park. Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks.

Community Separator. Largely open, natural areas with low intensity development between cities and communities in Sonoma County and/or Marin County.

Community Park. Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks. **Community Separator.** Largely open, natural areas with low intensity development between cities and communities in Sonoma County and/or Marin County.

Floodplain. The relatively level land area on either side of the banks of a stream subject to flooding. That part of the flood plain subject to a one percent chance of flooding in any given year is designated as an “area of special flood hazard” by the Federal Insurance Administration.

Flood Terrace. The creation of flat platforms, either natural or artificial, on either side of a river. Flood terraces are designed as a method of flood management by increasing the capacity of the river within certain areas.

Floor Area, Gross. The total horizontal area in square feet of all floors within the exterior walls of a building, but not including the area of unroofed inner courts or shaft enclosures.

Open Space. Any parcel or area of land or water which is essentially unimproved and devoted to an open-space use as defined in the General Plan or designated on a local, regional, or state open-space plan as one of the four types of open space defined by state planning law.

Vacant. Lands or buildings that are not actively used for any purpose.

Wetlands. An area at least periodically wet or flooded; where the water table stands at or above the land surface (bogs and marshes). Also those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under

normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wildlife Corridors. A primary means for linking fragmented wildlife habitat areas, allowing species to move between otherwise isolated areas. Especially important for migratory animals and animals with large home ranges. Contributes to maintaining biodiversity, population interbreeding and continuation of species, and accessing other habitats.

Wildlife Refuge. An area maintained in a natural state for the preservation of both animal and plant life.

Watershed Long Term Strategies to Pursue

John Shribbs, written Spring 2022 for RCD Watershed Enhancement Plan

Recommended strategies for the Petaluma Watershed to prepare for climate change involving open space, agriculture, urban ecosystems, riparian corridors, marshes, and wetlands.

Background

This *Additional Strategies* section is intended as an expansion to the Top Ten projects list done for a RCD Watershed Enhancement project. These strategies were identified within the effort of project solicitation as actions that are imperative to address and mitigate the effects of a changing climate, sea level rise, and security of water quality and quantity into the future. These strategies are needed in widespread areas, and will require continued coordination amongst watershed partners and landowners (whether public or private) to see that these strategies are pursued. These strategies were in part submitted by community members, local organizations, and stakeholders participating in the Petaluma Watershed Collaborative. Strong support for the identification and need for action with these strategies was indicated by the collective Petaluma Watershed Collaborative. Because some of these larger-scale and comprehensive strategies (as outlined below) did not fit well into the discrete project scoring criteria, they were difficult to score against proposed projects and instead made up this section of *Additional Strategies to Pursue*.

This section is organized by grouping the topic of interest, followed by local watershed and community concerns received through the solicitation and stakeholder collaboration process, with identified strategies to pursue.

Introduction

The City of Petaluma is situated in the Petaluma Valley, a fairly flat alluvial plain with elevation ranging from sea level along the Petaluma River, to over 400 feet in the nearby hills. This valley is characterized by a Mediterranean climate with long and dry summers, followed by cool and wet winters. The mean annual precipitation over the valley is approximately 26 inches. The main waterways in the City include the Petaluma River, Adobe Creek, Lynch Creek, Lichau Creek, and smaller branches or tributaries such as Willow Brook. A 146 square mile basin contributes to the 19 miles of the Petaluma River, emptying into San Pablo Bay. The City sits near the center of the river stretch. The Petaluma River is historically important due to its key role in enabling exploration activities, settlement and the development of the Petaluma and San Pablo Bay watersheds.

Petaluma is a historic but progressive smaller city surrounded by agriculture and open space with a river running through it. We value our history including geologic and natural setting, early

civilization, immigration from Central America and Europe, our agricultural heritage and civic participation over the last 150 years of city development. We support all our residents with full city services including programs for all ages and diversity. We plan for the future and seek resilient solutions that will provide opportunity for all, engage community spirit, and maintain public health. Petaluma will lead other cities in climate change actions, maintaining a sustainable economy, and regenerating natural resources. We will reduce carbon emissions in buildings and transportation, create local green jobs to give residents meaningful employment, and repopulate native plants and animals in our parks, riparian corridors, open spaces, and urban communities. Petaluma will be a highly sought-after city for both residence and tourism for its historic character, human centered living environment, and nature-based solutions.

The 2015 River Enhancement Plan calls for 5 and 10 year goals and actions in the implementation section at the end of the report along with current recommendations. We need to also include longer term goals and actions for climate change actions with a 50+ year implementation strategy. These strategies were brought forward from the 2015 River Enhancement Plan, Existing Conditions Reports and Community Engagement Process for the City of Petaluma General Plan Update, and projects submitted throughout the project solicitation process to highlight higher level needs of the watershed.

Climate Adaptation

Climate Change is usually associated with increasing global air temperatures, but has more extensive parameters including sea level rise, changes in ocean chemistry and currents, changes in hydrologic cycle including a combination of intense cycles of drought and increase in storm severity causing flooding, and increasing wildfire severity. The city has adopted the goal of carbon neutrality by 2030 with focus on reducing emissions from transportation and increasing building energy efficiency. The city won a million dollar grant to run a Cool Cities Initiative by getting over 300 citizens to volunteer to be block captains. Climate actions will need to be robust, comprehensive, and multi-faceted. Nature Based Solutions (NBS) are the most efficient carbon sequestering strategies and there are many projects that can provide multiple benefits.

Watershed and Community Concerns:

- Atmospheric rivers causing erosion and flooding
- Long term drought causing water supply shortages and ecosystem function decline
- Sea level rise causing loss of the historic Petaluma Marsh
- Saltwater intrusion into groundwater
- Exacerbated flooding potential during storm events coinciding with king tides
- Heat Island effect in urban areas, especially in underserved zones
- Need for increased protection from wildfires
- Achieving carbon neutrality by 2030

Strategies to Pursue:

1. Develop and implement projects that provide flood protection, sediment reduction, habitat enhancement, wildlife corridors, rainwater catchment, groundwater recharge, trails/paths for human powered transport, and park settings for recreation.
2. Ensure fresh water access to all by assisting and supporting Petaluma Water Department, Petaluma Groundwater Sustainability Agency, and Sonoma County Water Agency in developing comprehensive water systems.
3. Rezone and/or buy land along the river, tributaries, and floodplains and create multifunctional projects with regional coordination.
4. Complete the River Enhancement and Access Plan to increase human and nature interactions and improve bank stabilization.
5. Support planning measures that control development to appropriate locations and preserve open space and agricultural lands.
6. Improve and beautify the downtown ecosystem with planting native trees, restoring river banks with native vegetation, and creating larger park settings in River Park, Outlet Mall flood area, and Fairgrounds which also improves living standards for the local underserved communities.
7. Support improvement of the Urban Forest to increase biodiversity, reduce urban heat, and provide multiple other benefits.
8. Participate in development processes of Sonoma Mountain open spaces to maximize watershed benefits.

Agricultural and Rural Areas

The Petaluma Watershed supports several agricultural industries including dairies, vineyards, poultry, equestrian, hay, flower, cannabis, and farm to table enterprises with future expected expansion of vineyards, cannabis, and organic community coops. While many other cities in California have expanded development into farmland, Petaluma is unique in that the City recognizes an Urban Boundary that preserves local farmland and open spaces, allowing for the ongoing cooperation with County policy makers to prevent development on the greenbelts, agricultural, and open spaces surrounding the city.

The below strategies are intended to highlight practices and changes in management that not only benefit watershed processes, but may also serve to sustain production and profitability of the agricultural community.

Strategies to Pursue:

1. Continue community outreach and provide technical assistance to landowners for the management and protection of riparian areas.

2. Provide support for rural residential landowners and agricultural producers to implement beneficial management practices to improve stream health.
3. Provide support regarding nutrient management.
4. Assist landowners to eradicate non-native pest insects, diseases, and invasive weeds.
5. Provide technical and financial incentives for agricultural producers to transition management practices that will be affected by climate change Support regenerative agriculture, community farms, and local food supply.
6. Provide technical and financial incentives for agriculture to continue sustainable and best management practices that aid in carbon sequestration. Including,
 1. transitioning to organic, biodynamic, and/or regenerative systems
 2. improving soil health
 3. incorporating trees, shrubs, and hedgerows into rangeland or farm landscapes
 4. reducing tillage or transitioning to no-till practices
 5. increase practice of rotational grazing
 6. increase riparian canopy cover
 7. utilization of cover crops
 8. restoring grassland forage communities.
7. Provide technical and financial incentives for exclusionary livestock fencing, alternate water source development, and riparian area access.
8. Provide technical and financial incentives for the prevention and control of soil erosion processes.

Riparian Enhancement

Initial focus of riparian restoration and erosion control efforts may be focused on river and tributaries that currently, or potentially can, support steelhead and Chinook. Although these actions should be considered and pursued on all tributaries for overall watershed health and the benefit to water quantity, quality, and ecosystem services.

Strategies to Pursue:

1. Revegetate high and medium priority riparian sites with cooperative landowners.
2. Create habitat and wildlife paths along main corridors designated in the city General Plan, primarily along Petaluma River, Washington Creek, and Lynch Creek and include other tributaries when possible, e.g. Lakeville and Ellis Creeks.
3. Create eco-enhancement sections within all riparian projects along with sediment and erosion reduction projects.
4. Encourage native vegetation at multiple heights: groundcover, shrubs, and trees. In riparian areas, encourage a patchwork of habitats such as a small grassy area near a dense shrubby area near a group of tall trees and install plant species with climate changing adaptability.

5. Leave old and dead trees in place if they do not threaten structures. Remove trash and debris in all tributaries, especially within city urban boundaries, e.g. old car removal from Corona Creek.
6. Restore Petaluma River banks with native vegetation, especially in the downtown area, as well as creating floodwalls where needed.
7. Create a plan for sustainable river dredging and use sediments in marsh to prepare for sea level rise.

Marshlands

In the next 50 to 100 years about 3-4 feet rise is expected and in 200 years seas could rise more than 10 feet. We need to start now and work hard over the next 10-20 years to save the SF Bay shorelines and Petaluma Marsh. These are the methods currently recommended for the entire SF Bay region to prepare our wetlands for rising sea levels:

- Restore estuary-watershed connections.
- Design complexity and connectivity into the Baylands landscape.
- Restore and conserve complete tidal wetlands systems.
- Restore Baylands to full tidal action prior to 2030.
- Plan for the Baylands to migrate.
- Actively recover, conserve, and monitor wildlife populations.
- Develop and implement a comprehensive regional sediment management plan.
- Invest in planning, policy, research and monitoring.
- Develop a regional transition zone assessment program.
- Improve carbon management to prevent further subsidence, increase organic matter accumulation, reduce GHG emissions, and sequester more carbon.

Most of these concepts of meeting the challenge of rising sea level is to use sediments from dredging waterways with additional sediment from the bay and placing them where needed. There are several other methods that can be used around the bay including modifying beaches and storm walls, but sediment layering seems to be the most cost efficient and effective. The volume of sediment needed is quite large and will take long range planning and funding.

Innovative approaches to making managed ponds and marshes more resilient could be pursued for retrofitting existing diked baylands or constructing new ones. These might include designs for more flexible water-control structures or water management configurations that can accommodate changes in sea level. Also, there may be ways to allow the bathymetry of managed ponds and marshes to rise with sea levels by capturing sediment, which could ameliorate the need for reinforcing levees and pumping water.

Habitat types will naturally shift over time due to sea-level rise, salinity changes, and restoration. To ensure that the habitat needs of waterbirds are being met, a large-scale,

long-term planning and monitoring effort across the bay, delta, and Central Valley (and ideally the rest of coastal California) is needed. The reliance of Pacific Flyway waterbirds on bayland habitats is partly due to the extensive loss of wetlands in the Central Valley (particularly the delta) and other parts of coastal California.

Nature Based Solutions (NBS) are the most cost effective means of long term strategies.

Strategies to Pursue:

1. Restore large patches of tidal marsh along the entire shoreline of San Pablo Bay particularly near the mouths of sloughs and major streams. Use Nature Based Solutions for reducing water energy and spreading out the marshland habitat that will provide multiple benefits starting with Sears Point and continuing up San Pablo Bay shoreline to mouth of Petaluma River such as:
 1. Allow natural processes, such as flooding and laying down new layers of sediment.
 2. Placing piles of dredge spoils where natural water flow will move the sediment and lay them down naturally.
 3. Reuse dredge material where sediment is needed.
 4. Bury large logs to create mini dikes that break wave action and backside habitat protection.
 5. Move dikes back in "retreat".
 6. Build "horizontal levees" where sediments are loaded onto the land to create a gradual long slope.
2. For wetlands reduce development in low-lying areas, behind levees, or adjacent to the bay/coast and prevent or reduce other stressors that reduce the ability of the wetland ecosystem to respond.
3. Complete large wetland restoration projects to serve as buffers to tidal flooding as well as sea level rise.
4. Restore large patches of tidal marsh along the entire shoreline of San Pablo Bay particularly near the mouths of sloughs and major streams, e.g. the Bahia Wetlands Restoration Project.
5. Enhance riparian habitat along Petaluma River.
6. Where possible, enhance marsh/upland transitions and provide buffers.
7. Manage, restore, and monitor tidal marsh habitat to promote the recovery of listed species and the long-term conservation of species of concern and other tidal marsh species covered in this draft recovery plan.
8. Purchase privately owned parts of the Petaluma Marsh and then start the restoration work. Acquire existing, historic, and restorable tidal marsh habitat to promote the recovery of listed species and long-term conservation of species of concern and other tidal marsh species.

9. Conduct range-wide species status surveys/monitoring and status reviews for endangered, threatened, and key species.
10. Conduct research necessary to the recovery of listed species and long-term conservation of species of concern and other tidal marsh species.
11. Test various planting palettes and methods for restoring marsh edges and dikes, for example, the Shollenberger Levee Planting Project by STRAW.
12. Prepare and distribute information to the public about the habitat needs of these species and how watershed residents can help with recovery efforts.
13. With willing landowners in the Petaluma Marsh:
 1. establish managed marsh or enhanced seasonal pond habitat (especially for shorebirds) on agricultural baylands that are not restored to tidal marsh.
 2. establish managed marsh or enhanced seasonal pond habitat (especially for shorebirds) on agricultural baylands that are not restored to tidal marsh.
 3. create small diked ponded areas adjacent to levees where possible.
 4. Work with private landowners currently doing an agricultural service in the lower Petaluma River to shift how they manage their dikes.
 5. Instead of building bigger, higher front dikes, experts are recommending moving the dike back and grading the land in front with a gradual slope that breaks wave action and provides space for marsh habitat that slows water energy from reaching the main dike.
14. In agricultural areas in the upper watershed:
 1. allow ponding in field depressions for shorebirds and waterfowl.
 2. create small diked ponded areas adjacent to levees where possible.
 3. encourage growth of vegetation along fence rows or field edges to provide habitat for small birds and mammals.
 4. delay spring harvest of oat-hay as late as possible to avoid nesting waterfowl.
 5. fence cattle from wetland areas during wet periods.
 6. increase the practice of rotational grazing to encourage a more diverse grassland habitat.

Fish and Wildlife

The estuary serves as a migratory route and nursery area for Chinook salmon (*Oncorhynchus tshawytscha*), striped bass, and green sturgeon, American shad, and steelhead trout (*Oncorhynchus mykiss*). Among the threatened species that have been documented in the watershed is the *Rana draytonii*, California red-legged frog, the American badger—a species of concern once inhabited all of northern California but has been gradually forced westward as development has spread. Endangered species include the Red Legged Frog, Railey's Rail, and Salt Water Harvest Mouse with many other species on the threatened list.

Some of the highest ranked stressors include: increased sediment transport and stream incision, alterations to the estuary from straightening and dredging, changes to floodplain connectivity and degradation to the wetlands, impaired water flow through increased residential and agricultural water use pressures, lack of riparian cover due to land use changes affecting water temperatures, water quality, and lack of instream complexity including: spawning gravel, shelter and deep pools, increased fish passage barriers, increased water pollution from both urban and rural sources.

Wildlife corridors are generally defined as land that connects large areas of habitat where animals live and move. These corridors help animals move through natural areas. The fragmentation of natural areas around Petaluma and throughout Sonoma County due to development patterns can limit the ability of animal populations to move to areas they need for food, shelter, and breeding. The protection and enhancement of existing habitat connectivity linkages is essential to the future health of local wildlife species in and around Petaluma. Beginning in 2013, the Sonoma Land Trust initiated the Sonoma Valley Wildlife Corridor Project with funding from the Gordon and Betty Moore Foundation and Resources Legacy Fund. The goal is to ensure that the linkage continues to offer safe passage for wildlife by assessing, protecting, and enhancing essential corridor components. The Sonoma Land Trust began to purchase land within the Sonoma Valley Wildlife Corridor. This corridor lies east of the City of Petaluma, entirely within the Jack London State Historic Park and stretches from the Mayacamas Mountains in the east to Sonoma Mountain adjacent to Petaluma. Highway 12 cuts through the wildlife corridor and passes to the south of Glen Ellen.

The Helen Putnam Park Extension is in the planning phase and will convert an old dairy farm into a multi use park with emphasis on human interaction with nature as well as protecting wildlife.

Strategies to Pursue:

1. Conduct surveys for species of concern throughout the watershed; and support instream monitoring and survey efforts of salmonid and wildlife populations.
2. Conduct genetic testing on the Chinook to understand origins and patterns.
3. Conduct assessments of potential fish passage barriers and remove on priority streams.
4. Rehabilitate and reclaim historic tidal wetland/slough estuarine habitat for rearing steelhead.
5. Create more pool connectivity and increased summertime flow for salmonids
6. In agricultural areas
 1. allow ponding in field depressions for shorebirds and waterfowl,
 2. encourage growth of vegetation along fence rows or field edges to provide habitat for small birds and mammals,
 3. delay spring harvest of oat-hay as late as possible to avoid nesting waterfowl.
 4. fence cattle from wetland areas during wet periods,

5. revegetate high and medium priority riparian sites with cooperative landowners.
7. In forestlands look out for pest insects and disease, invasive species, and dying trees.
8. Focus riparian restoration and erosion control efforts on tributaries that do, or potentially can, support steelhead and Chinook. These tributaries are Lichau, Adobe, San Antonio, and possibly Lynch and Willow Brook Creeks.
9. Increase riparian canopy cover to 70% and install livestock exclusion fencing within key reaches of major tributaries.
10. Work with CDFW, UACGHS and NMFS to conduct surveys for threatened species and species of concern to include but not limited to pond-breeding and stream breeding amphibians throughout the watershed; and support on-going monitoring and survey efforts of salmonids and wildlife populations.
11. Conduct genetic testing on the Chinook to understand origins and patterns.
12. Conduct assessments of potential fish passage barriers and remove on priority streams.
13. Rehabilitate and reclaim historic tidal wetland/slough estuarine habitat for rearing steelhead.
14. Create more pool connectivity and increased summertime flow for steelhead and Chinook survival.
15. Create specialized local projects such as improve fish ladder on Adobe Creek and remove Lynch Creek Mouth Barrier.
16. Investigate the possibility of using Adobe Creek as an urban reference site.
17. Improve Wildlife Corridors south of the city and along Lynch Washington, and Ellis Creeks and coordinate with the Sonoma Valley Wildlife Corridor Project.
18. Ensure the Helen Putnam Park Extension has a Wildlife Corridor Plan since it lies within the overall Sonoma County Wildlife Corridor and is needed for badgers and other mobile animals by working with Sonoma County Parks.

Urban, Park, and Open Space Ecosystems

Trees in both the open space and urban environments provide many benefits: economic, environmental, ecosystem, health, traffic, social, psychological, and community benefits. Over 50% of the native oak trees were removed from the watershed to supply lumber to SF during the gold rush era. The city is seeking funding for development of an urban forest management plan and reworking of ordinances to protect trees and a local nonprofit has started the 10,000 tree planting initiative to increase canopy by 10%. The General Plan is being updated to include greater effort to purchase land for open space, flood management, catchment basins, trails and parks. Tree planting in all these areas will be a major undertaking. The STRAW program at Point Blue is working on riparian habitat restoration. ReLeaf Petaluma is working on the urban/community forest. We will need major funding for tree planting and maintenance for landowners, nonprofits, city, and county.

Several nonnative species and diseases have recently arrived including West Nile Virus, Sudden Oak Death, and Stinkwort as well as many from the past that need to be monitored since they put our native species at risk.

Strategies to Pursue:

1. Develop an Urban Forestry Plan and pursue projects that increase tree canopy, species biodiversity, wildlife habitat, and wildlife corridors.
2. Convert vacant and undervalued land into Pocket Forests with native species.
3. Include native bunch grasses in various urban and rural landscapes to sequester carbon.
4. Increase urban parks along and near Petaluma River and tributaries that also provide multiple benefits for community benefits, native species, water catchment, e.g. River Park, floodplain properties near Outlet Mall, and Sonoma-Marin Fairgrounds, Lynch Creek Trail, SMART Trails, and other trails in city plans.
5. Continue expansion and development of open space, esp. Helen Putnam Park, Tolay Park, and Lafferty Ranch.
6. Along roads, agricultural lands, open space, and in forestlands survey and monitor invasive species and apply control methods where needed.
7. Assessment of pest insects and disease, invasive species, and dying trees in forestlands, particularly in the regional parks, Helen Putnam and Tolay Parks and Adobe State Park

Water Conservation

The city has a robust water conservation initiative to help residential and commercial customers conserve water. The initiative includes programs, rebates, resources, and other incentives to help Petaluma residents save water. Reducing water demand through domestic water conservation is one of the most impactful ways to mitigate drought conditions.

The City of Petaluma Water System uses recycled water for agricultural, golf course, and landscape irrigation. Tertiary recycled water is used onsite at Ellis Creek Water Recycling Facility for flushing toilets, process water, and landscape irrigation. The City is planning an expansion of the urban recycled water system to deliver recycled water to more agricultural customers outside of the City's current service area.

The following is a list of programs and resources included in the water conservation initiative:

- Complimentary water-saving devices: The City offers complimentary water conservation devices to all Petaluma water customers. The devices include shower heads, faucet aerators, hose nozzles, toilet leak detection tabs, and more.
- High efficiency water fixtures rebates: The City offers rebates for the installation of various high efficiency water fixtures. Qualifying fixtures include residential High

Efficiency Toilets (HET), commercial High-Efficiency Toilets and Urinals, and high-efficiency clothes washers.

- Complementary Mulch Madness program: This program offers free mulch to residents and businesses who convert grass lawn into a drought-friendly landscape. The program includes free sheet mulching supplies (compost, cardboard, mulch) and delivery, as well as irrigation conversion kits for residential participants.
- Water-Wise HouseCall Program: This program offers residents a free consultation with a trained water efficiency professional. The water professional will assess a residence's current water usage and outline the best ways to maximize water savings.
- Do-It-Yourself (DIY) Leak Kits: The City offers free DIY Leak Kits to all community members. Each kit includes instructions, a practical plumbing handbook, toilet dye tablets, and more. Increase the role of water conservation and safe, beneficial reuse where water meets applicable regulatory standards.

Strategies to Pursue:

1. Implement the city Water Conservation Plan that incorporates conservation measures beyond the beneficial management practices developed by the California Urban Water Conservation Council such as low water landscaping, water saving appliances and fixtures, and greywater re-use, to improve water use efficiency and offset potable water demand for both urban and rural landowners.
2. Collaborate and seek funding for watershed-wide efforts to establish parameters of a multiple-benefit project involving elements of: water quality improvement, surface and groundwater storage, rainwater harvesting, use of recycled water, wetland restoration, and seasonal flood easements to allow continued agriculture. Example: Petaluma Municipal Well Groundwater Recharge Project
3. Develop a roof water catchment program and demonstration project for both residential and agricultural landowners, e.g. City Hall and Sonoma Mountain Institute Rain Catchment Systems.
4. Provide resources to landowners on the benefits of restoring groundwater and methods for increasing groundwater recharge in uplands areas through small landowners meetings.
5. Outreach to agricultural producers to determine if there are opportunities to increase water use efficiency or implement alternative water sources for irrigation and frost protection systems.

Hydrology

(From GP Infrastructure Existing Conditions Report)

Over the years, multiple factors both natural and man-made have caused siltation of the Petaluma River streambed, which in turn has affected the water-carrying capacity and

navigability of the waterway and has caused problems in surrounding communities. Many of the watersheds' natural creeks and drainages have been straightened or realigned to allow altered land uses. This includes connecting many eastern creeks such as Lynch, Washington and Adobe directly to the River. Many creeks, historically, did not reach the river but rather fanned out into freshwater wetlands and vernal pool systems. Current stormwater drainage infrastructure has drained nearly all of these habitats, and very little Riparian habitat or connected natural floodplains remain. This channelization has increased the flow intensity of creeks, by confining flood flows within their banks, rather than allowing stormwater to spread onto adjacent floodplains. Floodplains provide stormwater dissipation, water filtration, groundwater recharge and support some of the most bio-diverse habitat within the City where most of the limited remaining riparian wetlands, riparian forest and vernal pools are located in these floodplains.

All water that falls within the City of Petaluma eventually flows into the Petaluma River and finds its way to San Pablo Bay. Precipitation and surface runoff that does not infiltrate directly into the ground navigates into the river via natural or mechanized channels. This surface flow eventually leads to inlets that connect into the subsurface pipe and culvert networks. Storm drains either outfall directly into the Petaluma River or into the dendritic creeks that lead to the Petaluma River. Even though the City has separate sewer and storm drain systems, the water quality of storm water can become compromised by chemical pollutants or debris.

Many trees along the riparian corridors suffered during the recent drought indicating surface and groundwater interactions affect the riparian ecosystem. The Groundwater Sustainability Agency will be working on studying this interaction and developing hydrology models in cooperation with SCWA and USGS.

Strategies to Pursue:

1. Help City, County, SCWA, USGS and Petaluma GSA work together to construct hydrology models to inform surface water, groundwater, and stormwater decisions.

Stormwater Management

(From GP Infrastructure Existing Conditions Report)

Stormwater runoff picks up and carries pollutants and sediment as it flows over impervious surfaces, into drainage networks, and into waterways. There is no centralized treatment system within the storm drain network that cleans or filters the water that it conveys. The water quality of the Petaluma River watershed determines the health and vibrancy of the freshwater habitats, fish spawning and migration, and preservation of rare and endangered species that call the

region home. For this reason, it is important that runoff is directed into treatment measures before entering the Storm Drain network.

Lack of funding for the City's stormwater drainage system is currently being investigated. Deferred maintenance costs continue to grow each year. There remain significant portions of the City which are underserved by existing stormwater infrastructure and are prone to flooding. Storm events will continue to become more intense with climate change, threatening to overwhelm the capacity of natural waterways and the City storm drain network. The City does not currently have flood mapping which integrates rainfall flooding with Sea Level Rise predictions, nor with the expected increased flood intensity due to higher precipitation and further land development in the future. Though the City is currently in the process of improving the accuracy of its river flood maps for FEMA review, further hydraulic modeling is needed to expand these flood maps in the face of increased rainfall intensity, proposed development land uses, and the combined effect of Sea Level Rise scenarios. The limited remaining greenspace in the City, particularly flood plains or channel-adjacent undeveloped parcels, provide significant stormwater management functions and represent critical sites for future stormwater management and flood mitigation infrastructure projects. Additional measures in regard to water quality must be taken in order to address the TMDL goals defined by the City to protect the Petaluma River from pathogens, nutrients, sediment, trash, and other contaminants, as identified by the Clean Water Act. The opportunities identified in the Southern Sonoma Stormwater Resource Plan provide concepts for regional projects that could significantly improve water quality and reduce flood risk within the City. The upper watershed, outside of City Limits, has significant impacts on the performance of stormwater infrastructure and flood outcomes within the City.

The City has no utility funds allocated for stormwater drainage maintenance. Deferred maintenance has been estimated at \$37 million as of March 2020.²⁶ Stormwater maintenance is funded annually with \$450,000 from the general fund, and supplemental funding from the Trash Capture fee paid by Recology. Alternative methods of funding are under investigation. Lack of funding has been attributed toward legal regulations that currently exempt the storm drainage system from existing public funding efforts.

During the rainy season, the Petaluma River regularly leaves its banks and spreads out into the floodplain. For the past 50 years, the approach has been to direct runoff away from the property as quickly as possible using pipes and pavement. While largely effective, it is recognized that this approach only shifted problems downstream. Negative consequences of those methods include increased potential for flooding, damage to public and private property, stress on our water supplies, and degradation of our local waterways and habitats. The response to the damaging flood events that occurred between 1982 -1998 and again in 2004- 2005 have resulted in a coordinated approach by multiple agencies and the community at large. The City created a Storm Water Management Plan in 2003 and is involved in both channel modification

and local storm drain improvement projects and identifies and prioritizes flood reduction projects, cost estimates, funding sources and timelines.

Stormwater is any precipitation that does not infiltrate into the surface or evaporate after falling onto land. Development of urbanized areas disrupts the natural flow of stormwater into waterways and groundwater, inhibiting infiltration or naturalized surface runoff. Impervious surfaces such as roofs, sidewalks, roadways, bare and compacted soil, or parking lots intensify the volume, velocity and contamination of stormwater runoff, posing a threat to both the built environment and local ecologic systems. The City's stormwater drainage infrastructure consists of 119 miles of storm drains, 27 miles of creek or open channels, 4,383 inlets, 304 outfalls to the river, and 3 pump stations. The City does not currently divert stormwater for beneficial use, and stormwater is not included in the City's urban water supply portfolio.²³ The City's stormwater drainage system is not a combined sewer system. The Capital Improvement Plan through 2020 supported 9 local storm drain improvement projects to increase flow capacity and mitigate flood risks. Projects include Capri Creek re-grading, Phase III terracing project in the lower Denman reach, Kelly Creek improvements, Washington Creek Repair and Enhancement, and a range of surface water projects within creek beds.

To adequately address downstream flooding, the Sonoma County Water Agency, City of Petaluma, and others are studying and developing specific plans and actions that will both reduce flooding and increase beneficial recharge of groundwater. Stream maintenance activities support a proactive regional approach to flood protection and stream and wildlife habitat restoration. The Sonoma County Water Agency (SCWA) works in and around streams throughout the Petaluma Watershed, removing sediment and garbage and planting trees. SCWA routinely repairs and stabilizes banks along its engineered channels. The Petaluma Floodplain Management Plan calls for the utilization of flood terraces adjacent to the riparian corridors. These terraces provide the opportunity for sediment and pollutants, including trash, to settle out of the flowing water and facilitate easy pick-up and disposal following the storm events.

In addition to water quality concerns in the River, there remain significant portions of the City which are underserved by existing stormwater infrastructure and are prone to flooding. Deferred maintenance costs continue to grow each year, and the City continues to lose valuable stormwater management green space and floodplains.

Current and Proposed Stormwater CIP Projected Costs: Old Corona Road Water Quality Mitigation \$1,408,000 Storm Drain Trash Capture Device Pilot \$563,000 Edith Street Drainage Improvement \$110,000 Wilson Stormwater Pump Station Upgrades \$505,000 Corona Creek Restoration \$552,000.

Strategies to Pursue:

1. Participate in local stream maintenance and storm drain improvement projects.

2. Assist individual rural and urban landowners to install “Slow It, Spread It, Sink It, Store it!” practices such as rain gardens, rain capture systems, downspout outlet protection, and pervious hardscapes.
3. Support the goals and practices of the City of Petaluma Stormwater Management Plan
4. Support planning measures that control development to appropriate locations, preserve open space and agricultural lands.
5. Support the City of Petaluma in developing trash capture systems in the stormwater system.

Flood Management

(first 3 paragraphs from GP Natural Hazards Existing Conditions Report)

Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. Flooding is usually the result of, or is exacerbated by, weather events, and can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. The City is susceptible to various types of flooding including riverine, localized flooding resulting from heavy precipitation in a short span of time, and dam failure.

Flooding caused by heavy rainfall, primarily associated with seasonal storms, can occur in the region during winter and spring months. In the more urbanized areas of Petaluma, localized flooding intensifies because of impervious surfaces such as roads and paved structures that prevent the natural absorption of rainfall and runoff. According to the latest FEMA National Flood Hazard data, the 100- and 500- year flood plains are located on the south-southeast and north-northwest of the city and along the Petaluma River (See Figure 4). The most frequent flooding occurs along the Petaluma River, and the City has created the Petaluma River Flood Mitigation Plan to address the issues of recurrent flooding during heavy rains. Other smaller areas susceptible to flooding occur along Lakeville Highway and Casa Grande Road, where Adobe Creek and the Petaluma River meet, as well as east of Washington Street and McDowell Boulevard, where Lynch Creek converges with nearby tributaries associated with the Petaluma River. The more upstream portions of Lynch Creek, near the north-northeast of the city, are also affected by flooding, towards Adobe Road north of Sonoma Mountain Parkway.

The Payran neighborhood and adjacent areas are the most severely impacted by historic flooding. Previous significant floods include those of 1982 and 2005, which resulted in millions of dollars in damage and losses, and more recent flooding has occurred caused by heavy rains falling in a short period of time. In 2019, heavy rains flooded a section of Industrial Avenue, which delayed traffic and caused minor damage but is indicative of more frequent similar events as climate change causes more concentrated heavy rainfall.

Over the past 30 years, the City of Petaluma has experienced significant, documented flooding events. The City is susceptible to various types of flooding including riverine, localized flooding

resulting from heavy precipitation in a short span of time, and dam failure. Flooding caused by heavy rainfall, primarily associated with seasonal storms, can occur in the region during winter and spring months. Flooding will become an increasing issue with Climate Change due to Sea Level Rise and more intense storms during atmospheric river events, esp. when occurring during high or king tides.

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An area of approximately 150 acres of the Petaluma River's flood plain lies in a marsh that is regularly flooded by high tides. The Petaluma River Marsh Enhancement Plan was developed to ensure the preservation of this area in its natural state; including its water quality and endangered species habitat, as well as making it accessible to the public for passive recreational and educational/interpretive opportunities. Adopted in 1992, the Plan inventories the natural resources of the plan area, identifies resource management and biological enhancement needs and opportunities, and presents a number of individual enhancement and restoration design elements, as well as designating possible public access trails, waterfront access points, and park and recreational facility areas.

Wetland and habitat preservation also restricts development within the Floodplain. An inventory of sites within the City that have been surveyed for wetland characteristics along with a photo interpretation of potential wetland sites has been compiled as part of a cumulative impact analysis for expanding wastewater facilities and flood improvement projects. All future development within the areas identified will be required to comply with all local, State, and Federal regulations governing wetlands and habitat.

The General Plan focuses on implementing higher regulatory development standards, restoring and enhancing natural and beneficial areas, using increased technology to better define flood hazard areas, increased flood and surface water coordination with other agencies and implementing structural and non-structural improvements. These are listed in the General Plan's Water Resources and Natural Environment Elements.

Strategies to Pursue:

1. Implement the City of Petaluma's Floodplain Management Plan. Participate in local Stream Maintenance & Storm Drain Improvements projects including re-contouring creeks, terracing, and creation of basin ponds. Follow findings and recommendations

developed by the Zone 2A Advisory Council and the Groundwater Basin Assessment and Management Program. Support erosion and sediment control efforts such as the development of LandSmart ranch and farm management plans and implement Beneficial management practices to decrease sediment loads. Implement projects that provide flood protection, habitat enhancement, groundwater recharge, and where feasible, passive recreation.

2. Continue education programs for the public, development community, as well as training city staff on all regulations and requirements.
 1. Continue annual stream and creek channel maintenance in accordance with established City, Sonoma County Water Agency and other regulatory requirements.
 2. Coordinate flood control and maintenance projects with the Zone 2A Flood Advisory Committee.
 3. Monitor and update the City's stream level gauge system and expand as needed to maximize the use and effectiveness of the data in the operation of the Flood Alert System.
 4. Encourage local, State and Federal agencies to fund stream maintenance programs; pursue grants for increasing flow capacity in conjunction with stream enhancement projects.
 5. Work with the Fire Department to update the telephone information hotline and notification system.
 6. Establish a more effective disaster information distribution system.
3. The City will continue its efforts to keep vacant floodplain lands open and pursue additional open space acquisition opportunities pursuant to General Plan 2025 policies.
4. Assist individual rural and urban landowners to install "Slow It, Spread It, Sink It!" practices. Provide resources to landowners on the benefits of restoring groundwater and methods for increasing groundwater recharge in uplands areas through small landowners meetings. Develop a roof water catchment program and demonstration project for both residential and agricultural landowners.
5. Regenerative Flood Management for flooding and holding water: rain catchment in both basins and tanks including all north area and central basins (land purchase needed), roof water catchment (Sonoma Mtn. Instit. and city wide).

Sea Level Rise

In its sea level rise assessment, the LHMP finds that the majority of potential impacts occur within the 6.6 feet of sea level rise scenario—a high-risk aversion scenario that may occur by 2100, recommended for the design of critical infrastructure, long-lifespan projects, and projects with little opportunity for future adaptation to sea level rise.³⁰ When considering the occurrence of a 100-year storm surge in addition to the 6.6 feet scenario, the LHMP identifies 383 parcels with a total value of \$588,432,146 at risk to flooding. Of these parcels, two lifeline

utility systems are affected: Petaluma Electrical Substation C and the Hopper Street Primary Influent Pumping Station. The LHMP assigns a “medium” overall significance to FEMA floodplain hazards and flood hazards related to sea level rise, and notes that the effects of climate change may continue to increase the projected severity of flood events.

Strategies to Pursue:

1. Follow the science and data of climate change with how global events affect local geology, biology, and hydrology.
2. Study the growing impact on Petaluma Marsh and develop methods to preserve it.
3. Plan for increasing drought, storm intensities, and wildfires and study how this will synergize sea level rise effects.
4. Prepare the Petaluma River corridor for the 6 foot Sea Level Rise scenario.

Water Quality

(from GP Existing Conditions Water Report)

Petaluma relies primarily on regional surface water purchased from Sonoma Water to meet its potable water demands for the city. As of 2020, less than 1 percent of the City’s annual water supply was from groundwater. The City intends to phase out all reliance on its water supply wells in the near future. The entire 24.27 miles of the Petaluma River main stem is listed by the EPA as an impaired waterbody. Water quality in the Petaluma Watershed has been impaired for five pollutants: sediment, pathogens, nutrients, diazinon, and trash. The impairment designation is due to elevated fecal indicator bacteria (FIB) levels and excessive algae growth from high nutrient levels. The greatest source of surface water pollution comes from agricultural and urban run-off that drains directly into the Petaluma River and then flows into San Pablo Bay.

Surface water quality continues to be an issue for the Petaluma River, which is considered an impaired water body due to sedimentation/siltation and high levels of nutrients and pathogens. High nutrient levels could be attributed to the fertilizers and other chemicals used by nearby dairy farms, agriculture, viticulture, equine facilities, and livestock producers. Sedimentation buildup in tributaries are generally associated with new development and agricultural land use practices. Urban run-off is one the biggest sources of surface water pollution. Agricultural and urban runoff can adversely impact plant and animal habitats and contaminate drinking water.

Groundwater levels near the city began to drop in the 1950s until the 1960s when seawater intrusion occurred along the Petaluma River due to increased groundwater pumping. In 1962, the city began importing water from the Russian River to restore groundwater levels. At this time Lake Mendocino and Lake Sonoma became the cities primary source of water (Via the Sonoma County Water System). Since then, groundwater has remained steady with seasonal fluctuations of approximately 10 feet. Long-term hydrological monitoring and planning is

conducted by The Petaluma Valley Groundwater Sustainability Agency. The agency is currently drafting a plan to monitor and manage the groundwater supply and that current uses are supported, but climate change remains a threat to water sources in the region.

Groundwater quality is generally adequate to support existing uses within most areas of the Basin and contributing watershed. Since 2015 the City has recorded a general decrease in its groundwater usage and has only used groundwater during short-term scenarios such as local fires, aqueduct repair and water supply shortage. Localized areas of poor groundwater quality are primarily related to the following potential sources of impairment: brackish waters of San Pablo Bay and associated tidal marshland areas; deep connate waters associated with ancient seawater entrapped during deposition of Tertiary Era sedimentary units; and anthropogenic inputs associated with certain land-use activities (e.g., industrial, agricultural, or urban land uses), including an area of historical nitrate contamination in the northwestern portions of the Basin, following the path of Petaluma Highway and Stony Point Road .

Strategies to Pursue:

1. Increase flow monitoring to better interpret water quality data focusing on critical creeks that support wildlife and create habitat for spawning and movement.
2. Due to current habitat conditions, investigate the possibility of using Adobe Creek as an urban reference site.
3. Monitor and investigate groundwater and surface water interactions. Reduce upland erosion as stated in the sediment section below.
4. Encourage the City of Petaluma and urban landowners to implement practices to reduce pollutants from entering the waterway.
5. Assist residents in working with the Counties on well and septic installation and management to maintain or improve ground and surface water quality.
6. Encourage rural residential landowners and agricultural producers to implement beneficial management practices to improve stream health.
7. Develop LandSmart ranch and farm water quality plans and implement beneficial management practices to decrease pathogen and nutrient loads.

Erosion and Sediment Sources/Impacts

Although the precise causes of sedimentation are less readily identifiable than the effects, they can be separated into those attributable to the natural sediment load of the streams and those attributable to the additional loads created by current, ongoing human activities. The effects of sedimentation appear to be aggravated and magnified by past construction of levees and landfills in the tidal areas. The east side hills have erodible soils. Some tributaries to the Petaluma River northwest of Petaluma are over 50 percent filled with sediment, believed to be

primarily from natural sources. Erosion along the Petaluma River will also become more of a threat as a result of sea level rise as a result of climate change, combined with storm surges.

Strategies to Pursue:

1. Implement management actions to reduce erosion and sediment from entering streams.
2. Concentrate erosion control activities in the high priority sub-watersheds of watershed tributaries of Willow Brook, Lynch, Adobe, Ellis, and San Antonio Creeks.
3. Repair gullies in all tributaries, including NW area, all Eastside area, Tolay area, and San Antonio area. Improve upstream waterways for flood and sediment control by planting native species. Maintain drainage ditches, spillways, culverts, etc. to avoid overtopping and delivery of sediment to the streams.
4. Support erosion and sediment control efforts such as the development of LandSmart ranch and farm water quality plans and implement beneficial management practices to decrease sediment loads.
5. Manage livestock access to creeks and gullies, especially in the wet season.
6. Provide educational and technical assistance for “do-it-yourself” erosion control, small farm and pasture management.
7. Assist landowners and pursue funding to repair eroding banks, install riparian fencing and revegetation and implement
8. LandSmart ranch and farm water quality plans. Secure funding to implement stream enhancement plans and help landowners apply for cost share programs.
9. Monitor banks along Petaluma River for amount of erosion.

Landslides

A landslide is a geologic hazard where the force of gravity combines with other factors to cause earth material to move or slide down an incline. The California Geological Survey (CGS) along with the California Department of Conservation have generated a landslide dataset that classifies susceptibility in California to various degrees, from Very High (the most potentially dangerous) to a none or dry category (the least risk). The majority of Petaluma is in the lower risk categories of landslides, meaning that the local soils and geology are not very likely to lead to landslide activity. However, some higher landslide susceptibility areas fall inside the city boundary. A majority of the city is included in the moderate susceptibility category and small portions in the western and southern parts of the city are in high susceptibility. Historically, landslides have occurred in the hills to the northeast and southeast of the city. During heavy rainfall events, added precipitation in soil can result in increased landslide potential and susceptibility in these higher-risk areas.

Strategies to Pursue:

1. Monitor hills in the watershed for landslides over time.

Non-Point Source Pollution

(sourced from WikiPedia and from online news.)

The marshes provide an important wildlife habitat and fish hatchery. The Petaluma River feeds into creeks across the North Bay and Marin, and eventually connects with San Francisco Bay. It attracts boaters, paddle boarders, kayakers, and anglers.

However, since the onset of intensive immigration in the mid-1850s, the water quality has diminished, partly due to overgrazing and other agricultural uses. In 1975, scientists found that the Petaluma River was so heavily contaminated with E. Coli and other bacteria that it was unsafe to have any contact with the water. The presumed sources of the bacteria included animal and human waste running off of ranches, stables, farmland, and out of broken waste water treatment and septic systems. Today, little has changed. The Petaluma River remains dangerously contaminated, with high levels of bacteria showing up in every single water test taken in the river. Pollutants present in the river include nitrates, phosphates, petroleum hydrocarbons, pesticides and sediment. Urban runoff, particularly from the City of Petaluma, adds heavy metals and hydrocarbons to the river. Starting about 1990, material steps were taken to mitigate the pollution.

Because most of the length of the waterway is tidal and urban/suburban, there is a significant collection of tidally deposited debris along the banks. After the last dredging, volunteers collected 14 pickup truck loads of trash and debris from the spoils deposited at Shollenberger Park Central Pond. Despite the poor aesthetics including turbidity, the water quality is not particularly poor, but this is a growing concern.

On May 10, the Environmental Protection Agency (EPA) quietly signed off on a [plan](#) meant to reduce pollution in the 146-square-mile Petaluma River Watershed. Although the problem is rarely discussed, the Petaluma River has been listed as “impaired” by excessive levels of bacteria since 1975. The bureaucratic document approved by the EPA is known as a Total Maximum Daily Load (TMDL). It sets levels of acceptable waste discharge from various sources in an attempt to lower the levels of fecal bacteria found in the watershed until the water is deemed clean. While preparing the TMDL, scientists from the [San Francisco Bay Regional Water Quality Control Board](#) tested water from throughout the watershed for Fecal Indicator Bacteria to determine the amount of waste from warm-blooded mammals that has seeped into the water. Although indicator bacteria themselves are not dangerous, scientists use the strains to detect potentially dangerous levels of contamination in the water.

In a report accompanying the TMDL, water board staff identified 12 sources of pollution, which they then lumped into three general categories: human waste, animal waste and municipal

stormwater runoff. In tests conducted between 2015 and 2016, water board scientists found bacteria tied to humans, horses, cows and dogs throughout the Petaluma River and its tributaries.

According to a 2020 staff report, the 17 cow dairies in the Petaluma River Watershed are home to an estimated 11,000 cows. Meanwhile, 32 horse farms house approximately 8,600 animals in the watershed. Given the number of four-legged watershed residents, it shouldn't come as a surprise that tests found that bacteria originating from cow and horse waste "were identified at very high rates throughout the watershed, in both dry and wet seasons." In order to comply with the TMDL, Confined Animal Facilities, the technical term for high-density commercial ag operations, must prove they comply with Water Board regulations "as soon as possible," and monitor water quality as required by the Water Board moving forward. Meanwhile, grazing operations in the watershed, which include less dense ag operations, must obtain a Grazing Order from the Water Board by September and follow Water Board regulations.

Sewer overflows during heavy rainstorms appear to be another historically significant source of pollution in the watershed. Between 2007 and 2017, the Petaluma and the Penngrove Sanitation Zone, a small district located north of Petaluma, reported 94 large overflows, spewing a total of 1.35 million gallons of sewage into the watershed. Tests in 2016 and 2017 "detected fecal bacteria of human origin at many sites throughout the watershed, which could point to discharges from the sanitary sewer collection systems as a likely source," the 2020 staff report notes.

Strategies to Pursue:

1. Because the Petaluma River is relatively well-protected, most of the pollution comes from nearby storm drains. It is up to the people of Petaluma to keep the river clean.
2. The TMDL also requires marina owners and operators to increase "no dumping" education for boat owners by the end of 2021, and to create a plan review and install proper waste management equipment by next May. The marina owners must complete the improvements within five years.
3. "Adults and children should wash hands/shower and towel dry after swimming; rinse off pets after they come into contact with the water,"

Point Source Pollution

(From GP Manmade Hazards Existing Report)

Local government plays an important role in the management of hazardous materials and coordinating with State and federal regulators is part of the management process to keep people in Petaluma safe.

Key Findings and Constraints

- There are currently 20 active hazardous pollution sites in the City of Petaluma, identified using the California Water Resources Board GeoTracker database. Six of these sites are part of the State Water Control Board's Cleanup Program Sites and the other 14 are Leaking Underground Storage Tanks (LUST) Cleanup Sites.
- There are a total of seven contaminated sites in the City of Petaluma identified using the EnviroStor tool from the Department of Toxic Substances Control within the City's limits.
- There is a 35-acre site in the City of Petaluma formerly listed on the EPA's Superfund program's National Priorities List (NPL). It was previously occupied by Sola Optical USA, which produced optical lenses from 1978 to 2001. The site has groundwater contaminants with volatile organic compounds (VOCs) and solvents. Following cleanup, the EPA took the site off the Superfund program's National Priorities List (NPL) in 2013. This site is located along Highway 116 near South McDowell Boulevard. Other former Superfund sites may be redeveloped but are often unsafe for residential uses.

Local dairies have used Best Management Practices for many years and several have converted to organic methods. There have been few instances identified of direct point source pollution. The Petaluma Water Treatment plant was fined in the past for inappropriate discharges but has now resolved with the new plant.

There is rising concern for homeless encampments along the river, a source of urban trash. People living in informal shelters inside the watershed may also pose a risk to water quality. In July 2017, there were an estimated 17 encampments along waterways within Petaluma city limits. If encampment residents are not disposing of their waste properly, it could make its way into the waterways.

It has been alleged that the greatest threat to the Petaluma River is the planned Dutra asphalt plant. The reported concerns involve the "loud noises it will create" that will scare away the birds and "throw off the entire ecosystem".

The Water Board tasks Petaluma and the Penngrove Sanitation Zone with preparing an updated Sewer System Management Plan identifying necessary repairs to the systems within a year. Once the plans are approved by the water board, the agencies will have 10 years to complete all of the required improvements. More pressing projects identified in the report must be completed within five years.

There is a small community of fishing shacks deep in the Petaluma Marsh accessible only by small watercraft. Only one remains inhabitable because someone fixed it up and uses it. Most are now falling apart. Parts of roofs, windows, pipes, and lots of lumber are spreading out in piles and some of these parts are floating away during king tides.

The Redwood Landfill bordering the Petaluma Marsh next to San Antonio Creek will be closing in 5 years. It will be a capped mountain of trash situated for the next 500 years. Compost and material recycling may still continue past that time. A small methane gas collection system that burns off the methane exists now with plans to have a methane collection for biogas retrieval; storage for reuse is planned. Several leakage control systems have been constructed but could fail in the future, posing a tremendous threat to the marsh habitat and wildlife. Leakage will need to be monitored far into the future.

The General Plan outlines the following policies and programs related to hazardous material management:

10-P-4 Minimize the risk to life and property from the production, use, storage, and transportation of hazardous materials and waste by complying with all applicable State and local regulations.

- Require compliance with Sonoma's Countywide Integrated Waste Management Plan (CoIWMP) as well as all of the Consolidated Unified Protection Agency (CUPA) program elements.
- Prepare and maintain an inventory of environmentally contaminated sites to educate future landowners about contamination from previous uses. Work directly with landowners in the cleanup of these sites, particularly in areas with redevelopment potential.
- The U.S. Environmental Protection Agency (EPA) in 2005 awarded the City of Petaluma two grants to assess potential brownfield properties within the city. In addition, the City has applied to the EPA for a revolving loan fund grant to help developers, non-profits, and the City clean up brownfield sites.
- Establish special zoning designations and environmental review processes that limit the location of industry, research, and business facilities using hazardous materials. Require safe distances between these sites and residential areas, groundwater recharge areas (see Chapter 8: Water Resources), and waterways.

Strategies to Pursue:

1. Encourage implementation of practices to reduce pollutants from entering the water ways from urban and suburban stormwater.
2. Comply with all conditions of municipal NPDES permits for stormwater and sewer systems.

3. Coordinate with the Petaluma Groundwater Sustainability Agency and assist residents in working with the Sonoma and Marin Counties on well and septic installation and management to maintain or improve ground and surface water quality.
4. Prevent potentially polluting industries and construction that is planned on or near Petaluma River edge.
5. The TMDL requires Petaluma and CalTrans, the state transportation agency, to create a plan to “prevent human waste discharges into storm sewer systems from homeless encampments on City of Petaluma and Caltrans properties within the Petaluma River watershed” by next May. The resulting plan must be implemented by the end of 2022.
6. Cleanup abandoned fishing shacks in Petaluma Marsh.
7. Monitor San Antonio Creek for toxic leakage from the Redwood Landfill for the next several centuries.

Wildfire Hazard

(from GP Natural Hazards Existing Conditions Report)

Wildfires are a significant concern throughout California, typically caused by lightning or human activities such as arson or accidents involving cigarettes, fireworks, campfires, equipment misuse, or electrical infrastructure. Generally, the fire season extends from June through October of each year during the hot, dry months. Fire conditions arise from a combination of high temperatures, intense heat, low rainfall, an accumulation of fuel vegetation, and high winds. In recent years, hundreds of thousands of buildings have been destroyed by wildfire, thousands of people have been displaced, and dozens left dead. In addition, wildfires in surrounding areas, even a few counties away, can create impacts to the city such as intense smoke, which can lead to poor air quality, traffic visibility issues, and public health concerns. The 2020 fire season was the most extreme in California’s recorded history. With multiple fires burning in the region, air quality was poor for weeks. While much of the surrounding area is a moderate to high fire hazard, there are several areas in the southern portion of the city that are considered very high fire hazards.

Petaluma has experienced several notable wildfire events dating back to 1900 and earlier. The rugged terrain, dry vegetation and the rocky slopes of the surrounding lands all contribute to wildfire potential. In the Fall of 2017, the Santa Rosa fires spread and affected the Fountaingrove and Coffey Park areas extensively, with high winds and dry conditions fueling the flames. The fire seasons of 2017 and 2020 were especially devastating to the region. The Kincade Fire in October 2019 burned 77,758 acres and over 90,000 structures. In 2020 the LNU Complex Fires became the biggest in Sonoma County history and burned for two months. The multiple fires resulted from an unusually dry thunderstorm, burning 363,220 acres and destroying 1,491 structures. Residents and wildlife were exposed to poor air quality for Natural Hazards | 4-11 weeks, and surface water sources were polluted by the falling smoke and ash.

Not only are these fires devastating, the city's emergency response services and programs can be stressed beyond capacity.

Petaluma will see a continuation of the risk of wildfire in the coming decades as climate change exacerbates wildfire conditions. While much of the city is in the Moderate Fire Hazard Severity Zone, the pattern in the overall region suggests that fires will increase everywhere, or that indirect impacts of fires such as community exposure to poor air quality and smoke will be more severe. Figure 5 illustrates the areas that are currently in the moderate and high fire hazards areas for wildfire. This figure includes the State Responsibility Area (SRA) and Local Responsibility Area (LRA) to illustrate the fire hazard areas each are responsible for.

The Petaluma Fire Department provides fire protection services to a total area of 184 square miles and a population of 70,000 people. The Department's fire service area includes portions of southern Sonoma County and Marin County.

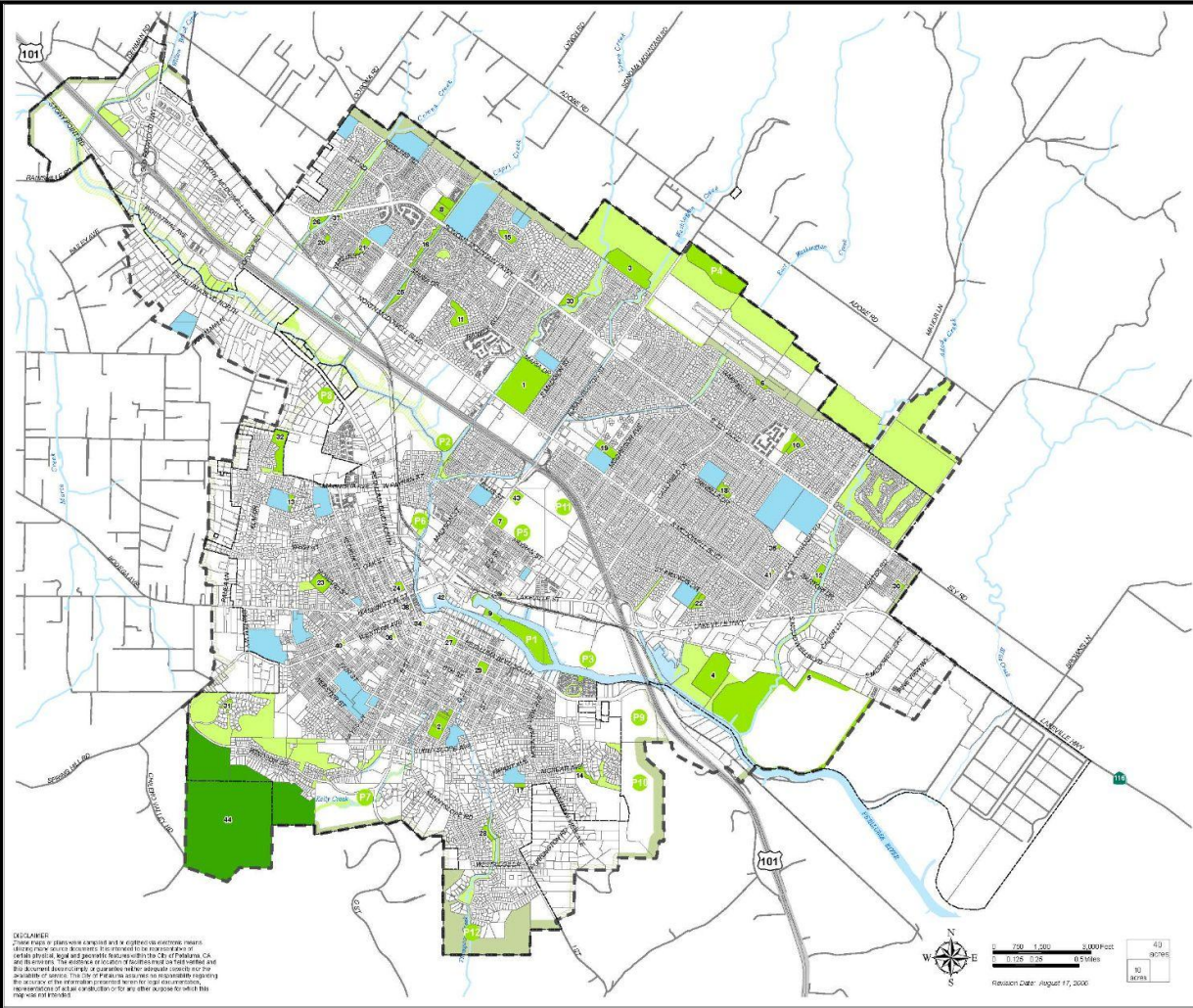
Strategies to Pursue:

1. Maintain urban growth boundary (UGB) and open space and agricultural lands surrounding RGB as a fire buffer.
2. Prepare Wildfire plans for control and evacuation.
3. Review information on how to reduce wildfire spread in the urban area and inform citizens of management practices.

Figure 3.3-1

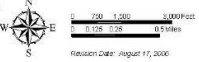
PARKS AND OPEN SPACE

Petaluma General Plan 2025



- LEGEND**
- Existing Park
 - P1 Proposed Park
 - Open Space
 - Urban Separator
 - Urban Separator Path
 - Regional Park
 - River Plan Corridor
 - School
- BOUNDARIES**
- City Limits
 - Urban Growth Boundary (UGB)
 - Rivers and Creeks

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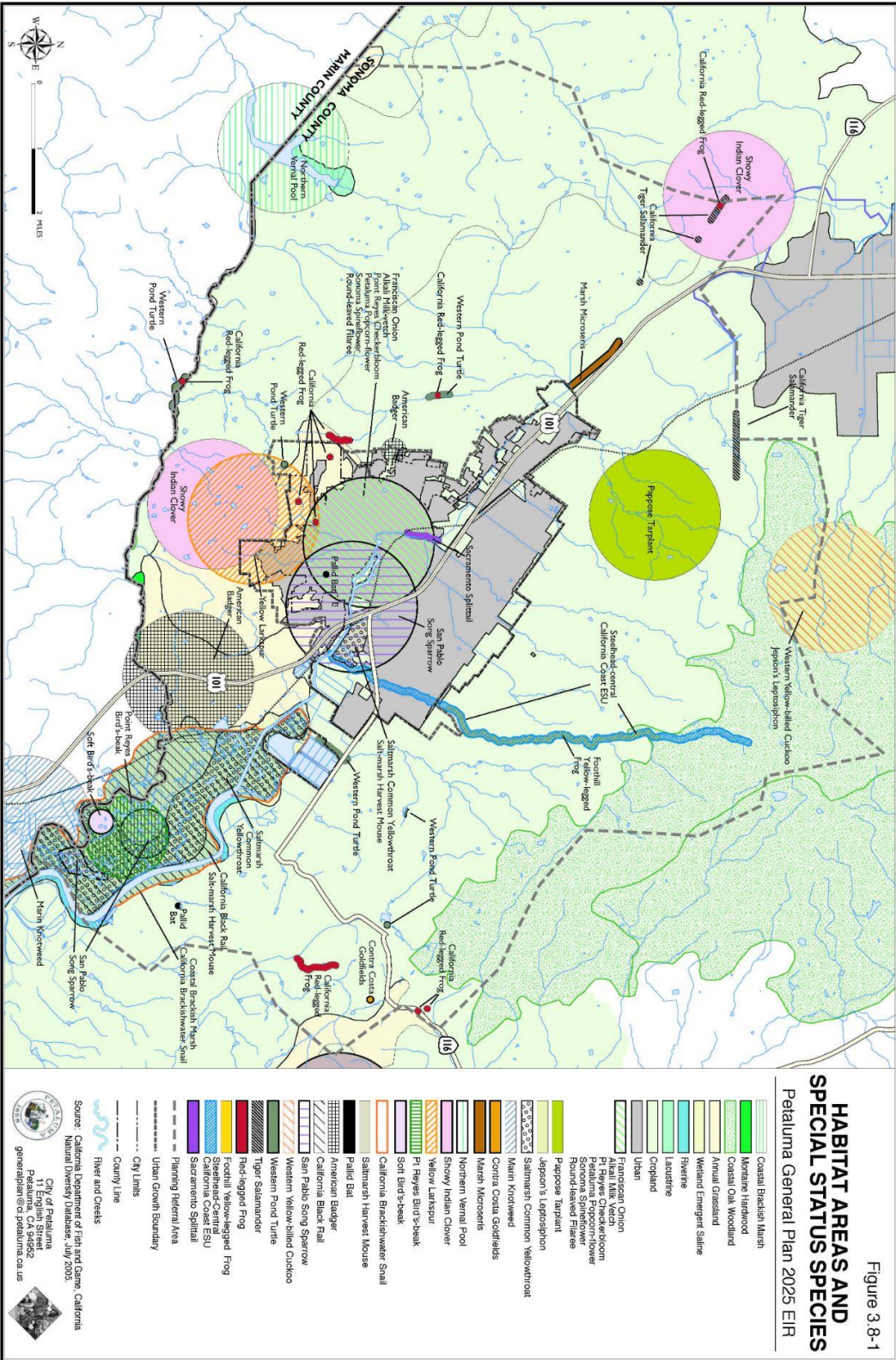


City of Petaluma
 11 English Street
 Petaluma, CA 94952
generalplan@ci.petaluma.ca.us

Figure 3.8-1

HABITAT AREAS AND SPECIAL STATUS SPECIES

Petaluma General Plan 2025 EIR



Bill's notes added 6/28/22 after reviewing current document:

1. General observations on contents of document:
 - a. List of "Potential Projects" does not need to be prioritized at this time
 - b. Great if we can identify resources (funding sources, labor partners, etc.), but is this our charge at this point?
 - c. Definition of open space: Needs to be reconsidered. Not necessarily "open to the public" Private open space is equally important for wildlife and climate control. Open space should be evaluated on "Access" level as well as "Ecological Benefit"
 - d. "Native" is not always appropriate qualifier when discussing landscape ecology
 - e. Watershed Strategies document needs to be edited for local applicability, too much regional information
 - f. Need to distill all information into a set of goals and desired outcomes
 - i.
2. Additional Goals/strategies to consider:
 - a. Planning/land use policy
 - i. Include stand-alone GP element as OS&NR
 1. Let's discuss re-structuring of "Recreation Music Parks and Arts"
 - ii. Identify neighborhoods lacking open space, and parcels within which can be "Converted"
 - iii. Develop overlay zones for various social and ecological benefits that can be applied to private parcels while allowing development but providing wildlife corridors and trees
 - iv. Identify parcels for potential 30x30 acquisition
 - v.
 - b. City management of OS&NR:
 - i. Create a City Department for Parks, Open Space and Natural Resources, under Public Works and Utilities so that open spaces and natural resources become "infrastructure" equal to roads and utilities.
 1. One responsible department manages all infrastructure, land, and natural resources
 2. Eliminate conflict between Utilities management and Natural Resources management, all have equal importance
 3. Requires trees to be included with all infrastructure and development projects
 4. Is "Recreation" managed under this department? Or a separate department relating to public health, the arts...?
 - 5.
 - ii. Urban Forestry officer and staff
 1. Conduct an City wide Tree inventory

2. Develop new standards and strategies for weed abatement
 3. Develop and publish a palette of successful, wildlife supporting plant species, with specific landscape purposes
 4. Full time staff for Gator-bag filling / street tree irrigation and maintenance
 5. Heritage tree survey, mapping and designation
 6. Invasive species control / eradication
 7. Integrated Pest Management Plan for city parcels and publish BMP's for private land owners
 8. Develop typical riparian landscape ecology transect to be applied to riverfront open space and private development
 - a.
- iii. Open Space Management
1. Pollution prevention
 - a. Further develop and implement pollution prevention policies and strategies at all levels (litter, sedimentation, sanitation, chemical/hazmat, groundwater...)
 - b. Identify and eliminate all sources of river and riparian corridor pollution
 - c. Evaluate BAASMA stormwater BMP's, develop additional local tools
 - iv. Create vernal pools in otherwise inaccessible open space (Highway interchanges, Fallow farmlands)
 - v. Ensure livestock fencing does not prohibit mobility of wildlife species
 - vi. Remove all barriers to aquatic migration
 - 1.
- c. Corridors
- i. Transportation
 1. Create a well-connected network of alternative transportation corridors which include trees, veg, and bike/ped routes
 2. Identify tree-less corridors and strategies for retro-fitting to add street trees
 3. Re-envision existing street network to identify corridors needing transformation
 4. Create continuous open space corridor with public access along full length of river
 - a.
 - ii. Habitat/natural resources
 1. Map existing wildlife corridors and identify gaps. Develop strategies to connect/bridge corridors across private lands
 - a.

d. Water systems/Infrastructure

- i. Provide recycled water to all neighborhoods and parks. New neighborhoods to be dual-plumbed for street tree irrigation
- ii. Allow for landscape metering or sub-metering to deduct wastewater fees for irrigation
- iii. Increase capacity for water recycling
- iv. Identify alternative water sources, recharge strategies
- v. Consider additional water storage infrastructure
- vi. Develop city standards for rainwater harvesting
- vii. Develop city standards for private use of greywater and black water
- viii. Develop standards for residential stormwater management BMP's
- ix. Provide filling station for recycled water