Shirlee Herrington

Subject: Access to the CISGP

From: Alliance for Environmental Leadership [mailto:allianceforenviroleadership@gmail.com]
Sent: Saturday, January 26, 2019 8:15 PM
To: Placer County Planning
Subject: Fwd: ✨Access to the CISGP ✨

Dear EJ:
Please share this email with the Chair and Members of the Placer County Planning Commission and cc me at allainceforenviroleadership@gmail.com. Many thanks. Leslie Warren

Dear Chair and Members of the Placer County Planning Commission:

Thank you so very much for giving me the opportunity to introduce myself and the Alliance for Environmental Leadership at your Planning Commission meeting on January 24th.

You may recall that I explained that the Alliance for Environmental Leadership, representing 14 local environmental and civic organizations, received grant funding to create a Citizen Initiated Smart Growth Plan for the West Placer Prairie that we will submit as an alternative to the County's Sunset Area Plan and Placer Ranch Specific Plan.

The Draft EIR for the County's Plan for the SA/PRSP in West Placer has identified 57 significant impacts that cannot be mitigated and many of these significant impacts run contrary to State and local policy. All is not lost. If you take this opportunity to review the Citizen Initiated Smart Growth Plan, you will find that the County's growth and economic development objectives can still be met, without harm to the environment or citizens. The Citizen Initiated Smart Growth Plan is an agile, innovative and future forward Plan has the potential to lift Placer County into a leadership position globally.

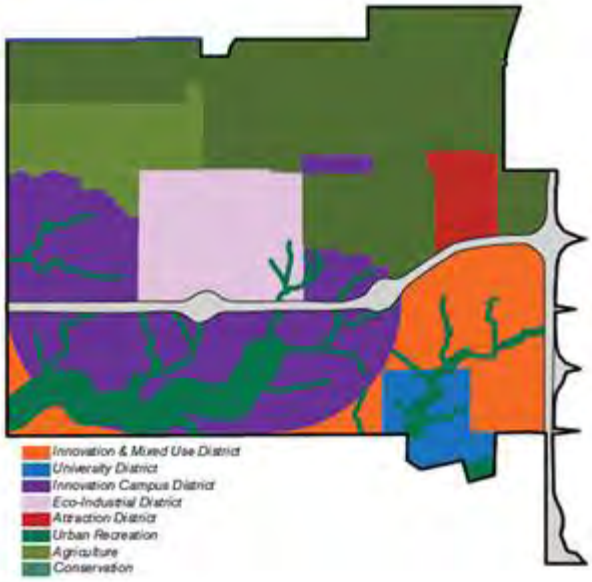
These two links are good for reading the Citizen Initiated Smart Growth Plan and sharable with the larger community:

In the CISGP Project Library:
CISGP_Phase1_Spreads.pdf
https://drive.google.com/file/d/1Vo54Fw2D-DewZoNpvI78RursshVOp4bw/view?usp=sharing

On Issuu, an online magazine platform:
https://issuu.com/g.marsh/docs/cisgp_phase1_sheets

You are welcome to excerpt pages and attach them to your DEIR comments or letters to the editor. If you are interested in a printed version, let Leslie and I know! We can print them beautifully for approximately $30 in full color.

Citizen-Initiated Smart Growth Plan



Excerpts:
If you are looking just for the Call to Action sheet go here. The Intro Letter sheet is here.
To assist those looking to make their own single page excerpts, here is the chop shop folder:
CISGP Component Files

Happy reading,

Leslie Warren, Chair, Alliance for Environmental Leadership

Genevieve Marsh, Master Planner
Agile Architecture
916-316-8061
design@genevievemarsh.com

Citizen-Initiated Smart Growth Plan

Alliance for Environmental Leadership

Prepared by:

Genevieve Marsh
AGILE ARCHITECTURE

Phase 1

January 2019

Alliance for Environmental Leadership

AEL brings together existing like-minded organizations and citizens for a common cause: defending natural ecosystems and advocating for sustainable, inclusive communities in Placer and Nevada Counties.

Thank You

The collaborations of many organizations and individuals made this project possible. We need diversity of thought and resilience in this world to face new challenger. Thank you to our funders, organizers, citizen scientists, cheer leaders, planners and visionaries for enacting the change the they wish to see in the world.

Prepared By:
Genevieve Marsh, Agile Architecture
www.genevievemarsh.com

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Grants
Rose Foundation for Communities and the Environment
Sierra Foothill Audubon Society

Dear Community,

The Sunset Area (SA) is a highly dynamic site. The earth expands and contracts annually and forms vernal pools, the unique edge conditions are shared with different neighbors, and the acreage enables unique solutions for the regional job center. With so many dynamics, understanding and working with the site is critical and complex. In this day and age, we as planners and designers are becoming more scientific, collaborating and learning from consultants and incorporating research and data into the decision making process. The natural sciences, social theory, and economics, to name a few, are at our fingertips. The capability to simulate and analyze effects of change is also new. Now science supported design is expected.

Placer County has yet to explore the full range of possibilities for the SA within their own conceptual framework. The Sunset Area Plan (SAP) unfortunately considers three projects as an inseparable unit, while failing to consider better suited locations for the university or checking their design against their own objectives. The SA has long been established as a place reserved for industry and agriculture that suburban sprawl could not transgress. The impending donation of the university land by the Placer Ranch developer has been too shiny for a few politicians to resist, who personally value getting the donation at the expense of the health and wellbeing of thousands of families. To make this happen, jurisdictional lines have been moved and tax payers have funded the upfront planning work for the developer's design, to date at the cost of $5 million.

The Citizen-Initiated Smart Growth Plan (CISGP) seeks to diversify the conversation and right these wrongs. In this Phase 1 report, we have explored the region's collective vision, brought the site to life with the seasonal changes of the natural systems in the prairie, and worked diligently to respect the community and the land. The resulting zoning plan enhances the County's regional job center vision by providing comparable employment and business opportunity. It also sets straight the job-house balance, enables public transit, and improves quality of life and character of place. It embraces the natural features of the SA and enhances or protects them based on scientific review. It incorporates equity from the core, through quality locations for all housing choices, mixed use neighborhoods, and sustainable design standards that apply equally to blue and white collar working conditions. We have found that when we set out to grow smarter, many benefits arise from each element having various functions. For example, the higher density mixed use areas create walkable communities, have the ridership to support quality public transit, reduce household operating costs, and share public amenities across more people enabling them to be of higher quality.

The Phase 1 of the CISGP is intended to lead by example, to show rather than tell the public the thought process behind planning. It engages the reader in a critical discourse through literally illustrating the various considerations and by providing crucial excerpts of other documents within its own pages. It is designed as a useful tool for quickly getting up to speed on the SA, assisting well-informed commenting on the SAP DEIR, and bringing to the table a constructive conversation about what should be.

Phase 2 and 3 will continue to bring depth to this planning vision and layer in greater levels of refinement. As the citizen's plan, Phase 1 inevitably becomes a sounding board for further ideas, a welcome collaboration for the next phases to record.

With warm regards and a resilient heart,
Genevieve Marsh

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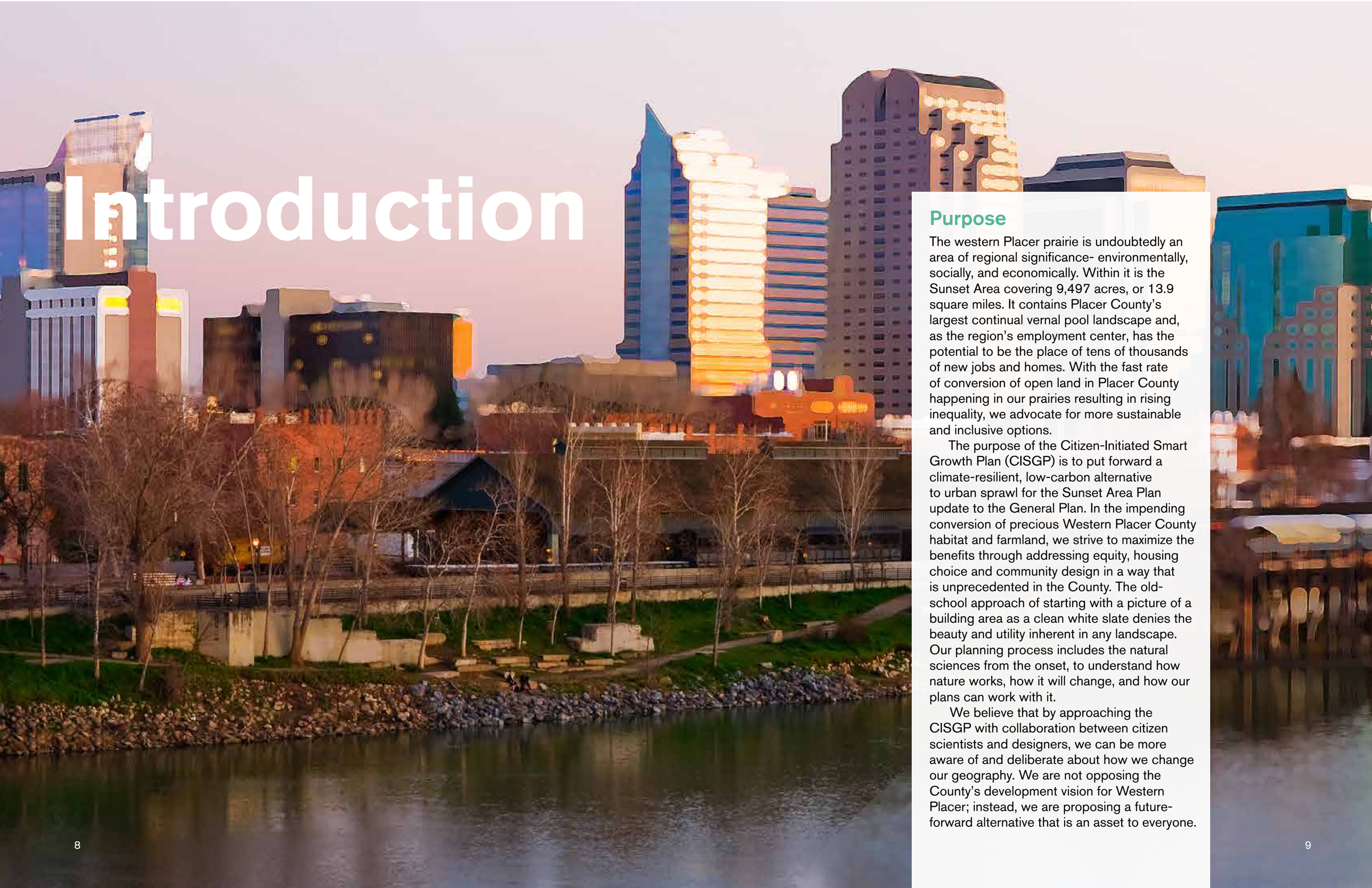
Acronyms

AEL	Alliance for Environmental Leadership
CISGP	Citizen Initiated Smart Growth Plan (The document you are reading)
SA	Sunset Area (the planning area)
SAP	Sunset Area Plan (Placer County's zoning and development guidelines plan for the site)
SIA	Sunset Industrial Area (name for the existing plan for the SA)
PR	Placer Ranch (Development within the SAP)
PRSP	Placer Ranch Specific Plan (De tailed development plan for a large part of the SA.)
PCCP	Placer County Conservation Plan (off-site mitigation that forms a Conservation belt in Placer County; currently in development.)
DEIR	Draft Environmental Impact Report (Evaluates the environmental impact of the SAP and PRSP.)
HDIMU	High Density Industrial Mixed Use
PP	Placer Parkway (Proposed express way between highway 95 and state route 99.)
BRT	Bus Rapid Transit
WRSL	Western Regional Sanitary Landfill (The landfill in the middle of the SA.)
GHG	Greenhouse Gas
FAR	Floor Area Ratio (Percentage of a parcel's area allowed to be made indoor floorspace. Used to establish density rules.)
HH	Household

Introduction



Purpose

The western Placer prairie is undoubtedly an area of regional significance- environmentally, socially, and economically. Within it is the Sunset Area covering 9,497 acres, or 13.9 square miles. It contains Placer County's largest continual vernal pool landscape and, as the region's employment center, has the potential to be the place of tens of thousands of new jobs and homes. With the fast rate of conversion of open land in Placer County happening in our prairies resulting in rising inequality, we advocate for more sustainable and inclusive options.

The purpose of the Citizen-Initiated Smart Growth Plan (CISGP) is to put forward a climate-resilient, low-carbon alternative to urban sprawl for the Sunset Area Plan update to the General Plan. In the impending conversion of precious Western Placer County habitat and farmland, we strive to maximize the benefits through addressing equity, housing choice and community design in a way that is unprecedented in the County. The old-school approach of starting with a picture of a building area as a clean white slate denies the beauty and utility inherent in any landscape. Our planning process includes the natural sciences from the onset, to understand how nature works, how it will change, and how our plans can work with it.

We believe that by approaching the CISGP with collaboration between citizen scientists and designers, we can be more aware of and deliberate about how we change our geography. We are not opposing the County's development vision for Western Placer; instead, we are proposing a future-forward alternative that is an asset to everyone.

Vision

Update the framework for the western Placer regional job center to establish an innovation ecosystem. Support high-quality employment, collaboration, distinct quality of place, and vibrant walkable communities.

Opportunities

Lead by Example
Set an example for smart growth development in Placer thought General Plan policy recommendations, the CISGP planning process, and specifications.

Demographics
Millennials will be the dominant generation in the workforce when the SA is project to be built out. Incorporate workforce demographic research to enhance area attractiveness.

Technological Advancement
With rapid changes to design, technology and business, include technology and trends already on the rise that will be the norm in Placer County in next two decades.

Large Undeveloped Parcels
Specify quality design and performance from the onset, instead of band-aid fixes later.

National Spotlight
Position Placer County as a leader nationally with synergistic employment ecosystem concept and CISGP planning process.

Regional Housing Balance
Balance the scale of Placer's affordable and achievable housing options so the ratios better reflect Placer County residents. Incorporate equity by design to make desirable living places for all income levels.

Kick Start Public Transit
Be a driver to start serious public transit in Placer County through designing in the density and infrastructure to support it.

Geodesign
Collaborate with the natural sciences from the beginning to create a plan that is climate resilient, while preserving the quality of life factors and basic needs nature provides.

Conservation
Use the Sunset Area as a pilot project for how to utilize the PCCP. Balance regional and local conservation.

Objectives

Diverse Opportunities for Industrial Innovation
Transition to a more high-employee density, labor-intensive mix of uses with an emphasis on goods and services focused on innovation and creativity. Make the area attractive for companies at all stages of business development. Broaden the range of development opportunities in the Sunset Area, by supporting small and large scale development and placing it symbiotically with neighborhoods and the university.

Mixed Use Compact Development
Develop mixed use compact development to provide a high quality of life through increasing social opportunities, reducing commute times, and encouraging walking, biking and transit use. Create the framework for the area to develop into a transit-oriented development.

Housing Choice
Support the provision of attractive and under represented housing types locally to accommodate employees of Sunset Area businesses and make a synergistic atmosphere. Integrate housing into mixed use areas to prevent housing islands.

High-Quality Design and Amenities
Utilize demand trends and changing markets to make wise projections about the design requirements of future occupants. Create a sense of place that incorporates the beauty of the prairie with an industrial-modern campus feel. Establish and maintain high-quality standards for sustainable design and construction.

Enhance Existing Assets
Promote infill and redevelopment that already have access to existing public sewer and water. Prepare for conversion of open space by design large-scale systems for managing water, energy, and waste to increase efficiency and environmental health. Make edges conditions compatible with neighboring jurisdictions.

Maintain Natural Resource Value
Balance regional and local conservation. Create zoning designations for open space and agricultural land that promote their multiple functions. Maximize conservation benefits by generating income for the PCCP and protecting it's territory in the SAP.

Retention of Unique Land Supply
Retain the large supply of large development sites in the Sunset Area by discouraging subdivisions that diminish long-term value and foreclose unique development opportunities. Preserve the viability of industrial and large-scale manufacturing operations.

Protection from Incompatible Uses
Protect existing and future development and populations from adverse impacts associated with incompatible uses. Maintain the landfill buffer zone.

Education and Outreach
Share the benefits of compact mixed use development and the CISGP planning process with citizens, elected officials, and developers.

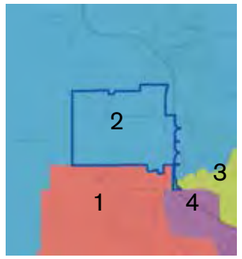
Monitoring
Establish an ongoing monitoring system to evaluate polices during development and determine if strategies are meeting objectives.

Today

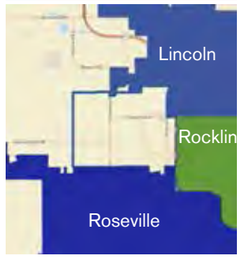
A 2018 satellite view of the West Placer Region reveals suburban development spreading from highway 65 and interstate 80 into the farmlands of unincorporated Placer County. The towns of Roseville, Rocklin and Lincoln share boarders with the Sunset Area (outlined in white). In the below governance jurisdictions, the main authority is Robert Weygandt, District 2 Supervisor. Lincoln has a small area of influence in the North-west corner.

Municipal Advisory Council
Rural Lincoln MAC

Sphere of Influence
City of Lincoln



Board of Supervisors
District 2: Robert Weygandt



City Limits
None

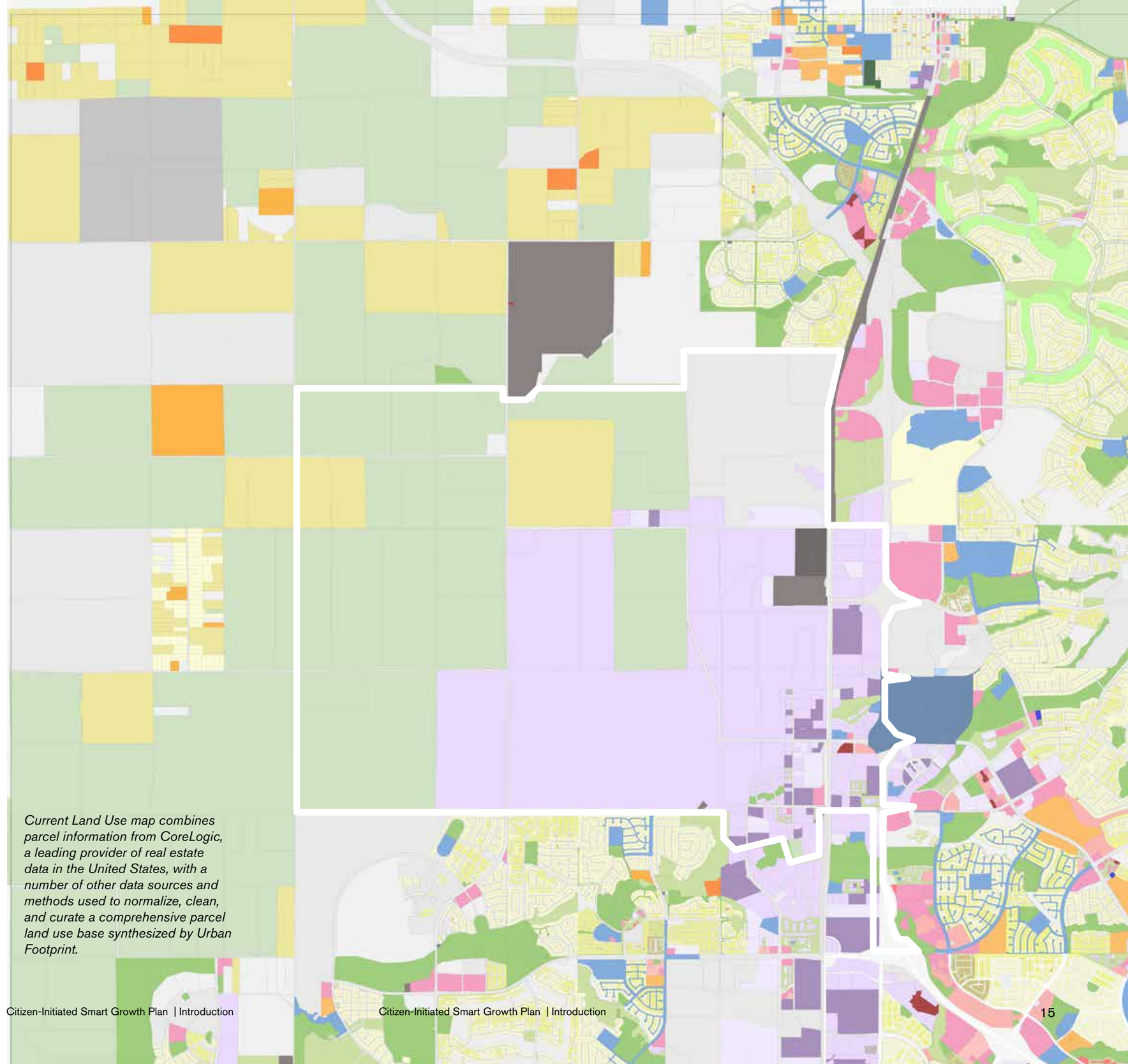
Current Land Use

This map shows the current parcel uses regardless of zoning. The extents include a two mile radius around the Sunset Area. Many parcels have yet to break ground, creating many greenfield parcels in existing development areas. These parcels are infill opportunities that could increase density. The current low density development in West Placer creates car dependence and discourages public transit expansion and walkable communities.

Zoning is highly segregated between residential areas and workplaces. Commercial is aggregated in large shopping areas accessible by car. Mixed use zoning is minimal and housing diversity is dominated by a spectrum of single family homes on various size lots.

Legend

- Garden Apartment
- Religious Center
- Residential Common Area
- Rural Employment
- Rural Ranchette Lot SF Detached
- Rural Residential Lot SF Detached
- Small Lot SF Detached
- Suburban Multifamily
- Suburban Townhome
- Town Civic Complex
- Urban High School
- Vacant
- Vacant Residential Lot
- Very Small Lot SF Detached
- Warehouse High
- Warehouse Low
- Hotel Low
- Industrial High
- Industrial Low
- Natural
- Water
- Blank Data
- Campus/College High
- Cemetery
- Commercial Recreation Facility
- Commercial Storage
- Communications Facility
- Daycare
- Duplex
- Estate Lot SF Detached
- Golf Course
- Hospital
- Large Format Standalone Commercial
- Large Lot SF Detached
- Low Intensity Strip Commercial
- Low-Rise Office
- Main Street Commercial Low
- Medium Intensity Strip Commercial
- Medium Lot SF Detached
- Military
- Mobile Home Park
- Office Park High
- Non-Urban Elementary School
- Non-Urban High School
- Non-Urban Middle School
- Office Park Low
- Open Space
- Park
- Parking Structure
- Parking Surface Lot



Current Land Use map combines parcel information from CoreLogic, a leading provider of real estate data in the United States, with a number of other data sources and methods used to normalize, clean, and curate a comprehensive parcel land use base synthesized by Urban Footprint.

Tomorrow

This map combines the future vision of relevant planning jurisdictions, excluding the SAP Update:

Placer County General Plan (current)
Placer County Conservation Plan (proposed)
City of Roseville General Plan 2035 (2010)
City of Lincoln General Plan (2012)
City of Rocklin Existing General Plan (2014)

Each map has a different time horizon and a level of detail, making this map best for general deductions.

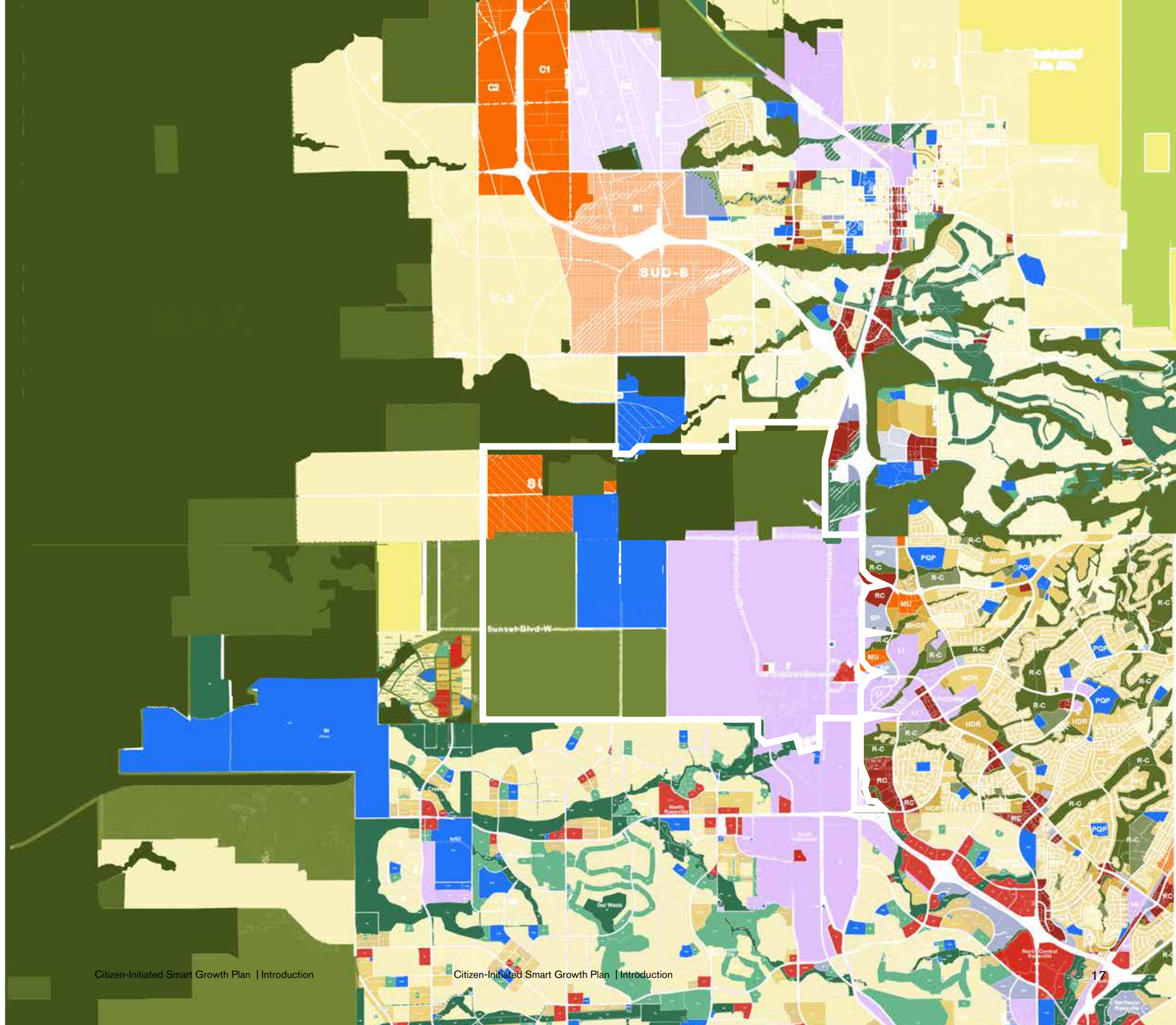
The dominant land use types are low density residential and conservation. These border each other where the farms buffer is gone.

Along highway 65, industrial zones blend across the borders of Lincoln, SA, and Roseville, creating a large industrial expanse. The north band of reserves act as a buffer that separates Lincoln's future residential areas from the landfill and preserve the landfill one mile buffer.

To the south, Roseville's residential area is built right up the landfill buffer. Roseville will expand development north along the western edge of the SA. A large regional water treatment plant will process runoff from the new developments.

Legend

- Agriculture/Timberland 10 Ac. Min.
- Agriculture/Timberland 20 Ac. Min.
- Agriculture/Timberland 40 Ac. Min.
- Agriculture/Timberland 80 Ac. Min.
- Conservation
- Reserve Acquisition Area
- Commercial
- Industiral
- Rural Residential
- Low Density Resiental (0.1-5 DU/acre)
- Medium Density Residential (5.1-7.0 DU/acre)
- High Density Residential (10.1+)
- Mixed-Use
- Open Space
- Professional Office
- Public
- Recreation
- Resort/Recreation



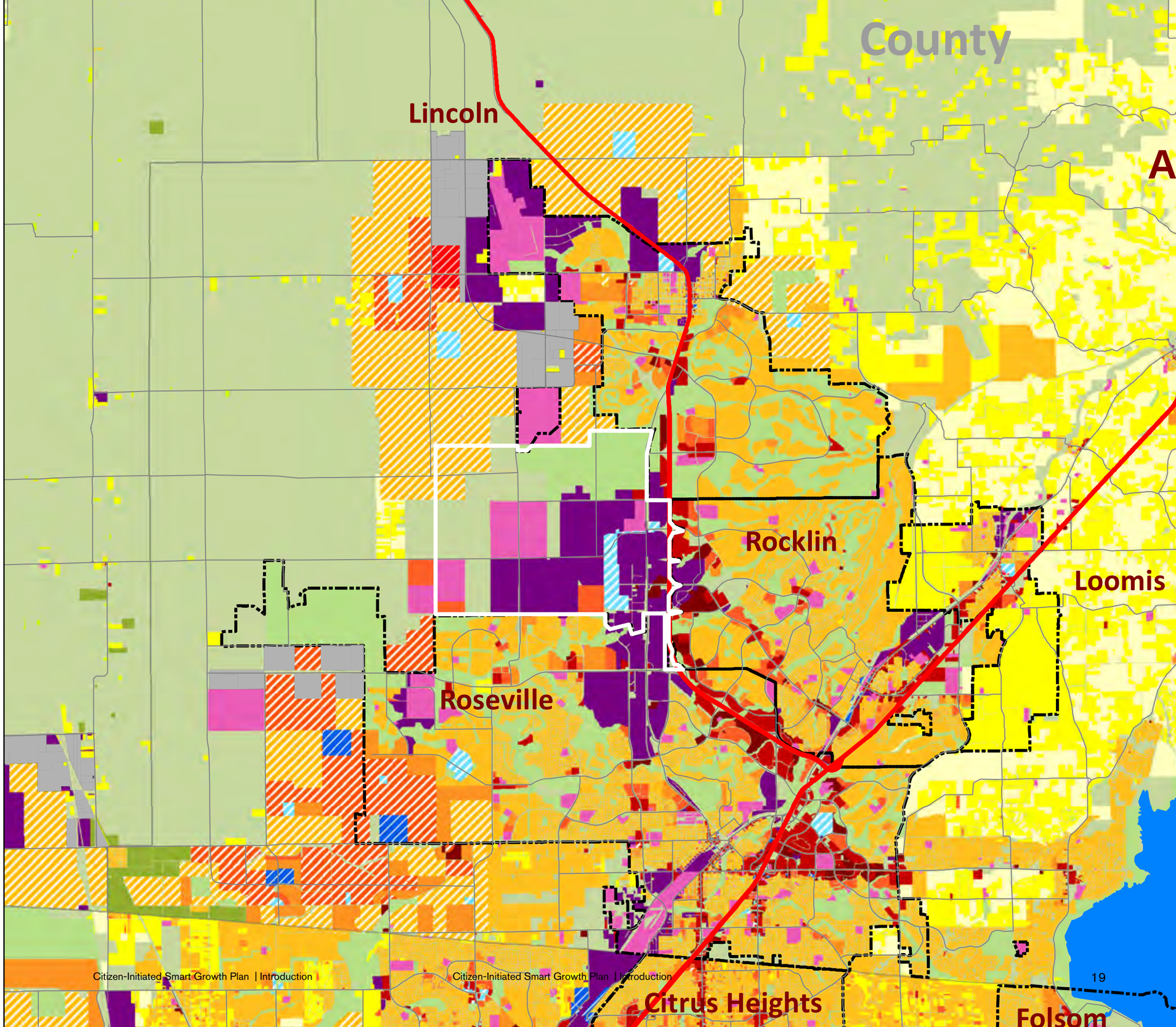
SACOG Regional Blueprint

This regional blueprint is a smart growth vision for the greater Sacramento area adopted by the Sacramento Area Council of Governments Board of Directors in 2004. The spirit of the Blueprint is to integrate land use and transportation planning to curb sprawl, cut down on vehicle emission and congestion in order to improve the quality of life for residents of the Greater Sacramento Region. It accomplishes this by implementing smart growth principles that encourage a variety of housing options closer to employment, shopping, and entertainment hubs, which gives options for people to walk, bike, or take public transportation to work and play.

For the SA, it encourages industrial in the south-east with a low density mixed use zone. A large amount of the site remains open space and residential encroaches from the north and south. Since 2004, SACOG has tracked development in relation to the blueprint and created preferred build out scenarios. Single family small lot residential has been building out to capacity at an unanticipatedly fast rate.

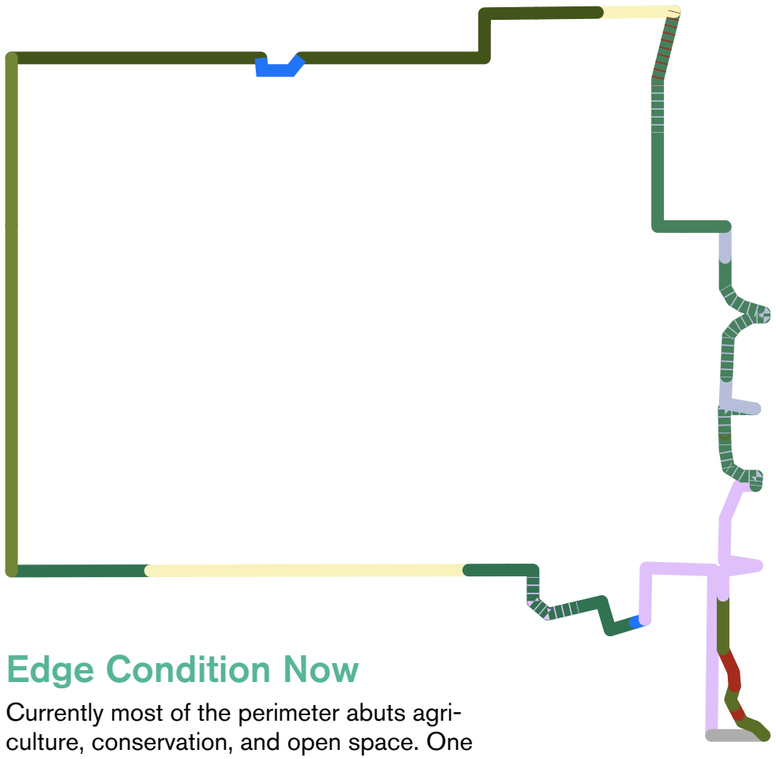
Legend

- Retail
- Office
- Industrial
- Public
- Rural Residential
- Single Family Large Lot
- Single Family Small Lot
- Attached Residential
- Agriculture
- Forest
- Open Space
- Parks
- Water
- Future Growth Area
- Vacant Rural Residential
- Medium Density Mixed Residential
- High Density Mixed Residential
- Low Density MU Center/Corridor
- Medium Density MU Center/Corridor
- High Density MU Center/Corridor
- Mixed Use Employment Focus



Comparison

As the Sunset Area touches three city jurisdictions, the edge condition must be considered so uses can appropriately blend across boarders.

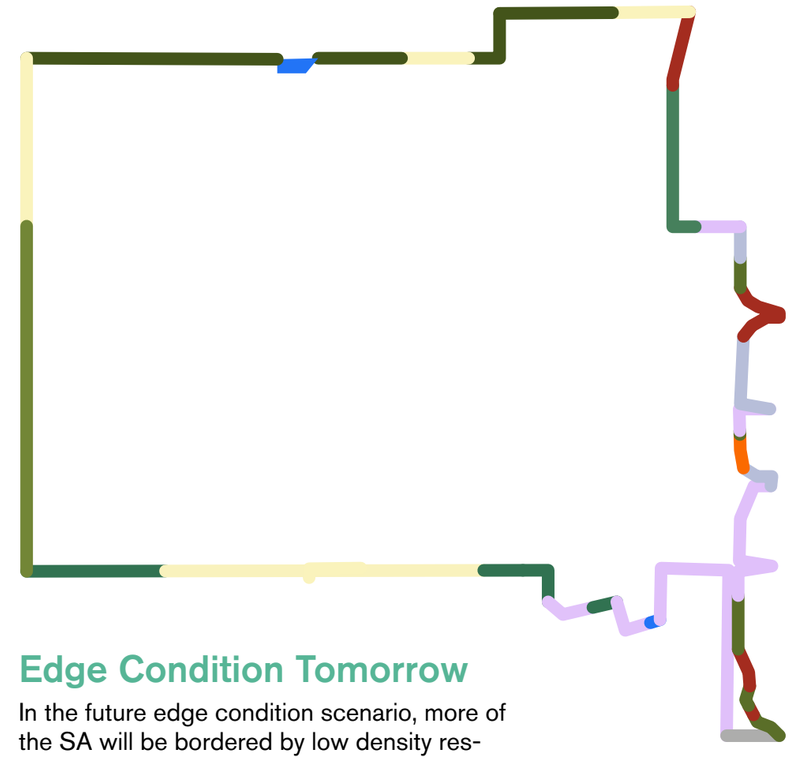


Edge Condition Now

Currently most of the perimeter abuts agriculture, conservation, and open space. One of Roseville's low density residential areas is built out along the south border. Roseville has the least amount of available growth along the edge, confined to a small industrial area.

Rocklin to the east has yet to build out the properties along highway 65, leaving approximately half their border in an open space condition. This edge is interspersed with a few small conservation areas along streams.

Lincoln's edge is dominated by agriculture use, except for their wastewater treatment plant. A residential community abuts the north east corner. The western boarder, which meets the Placer County General Plan, is currently entirely large agricultural land uses.



Edge Condition Tomorrow

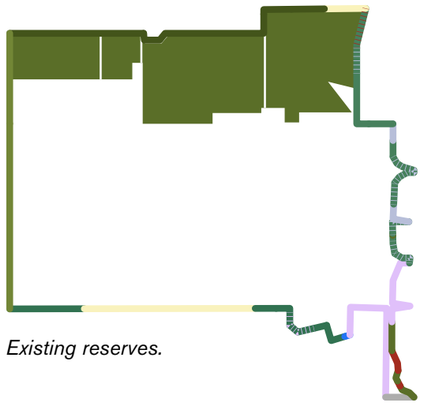
In the future edge condition scenario, more of the SA will be bordered by low density residential. Lincoln will expand their residential villages across the north border and down the western edge.

Roseville will have built out their light industrial area along the southeast corner and expand north along the western edge. Rocklin will have populated the edge of hwy 65 with a mix of professional office, commercial and industrial uses, in a similar approach to Roseville's stretch of highway 65.

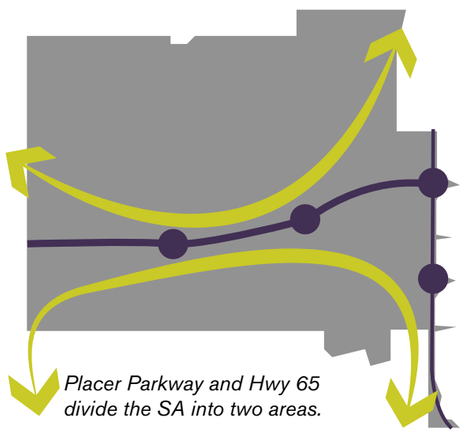
The PCCP establishes an urban growth boundary one mile west of the SA and reinforces the existing reserves in the north SA by including them in it's habitat corridor network.

Constraints

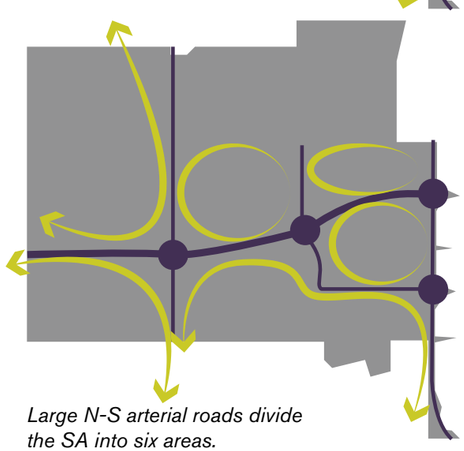
Project constraints identity natural and man-made borders that shape distinct senses of place, and in some cases act as barriers.



Existing reserves.



Placer Parkway and Hwy 65 divide the SA into two areas.



Large N-S arterial roads divide the SA into six areas.

Existing Conservation

The four conservation areas along the north edge of the site separate the SA from Lincoln. These reserves are mitigation banks and three of them are anticipated to be in the PCCP. Recreation and through traffic is not allowed.

As a result, uses along the northern half of the SA will remain isolated from Lincoln. The sensitive habitat of the conservation areas will require safeguards to prevent contaminated by development along its edge.

Major Roadways

While major roadways provide high capacity regional access to an area, their great width and few crossings create community edges. These can be limiting barriers to pedestrians and cyclists. For drivers, they foster a psychological response of a change of place.
As a result, Placer Parkway will create a strong divide amidst the north SA and the south. It's width and few crossings will discourage dissemination across the line. As a result, community nodes that seek to span the parkway, will likely be unsuccessful. Instead, design self sufficient districts.

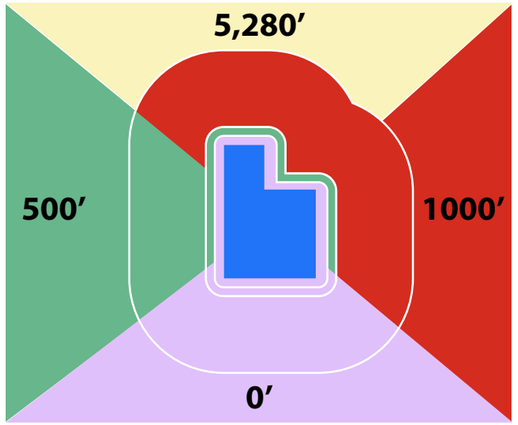
Connectivity

Highway 65 and Placer Parkway will be the main access points in and out of the SA. In terms of local road access, Lincoln has the most connected roads into the SA. They approach the north of the site from west, north and east. These roads reach out to far spread areas of Lincoln and unincorporated Placer County.

Roseville currently has two entry roads on the south border, with groundwork constructed for potentially five more. Seven of their eight possible roads approach from the south and connect the residential developments to interstate 80 further south.

Rocklin currently has one access point with one other possible. Rocklin is divided from the SA by highway 65 and overpasses are the only means of entry. This limits local diffusion from one side to the other as a result of poor pedestrian and public transit access.

Considered collectively, the south edge and Roseville has the most potential for local community continuity. The east edge will mostly serve highway 65. The north edge condition of far spaced access points will make the SIA more of a destination to people in Lincoln and unincorporated Placer County. The west edge will primarily be entered through Placer Parkway with low volume local access.



Landfill buffer zoning constraints.

Western Regional Sanitary Landfill Buffers

The landfill buffer zone includes most of SA, including the majority of PR. This is a major constraint, as it affects allowable land uses. It protects both the future operation of WRSL and the health and comfort of people. The CISGP will respect the buffer and not put residences or schools in within the buffer zone. Placer Ranch seeks a variance to the buffer to put 5,827 of homes, an elementary school, a middle school, and a university within the mile buffer.

General Plan on Landfills

4.G.11. When considering land use changes in the vicinity of a landfill operation, the County shall consider the landfill as the dominant land use in the area. In order to protect these facilities from incompatible encroachment, new residential land uses shall be separated from the property lines of active and future landfill sites by a buffer of one mile. Such buffers do not apply to closed landfills or solid waste transfer stations. Other uses will be required to provide buffers as described in Table 1-5. The intent of this policy is to prohibit the creation of new parcels for residential use within one mile of the landfill; not to prohibit construction of a residence on an existing legal building site within this area.

4.G.6. The County shall ensure that landfills and transfer stations are buffered from incompatible development.

1.B.4. The County shall ensure that residential land uses are separated and buffered from such major facilities as landfills, airports, and sewage treatment plants.

TABLE 1-5
MINIMUM PUBLIC FACILITY BUFFER ZONE WIDTH

Type of Public Facility	Minimum Buffer Zone Width (feet) by Land Use Designation			
	Residential	Commercial	Industrial	Recreation
Airport [1]	2,000	1,000 [2]	0	0 - 500 [3]
Sewage treatment plant	1,000	1,000	0 - 500 [4]	1,000
Solid waste transfer station	500	0	0	500
Solid waste disposal site	5,280 [5]	1,000	0	500

[1] *See also comprehensive land use plans (CLUPs) for airports.*
[2] *Buffer required for non-airport related commercial uses only.*
[3] *No separation necessary for expansive, low-population outdoor recreation facilities such as golf courses; 500 feet for places of public assembly, outside of aircraft overflight areas.*
[4] *No separation necessary for warehousing uses with a low employee-per-square foot ratio; 500 feet required for manufacturing facilities and business parks.*
[5] *Policy 4.G.11 protects landfill facilities from future residential encroachment by requiring a residential buffer of one mile measured from the property line of an active or future landfill site.*

All Together

These constraints shape the objectives in the following ways:

Diverse Opportunities for Industrial Innovation: Industrial uses are allowed on all areas of the site except for the conservation zone. The constraints naturally form different areas for various industrial intensities, the lest intense being in the free choice area and the most intense being around the landfill.

Mixed Use Compact Development: Mixed use is only possible in the free choice areas. The largest of the free choice areas has the most potential to be a mixed use community.

Housing Choice: Housing is only allowed in the free choice area and should be incorporated within mixed use communities. As such, housing will be concentrated in the largest free choice area.

Enhance Existing Assets: Enhance the landfill, conservation area, and the existing building stock.

Maintain Natural Resource Value: Potential for intense industrial uses line the conservation area. Safeguards must be put in place to prevent contamination.

Retention of Unique Land Supply: Large industrial parcels should be preserved within the landfill buffer zone, while subdivision should be allowed in the mix use zone.

Protection from Incompatible Uses: Distinct areas gradually transition from intense industrial uses to residential in the south and south east.

Access

Different types of zoning have different access needs and modes of transportation. The off ramps from Hwy 65 and Placer Parkway correspond with three different locations in relation to the buffer zone. Two for the free choice area, one for the commercial/industrial zone, and the other for the landfill/industrial zone.

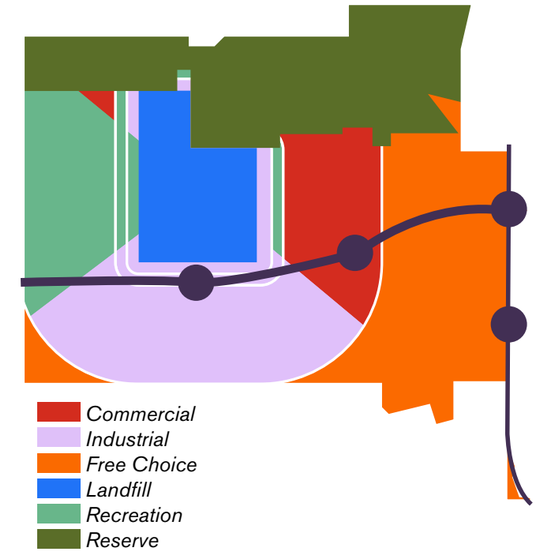


Diagram showing constraints overlaid.

Smart Growth Plan

Superstructure of the Sunset Area Economic Ecosystem

Growing smarter means encouraging development on vacant or underused land, redeveloping derelict properties, rehabilitate industrial "brownfield" sites, and adapting and reusing our old and historic structures. Doing so not only strengthens our existing communities, but also helps us to care for our natural environment and preserve it for future generations.

The location of a project within a region is critical because even projects designed to be compact and walkable can have unwanted impacts on transportation systems and natural areas if they are dependent on overburdened roads, or are disconnected from the transit system, or require unnecessary destruction of irreplaceable farms or forests.

This section lays out the CISGP zoning plan and how the different districts work together to achieve the project objectives. Topics include:

- 21st Century Industry
- Zoning Designations
- Exclusive Comparison
- Comparison in Context

CISGP Zoning

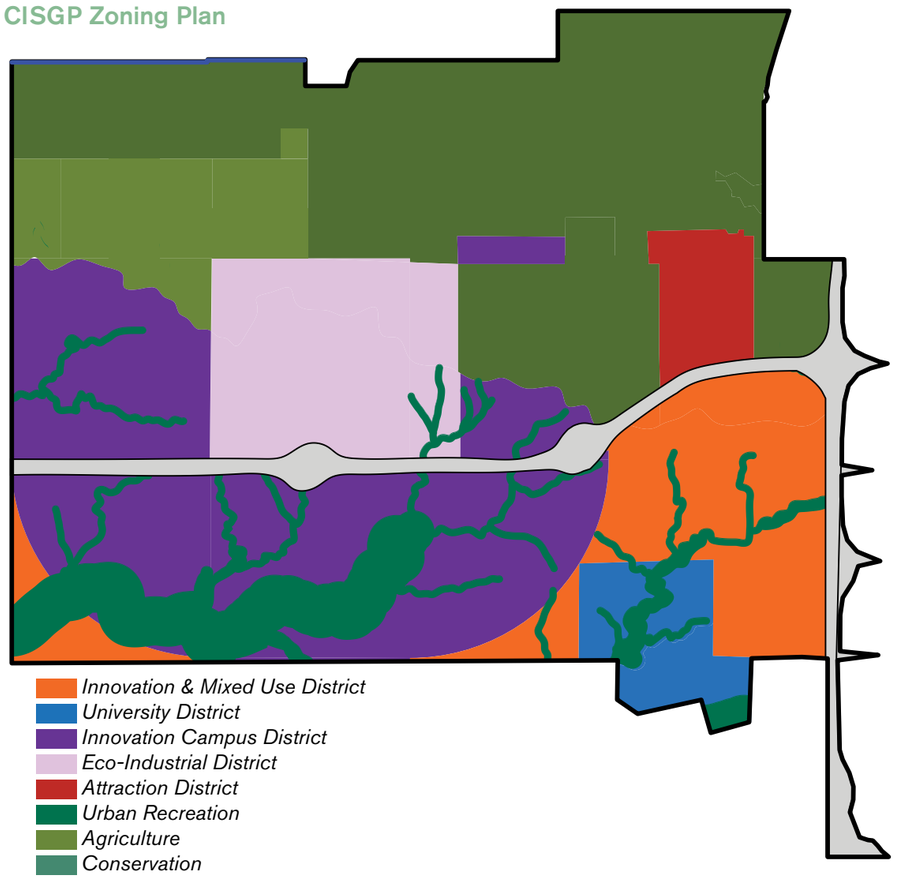
The CISGP includes eight different zoning types and four sub-types. Three of the zoning types layout the spectrum of industrial use from innovation and mixed use to eco-industrial at the landfill. Industrial is the most flexible zoning for an innovation ecosystem because it allows for the fill product development cycle. From office work to prototyping, to manufacturing and warehousing, to shipping, industrial zoning accommodates it all. As a result, businesses can scale in place.

A university district and an attraction district form unique areas within the larger whole. Natural areas are given three different designations to accommodate various uses: Urban Recreation, agriculture, and conservation. The Innovation and Mixed-Use district includes four sub-zones: Town Center, High Density Industrial Mixed Use, Office and R&D, and Office Industrial.

21st Century Industry

Industrial facilities are important in the global marketplace and impact every facet of our daily lives. Virtually everything you touch and use all day was manufactured, stored and transported before it came to you. Industrial facilities enable all of this to happen and are a significant economic driver. Manufacturing contributes $2.1 trillion to the U.S.'s GDP. It employs 12.33 million manufacturing workers and supports18.5 million jobs- about one in six private-sector jobs (National Association of Manufacturers).

CISGP Zoning Plan



Exon Mobil Corporate Campus in Spring, TX, designed by Gensler and PDR and built by Harvey Construction, covers 385-acres and opened in 2015. Image from PDR , https://workdesign.com/2016/05/new-corporate-campus/

The CISGP includes three different zoning types related to industrial use: light industry in the innovation and mixed use zone, large industrial campuses in the industrial zone, and an eco-industrial zone that is symbiotic with the landfill. The design of facilities in these zones has evolved over time and the SA zoning policies must reflect that. This excerpt written by Drew Patton summarizes the sector's state today:[1]

"Decades ago, the sprawling suburban campus was the corporate office solution — think classic campuses like Connecticut General outside of Hartford and the Texaco campus in Rye, N.Y. Today, a new corporate real estate model, influenced by the combined history of corporate campuses and leased office space, has emerged to better meet the needs of global corporations and their changing workforce. As companies centralize their employees, we are seeing a renewed commitment to real estate ownership and investment in campuses. If a company employs 50, 100, or even 200 employees, leasing space in a landlord-owned building will likely provide the most economical, flexible solution. However, companies that are looking to centralize thousands of employees and make a 20- 30- 40- 50-year real estate investment will make different decisions about property location and ownership.

"Suburban campuses appeal to corporations for three key reasons. First, the abundance of affordable land in suburban locations allows them to buy it up, develop some of it, and reserve the rest for future needs. Second, suburban campuses provide easy access to

1 Patton, Drew. "The New Corporate Campus." Work Design Magazine, 24 May 2016, workdesign.com/2016/05/new-corporate-campus/.

Method Manufacturing Facility: The South Side Soapbox in Chicago, Illinois. Image from: Patsy Mcenroe Photography, 2015. http://www.mcdonoughpartners.com/projects/method-home/

nearby, affordable housing for employees. This proximity enables companies to locate the workplace closer to employees' homes, a priority that has existed for over 50 years. Finally, developing a campus in a suburban location provides a company with the ability to significantly impact the development of surrounding infrastructure, resulting in a competitive advantage.

"There are three realms of work that a well-designed campus amplifies: the urban vibe, the collegiate atmosphere, and the walk in the woods. The urban vibe can be understood as the energy and the urgency of working in an urban setting in close proximity to colleagues. A lot of people have to get their work done today or in the next 10 minutes. A sense of urgency is achieved with density; even if you can see the trees and the skyline or walk outside, you are located nearby your peers. The urban vibe is the highest impact realm of work for researchers and companies with long-term goals in mind.

"The second realm is the collegiate atmosphere: a walkable, pedestrian-friendly campus. Today's leading corporate campuses have their employees park their cars outside the campus. The campus is pedestrian-oriented — inside or outside, elevated or on the ground, and builds the sense of a college. The collegiate atmosphere is also achieved using scale: 90 feet across from building to building, with buildings six and seven stories tall so that employees can identify the person they see across the way. Visibility is key to the collegiate scale — all views are short enough that you can actually identify someone walking toward you.

"The third realm is the walk in the woods: truly, woods to walk in, a soccer field, or a swimming pool. Outdoor spaces nurture the authentic roots of a company and support the people."

Innovation & Mixed Use District

The Innovation & Mixed Use District is the heart of the overarching employment center concept in the CISGP, hosting a live-work campus style community for employees and entrepreneurs at companies at various stages of the business life cycle. It is symbiotically located next to the Innovation Campus District and the University District to encourage idea dissemination and fast pedestrian access. It has four sub-zonings: Town Center, High Density Industrial Mixed Use, Office and R&D, and Office Industrial.

The Urban Recreation network is the focal point and primary pedestrian thoroughfare providing opportunities for a spectrum of outdoor uses from urban lawn to riparian walks and programmable edges. It provides the 'walk in the woods' design requirement.

At the time of build-out, millennials (already aged 22-39) will be the largest generation in the workforce. This is the demographic that will need to be attracted to locate their businesses in the Sunset Area and who will need to like the area enough to work for companies based there. The other demographic are the boomers, who are looking for downsizing options with high quality social life. They are less interested in the acquiring possessions and are more interested in seeking experiences.

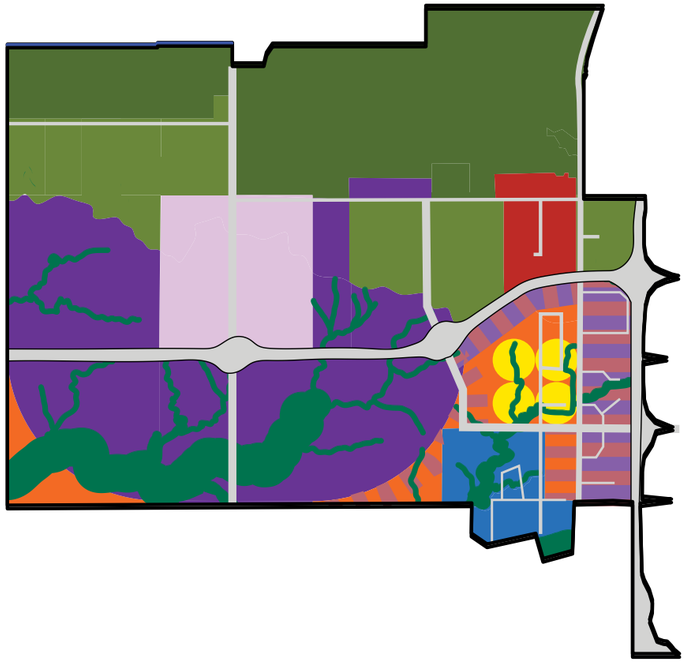
Town Centers

Adjacent to the Urban Recreation network are quarter-mile mixed-use town centers. A quarter mile is the distance people are willing to walk to access amenities and transit stops. It is also the radius of pre-automobile towns. Town centers include shops, restaurants, professional offices, dwellings and other community amenities in a high density mix. This layout prioritizes access instead of space per person, a highly desirable trait for two significant and dominant demographics.

The town center is the ideal zone for schools and public facilities that service the local community. It ensures that all residents in the eastern Innovation and Mixed Use District can access the establishments within a 15 minute walk, as the crow flies.

Detailed Zoning Diagram

Innovation & Mixed Use District:
- *Town Centers*
- *High Density Industrial Mixed Use*
- *Office and R&D*
- *Office Industrial*
- *University District*
- *Innovation Campus District*
- *Eco-Industrial District*
- *Attraction District*
- *Urban Recreation*
- *Agriculture*
- *Conservation*



Industrial Modern Facility. Image from: KTC-External Elevation by PGDesigns.co.uk, http://www.flickr.com …pgdesignscouk/8116108980/

High Density Industrial Mixed Use

Surrounding the town centers light industrial uses enter the mix. The high density industrial mixed use district (HDIMU) has high employment-density industrial with office and residential mixed in. It is composed of low-rise office buildings, high density office parks and warehouses. Housing options include mid-rise residential, standard and suburban multifamily podiums, and some suburban townhomes.

Office and R&D

Surrounding the HDIMU is the Office and R&D area. A higher percentage of industry enters the use mix. It is composed of low density office parks, warehouses, low and medium intensity commercial strips. Housing includes standard multifamily podiums.

Office Industrial

Along the perimeter of the Innovation Mixed Use District the Office Industrial designation lines the highways. It is the farthest away from the town center and houses the industrial uses with that employ less people per square foot. It includes office parks, high density industrial, warehouses, and medium intensity commercial strips.

The district has large lots for industrial uses, such as light manufacturing, research and development labs, and warehouses that support large established businesses. It also has smaller lots and a variety of existing building sizes for smaller companies seeking adaptive reuse or new construction.

When multiple building types coexist within a neighborhood, physical and social mono cultures are avoided and the neighborhood can naturally evolve in use, which decreases the likelihood of demolition.

The Edison at Gordon Square multifamily podium apartments create a modern-industrial look with zigzagging roof lines,colorful facades, the retaining the water tower. Image from: NRP Group, https://www.multifamilyexecutive.com/design-development/class-a-cleveland-mid-rise-eschews-high-density-hits-several-price-points_o

Buildings Types: Light Industry

Consists of manufacturing buildings, warehouses and distribution centers. Manufacturing buildings are industrial facilities that house machines and tools to produce goods for use or sale. Business activities in manufacturing buildings may range from handicraft to high tech. Today, most manufacturing facilities are involved in industrial production through which raw materials are transformed into finished goods on a large scale. Warehouses and distribution centers are buildings that store goods, manufactured products, merchandise, raw materials, or personal belongings, such as self-storage centers.

Building Types: Residential

The various residential options permitted in this zone are compatible with the high density design and community-experience centric approach. Acceptable residential building type include mid-rise residential apartments/condos/lofts, garden apartments, multifamily podiums with commercial below, cohousing, suburban multifamily, live-work, urban townhomes and suburban townhomes.

To guide the formation of the Innovation and Mixed Use District community, individual projects within the district should be located so that 50% of its dwelling units are within a quarter mile walking distance of the number of supporting uses. Projects with no dwelling uses should be positioned within quarter mile of dwelling units. Sufficient supporting uses must be in place by the time of 50% occupancy of total building floor area (exclusive of portions of parking structures devoted to parking).

Innovation Campus District

The Innovation Campus District is for large industrial campuses looking to invest in new facilities. These businesses will likely have more than 200 employees and will be looking to invest in long term use of the site. To encourage this, sustainable design is required to be certified through a highly rated national building rating standard program. With direct access to Placer Parkway, these major employers will have easy access to the regional road network. Campuses may to have supporting commercial uses that provide amenities to work life as well as retail showrooms for their products. Located within the landfill odor zone, the Innovation Campus District does not include town centers, residential, or public education facilities. As industrial campuses tend to be insular, the Urban Recreation network gives an overarching organizational feature and sense of place, while connecting the campuses with a common space and pedestrian commuter corridor.

Industrial Campuses

Manufacturers often operate at a large scale with multiple processes taking place across several buildings, with shared infrastructure and policies. Industrial campuses are large areas or collections of buildings that participate in common manufacturing activities, and include manufacturing buildings and warehouses.

Scale

Manufacturing and industrial facilities operate on a vastly different scale than homes, office buildings or even large campuses, like universities. When talking about industrial facilities, we should compare them to small cities. All buildings on an industrial campus are connected by a complex network of utility infrastructure. Hundreds or thousands of employees move between office buildings and plants as they perform their daily activities. Because the buildings, the people and the processes are all interconnected, any single building on an industrial campus as a critical component of a larger whole. For manufacturers, efficiency equals a healthy business unit. Saving energy and water produce major cost-savings on the industrial campus scale.

Sustainable Design

Industrial campuses must be designed to standards of LEED, Living Building Challenge, WELL Building Standard, BOMA 360, NZEB, or other highly rated national building rating standard programs. Currently California has 200 LEED-certified factories.

These certifications create healthier, more productive places, reduced stress on the environment, and savings for owners and occupants stemming from increased building value, higher lease rates and lower utility costs. At the scale of industrial campuses, they put a triple bottom line into action, benefiting people, planet and profit. For example, a leading manufacturer saw 33 percent savings on energy costs after making changes to a building's baseline design in pursuit of LEED Gold certification. Ozzie Gonzalez of CH2M, says, "When we consider an entire campus project for LEED, we can gain enormous benefits in predictability, streamlining processes, cost savings, standardization, successful implementation and continuous improvement. For me, nowhere is the impact bigger or more meaningful than at the level of the manufacturers who produce the products we use every day, around the world."
Benefits of requiring certification include:

Workers: Green buildings positively impact occupant health, safety, well-being and overall experience. Blue collar and white collar workers alike, regardless of location, can expect the same quality standard.

Higher Value Construction Jobs: Industrial facilities can be the cornerstone business for entire towns, cities and metro areas, providing not only direct employment but a ripple effect of commerce throughout the region (NAM). USGBC's recent Green Building Economic Impact Study found that across industries, green construction is poised to create more

Modern ceramic plant campus facade. Image from: https://depositphotos.com/stock-footage/ceramics-plant.html

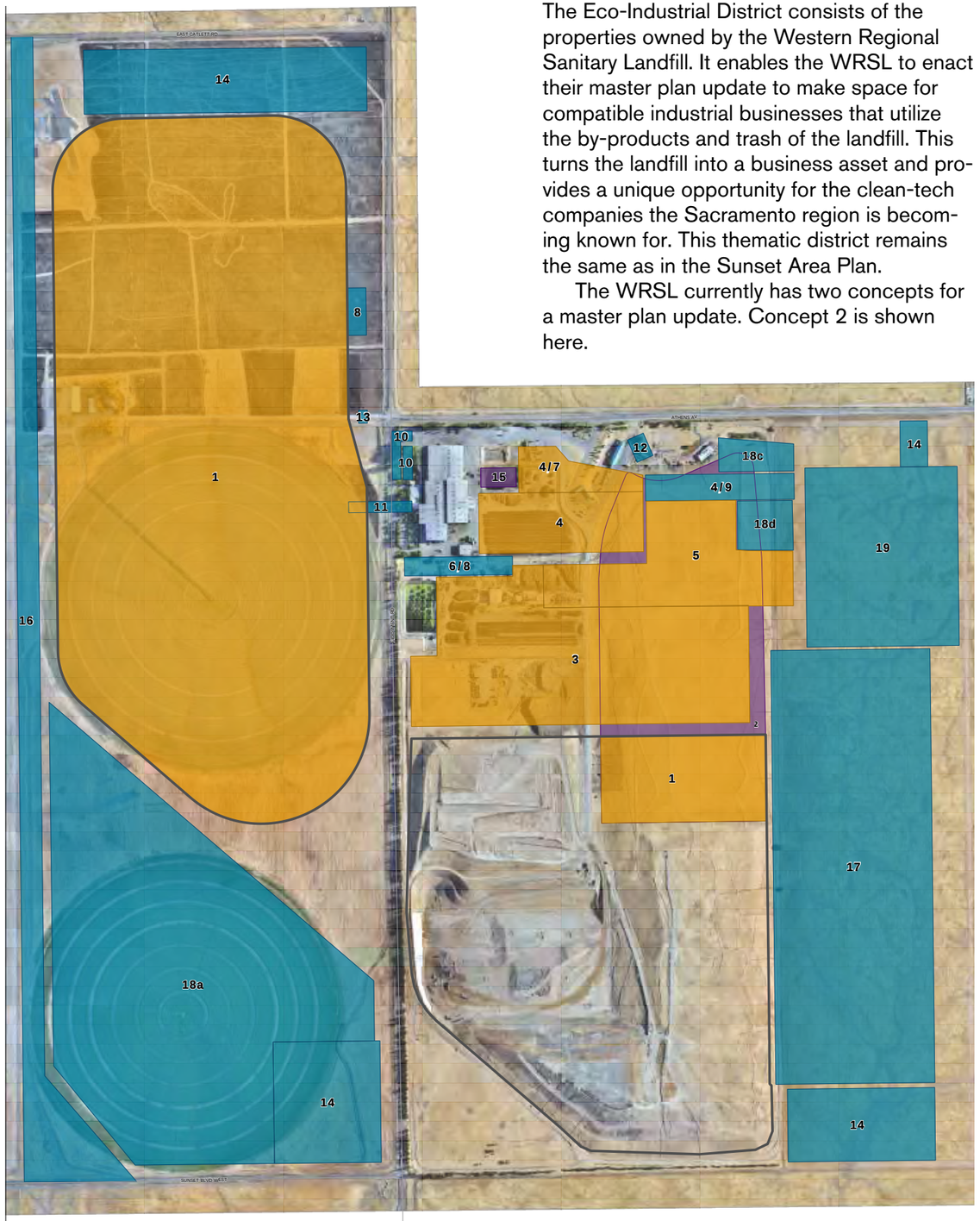
than 3.3 million US jobs and $190.3 billion in labor earnings through the end of 2018. The growth of green jobs in manufacturing is expected to continue at a strong pace. USGBC's recent Green Building Economic Impact Study found that across industries, green construction is poised to create more than 3.3 million U.S. jobs and $190.3 billion in labor earnings through the end of 2018.

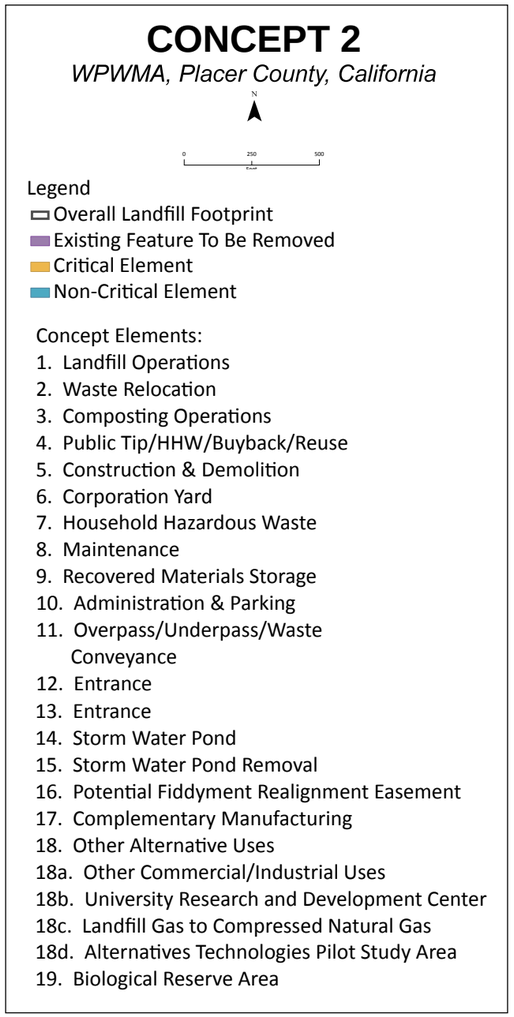
Community Health: Green buildings help ensure manufacturers are good stewards for their communities. Sustainable manufacturing facilities protect local residents and workers, promoting a healthy environment and economy.

Eco-Industrial District

The Eco-Industrial District consists of the properties owned by the Western Regional Sanitary Landfill. It enables the WRSL to enact their master plan update to make space for compatible industrial businesses that utilize the by-products and trash of the landfill. This turns the landfill into a business asset and provides a unique opportunity for the clean-tech companies the Sacramento region is becoming known for. This thematic district remains the same as in the Sunset Area Plan.

The WRSL currently has two concepts for a master plan update. Concept 2 is shown here.





Attraction District

The Attraction District enables super-regional entertainment venues and supporting uses that are compatible with the Thunder Valley Casino. It is the same as in the SAP Entertainment and Mixed-Use District, but the Regional Shopping Center and Cornerstone District have been removed.

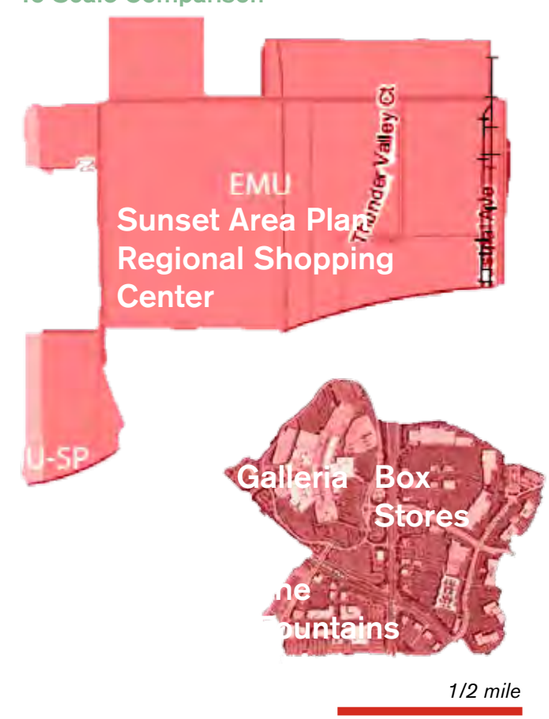
How big is retail in the Sunset Area Plan?

A comparison with the one of Roseville's shopping districts puts it in perspective. The Westfield Galleria Mall is approximately 90 acres. The Galleria plus the Fountains and the big box stores east-side of Galleria Blvd is approximately 260 acres.

The Sunset Area Plan Draft includes a regional shopping center that is 517 acres-that's twice as big!

By removing this component of the SAP, the CISGP maintains retail revenue for Lincoln, Roseville and Rocklin.

To Scale Comparison



CSU Chico's new arts & humanities building is 91,000 sf and LEED certified. Image from Otto Construction, https://ottoconstruction.com/portfolio-items/csu-chico-arts-humanities-building/

University District

The university furthers the objective of creating a major job center in the community, by creating a pipeline for students to find jobs and employers to engage in research. The CISGP moves the university slightly to the east out of the dump buffer zone, where half of it's district is vacant and the other half has buildings and infrastructure. Adaptive reuse will help the university get established with less infrastructure and utility expansion cost, mitigation fees, and environmental impact.

The site has various edge conditions that work well with a university's many faces, and incorporates the most scenic stream courses. By nestling the university amidst the Innovation and Mixed Use District, Roseville's industrial business area, and the Neighborhoods to the south, it's community catchment area expands and it becomes more of a community asset, for those on the outside and the inside.

What are the university mitigation costs in the Sunset Area Plan?

The SAP university land is donated by the developer and landowner of Placer Ranch, Eli Broad. The university site is a subdivision of a larger parcel with the an assessed market value of approximately $20 million. All 300 acres are a vernal pool complex. Mitigated through the PCCP, the total land conversion and special habitat fees are upwards of $40 million.

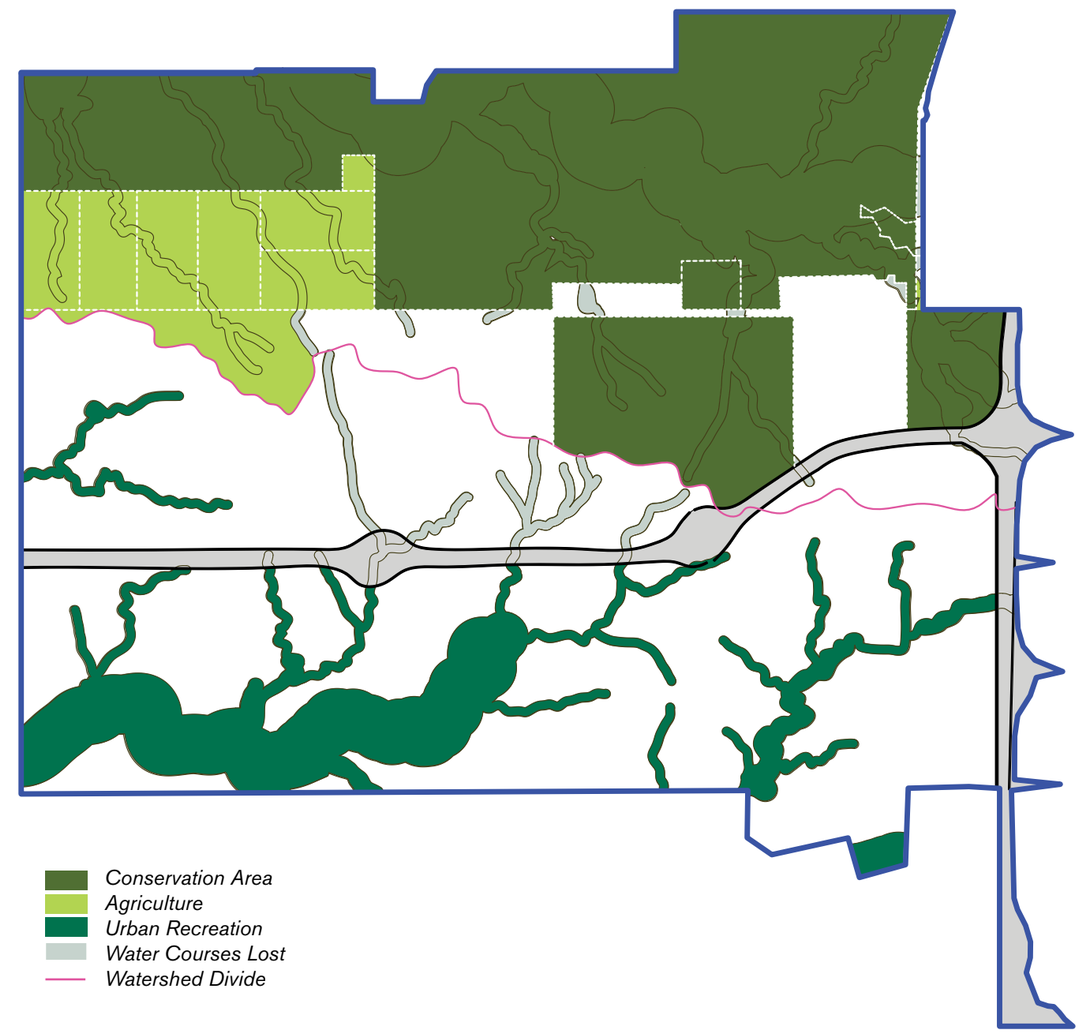
Agriculture

The urban reserve district identified in the SAP will remain agricultural uses in the CISGP, for future consideration as part of the conservation network or another use. This district is ecologically significant and the rest of the SA should be built out first. The agriculture designation protects the catchment areas of the Auburn Ravine watershed that supports the conservation zone and maintains extensive vernal pool complexes.

Conservation

This district includes existing reserves and mitigation banks that will be in the PCCP, or are immediately adjacent to the PCCP and provide increased habitat value and migration corridor.

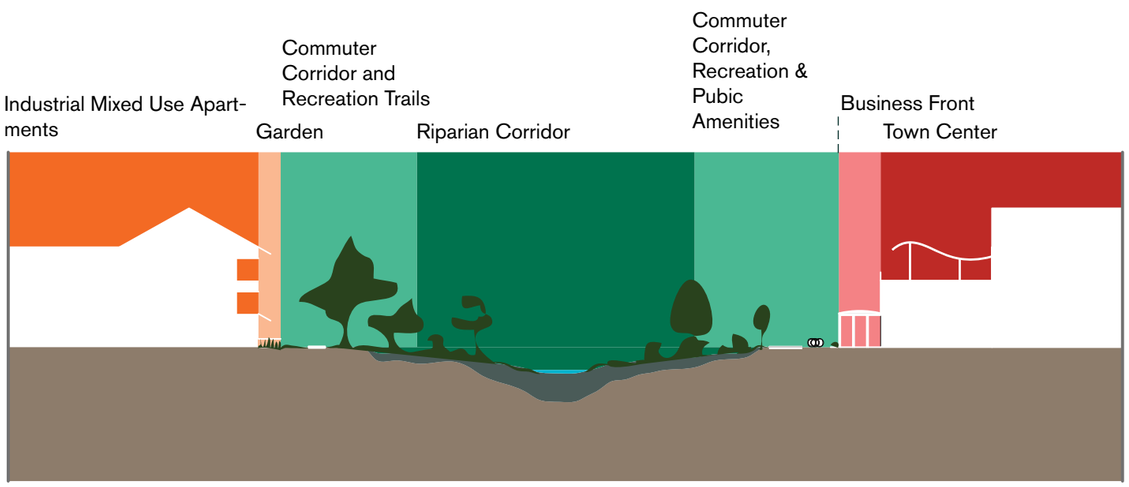
To learn more about how the open space designations have been determined, see the natural systems section.



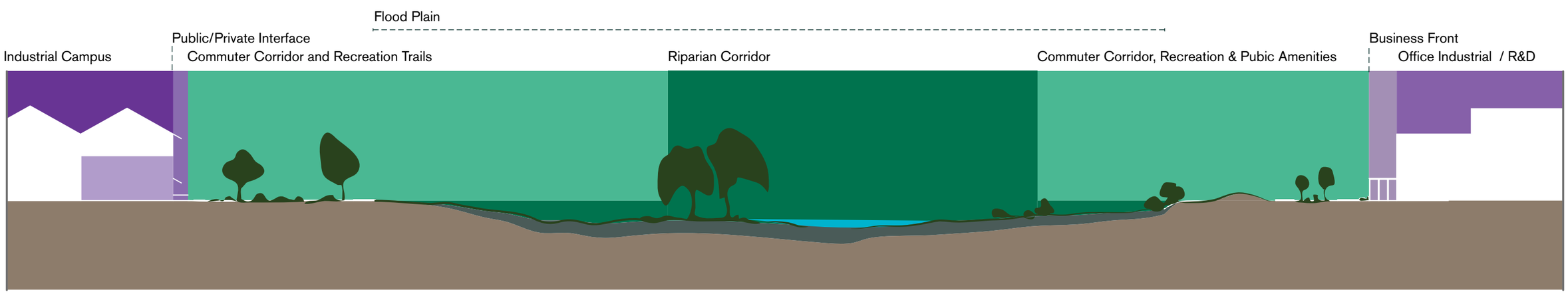
Urban Recreation District

The Urban Recreation District outlines the headwater catchment channels across the plan area. It is a core component of the walkable community design, and contributes many features to the plan in character and function. Long winding natural corridors are a defining and popular feature of the West Placer area and give a feel of the countryside throughout the seasons amidst developments. As part natural area and part park, the corridor edges incorporate a variety of public amenities, such as workout equipment, nature education signage, and gathering spaces. Building edges along the corridor will have front-facing facade designs, to create a riverfront feel, with shops, restaurants, garden apartments and business entrances opening onto this pedestrian thoroughfare. It is meant to be a daily part of life and work in the community, the long green-ways connecting various zonings with recreational and commuter walking and bike paths.

Conceptual Cross Section of Urban Recreation District for Level 1 Streams



Conceptual Cross Section of Urban Recreation District with Wide Setback



Example of amenities along the Urban Recreation district include bike and pedestrian paths, cafes, sitting spots, and plazas.

Urban Recreation preserves the natural hydrology of the site and maintains the headwater flow for two streams. It has little habitat conservation value because reserves of such area and perimeter-area ratio are unlikely to protect species from edge impacts. Instead, the Urban Recreation becomes the greenway through community and an enhanced riparian corridor for native birds that are compatible with humans.

Zoning Place Types Table

This table indicates the buildings mix in each district. Comparing across columns reveals similar and unique uses.

	Place Type	Secondary Mixed Use	District: Innovation Campus	District: Eco-industrial	District: Agriculture	Attraction	Conservation	Innovation and Mixed Use: HDIMU	Innovation and Mixed Use: Office and R&D	Innovation and Mixed Use: Office Industrial	Innovation and Mixed Use: Town Center	University
Office	low-rise office							x			x	
	office park high							x		x		
	office park low								x			
	low-rise mixed use	COM/RES									x	
Industrial	industiral high		x					x	x	x		
	office industrial											
	industrial low		x									
	SIA ind eco			x								
	warehouse high		x					x	x	x		
	warehouse low		x					x	x	x		
Commercial	low intensity commerical strip								x	x		
	large format standalone commercial		x									
	urban convention center					x						
	hotel high					x						
	hotel low					x					x	
	commercial recreation facility					x						
	main street commerical / mu low	RES									x	
	main street commercial / mu high	RES									x	
	medium intensity strip commerical					x			x	x		
	town mixed use	OFF/RES										
Residential	mid-rise residential							x				x
	garden appartment											
	Small lot SF detached											
	standard podium miltifamily	COM						x	x		x	x
	suburban multifamily							x				
	urban podium multifamily	COM									x	x
	urban town home/ live-work	OFF									x	
	suburban townhome							x			x	
Other	parking structure								x			x
	campus/college high	COM/OFF										x
	hospital										x	x
	urban elementary school										x	
	urban high school										x	
	urban middle school										x	
Open Space	agriculture		x		x							
	urban recreatoin								x		x	
	conservation						x					

Zoning Densities

	District				Innovation and Mixed Use					
	Innovation Campus	Eco-industrial	Agriculture	Attraction	Conservation	HDIMU	Office and R&D	Office Industrial	Town Center	University
Employment Breakdown										
Employment density gross emp/ac	22.14	41.2	0	149.63	0	36.8	43.02	22.97	71.31	24.95
retail	9.5%	0.0%	0.0%	81.8%	0.0%	15.5%	6.1%	5.7%	30.8%	29.4%
industrial	88.0%	89.3%	0.0%	0.0%	0.0%	16.7%	14.6%	54.2%	0.0%	0.0%
office	2.6%	10.7%	0.0%	1.0%	0.0%	67.8%	79.3%	40.1%	62.6%	10.5%
public	0.0%	0.0%	0.0%	18.2%	0.0%	0.0%	0.0%	0.0%	6.5%	60.1%
Residential Breakdown										
Residential Density (gross) du/ac	0	0	0	0	0	59	0	0	24	77
Population Density pop/ac	0	0	0	0	0	100	0	0	42	131
Building Scale										
FAR	0.52	0.75	0	2	0.01	2.33	0.53	0.5	1.65	2.4
Average Number of Floors	1.5	8*	0	8.5	2	4.7	2.4		3.4	5.2

*height of equiptment allowed

The Zoning Densities Table breaks down what each zone contributes to employment and residencies. The higher the density, the more the jobs or residents the zone supports per acre.

Primary wage earner jobs are most likely to be office and industrial jobs. Minimum wage jobs typically include retail, hospitality, and industrial assembly.

Residential exists in three zones, the High Density Industrial Mixed Use, the Town Center, and the University District.

The Innovation and Mixed Use District has building heights of two to five stores. To its east, the Innovation Campus District has an average height of 1.5 stories. The tallest buildings are in the Attraction District, with 8.5 stories, primarily for hotels. The Eco-Industrial district also has a high number of floors, per the SAP designation.

Exclusive Comparison

Sunset Area Only

The following analysis includes only the Sunset Area and no surrounding context. It evaluates impacts at the zoning level only, excluding CISGP reduction measures such as public transit and walking trails that would reduce impacts further. Because of this it is a fair comparison with the SAP and also represents a worst case scenario. The properties of the zoning descriptions from the December 2018 SAP Draft and December 2018 PR Draft form the basis of the SAP scenario evaluation.

Scope of Analysis Map

Exclusive Comparison: Emissions Report

The Emissions Report calculates emissions from building operations, passenger vehicle transportation and water use. It uses an average from the energy mix of the California grid to determine the emission associated with electricity use, as reported by the U.S. Environmental Protection Agency (EPA) Emissions & Generation Resource Integrated Database (eGRID). In the calculation of the energy use and GHG emissions from water use, it includes the conveyance, treatment, and distribution of water and wastewater. The energy associated with the end uses of water, such as the cost of heating water, are rather included in building energy use.

In addition, the Emissions module currently applies a single water energy use rate to both indoor and outdoor water uses. The Total Building Energy GHG Emissions estimates displays the total greenhouse gas emissions due to building energy. The Total Water Energy GHG Emissions estimates the emissions produced by the energy used for all stages of water use except for end use. It includes source, conveyance, treatment, distribution, and wastewater treatment. This includes residential and commercial indoor and outdoor water use purposes. The GHG Emissions Per Household chart displays the GHG emissions attributed to the energy consumed per household.

The CISGP strives to decrease emissions per capita rather than displace the effect. As a result, the total emissions in the SA are slightly higher with the CISGP than the SAP, but equate to a reduction of 5.9 million metric tons annually for the county, the equivalent of taking 1.3 million cars off the road every year.

	Existing Conditions	CISGP	SAP	
Total GHG Emissions by Source, metric tons / year				
Annual passenger vehicle emissions without public transit)	5,311	414,922	340,399	
Annual building energy emissions	74,406	1,753,708	1,686,302	
Annual water-energy emissions	328	7,462	9,235	
Total	80,045	2,176,091	2,035,936	
GHG Emissions Per Household by Source, metric tons / household / year				
Annual passenger vehicle emissions per household (without public transit)	758.69	8.90	40.46	**-79%**
Annual building energy emissions per household	11.88	5.13	8.35	**-39%**
Annual water-energy emissions per household	20.83	0.04	0.13	**-66%**
Total	791.40	14.07	48.94	
Pollutant Emissions by Pollutant Type, metric tons / year				
Annual NOx emissions	12.36	966	792.10	
Annual PM10 emissions	0.28	22	17.83	
Annual PM2.5 emissions	0.25	19	15.81	
Annual SOx emissions	0.12	9	7.64	
Annual CO emissions	99.95	7,809	6,406.11	
Annual ROG/VOC emissions	9.40	734	602.55	
Total	122.35	9,559	7,842.04	

Exclusive Comparison: Land Consumption Report

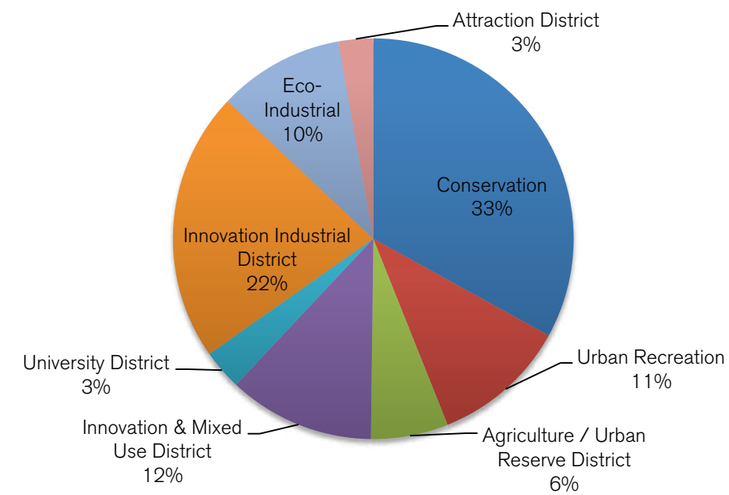
CISGP	Acres	Converted from Ag	Converted from Greenfield	Urban Infill & Redevelopment
Conservation	2,564	220	102	0
Urban Recreation	849	704	130	15
Agriculture / Urban Reserve District	484	0	0	0
Innovation & Mixed Use District	918	0	469	449
University District	252	0	137	115
Innovation Industrial District	1,691	1,058	0	633
Eco-Industrial	790	305	155	330
Attraction District	217	0	49	168
Totals				
Development Area	3,868	1,363	811	1,694
Reserved Development Area	494	0	0	0
Natural Area	3,413	924	232	15
Total per Conversion Type		2,287	1,044	1,709

SAP				
General Commercial	34	0	27	7
Entertainment Mixed-Use	517	265	33	218
Business Park	147	0	137	10
Innovation Center	1,245	1,204	0	41
Eco-Industrial	927	613	0	314
Light Industrial	750	0	214	536
Public Facility	6	n/a	n/a	n/a
Preserve/Mitigation Reserve	1,943	0	0	12
Urban Reserve	320	0	0	0
Totals				
Development Area	3,627	2,082	197	1,127
Reserved Development Area	320	0	0	0
Natural Area	1,943	0	0	12
Total per Conversion Type		2,082	197	1,139

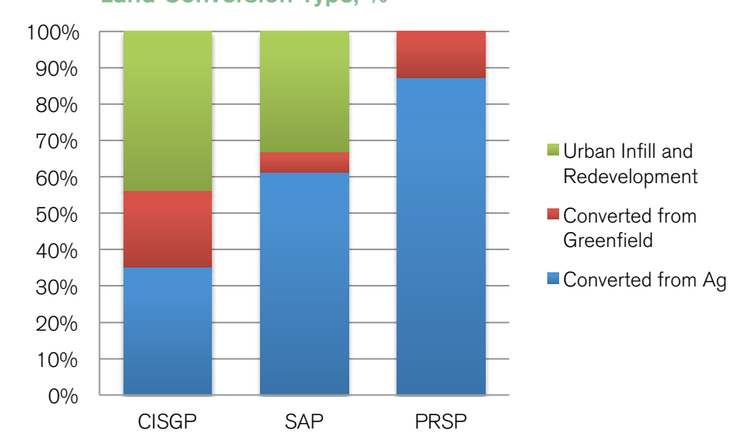
PRSP				
Residential	801	713	88	0
General Commercial	23	23	0	0
Commercial Mixed Use	49	49	0	0
Campus Business Park	335	229	106	0
University	301	301	0	0
Public Facilities	33	33	0	0
Parks + Open Space	335	310	24	0
Totals				
Development Area	1,542	1,347	195	0
Reserved Development Area	0	0	0	0
Natural Area	335	310	24	0
Total per Conversion Type		1,658	219	0

	Converted from Ag from Ag	Converted from Greenfield Greenfield	Urban Infill & Redevelopment t
CISGP	35%	21%	44%
SAP	57%	5%	31%
PRSP	87%	13%	0%

CISGP Land Use, acres

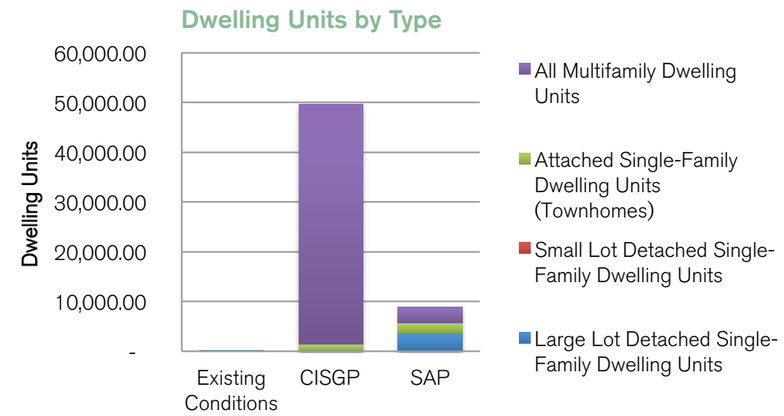


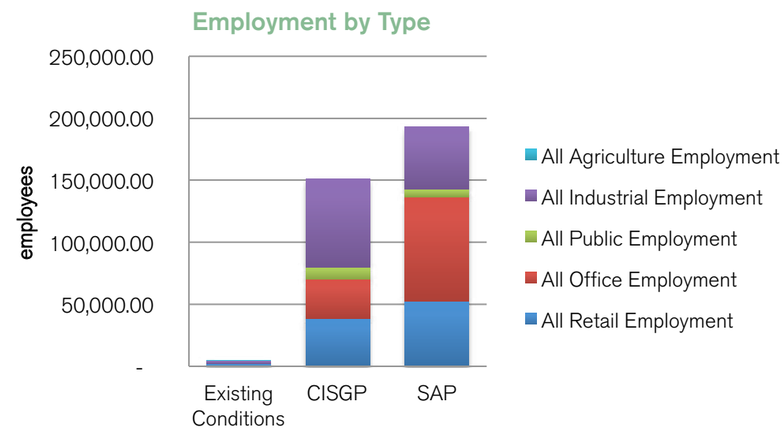
Land Conversion Type, %



Exclusive Comparison: Summary Stats Report

	Existing Conditions	CISGP	SAP
Population	19.00	84,080.49	17,367.32
Dwelling Units	9.00	49,613.62	8,950.27
Households (Occupied Dwelling Units)	7.00	46,636.80	8,412.80
Employment	4,480.00	151,462.63	192,879.40
Job-Housing Balance			
Jobs per Single Dwelling Unit	497.78	3.05	21.55
Dwelling Units by Type, dwelling units			
Large Lot Detached Single-Family Dwelling Units	9.00	0.06	3,578.03
Small Lot Detached Single-Family Dwelling Units	-	-	2.93
Attached Single-Family Dwelling Units (Townhomes)	-	1,427.85	2,145.29
All Multifamily Dwelling Units	-	48,185.71	3,224.02
Total	9.00	49,613.62	8,950.27
Employment by Type, employees			
All Retail Employment	1,910.00	38,458.52	52,681.68
All Office Employment	505.00	31,646.43	84,035.42
All Public Employment	64.00	9,724.01	5,934.90
All Industrial Employment	1,993.00	71,633.68	50,227.41
All Agriculture Employment	8.00	-	-
Total	4,480.00	151,462.63	192,879.40
Building Square Feet - Residential, (millions)			
Small Lot Detached Single-Family Building Area	0.00	0.00	0.01
Large Lot Detached Single-Family Building Area	0.01	0.00	12.43
Attached Single-Family Building Area	0.00	2.31	3.55
Multifamily Building Area	0.00	40.88	3.30
Total	0.01	43.20	19.29
Building Square Feet - Retail,, (millions)			
Retail Services Building Area	0.34	3.47	5.79
Restaurants Building Area	0.02	2.38	2.49
Arts & Entertainment Building Area	1.98	2.92	2.41
Accommodation Building Area	0.06	10.66	15.02
Other Retail Building Area	0.12	3.14	4.74
Total	2.51	22.56	30.46





	Existing Conditions	CISGP	SAP
Building Square Feet - Office, (millions)			
Office Services Building Area	0.36	8.29	18.75
Medical Services Area	0.02	1.00	7.29
Total	0.37	9.29	26.05
Building Square Feet - Public Services, (millions)			
Education Building Area	0.30	2.48	3.24
Total	0.30	0.00	3.24
Building Square Feet - Industrial, (millions)			
Transportation/Warehouses Building Area	0.32	36.76	20.16

Exclusive Comparison: Accessibility - Walk Report

The Walk Report evaluates the land use distribution for its potential as walkable community. The given time frames are the durations people are willing to walk to get to various amenities. Walk times greater than these are likely to discourage walking and encourage car dependence. Distances are measured as the crow flies and thus percentages indicate the portion of the population that has the potential for these walk times. Actual percentages are expected to be lower as a result of walking path layout.

	Existing Conditions	CISGP	SAP
Parks			
Percent of Residents within 10 min.	0%	100%	72%
Schools			
Percent of Residents within 15 min	0%	89%	17%
Hospitals			
Percent of Residents within 15 min.	0%	89%	23%
Transit Stops			
Percent of Residents within 5 min.	0%	n/a	89%
Percent of Residents living in minimum required density of 9 du/ac to support Bus Rapid Transit	0%	100%	12%
Percent of Non-Residential Uses with the minimum FAR of 1.0 required to support Bus Rapid Transit	0	45%	0%
Restaurants			
Percent of Residents within 10 min.	0%	100%	30%
Work Commute			
Percent of Residents within 15 minute walking distance of a job site	n/a	100%	9%
Percent of Job sites within 15 minute walking distance for a residence	n/a	61%	38%

Exclusive Comparison: Household Cost Report

The Household Cost Report estimates annual household costs associated with passenger vehicle transportation, residential energy use, and water use. Analyzed together, these represent dimensions of housing affordability as it relates to location efficiency and housing type. The same energy efficiencies have been applied to all scenarios. The transportation costs *assume no public transit* to reflect the cost savings inherent in the zoning layout alone.

	Existing Conditions	CISGP	SAP
Total Residential Costs, Dollars / year (millions)			
Annual residential water costs	0.78	10.91	5.71
Annual residential building energy costs	0.02	51.48	15.11
Annual passenger vehicle costs	0.17	311.79	82.25
Average Household Costs, Dollars / year			
Annual residential building energy costs per HH	2,552.27	1,103.75	1,795.60
Annual passenger vehicle costs per HH	24,783.94	6,685.58	9,776.56
Total	27,336.21	7,789.34	11,572.16
Average Household Transportation Costs by Type, Dollars / year			
Auto fuel costs per HH	4,966.61	1,339.77	1,959.19
Ownership and maintenance costs per HH	19,817.33	5,345.82	7,817.38
Total	24,783.94	6,685.58	9,776.56

Exclusive Comparison: Water Use Report

The Water Use Report calculates residential and commercial water demands for all buildings in each scenario. Water demand profiles vary by scenarios vary due to their building program, the location of new growth, and policy-based assumptions about improvements in water efficiency over time. The costs and GHG emissions associated with water demand, in turn, vary according to policy-based price and emissions rate assumptions.

Indoor and outdoor water use for residential and commercial buildings are modeled separately. Indoor water use is estimated on a per-capita and per-employee basis, while outdoor water use is estimated by irrigated area at the parcel scale. For both, baseline rates are adjusted to account for efficiency and conservation policies into the future.

	Existing Conditions	CISGP	SAP
Total Water Use, gallons / year (millions)			
Total Residential Indoor Water Use	0.38	1381.02	311.31
Total Residential Outdoor Water Use	100.22	28.07	426.08
Total Commercial Indoor Water Use	119.56	3275.32	4657.83
Total Commercial Outdoor Water Use	6.11	203.43	977.28
Total	226.27	4887.85	6372.51
Total Indoor Use, gallons / year (millions)			
Total Residential Indoor Water Use	0.38	1381.02	311.31
Total Commercial Indoor Water Use	119.56	3275.32	4657.83
Total	119.94	4656.35	4969.14
Total Outdoor Use, gallons / year (millions)			
Total Residential Outdoor Water Use	100.22	28.07	426.08
Total Commercial Outdoor Water Use	6.11	203.43	977.28
Total	106.33	231.50	1403.37
Total Residential Use, gallons / year (millions)			
Total Residential Indoor Water Use	0.38	1381.02	311.31
Total Residential Outdoor Water Use	100.22	28.07	426.08
Total	100.61	1409.09	737.39
Total Commercial Use, gallons / year (millions)			
Total Commercial Indoor Water Use	119.56	3275.32	4657.83
Total Commercial Outdoor Water Use	6.11	203.43	977.28
Total	125.67	3478.75	5635.12
Per Capita Residential Use, gallons / person / year			
Residential Water Use per Capita	5,295,040	16,759	42,459
Per Household Residential Use, gallons / household / year			
Residential Indoor Water Use per Household	54,489	29,612	37,005
Residential Outdoor Water Use per Household	14,317,761	602	50,647
Total	14,372,251	30,214	87,651

Exclusive Comparison: Energy Use Report

The Energy Use Report totals building energy use for all new and existing residential and commercial buildings. Building program, the location of new growth, and policy-based assumptions for improvements in energy efficiency all effect energy consumption. Costs and GHG emissions associated with energy use, in turn, vary according to policy-based price and emissions rate assumptions.

This report determines energy use with three types of variables: building characteristics, climate zone, and efficiency factors. Baseline per-residential unit or per-commercial square foot factors are derived from survey data by building characteristics and climate zone. Reductions are then applied to the resulting baseline estimates to reflect the implementation of energy efficiency and conservation policies into the future across all scenarios.

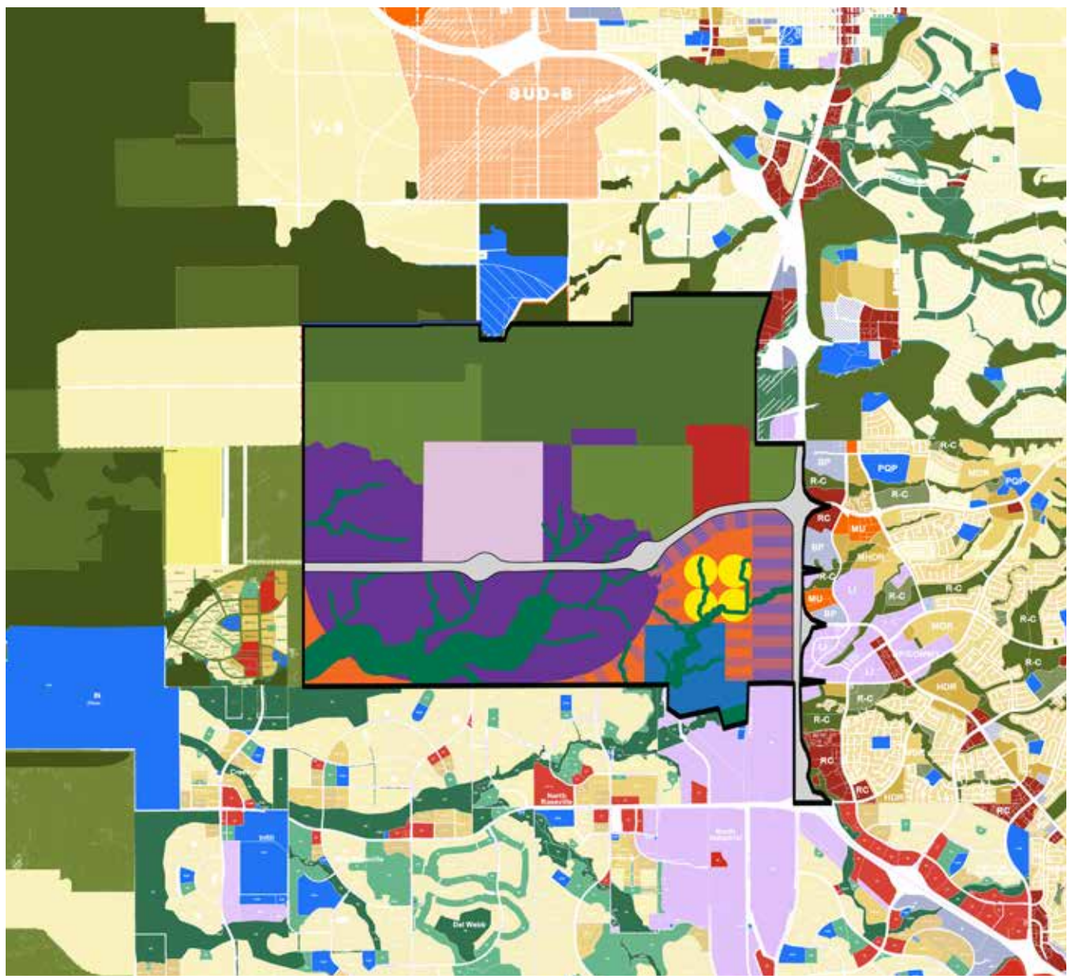
	Existing Conditions	CISGP	SAP
Total Annual Electricity Use, Kilowatt hours / year (millions)			
Residential Electricity Use	0.07	217.95	64.01
Commercial Electricity Use	85.99	1575.10	1531.93
Total	86.07	1793.05	1595.93
Total Annual Gas Use, Therms / year (millions)			
Residential Gas Use	0.01	14.78	4.33
Commercial Gas Use	2.08	66.53	91.41
Total	2.08	81.31	95.74
Per Household Energy Use, Kilowatt hours / household / year			
Residential Energy Use per Household	32,748	13,959	22,691
Total Household Energy Costs, Dollars / year (millions)			
Annual residential building energy costs	0.02	51.48	15.11
Total Building Energy GHG Emissions, metric tons / year (millions)			
Annual building energy emissions	0.07	1.75	1.69

Comparison in Context

Sunset and Surrounds

The following analysis includes a two mile area around the perimeter of the Sunset Area in order to identify effects on the greater community. In West Placer the two mile radius is equal to a 15 minute drive or 30 minute bike ride. The following analysis also utilizes the Future Vision of the Tomorrow Map, named the Regional Vision in the analysis, from the Introduction section as the base line. SAP refers to the combined December 2018 SAP Draft and the December 2018 PR Draft. The Nature Conservancy's evaluation modules have been used for the conservation analysis.

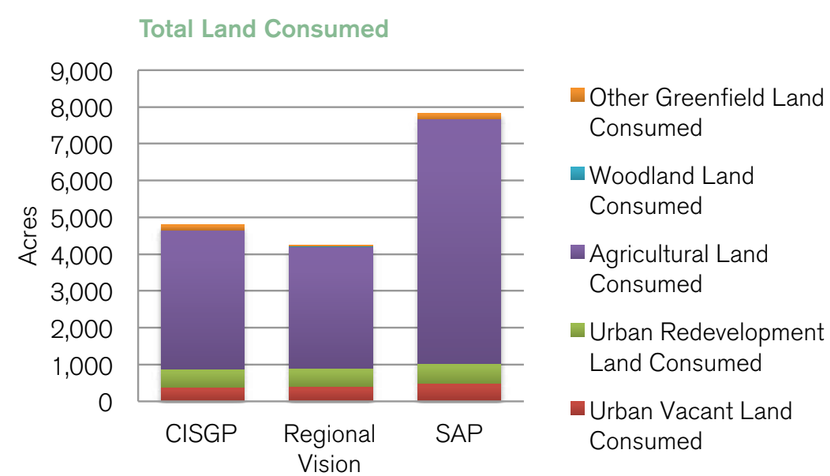
Scope of Analysis Map



Comparison in Context: Land Consumption Report

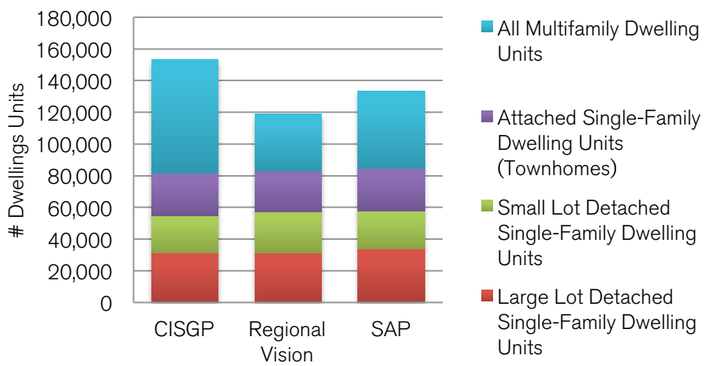
The land consumption report analyzes three scenarios within the Sunset Area.

	CISGP	Regional Vision	SAP
Total Land Consumed, acres			
Urban Vacant Land Consumed	390	411	488
Urban Redevelopment Land Consumed	488	485	547
Agricultural Land Consumed	3,781	3,317	6,632
Woodland Land Consumed	1	1	1
Other Greenfield Land Consumed	139	36	162
Total	4,799	4,250	7,830

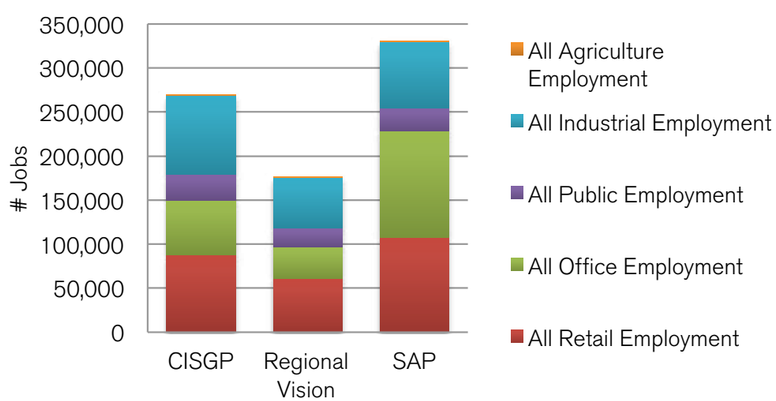


Comparison in Context: Summary Stats Report

Dwelling Units by Type



Employment by Type

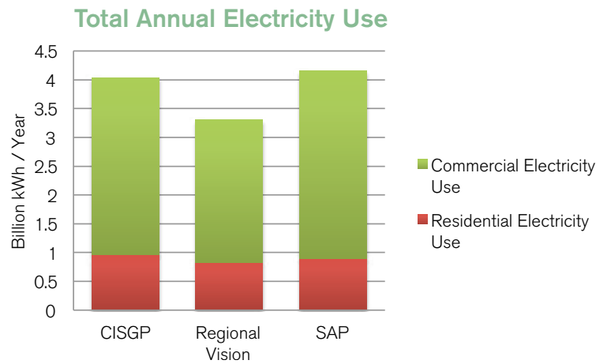


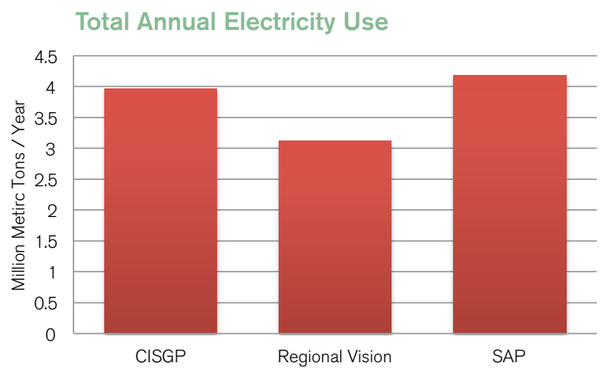
	CISGP	Regional Vision	SAP
Population, people	297,993	240,455	265,864
Dwelling Units	153,422	118,845	133,503
Households (Occupied Dwelling Units)	144,017	111,516	125,294
Employment, employees	268,968	175,536	329,695
Dwelling Units by Type, dwelling units			
Large Lot Detached Single-Family Dwelling Units	31,111	31,418	33,823
Small Lot Detached Single-Family Dwelling Units	23,681	25,964	23,684
Attached Single-Family Dwelling Units (Townhomes)	26,662	25,919	27,170
All Multifamily Dwelling Units	71,968	35,544	48,826
Total	153,422	118,845	133,503
Employment by Type, employees			
All Retail Employment	87,582	61,117	107,492
All Office Employment	62,223	36,064	120,846
All Public Employment	29,832	20,768	25,963
All Industrial Employment	89,329	57,577	75,392
All Agriculture Employment	2	10	2
Total	268,968	175,536	329,695
Building Square Feet - Residential, square feet			
Small Lot Detached Single-Family Building Area	50,359,817	55,738,248	50,365,961
Large Lot Detached Single-Family Building Area	91,043,334	92,197,006	100,446,046
Attached Single-Family Building Area	41,250,530	40,037,399	42,141,440
Multifamily Building Area	60,938,803	29,766,364	41,244,826
Total	243,592,484	217,739,018	234,198,274
Building Square Feet - Retail, square feet			
Retail Services Building Area	19,384,192	18,730,979	22,409,531
Restaurants Building Area	7,648,671	6,393,287	8,478,888
Arts & Entertainment Building Area	6,094,726	6,599,077	6,313,594
Accommodation Building Area	13,684,750	3,343,446	18,086,416
Other Retail Building Area	11,380,631	9,535,536	13,589,239
Total	58,192,971	44,602,325	68,877,669
Building Square Feet - Office, square feet			
Office Services Building Area	17,495,891	10,697,544	29,511,293
Medical Services Building Area	2,183,259	1,316,097	8,720,006
Total	19,679,150	12,013,641	38,231,299
Building Square Feet - Education, square feet	19,735,422	17,099,814	16,144,038
Building Square Feet - Industrial, square feet			
Transportation/Warehouses Building Area	48,542,304	46,169,951	36,633,680
Wholesale Building Area	24,168,468	17,408,886	16,008,677
Total	72,710,772	63,578,837	52,642,357

Comparison in Context: Energy Use Report

The Energy Use Report models building energy use for all new and existing residential and commercial buildings. Scenarios vary in their building energy use profiles due to their building program, the location of new growth, and policy-based assumptions for improvements in energy efficiency. Costs and GHG emissions associated with energy use, in turn, vary according to policy-based price and emissions rate assumptions.

Within the model, energy use is determined by three types of variables: building characteristics, climate zone, and efficiency factors. Building characteristics and climate zone determine what baseline per-residential unit or per-commercial square foot factors (derived from survey data) are used to calculate energy use. Reductions are then applied to the resulting baseline estimates to reflect the implementation of energy efficiency and conservation policies into the future.

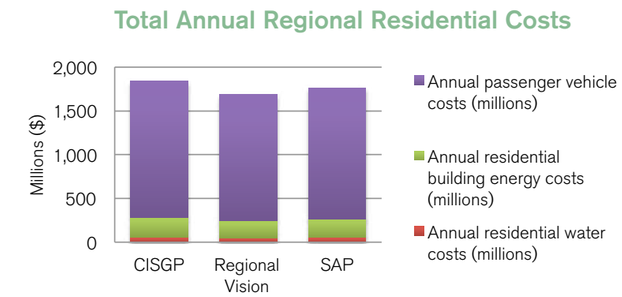


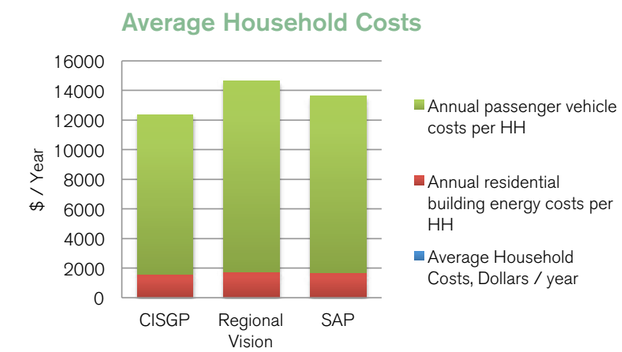


	CISGP	Regional Vision	SAP
Total Annual Electricity Use, Kilowatt hours / year (billions)			
Residential Electricity Use	0.97	0.82	0.90
Commercial Electricity Use	3.07	2.48	3.25
Total	4.04	3.30	4.15
Total Annual Gas Use, Therms / year (millions)			
Residential Gas Use	66.69	57.12	61.98
Commercial Gas Use	119.21	72.52	150.02
Total	185.89	129.64	212.00
Per Household Energy Use, Kilowatt hours / household / year			
Residential Energy Use per Household	20,286	22,403	21,662
Total Building Energy GHG Emissions, metric tons / year (millions)			
Annual building energy emissions	3.97	3.12	4.19

Comparison in Context: Household Cost Report

The Household Cost Report evaluates how much residents will pay on average for basic services. The results show that transportation is the largest expense providing cost saving measures to transit would benefit residents the most.





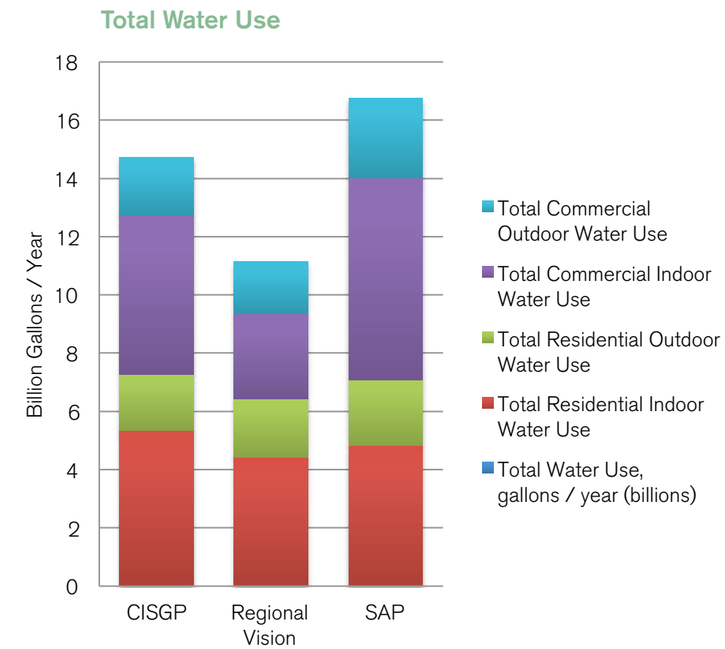
	CISGP	Regional Vision	SAP
Total Annual Regional Residential Costs			
Annual residential water costs (millions)	56.35	49.75	54.92
Annual residential building energy costs (millions)	229.67	196.03	213.25
Annual passenger vehicle costs (millions)	1,553.34	1,438.86	1,496.52
Total	1,839.36	1,684.63	1,764.69
Average Household Costs, Dollars / year			
Annual residential building energy costs per HH	1,595	1,758	1,702
Annual passenger vehicle costs per HH	10,786	12,903	11,944
Total	12,381	14,661	13,646
Average Household Transportation Costs by Type, Dollars / year			
Auto fuel costs per HH	2,161	2,586	2,394
Ownership and maintenance costs per HH	8,624	10,317	9,551
Total	10,786	12,903	11,944

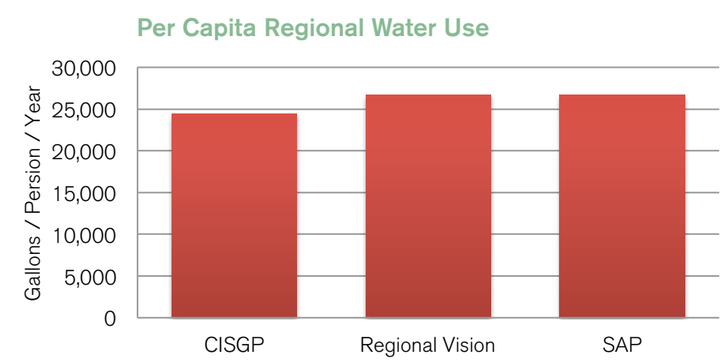
Comparison in Context: Water Use Report

The Water Use Report models residential and commercial water demands for all buildings in the base year and for future scenarios. Scenarios vary in their water demand profiles due to their building program, the location of new growth, and policy-based assumptions about improvements in water efficiency over time. The costs and GHG (Greenhouse Gas) emissions associated with water demand, in turn, vary according to policy-based price and emissions rate assumptions.

Indoor and outdoor water use for residential and commercial buildings are modeled separately. Indoor water use is estimated on a per-capita and per-employee basis, while outdoor water use is estimated by irrigated area at the parcel scale. Indoor and outdoor water use are first calculated according to baseline rates and then adjusted to account for the application of efficiency and conservation policies into the future.

	CISGP	Regional Vision	SAP
Total Water Use, gallons / year (billions)			
Total Residential Indoor Water Use	5.35	4.42	4.84
Total Residential Outdoor Water Use	1.93	2.00	2.25
Total Commercial Indoor Water Use	5.47	2.93	6.93
Total Commercial Outdoor Water Use	1.97	1.79	2.73
Total	14.72	11.15	16.75
Total Indoor Use, gallons / year (billions)			
Total Residential Indoor Water Use	5.35	4.42	4.84
Total Commercial Indoor Water Use	5.47	2.93	6.93
Total	10.82	7.36	11.77
Total Outdoor Use, gallons / year (billions)			
Total Residential Outdoor Water Use	1.93	2.00	2.25
Total Commercial Outdoor Water Use	1.97	1.79	2.73
Total	3.90	3.79	4.98
Total Residential Use, gallons / year (billions)			
Total Residential Indoor Water Use	5.35	4.42	4.84
Total Residential Outdoor Water Use	1.93	2.00	2.25
Total	7.28	6.42	7.09
Total Commercial Use, gallons / year (billions)			
Total Commercial Indoor Water Use	5.47	2.93	6.93
Total Commercial Outdoor Water Use	1.97	1.79	2.73
Total	7.45	4.72	9.65
Per Capita Residential Use, gallons / person / year			
Residential Water Use per Capita	24,420	26,718	26,678
Per Household Residential Use, gallons / household / year			
Residential Indoor Water Use per Household	37,139	39,657	38,635
Residential Outdoor Water Use per Household	13,390	17,953	17,974
Total	50,529	57,610	56,609



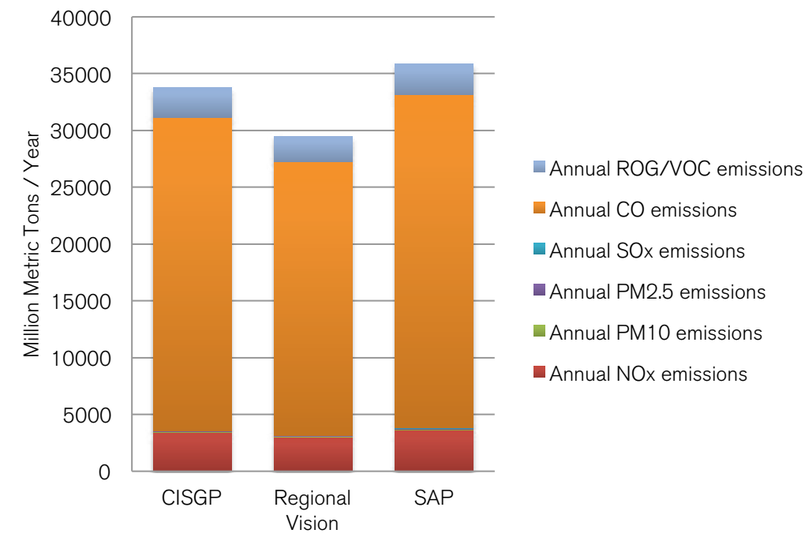


Comparison in Context: Transportation Report

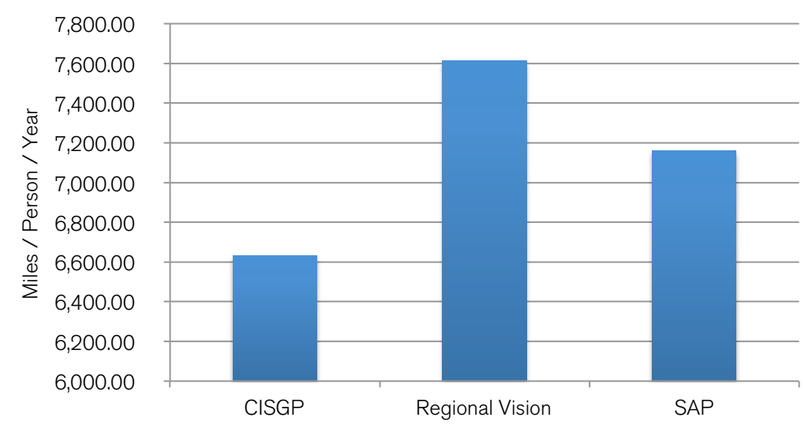
The Transportation Report incorporates a comprehensive "sketch" travel model that interacts with regional travel network data to produce estimates of vehicle miles traveled (VMT) for land use and transportation scenarios. In turn, the VMT estimates are used to calculate transportation-related costs, greenhouse gas (GHG) emissions, and pollutant emissions. It assumes that public transit remains the same and no new public transit is added to the Sunset Area. In this way it identifies the worst case scenario. *Excludes CISGP Public Transit.*

	CISGP	Regional Vision	SAP
Total Annual VMT, miles / year (billions)	2.60	2.30	2.70
Average Annual VMT per Capita	6,631.11	7,612.63	7,161.21
Average Annual VMT per Household	13,718.27	16,413.08	15,193.82
Total Transport Pollutant Emissions, metric tons / year			
Annual NOx emissions	3,408.82	2,978.54	3,623.96
Annual PM10 emissions	76.73	67.05	81.58
Annual PM2.5 emissions	68.04	59.45	72.33
Annual SOx emissions	32.89	28.74	34.96
Annual CO emissions	27,568.81	24,088.95	29,308.74
Annual ROG/VOC emissions	2,593.09	2,265.78	2,756.75
Total	33,748.39	29,488.51	35,878.32
Total Transport GHG Emissions, metric tons / year (millions)			
Annual passenger vehicle emissions	1.46	1.28	1.56
Total Transportation Costs, Dollars / year (billions)			
Annual passenger vehicle costs	1.55	1.44	1.50
Average Household Transportation Costs by Type, Dollars / year			
Auto fuel costs per HH	2,161.45	2,585.66	2,393.55
Ownership and maintenance costs per HH	8,624.41	10,317.07	9,550.54
Total	10,785.85	12,902.73	11,944.10

Total Transportation Pollutant Emissions



Average Annual VMT per Capita



Comparison in Context: Emissions Report

The Emissions Report accounts for the Greenhouse gas (GHG) emissions from transport, water, and energy utilities.

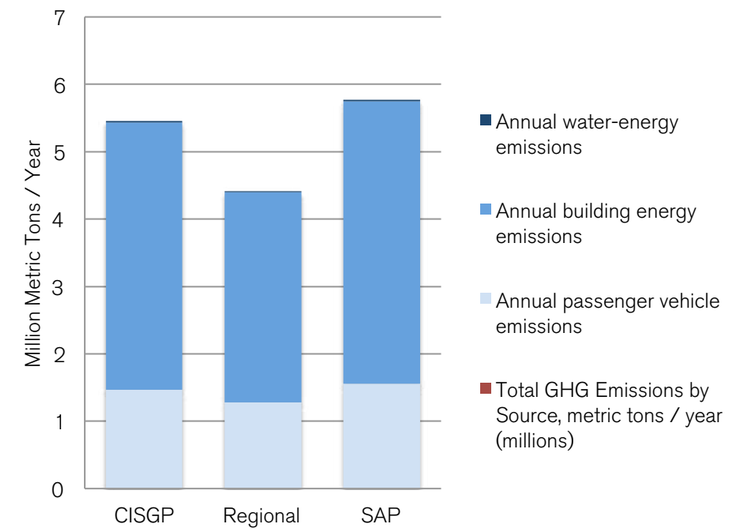
GHG emissions from transportation include carbon dioxide equivalent (CO2e) emissions from both upstream and downstream components of the energy life cycle. Upstream emissions (also known as well-to-tank, or WTT emissions) include those associated with the production of energy, from material extraction to processing and transport. For electricity, this includes power plant emissions. Downstream emissions (tank-to-wheel, or TTW emissions) are those that occur upon energy use. For liquid fuels, this includes the emissions that occur upon fuel combustion. The emissions associated with electric and other alternative or "zero emission" vehicle use are primarily upstream.

Greenhouse gas (GHG) emissions associated with building energy use are determined from California average GHG emission rates for electricity generation and natural gas combustion.

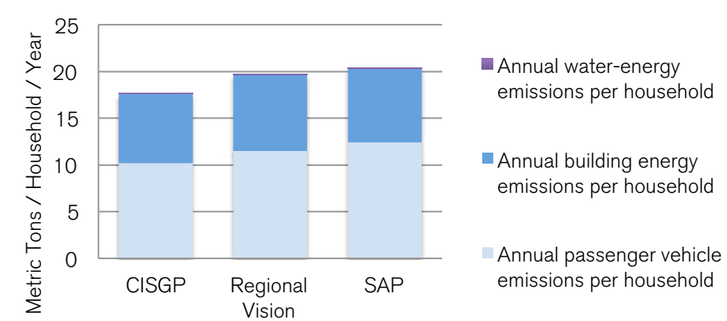
Water-related energy use and greenhouse gas (GHG) emissions refer to those resulting from two main water-related energy use categories. System Uses include the transport and treatment of residential water consumed. End Uses include all uses of water that occur within homes (e.g., water heating).
The Emissions Report calculates energy use and emissions for water system uses only, since these can be considered as a discrete component of a GHG emissions inventory (along with transportation-related and building energy emissions). Water end-use emissions are counted as part of building energy emissions.

	CISGP	Regional Vision	SAP
Total GHG Emissions by Source, metric tons / year (millions)			
Annual passenger vehicle emissions	1.46	1.28	1.56
Annual building energy emissions	3.97	3.12	4.19
Annual water-energy emissions	0.02	0.02	0.02
Total	5.45	4.42	5.77
GHG Emissions Per Household by Source, metric tons / household / year			
Annual passenger vehicle emissions per household	10.17	11.48	12.43
Annual building energy emissions per household	7.42	8.18	7.92
Annual water-energy emissions per household	0.07	0.08	0.08
Total	17.67	19.74	20.43
Transportation Pollutant Emissions by Pollutant Type, metric tons / year			
Annual NOx emissions	3,409	2,979	3,624
Annual PM10 emissions	77	67	82
Annual PM2.5 emissions	68	59	72
Annual SOx emissions	33	29	35
Annual CO emissions	27,569	24,089	29,309
Annual ROG/VOC emissions	2,593	2,266	2,757
Total	33,748	29,489	35,878

Total GHG Emissions by Source



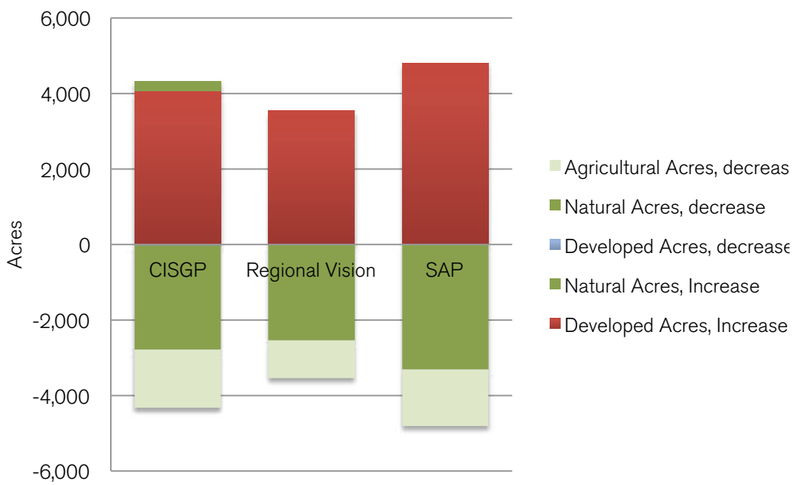
Total GHG Emissions per Household by Source



Comparison in Context: Conservation - General Report

The General Conservation Report gives a high-level understanding of the land cover changes.

Change in Landcover Types

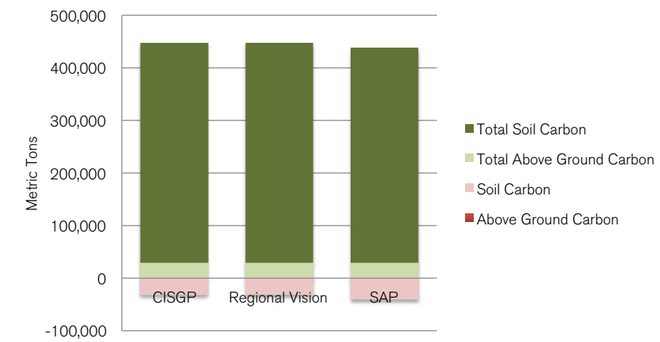


	CISGP	Regional Vision	SAP
Total Increase in Acreage of Land Cover Types, acres			
Developed Acres, Increase	4,082	3,542	4,809
Natural Acres, Increase	246	0	0
Total	4,328	3,542	4,809
Total Decrease in Acreage of Land Cover Types, acres			
Developed Acres, decrease	-22	0	0
Natural Acres, decrease	-2,755	-2,543	-3,303
Agricultural Acres, decrease	-1,551	-999	-1,506
Total	-4,328	-3,542	-4,809
Net Change in Acreage of Land Cover Types, acres			
Developed Acres	4,060	3,542	4,809
Natural Acres	-2,509	-2,543	-3,303
Agricultral Acres	-1,551	-999	-1,506

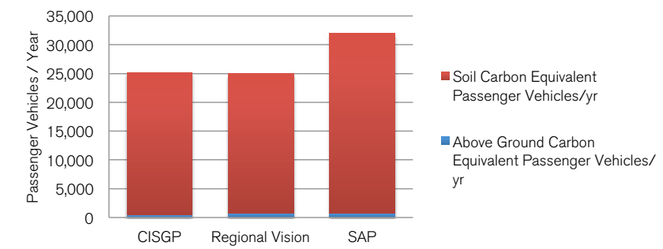
Comparison in Context: Conservation - Carbon Report

The terrestrial carbon storage analysis is focused on measurement of the stock change of carbon (C) in natural vegetation and soil. This change is associated with various land use changes and land management actions. The model is used to analyze the impact of land use change on above-ground carbon stock in grassland, shrubland, forested ecosystems, and below-ground carbon stock in all environments. Above-ground carbon includes carbon stocks in live natural vegetation; soil carbon includes carbon stocks that are up to 30 cm below the surface of the soil.

Net Change and Total Carbon Stock



Net Change in Carbon Stock Measured as Equivalent Passenger Vehicles Driven per Year



	CISGP	Regional Vision	SAP
Net Change in Carbon Stock, metric tons			
Above Ground Carbon	-654	-962	-973
Soil Carbon	-31,456	-30,809	-39,743
Total	-32,110	-31,771	-40,715
Total Carbon Stock, metric tons			
Total Above Ground Carbon	29,370	29,063	29,052
Total Soil Carbon	417,957	418,604	409,670
Total	447,328	447,666	438,722
Net Change in Carbon Stock measured as equivalent passenger vehicles driven per year, passenger vehicles/yr			
Above Ground Carbon Equivalent Passenger Vehicles/yr	514	755	763
Soil Carbon Equivalent Passenger Vehicles/yr	24,693	24,185	31,198
Total	25,207	24,941	31,962

Comparison in Context: Conservation - Water Report

The water theme is based on impacts related to four aquatic subthemes: Watershed Integrity, Water Demand (Agricultural and Urban), Groundwater Recharge Potential, and Priority Resource Areas.

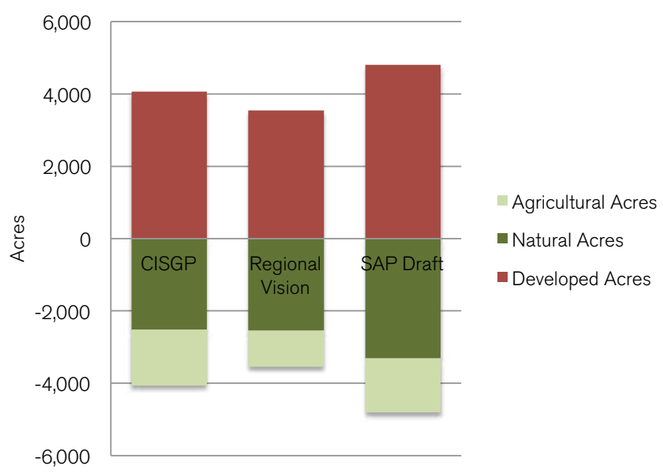
Watershed Integrity has been used by several agencies as an indicator of the "health" of water-related ecosystem processes, functions, and services. Natural land cover within the catchment supports water quality by decreasing the potential for non-point source pollution from runoff. Natural lands proximal to riparian areas are important for filtering out sediment, particles, nitrogen, phosphorous, and other pollutants. The natural land cover in riparian buffers supports natural flow, sediment, and water temperature regimes, and it maintains natural levels of nutrient and organic matter input to streams.

Water Demand (Agricultural and Urban) changes with associated land use. When agricultural lands expand into natural lands, agricultural water demand in that area may increase. Alternatively, urban lands expanding into agricultural lands can reduce agricultural water demand and increase regional urban water demand. Demand can also change when lands are converted from one agricultural type to another.

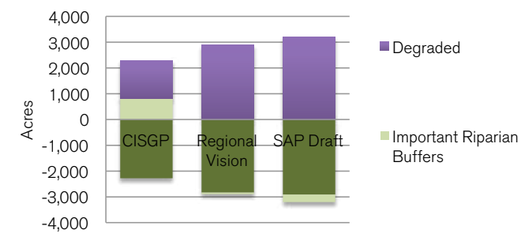
Groundwater Recharge Potential also changes when land cover changes. When natural, agricultural, or developed open space land cover becomes low-, medium-, or high-density urban, the groundwater recharge potential in that area will be reduced. Alternatively, when low-, medium-, or high-density development is returned to natural, agricultural, or developed open space, recharge potential will be restored. The model is used to measure the net change in volume of potential groundwater recharge. The model does not quantify the relationship between groundwater recharge, actual evapotranspiration (AET), and runoff; nor does it quantify the shift in that relationship that was caused by changes in land use and land management.

Priority Resource Areas include wetlands, floodplains, active river areas, and drinking water source watersheds. The change in acreage by type in water resource priority areas provides the spatial extent of land cover change in those areas.

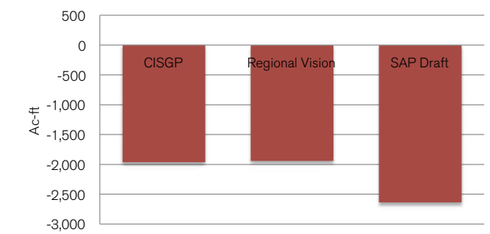
Change in Land Use within Drinking Water Source Watersheds



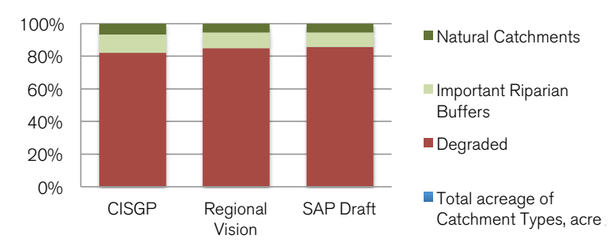
Change in Acreage by Watershed Integrity Class



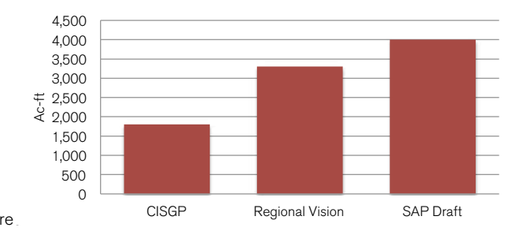
Net Change in Groundwater Recharge Potential



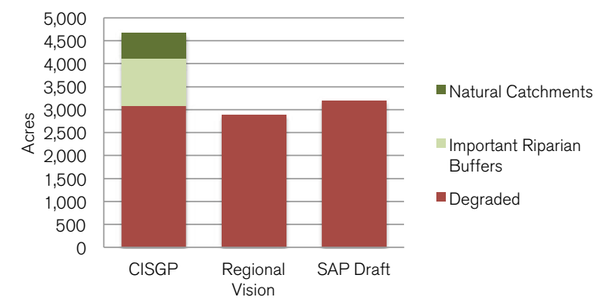
Total Acreage of Catchment Types



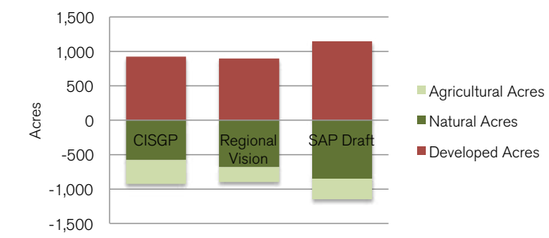
Net Change in Total Water Demand, Ag Loss to Urban Gain



Increase in Catchment Types



Change in Land Use within Active River Area



	CISGP	Regional Vision	SAP
Land Use			
Net Change in Land Use within Wetlands (Developed/ Natural/ Ag), acres			
Developed Acres	20	18	25
Natural Acres	-20	-12	-25
Agricultural Acres	0	-6	0
Total	0	0	0
Net Change in Land Use within Drinking Water Source Watersheds (Developed/ Natural/ Ag), acres			
Developed Acres	4,060	3,542	4,809
Natural Acres	-2,509	-2,543	-3,303
Agricultural Acres	-1,551	-999	-1,506
Total	0	0	0
Net Change in Land Use within Active River Area (Developed/ Natural/ Ag), acres			
Developed Acres	924	898	1,148
Natural Acres	-576	-684	-848
Agricultural Acres	-349	-214	-300
Total	0	0	0
Change in Acreage by Watershed Integrity Class (Natural / Riparian/ Degraded), acres			
Natural Catchments	-2,283	-2,839	-2,908
Important Riparian Buffers	801	-54	-295
Degraded	1,482	2,893	3,203
Total	0	0	0
Net Change in Groundwater Recharge Potential, ac-ft			
Volume Impacted	-1,961	-1,940	-2,637
Catchments			
Change in Acreage of Catchment Types, acres			
Degraded	1,482	2,893	3,203
Important Riparian Buffers	801	-54	-295
Natural Catchments	-2,283	-2,839	-2,908
Total	0	0	0
Total acreage of Catchment Types, acres			
Degraded	39,940	41,351	41,661
Important Riparian Buffers	5,484	4,629	4,388

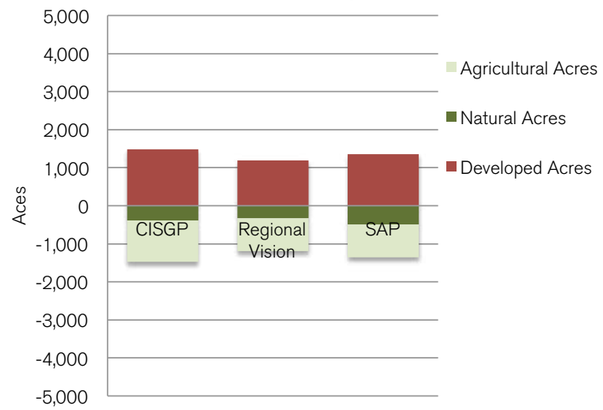
	CISGP	Regional Vision	SAP
Natural Catchments	3,217	2,661	2,592
Total	48,641	48,641	48,641
Increase in Catchment Types, acres			
Degraded	3,080	2,893	3,203
Important Riparian Buffers	1,042	0	0
Natural Catchments	556	0	0
Total	4,678	2,893	3,203
Decrease in Catchment Types, acres			
Degraded	-1,598	0	0
Important Riparian Buffers	-241	-54	-295
Natural Catchments	-2,839	-2,839	-2,908
Total	-4,678	-2,893	-3,203
Demand			
Total Agricultural Water Demand, ac-ft			
Cropland	14,216	16,179	13,942
Deciduous Orchard	233	234	234
Dryland Grain Crops	200	211	267
Evergreen Orchard	26	26	26
Irrigated Grain Crops	469	469	469
Irrigated Hayfield	4,782	4,325	5,070
Irrigated Row and Field Crops	125	125	125
Rice	16,365	16,365	16,365
Vineyard	1	1	1
Total	36,417	37,934	36,500
Net Change in Agricultural Water Demand, ac-ft			
Cropland	-3,445	-1,482	-3,719
Deciduous Orchard	-1		
Dryland Grain Crops	-115	-104	-48
Irrigated Grain Crops	-1	-1	0
Irrigated Hayfield	-1,251	-1,708	-962
Total	-4,812	-3,295	-4,729
Net Change in Urban Water Demand, ac-ft			
Urban Water Demand	6,619	6,595	8,735
Net Change in Total Water Demand (Urban + Agricultural), ac-ft			
Total (Ag+Urban) Water Demand	1,807	3,300	4,006

Comparison in Context: Conservation - Habitat Report

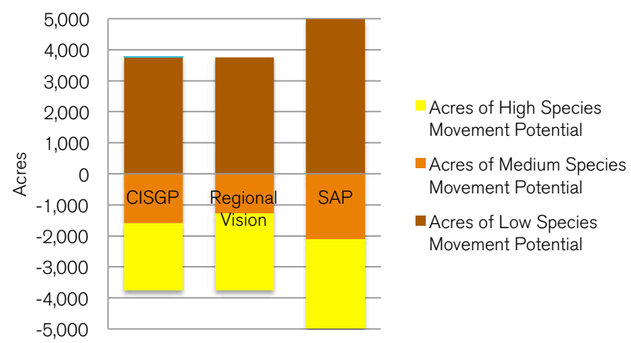
The terrestrial habitat analyses integrates habitat conservation values into a decision-making framework to reveal the impact and benefits of land use change decisions on habitats and associated biodiversity. The metrics specific to terrestrial habitat conservation reveal how land use in an area contributes to habitat value for terrestrial vertebrates, species movement potential, and conservation priority areas.

The Habitat Report focus on the landscape's capacity to facilitate or inhibit species' movement and the suitability of an area's land use for supporting terrestrial vertebrates. Movement potential is evaluated under the assumptions that natural landscapes generally facilitate movement and converted landscapes generally inhibit movement. The terrestrial habitat models also evaluate the acreage affected by proposed land use change that intersects with predefined habitat conservation priorities.

Net Change in Land Use within Essential Connectivity Areas



Net Change in Species Movement Potential

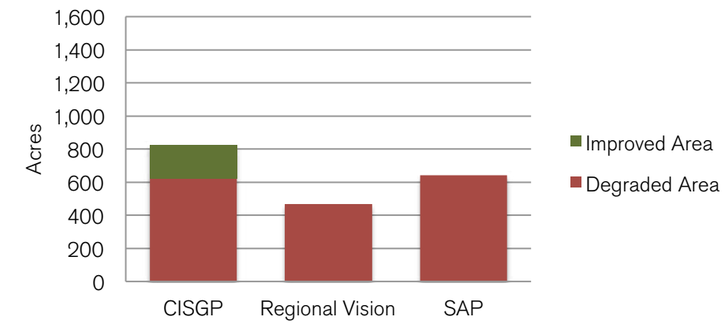


Connectivity	CISGP	Regional Vision	SAP
Net Change in Land Use within Essential Connectivity Areas (Developed/Natural/Ag), acres			
Developed Acres	1,477	1,195	1,353
Natural Acres	-382	-323	-489
Agricultural Acres	-1,095	-872	-864
Total	0	0	0
Net Change in Acres of High, Medium and Low Species Movement Potential, acres			
Acres of Low Species Movement Potential	3,756	3,750	4,981
Acres of Medium Species Movement Potential	-1,588	-1,269	-2,112
Acres of High Species Movement Potential	-2,168	-2,481	-2,869
Total	0	0	0

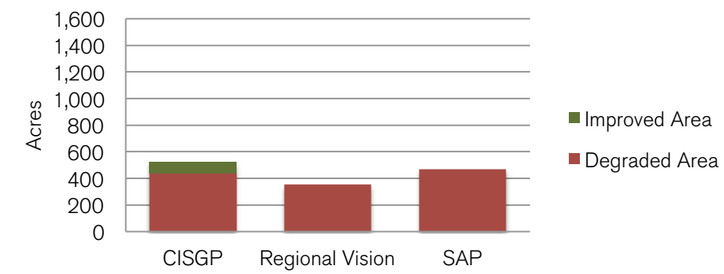
Habitat Degraded and Improved	CISGP	Regional Vision	SAP
Amphibians, acres			
Degraded Area	195	146	204
Improved Area	39	0	0
Total	234	146	204
Birds, acres			
Degraded Area	1,389	1,040	1,430
Improved Area	446	0	0
Total	1,835	1,040	1,430
Mammals, acres			
Degraded Area	864	667	897
Improved Area	228	0	0
Total	1,092	667	897
Reptiles, acres			
Degraded Area	638	460	640
Improved Area	132	0	0
Total	769	460	640
Threatened and Endangered Species, acres			
Degraded Area	621	468	642
Improved Area	202	0	0
Total	823	468	642
Species Vulnerable to Climate Change (except Birds), acres			
Degraded Area	439	353	469
Improved Area	84	0	0
Total	523	353	469
Birds Vulnerable to Climate Change, acres			
Degraded Area	1,141	859	1,195
Improved Area	419	0	0
Total	1,560	859	1,195
Bald Eagle, acres			
Bald Eagle Degraded	3,753	3,033	4,533
Bald Eagle Improved	2,067	0	0
Total	5,820	3,033	4,533
Swainson's Hawk, acres			
Swainson's Hawk Degraded	5,634	3,711	5,005
Swainson's Hawk Improved	721	0	0
Total	6,354	3,711	5,005

	CISGP	Regional Vision	SAP
Sandhill Crane, acres			
Sandhill Crane Degraded	4,079	3,539	4,806
Sandhill Crane Improved	2,068	0	0
Total	6,147	3,539	4,806
Loggerhead Shrike, acres			
Loggerhead Shrike Degraded	6,243	3,814	5,052
Loggerhead Shrike Improved	8	0	0
Total	6,252	3,814	5,052
California Towhee, acres			
California Towhee Degraded	273	279	250
California Towhee Improved	489	0	0
Total	762	279	250
Savannah Sparrow, acres			
Savannah Sparrow Degraded	4,081	3,541	4,809
Savannah Sparrow Improved	2,076	0	0
Total	6,157	3,541	4,809
California Vole, acres			
California Vole Degraded	6,041	3,815	5,052
California Vole Improved	286	0	0
Total	6,328	3,815	5,052
Red Fox, acres			
Red Fox Degraded	4,314	3,542	4,809
Red Fox Improved	1,844	0	0
Total	6,157	3,542	4,809
Common Gartersnake, acres			
Common Gartersnake Degraded	4,082	3,542	4,809
Common Gartersnake Improved	2,076	0	0
Total	6,157	3,542	4,809
Giant Gartersnake, acres			
Giant Gartersnake Degraded	3,742	3,030	4,530
Giant Gartersnake Improved	2,076	0	0
Total	5,818	3,030	4,530

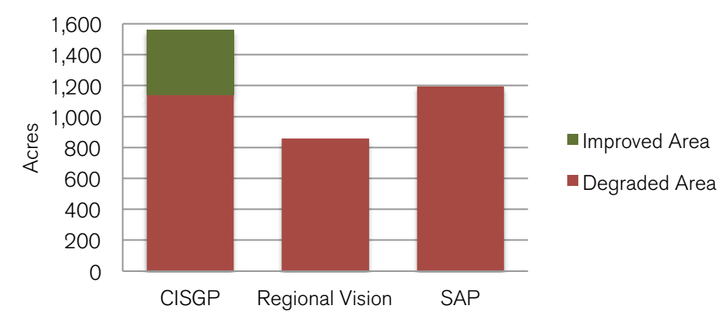
Habitat for Threatened and Endangered Species



Habitat for Species Vulnerable to Climate Change (except Birds)



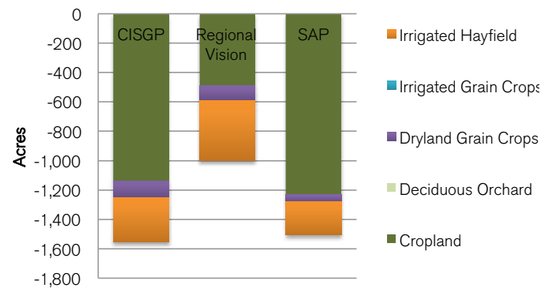
Habitat for Birds Vulnerable to Climate Change



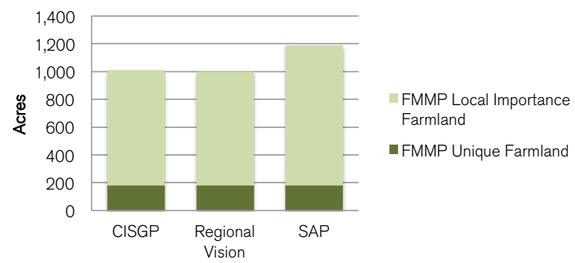
Comparison in Context: Conservation - Agriculture Report

The Agriculture Report focuses on the conversion of land to and from agricultural and non-agricultural uses. Broadly, metrics are classified into three groups—agricultural capacity, agricultural acreage, and agricultural production. Agricultural capacity calculates the impact of development in areas considered important for agriculture. Agricultural acreage calculates the change in acreage of agricultural land by agricultural type through expansion of agricultural land on urban or natural lands, and consumption of agricultural land by urban lands. Agricultural production represents how the above changes affect the monetary value of crop production in the region studied. When agricultural lands expand into natural lands, local agricultural production may increase. On the other hand, the expansion of urban lands into agricultural lands can reduce agricultural production. Production value also changes when agricultural lands are converted from one agricultural type to another.

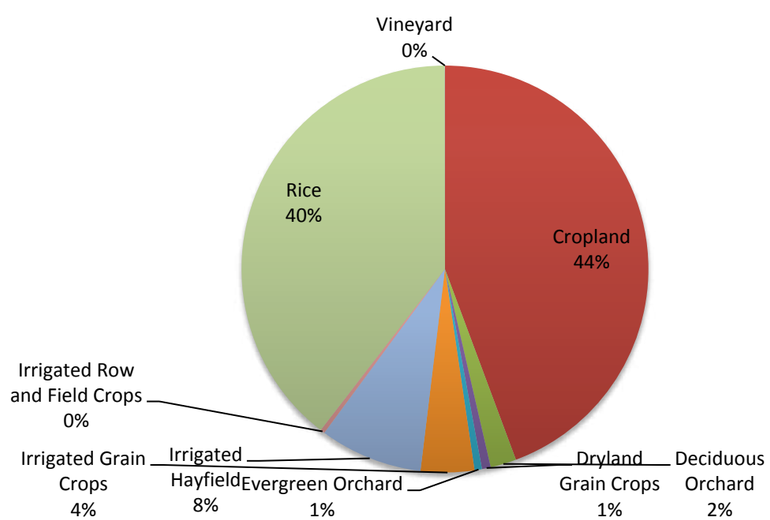
Net Change in Crop Class



Development on Cultivated Crop Lands



Total Production Value of CISGP and 2 Mile Surrounds



	CISGP	Regional Vision	SAP
Total Production Value, $			
Cropland	5,801,390	6,602,443	5,689,698
Deciduous Orchard	269,251	270,077	270,077
Dryland Grain Crops	91,541	96,478	122,295
Evergreen Orchard	77,356	77,356	77,356
Irrigated Grain Crops	556,103	556,103	556,556
Irrigated Hayfield	1,070,924	968,531	1,135,549
Irrigated Row and Field Crops	46,504	46,504	46,504
Rice	5,172,583	5,172,583	5,172,583
Vineyard	1,590	1,590	1,590
Total	13,087,242	13,791,665	13,072,207
Net Change in Production Value, $			
Cropland	-1,405,890	-604,837	-1,517,582
Deciduous Orchard	-826	0	0
Dryland Grain Crops	-52,559	-47,622	-21,805
Irrigated Grain Crops	-905	-905	-452
Irrigated Hayfield	-280,110	-382,503	-215,486
Total	-1,740,291	-1,035,867	-1,755,326
Total Acreage by Crop Class, acres			
Cropland	4,701	5,351	4,611
Deciduous Orchard	73	73	73
Dryland Grain Crops	198	209	264
Evergreen Orchard	8	8	8
Irrigated Grain Crops	273	273	274
Irrigated Hayfield	1,135	1,027	1,204
Irrigated Row and Field Crops	48	48	48
Rice	2,945	2,945	2,945
Vineyard	0	0	0
Total	9,381	9,933	9,426
Net Changes in Acreage by Crop Class, acres			
Cropland	-1,139	-490	-1,230
Deciduous Orchard	0	0	0
Dryland Grain Crops	-114	-103	-47
Irrigated Grain Crops	0	0	0
Irrigated Hayfield	-297	-405	-228
Total	-1,551	-999	-1,506
Development on Cultivated Crop Lands, acres			
FMMP Unique Farmland	181	181	181
FMMP Local Importance Farmland	830	818	1,008
Total	1,010	999	1,189

Natural Systems

Why include natural systems?

Studying the natural systems reveal what is possible, useful, and beautiful about the West Placer Prairie. It shows us the interconnectivity of how the earth works and provides us with models to evaluate the effects of proposed changes. All changes create ripple effects and the systems approach helps us to think about where the ripples are going, and where they coincide.

In this section we connect the lines between various natural sciences to get a holistic picture of the site. The following analysis contributed to our decision making in the CISGP. Read on to learn more about:

Cycle of Change

Watersheds

Water Dynamics

Soil Dynamics

Species Displacement & Migration

Cycles of Change

Dry Season

Summer

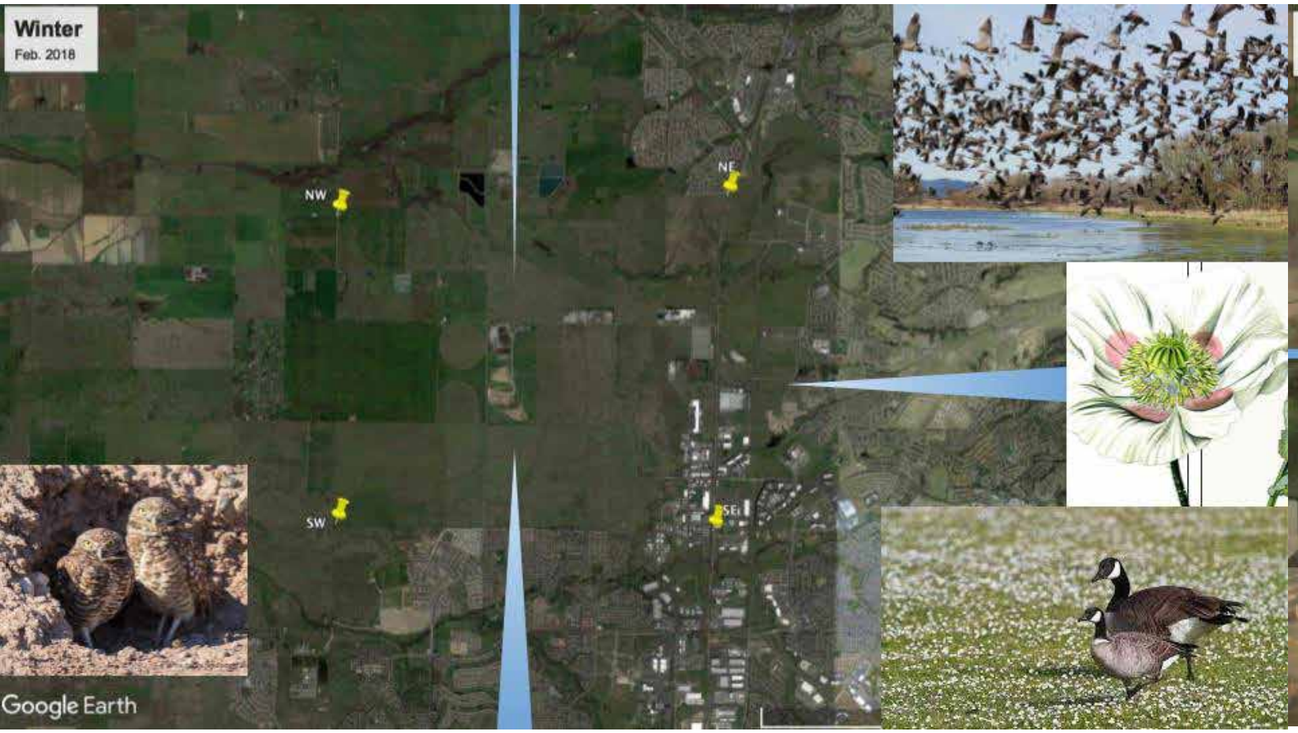
Summers are hot, arid, and very bright. Like every summer, there are few trees and little shade, no rain, and no cloud cover. The grass, mostly native, dances in a light southwesterly breeze. With so much sun the prairie grasses grow quickly and dry them out. Some farmers irrigate.

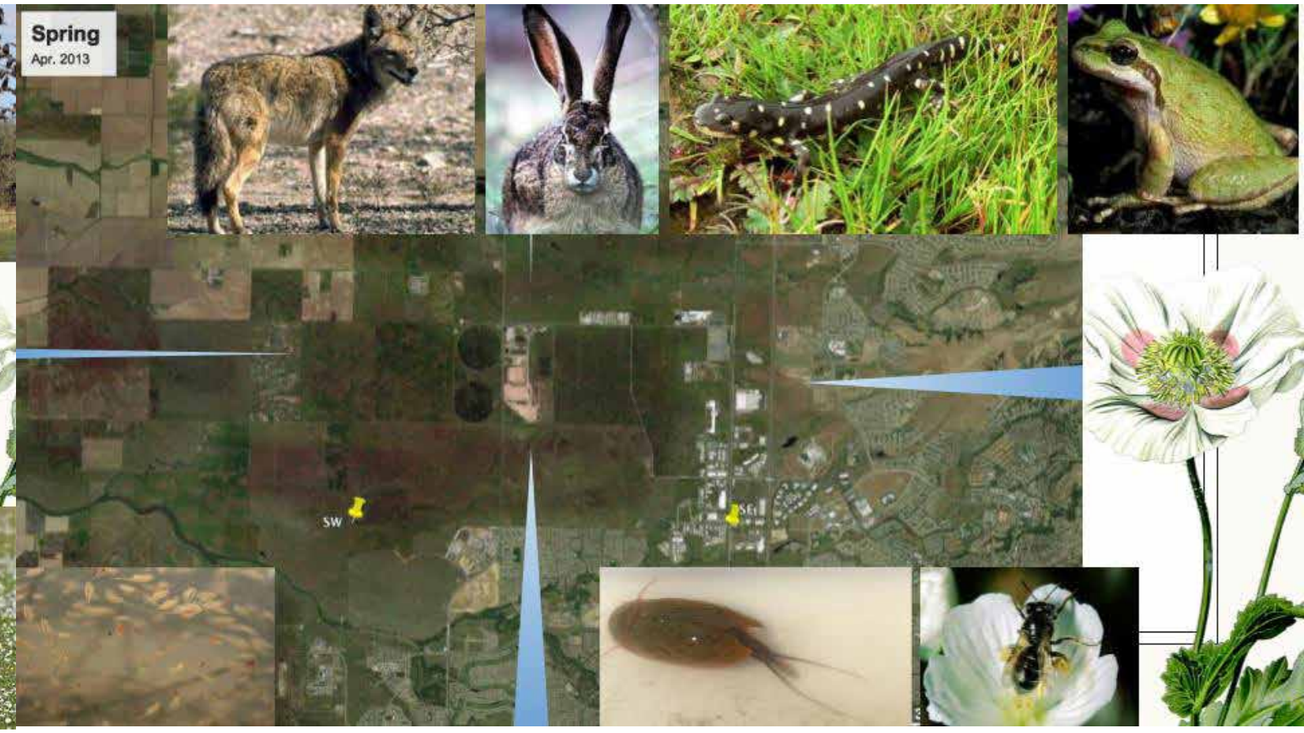
By July, the Swainson's hawks swoop through the sky eating the grasshoppers and caterpillars. Flocks of listed endangered tri-colored blackbirds chase insects in unison, flashing their red shoulder pads. Meadowlarks walk in the grass foraging for seeds. These birds are for the moment lucky, for birds of grassy habitats are among the fastest declining species in North America.

Fall

As November comes, the peak growing season ends. The winds pick up and shift to the south east, blowing in cloud cover. As the climate cools and rains start, the Botta Pocket Gophers look forward to enjoying their stockpiles. Cosy in their shallow burrows, they remember tilling the ground to fertilize the native grasses, observing the roots of their labor poke through their ceilings, and harvesting the lot by stuffing their fur-lined cheek pouches to the brim. Yet they must not become sedate, as the California king snake laid eggs in their tunnel mid summer. Any day they will hatch and begin exploring the tunnel system.

Images and Information from:
American Audubon Society, Sac Splash,
and www.weatherspark.com





Wet Season

Winter

Winter is wet and temperatures range from days in mid-50s to nights in mid-40s. The sky is overcast half of the time and 4-5 inches of rain will fall each month from December to March. The Pacific Flyway becomes full of winged traffic, as the Winged Migration enters our region. Early winter, waterfowl arrive and hang out at water treatment ponds and rice fields during the night and forage in the grasslands during the day. Burrowing owls explore gopher holes for burrows.

As the season progresses, the rich soil becomes saturated as a layer of clay below slows water's decent to the aquifer. Soon, the water will puddle on the surface and form vernal pools. In these, amphibians will lay their eggs and mate.

By mid December the vernal pools begin to fill. By returning to these vernal pools, small and mid sized white cheeked goose populations sustain themselves in the winter, during spring migration and also during the subsequent nesting season.

Spring

Amphibians and insects team in the vernal pool breeding grounds. Micro-life and invertebrates, including the listed endangered fairy shrimp and the listed endangered tadpole shrimp, flourish in their wet world. Their population booms attract the rest of the food chain– migratory and regional birds, mammals and reptiles are drawn into the vernal pool grasslands to feast! Each vernal pool has its own specialized biodiversity, adapted to its specific micro conditions, making a buffet with endless variety.

Through early spring, half of the days are cloudy and rainy with a southeasterly wind, refreshing the pools and keeping the biosphere cool. As temperature warms mid march, prairie growing season takes off and amphibians travel away from the drying vernal pools in search of burrowing places. The solitary bee juggles pollen collection with digging egg tunnels in the dirt before the ground hardens.

The race now begins for amphibians to travel away from the drying vernal pools in search of burrowing places. The solitary bee juggles pollen collection with digging egg tunnels in the dirt before the ground hardens. Notice the wildflower color on the satellite map coming in.

Images and Information from:
American Audubon Society, Sac Splash, and www.weatherspark.com

Watersheds

The Sunset Area is home to the headwaters of two watersheds, the Auburn Ravine and Coon Creek Watershed and the Pleasant Grove and Curry Creek Watershed. Both of these watersheds drain into the Sacramento River, irrigate crops, and flow through the delta to the Pacific Ocean. The below image shows the Sunset Area in relation to watersheds throughout the county.

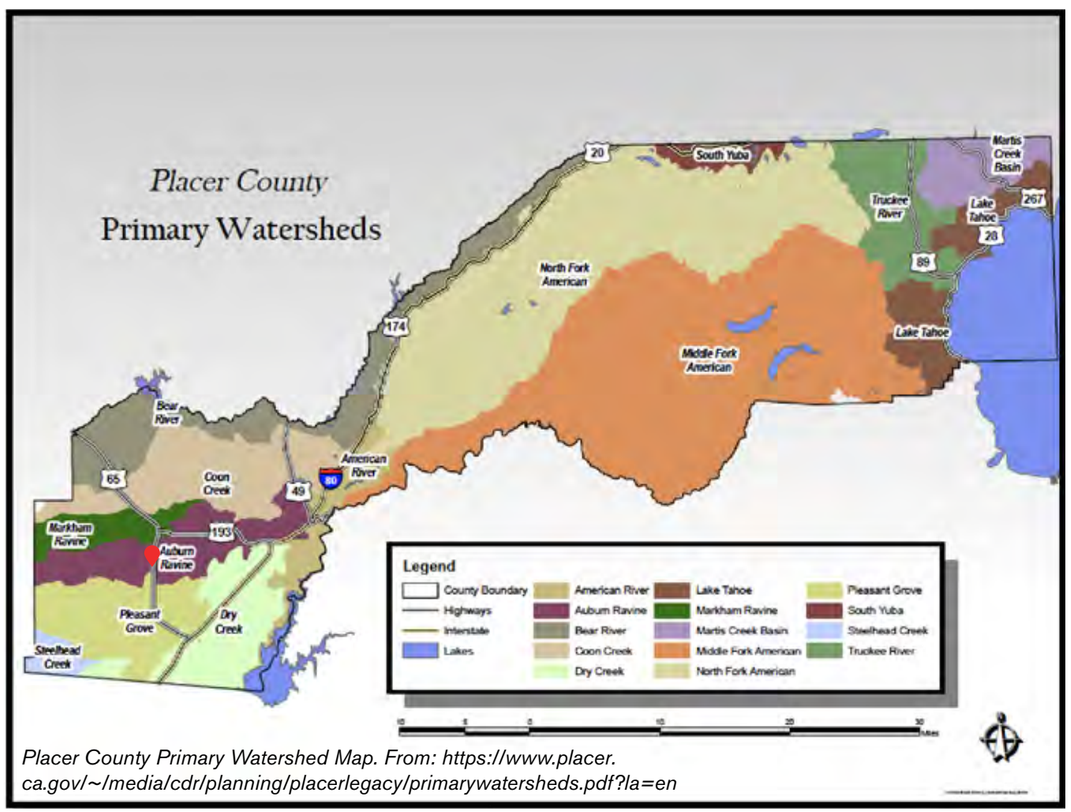
On the facing page, the Sunset Area is overlaid on both watershed maps. The top map, featuring the northern watershed of the site, Auburn Ravine, shows that the last headwaters enter the stream from the SA. All headwaters upstream run through urbanized areas.

In the Pleasant Grove Curry Creek map, the health of the streams is indicated by their color. It shows that when streams flow through urban areas, their health is diminished. The streams in the SA follow this pattern.

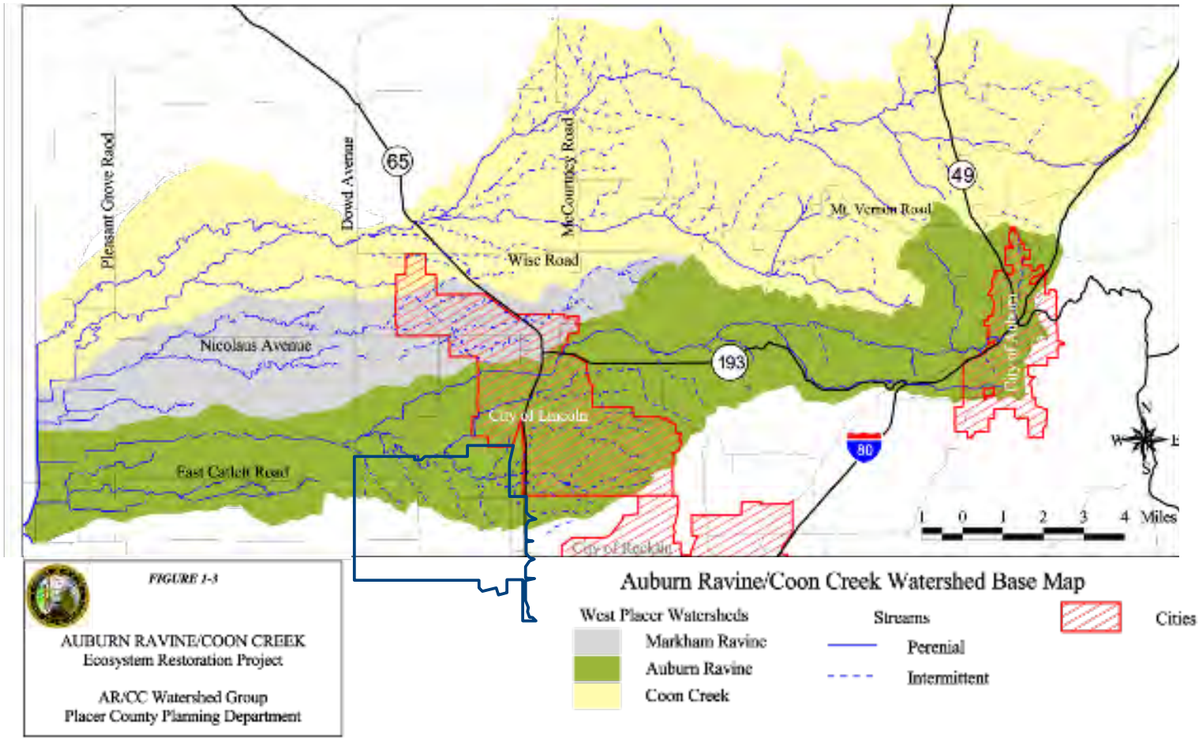
Water Dynamics

The map on the following spread examines how the headwaters engage with the terrain and calls out areas of interest. The divide runs NW to SE. The SA has first, second and third order streams. The arrow heads show the direction the water flows. The map includes:

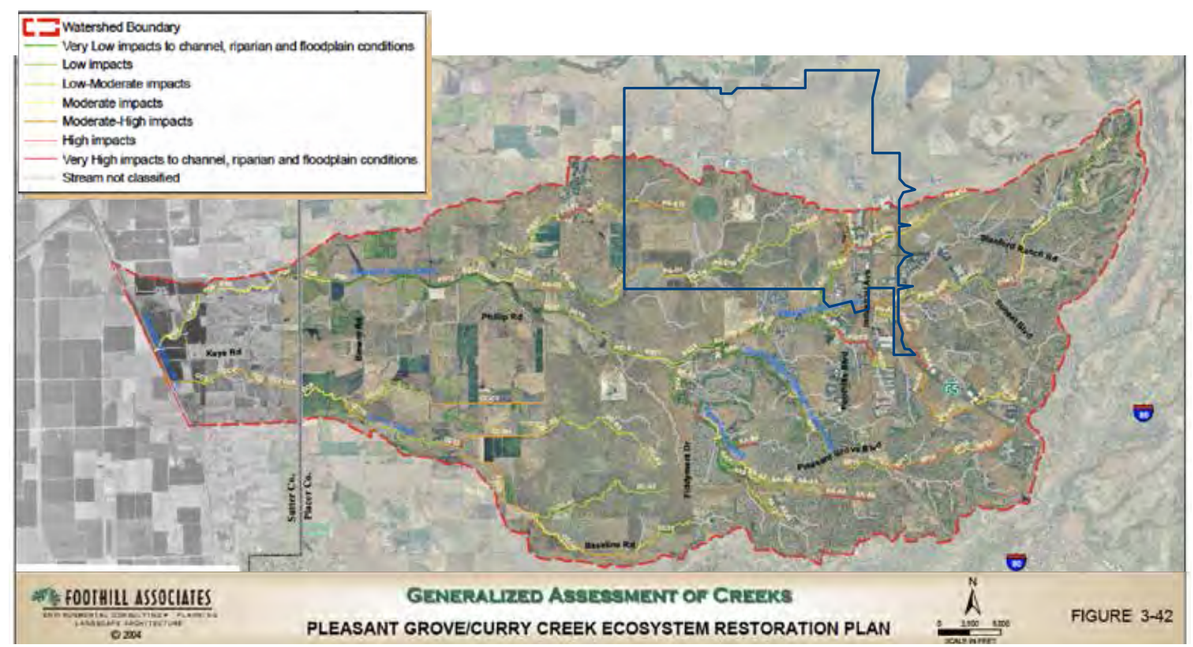
- USGS National Hydrography Dataset
- USGS National Watershed Boundary Dataset
- FEMA National Flood Hazard Map
- Holding Ponds traced from Satellite
- Placer County Grassland and Vernal Pool Complex Map (used for PCCP)



Placer County Primary Watershed Map. From: https://www.placer.ca.gov/~/media/cdr/planning/placerlegacy/primarywatersheds.pdf?la=en



Above: "Auburn Ravine/Coon Creek Watershed Base Map" Figure 1-3. Auburn Ravine/Coon Creek Ecosystem Restoration Project. ARCC Watershed Group & Placer County Planning Department. 2002.
Below: "Generalized Assessment of Creeks" Figure 3-42. Pleasant Grove/Curry Creek Ecosystem Restoration Plan. Foothills Associates, 2004.



Legend

SIA_Boundary

FEMA National Flood Hazard Layer

High Water Marks

Water Lines

Levees

General Structures

- Flood Structure
- Bridge
- Dam, Weir, Jetty
- Other Structure

Hydrologic Reaches

Flood Hazard Boundaries

- Limit Lines
- SFHA / Flood Zone Boundary
- Other Boundaries

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

Alluvial Fans

Water Areas

USGS National Hydrography Dataset (NHD) - External Service

Point

- Dam/Weir
- Other

Point Event

- Dam
- Gaging Station
- Divergence Structure
- Other

Line - Large Scale

- Tunnel
- Line

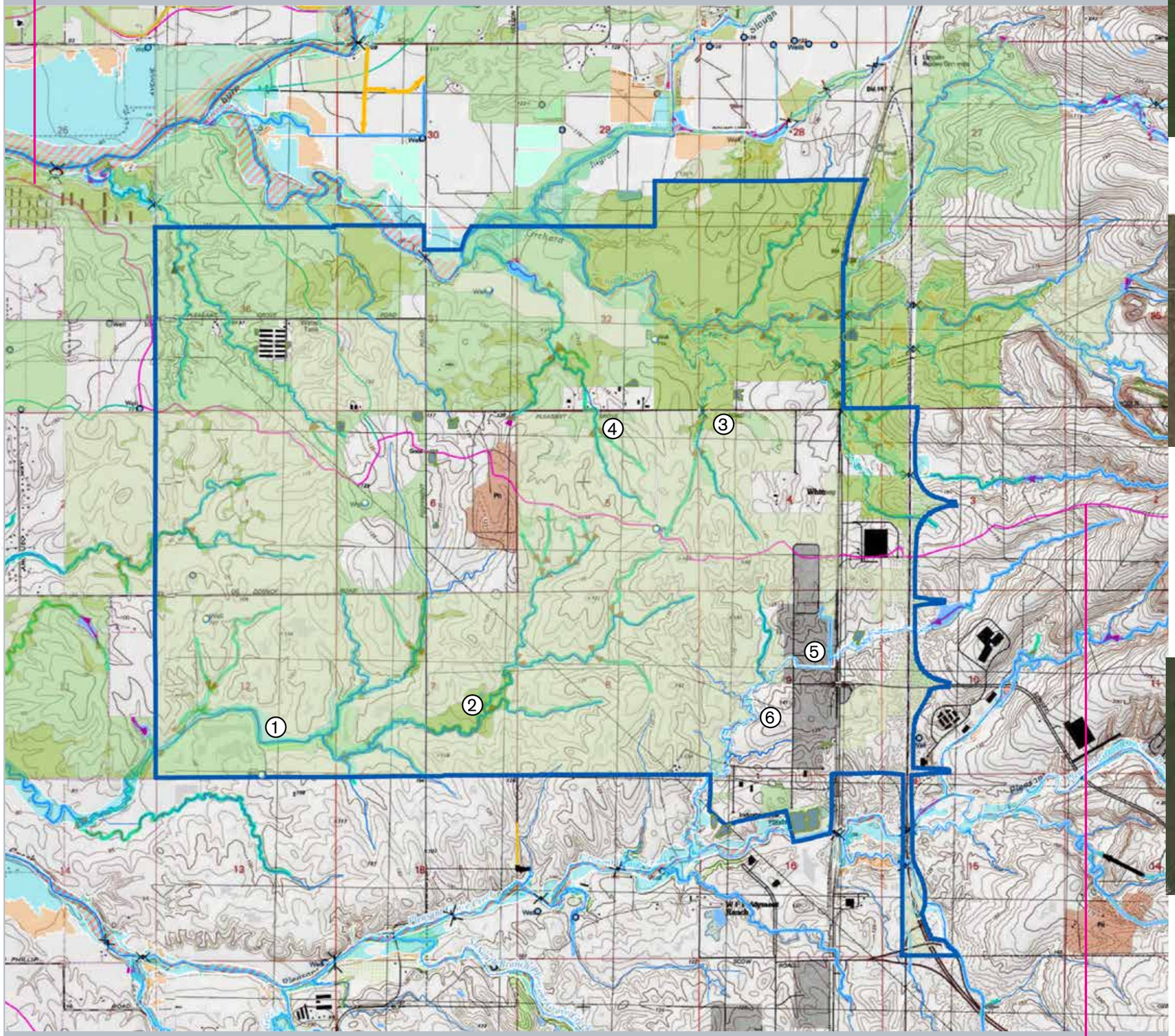
Flow Direction

- Connector
- Canal/Ditch
- Underground Conduit
- StreamRiver
- StreamRiver - Perennial
- StreamRiver - Intermittent
- StreamRiver - Ephemeral
- Pipeline
- Artificial Path

Flowline - Large Scale

- Perennial
- Intermittent
- Ephemeral
- Artificial Path
- Canal Ditch
- Coastline
- Connector
- Pipeline
- Underground Conduit

Auburn Ravine Watershed, Orchard Creek Tributary



Pleasant Grove and Coon Creek Watershed

Headwater Tributary of Pleasant Grove Creek covers an approximately 1 mi x 3 mi area. (1) Altered stream course for rice field. (2) Healthy meanders.

(3) Athens Ave. divides the upper and lower catchment area for the Orchard Creek Tributary. The headwaters pass under the road in two areas and frequently pool near the culvert. (4) The stream course has been realigned and tunneled to pass through the Athens Industrial Area. These crossings deliver headwaters from a large catchment area to conservation protected vernal pool lands near the tributary. The headwaters also feature many upland vernal pools in intermediate complexes.

(5) Headwater Tributary of Pleasant Grove Creek passes under Hwy 65 and is paved over through the current industrial area. As this tributary has a large catchment area, it has high value as a Riparian Corridor, much needed habitat within the site boundaries. (6)After the tunnel, the stream course is healthy with good meanders.

Streams

The stream courses provide drainage throughout the year and are pleasing natural features with lots of meanders. The proper stream course setback enables the natural water system to filter and acclimate water before it enters larger aquatic habitats. This minimizes the disruption of the aquatic ecosystem, such as that of Pleasant Grove creek adjacent to development.

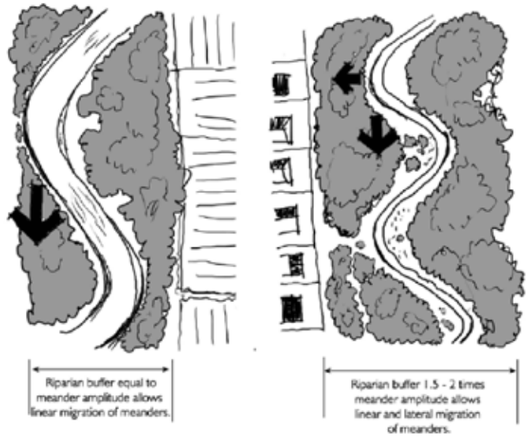
What makes a good stream course setback?

A good stream course setback lets the local natural hydrological system continue to function. There are many ways to calculate setbacks, and we have chosen a setback system determined from a scientific study of the stream courses in Western Placer County. These setbacks take account of the unique prairie conditions that more general setback methodologies do not include. It also encompasses recommend setbacks from both relevant watershed ecosystem restoration plans.

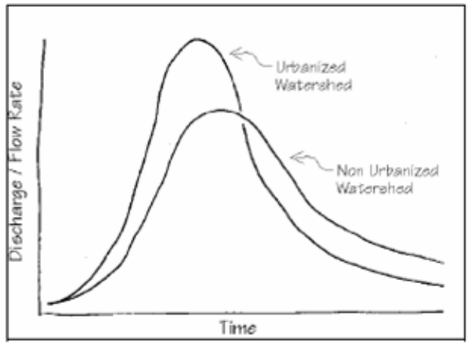
In Setbacks, Placer County Zoning Ordinance, Section 17.54.130.D.3 of the General Plan, it states that Community Plans, such as the SAP, will specify the required watercourse setbacks for the area they cover. The specified set backs should be:

1st & 2nd Order Streams: 98 ft. + floodplain
3rd + Order Streams: 656 ft. + floodplain

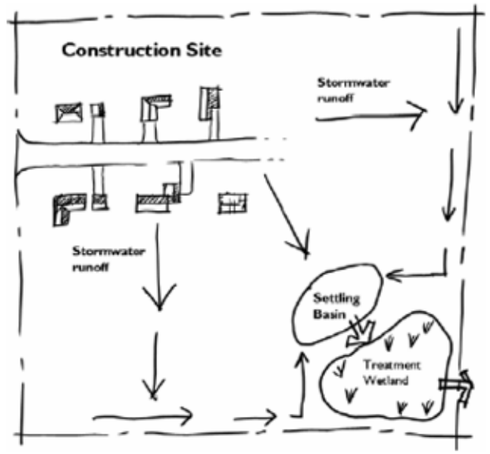
Unlike the county-wide setback standards, this recommendation takes account of the floodplain and width of water course as well as the stream hierarchy. It will provide enough space for the water courses to continue to meander and shift across the prairie. This is illustrated in the Riparian Buffer Widths as a function of Meander Amplitude diagram from the Pleasant Grove/Curry Creek Ecosystem Restoration Plan. The wider setback also aids in slowing the speed of the water discharge after a rain event. Hard surfaces create faster run off which create many problems, from more erosion to less water absorbed for the dry season.



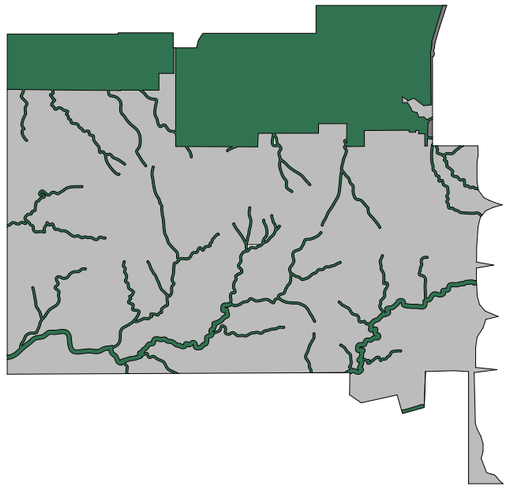
Riparian Buffer Widths as a function of Meander Amplitude



Hydrograph comparison between non-urbanized and urbanized watersheds.



Detention Wetland Used to Filter Sediment on Construction Site.
Above three diagrams from: Foothills Associates. Pleasant Grove and Curry Creek Ecosystem Restoration Plan. 2004.

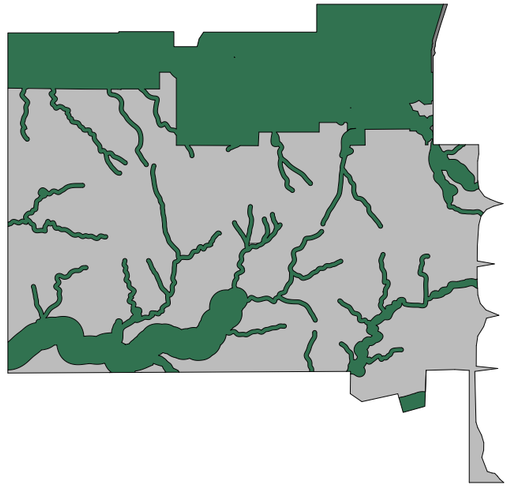


General Plan Stream Course Setbacks and Existing Protected Areas

Stream Course Setbacks from Placer County Zoning Ordinance, Section 17.54.130:

Intermittent Streams: 50 ft.
Permanent Streams: 100 ft.

This delineates 29% of the site open space.



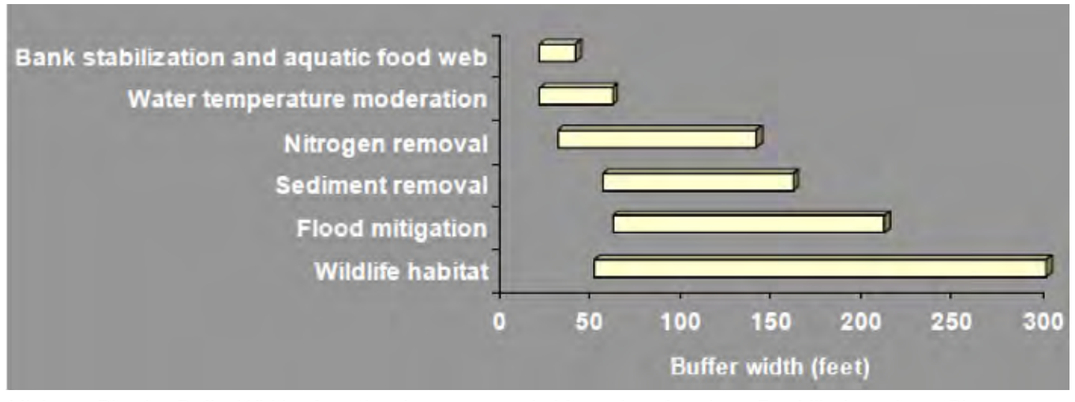
West Placer Specific Stream Course Setbacks and Existing Protected Areas

Stream Course Setbacks from "Setback Recommendations to Conserve Riparian Areas and Streams in Western Placer County" prepared for Placer County Planning Department by Jones & Stokes and PRBO Conservation Service, 2005:

1st and 2nd Order Streams: 98 ft. + floodplain
3rd + Order Streams: 656 ft. + floodplain

This delineates 37% of the site as open space.

Slow discharge is also fundamental to filtering of the water. As shown in the construction site diagram, surface water should first go to a settling basin and then through a treatment wetland before entering a stream course. The wider setback accommodates this process.



Minimum Riparian Buffer Widths, featuring the space needed for various functions. Foothills Associates. Pleasant Grove and Curry Creek Ecosystem Restoration Plan. 2004.

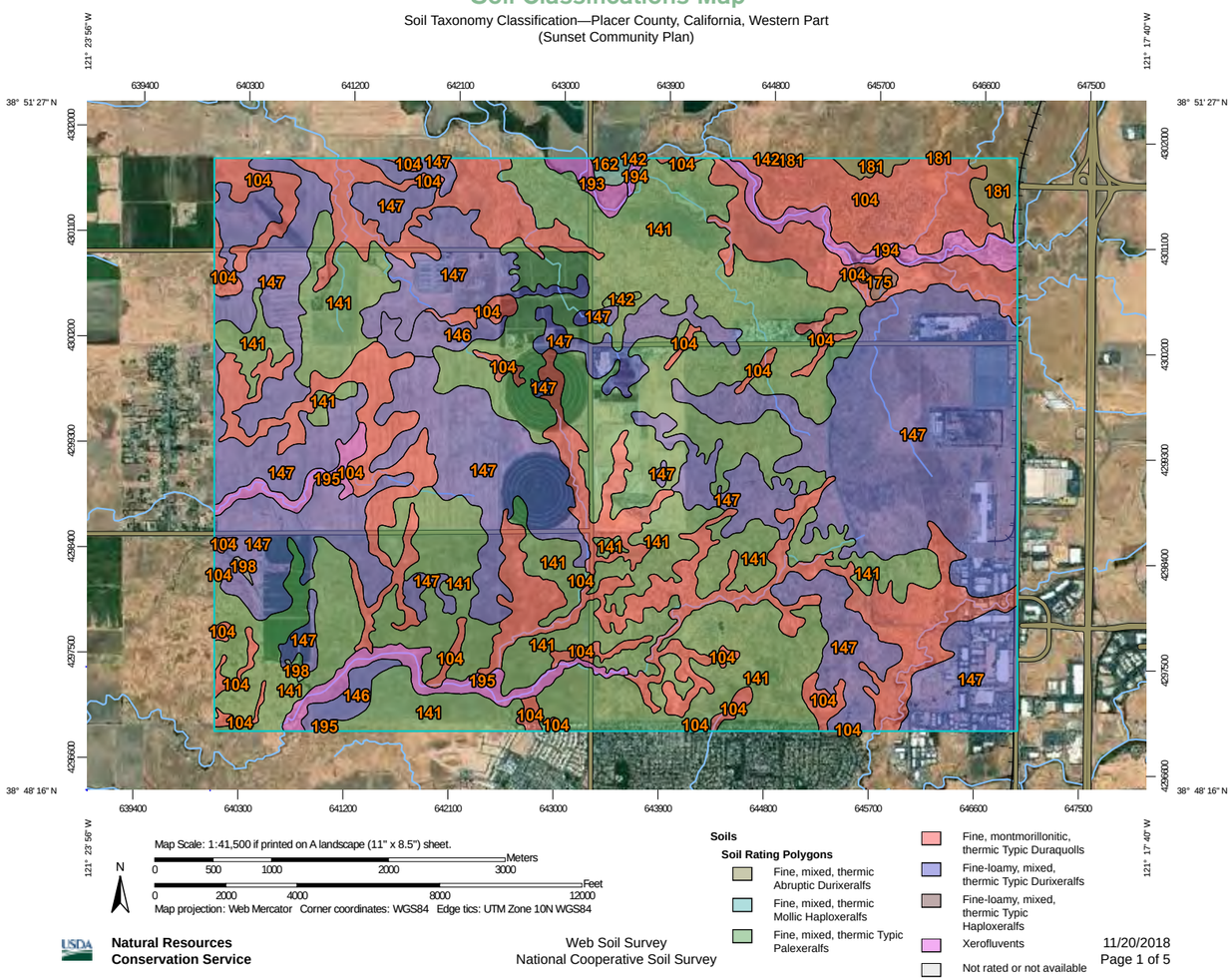
Soil Dynamics

Three main soil taxonomies dominate the composition, covering 98.3% of the surface area: the Cometa-Fiddyment complex, Fiddyment-Kasebery loams, and the Alamo-Fiddyment complex. Eight other taxonomies make up the remaining 1.7% and are primarily located in the existing reserve area stream beds. The soil types have 12" to 18" of fluffy sponge-like topsoil resting on nearly water-repellent clay hard pans 1" to 16" thick. The fluffiness of the sponge determines how much water the soil can hold, and the hard pan directs water along it's surface to the stream system. A small amount of water will infiltrate through the clay to the water table. Together, the interaction of the water and soil enable the emergence of vernal pools.

Each of the three main soil taxonomies have different ratios of soils: cometa soil, fiddyment soil, kaseberg soil, and alamo soil. Alamo soil is entirely clay. The bedrock can be quite shallow and is sandstone and siltstone. For the full breakdown see the Soil Properties Table on the next spread.

Soil Classifications Map

Soil Taxonomy Classification—Placer County, California, Western Part
(Sunset Community Plan)



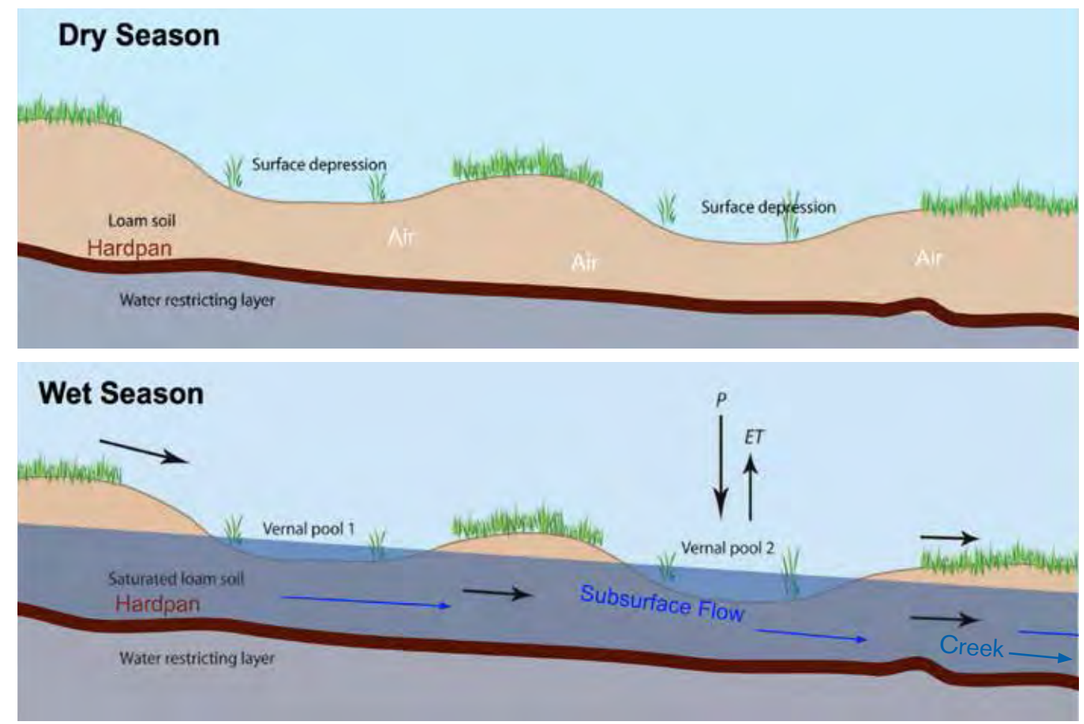
Preparing for Construction

The Natural Resources Conservation Service identifies all the main soil types as having properties that severely limit their abilities to support buildings. Fiddyment soil is the most accommodating soil, providing only moderate limitations for shallow excavation. The limitations for the other types are either related to water or the shallowness of bedrock/cemented clay pan. These limitations for construction are the features that enable and sustain the vernal pool landscape.

To prepare th soil for construction, it is likely that the soil will be scraped deeply and compacted with lime or other stabilizers to manufacture the desired structural properties. This will require specialty equipment. To eliminate complexity, entire parcels will be compacted and shaped by deeply cut roads, drains and overflow ponds. Such soil preparation is irreversible.

Vernal Pool Conceptual Cross Section

During the dry season, the soil is 45-50% air. Rain fully saturates the soil in the wet season, pushing the air out. 40-60% of the water content at any given place is from direct rainfall, while the rest comes from subsurface flow from adjacent uplands.



Vernal Pool Conceptual Cross Section. Niall McCarten, UC Davis, Dept of Land, Air and Water Resources, with subsurface flow and creek added by Genevieve Marsh

Soil Properties Table

Map unit symbol & color	Map Unit Name	Description	Acres in AOI	Percent of AOI	Topsoil	Clay Pan Layer	Restrictive Soil Features: Restrictive Soil Features	Restrictive Soil Features: Small Buildings no basements	Restrictive Soil Features: Local Roads and Streets
141	Cometa-Fiddyment complex, 1 to 5 percent slopes	35% Cometa Soil: Deep well-drained claypan soil with slow surface runoff. Available water capacity is 4 to 6 inches.	2,993.0	35.8%	18" sandy loam	18" to 29"	Severe. Too clayey.	Severe. Shrink-swell, low strength.	Severe. shrink-swell, low strength.
		35% Fiddyment Soil: Well drained and moderately deep over a hardpan. Water capacity is 2 to 3.5 inches. Permeability is very slow. Underlain with silica-indurated siltstone.			12" loam and silt	12" to 28"	Moderate. Depth to rock, cemented pan, too clayey.	Severe. Shrink-swell.	Severe. Shrink-swell, low strenth.
147	Fiddyment-Kaseberg loams, 2 to 9 percent slopes	50% Fiddyment Soil	2,932.4	35.1%	12" loam and silt	12" to 28"	Moderate. Depth to rock, cemented pan, too clayey.	Severe. Shrink-swell.	Severe. Shrink-swell, low strenth.
		30% Kaseberg Soil: Shallow well drained soil over a hardpan. The available water capacity is 1.5 to 3.5 inches. Underneath is siltstone. Permeability is moderate.			14" loam and motiles in top 8"	16" to 17"	Severe. Depth to rock, cemented pan.	Severe. Depth to rock, cememted pan.	Severe. Cemented pan, depth to rock.
104	Alamo-Fiddyment complex, 0 to 5 percent slopes	50% Alamo Soil: poorly drained clay this is moderately deep over a hardpan. The availiable water capacity is 2.5 to 6 inches. Surface run off is slow or ponded.	1,915.9	22.9%	37" clay	37" +	Severe. Wetness, too calyey, floods.	Severe. Wetness, floods, shrink, swell.	Severe. Wetness, low strength, shrink-swell.
		30% Fiddyment Soil: Underlain with hard sandstone.			12" loam, 23" clay loam	28" to 35"	Moderate. Depth to rock, cemented pan, too clayey.	Severe. Shrink-swell.	Severe. Shrink-swell, low strenth.
195	Xerofluvents, hardpan substratum	Along intermittent stream courses in Pleasant Grove Watershed catchment area.	154.0	1.8%	x				
194	Xerofluvents, frequently flooded	Orchard Creek bed.	105.2	1.3%					
146	Fiddyment loam, 1 to 8 percent slopes	Two pockets, both on the western side of the site, one near the conservation parcels and the other near crossing the south border.	103.0	1.2%					
181	San Joanquin Sandy loam, 1 to 5 percent slopes	In NE existing reserve area.	69.7	0.8%					
193	Xerofluvenets, occasionally flooded	Adjacent to Orchard Creek bed in existing reserve area.	33.9	0.4%					
162	Kilaga Loam	Adjacent to Orchard Creek bed in existing reserve area.	15.9	0.2%					
175	Ramona sandy loam, 2 to 9 percent slopes	In NE existing reserve area.	12.5	0.2%					
142	Cometa-Ramona sandy loams, 1 to 5 percent slopes	In existing reserve area.	7.0	0.1%					
198	Water	SW corner of site.	6.9	0.1%					
Total AOI	Total		8,349.4	99.9%					

The Soil Properties Table summarizes the findings of the Natural Resources Conservation Service. The right side of the table evaluates each type for its ability to support shallow excavation, small buildings, and paved roads.

Soil Compaction Resistance

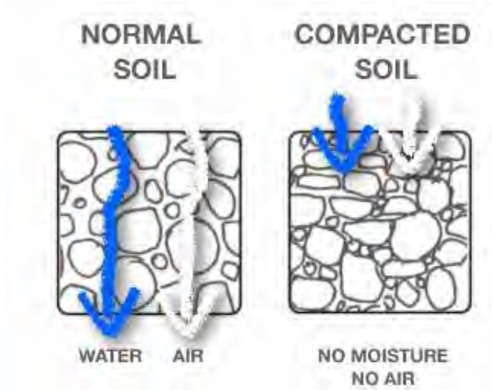
Normal soil has large air pockets, called pores, that allow water and nutrients to move down to plant roots and the water table. Compaction squeezes the air out of the soil and reduces the size of pores, limiting water infiltration and increasing runoff. These factors change plant production and composition and the arrangement of organisms living in the soil within the compacted areas as well as adjacent normal soil areas. With greater runoff, erosion increases. **To best protect the reserve areas, the natural water flow on top of and in the soil should be maintained and mimicked.**

The Soil Compaction Map rates each soil for its resistance to compaction. Red, representing "Low resistance", indicates that the soil has one or more features that make it susceptible to compaction and will not re-expand to its initial state overtime.

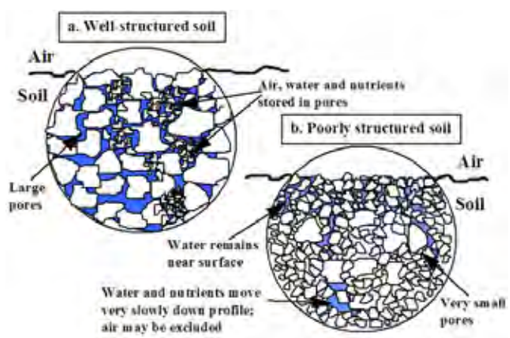
To avoid compaction, these soils should not be cultivated or driven on when wet. Dwelling and road construction can be designed to offset the shrink-swell potential and the load-bearing strength of the soils.

Shrink-Swell

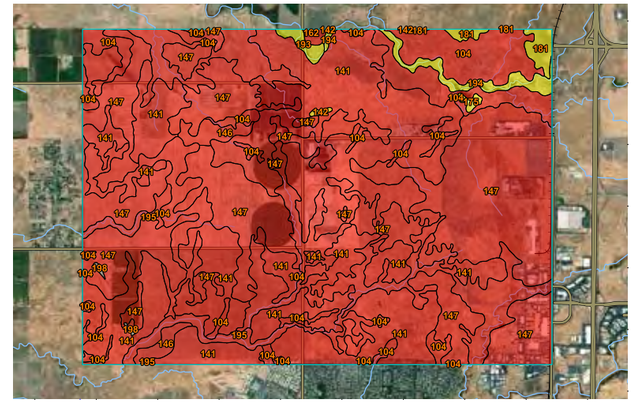
As the soil sponge absorbs and releases water, it expands and contracts– moving everything on top of it. For brittle objects, such as roads and foundations, cracking occurs. In the Expansive Soil Process Diagram, notice how when the rain falls on a new road, the edges of the road curl up because water has only infiltrated the soil accessible to direct rainfall. As the road ages, subsurface flow saturates the soil under the road. The water in soil under the road cannot evaporate, and does not have roots collecting it. The water in the soil next to the road depletes faster and the soil shrinks. With the soil under the road still expanded, it creates a bulge effect. Shrink-swell, along with other factors listed in the Soil Properties Table, are why the Suitability of Local Roads and Streets and Suitability for Small Buildings is Somewhat Limited (yellow) to Very Limited (red).



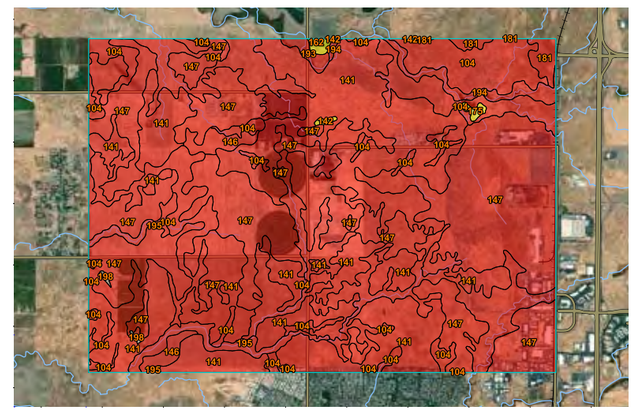
Michael-Anne Foley, Butte County Master Gardener. The Real Dirt Blog. University of California Division of Agriculture and Natural Resources.



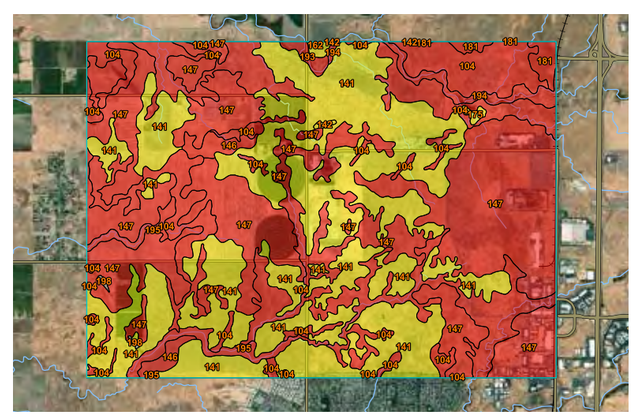
Dr. Adriana Arango, Department of Forestry and Horticulture. The Connecticut Agricultural Experiment Station.



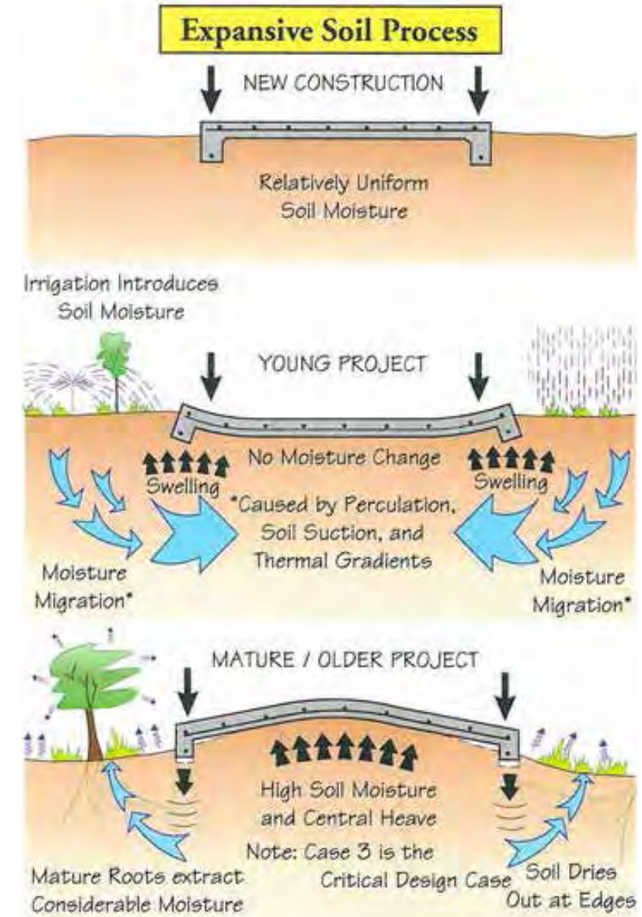
Soil Compaction Resistance Map. Web Soil Survey, Natural Resources Conservation Service.



Suitability of Local Roads and Streets. Web Soil Survey, Natural Resources Conservation Service.



Suitability for Small Buildings. Web Soil Survey, Natural Resources Conservation Service.



Expansive Soil Process Illustration. Integrated Concrete Services Inc. https://ic.services/soil-stabilization/.

Species Displacement & Migration

Developing the Sunset Area will shift the ecosystem from grassland-dependent species to urban-riparian species.

Currently, predominantly grassland-dependent bird species make their home in the West Placer Prairie. It hosts a plethora of migratory and annual raptors, migratory waterfowl, and small bodied year-round grassland birds. Some of the migratory birds arrive in the winter from snowy northern states, Canada, and even the arctic. Large sweeping grasslands with little variation, few trees or telephone poles make excellent hunting grounds for raptors. Their prime hunting grounds are well-grazed where rodents are more visible. According to the annual Christmas Bird Count, the grassland around Antonio Mountain Ranch (in the existing reserves area) is the second best location for spotting raptors, including ferruginous hawk, prairie falcon, and golden eagle. The migratory water fowl congregate en mass at the waste water treatment plant north of the area and the flooded rice fields to the southwest.

Grassland-dependent birds are very sensitive to elements added in habitat, including power lines and trees, and will absolutely be displaced. Even the lingering smell of a dog will move them to other fields. The ground nesters will be ousted by next predators, such as raccoons and possums, that come with development. The PCCP with off-site, large scale mitigation is the best solution for preserving grassland bird habitat. There is likely no way to facilitate grassland bird's continued use of the site if human presence and associated development increases. Any preserved grassland, such as the reserve areas, will need to be fenced so no dogs can run through a leave scent trails. It will also need to be grazed to keep the invasives down. Industrial and commercial areas can be good buffers for grasslands because nest predators are less attracted to those areas.

Current Species Mix

Survivors of Displacement

Species Mix with Development

Providing for Riparian-Urban Species

Riparian corridors provide the greatest habitat value amidst development. Cavity nesters will have the best chance of survival against urban predators-- raccoons, possums, cats and dogs. These birds need plenty of trees with little hollows. These trees tend to be older, dead and dying and should be left in place. The vegetation along watercourses on site is currently minimal, due to historic tree harvesting and grazing. New trees that produce cavities should be planted along the stream courses with berry-producing under-stories. Native and non-native Ashes form cavities in middle age. Native oaks also form cavities, but tend to be slow to grow and messy. Species not native to our region should be avoided, such as Redwoods, because they provide little habitat value as they do not form cavities or provide food, and acidify the soil preventing other plants to grow.

A Bushy under-story is crucial for protecting the small birds and providing foraging opportunities for nesting. Winter berry-producing shrubs and trees, such as elderberry, should make up a majority of the planting. According to the California Native Plant Society, 70% of a garden must produce food value for local species if it is to sustain them.
Nest boxes should be placed in open areas and can be used to enrich habitat between corridors. These boxes accommodate birds that prefer to be on the edges of open fields.

The listed bushes and trees are easy to buy, will thrive on the site, and provide high quality food and habitat for birds, butterflies and bees: Blue Elderberry, Black Elderberry, Coffee Berry, California Grape, Southern California Black Walnut, Northern California Black Walnut, Sandbar Willow, Oregon Ash.

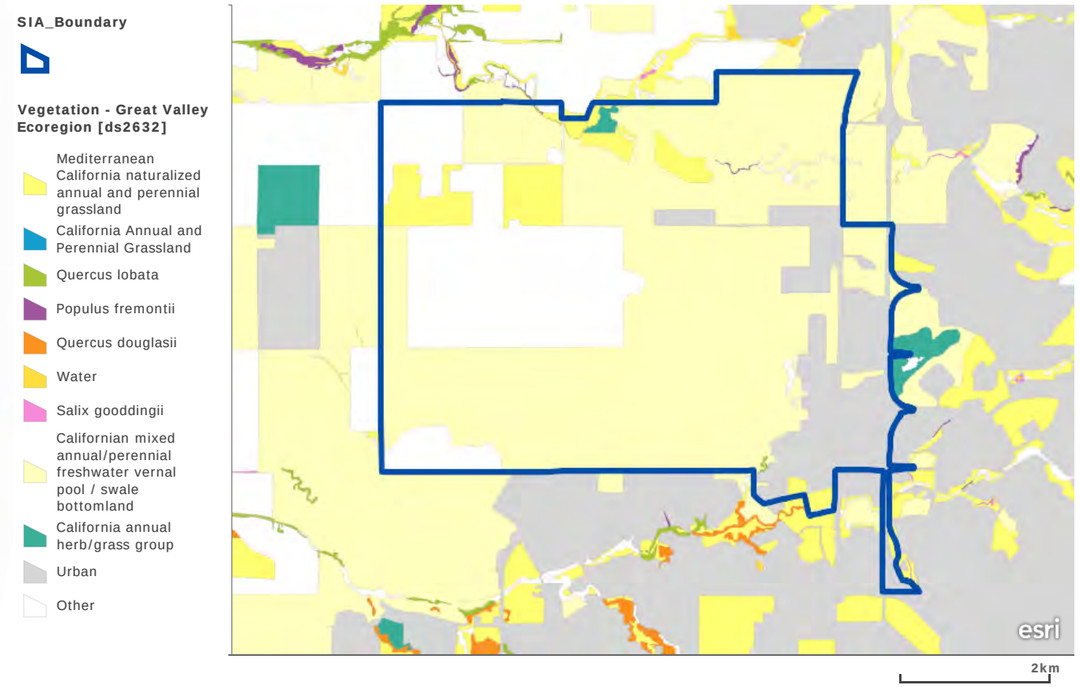
Preserving Grassland Value

Grassland in the SA is predominantly native Californian annuals and perennials with less than 5% invasives. These grasslands host freshwater vernal pools in the wet season. Several parcels have 25-50% Mediterranean California naturalized annual and perennials, which are introduced grasses from European

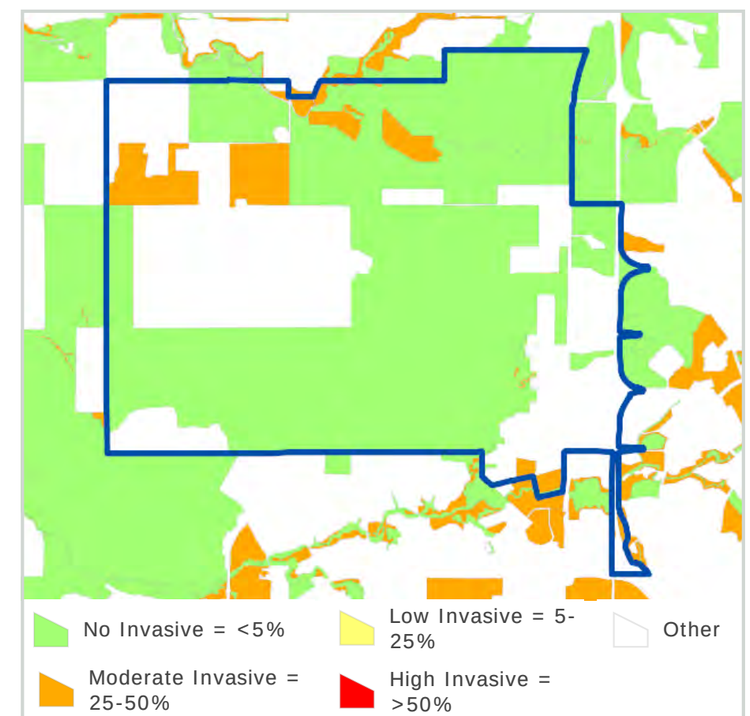
Collage of flora that provide reliable food sources for native species.

Settlers that gradually displace native grasses. In the Vegetation Type Map, many 'other' parcels are agriculture and landfill.
In reviewing satellite imagery, color changes in ground cover along fence lines indicate grazing. This is likely contributed to the low percentage of invasives, because cows eat introduced species first. If moved before they eat everything down, the native species thrive. Maintaining this grazing practice is crucial for keeping the invasives out.

Grasslands Map



Invasive Species Map



Data for the grassland and invasive species maps provided by the Geographic Information Center, Chico Research Foundation.

Vernal Pools

The most significant ecological factor on site are the vernal pools. Their ephemeral nature and dependence on rain makes it difficult to observe the whole system. Properly understanding their distribution through the region and site is a fundamental step in determining ecological value and determining mitigation fee classification.

The Report of Science Advisors[1] states that, "In Placer County, urbanization, industrial development, and infrastructure construction have resulted in substantial losses of vernal pool ecosystems. To date, most conservation efforts have focused on fencing off single pools or tightly confined small pool complexes and surrounding them by various types of development. The majority of these conserved pools reside in an urban or suburban landscape...The creation of new vernal pools in mitigation banks is of marginal long-term conservation value at best. Rather, effective conservation must focus on the protection of archipelagos of pools containing a number of pools and pool types plus a substantial portion of the surrounding catchment area."

Historically, Vollmar Natural Lands Consulting estimates that Placer County had 117,289 acres of vernal pool habitat. 75% of that has been destroyed as of 2013 and 25,893 acres remain (25%). The SA contains 17% of the remaining vernal pool habitat in Placer County and also the largest continual vernal pool complex. The maps from Vollmar on the following pages show the predicted habitat and it's decline. The white dots represent sitings of vernal pool faerie shrimp, a species that lives solely in vernal pools.

Preliminary Analysis of Extirpated and Remaining Vernal Pool Habitat within Placer County and the proposed Sunset Area Plan and Placer County Conservation Plan Area. Courtesy of Vollmar Natural Land Consulting.

Geographic Area	Acreage	% of Historical Total
Placer County Estimated Historical Acreage	117,389	100%
Placer County Estimated Extirpated Acreage	87,496	75%
Placer County Remaining Acreage	29,893	25%
		% of Remaining Habitat
Placer County Remaining Acreage	29,893	100%
PCCP Existing Reserves	5,235	18%
PCCP Proposed Reserve Acquisition Area	9,330	31%
Sunset Area Plan	5,152	17%

1"County of Placer Natural Community Conservation Plan Habitat Conservation Plan, Report of the Science Advisors, Phase 1." Burssard, P. et al. January 8, 2004.

Top: Recreated Vernal Pools in the SA, April 2014.

Bottom: Natural Vernal Pools in the SA, April 2014.

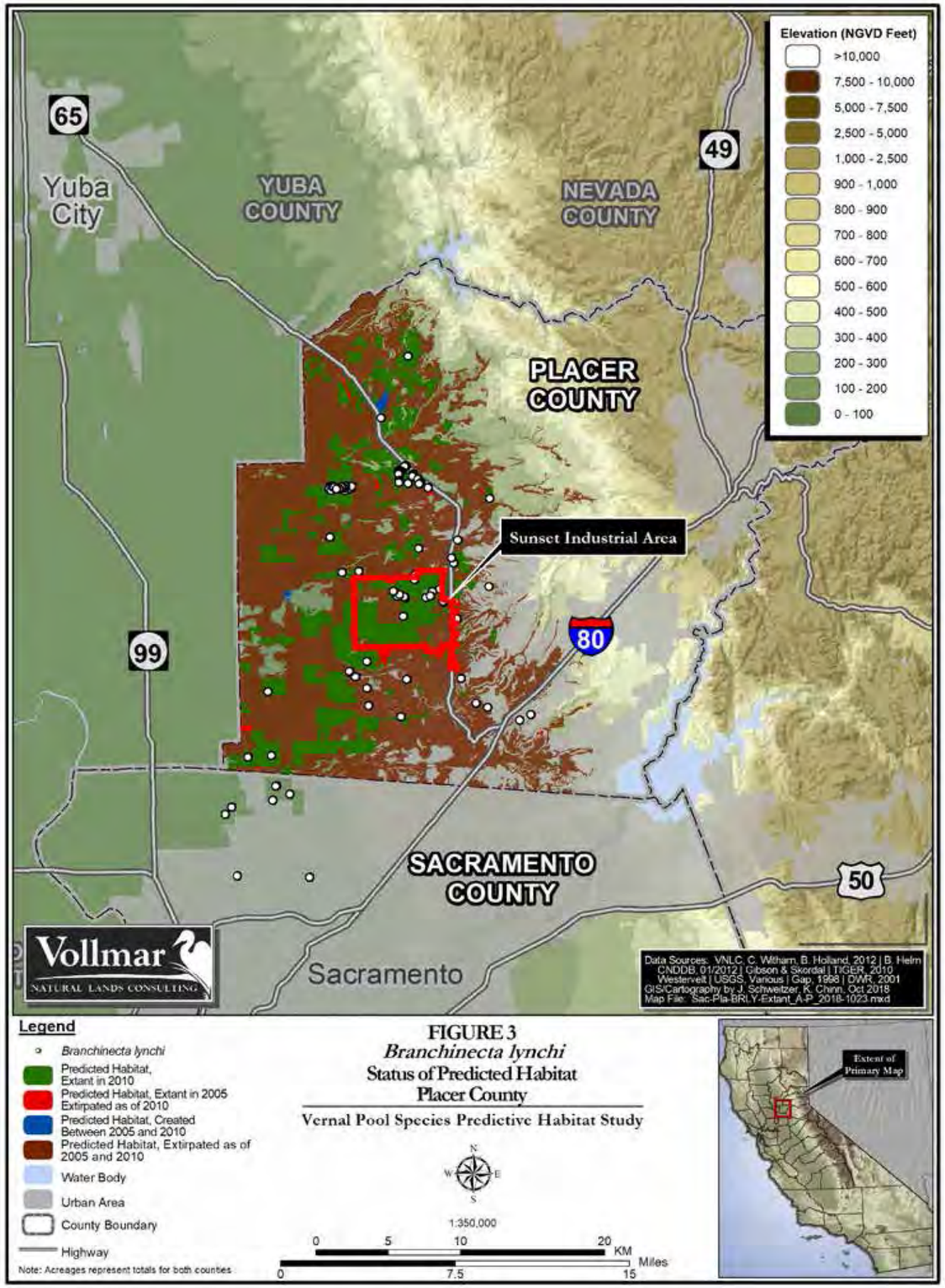


FIGURE 3
Branchinecta lynchi
Status of Predicted Habitat
Placer County
Vernal Pool Species Predictive Habitat Study

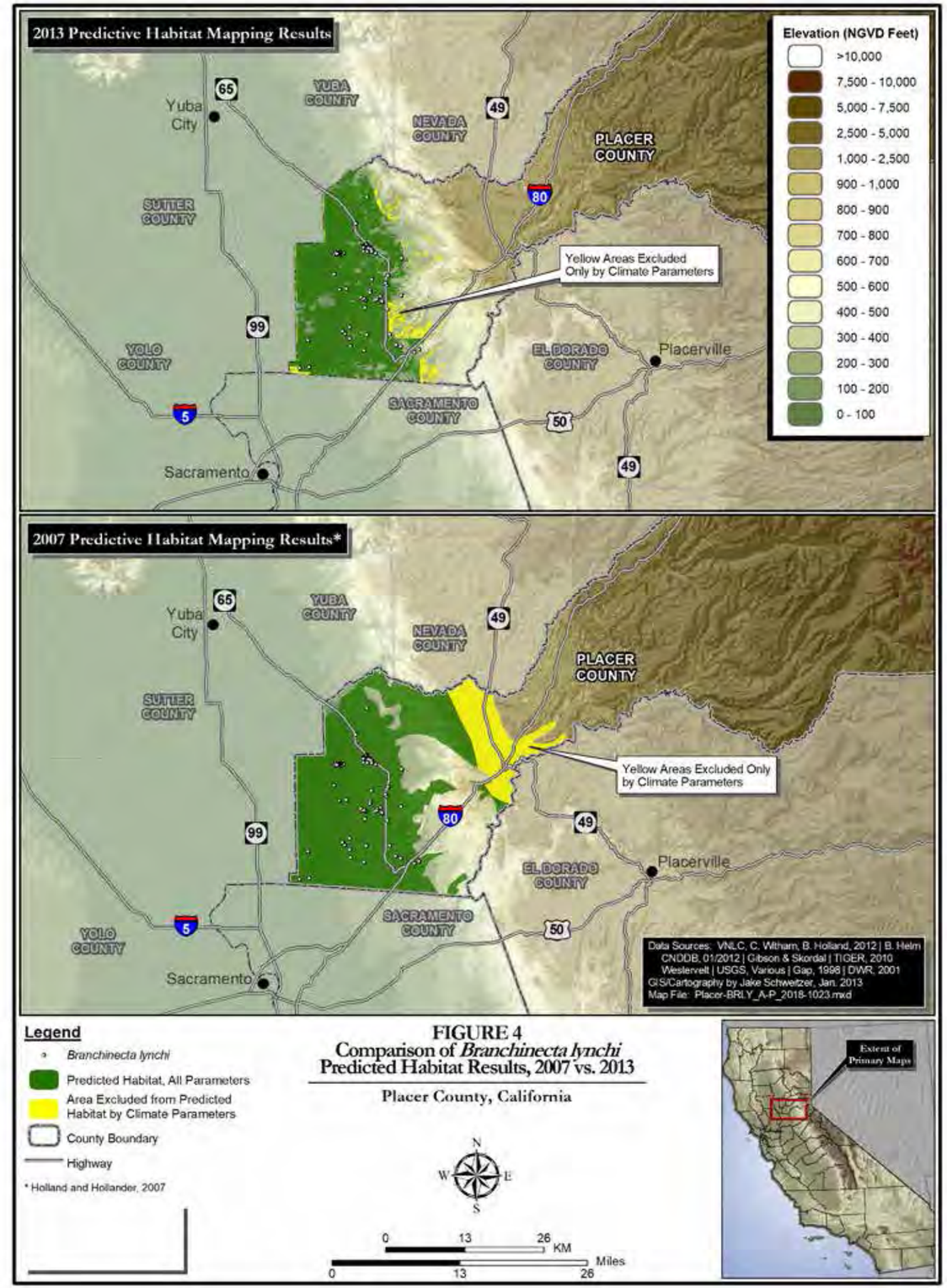
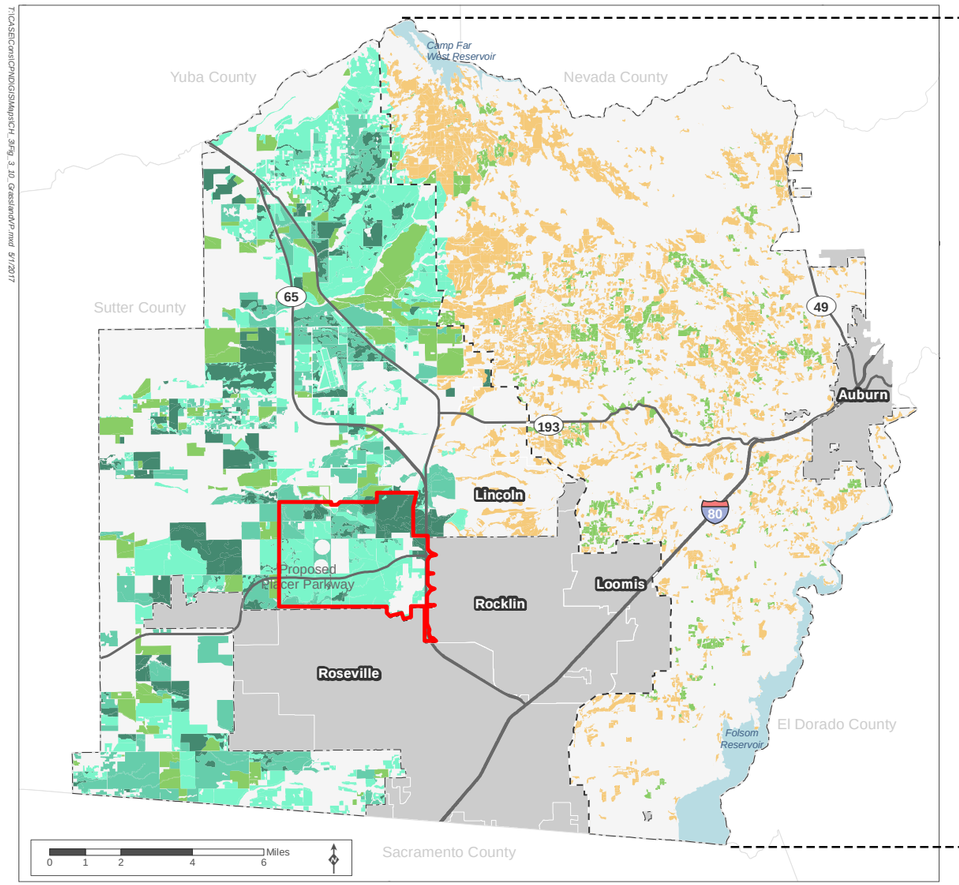


FIGURE 4
Comparison of *Branchinecta lynchi*
Predicted Habitat Results, 2007 vs. 2013
Placer County, California

Figure 3-13 Grassland and Vernal Pool Complex

Placer County Conservation Program - Western Placer County HCP/NCCP



Source: Placer County, 2014; MIG | TRA, 2015

Community and Land Cover Type

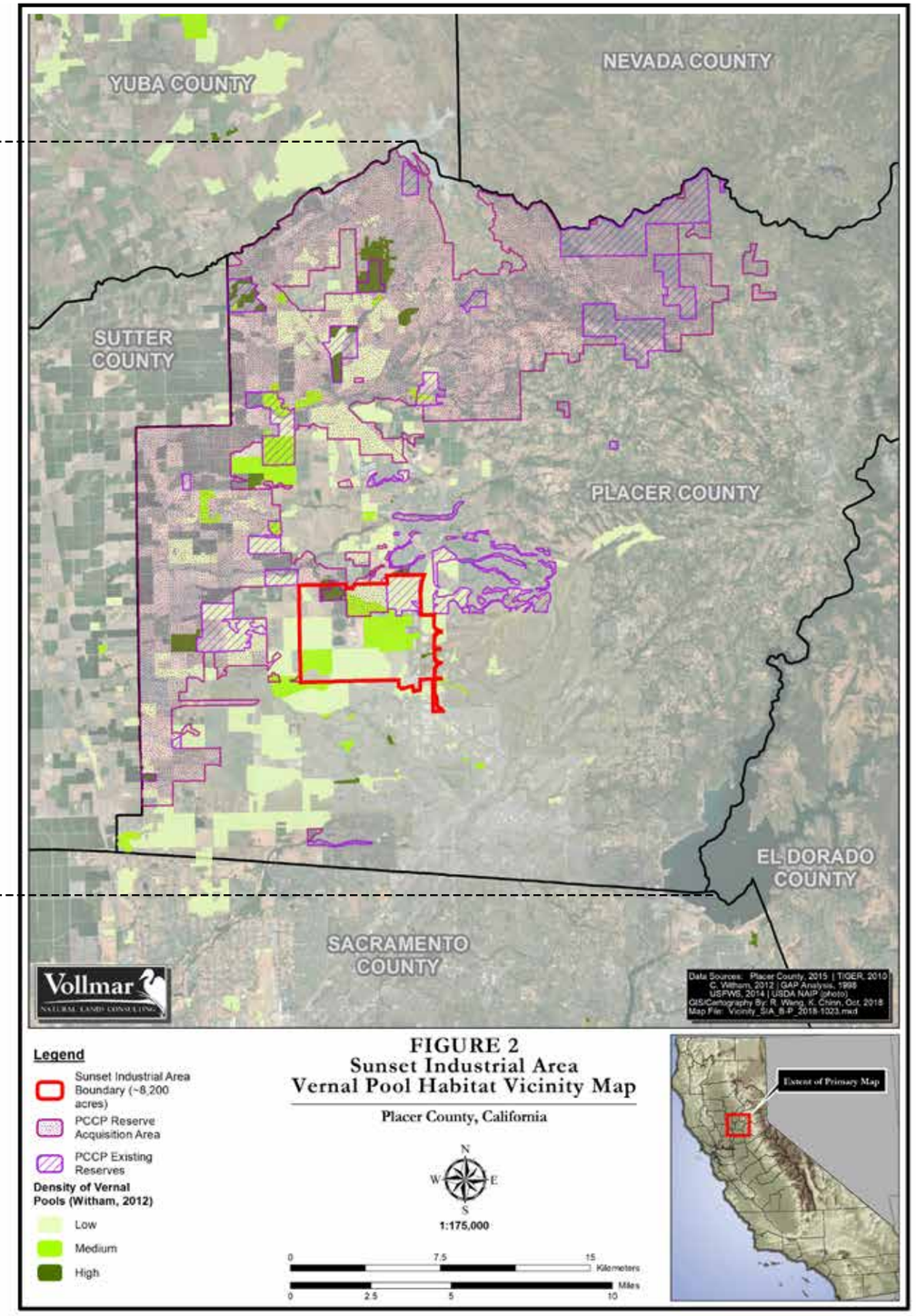
Grassland

- Annual Grassland
- Pasture

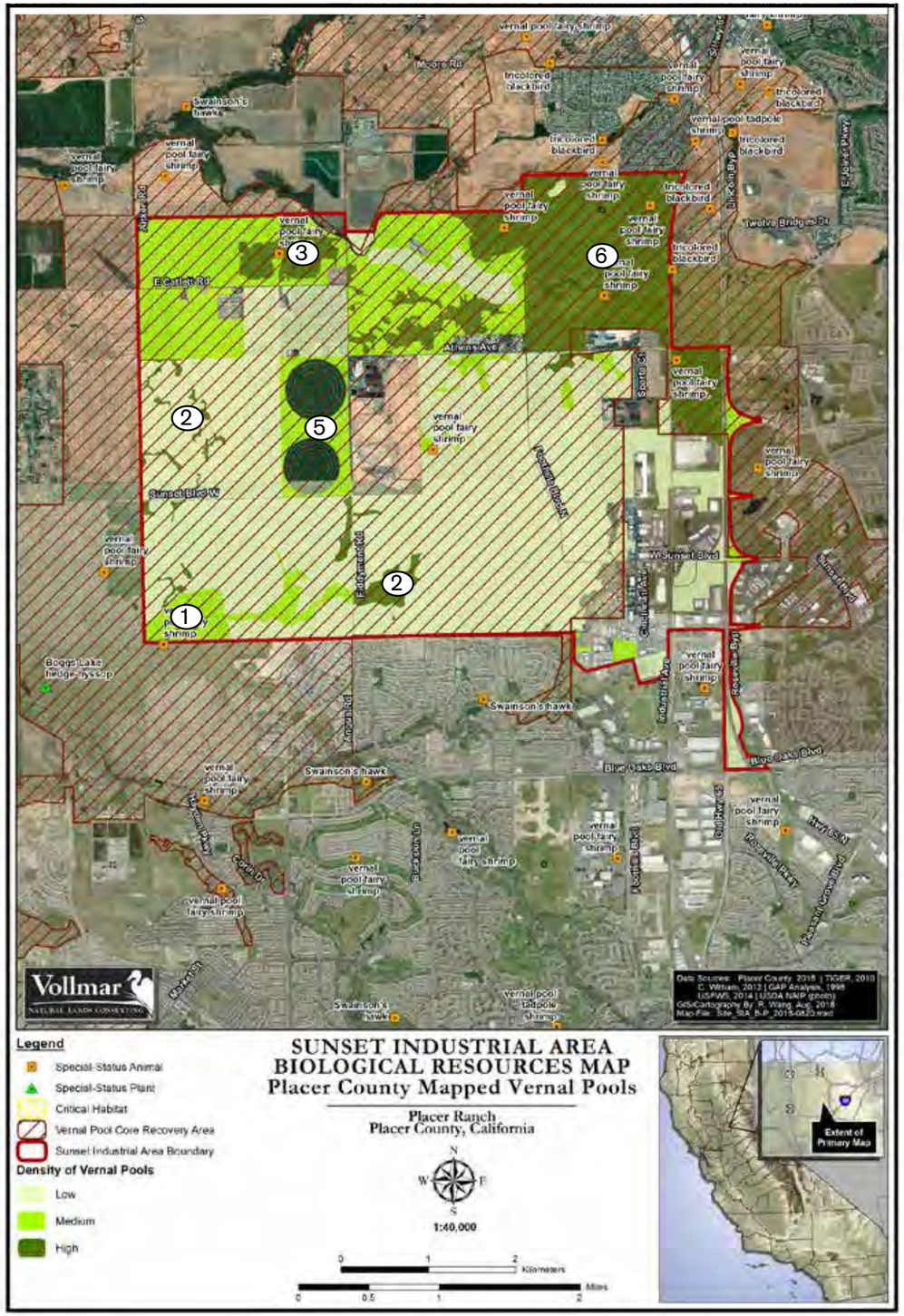
Vernal Pool Complex

- VPC High Density
- VPC Intermediate Density
- VPC Low Density

- Non-Participating City
- Major Road
- Valley/Foothill Divide
- Plan Area A



These two maps feature existing vernal pools. The County's Grassland and Vernal Pool Complex map (left) was created through aggregating multiple sources and thus does not have a consistent research method. It is the definitive map for the PCCP, SAP and PR. The other map (right) is from a comprehensive single study by vernal pool expert Carol Whitham, John Vollemar and John Schweitzer, commissioned by US Fish and Wildlife Services and the Bureau of Reclamation. These two maps have many differences in both the location and density of vernal pools, highlighted on the next spread.



Differences in Vernal Pool Maps

(1) Rice Terraces; cannot support vernal pools

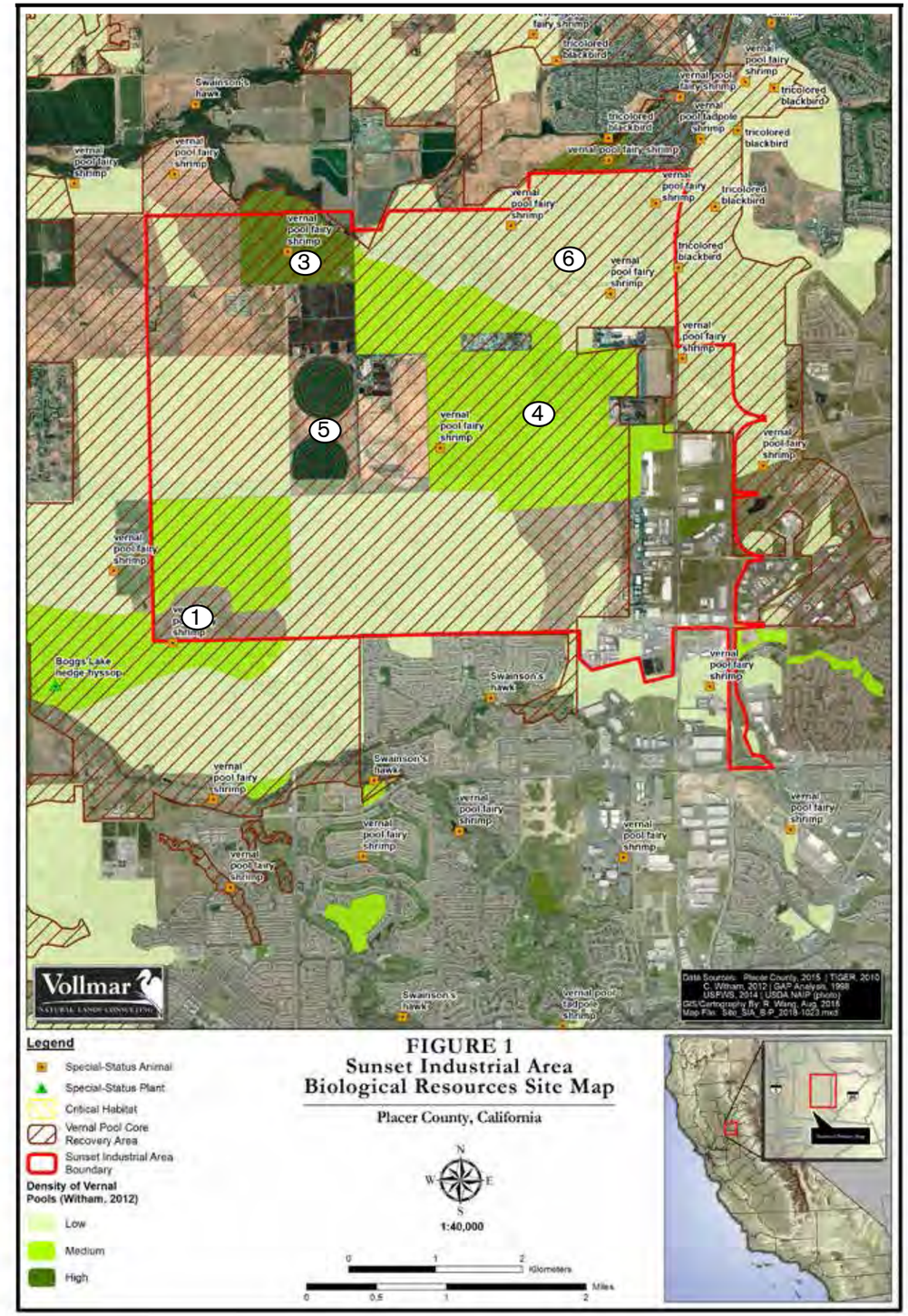
(2) Follows intermittent stream course

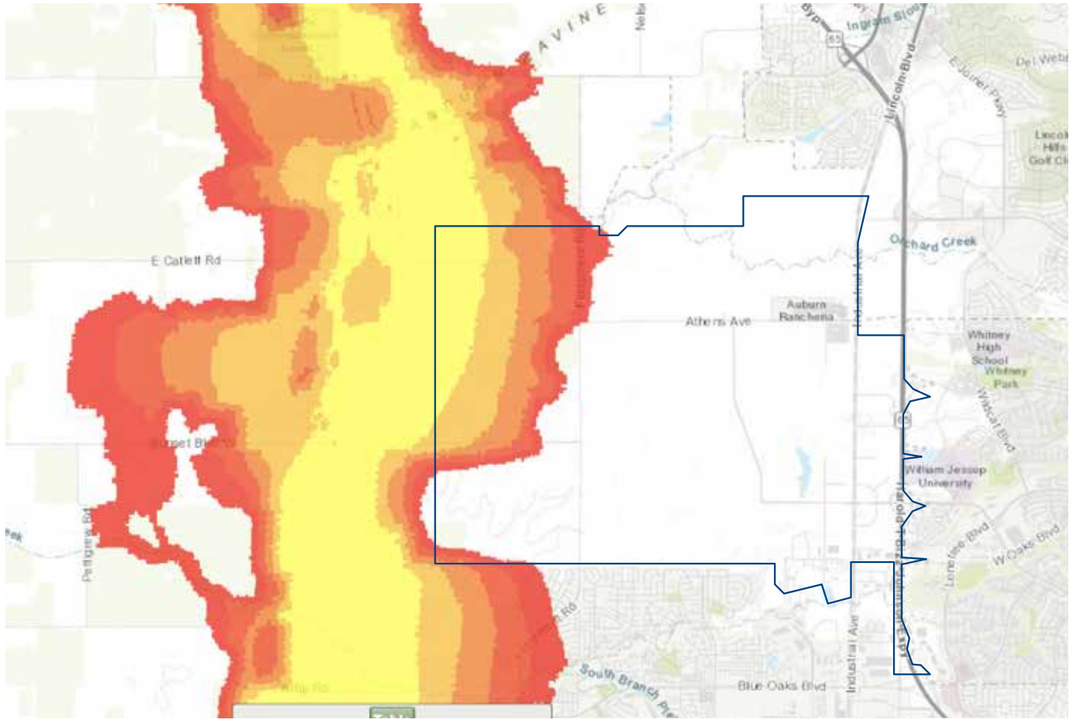
(3) Man-made vernal pool mitigation bank

(4) Second highest concentration of vernal pools in satellite images; Corresponds with Orchard Creek watershed divide

(5) Patterns of agriculture use make vernal pools unlikely

(6) Highest concentration of vernal pools in satellite images

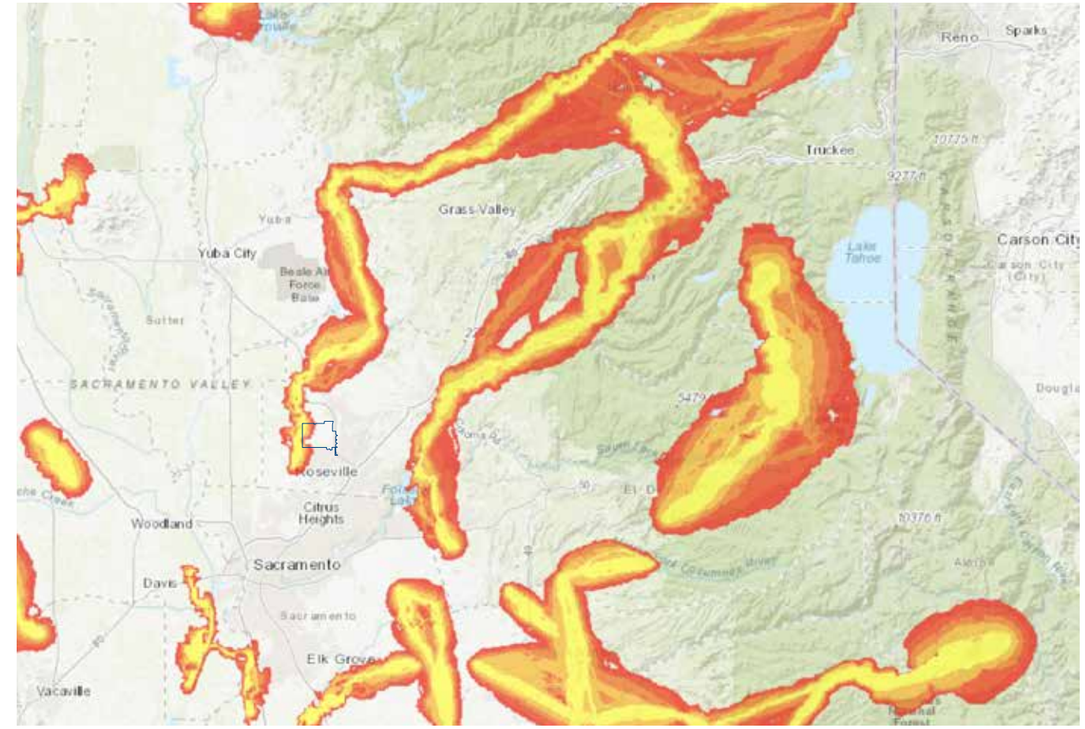




1/2 mile

Essential Connectivity Areas

The California Essential Habitat Connectivity Map shows the farmland to the west of the SA as a major migration corridor. Various fauna use this corridor to move between the grasslands and the high Sierras. At Roseville the habitat corridor is cut off. It may be surmised from the zoomed out map that it once connected with the a corridor in Davis or a corridor southeast of interstate 80.



10 miles

California Essential Habitat Connectivity (CEHC) [ds620] Map, California Department of Wish and Wildlife & CalTrans, 2010.

Legend
More Permeable
Less Permeable

Existing Conservation Areas

The north of the site currently has 4 existing reserves, some recreated habitat and some original habitat. The PCCP includes three of these reserves in it's green belt plan, WSMB excluded. The SAP does not specify any additional reserve besides for stream corridors in PR. The four reserves are as follows:

Warm Springs Mitigation Bank, WSMB
Not identified by PCCP
Owned by an out-of-state investment company possibly featuring recreated vernal pools

Moore Ranch Conservancy, MRC
Mitigation Bank with man made vernal pools
Mitigation Credits Sold Out

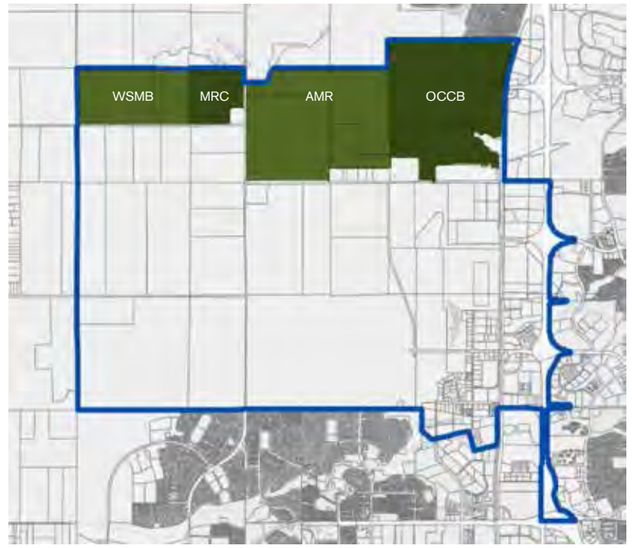
Antonio Mountain Ranch, AMR
Desired Acquisition for PCCP
Second best place for spotting falcons
Conversion from conservancy to mitigation bank 2018.
Owned by the Tsakopoulos family, SAP interest holders

Orchard Creek Conservation Bank, OCCB
Williamson Act Parcels
Included in PCCP
Mitigation Credits Sold Out

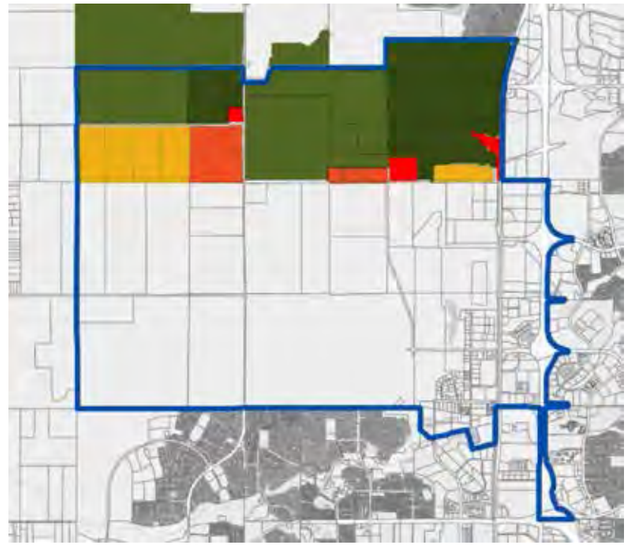
Adjoint Parcels of Concern

The parcels of concern are proposed as business parks and industrial zones in the SAP. These parcels are immediately adjacent to the conservation zone on at least two sides and have the potential to impact the reserves.

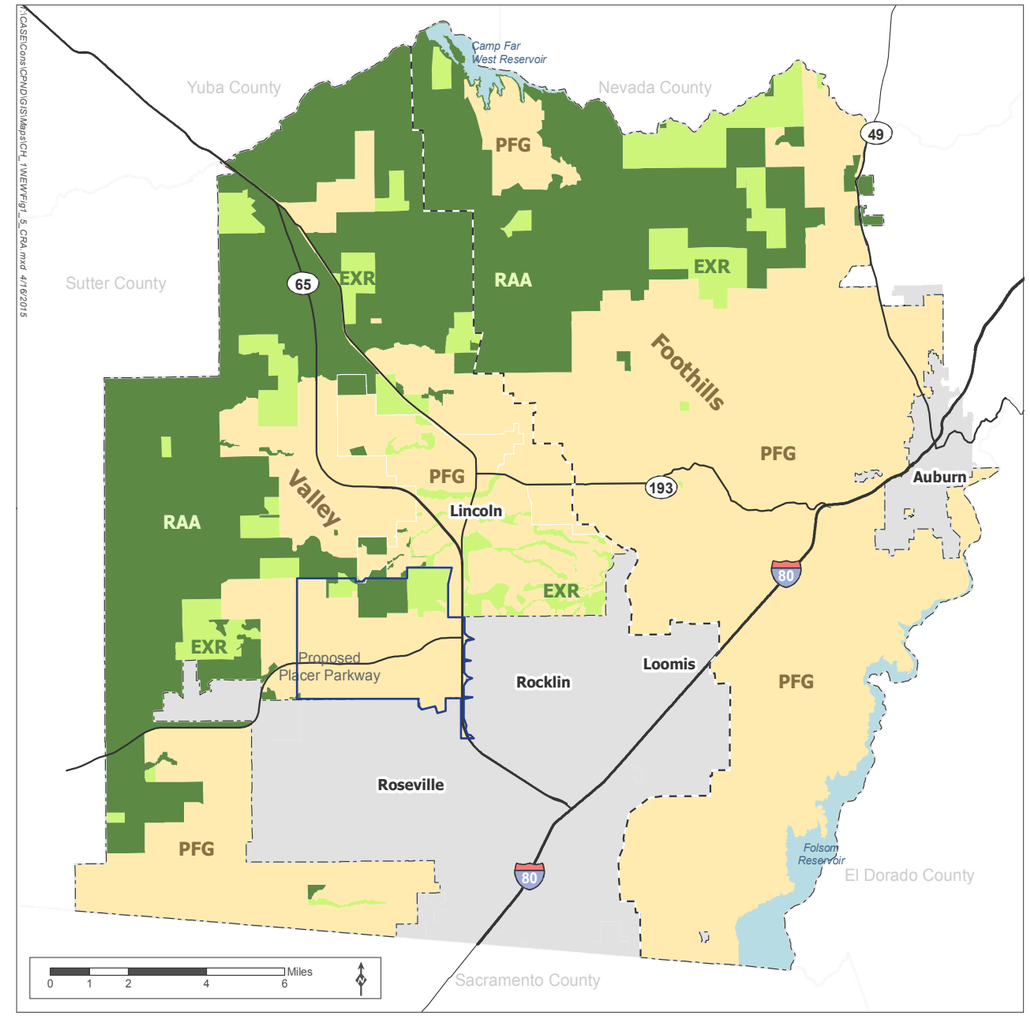
Development of the western parcels of concern would create a bottle neck for animals and plants crossing the east-west corridor. These parcels also provide the headwaters that feed the vernal pools. The eastern parcels of high and medium concern are proposed for large development expansion. The high concern parcels are currently greenfield while the medium concern parcel is the low density Athens Industrial Park. The low concern is Thunder Valley Casino, already built out.



Existing Reserves Map. Underlaying Parcel Map from the Placer County Assessor Office.



Parcels of Concern
- High
- Medium
- Low
- Conservation Zones



Source: Placer County, 2014; MIG | TRA 2015

- Reserve Aquisition Area (RAA)
- Potential Future Growth Area (PFG)
- Existing Reserve (EXR)
- Non-participating City
- Area A Boundary
- Highways
- Valley/Foothill Divide

MIG TRA

Figure 1-5 PCCP Designation Map
Placer County Conservation Program - Western Placer County HCP/NCCP

Conservation Management in the SA

These management strategies are from the Report of Science Advisors[1]:

1. Management strategies must include fencing for the protection of pool archipelagos from off-highway vehicle use, trash dumping, unauthorized hunting, and watershed alteration. Off-highway vehicles can alter hydrology, damage vegetation, and kill or injure small animals, especially when they are migrating to breeding areas.

2. Ground squirrels and other rodents must not be shot or poisoned because of their importance to the vernal pool community.

3. Pool complexes must be sufficiently free from disturbance so that ducks and other aquatic birds are able to move freely from pool to pool. Fairy shrimps are an important part of the diet of many birds, and the resistant cysts of the shrimps are dispersed from pool to pool in the guts of these birds or in the mud adhering to their feet.

4. Artificial drainages that alter pool hydrology must be eliminated, and the natural drainage pattern must be restored.

5. Vernal pools and their associated Valley Grassland habitats could be managed as grazing systems. In the absence of grazing, annual grasslands often become dominated by tall, dense stands of grasses such as ripgut brome and wild oats that are not used by many wildlife species. Fall grazing is also necessary to keep the vernal pools free of invasive vegetation.

6. Prescribed fire also may be considered as a management tool to mimic natural conditions and maintain the natural vegetative community.

7. Many other human uses including hiking, horseback riding, and other types of "soft" (less invasive) recreation are compatible with vernal pool conservation.

8. In the absence of protected areas, large areas of ranch land managed for both conservation and livestock production, provided that the grazing regime is consistent with vernal pool conservation, may be the best conservation prescription for vernal pools and their associated species. The latter strategy fits in well with Placer Legacy's agricultural conservation goals.

PCCP Off-site Mitigation

Wherever relevant the SA will be mitigated by the PCCP. In this process a developer will pay a land conversion fee and relevant special habitat fees per acre. The PCCP oversight body uses the money to purchase and protect habitat in the reserve acquisition area. The reserve area will include 20,000 acres of vernal pool grasslands and impacts to vernal pools must meet a no net loss standard of 2:1. By using the PCCP mitigation measure, we ensure the creation of effective reserves backed by scientific research. For a description of the different special habitat fees, see the Special Habitats Fee Schedule to the right[2].

The PCCP Mitigation Fee Estimate Table gives a range of $427 million to $566 million for allowable land conversion in the CISGP and SAP. It costs $ 134,473 to convert one acre of vernal pool habitat. Over fifty years, the Placer County valley region is budgeted to contribute $627 million in land conversion and special habitat fees.[3] Mitigation fees for the SA alone would cover 68% to 90% of the valley's estimated fees.

1 "County of Placer Natural Community Conservation Plan Habitat Conservation Plan, Report of the Science Advisors, Phase 1." Burssard, P. et al. January 8, 2004.

2 To see the Land Conservation Fee Schedule visit https://www.placerconservation.com/uploads/4/8/8/9/48899225/land_conservation_fee_schedule.pdf

3 Valley and Foothills Share of Plan Funding, HCP/PCCP Table 9-4. https://www.placerconservation.com/cost--funding.html

PCCP Mitigation Fee Estimate Table

		CISGP		SAP	
Land Conversion Fee	**$/acre**	**Acres**	**Total**	**Acres**	**Total**
All Development Projects	$24,923	4237	$105,598,751	5505	$137,193,638
Special Habitats Fee					
Vernal Pool Direct Effects					
County Vernal Pool Map	$109,550	3753	$411,086,375	3923	$429,730,690
Whitham & Vollmar Vernal Pool Map	$109,550	2942	$322,303,769	3515	$385,112,070
Vernal Pool Immediate Watershead Effects	$18,296	n/a		n/a	
Stream System Encroachment	$101,020	n/a		n/a	
Salmonoid Stream Channel	$591/lf	0		0	
Total Fees Max			$516,685,126		$566,924,328
Total Fees Min			$427,902,520		$522,305,708

This estimate uses two vernal pool maps to establish a range of possible fees. The actual vernal pool acreage will be determined on site. Special habitat fees other than direct effects to vernal pools have not been included. The total fees are not to be taken as final or definitive.

Special Habitats Fee Schedule

ID	Fee Name	Fee
4a	Vernal Pool Direct Effects	$109,550 per acre of vernal pool wetland constituent habitat altered by ground disturbance; includes entire delineated wetland area if any part is affected
4b	Vernal Pool Immediate Watershed Effects Applies to wetted area of vernal pool constituent habitats affected by ground disturbance in immediate watershed rather than affected directly. Not subject to temporary effects fee.	$18,296 per acre of wetland on project site not altered by ground disturbance, but within an immediate watershed that is altered by ground disturbance
4c	Aquatic/Wetland	$74,964 per acre of aquatic/wetland constituent habitat altered by ground disturbance
4d	Riverine/Riparian	$101,020 per acre of riverine/riparian constituent habitat altered by ground disturbance
4e	Stream System Encroachment Not subject to temporary effects fee.	$101,020 per acre of natural, semi-natural, and other agricultural communities in stream system altered by ground disturbance and not subject to a separate special habitat fee
4f	Salmonid Stream Channel Not subject to temporary effects fee.	$591 per linear foot; paid in addition to any other special habitat fee

Notes: All special habitat fees are paid in addition to the land conversion fee.
All amounts are in 2017 dollars. The PCA will update fees on an annual basis to reflect cost inflation.
Source: HCP/NCCP Table 9-7

Table 2 Notes: All amounts are in 2017 dollars. The PCA will update fees on an annual basis to reflect cost inflation.
"Existing Parcel" is a parcel at time of Plan adoption.
"Single Family Residential" is construction of one or more buildings designed for occupation by one family, including factory-built housing (modular housing).
"Per acre" applies to total parcel acreage, except where avoidance occurs pursuant to HCP/NCCP Section 6.3.1.3, General Condition 3, Land Conversion.
Source: HCP/NCCP Table 9-6

Special Habitats Fee Schedule, HCP/NCCP Table 9-6. https://www.placerconservation.com/uploads/4/8/8/9/48899225/special_habitats_fee_schedule.pdf

Human Systems

Leverage what Exists

Growing smarter means we locate development where infrastructure and services already exist or where infrastructure is already planned to provide adequate capacity. Doing so saves taxpayers money and maximizes the benefits of public investment. Steering development toward established places can help to revitalize neighborhoods that are languishing. It saves government funds by avoiding the unnecessary expenses of recreating or expanding roads, water and sewer capacity and schools.

Walkable Neighborhoods

Housing

Transport

Energy

Human Settlements

Designing Walkable Communities

Walkable communities have fundamental amenities within walking distance and are inherently mixed use. Their scale is similar to traditional towns, before people become reliant on cars, and have compact development to minimize walking distance and infrastructure. They have clear pedestrian routes and public spaces that extend the private realm. The smart growth standard uses a quarter mile diameter for walkable communities. This is also how far people will walk to reach a transit stop, the equivalent of a five minutes stroll.

The Quarter Mile Diagram shows how many walkable communities are possible in the SA. There are 40 circles in the diagram, 17 of which make up the Industrial Mixed Use zone and 8 which make up the University District. Of the 20 in the Industrial Mixed Use zone, 9 are far enough from the major roads to be suitable places to live.

The small parcel size in the mixed use area, featured in the SAP Parcel Size Diagram, enables a diversity of landowners and land uses to coexist within a quarter mile.

Guidelines

The following guidelines apply to the Innovation Mixed Use District. The guidelines are from the Smart Growth Tool Kit produced by Smart Growth America.

Strengthen and Direct Development Towards Existing Communities

1. Discourage sprawl-generating subsidies and encourage structured incentives for urban infill or transit-oriented development.
2. Locate schools and coordinate school investments to support existing neighborhoods.
3. Require schools to be centrally located to avoid extensive transporting and to minimize student travel distance and traffic congestion.
4. Establish regulations that support land reuse and require new urban growth to be coordinated with provision of infrastructure capacity.
5. Encourage infill development with specific zoning ordinances.
6. Establish tax credits/incentives or other policies to encourage infill over greenfield development.
7. Establish regulations that promote redevelopment of previously developed, underused or derelict properties (greyfields) for housing and/or mixed-use.
8. Establish land use strategies and incentives for redevelopment of brownfields.
9. Promote brownfields redevelopment for housing and/or mixed-use.
10. Establish minimum clean-up standards associated with brownfield proposed land uses.
11. Favor the use of existing infrastructure over new, and require that new development either is self-paying or that any required subsidization is made explicit.
12. Encourage regional tax sharing to discourage fiscalization of land use and destructive sales tax competition.
13. Establish an urban growth boundary.

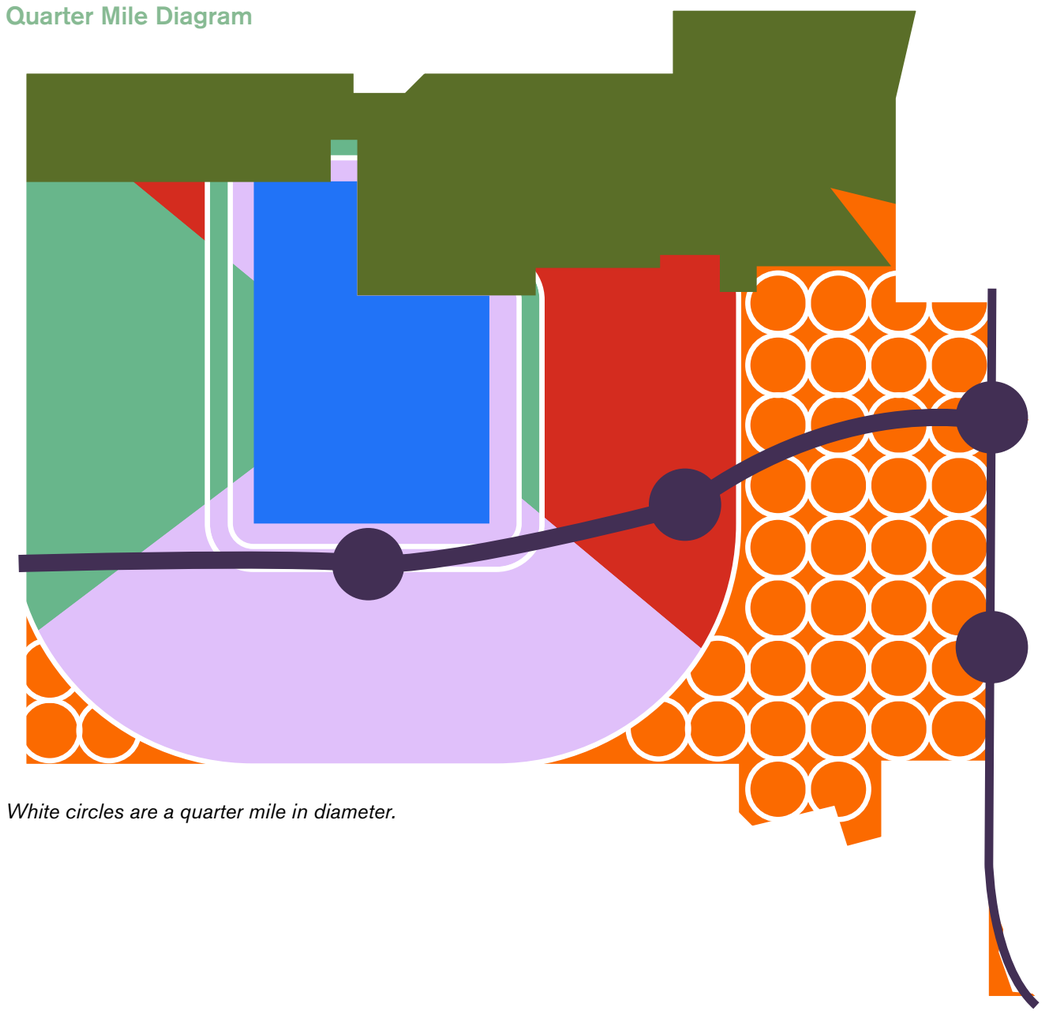
Mixed Land Use Policy

1. Encourage mixing of uses at building, site, and neighborhood levels.
2. Designate appropriate areas for mixed-use developments.
3. Encourage residential uses in the downtown districts.
4. Allow for home/office use in residential areas.

Adopt Compact Building Patterns and Efficient Infrastructure Design

1. Connect infrastructure decisions to land use planning.
2. Invest in rehabilitation of existing neighborhood schools over construction of new schools. Remove all minimum school acreage requirements.
3. Encourage energy efficient buildings and public infrastructure.
4. Encourage utilization of the full development capacity (density or floor area ratio).
5. Encourage reduced lot size and setback guidelines to encourage higher density.
6. Establish minimum densities for higher density development.
7. Allow for conversion of existing underutilized and/or abandoned nonresidential sites into housing and/or mixed-use developments.
8. Allow density bonuses along transit corridors.
9. Adopt reduced parking ratio requirements or establish maximums.
10. Provide for shared parking.
11. Allow for reduction in parking requirements in transit-oriented development (TOD).

Quarter Mile Diagram



White circles are a quarter mile in diameter.

Sense of Place Policy

1. Encourage or require the inclusion of places for interaction among residents within neighborhoods--such as parks, community centers, schools, commercial areas, churches and other gathering places.
2. Public and private development should support or strengthen the character of existing neighborhoods and enhance the sense of neighborhood identity.
3. Discourage new development that introduces elements that will cause neighborhood instability or create barriers within or among neighborhoods. Encourage development that abates any existing disruptive elements.

Create Walkable Neighborhoods Policy

1. Allow for narrow street widths to promote walkability and bicycle friendliness.
2. Adopt traffic-calming measures and pedestrian-controlled traffic signals to encourage bike and pedestrian friendliness.
3. Require sidewalks on both sides of the street.
4. Regulate curb cuts to enhance pedestrian use of sidewalks.
5. Connect sidewalks to amenities such as parks and open space.
6. Establish a trail system or other non-motorized public access to amenities.

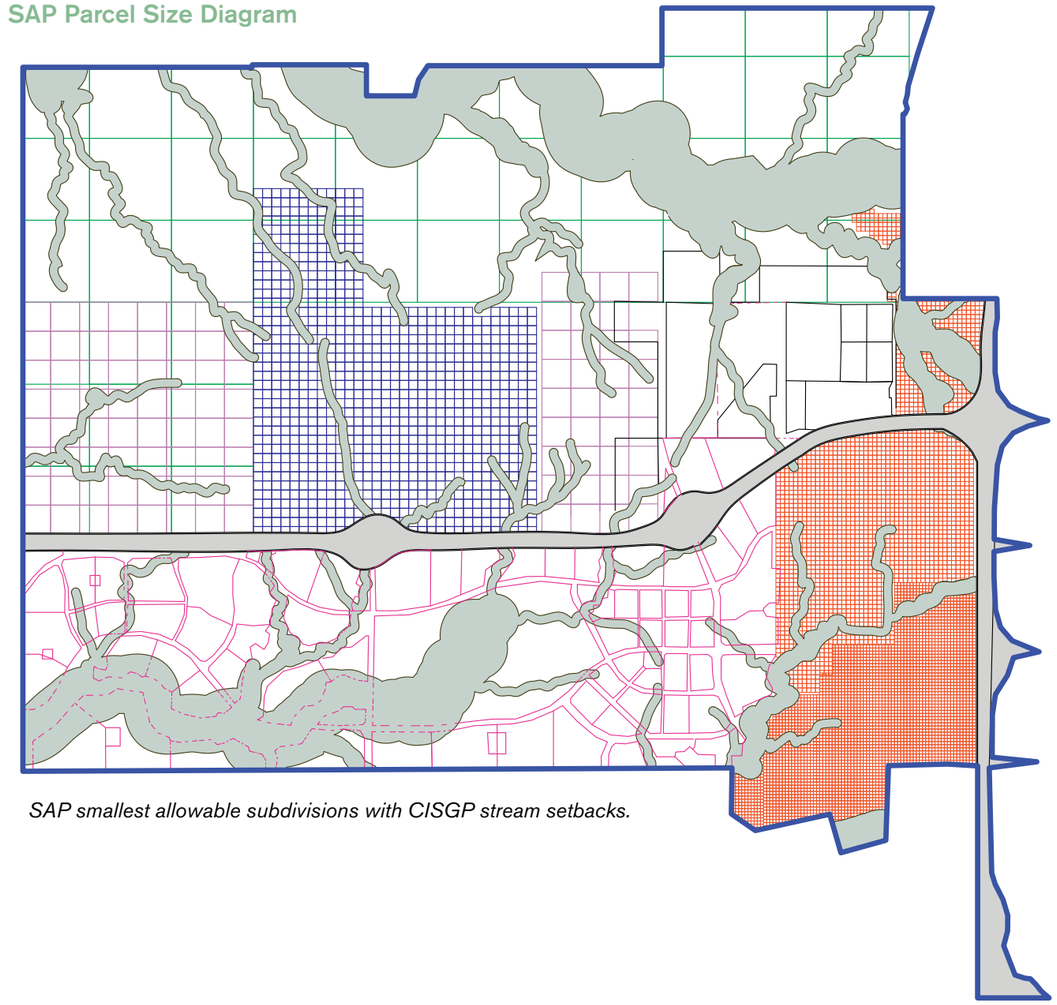
Diversity of Housing Opportunities and Choices Policy

1. Encourage traditional neighborhood residential patterns, which include diverse housing types (e.g. large family homes, cottages, boarding houses, duplexes and small apartments) and configurations (e.g. town homes, condominiums, or garden courtyard cottages).
2. Provide opportunities for a wide range of housing types (e.g. duplexes, apartments, live/work units, assisted living facilities, pre-fab houses).
3. Allow local zoning flexibility in housing sizes (smaller dwelling units).
4. Encourage mixed income housing developments.
5. Meet housing needs for all income groups.
6. Allow minimum lot-sizes low enough to accommodate all income groups.
7. Meet or exceed the fair share housing allocation for both market-rate and affordable housing within the region.
8. Allow for accessory housing within single-family residential zoning districts.
9. Encourage live-work homes by establishing zones where residents' businesses may share location with their homes. These uses are differentiated from "home occupations" in that they allow for non-resident employees and visitors. Uses may range from professional services to small manufacturing concerns.

Make Development Decisions Predictable, Fair, and Cost Effective

1. Incentives for historic preservation and infill development that make these projects as attractive to developers as building on green fields.
2. Clear design and construction standards, and review and approval processes set out for all types of development.
3. The local comprehensive plan, government regulations and action plans should be consistent with one another.

SAP Parcel Size Diagram



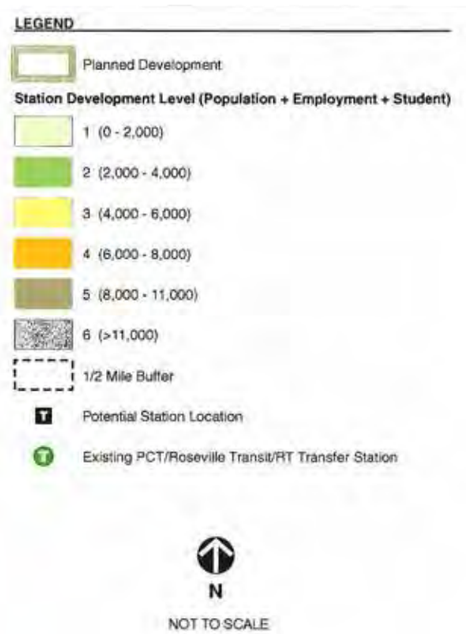
SAP smallest allowable subdivisions with CISGP stream setbacks.

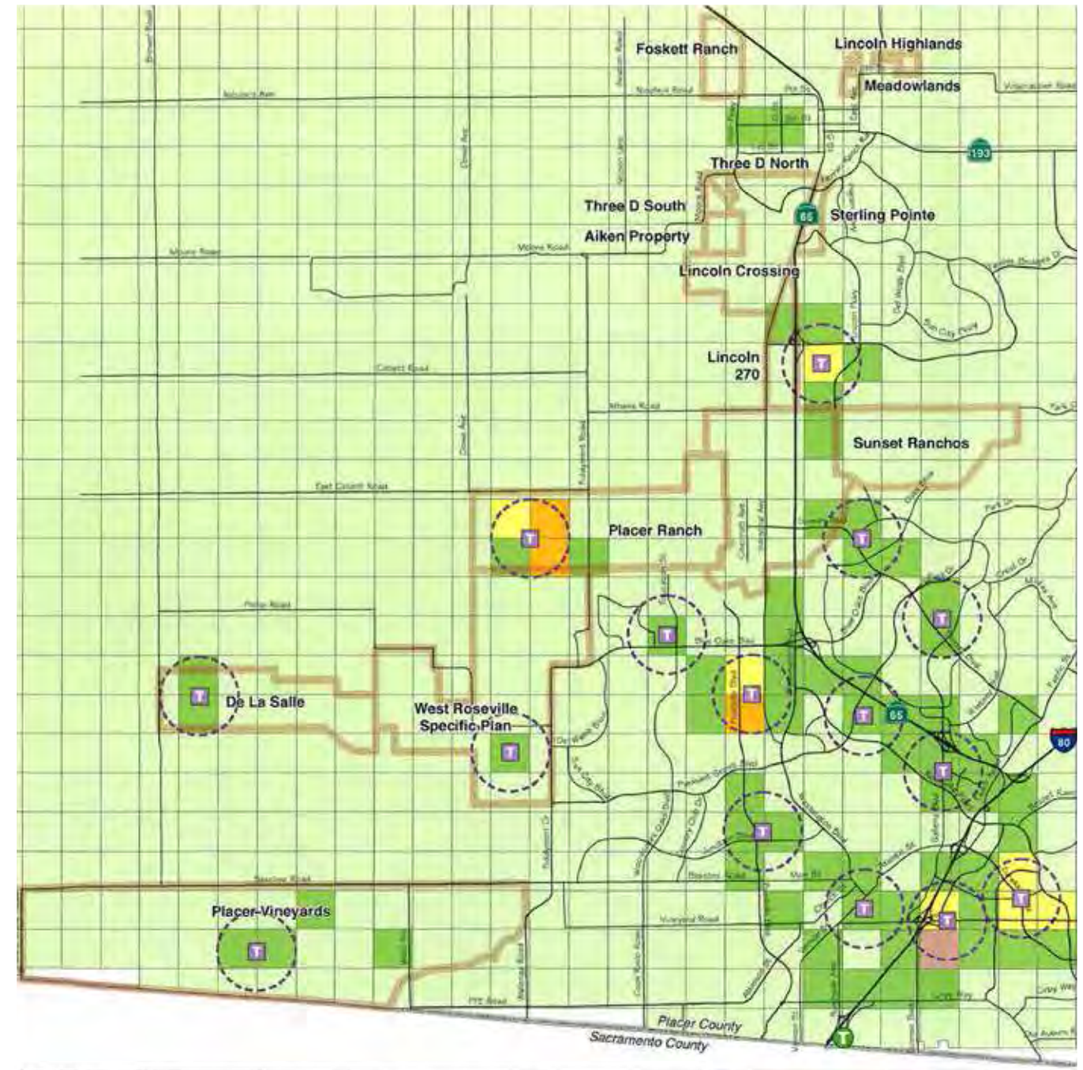
Public Transit

Certain population and employment densities are the foundation to support public transit. The more people per acre, the more robust a transit system can be supported. A study commissioned by the Placer County Department of Public Works found that Bus Rapid Transit (BRT) in South Placer needs 9 du/ac in residential areas and a minimum FAR of 1.0 in non-residential areas. These densities enable the proper spacing of stops and the level of ridership for financial feasibility. Light-rail requires an average density of 9 du over the entire length of the corridor. The corridor must be between 25 and 100 miles long and connect downtowns with 20 to 50 million square feet of non-residential uses. While the light-rail density does not currently exist in South Placer, a light-rail corridor should be reserved.

The main features of BRT include dedicated running ways, attractive stations, distinctive and easy-to-board vehicles, off-street fare collections, use of ITS technologies, and frequent all-day service (typically between 5 a.m. and midnight). The Federal Transit Administration (FTA) defines BRT as "a rapid mode of transportation that can provide the quality of rail transit and the flexibility of buses." Currently Placer County uses dial-a-bas and a minimal local bus system. BRT would be a substantial upgrade to public transit.

One of the key conditions for developing an effective BRT system is that the proposed location be an urbanized area with a strong central business district or activity centers with dense patterns that facilitate transit use. To make transit effective, the land use patterns should be complementary, meaning high residential densities and concentrated employment near stations. The CISGP includes these conditions to establish the foundation for BRT.





Station Development Level	Sacramento Analogue Low	Sacramento Analogue High	Bay Area Analogue Low	Bay Area Analogue High (Adjusted Ridership)
Level 1 Ridership:	N/A	Marconi/Arcade 1,540	San Martin 370	Orinda 1,770
Level 2 Ridership:	Marconi/Arcade 1,540	Roseville Rd 2,130	Atherton 490	N. Concord/Martinez 2,450
Level 3 Ridership:	Roseville Rd 2,130	65th St 3,620	Morgan Hill 720	Dublin/Pleasanton 8,550
Level 4 Ridership:	College Greens 1,540	Watt/I-80 4,400	Millbrae 1,610	El Cerrito Del Norte 9,950
Level 5 Ridership:	Watt/I-80 4,400	N/A	San Mateo 2,220	Balboa Park 11,000
TOD Scenario Level 6 Ridership:	N/A	N/A	Palo Alto 3,940	Berkeley 13,600

Example Density Map for determining the capacity of areas to support public transit. When this map was made in 2005, many of the same development projects were in the pipeline. While it does not include the CISGP, it does still have relevance regionally.

Bus Rapid Transit Conceptual Plan for South Placer County. Fehr & Peers, 2005. Commissioned by Placer County Department of Public Works.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

POTENTIAL BRT STATION AREA EVALUATION - YEAR 2025 CUMULATIVE POPULATION PLUS EMPLOYMENT AND STUDENT
FIGURE 6

TABLE 1. TRANSIT MODES RELATED TO RESIDENTIAL DENSITY CRITERIA

Mode	Service	Minimum Necessary Residential Density (dwelling units per acre)	Remarks
Dial-a-bus	Many origins to many destinations	6	Only if labor costs are not more than twice those of taxis
	Fixed destinations or subscription service	3.5 to 5	Lower figure if labor costs twice those of taxis; higher if thrice those of taxis
Local bus	"Minimum," ½ mile route spacing, 20 buses per day	4	Average, varies as a function of downtown size and distance from residential area to downtown
	"Intermediate," ½ mile route spacing, 40 buses per day	7	
	"Frequent," ½ mile route spacing, 120 buses per day	15	
Express bus -reached on foot	Five buses during two hour peak period	15 Average density over two square mile tributary area	From 10 to 15 miles away to largest downtowns only
Express bus -reached by auto (Park & Ride)	Five to ten buses during two hour peak period	3 Average density over 20 square mile tributary area	From 10 to 20 miles away to downtowns larger than 20 million square feet of non-residential floor space
Light rail	Five minute headways or better during peak hour	9 Average density for a corridor of 25 to 100 square miles	To downtowns of 20 to 50 million square feet of non-residential floor space
Rapid transit	Five minute headways or better during peak hour	12 Average density for a corridor of 100 to 150 square miles	To downtowns larger than 50 million square feet of nonresidential floor space
Commuter rail	Twenty trains a day	1 to 2	Only to largest downtowns, if rail line exists

Source: Pushkarev and Zupan, 1977.

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Fehr & Peers

Densities required to support various types of public transit.

Bus Rapid Transit Conceptual Plan for South Placer County. Fehr & Peers, 2005. Commissioned by Placer County Department of Public Works.

Bus Rapid Transit Guidelines[1]

1 Develop BRT alignment options that connect the potential stations with the greatest opportunity for transit-oriented development.
2. Provide transit-oriented land use development criteria for the ~ mile radius surrounding potential BRT stations.
3. Provide high-quality design with passenger amenities (such as shelters, seating, and lighting) to support a positive public perception of BRT service.
4. Respect the unique character of neighborhoods and districts and provide the appropriate balance between system continuity and contextual design.
5. Integrate with the current and future land use to generate greater patronage and develop design concepts cooperatively with the surrounding community.
6. Support an integrated system identity by keeping the transit service visible and recognizable to the community.
7. Provide an opportunity to improve streetscapes by incorporating new amenities such as landscaping and recreational trails.
8. BRT station should be located at major passenger concentrations (e.g., high-density residential areas, high-density employment areas, universities and high schools, and recreational centers).
9. BRT station should be located near major bus routes and major arterial roadways .
10. BRT station should be placed as far apart as possible and the recommended guidelines for BRT station spacing by arrival mode are show below.

0.25- 0.33 miles for pedestrians
0.5- 1.0 miles for bus
2.0 miles for automobile

10. BRT service plans generally prefer to have few high-frequency BRT routes than more routes with long headways.
11. Through service, at least for basic all-stop routes, is desirable when the round trip can be made in 2 hours (3 hours maximum).
12. Busway route structure should include basic all-stop service complemented by express (or limited-stop), feeder, and connector service.
13. The basic all-stop service should run all-day, from about 6 a.m. to midnight, 7 days a week; and the express service should operate weekdays throughout the day or just during peak hours.
14. The basic BRT service should operate at an interval of 5-10 minutes during peak hours, and 12-15 minutes at other times.

Provide a Variety of Transportation Choices[2]

1. Provide transportation choices to densely populated areas as well as major employment centers.
2. Link land use and transportation choices at the local and regional levels.
3. Address jobs and housing balance in the General Plan.
4. Locate new development, especially public facilities, in areas supported by a balanced transportation network.
5. Require roadway design standards that protect pedestrians and support transit and non-automotive modes.
6. Encourage transit-oriented (TOD) and transit friendly developments.
7. Grant density bonuses in transit or mixed -use districts.
8. Offer TOD-promoting incentives such as down payment assistance, reduced transit passes, and location efficient mortgages.
9. Encourage public transit use by integrating multi-modal use and connectivity (Park and Ride lots, transit centers, etc.).
10. Plan or maintain high-occupancy vehicle (HOV) lanes.
11. Encourage the formation of vanpools and carpools.

1 Guidelines from Bus Rapid Transit Conceptual Plan for South Placer County. Fehr & Peers, 2005. Commissioned by Placer County Department of Public Works.

2 Guidelines from the Smart Growth Tool Kit produced by Smart Growth America.

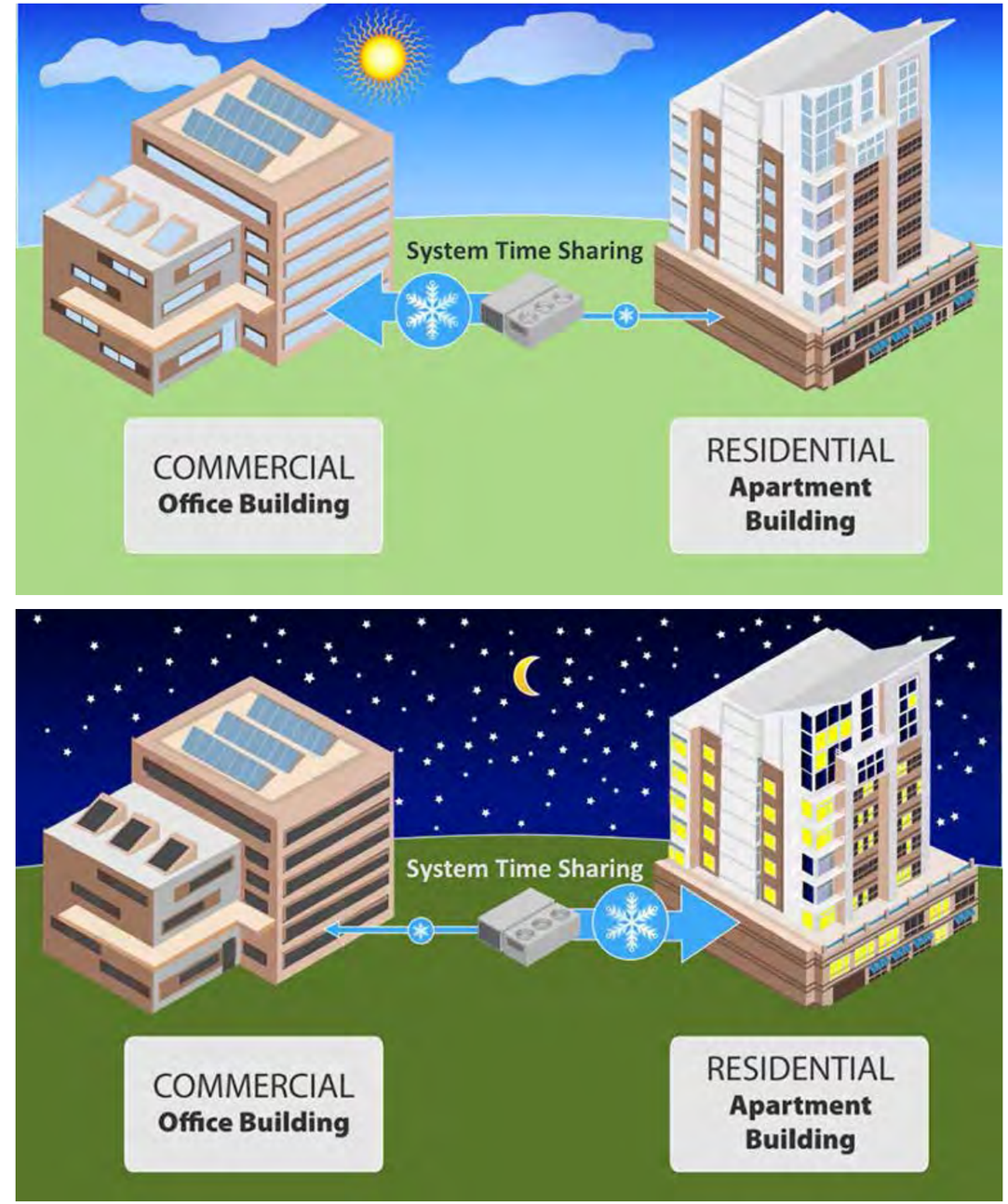
Energy

With a variety of socioeconomic residential units, industrial and commercial zones, energy efficient construction must be required, not simply encouraged. Placer County should expand and increase the mPOWER program to expedite energy efficiency renewal projects and retrofit older buildings in the proposed development area and the surrounding neighborhoods. The County should actively advertise county and state grant and incentive programs to residential and commercial sites within and around the Sunset Area.

Half of all new commercial and industrial construction to meet energy efficiency rating standards such as LEED, Living Building Challenge, WELL Building Standard, BOMA 360, NZEB, or other highly rated national building rating standard programs. These programs promote energy-efficient building practices which incorporate efficient technologies and offer incentives for on-site electricity generation.

All construction within the SA must comply with CALGreen building standards to ensure construction materials and waste are properly recycled. This includes encouraging the use of recycled materials throughout the construction of new projects.

Public parks and community areas should have electric outlets for landscape maintenance equipment. All new equipment purchased should be electric. The County shall require all new residential buildings to have south facing rooftops and solar panels. The County shall require and incentivize solar hot water heaters, efficient HVAC systems and appliances, and energy efficient lighting wherever possible. The County shall use its position to encourage energy infrastructure innovation.



URBANopt (Urban Renewable Building and Neighborhood optimization) is an example of an emerging energy infrastructure innovation. It leverage the U.S. Department of Energy's open-source building energy modeling ecosystem to analyze and optimize the distribution of electricity on the grid. These images show how district systems can take advantage of diversity in building loads.
Schott, Marjorie. "Figure 2." NREL Transforming Technology, www.nrel.gov/buildings/urbanopt.html.

Call to Action

At AEL, we believe we are stronger together. Join us in advocating for sustainable communities and equitable planning. Your voice counts! Here are some actions you can take:

Stay Informed

Join our email list to stay up to date:
allianceforenviroleadership@gmail.com

Communicate

Supervisor Robert Weygandt has jurisdictional authority over the West Placer Prairie / Sunset Area. Tell him and your own supervisor about your Sunset Area Plan (SAP) concerns and share the Citizen-Initiated Smart Growth Plan.

Robert Weygandt
Placer County Supervisor, District 2
175 Fulweiler Avenue
Auburn, CA 95603

rweygand@placer.cs.gov
Office Phone: 530-889-4010
Home Phone: 916-408-1264

Crystal Jacobsen, SAP Project Manager
cjacobe@placer.ca.gov
Michelle Kingsbury, **Placer Ranch Project Manger**
mkingsbu@pkacer.ca.giv

Attend

Show your support at the Board of Supervisors Meeting. Speak about the SA in the Draft Environmental Impact Report comment hearing on 2/14 or write in during the official comment period through 2/22. Join our mailing list to learn details!
allianceforenviroleadership@gmail.com

Mingle with us at our monthly workshops. Each month we invite speakers to address a specific topic in a group dialog and relate the topic to Sunset Area. This is a great place to give your input for the CISGP or volunteer to fact-find for a specific topic. Workshops are casual and held at a local brewery.

Share

Share the CISGP with the Press! With silence the County's SAP will slip through. Write a newspaper editor and accompany it with CISGP graphics.

Join the Alliance for Environmental Leadership on facebook, share our posts, and post your own! @allianceforenviroleadership

Citizen-Initiated Smart Growth Plan