Yolo County

Design Guidelines

YOLO COUNTY DESIGN GUIDELINES

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Section 1, *Introduction*, and Section 2, *Appendices*, include general information that relate to all built projects. Separate *Design Guidelines* documents are available for Industrial, Commercial, and Residential development proposals.

The following sections are available as separate documents:

Industrial Guidelines

Applies to those areas zoned Limited Industrial (M-L), Light Industrial (M-1), and Heavy Industrial (M-2), and includes:

- Research and Testing Facilities
- Light and Heavy Manufacturing Facilities
- Agricultural Industrial Complexes
- Storage Facilities
- Automobile Service and Repair
- Corporation Yards
- Construction Shops and Yards
- Building Materials Sales
- Warehouses
- Canneries
- Trucking Terminals and Garages

Commercial Guidelines

Applies to those areas zoned Neighborhood Commercial (C-1), Community Commercial (C-2), General Commercial (C-3), and Highway Service Commercial (C-H), and includes:

- Retail/Mercantile
- Hotels
- Business, Professional, and Medical Offices
- Restaurants and Food Services
- Personal Services
- Grocery Stores
- Movie Theatres
- Big Box Retail

Residential Guidelines

Applies to new homes in areas zoned Residential Suburban (R-S), Residential One-Family (R-1), Residential One-Family or Duplex (R-2), and Multiple Family Residential (R-3)

- Single-Family Dwellings
- Duplexes
- Multiple-Family Dwellings/Apartments

1. Introduction

The Yolo County Design Guidelines expand on the policies governing development in the Yolo County General Plan, and associated community plans, as well as zoning and development regulations in the Yolo County Code. The Design Guidelines are intended to supplement the General Plan and County Code with a set of recommended design criteria for incorporating preferred design elements into new development projects located in the industrial, commercial, and residential zoning districts within the unincorporated area of the county. The Design Guidelines compliment, but do not supersede, any General Plan or community plan policies, or subsequent Specific Plan policies, regulating land use and development in the county. All development proposals in the industrial, commercial, and residential zoning districts will be reviewed for consistency with the Yolo County Design Guidelines.

a. Purpose

The Design Guidelines are intended to promote innovative design concepts for new development in the industrial, commercial, and residential zoning districts in the unincorporated area of the county, without limiting creative and/or alternative design solutions. The Guidelines will be used by county staff during project review, as well as developers, property owners, residents, decision makers, and other stakeholders seeking to develop in Yolo County. The ultimate goal is to provide a set of design criteria that outlines the county's expectations for the planning, design, and review of development proposals.

b. Design Principles

- Projects should incorporate:
  - Environmentally-sensitive site planning concepts,
  - High quality architectural design,
  - Innovative use of materials, i.e., resource conservation,
  - Sound construction methods, and
  - Green building techniques.
- The natural beauty of the county should be preserved.
- The built environment should respect and preserve the agricultural value of the land.
- The exterior of proposed developments should be compatible with and/or enhance the design scale and context of surrounding properties and buildings.

c. Applicability

The Design Guidelines apply to proposals for new development in the industrial, commercial, and residential zoning districts of the unincorporated area of the county, and could be used to encourage good design in the rural areas. The guidelines will be applied to ministerial projects (i.e., where only a building permit is required) and discretionary projects (i.e., Use Permits, and/or where a public hearing is required) in the non-agricultural zoning districts. Although the Guidelines are not intended to apply to rural residences and buildings within agricultural districts, applicants are encouraged to consider incorporating elements of the specific design criteria into their proposals.

In addition to building and site design, the Design Guidelines also include appendices for General Landscaping Guidelines (Appendix A) and Sustainability Guidelines (Appendix B). If questions arise regarding the Design Guidelines or Appendices, a planner at the Yolo County Planning and Public Works Department should be consulted.

d. Implementation

As noted above, all development projects (discretionary and non-discretionary) will be subject to review for their consistency, as applicable, with the Design Guidelines. In some cases, individual development applications may not be consistent with all of the Guidelines, but may meet some of the criteria. Efforts should be made by applicants to adhere to the most relevant Guidelines, and to document specific situations where meeting the Design Guidelines may not be possible or feasible. The Design Guidelines are meant to be adhered to unless superior or alternative design approaches are presented that contribute to the county's vision for environmentally-sensitive site planning.

e. Definitions

i. Guideline- Refers to a design recommendation or an approach in project design that reflects the county's vision for innovative development.
ii. Impervious Surface- Any material that prevents absorption of storm water into the ground. Common examples are concrete, asphalt, and building roofs.
iii. Mass- The three-dimensional bulk of a structure: height, width and depth.
iv. Pervious Surface- Any material that permits full or partial absorption of storm water through the surface of the material into the ground. Common examples are gravel and swales.
v. Scale- The spatial relationship between the mass of structures and open areas along a street or block front.

Yolo County: Landscaping Design Guidelines

Appendix A

APPLICABILITY

These Landscaping Design Guidelines provide general plant selection information that applies to all ornamental landscaping in Yolo County. Refer to the landscaping section in the Design Guidelines applicable to each project for site-specific information, including landscape-screening recommendations.

ORGANIZATION

The Landscaping Design Guidelines provide a synopsis of recommended plantings. The Plant Species Guide lists trees, shrubs, ground covers, vines, and ornamental grasses that are recommended for the Yolo County area. The Plant Species Guide is presented in a grid format for easy reference.

GUIDELINES

RECOMMENDED PLANTS

Projects should incorporate plants that are **heat tolerant, drought tolerant, and native** to the extent feasible. Generally, projects should devote at least 25 percent or more of the landscaping to native plants. Yolo County is historically hot in the summer months, so it is important that plants can tolerate temperatures above 100 degrees. It is also important that plants are drought tolerant since the region experiences low rainfall during the summer. Landscaping should also offer visual interest by using plants with varying forms, textures, and colors.

Drought tolerant, native plants require less time and money to maintain the landscaping because the plants will be suited to their environment. Excessive irrigation of ornamental landscaping wastes precious water. Plants not suited to their environment often require more water and maintenance, in addition to the use of fertilizers, herbicides, and pesticides. Landscaping that is suited for the local environment will mutually benefit both the landowner and the surrounding area by reducing maintenance costs as well as the harmful effects of fertilizers, herbicides, and pesticides. The attached spreadsheet contains an extensive listing of heat tolerant, drought tolerant, and native plants recommended for Yolo County.

INVASIVE PLANTS: DO NOT PLANT

The following species have become invasive and are strongly discouraged.

- Acacia: *Acacia* sp.
- Bermuda grass: *Cynodon dactylan*
- Bindweed or Orchard morning glory: *Convolvulus avensis*
- Bamboo: *Sasa, Bambusa, Aruninaria* sp.
- Cheat grass: *Bromus tectorum*
- Chinese pistache: *Pistachia chinensis.* Only a problem is both male and female plants are present.
- Cotoneaster: *Cotoneaster* sp.
- German ivy (Cape ivy): *Delairia odorata,* syn. *Senecio mikanioides*
- Himalayan blackberry: *Rubus discolor*

- Japanese honeysuckle: *Lonicera japonica*
- Lombardy & Hybrid poplar: *Populus* sp.
- Medusa-head: *Taeniatherum caput-medusae*
- Pennyroyal: *Mentha pulegium*
- Pyracantha: *Pyracantha* sp.
- Pampas grass or Jubatagrass: *Cortaderia selloana or Cortaderia jubata*. Crowds out native grasses and creates a fire hazard.
- Privet: *Ligusrum* sp., incl. *L. lucidum*
- Red brome: *Bromus madritensis* ssp. *Rubens*
- Tamarisk (Salt cedar): *Tamarix* sp., incl. *T. chinensis*
- Yellow star thistle: *Centaurea solstitialis*
- Water hyacinth: *Eichhornia crassipes*
- Iceplant: *Carpobrotus edulis*. Drought tolerant, but has invaded natural habitats, especially sand dunes.
- Fennel: *Foeniculum vulgare*. Fennel is very competitive against native species.
- English or Algerian Ivy: *Hedera helix or Hedera caneriensis*. These can smother understory vegetation, kill trees, and harbor snails and rats.
- Periwinkle: *Vinca major*. Stem fragments can re-sprout, causing them to smother native plants.
- Giant Reed or Giant Cane: *Arundo donax*. These plants grow tall and dense along waterways, causing a fire hazard and clogging the water flow.
- Green Fountain Grass: *Pennisetum setaceum*. Seeds spread aggressively and the plant grows fast. Fuels fires. NOTE: Red varieties of fountain grasses are not invasive, "*Rubrum*."
- Bridal Broom, French Broom, Portuguese Broom, Scotch Broom, or Spanish Broom: *Retama monosperma, Genista monspessulana, Cytisus striatus, Cytisus scoparius, or Spartium junceum*. The Flowers produce thousands of seeds resulting in dense thickets that invade plant and animal habitats and cause a fire hazard.
- Scarlet Wisteria: *Sesbania punicia*. This plant is invading river and stream corridors and pushing out native plants and animals.
- Tree of Heaven: *Ailanthus altissima*. Root sprouts can emerge up to 50' feet away from the parent tree.
- Blue Gum Eucalyptus: *Eucalyptus globules*. These trees are invading native plant communities and are extremely flammable.
- Russian Olive: *Elaeagnus angustifolia*. Invades river and stream corridors, and provides a poor habitat for animals.
- Black Locust: *Robinia pseudoacacia*. Spreads easily, grows very thick and all parts of the tree are toxic to humans and animals.
- Saltcedar: *Tamarix spp*. Uses excessive water and increases soil salinity. Also a fire hazard.
- Chinese Tallow Tree: *Sapium sebiferum*. Reproduces by root and seed and crowds out native plants.
- Mayten: *Maytenus boaria*. Has been found to be quickly spreading through the valley.
- Edible Fig: *Ficus carica*. Dominates stream and riverside habitats. (Does not apply to agricultural uses.)

RECOMMENDED LANDSCAPING RESOURCES

The user of this guide is encouraged to consult with landscape professionals and/or publications to determine appropriate locations and uses for each plant. The following recommended plant list is not all-inclusive and other plant selections may be used with site plan approval. In addition, it is important to recognize that the growth patterns listed in this document are approximations and actual growth patterns will vary based on location and soil type, among many other factors. Please contact a landscape professional if you have specific questions about how a particular plant will fare in a specific location.

The following resources were used to write these landscape guidelines and are recommended sources for additional information:

GENERAL INFORMATION

- sacvalleycnps.org: The website for the Sacramento Chapter of the California Native Plant Society has information on why it is important to plant native plants, as well as recommended plant lists.
- arboretum.ucdavis.edu/AllStar.htm: The website for the UC Davis Arboretum publishes lists of "All Stars." "All Stars" are plants that are well suited to the central valley. Documents on this website include descriptions and photos of many of the plants.
- calflora.org: The website for Calflora has a user friendly species search that gives the user feedback on appropriate plants for various areas with plant photos.
- California Native Plants for the Garden; by Carol Bornstein, David Fross, and Bart O'Brien: This book has extensive information, descriptions, and pictures of recommended plants, as well as information on how to design and care for landscaped areas.
- The Sunset Western Garden Book; published by Sunset: This book gives details on over 8,000 plants and information on how to plant in specific climates.
- Parks & Open Space Master Plan; Yolo County, CA, January 2006: This master plan contains suggested native plant species for landscaping and restoration in Yolo County.

INVASIVE SPECIES INFORMATION

- groups.ucanr.org/OHRIC/documents/newsletter1327.htm: This website has brochures on invasive species organized by region compiled by the University of California Cooperative Extension.
- cal-ipc.org/ip/inventory/weedlist.php?region=CAFP: This website includes a spreadsheet of all California invasive species compiled by the California Invasive Plant Council.

WATER QUALITY

- groups.ucanr.org/OHRIC/Landscape_Horticulture/: Describes how fertilizer and herbicides harm water quality by the University of California Cooperative Extension.

TREES

Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Growth Rate	Minimum Planter Width	Watering Requirement	Native Plant	Fall Color	Flowering	Additional Comments
Deciduous										
Aristocrat pear	*Pyrus calleryana "Aristocrat"*	25-50'	30'	Moderate	4'	M		X		Pollution resistant and drought tolerant
Arroyo willow	*Salix lasiolepis*	35'				H	X			Tolerates sand and seasonal flooding
Big-leaf maple	*Acer macrophyllum*	18'-100'				H	X	X	X	Has largest leaves of any maple
Box elder	*Acer negundo* ssp. *Californicum*	20'-40'				M	X		X	Drought tolerant
California black walnut	*Juglans californica*					IN	X			Requires intensive watering
California buckeye	*Aesculus californica*	15'-30'				VL	X		X	Prevents erosion in hilly regions
European hackberry	*Celtis australis*	40'	30-40'	Moderate	6'	M				Requires well-drained soil, but can be nutrionally poor
European hornbeam	*Carpinus betulus*	40'	40'	Rapid	6'	M		X		Useful for providing shade
Fan-Tex ash	*Fraxinus velutina 'Rio Grande'*	30-50'	30-40'	Rapid	6'	M				Best ash for residential landscapes
Flowering plum	*Prunus cerasifera*	20'	12'	Moderate	3'	M		X		Prefers well-drained, acidic soil
Fremont cottonwood	*Populus fremontii*	100'				M	X			Riparian
Golden rain tree	*Kolereuteria paniculata*	20-35'	10-40'	Moderate	4'	M		X		Flowers in mid-summer
Kentucky coffee tree	*Gymnocladus dioica*	60-100'	45-50'	Rapid	6'	M				Tolerates poorer soils and drought
London plane tree	*Platanus acerifolia "Bloodgood Strain*	60'	50'	Rapid	8'	M				Tolerant to pollution, adverse soil conditions, heat, and drought
Maidenhair "autumn gold"	*Ginko b. "Autumn Gold"*	60'	45'	Slow	6'	M		X		
Maidenhair "saratoga"	*Ginko b. "Saratoga"*	60'	45'	Slow	6'	M		X		
Oregon ash	*Fraxinus latifolia*	70'				M	X			Prefers damp, loose soils
Pacific willow	*Salix lucida*	53'				H	X			
Red willow	*Salix laevigata*					H	X			
Sandbar willow	*Salix exigua, S. hindsiana*					H	X			
Sour gum tree/tupelo	*Nyssa sylvatica*	40'	20'	Moderate	4'	M		X		
Sawleaf zelkova	*Zelkova serata*	50-90'	50-90'	Rapid	6'	M		X		
Western redbud	*Cercis occidentalis*	6'-16'				VL	X		X	
Western sycamore	*Platanus racemosa*	30-100'	11'	Rapid		M	X			5-6" long and wide leaves
White alder	*Alnus rhombifolia*	30'-40'				H	X			
Ornamentals										
Chitalpa "pink dawn"	*Chitalpa tashkentensis*	20-30'	20-30-	Rapid	4'	M				
Crape myrtle	*Lagaerstromia indica or hybrids*	8'-30'	5'-25'	Moderate	3'	L				
Eastern redbud "forest pans	*Cercis candensia*	25-35'	25'	Moderate	3'	M		X		
English hawthorn	*Crataegus laevigate "Paul' Scarlet"*	18-25'	15-25'	Moderate	4'	M		X		
Flowering crabapple	*Malus floribunda "Prairiefire"*	20'	20'	Moderate	4'	M				
Coniferous Evergreens										
Atlantic cedar	*Cedrus atlantica*	60'+	30'	Slow/Mod	6'	M				
Arizona cypress	*Cupressus arizonica*	40'	20'	Slow/Mod	6'	VL				
Beefwood	*Casuarina stricta*	20-35'	20-35'	Rapid	6'	L				
Calabrian pine	*Pinus brutia*	30-80'	15-25'	Rapid	6'	L				
California juniper	*Juniperus californica*	10-40'	10-40'	Moderate	6'	L				
Canary Island pine	*Pinus canariensis*	50-80'	20-35'	Rapid	6'	L				
Coast redwood	*Sequoia semperviens "Soquel"*	70-90'		Rapid	8'	H	X		X	
Deodar cedar	*Cedrus deodara*	80'	40'	Rapid	6'	M				
Fern pine	*Podocarpus gracilor*	20'-60'				M				
Ghost pine	*Pinus sabiniana*	100'				VL	X			Grey-green needles, large cones
Incense cedar	*Calocedrus decurrens*	75-90'	10-15'	Slow/Mod	6'	M	X		X	
Japanese cryptomeria	*Cryptomerica japonica*	100'	30'	Rapid	6'	H				
Western red cedar	*Thuja plicata "Fastigiata"*	80-90'	20-25'	Moderate	6'	L	X			Drought tolerant; does not tolerate heavy watering
Broadleaf Evergreens										
African sumac	*Rhus lancea*	20-30'	20-35'	Slow		L				
California laurel	*Umbellularia californica*	20-25'	20-25'	Slow		M	X		X	
Toyon	*Heteromeles arbutifolia*	8'-25'	8'-15'			VL	X		X	
Oaks										
Blue oak	*Quercus douglasii*	50'-70'	40-70'	Moderate	8'	VL	X			
Burr oak	*Quercus macrocarpa*	60-75'	60-75'	Moderate	8'		X			Drought tolerant; does not tolerate heavy watering
California black oak	*Quercus keloggii*					M	X			
California live oak	*Quercus agrifolia*	32'-80'				L				
Cork oak	*Quercus suber*	40'	40'	Moderate	8'	L				
English oak	*Quercus robur*	50-60'	30'	Rapid	8'	M				
Holly oak	*Quercus ilex*	40-70'	40-70'	Moderate	8'	L				
Interior live oak	*Quercus wislizenii*	30-70'				VL	X			Recovers quickly after fire damage.
Scarlet oak	*Quercus coccinea*	60-80'	40-60'	Moderate	8'	M		X		
Southern live oak	*Quercus virginiana*	60'	60-90'	Moderate	8'	M				
Valley oak	*Quercus lobata*	100'	70'	Moderate	8'	L	X		X	

SHRUBS

Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Watering Requirement	Native Plant	Fruit	Flowering	Additional Comments
California buckeye	*Aesculus californica*	15'-30'		VL	X		X	
California fuchsia	*Epilobium canum*	1'-3'	9'	L	X		X	Drought tolerant
California grape	*Vitis californicus*	30'		M	X			
Chamise	*Adenostoma fasiculatum*	13'		VL	X			
Elderberry	*Sambucus mexicana*	6'-20'	6'-20'	L	X	X	X	Riparian
Mountain mahogany	*Cercocarpus betuloides*	15'	15'	VL	X			
St. Catherine's lace	*Eriogonum giganteum*	5'	5'-10'	L	X		X	
Mule fat	*Baccharis viminea, B. salicifolia*			L	X		X	Drought tolerant; grows well in riparian and associated upland areas.
Squaw bush	*Rhus trilobata*	4'		L				
Western redbud	*Cercis occidentalis*	15'		VL	X		X	
Yerba santa	*Eriodicton californicum*			L	X			Drought tolerant; does not tolerate extra water in summer
Toyon	*Heteromeles arbutifolia*	6'-15'	6'-15'	VL	X	X	X	
Wild lilac	*Ceanothus sp.*	varies	varies	M	X		X	Drought tolerant
Coyote brush	*Baccharis pilularis*	5'-8'	4'	L	X		X	Heat and drought tolerant
California wild rose	*Rosa californica*	10'		L	X		X	Riparian. Resistant to alkali soils
Fuchsia-flowered gooseber	*Ribes speciosum*	about 6'	varies	L	X		X	
Western spice bush	*Caulycanthus occidentalis*	5-12'	5-12'	L	X		X	
Red-twid dogwood	*Cornus stolonifera*	4-8'	10'	M	X		X	
Manzanitas	*Arctostaphylos sp.*	varies	varies	L	X		X	
Bush poppy or island BP	*Dendromecon rigida or D.har*	3'-6'		M	X		X	
Cleveland sage	*Salvia clevelandii*	4'		L	X		X	
Coffeeberry	*Rhamnus californica*	15'		L	X	X		Hedgerow plant
Jerusalem sage	*Phlomis fruticosa*	4-6'		L			X	
Japanese kerria	*Kerria japonica*	3-6'	6-9'	M			X	
Forsythia	*Forsythia x intermidia*			L			X	
Golden currant	*Ribes aureum*	8'-16'	6'-12'	L		X	X	
Buttonbush, button willow	*Cephalanthus occidentalis*	20'			X		X	Summer insectary plant. Riparian
Brown dogwood	*Cornus glabrata*				X			Requires moist conditions
California blackberry	*Rubus ursinus*	10'-20'		L	X	X	X	Moist areas below 5,000 feet

GROUND COVERS AND VINES

Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Watering Requirement	Native Plant	Fruit	Flowering	Additional Comments
Creeping mahonia	*Mahonia or Berberis repens*	1'-6'	varies	M	X	X	X	
Manzanitas	*Arctostaphylos sp.*	varies	varies	M	X		X	
Virgin's bower	*Clematis ligusticifolia*			M	X		X	Riparian. Will cover large areas if allowed to grow freely
Wild grape	*Vitis californica*			M			X	Riparian. Flowers in May and June
Jasmine (Asian or Ivory st	*Trachelospermum asiaticum*		20'	M			X	
Pachysandra "Japanese s	*Pachysandra terminalis*			M				
Taiwan raspberry	*Rubus pentalobus*			M		X		Provides fall color
Giant alumroot or Coral be	*Heuchera maxima and hybrids*			M	X			Can withstand dry conditions with indirect sunlight
Bergenia or Winter saxifra	*Bergenia cordifolia*			M			X	
Coast purple sage	*Salvia leucophylla*			L	X		X	Requires moist conditions
Common yarrow	*Achillea millefolium*	1'-4'		L	X		X	
Oregon grape	*Mahonia or Berberis Sp.*	1'-6'	varies	M	X	X	X	
California Dutchman's pipe	*Aristolochia californica*			L	X		X	Climbs by twining; no tendrils

GRASSES & FORBS

Common Name	Botanical Name	Height at Maturity	Spread at Maturity	Watering Requirement	Native Plant	Flowering	Additional Comments
Deer grass	*Muhlenbergia rigens*	4'	4'	M	X		Riparian. Attracts lady beetles that prey on pests
Dogbane	*Apocynum cannabinum*				X		causes skin blisters, highly poisonous. NOT recommended
Great Valley phacelia	*Phacelia ciliata*	12"-18"			X		
Lavender	*Lavandula species*	12"-18"		L		X	
Meadowfoam	*Limnanthes douglassii*	6"					
Monkey flower	*Mimulus* sp.			H	X	X	Hummingbird pollinated
Mugwort	*Artemisia douglasiana*			L	X		Fragrant. Stream corridors
Narrow-leaf milkweed	*Asclepias fascicularis*	3'		L	X	X	Insectary plant. Drought tolerant
Nodding needlegrass	*Nassella cernua*	2.6'		L	X		
Owl's clover	*Castillija exserta*	9"			X		
Penstemon	*Penstemon s*p.			L			Medium watering requirement if a hybrid
Purple needlegrass	*Nassella pulchra*	3'		L	X		
Saltgrass	*Distichlis spicata*	1.1'			X		Drought tolerant;looks similar to Bermuda grass
Tarplant	*Hemizonia sp.*						
Yarrow	*Achillea millefolium*	3'		L	X	X	Insectary plant. Resistant to alkali soils
Yellowray goldfields	*Lasthenia* sp.	*5"*			X		Annual - associated with vernal pools and wetlands; readily reseeds with enough moisture
Yolo slender wheatgrass	*Elymus trachycaulus*			L	X		Perennial; drought tolerant
Giant wild rye	*Leymus condensatus*	6'-8'	4'-5'	VL	X		
Lindheimer's muhly grass	*Muhlenbergia lindheimeri*	5'		L	X		
Bigelow's bear grass	*Nolina bigelovii*	6'		L		X	
New Zealand flax	*Phormium tenas*			L			
Blue grama grass	*Bouteloua gracilis*	1.0'		L			
Berkeley sedge	*Carex tumulicola*	3'	3'	M	X		
Serpentine columbine	*Aquilegia eximia*	4'-5'		M	X	X	
Bent grass, spike redtop	*Agrostis exarata*	3'		VL	X		Drought tolerant; important pollinator
Blue-eyed grass	*Sisyrinchium bellum*			VL	X		
California barley	*Hodeum californicum*	1.6'			X		Perennial; drought tolerant
California brome	*Bromus carinatus*	4'		L	X		Perennial; drought tolerant
California buckwheat	*Erigonum californica*			L	X		
California oniongrass	*Melica californica*	4'		L	X		Perennial; drought tolerant
California poppy	*Eschscholzia californica*	2'		VL	X		
Bird's-eye gilia	*Gilia tricolor*	3'			X	X	Annual herb; drought tolerant - used for color
Blue wildrye	*Elymus glaucus*	3.3'		L	X		
Creeping wildrye	*Leymus triticoides*	3'		VL	X		Drought tolerant

YOLO COUNTY: Sustainability Design Guidelines

Appendix B

APPLICABILITY

The building practices and design strategies discussed in this document should be used whenever possible. This document includes sustainable guidelines that apply to all built projects. Sustainable guidelines that are specific to residential, commercial, or industrial projects will be discussed in the Sustainability section of each corresponding Design Guidelines document, and are supplemental to this document.

PURPOSE AND GOALS

Sustainable building allows Yolo County to meet its current need for housing, industry, and business while meeting broader environmental goals of mitigating climate change and reducing greenhouse gases. The purpose of this section is to provide building professionals with a well-organized and easy to use document that outlines sustainability guidelines that are important to building in Yolo County. The integration of sustainable techniques is encouraged in all development projects, and, in some cases, is required by policies in the 2030 Countywide General Plan.

The guidelines in this appendix support the following General Plan Policies:

- Community Character Policy CC-2.6: *Encourage infill development and the appropriate redevelopment of vacant and underutilized properties within existing unincorporated communities and prioritize infill projects over development on land at the planned community edge.*
- Community Character Policy CC-2.16: *Require sustainable design standards as appropriate for projects located within the growth boundaries of the unincorporated communities.*
- Community Character Policy CC-4.1: *Reduce dependence upon fossil fuels, extracted underground metals, minerals and other non-renewable resources.*
- Community Character Policy CC-4.2: *Reduce dependence upon chemicals and unnatural substances.*
- Community Character Policy CC-4.4: *Encourage all new construction to be zero-net energy by combining building energy efficiency design features with on-site clean distributed generation so as to result in no net purchases from the electricity or gas grid.*
- Community Character Policy CC-4.5: *Encourage individual and community-based wind and solar energy systems.*
- Community Character Policy CC-4.6: *Encourage all new residences to exceed Title 24 energy standards by at least 15 percent, and encourage all new commercial buildings to exceed Title 24 by at least 20 percent.*
- Community Character Policy CC-4.7: *Require energy efficient design for all buildings.*
- Community Character Policy CC-4.8: *Require measures to minimize "heat islands" by requiring light-colored and reflective roofing materials and paint; "green" roofs; light colored roads and parking lots; extensive numbers of shade trees in parking lots; and shade trees and/or overhangs on the south and west sides of new or renovated buildings.*
- Community Character Policy CC-4.12: *Require "green" design, construction and operation.*

- Community Character Policy CC-4.13: *Strongly encourage LEED certification for all public, private and existing buildings and LEED-Neighborhood Design (ND) for other applicable projects, particularly within the Specific Plan areas.*
- Circulation Policy CI-1.3: *Reduce the total vehicle miles of travel (VMT) per household by making efficient use of existing transportation facilities and by providing for more direct routes for pedestrians and bicyclists through the implementation of "smart growth" and sustainable planning principles.*
- Circulation Policy CI-4.3: *Reduce dependence upon fossil fuels.*
- Public Facilities and Services Policy PF-9.8: *Require salvage, reuse or recycling of construction and demolition materials and debris at all construction sites.*
- Public Facilities and Services Policy PF-9.9: *Encourage use of salvaged and recycled materials in construction.*
- Economic Development Policy ED-5.3: *Encourage businesses and research that support sustainability and contribute to the emerging "green" economy.*
- Economic Development Policy ED-5.4: *Encourage businesses to exceed clean air standards, whenever possible.*
- Economic Development Policy ED-5.8: *Promote the use of recycled materials and/or by-products of other businesses, to reduce the consumption of virgin raw materials.*
- Economic Development Policy ED-5.9: *Support reductions in the use of hazardous materials and require businesses to employ proper disposal and recycling mechanisms.*
- Economic Development Policy ED-5.10: *Require the re-use of processed water for landscaping and other appropriate activities, where feasible.*
- Economic Development Policy ED-5.11: *In all agricultural, industrial, and commercial endeavors, promote use of solar technology, water reuse systems, biomass systems, and other systems to capture alternative sources of energy. Strongly encourage businesses to incorporate water and energy conservation measures.*
- Conservation and Open Space Policy CO-5.15: *Encourage new development and redevelopment to use reclaimed wastewater, where feasible, to augment water supplies and to conserve potable water for domestic purposes.*
- Conservation and Open Space Policy CO-5.18: *Encourage developers to build new homes to higher water-efficiency standards than already required.*
- Conservation and Open Space Policy CO-7.3: *Require all projects to incorporate energy-conserving design and construction techniques and features.*
- Conservation and Open Space Policy CO-7.4: *Require the use of Energy Star certified appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units, where feasible.*
- Conservation and Open Space Policy CO-7.6: *Encourage the use of building materials and methods that increase energy efficiency a minimum of 15 percent beyond State Title-24 standards for residential buildings and 20 percent beyond State Title-24 standards for commercial buildings.*
- Conservation and Open Space Policy CO-7.9: *Require that new site and structure designs maximize energy efficiency.*
- Health and Safety Policy HS-4.1: *Minimize exposure to the harmful effects of hazardous materials and waste.*
- Health and Safety Policy HS-4.3: *Encourage the reduction of solid and hazardous wastes generated in the county.*
- Housing Policy HO-6.1: *Encourage site and building design that conserves natural resources.*

ORGANIZATION

Sustainable building techniques fall into five distinct categories: site selection, resource efficiency, energy conservation, water conservation, and indoor environmental quality. These five categories, which follow from the LEED (Leadership in Energy and Environmental Design) framework, serve as the organizational structure of this document.

TAX BREAKS, FUNDING AND INCENTIVES:

The importance of sustainable building has resulted in a number of financial incentives.

- For current tax rebates: contact a tax professional and ask about possible rebates per the Energy Policy Act of 2005, or visit the Energy Tax Incentives Project website at www.energytaxincentives.org.
- For federal incentives: visit the EPA's Green Building website at www.epa.gov/greenbuilding/tools/funding.htm.
- For incentives offered by the state: visit the Database of State Incentives for Renewables and Efficiency at www.dsireusa.org.

GUIDELINES

SITE SELECTION

Transportation Access: Locate significant new development in as close proximity to all forms of transportation infrastructure as possible, including bike lanes, sidewalks, and public transportation, in order to offer a range of transportation alternatives, and to reduce pollution and congestion.

Amenity Access: Locate new development in close proximity to local amenities and necessities, such as shopping, schools and, parks and recreation facilities.

Balance Amenities: Provide amenities that serve existing and adjacent development. For example, new homes should be near existing schools and should be configured and priced to reflect the local and sub-regional workforce. Commercial projects should appeal to existing local residents, other county residents, as well as visitors.

Tree Conservation: Preserve trees whenever feasible, and avoid construction damage to their root systems.

Infill and Brownfields Reuse: Lots that qualify as infill or brownfields should be the preferred locations for new development.

Regional Asset Preservation: New development should preserve existing assets, such as farmland, open space, wetlands, and habitat.

RESOURCE EFFICIENCY

Home Size: Well-designed small homes can meet the needs of various types of households while consuming less land and building materials. Future inhabitants will consume less energy as a result of heating, cooling, and lighting less space.

Wood Sources: If feasible, wood should come from rapidly-renewable sources such as bamboo or cork, or from certified recovered wood projects such as wood by-products from

secondary manufacturers or post-consumer recycled wood. Use of tropical hardwoods is strongly discouraged.

Reuse of Materials: Use of salvaged materials or materials with a significant recycled content is strongly encouraged.

Use of OSB: Use of OSB (Oriented Strand Board) for sub floor and sheathing is encouraged as a measure to reduce the need for large diameter old growth trees.

Construction Waste: Recycle waste from the construction site, donate to a local charity, or divert from the landfill whenever possible.

Concrete: When feasible, replace Portland cement in concrete with recycled flyash.

Lumber: Use engineered lumber in the structural frame and building envelope, as much as possible, to reduce total lumber that is required.

Flooring: Flooring should come from rapidly-renewable sources (bamboo or cork), or from reclaimed materials such as stone, tile, or wood.

ENERGY CONSERVATION

Roofing Materials: Energy Star labeled roofing materials or a light colored, reflective coating should be used to reduce cooling loads.

Install Solar Water Heater: If feasible, install a solar water heater to reduce energy consumption associated with water heating.

Tankless Water Heaters: Tankless water heaters are encouraged because they use less energy and deliver hot water quickly.

Pre-plumb for Solar Water Heater: Install plumbing that would enable future residents to easily install a solar water heater, if one is not installed at the time of construction. Pre-plumb all two-story structures having the appropriate orientation to allow for future solar applications.

Install PV (photovoltaic) panels: If feasible, install PV panels to reduce future energy consumption.

Install Wiring Conduit for Future PV Panels: Install conduit that would enable future residents to easily install PV panels, if PV panels are not installed at the time of construction.

Building Orientation: Whenever possible, orient buildings to face north and south, or be within 30 degrees of north/south orientation, to allow a comfortable level of heat and light into the building during the majority of the day. This reduces energy consumption due to heating, cooling, and lighting.

Window Orientation: Orient windows in a way that takes advantage of prevailing breezes and allows air to circulate through the building.

Shading: Buildings, especially south and west facing windows, should be shaded from the sun to reduce summer cooling loads. Recommended shading techniques include trellises, window shades, canopies, roof overhangs, and trees. For example, an 18-inch roof overhang would reduce solar gain through walls and windows.

Window Quality: Use Energy Star dual glaze windows to reduce summer heat and winter cold from entering the building.

Insulation: Use insulation with a high R-value (heat resistance) in all buildings. Developers are encouraged to install insulation that is at least 15 percent above Title 24 energy requirements.

Windows and Doors: All windows and exterior doors should be Energy Star rated and sealed tightly.

Energy Efficiency: Use energy efficient heating and cooling systems, lighting, and water heating systems.

Appliances: All appliances should be Energy Star rated.

Hot Water Pipes: Insulate hot water pipes.

HVAC and Ducting Location: The HVAC system, including all ducting, should be located within the conditioned space.

WATER CONSERVATION

Plants and Landscaping: Use regionally appropriate plants and landscaping techniques to provide shade and an attractive environment without using excessive water.

Irrigation Systems: Use water conserving irrigation systems in all landscaped areas.

Kitchen and Bathroom Fixtures: Install high efficiency fixtures in the bathroom and kitchen or have flow reducers installed. Install high efficiency toilets.

Appliances: Install water efficient dishwashers and clothes washers.

Water Recycling: If feasible, pre-plumb for future use of a greywater system and/or install a water catchment/retention system for irrigation use. Use of a greywater system must meet with Yolo County Environmental Health standards.

INDOOR ENVIRONMENTAL QUALITY

Paints and Sealants: Use non-toxic building materials in all construction, including low or zero VOC (volatile organic compound) paints and sealants.

Insulation Materials: Insulation made from non-toxic sources, such as soybeans, cellulose, or cotton is encouraged.

Reduce Use of Formaldehyde: All interior finishes, including subfloor, cabinets, countertops, and shelving, should be made from materials with low formaldehyde content.

Natural Lighting: Natural daylight should reach the majority of indoor space in buildings and homes.

Natural Ventilation: Natural ventilation should be available through the use of operable windows, fans, building orientation, and other techniques. The HVAC system should filter all air coming into the building from outside and vent stale indoor air outside.

Bathroom Ventilation: Install Energy Star exhaust systems that vent to the outside in all bathrooms.

Range Ventilation: Kitchen range hoods should vent to the outside.

Fans: Install attic fans, ceiling fans, whole house fans, or any combination thereof, to reduce air conditioner usage.

ALTERNATIVE COOLING SOLUTIONS

Meet energy star minimum HVAC requirements:

- www.ice-energy.com/technology/tabid/53/Default.aspx
- www.oasysairconditioner.com/?gclid=CN_61fiEv5kCFRBbagodNmG54w
- www.uponor-usa.com/Misc/Applications/Radiant-Cooling.aspx