
7.0 Resource Management

The Resource Management Chapter provides a discussion of sensitive environmental issues such as water quality and erosion, special status species, wetlands, air quality and noise.

With a development project of this scale impacts are unavoidable, however, the LRSP has been designed to conserve natural resources and mitigate, to the extent possible, the impacts associated with development of the Plan Area. Different chapters within this document discuss proposed systems and provide diagrams, policies, guidelines and standards that have been tempered in response to the complex objective of minimizing negative effects on air quality, water quality, energy demand, natural and historic resources while allowing development of the Plan Area. The Laguna Ridge EIR provides a full review of environmental impacts and lists mitigation measures to reduce impacts.

7.1 SOILS, AGRICULTURAL LAND LOSS AND EROSION CONTROL

Existing uses within the LRSP Plan Area consist of non-irrigated grazing, irrigated pastures and farming, hay fields, dairy operations, and rural residential homes. Much of the Plan Area is regularly disked in conjunction with these agricultural activities. The topography within the Plan Area is essentially flat ranging from 0% to 3% slopes.

7.1.1 Soils

The "*Preliminary Geotechnical Engineering Overview*" prepared by Wallace Kuhl & Associates identified the soils within the Plan Area as generally silty or sandy loams over a cemented clay hardpan layer. The San Joaquin silty loam is located on approximately 80% of the Plan Area and typically consists of a brown silt loam to a depth of approximately 23 inches, a 5 inch subsoil layer of a yellowish red clay loam claypan that is underlain by an indurated hard pan layer approximately 26 inches thick, and a substratum of yellowish brown loam.

The Soil Survey of Sacramento County California rates some of the soils with high clay contents as having moderate to high shrink-swell characteristics. The shallow depth to cemented soil strata results in poor permeability properties. For construction of buildings and roads, the high shrink-swell potential and low bearing strength of the subsoil present some design limitations, which may require special design modifications.

7.1.2 Agricultural Land Loss

The main limitation for crops on the site is the depth of the clay pan and hardpan layers, which reduces the yield of deep-rooted crops. Soils and agricultural operations in the Laguna Ridge Plan Area are generally considered to be marginal. The project will convert of 52.8 acres of Prime Farmland, 1,545.9 acres of Farmland of Statewide Importance, 51.0 acres of Unique Farmland, and 171.0 acres of Farmland of Local Importance to urban uses.

The City's General Plan discusses agricultural land loss and acknowledges that lands within the City will be urbanized over time. The EIR provides a consistency analysis with the General Plan policies and notes that the loss of agricultural land is a significant and unavoidable impact.

The City's General Plan does not require buffers to adjacent agricultural operations however the Laguna Ridge Land Use Plan locates roadways and landscape corridors to provide separation between urban and agricultural uses. Old Poppy Ridge Road is designated as a collector residential street and will provide separation from the small rural residential and agricultural uses south of this road. Big

Horn Boulevard will provide a 72-foot road right-of-way, a 25-foot landscape corridor and masonry wall. Bilby Road will provide a 48-foot road right-of-way and a 31-foot landscape corridor and masonry wall.

7.1.4 Soil, Erosion Control and Agricultural Guidelines and Standards

1. The City of Elk Grove may require a detailed Geotechnical/Soil Study concurrent with the submittal of improvement plans, until an adequate database of studies for the Plan Area exists. This study should list any special erosion control standards, building or roadway requirements, and drainage limitations regarding landscape materials.
2. During construction, the soil may erode, either through wind or water. Each development project within the Plan Area shall use Best Management Practices (BMPs) to reduce the total level of soil erosion. These practices may include but are not limited to: watering during grading operations to control dust; grading areas flat enough to limit run-off, covering slope banks upon completion of construction with a straw mulch or hydroseeding; silt fencing, and placing straw bales to slow and filter run-off.
3. Roadways, landscape corridors and masonry walls will be installed as noted by the Circulation Plan to provide separation from adjacent agricultural uses.

7.2 WATER QUALITY

Water quality concerns primarily focus on the effects of contaminated urban runoff on the natural drainages. The Environmental Protection Agency (EPA) has rules on stormwater discharge for construction activities and new uses pursuant to the National Pollutant and Discharge Elimination System (NPDES).

A secondary focus is any potential seepage of contaminants into the ground water table. There are a number of existing wastewater producers within the Plan Area including rural residential homes utilizing septic systems and dairy operations. The estimated water table depth of 95 feet below the ground surface, and the relatively impermeable "hardpan" soils minimize the potential impact from these existing uses.

The LRSP "backbone" drainage system includes a grass-lined drainage channel that connects from Big Horn Boulevard to Bruceville Road near the center of the project. Future underground storm drainage systems installed with the construction of subdivisions will direct run-off toward this grass-lined channel. The flat gradient of this channel and the proposed landscaping materials will serve to filter run-off. This grass-lined drainage channel continues to the west through the East Franklin Specific Plan and eventually the Stonelake area. A water quality and detention pond is proposed at the southern edge of the LRSP just north of Bilby Road to serve the southerly shed. As in the northern shed, subdivisions will be designed to convey water to this basin. The flat gradient of the basin and landscaping materials will serve to filter run-off.

7.2.1 Water Quality Standards and Guidelines

1. New development will be required install on-site sanitary sewer systems and will be required to connect to off-site sanitary sewer systems as soon as off-site facilities are available.
2. The NPDES requirements will be applied to new developments, and Best Management Practices (BMP) shall be required to minimize pollutant runoff during a storm occurrence.

The BMPs available for use on project sites during construction activities to decrease stormwater discharge include both non-structural and structural measures. The non-structural measures include grading controls and "housekeeping" techniques. Typical grading controls involve timing, staging, setbacks and buffers, and restrictions on open areas. Housekeeping techniques involve limitations on material storage and disposal, soil stabilization of all roads and entrances, dust control, and mandatory site cleanup. The structural measures that qualify as BMPs include perimeter controls, diversion channels, sedimentation collection systems, and soil stabilization. Perimeter controls include such items as fencing, sand bags, and hay bales. Typical diversion channels involve dikes, channels, swales, and grass-lined drainages. Sedimentation collection systems use items such as traps, basins, and inlet protection for storm drains. Finally, soil stabilization involves the use of temporary vegetation planting, mulching, netting, paved chute structures, and pipe slope drains.

7.3 BIOLOGICAL RESOURCES

City of Elk Grove General Plan policies mirror the Federal "no net loss" policy that require development, either public or private, replace impacted or lost habitat with habitat of equal or greater value. The Army Corps of Engineers, the U.S. Fish and Wildlife Service, the Environmental Protection Agency, and the California Department of Fish and Game establish guidelines for assessing impacts and establishing mitigation plans.

7.3.1 Vegetation

The majority of vegetation on the site consists of irrigated pasture and hayfields. Generally, these areas vary from relatively pure stands of grains to mixed ruderal vegetation including wild oats (*Avena* sp.), Ripgut Brome (*Bromus diandrus*), Yellow Star Thistle (*Centaurea solstitialis*), Soft Chess (*Bromus hordeaceus*), and Fitch's Tarweed (*Hemizonia fitchii*). The majority of this vegetation grows along the perimeters of on-site agricultural fields and along the existing roads, which outline the project site.

A number of trees are found within the Plan Area, generally located along fence lines, irrigation canals and existing roadways. Typical species include Blue Oak (*Quercus douglasii*), Valley Oak (*Quercus lobata*), Eucalyptus (*Eucalyptus* sp.), Northern California Black Walnut (*Juglans californica* var. *hindsii*), and English Walnut (*Juglans regia*). An "Arborists Survey" for the Plan Area was prepared February 5, 2001 by Foothill Associates. A total of 1,310 trees were inventoried, of which 1,294 are greater than 6-inches in diameter. Oaks comprise 67% of the total, and Eucalyptus account for 15% of the total. Some removal is inevitable with the construction of roadways and infrastructure.

Open water canals onsite are bordered by common riparian vegetation. Dominant species found in these areas include woody riparian vegetation and some wetland herbaceous species. Woody species include Fremont's Cottonwood (*Populus fremontii*), Arroyo Willow (*Salix lasiolepis*), and Valley Oak. Poison Oak (*Toxicodendron diversilobum*) and Himalayan Blackberry (*Rubus discolor*) are also found in these areas. Herbaceous species found in the canal include Yellow Water Primrose (*Ludwigia peploides*) and Smartweed (*Polygonum lapathifolium*).

No special status plant species were observed during site surveys. For more detailed information, please refer to the "Biological Resources Assessment and Preliminary Wetland Delineation prepared by Foothill Association April 4, 2002.

7.3.2 Wetlands

Generally, wetlands are identified and located by three criteria: hydrophytic vegetation, wetland hydrology, and hydric soils. Jurisdictional waters can also be defined by exhibiting a clearly defined bed and bank and ordinary high water mark.

There are a number of open ditches and canals located within the Plan Area that were constructed to provide for agricultural irrigation. These irrigation ditches and canals are man-made systems, would likely be dry in the absence of irrigation water, and generally do not possess the types of vegetation, soils or hydrology that would qualify them as wetlands. Therefore, they are not considered jurisdictional waters of the U.S. and, as such, would not be regulated by the Corps.

To determine the relative distribution and extent of wetland areas potentially subject to Corps jurisdiction, an investigation was conducted for the participating properties within Plan Area. Wetland delineations were conducted utilizing the methods outlined in the Corps of Engineers Wetland Delineation Manual (U.S. Army Corps of Engineers, 1987). The non-participating properties were mapped using aerial photograph analysis, review of available soils data, and observations made from off-site.

7.3.3 Special-Status Species

A preliminary survey for special-status species surveys was conducted for the Plan Area. Special-status species observed within the plan area include:

Swainson's Hawk

Three Swainson's hawks were observed foraging and roosting within the Plan Area; and nesting habitat is available onsite. Loss of Swainson's hawk foraging habitat within 10 miles of an active nest with fledglings may be subject to CEQA or local agency mitigation requirements, and is discussed by the LRSP EIR.

Giant Garter Snake

The giant garter snake has not been observed within the Plan Area. However, the on-site irrigation ditches and canals constitute potential habitat for this species.

Raptors

Two raptor nests were observed on the site. Active raptor nesting sites are protected by the MBTA; additionally, removal or destruction of active raptor nesting sites is considered a violation of CDFG Code (Section 3503.5).

7.3.4 Biological Resource Guidelines and Standards

1. Existing trees for a particular site shall be precisely field located in accordance with the City's Tree Preservation Ordinance at the time Tentative Subdivision Maps or development plans are prepared, so that potential tree impacts can be fully evaluated and appropriate mitigations can be considered.
2. The City of Elk Grove may require additional Biological Surveys to augment information gathered for participating property owners. Such surveys shall be required for non-participating properties. Surveys should delineate any existing wetland features and identify any sensitive species observed on-site.

3. A pre-construction raptor survey shall be required if construction or removal of trees is proposed to occur between to determine whether active nesting is occurring on the site during the raptor nesting season (typically February 15 to June 15).
4. A 500foot non-disturbance buffer shall be established around occupied Swainson's hawk nests prior to the commencement of grading operations. A buffer is not needed during the non-breeding season.

7.4 AIR QUALITY

Air quality is recognized as a significant environmental concern influencing the quality of life for all. The LRSP Land Use Plan and Circulation Plan are designed, and policies and standards have been included in this document, to provide a balanced mix of land uses and good connectivity between properties. This will serve to reduce automobile traffic and encourage alternative transportation modes.

The urban uses anticipated in the Specific Plan area would likely impact air quality almost exclusively through vehicular traffic generated by the development. Such impacts occur on two levels. Regionally, commuting and other traffic would add to trip generation and increase the vehicle miles traveled (VMT) within the local airshed. Locally, Plan Area traffic, especially at peak hours, would be added to the local roadway system traffic.

The Land Use Plan locates higher intensity land uses adjacent to arterial roadways to optimize the opportunities for alternative modes of transportation and transit connections, and to encourage ridership. Parks and schools have been located within each neighborhood to allow most residents the ability to walk to these amenities. The Land Use Plan also includes 195 acres of commercial uses to provide a balance to the proposed residential, and providing the opportunity for future residents to live and work within the Plan Area.

The proposed circulation system will provide a high degree of connectivity between land uses encourage alternative modes of transportation. Class II bike lanes are proposed on all arterial and collector streets, and a Class I bike trail is located alongside the main drainage corridor within the Plan Area. The LRSP will allow for transit options based on future technologies, as well as conventional alternatives such as a bus system, linkages to major trip generator centers, dial-a-ride, shuttle buses, jitneys for inter-community trips, and an extensive bikeway system. These components to the overall plan will serve to reduce the Vehicle Miles Traveled (VMT) within the Plan Area.

In addition to impacts associated with development and its associated vehicular traffic, secondary impacts may result from other small emission sources. These potential sources include: dust and fumes during construction, increased fossil-fuel combustion in power plants and other energy-consuming devices, evaporative emissions, increased business air travel, dust from tire wear and suspended roadway dust. All these emission points are either temporary, or they are so small in comparison to regional automotive sources that their impact would be negligible.

The land use pattern and circulation system for Laguna Ridge has been structured to reduce the category of trips which most contribute to air pollution. The greatest opportunity for reduction of air pollution from automobiles is in the reduction of the short, random trips for leisure, visiting, school and recreation.

7.4.1 AQ-15 Compliance

The City's General Plan Policy AQ-15 calls for the preparation of a management plan and implementation of specific measures from a pre-prepared list that can serve to reduce air quality impacts. This list has been reviewed and the AQ-15 measures that are appropriate to the Laguna Ridge Plan Area have been included on two tables. Table 7-1 provides a listing of the measures that will be applied to projects within the entire Plan Area. This list currently shows a Total of 15.75 points and therefore satisfies the requirements of AQ-15. Table 7-2 lists potential measures that individual builders could elect to apply to their individual projects, should certain measures included on Table 7-1 be deleted in the future, or in the case where a build seeks to further reduce impacts beyond that required. In any case, a total of 15 points must be achieved.

Table 7.1 Summary of Proposed Specific Plan AQ-15 Measures

#	Measure/Description	Land Use Type	Maximum Point Value	Allowed Point Value
	<i>Bicycle/Pedestrian/Transit:</i>			
1	Non-residential project provide bicycle lockers and/or racks.	C	0.5	0.25
2	Provide an additional 20 percent of required Class I or Class II bicycle parking facilities.	C	0.5	0.25
4	Bicycle storage (Class I or bike lockers) at apartment complexes or condos without garages.	R	0.5	0.25
5	Entire project is located within ½ mile of an existing Class I or Class II bike lane and provides a comparable bikeway connection to that existing facility.	R, C, M	1.0	1.0
7	The project provides for pedestrian facilities and improvements such as wider sidewalks, which are increased by one foot in width. These increases would be along arterial roads where there are separated sidewalks.	R, C, M	1.0	1.0
8	Provide a display case or kiosk displaying transportation information in a prominent area accessible to employees or customers. Provide opportunity in model home complexes to demonstrate electric vehicles.	C	0.5	0.5
	Subtotal			3.25
	<i>Parking:</i>			
14	Provide lighter colored reflective surface where parking lot areas are unshaded, at driveways, or fire lanes that reduces standard blacktop paving in these areas by 10% or more. This could be accomplished by using a lighter colored asphalt, pigment or concrete as an accent paver, or turf block.			0.5
16	Provide electric charging facilities. Run conduit into residential garages per building code: provide one charger in commercial areas if over 100 parking spaces; two chargers if over 200 parking spaces.	R, C, M	1.0	1.0
17	Provide preferential parking for carpools/vanpools.	C	0.5	0.5
18	Provide loading and unloading facilities for transit and	C	0.5	0.5

	carpool/vanpool users.			
20	Project is located within one mile of a park and ride lot operated by a transportation agency.	R	0.5	0.2
21	Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.	C	0.5	0.5
	Subtotal			3.20
	<i>Residential Development:</i>			
27	Multiple and direct street routing (grid style)	R, C, M	2.5	1.5
28	Granny Flats – Have ability to do ancillary "granny units" (requires Special Development Permit but no Accessory Structure Use Permit)	R	0.5	0.5
	Subtotal			2.0
	<i>Mixed Use:</i>			
30	Mixed use-Have at least 3 of the following on site and/or within a ¼ mile: Residential, Retail, Personal Services, Open Space, Office	R, C, M	1.0	1.0
31	Neighborhood serving as focal point with parks, schools and civic uses within ¼ mile.	R, M	0.5	0.25
32	Separate, safe and convenient bicycle and pedestrian paths connecting residential, commercial and office uses.	R, C, M	2.0	2.0
33	The project provides a development pattern that eliminates physical barriers such as walls, berms, landscaping, and slopes between multi-family and non-residential uses that impede bicycle or pedestrian circulation.	R, C, M	1.0	1.0
	Subtotal			4.25
	<i>Building Component Measures:</i>			
41	Install lowest emitting commercially feasible fireplace	R	1.0	1.0
44	Install Energy Star labeled roof materials or equivalent	C	0.5	0.5
45	Install fiber optic wiring and connection (i.e. CAT-5)	R, C, M	0.5	0.5
46	Comply with SMUD Advantage (Tier II) energy standards.	R, C, M	0.5	0.5
	Subtotal			2.5
	TOTAL POINTS			15.20

7.5 WATER CONSERVATION

Water is a valuable resource that must be conserved in all aspects of design and operation of land use in the Laguna Ridge plan area. Water conservation is encouraged, especially through the use of drought tolerant plant materials and efficient and appropriate irrigation systems. All new residences and commercial users will be required to have water meters.

The use of reclaimed water is discussed in Chapter 6 Infrastructure. This system will be constructed to provide landscape irrigation water to the major park sites and landscape corridors located adjacent to arterial and collector roadways.

7.6 ENERGY CONSERVATION

The Laguna Ridge Specific Plan provides the framework for establishing a passive solar community. This involves neighborhood design which incorporates primarily an east-west street pattern, allowing the greatest amount of building frontage to be located on the north and south sides.

Energy-saving landscaping requirements around buildings and in parking lots will reduce solar gain in summer and allow solar gain in winter. Plant material selection will also take into consideration water saving requirements.

7.7 CULTURAL RESOURCES

A "Cultural Resources Survey" was prepared for Plan Area. The existing homes and building complexes within the Plan Area have been researched and do not appear to be important resources under CEQA criteria. No building is associated with an event or person of recognized significance in California or American history. It is unlikely that the Plan will have any impact on important cultural resources.

7.7.1 Cultural Resource Standards and Guidelines

1. If, during development of specific projects within the Specific Plan area, any artifacts or unusual amounts of stones, bones, or shells are uncovered, an archeologist shall be consulted for an on-the-spot evaluation.

7.8 PARTICIPATING PROPERTY OWNERS

The Laguna Ridge Specific Plan EIR, prepared detailed site specific studies for participating property owners. Lands of non-participating owners will require additional studies, including Phase 1's and cultural resources.

(Insert Map from EIR)

7.9 EIR MITIGATION MONITORING AND REPORTING PLAN

The City of Elk Grove Planning Department will prepare an MMRP (Mitigation Monitoring and Reporting Program), to ensure that mitigation measures listed by the EIR are adequately addressed.