

5.4 TRANSITIONS AND BUFFERS

LLV is a blend of wonderful views of the extensive hillside open space and the City Park and Lagoon Lake. The proposed uses for LLV are intended to carefully fit into the valley in order to protect and utilize the significant natural

visual amenities. At the same time, many of the improvements will be used to enhance the natural qualities while mitigating certain existing impacts such as sound and views of I-80. Figure 5.4 indicates the primary landscape buffers and transitions.

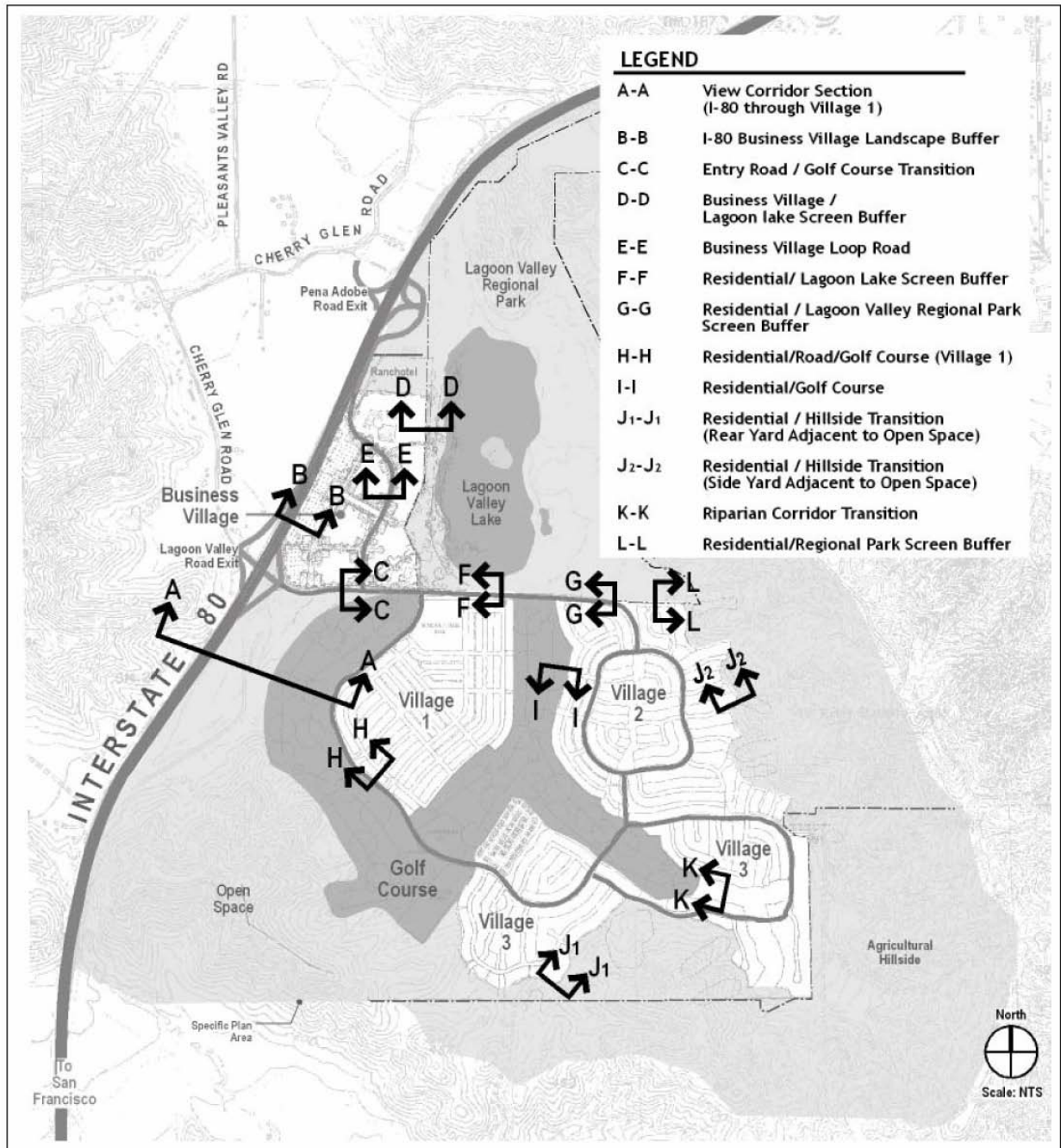


Figure 5.4: Landscape Buffers and Transitions Diagram

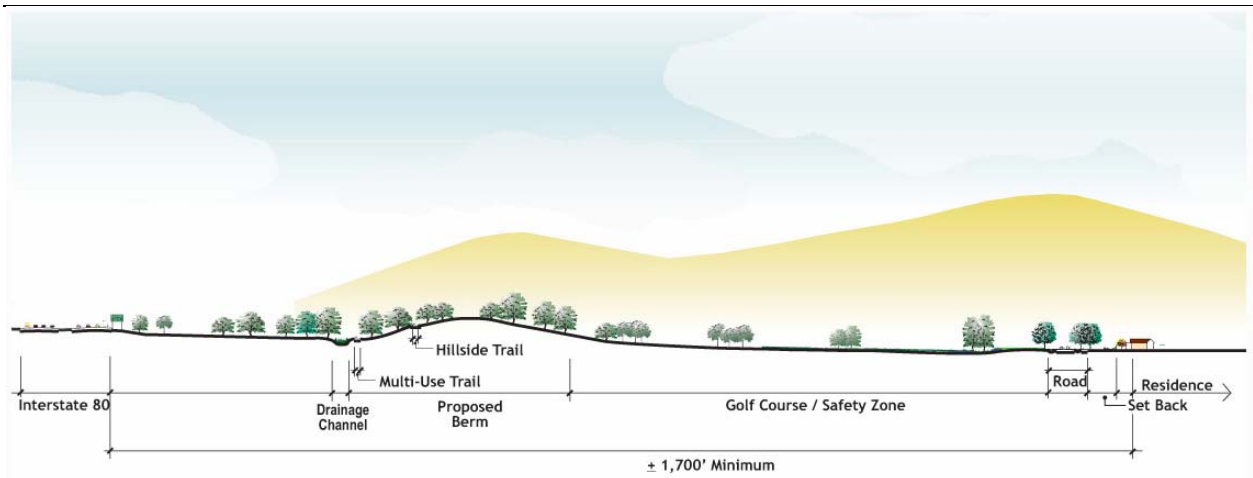
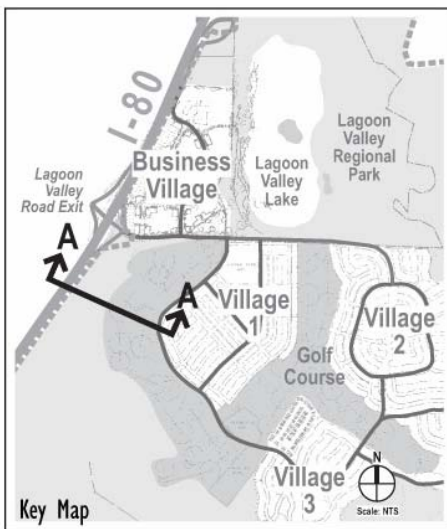


Figure 5.4.1: View Corridor Section (I-80 through Village 1)

Section: A-A

View Corridor Section (I-80 through Village 1)



View Corridor Section. I-80 Through Golf Course and Village 1 (Figure 5.4.1, Section A-A)

A carefully sculpted landform berm with “natural” plantings of oak and grasses will extend the existing natural hillside area towards I-80 and wrap around to the west of the proposed golf course and the Village residences. This berm is intended to substantially screen residential homes from the freeway while allowing and enhancing views towards the eastern hills. To further minimize the visual impact from the

proposed residences, homes are set back from I-80 a minimum distance of 1,700-feet. See Figure 5.4.1

Primary View Corridor

The Primary View Corridor encompasses an approximately 750-foot wide corridor that runs from south of the Lagoon Valley interchange northeast towards the lake and hills. The purpose of the View Corridor is to maintain views of the lake, park, and hills for motorists driving eastbound on I-80 (see Figure 5.2) while minimizing the visual impact of the proposed improvements for LLV.

Within the 750-foot wide view corridor, no buildings will be allowed, with the possible exception of a portion of the Town Center, and no parking is planned. Plant materials will include large informal groupings of high canopy trees planted intermittently so as to not completely obscure the view. Plant materials will be located adjacent to proposed buildings to screen their presence. Figure 5.4.4 is perspective sketch showing what the views will be like with the proposed improvements in place.

Additionally, a landscape berm will be constructed between I-80 and the golf course and residential. The berm will be designed as a natural landscape feature that will not obscure views of the lake or hills but will improve the views into the valley. The berm will also be used to incorporate a small golf course maintenance area that will be completely screened from the I-80 view. Figure 5.2 shows the location of the berm, and section A-A on Figure 5.4.1 shows the details of the proposed berm.

To further protect this significant view corridor, the residential villages are set back from I-80 a minimum of 1,700 feet.

Secondary Views

Figure 5.2, View Corridors, indicates significant views from I-80 towards the hills to the east. The planning and design of the Business Village, as well as new construction in the General Commercial areas (Subareas 1B & 1C), will respect the goal of protecting views towards the hills.

Section B-B, Figure 5.4.2, shows a perspective view from I-80 looking into the Business Village of a potential development plan that preserves views to the hills.

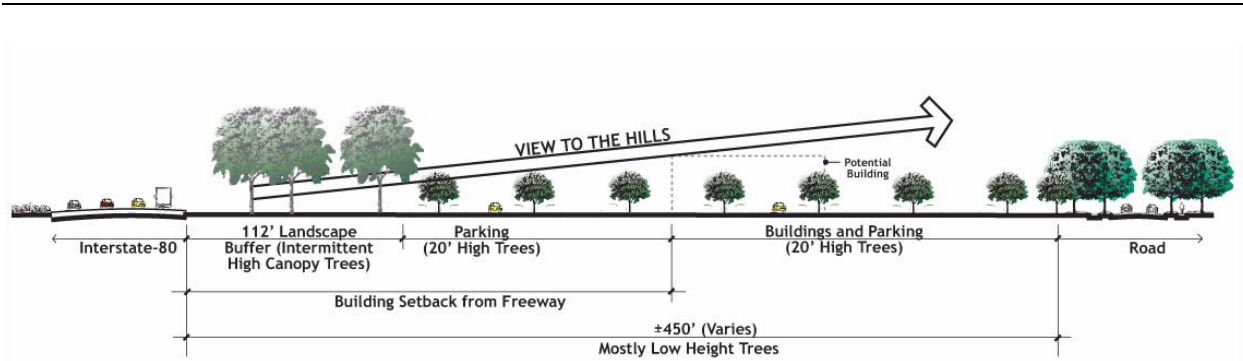
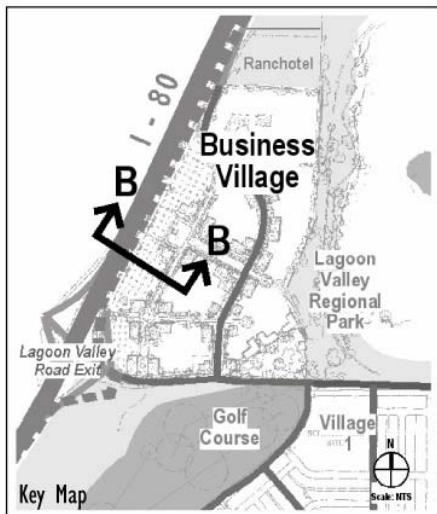


Figure 5.4.2: I-80 Business Village Landscape Buffer
Section: B-B
I-80 Business Village Landscape Buffer



Business Village Landscape Buffer (Figure 5.4.2, Section B-B)

The Landscape Buffer is provided along the eastern edge of I-80. Along the Business Village frontage this buffer is 112 feet wide, measured from the freeway right-of-way, and includes the 50 foot right-of-way for Rivera Road plus approximately 62 feet of the adjacent Business Village parcels. Within this buffer area only plant materials or storm water detention will be allowed. Within this buffer, intermittent high canopy trees will be, located so as to allow view

corridors under and through the trees to the hills.

Buildings will be set back approximately 250 feet from the edge of the freeway and be grouped such that view corridors between the groupings of building are preserved looking towards the hills. Those view corridors illustrated on Figure 5.2 are conceptual and may not represent the final location. Final location of view corridors will be determined during the City's design review process.

Within the first approximately 450 feet from the freeway edge, trees will be primarily 20' maximum in height. This will allow views over the trees to the hills beyond. A few intermittent taller trees may be permitted, particularly along streets, as long as view corridors can be maintained.

No buildings or vehicular parking are permitted in the Landscape Buffer. Landscape improvements are intended to allow filtered views of the distant hills through the Business Village, as illustrated in Figure 5.4, and Figure 5.4.2. This central and southern area will be planted with intermittently spaced, high canopy trees that allow filtered views. To screen parking while maintaining

views, the ground plane may be tilted and planted with shrubs, low groundcover or grass, or, if required, detention of storm water. The existing mature trees, with the exception of the eucalyptus, in the interior of this parcel shall be preserved, if feasible. The 112 ft. wide landscape buffer will be owned by the City but will be maintained by the Community Association for the Business Village. The 112 ft. wide landscape buffer shall be installed prior to the certificate of occupancy being issued for any buildings within the Business Village with the exception of the buildings within the Town Center or for a church complex on the northern end of the Business Village.

The remainder of the Landscape Corridor extends from the northern end of the Business Village and across the western side of Subareas 1C and 1B to the midpoint of the Lagoon Valley Road interchange. Along this area the existing wooded landscape between the Pena Adobe freeway interchange and the Ranchotel should be maintained and supplemented with additional landscaping. To the extent feasible, the mature trees immediately adjacent to the northern edge of the existing Ranchotel property should be maintained.

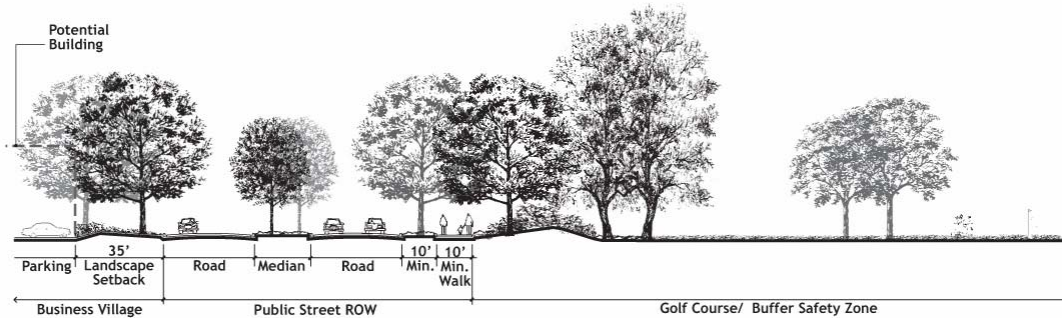
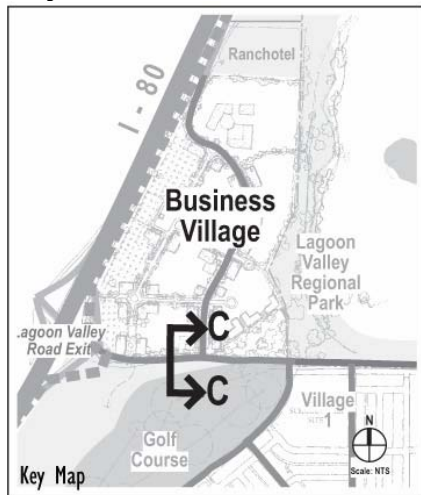


Figure 5.4.3: Entry Road/Golf Course Transition
Section: C-C

Entry Road/Golf Course Transition



Entry Road-Golf Course Transition (Figure 5.4.3 Section C-C)

The main entry road into LLV is a divided roadway with a 16 to 30 foot wide generously planted median. Both sides

of the street will have informal groupings of large-scale trees such as oaks. The south side of the entry road, adjacent to the golf course, will have a 10 foot wide multi-use trail separated from the roadway by a 10 foot wide planting boulevard providing shade for pedestrians. Existing trees will be preserved if feasible. Trees species will be selected to allow views towards the golf course creating a dramatic sense of entry. The north side of the entry road, adjacent to the Business Village, will have a 35 foot wide landscape setback used to screen parking and enhance the sense of landscape and openness. See Figure 5.4.3.

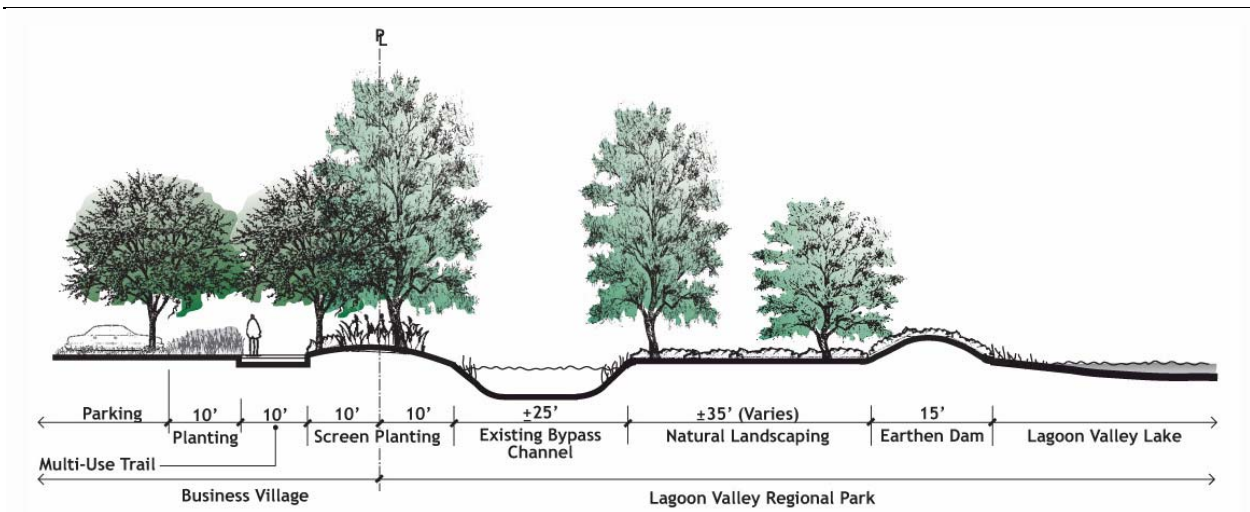
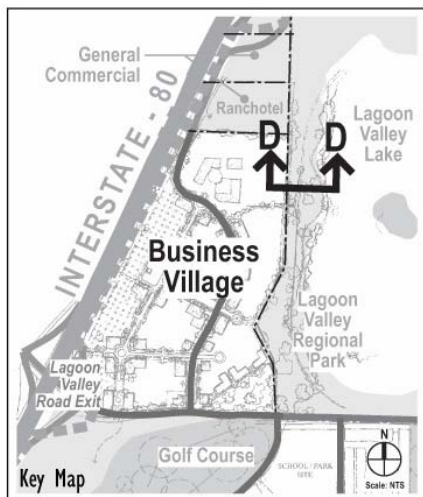


Figure 5.4.4: Business Village/Lagoon Lake Screen Buffer
 Section: D-D
 Business Village & Commercial Properties/Lagoon Lake Screen Buffer



Business Village-Lagoon Lake Screen Buffer (Figure 5.4.4, Section D-D)

A landscape buffer along the east side of the Business Village is planned to screen views of the Business Village from the City Park and Lagoon Lake. This buffer will be comprised of intermittent, tall groupings of trees, and, a continuous planting of lower-height shrubs. The tall trees will be grouped to reinforce the view corridors from I-80 to the hills. The lower shrub massing will provide pedestrian-level visual screening. The multi-use trail, linking the three residential villages with the Ranchotel and City Park, is located along this eastern edge of the Business Village. See Figure 5.4.4.

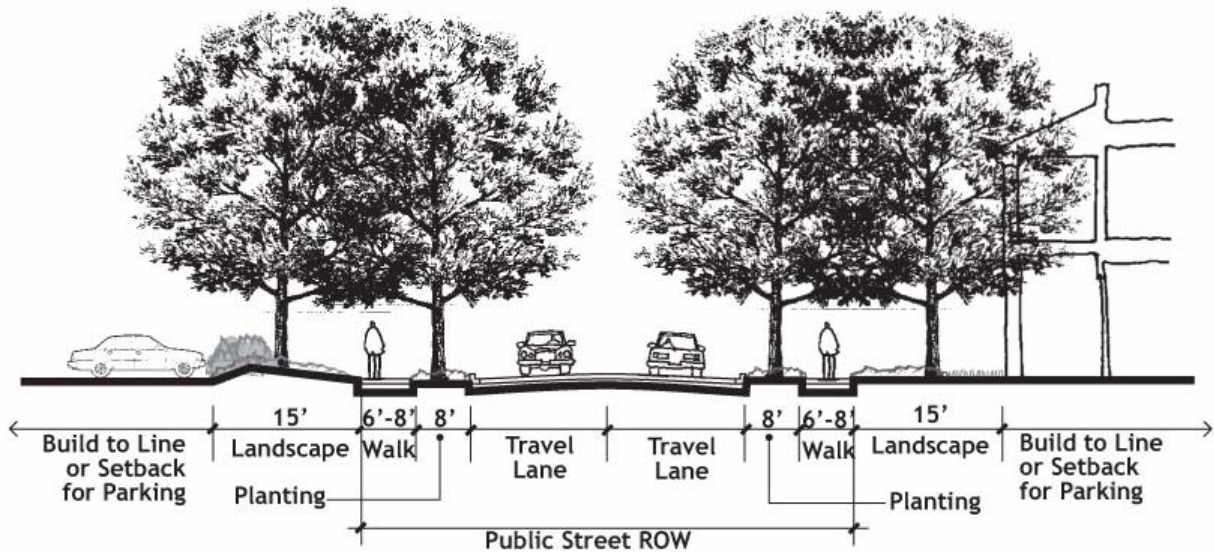


Figure 5.4.5: Business Village Loop Road
 Section: E-E
 Business Village Loop Road



Business Village Loop Road Transition
 (Figure 5.4.5, Section E-E)

In keeping with the overarching goal of encouraging pedestrian use of LLV,

buildings within the Business Village will be placed close to the street so as to “engage” and activate the streets. Parking will be located behind the buildings or screened behind landscaping. Sidewalks on both sides of the road will be separated from the roadway by a 6 foot wide planting boulevard. The Business Village Loop Road will have informal groupings of trees, similar in theme to the main entry road, allowing views into the individual business parcels and creating a strong street edge. The heights of the trees will be carefully selected so as to not completely obscure views from I-80 to the hills. See Figure 5.4.5.

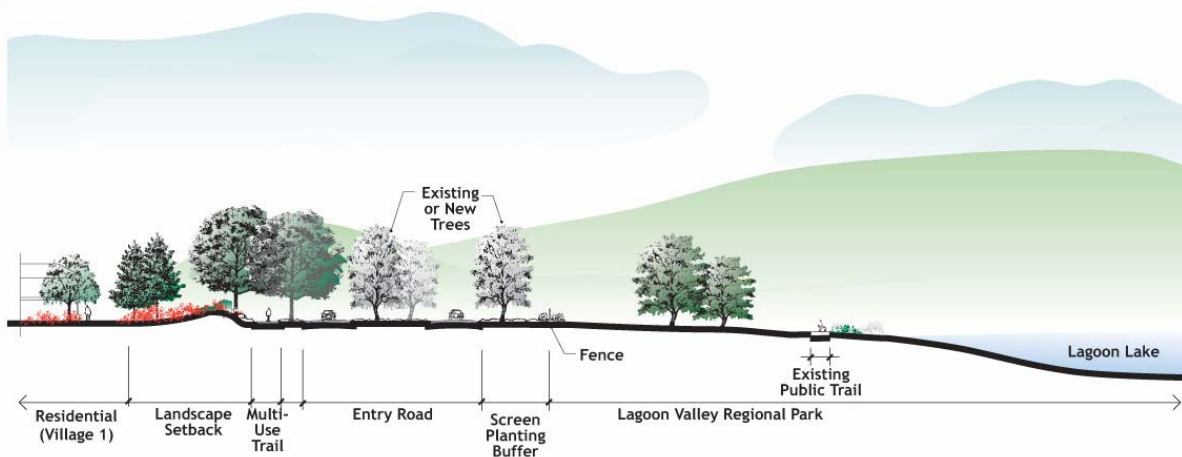
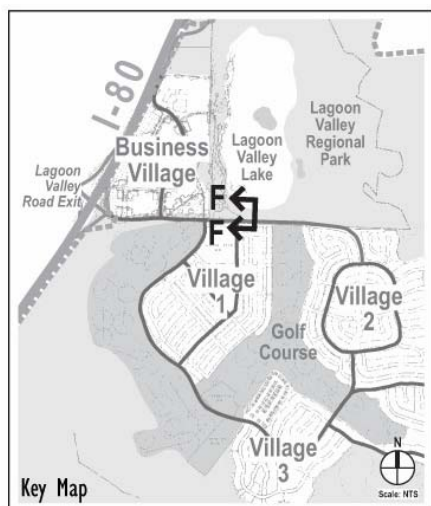


Figure 5.4.6: Residential/Lagoon Lake Screen Buffer
 Section: F-F
 Residential/Lagoon Lake Screen Buffer



Residential-Lagoon Lake Buffer (Figure 5.4.6, Section F-F)

This segment of the main entry road will have 2-lanes with both sides of the street planted with informal groupings of large-scale trees such as oaks. Currently,

there is a long row of existing trees. These will be preserved as much as possible in order to help provide a visual separation between the residences and Lagoon Lake. This existing visual separation will be enhanced by carefully adding complimentary trees and a continuous planting of pedestrian-scaled shrubs. The south side of the entry road will have a 10 foot wide multi-use trail separated from the roadway by a 10 foot wide planting boulevard. Views between the park and the housing or golf course will be screened with plant material including trees and pedestrian-scaled shrubs. The residential homes will be further screened behind a generous landscape setback. See Figure 5.4.6

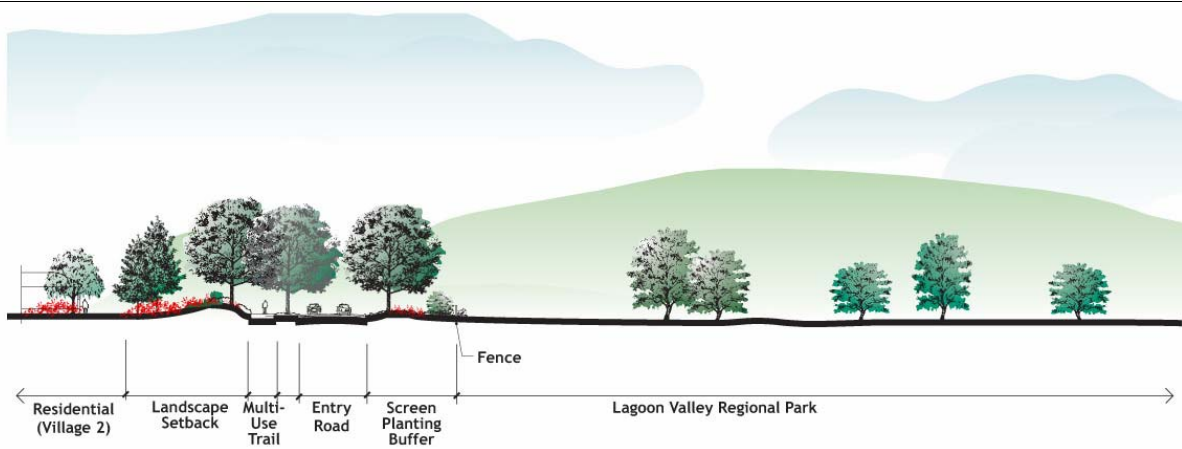
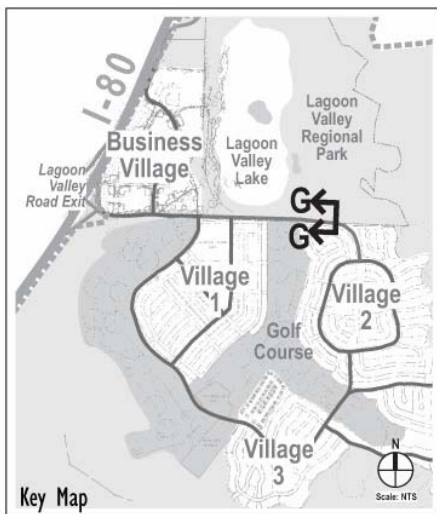


Figure 5.4.7: Residential/Lagoon Valley City Park Screen Buffer
 Section: G-G
 Residential/Lagoon Valley City Park Screen Buffer



Residential-City Park Buffer (Figure 5.4.7, Section G-G)

This segment of the main entry road will have 2-lanes with both sides of the street planted with informal groupings of large-scale trees such as oaks. The south side of the road will have a 10-foot wide multi-use trail separated from the roadway by a 10-foot wide planting boulevard. The residential homes will be screened behind a generous landscape setback. See Figure 5.4.7.

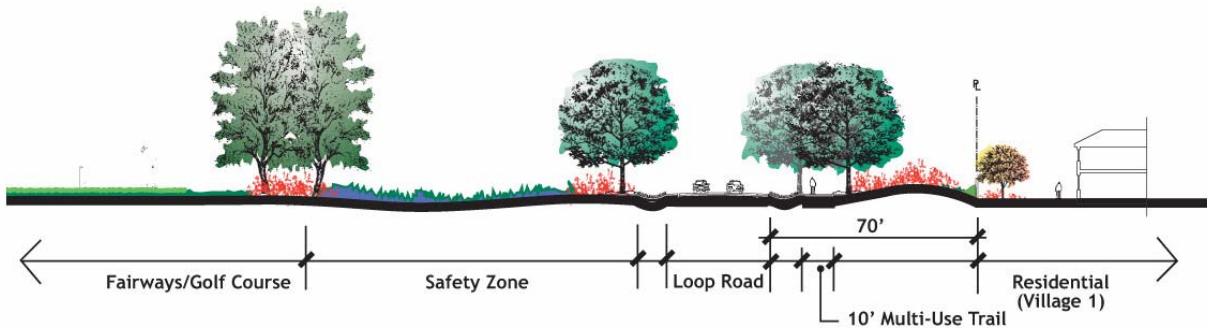
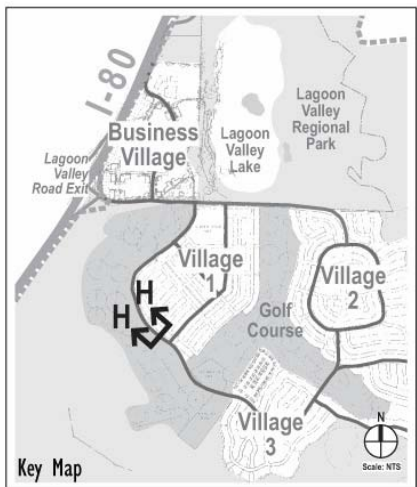


Figure 5.4.8: Residential/Road/Golf Course Transition (Village1)
 Section: H-H
 Residential/Road/Golf Course Transition (Village 1)



Residential Village 1-Golf Course Transition(Figure 5.4.8, Section H-H)

The main loop road, running along the western edge of Village 1 and leading to the golf course clubhouse, is intended to be rural in character. It is designed to

have 2 lanes without standard curbs or gutters. Each side of the road will have a 10 foot wide swale planted with natural grasses and plants that will create an informal edge and help with storm water management. The residential side of the road will have a 10 foot wide multi-use trail. Both sides of the street will have informal groupings of large-scale trees, such as oaks, that will provide a visual separation between the residences and the golf course. The residential homes will be further screened behind a generous landscape setback of trees and shrubs in order to enhance the visual separation and allow a feeling of openness in the landscape. See Figure 5.4.8.

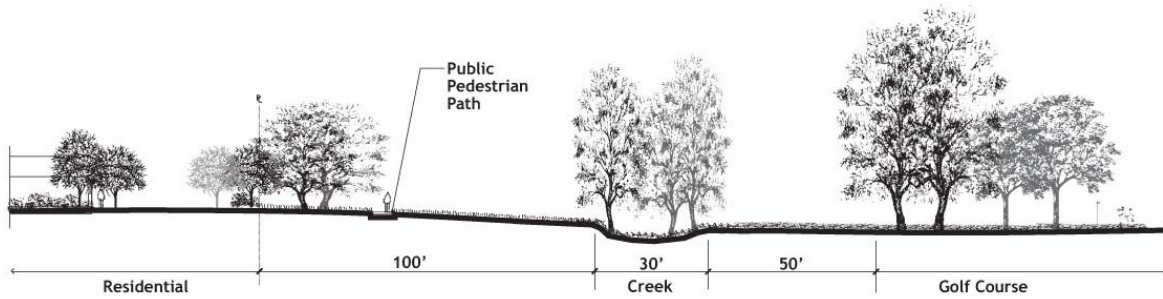
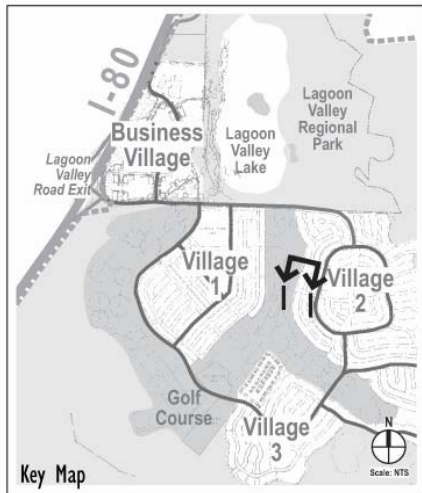


Figure 5.4.9: Residential/Golf Course Transition
 Section: I-I
 Residential/Golf Course Transition



Residential Village 2-Golf Course Transition (Figure 5.4.9, Section I-I)

Residences that align the golf course will be carefully landscaped to create a beautiful soft edge. A wide safety zone will separate the homes from the fairways. Landscaping within this zone will allow views of the golf course from the houses while minimizing the visual presence of the homes for the golfer. See Figure 5.4.9.

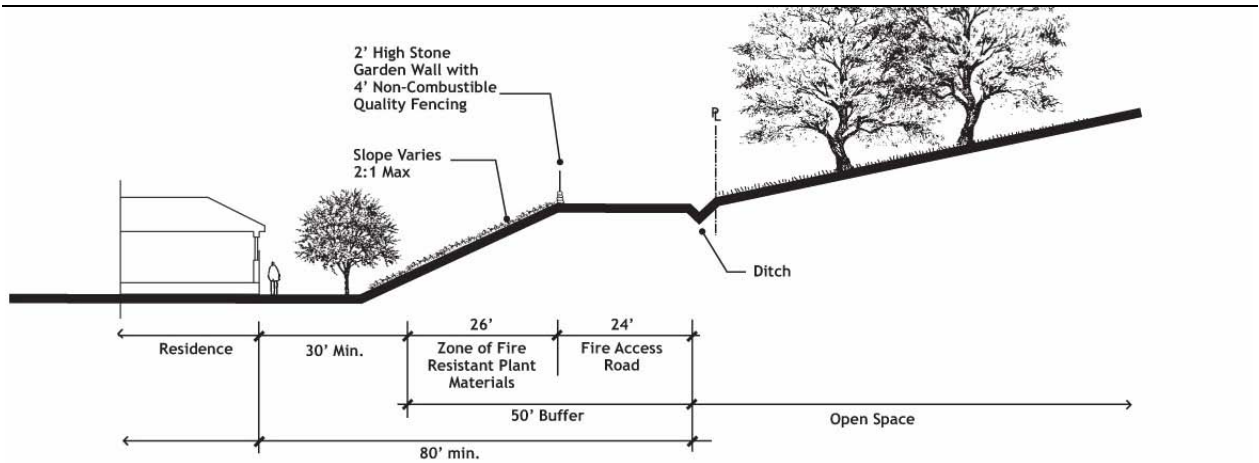


Figure 5.4.10a Alternative A: Residential/Hillside Transition (Rear Yard Adjacent to Open Space)

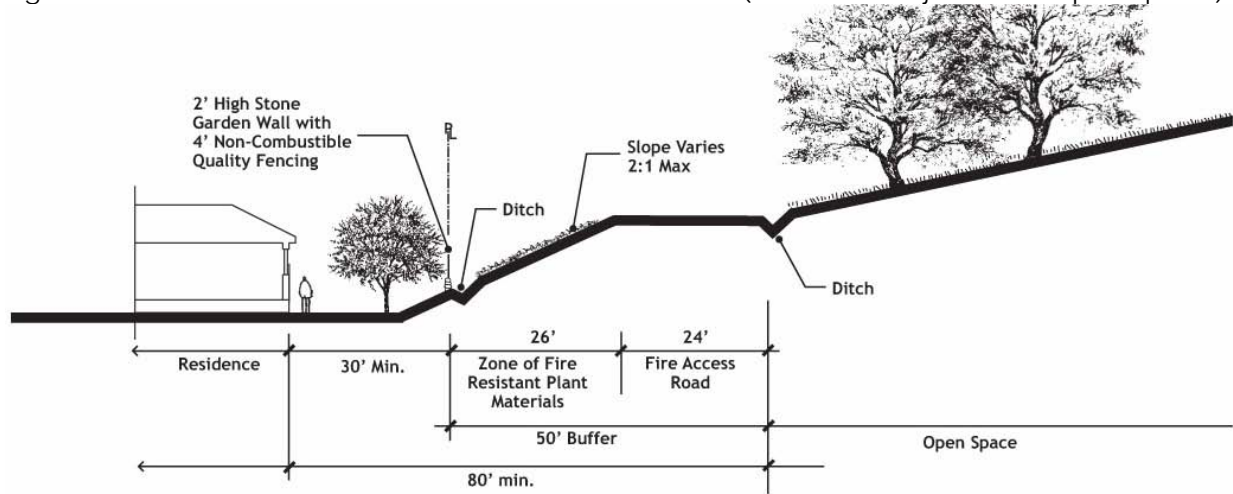
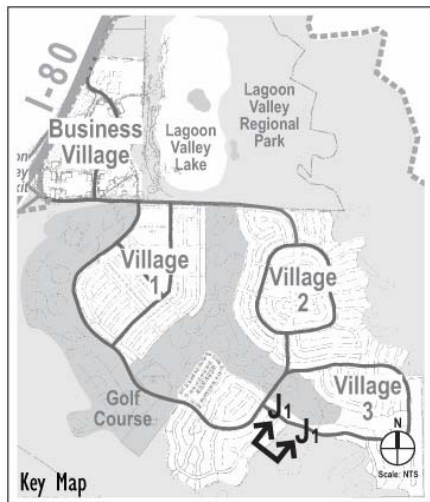


Figure 5.4.10a Alternative B: Residential/Hillside Transition (Rear Yard Adjacent to Open Space)
Section: J1-J1
Residential/Hillside Transition (Rear Yard Adjacent to Open Space)



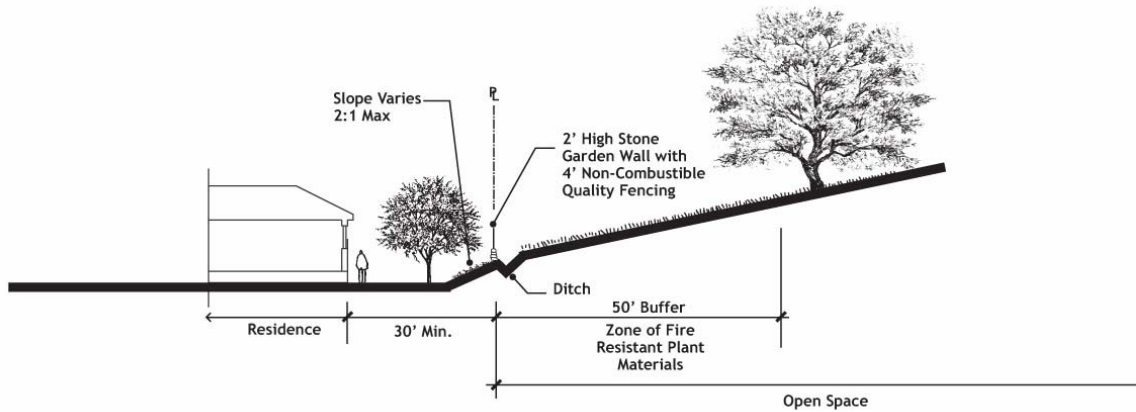


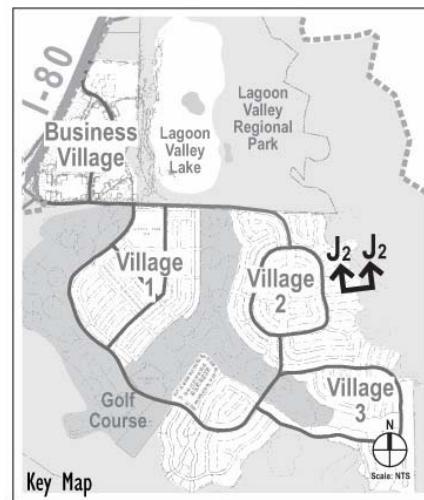
Figure 5.4.10b: Residential/Hillside Transition (Side Yard Adjacent to Open Space)
Section: J2-J2

Residential/Hillside Transition (Side Yard Adjacent to Open Space

Residential-Hillside Transition (Figure 5.4.10a and 5.4.10b, Sections J1-J1 and J2-J2)

All lots where the rear yard is adjacent to the hillside open space will include an 80 foot wide minimum setback to the open space for the structure. The 80 foot setback will include a 24 foot wide Fire Access Road, a 26 foot wide zone of fire resistant plants, (for a total of 50 feet), and a 30 foot minimum setback to the house. The fire access road will be separated from the Zone of Fire Resistant Plants by a 2 foot high non-combustible stone garden wall and attached non-combustible quality fencing. Where lots have a side yard adjacent to open space, these lots shall have an 80 foot setback from the house to the natural open space. Within the 80 feet, there shall be a 50 foot zone of fire resistant plants and an additional 30 foot minimum rear yard. The rear yard shall be separated from the 50 foot zone by a 2 foot high non-combustible stone

garden wall and attached non-combustible quality fencing. The 50 foot zone of fire resistant planting in both conditions, shall be maintained by the HOA or Lighting and Landscape District. See Figure 5.4.10a and 5.4.10b. The fire protection measures in these areas will be coordinated with the City's Fire Chief.



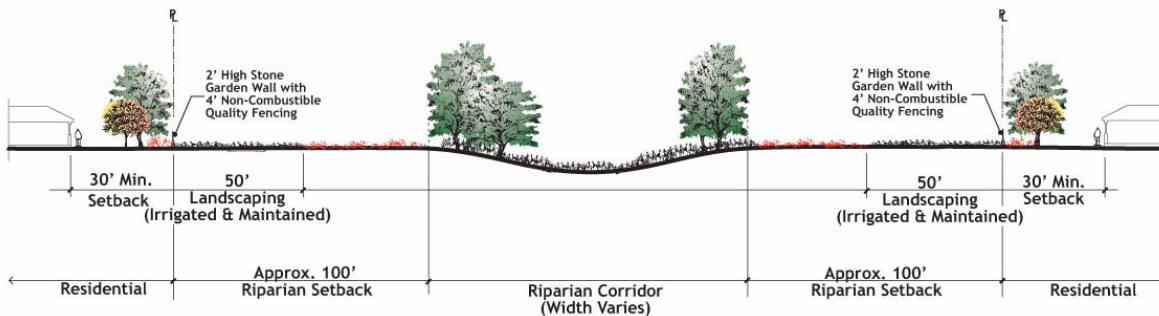
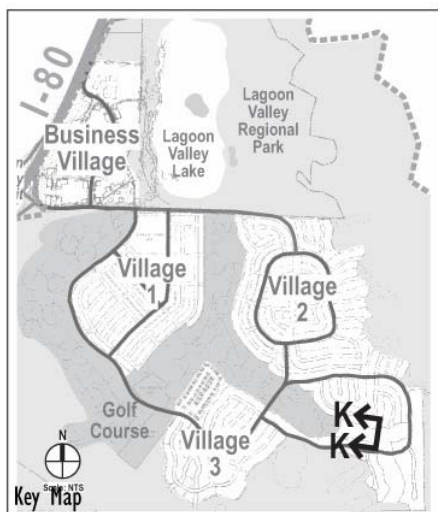


Figure 5.4.11: Riparian Corridor Transition

Note: Fire protection measures within riparian setback will be coordinated with the Fire Chief as part of State & Federal permitting process.

Section: K-K

Riparian Corridor Transition



Riparian Corridor Transition (Figure 5.4.11, Section K-K)

The riparian corridor in the south east portion of Village 3 will be preserved. Rear yards of homes will be set back 100 feet from the top of bank. Natural planting will be added to enhanced the visual and habitat potential of the corridor. See Figure 5.4.11. The fire protection measures in these areas will be coordinated with the City's Fire Chief.

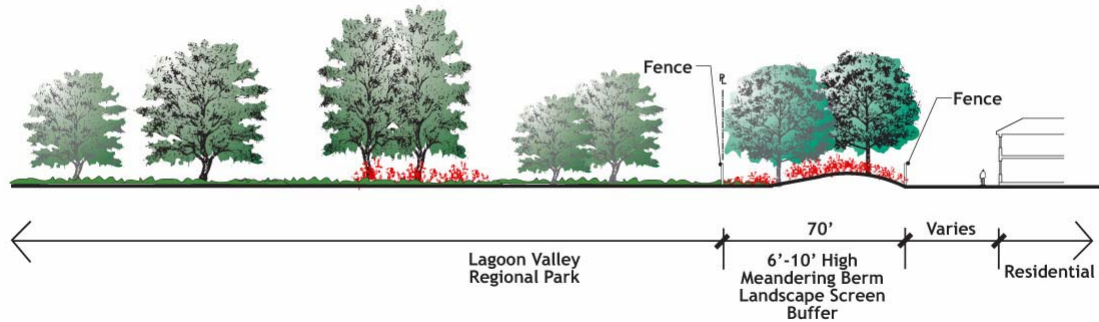
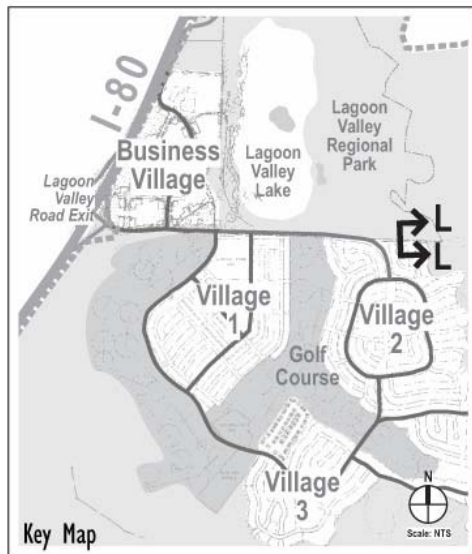


Figure 5.4.12: Residential Village 2 – City Park Transition



Residential Village 2 – City Park Transition (Figure 5.4.12, Section L-L)

The landscaping treatment along the main entry road, including the informal grouping of large-scale trees such as oaks, will be extended along the northern boundary of Village 2. The residential homes will be screened by a 70 foot wide, landscaped setback containing a 6 to 10 ft. high meandering berm. See Figure 5.4.12.

5.5 RESOURCE MANAGEMENT

5.5.1 Introduction

The extent of waters of the United States, including wetlands, on the Lagoon Valley Residential/Commercial Project Site have been delineated and described in LSA’s report entitled “Delineation of Waters of the United States on the Lagoon Valley Residential/Commercial Project Site” dated October 7, 2003.

In addition, LSA has completed a reconnaissance-level biological survey for the area documented in their report entitled “Biological Resources Lagoon Valley Property” dated September 3, 2003.

5.5.1-P-1 Environmental survey work required by an adopted Mitigation Monitoring Plan or by State or Federal law for sensitive species or wetlands, shall be performed for all mitigation lands prior to approval of

a Final Map for the urban development requiring mitigation.

5.5.1-P-2 Primary trails in the proposed city park and City-owned open space area above the elevation of 350 feet in subareas 5, 6A and 6C should use existing service roads or be sited to minimize disturbance to native vegetation. If the trail corridor is to deviate from the existing service roads, further detailed assessment and mapping of grassland and vegetative cover along the trail corridor shall be conducted by a qualified plant ecologist, and the proposed alignment should be adjusted before construction of any trail improvements in order to protect stands of native grasslands or special status plants.

5.5.1-P-3 In order to prevent further disturbance to grassland cover and other vegetation, motorized vehicles and motorcycles shall not be allowed to travel off designated roadways. Barriers should be provided where vehicle access to open space areas might be possible.

5.5.1-P-4 Landscaping and re-vegetation shall emphasize the use of native drought resistant plant species along the fringe of future development projects in all of the subareas. Landscape design and maintenance shall recognize the ultimate condition of a specific location and provide appropriate plants that can survive and regenerate naturally. Landscape improvements shall be monitored for a minimum of five years until defined plant establishment criteria are achieved. Suitable native plant species for possible use in

landscaping plans in or adjacent to open space and rangeland areas include valley oak, blue oak, live oak, and California buckeye. Prior to approval of landscape plans, a plant list of species suitable for use in these areas shall be developed by a qualified plant biologist/ecologist and shall be incorporated into the design standards for open space area planting.

5.5.1-P-4.1 The plant list of suitable species should be developed in consultation with the California Native Plant Society.

5.5.1-P-4.2 Exceptions may be permitted for areas that are required as part of the Fire Chief's determination that a landscaped buffer be provided between the areas of development and the adjoining hillside and wildland fire hazard areas.

5.5.1-P-5 Non-native ornamental species used in landscape plantings shall be restricted to the immediate vicinity of future residential, commercial and business park uses. Landscaping plans shall not include use a non-native invasive species which may spread in adjacent undeveloped areas. A listing of unsuitable species shall be included within the landscape standards for the Specific Plan or the LLV Design Guidelines..

5.5.1-P-5.1 Exceptions may be permitted for areas that are required as part of the Fire Chief's determination that a landscaped buffer be provided between the areas of development and the

adjoining hillside and wildland fire hazard areas.

5.5.1-P-6 Graded slopes which are to remain undeveloped and without landscape improvements shall be reseeded with a mixture of compatible native and non-native perennial and annual species to increase the diversity of the grassland cover. Highly invasive annuals typically used just for erosion control shall not be used. Graded slopes shall be completed with a "contour" grading design and shall be designed to replicate existing slope appearances on adjacent lands.

5.5.1-P-7 Oaks and other native trees shall be preserved and protected to the maximum extent feasible, with adequate replacement provided where tree removal is unavoidable. Developers of individual development projects proposed the Specific Plan area shall design their projects to refine the Plan's development concepts in order to protect mature native trees. Surveys shall be performed to identify trees with trunk diameters of four inches or greater (measured at a height of four feet above grade) before submitting tentative maps for individual development projects, and project plans shall map trunk locations within 50 feet of the anticipated limits of grading. Individual native trees shall be preserved by adjusting proposed site alterations, using retaining walls, creating short over-steepened slopes, and other methods.

5.5.1-P-8 The development concept for Open Space areas (e.g. the southeast portion of Area 6C) shall

emphasize preservation of existing oak woodland environments and other natural environments present. The policy for these areas shall be to preserve the existing landscape, with alterations anticipated only for such items as recreational trails and utility facilities, and from grading for landslide repair. Final landscape concepts for these areas shall be designed to replicate the existing hill-forms and landscapes. Specific tree protection measures shall include the use of construction barriers, avoidance of grading/trenching disturbance within dripline zones, and maintenance of existing drainage/hydrology to protect trees, consistent with the policies and standards of the Specific Plan.

5.5.1-P-9 Individual development projects shall comply with the City's tree protection guidelines to minimize the potential for damage to significant vegetation and the following tree protection/preservation guidelines. These guidelines shall be implemented to minimize the potential for damage from proposed development and construction activities.

5.5.1-P-9.1 Avoid grade changes within 1.5 times the width of the tree dripline and prohibit any encroachment closer than 15 feet of the trunk. Restrictions to the limits of grading, adjustments to the final grade of cut and fill slopes, and use of retaining walls shall all be used to protect individual trees worthy of preservation.

5.5.1-P-9.2 Before any land alterations or construction begin,

install temporary fencing along the outermost edge of the dripline of each tree or group of trees to be retained in the vicinity of grading in order to avoid compacting the root zone and mechanical damage to trunks and limbs.

5.5.1-P-9.3 Prohibit paving within the tree dripline by using porous materials such as gravel, loose boulders, cobbles, wood chips, or bark mulch where placement of hardscape in the vicinity of trees would be necessary for access.

5.5.1-P-9.4 Prohibit trenching within the tree dripline and install any utility to be located within the dripline by boring or drilling through the soil.

5.5.1-P-9.5 Minimize the amount of landscape irrigation within the tree dripline by prohibiting turf or any landscaping with high water requirements and by limiting permanent irrigation improvements to bubbler, drip, or subterranean systems.

5.5.1-P-9.6 Prohibit storage of construction equipment, materials, and stockpiled soils within the tree dripline.

5.5.1-P-10 Where removal of trees is determined through individual project approvals to be unavoidable, each project developer shall prepare a tree replacement program to provide for replacement of native trees with trunk diameters exceeding four (4) inches which future development

would remove. The tree replacement program shall be incorporated as component in each project's Landscape Plan and implemented as part of site revegetation and following:

5.5.1-P-10.1 Replace oaks at a ratio of 5:1 (ratio of replacement trees to number of trees removed) unless salvaged from the site or grown from a locally collected source (as specified below).

5.5.1-P-10.2 Replace all other native tree species or specimen ornamental trees at ratio of 3:1.

5.5.1-P-10.3 Select plant species composition for the tree replacement program consistent with the percentage of each tree species removed.

5.5.1-P-10.4 Salvage and transplant young trees and saplings (with trunk diameters of less than 12 inches) from within the limits of anticipated grading to use as replacement plantings as part of project's revegetation program. Use of on-site salvage trees for replacement plantings would preserve younger trees and protect the genetic integrity of the native species. Trees from local source, particularly seedlings, typically have higher success rate for re-establishment than nursery stock due to their adaptation to local conditions. Due to the benefits of using local plant material, salvage of young oaks is required where young trees are available on site. The required replacement ratio is reduced from 5:1 to 3:1 where

on-site oaks are used as replacement plantings.

5.5.1-P-10.5 Consider collecting on-site seed and growing seedlings for use in the tree replacement program. Seeds should be on-site in the fall months, planted in temporary containers, and maintained for period of one or more years until seedlings are ready for planting. As with salvage plantings, oak seedlings grown from an on-site seed source are preferable to off-site nursery stock. This program will be encouraged by reducing the required replacement ratio from 5:1 to 3:1 where seedlings from on-site collection are used as replacement plantings.

5.5.1-P-10.6 Monitor tree replacement plantings for minimum of five years. If mature salvaged trees die within this time period, replacement plantings shall be made at 1:1 ratio. Also, any on-site salvage, locally-collected and grown seedlings or nursery stock plantings lost within this monitoring period shall be replaced at a 1:1 ratio on an annual basis.

5.5.1-P-11 In order to minimize disturbance to wildlife habitat, new development shall protect and restore native vegetation and sensitive habitat features such as creeks and wetlands that are determined to provide suitable habitat for special status plants and animals. Development shall be setback a minimum of 100 feet from the edge of intermittent and perennial streams that support woodland and riparian vegetation

or serve as important wildlife movement corridors. Development shall establish minimum setbacks from smaller drainages and seasonal wetlands to be retained in the vicinity of proposed development. Where wetland fill is permitted, on-site mitigation/replacement for areas of fill shall be required within the Specific Plan area. The Golf Course design shall incorporate landscape design features intended to enhance wildlife movement/habitat corridors. Where stream crossings are required, bridges or oversized culverts shall be used to minimize disturbance to wildlife movement.

5.5.1-P-12 All modifications to potential wetlands and other waters, including filling of drainage swales seasonal wetlands, and creek crossings, shall be coordinated with representatives of the California Department of Fish and Game (CDFG) and Army Corps of Engineers, as required by State and Federal law to ensure that all mitigation requirements and any design modifications are incorporated into individual development projects during the initial stages of project review.

5.5.1-P-13 Wetlands shall be accurately identified and avoided by proposed development to the extent feasible. Where possible, this shall include redesign of site-specific infrastructure improvements and include relocation or elimination of lots in individual development projects. Development shall be set back at least 50 feet from all wetlands to be preserved or created. A detailed wetland delineation shall be conducted by a

qualified wetland specialist for each subarea to accurately determine the extent of wetlands and other waters and to determine design features that may enhance wetland protection/restoration. Wetland delineations shall be conducted and verification with the Corps required by Policy 5.1.16 completed prior to submittal of tentative map(s) for the individual subareas of the Specific Plan.

5.5.1-P-14 Where disturbance and loss of wetlands can not be completely avoided, a detailed wetland protection, replacement, and restoration program shall be prepared by qualified wetland specialist which meets with the approval of any jurisdictional agencies and the City. Some loss of seasonal wetlands with poor habitat value is anticipated as part of implementation of the Plan. Each wetland mitigation plan shall clearly identify the total wetlands and other jurisdictional areas affected by individual development projects in the affected subarea, provide for re-establishment, enhancement, and/or replacement of wetland habitat and each wetland mitigation plan shall include the following details:

5.5.1-P-14.1 Identify the location(s) of mitigation areas. Mitigation for loss of existing wetlands shall be provided at a minimum replacement ratio of 1:1 and shall create or restore wetlands with equivalent or

higher habitat value. Wetland replacement habitat shall be created on-site or alternatively in Lagoon Valley Park or other parts of the Specific Plan area as part consolidated area-wide wetland mitigation and enhancement program. Replacement wetlands shall be consolidated to the degree possible thereby improving the value of the currently scattered wetlands.

5.5.1-P-14.2 Performance criteria, maintenance and long-term management responsibilities monitoring requirements, contingency measures, and funding shall be specified. Monitoring shall be provided for a minimum of five years and continue until the performance criteria are met.

5.5.1-P-14.3 Define site preparation and revegetation procedures, an implementation schedule, and funding sources to ensure long-term management of the overall wetland mitigation plan.

5.5.2 Waters of the United States and Wetlands

Waters of the United States identified within the study area consist of numerous ephemeral and intermittent streams, drainage ditches, seasonal wetlands and two stock ponds. The acreages of these specific features are listed in Table 5.1.

Table 5.1: Summary of Potentially Jurisdictional Areas

Feature	Square Feet	Acres
Stream and Ditch Segments	337,320 (41,950 l.f.)	7.74
Seasonal Wetlands	96,730	2.22
Alkali Wetlands	82,050	1.88
Stock Ponds	11,700	0.27
TOTAL	527,800	12.12

The locations of all potentially jurisdictional features are shown on Figure 3 of LSA's report.

Streams and Ditches

Lagoon Valley is a bowl-shaped valley with Lagoon Valley Lake situated in the northern part of the valley. The project site occupies the southern part of the valley and drains toward Lagoon Valley Lake via several tributaries. The tributaries range from a short, single segment ditch to a long, multi-branched stream system that traverses the length of the project site. Each of these tributaries falls in a separate watershed that drains toward the lake, and the tributaries collectively drain the entire southern half of the valley.

The natural streams on the property tend to carry high volumes of runoff for short periods during the winter, and dry rapidly. These flow conditions are a result of the semi-arid Vacaville climate and permeable streambeds. Long-term riparian cover only occurs on two tributaries (Tributary G and part of Tributary D identified in LSA report). This cover is mostly comprised of mature valley oak and California black walnut, and appears to have survived intact since pre-settlement. Most of the remaining, smaller natural channels are too ephemeral to support tree and brush cover.

The large ditches adjacent to Lagoon Valley Road also support dense riparian cover, but this cover is comprised of

younger willow and Fremont's cottonwood trees. The riparian cover along the roadside ditches is supported by summer irrigation runoff emanating from Hines Nursery. Some of the tree cover adjacent to the Lagoon Valley Road ditches was probably planted.

Seasonal Wetlands

Many of the mapped seasonal wetlands are small basins at various locations in the fields on the valley floor. The origins of these basins are mostly incidental to human agricultural and grading activities. Soil studies conducted in the fields adjacent to Lagoon Valley Road by LSA in the 1990's revealed that these fields had previously been graded. The grading was most likely conducted to level the fields and provide positive drainage. The leveling and drainage activities would have included filling of any pre-existing wetlands and stream channels, and included installation of new drainage ditches and drainage swales. Many of the installed ditches and swales do not have persistent jurisdictional characteristics, but do include occasional basins or short lengths of swale that are ponded long enough to meet wetland criteria.

Many of the seasonal wetlands are associated with a berm and swale constructed along the base of the hills

at the southwestern edge of the open field south of Lagoon Valley Road. The berm and swale were constructed by past landowners in an attempt to re-direct runoff emerging from the southern hills away from the open field.

There are several additional seasonal wetlands on the site that have natural origins. These occur on the footslopes of the hills due south of the Hines Nursery. The footslope wetlands are maintained by seepage of groundwater, and could be described as seeps. They differ from normal seeps, however, in that they are maintained by near-surface flow of percolating rainwater rather than by a connection with the regional water table. The soils and underlying parent material on the upper slopes of the hills must be permeable, allowing for a relatively high volume of subsurface percolation of rainfall during the winter. This near-surface flow emerges from the ground surface at the base of the hills, at the point where the slope gradient begins to level. The emerging groundwater maintains extended soil saturation on the footslopes of the hills through late winter and into the spring, leading to the development of seasonal wetland characteristics.

The footslope wetlands do not support very distinct wetland plant communities, but display strong evidence of hydric soil conditions. The plant cover is dominated by Italian ryegrass and fiddle-dock (*Rumex pulcher*). These facultative species are not normally reliable indicators of wetland hydrology, but on this site they are clearly coincident with soils that display strong redoximorphic mottling. Surrounding plant communities are dominated by non-hydrophytic grasses (such as medusa-head) as might be expected

on a permeable, well-drained soil. Italian rye and fiddle-dock do not normally thrive on permeable hillside soils, however, the extended springtime saturation present on the footslope wetland areas provides an extended source of soil moisture. This mechanism explains why Italian rye and fiddle-dock are indicative of potential seasonal seepage and wetland conditions on the project site.

Alkali Wetlands

Some areas that support alkali vegetation are present in the fields south and west of Lagoon Valley Lake. Areas south of Lagoon Valley Road supporting salt grass appear to have a moderate alkali influence in the soil but do not otherwise display wetland characteristics.

An area west of Lagoon Valley Lake (described in LSA's report as Alkali Wetland B) has a very shallow basin in the field which has been dammed by a berm alongside the bypass channel running along the west side of the lake. This area probably graded into the lagoon previous to disturbance associated with the development of Lagoon Valley Lake and the bypass channel. The soil in this area is mapped as Pescadero clay loam, which is listed as hydric where ponded and described as being on a saline-alkali subsoil. White alkali stains are occasionally visible on the soil surface in this area. Parts of this area contain almost monoculture stands of salt grass occasionally mixed with weed pickle. These areas show matting of the previous year's vegetation that appears to indicate shallow seasonal inundation. The characteristics of these mapped alkali wetlands appear to be the result of a combination of alkali soil and seasonal soil saturation.

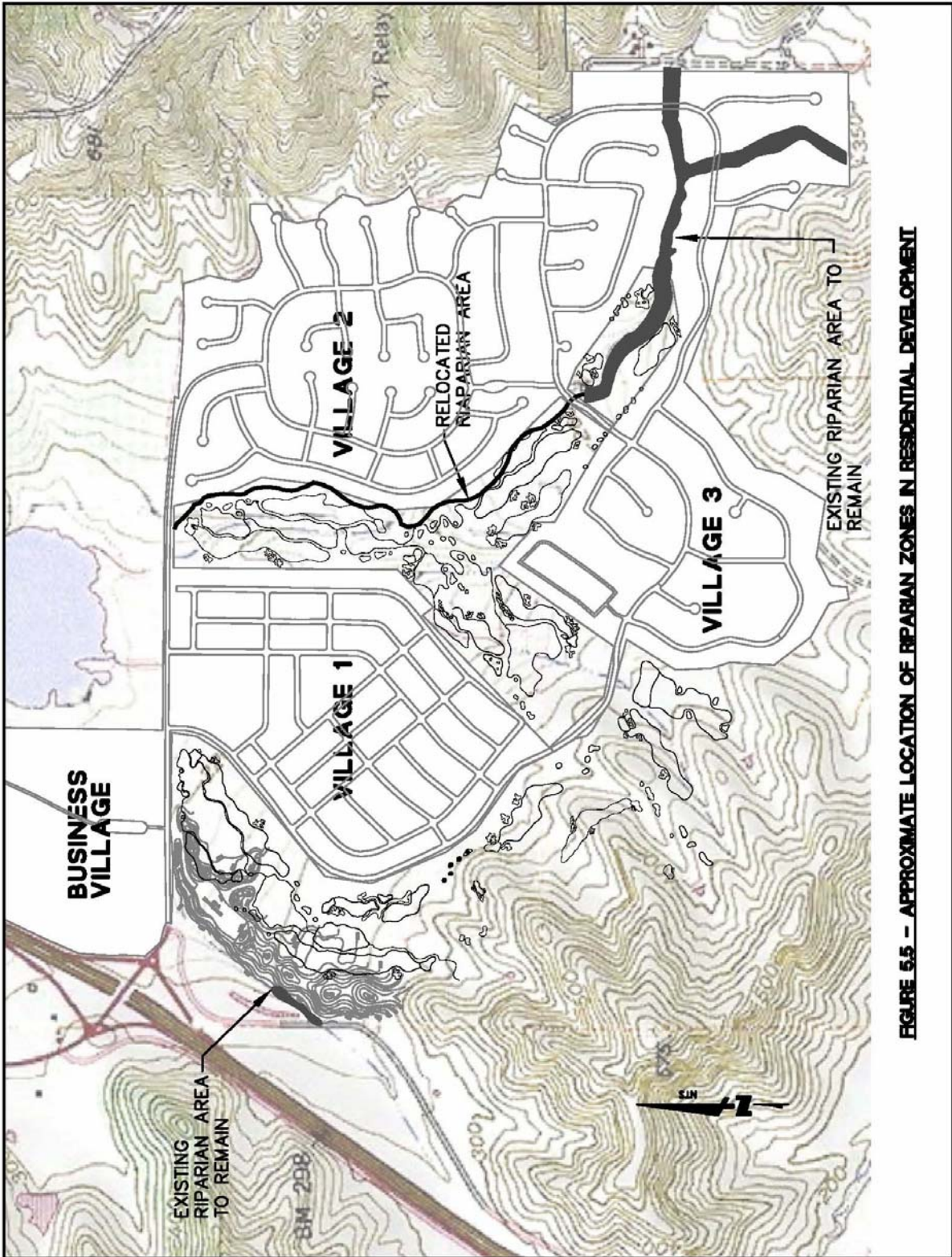


FIGURE 5.5 – APPROXIMATE LOCATION OF RIPARIAN ZONES IN RESIDENTIAL DEVELOPMENT

Stockponds

Two stockponds are present on the site. These ponds were constructed by damming existing tributaries. Both stockponds continue to hold standing water well into the dry season, and one is probably perennial. The stockponds have been characterized as non-wetland waters by LSA because the duration and depth of ponding prevents establishment of wetland plant cover in the centers of the ponds. Wetland plant cover, such as rabbit's-foot grass, does occur on the pond margins.

5.5.2.1 Management Program

It is the goal of Lagoon Valley project to conserve and maintain natural resources and open spaces throughout the project site. This will be accomplished through maintaining the important natural portions of the existing riparian areas, re-creating additional natural riparian areas through the golf course, and developing wetland habitats throughout the project site.

Streams and Ditches

The Riparian Woodland areas identified by LSA consist of two types; 1) natural stream channels, and 2) natural drainages realigned to flow adjacent to existing roadways. The proposed project will preserve the natural riparian woodlands and incorporate them into residential and golf course areas with 100-foot setbacks to residential homes and 50 foot setbacks to any golf course improvements (edge of rough, edge of tees).

The roadside drainages will be re-aligned through the golf course area with a more natural alignment and planted with native riparian species. These re-aligned riparian zones will also

have 100-foot setbacks to the residential development and 50 feet to any golf course improvements. Refer to Figure 5.5 for the riparian locations.

Emergent Wetlands

Emergent wetland associated with roadway drainage ditches will be removed as part of project grading and new emergent wetlands established along the relocated stream channels. The project will also remove the emergent wetland in the southern portion of the site for grading purposes, and replace in kind on-site or mitigate off-site at a 2:1 ratio.

Some of the ephemeral streams and ditches will be filled as part of the project. The existing seasonal flow within filled streams will be routed to the project storm drainage system. The mitigation for these areas to be filled will include on-site creation of new stream channels, on-site creation of wetland areas and/or purchase of off-site mitigation at an approved agency mitigation bank. The impacted area will be mitigated at a 2:1 ratio.

Seasonal Wetlands

The seasonal wetland areas above the proposed residential/golf course development, and not within existing slide areas, will be preserved and not altered by the project. Seasonal wetland areas within the project site will be filled as part of the grading operation. They will be mitigated for by the creation of new seasonal wetland habitat on or off-site at a 2:1 ratio.

Alkali Wetlands

The large alkali wetland at the southwestern corner of the Lagoon Valley Lake will be preserved. The other smaller alkali wetlands within the project site will be filled as part of the grading

operation. They will be mitigated for by the creation of new seasonal wetland habitat at a 2:1 ratio on or off-site.

Stock Ponds

The LSA report identifies two stock ponds on the project site. Stock Pond A will remain after construction of the project and be placed in project open space. Stockpond B will be filled as part of the grading operation. A new stockpond of the same size (0.13 acre) will be built in project open space.

Resource Agency Permits.

The fill of any of the areas described above will require obtaining a permit from the U.S. Army Corps of Engineers. As currently proposed an Individual permit would be necessary due to the total amount of fill (over ½ acre) and the length of drainages which would be filled (over 300 lineal feet). In addition, the Regional Water Quality Control Board will need to issue water quality certification under Section 401 of the Clean Water Act for jurisdictional fills. The fill or modification of drainages on the site will require obtaining a Streambed Alteration Agreement from the Department of Fish and Game.

All of these agencies will require mitigation for the loss or modification of jurisdictional area. The wetland areas associated with filling the streams and ditches, seasonal wetland and alkali wetland, will be mitigated through the construction of wetland areas along the golf course adjacent to the new riparian zones and other edges of the course. The stockpond will be mitigated for by constructing a new pond in the project open space. Additional mitigation areas may also be constructed as part of implementing the City's proposed "Lagoon Valley Lake Management Plan", or potentially through the

purchase of property from appropriate agencies such as the Solano County Land Trust or a mitigation bank. The areas impacted will be mitigated on a 2:1 basis.

5.5.3 Biological Resources

5.5.3-P-1 Habitat for special-status species shall be accurately identified and avoided by proposed development to the extent feasible as determined through the individual project review process. Where possible this avoidance shall include redesign of site-specific infrastructure improvements and through relocation and/or the elimination of lots within the designated development area. Confirmation in accordance with appropriate protocol, shall be performed to determine whether special status plant and animal species occur within certain subareas where absence has not been confirmed. Where appropriate, the scope of specific surveys shall be coordinated CDFG and USFWS, and trustee agencies shall be given an opportunity to review the adequacy of the survey efforts and recommended mitigation as part of environmental review of individual development applications. Confirmation surveys shall include:

5.5.3-P-1.1 Systematic rare plant surveys for all plant species of concern in development areas within all Subareas, including Spring rare plant surveys to determine whether Spring blooming rare plant species are present;

5.5.3-P-1.2 Surveys of suitable vernal pool and swale habitat in

all Subareas identified through a wetlands delineation as having suitable habitat for vernal pool Crustaceans.

5.5.3-P-1.3 Surveys for possible nesting burrowing owl in all subareas proposed, extending minimum distance of 300 feet from the limits of grading and construction.

If any special-status species are encountered, disturbance to habitat shall be avoided to the extent feasible. Where disturbance and loss of habitat can not be completely avoided detailed habitat protection, replacement, and restoration plan shall be prepared and implemented by qualified biological specialist. Plans shall meet with the approval of jurisdictional agencies and the City.

5.5.3-P-2 Pre-construction raptor surveys should be conducted by qualified wildlife biologist in the respective subareas before initiation of any development project in order to determine the presence or absence of active raptor nests or suitable habitat areas which could be disturbed or lost with project implementation. The required pre-construction nesting surveys and construction restrictions shall include the following elements:

5.5.3-P-2.1 Conduct each survey 30 days before any grading or other habitat modifications. Confirmation surveys on presence or absence of burrowing owl ground nesting colonies shall be required through wintering and nesting season surveys on all subareas to

ensure absence of any resident owls. Due to the presence of trees and possible use by tree-nesting raptors, surveys in development areas shall also determine whether any nests occur in trees within 0.5 miles of proposed development if grading or other habitat modifications are proposed during the breeding season of tree nesting raptors (from March 1 through August 15).

5.5.3-P-2.2 If an active raptor nest is encountered, monitor known active nests within 0.5 miles of development activity, by a qualified biologist. If any special-status species are encountered, disturbance to habitat shall be avoided to the extent feasible. Where disturbance and loss of habitat can not be completely avoided detailed habitat protection, replacement, and restoration plan shall be prepared and implemented by qualified biological specialist. Plans shall meet with the approval of jurisdictional agencies and the City.

5.5.3-P-2.3 Prohibit construction activities within the designated buffer zone until the biologist determines that breeding was unsuccessful, that the young have fledged from the nest, or that CDFG-approved relocation plan has been implemented successfully.

5.5.3-P-2.4 Prohibit construction activities within the designated buffer zone, including removal of any nest tree or burrow, until the

wildlife biologist submits written confirmation on the status of nesting activity to the City Planning Division.

Existing Setting

Vegetation

The different plant community/habitat types identified at the Lagoon Valley project site are:

- Non-Native Grassland
- Oak Woodland / Savanna
- Riparian Woodland
- Emergent Wetland
- Seasonal Wetland

The spatial distribution of these habitats with descriptions of their characteristics are included in detail in LSA's report.

Wildlife

Wildlife found on the Lagoon Valley property are species that inhabit the four plant communities present. Wildlife species observed during the reconnaissance survey are listed in LSA's report.

Special-Status Species

Special-Status Plant Species

The LSA report identified five plant species that could potentially occur within the project area.

- San Joaquin saltbrush (*Atriplex joaquiniana*, List 1B)
- Big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*, List 1B)
- Carquinez goldenbush (*Isocoma arguta*, List 1B)
- Contra Costa goldfields (*Lasthenia conjugens*, FE/List 1B)
- Showy Indian clover (*Trifolium amoenum*, FE/List 1B)

Of these five species, two are federally-listed as endangered. All of these species are on the CNPS's List 1B, indicating that they are considered rare, threatened, or endangered in California or elsewhere. None of these five species, were observed during the reconnaissance survey, and it is unlikely any of them will occur on the property because this area has experienced a long history of agricultural disturbance, including hay-farming, walnut and almond harvesting, and horse and cattle grazing. These disturbances have displaced native plant cover over much of the site with weedy, herbaceous species.

Special-Status Wildlife Species

The LSA report identifies 8 special status wildlife species that could potentially inhabit the site:

- Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)
- Swainson's Hawk (*Buteo swainsoni*)
- Western Pond Turtle (*Clemmys marmorata*),
- White-Tailed Kite (*Elanus leucurus*),
- Golden Eagle (foraging) (*Aquila chrysaetos*),
- Loggerhead Shrike (*Lanius ludovicianus*),
- Tricolored Blackbird (*Agelaius tricolor*), and
- Western Burrowing Owl (*Speotyto cunicularia hypugea*)

Of these species, as described below, only three (Valley elderberry longhorn beetle, Swainson's hawk, Western pond turtle) have actually been observed on the site, and only in limited numbers.

5.5.3.1 Management Plan

Vegetation

The proposed project will develop the lower portions of the Valley and lower portions of the adjacent hillsides. The non-native grasslands within this area will be removed. The existing grasslands above the development will be preserved and managed to prevent erosion and siltation of the storm drainage system.

All Oak Woodland areas identified in the LSA report will be preserved with the possible exception of trees removed for slide repair. The riparian Oak Woodland area in the southeastern portion of Village 3 will be protected with a 100-foot setback to the residential development. A small area of Oak Woodland within the open space between Village 2 and Village 3 and the golf course may be impacted due to slide repairs. All trees removed for the project will be replaced at ratios consistent with to the City of Vacaville's Tree Preservation ordinance.

As described earlier, the Riparian Woodland areas identified by LSA consist of two types 1) a natural stream course, and 2) roadside drainage ditches. The Riparian Woodland associated with the natural stream course occurs in the southeastern corner of the project site. The section of natural drainage will be maintained and incorporated into the residential development and golf course with 100-foot setbacks to the residential development boundary and 50 feet to any golf course improvements. The riparian zones associated with the roadside ditches will be removed and re-established through the golf course area along the realigned channels.

These re-aligned riparian zones will have 100-foot setbacks to the residential homes and 50 feet to any golf course improvements. They will be vegetated with native riparian plant species. The realignment or fill of riparian areas altered by the development will require permits from the Corps of Engineers, Regional Water Quality Control Board, and Department of Fish and Game.

The Emergent and Seasonal Wetland areas within the lower portions of the Valley and lower portions of the adjacent hillsides areas will be filled as part of the residential and commercial development. The wetland areas within the upper areas of the golf course and above the residential development will be preserved as much as possible. The fill of wetland areas will require permits from the Corps of Engineers and Regional Water Quality Control Board.

Wildlife

The Lagoon Valley property provides suitable foraging habitat and possible nesting habitat for Swainson's hawk, a state listed threatened species. Foraging could occur in any of the project site grasslands but would most likely be concentrated in the valley bottom areas. Mitigation for the loss of these areas would best be accomplished at an off-site location where Swainson's hawk regularly forage. Because the project site is located almost five (5) miles from any known active nest tree, and well outside the core areas of Swainson's hawk nesting and foraging areas located further to the East in Solano County, the impact of this project on Swainson's hawk foraging hawk is expected to be limited. If loss of Swainson's hawk foraging habitat is identified as a significant impact during project review,

however, mitigation for the loss will be provided off-site, expected to be in the form of conservation easements or participation in approved mitigation banks.

In addition, pre-construction surveys for nest trees or certain other bird species, such as habitat for the burrowing owl, will be conducted at the appropriate time to ensure that impacts on those species are avoided to the extent practicable. Avoidance or passive relocation measures for the burrowing owl would be accomplished in consultation with the California Department of Fish & Game.

At least one elderberry shrub is present on the property and it shows evidence of use by valley elderberry longhorn beetle, a federally listed threatened species. The property will be surveyed to inventory the number of elderberry shrubs present and a mitigation plan prepared which implements The U.S. Fish and Wildlife Service guidelines for mitigation for this species. Elderberry shrub planting will occur in the 100foot setback zones along the preserved creek in the southeast corner of the property. The mitigation strategy for the valley elderberry longhorn beetle would seek to provide replacement plantings as close as feasible to the areas of impact.

Western pond turtle, a state species of concern has been observed in one of the project site roadside drainages. The project will conduct pre-construction surveys for pond turtles in all drainages that will be impacted by construction. All pond turtles found will be relocated to safe locations, such as the Lagoon Valley Lake, or protected through the establishment of buffer zones. It is

expected that wetland protection measures will also provide protection for this species.

5.6 LANDSCAPE AND SUSTAINABILITY

Lagoon Valley will emphasize sustainable landscape design and development principles by fitting the proposed improvements into the existing natural systems where those systems are significant and to enhance and improve the natural systems where deficient. The use of native or naturalizing plant materials will be encouraged in order to conserve water resources and support bio-diversity. Naturalized drainage swales will be constructed along selected streets and within the golf course to provide storm water treatment.

Landscaping can be the key to the success of any significant development if done in a manner that reflects the opportunities and constraints of the site to be developed. LLV is a distinctive environment. Soils, climate, prevailing winds, slopes, and riparian edges will be carefully considered in landscape design. Plant materials will be selected for their ability to thrive in the site conditions with particular respect for water conservation and the natural setting of the valley.

The overall landscape design of developed areas should reinforce the existing character of the site by emphasizing the use of native plants, and sensitive grading that preserves trees and reflects existing topography.

All plant materials used in the landscape should be appropriate to LLV. The landscape should reinforce the existing aesthetic, cultural and historical character of the valley, and, at the

same time, support the broader environmental goals of water conservation, storm water management, and expanding wildlife habitat and bio-diversity.

A reasonable effort should be made to ensure that common areas and lot areas outside building envelopes are planted with indigenous plants in a manner to blend with the site's open spaces. Yards of lots adjacent to the golf course should be designed to blend with the golf course. The use of exotic plant material should be discouraged. The use of indigenous, drought-tolerant plant species should be encouraged.

Oaks and other native trees shall be preserved and protected to the maximum extent possible, with adequate replacement provided where tree removal is unavoidable. Sponsors of individual development projects proposed the SP area shall design their projects to refine the Specific Plan's development concepts in order to protect mature native trees. Surveys shall be performed to identify trees with trunk diameters of four inches or greater (measured at a height of four feet above grade) before submitting tentative maps for individual development projects, and project plans shall map trunk locations within 50 feet of the anticipated limits of grading. Individual native trees shall be preserved by adjusting proposed site alterations, using retaining walls, creating short over-steepened slopes, and other methods. The following tree preservation guidelines should be implemented to minimize the potential for damage from proposed development and construction activities.

- a) Avoid grade changes within 1.5 times the width of the tree dripline and prohibit any encroachment closer than 15 feet of the trunk. Restrictions to the limits of grading, adjustments to the final grade of cut and fill slopes, and use of retaining walls shall all be used to protect individual trees worthy of preservation.
- b) Before any land alterations or construction begin, install temporary fencing along the outermost edge of the dripline of each tree or group of trees to be retained in the vicinity of grading in order to avoid compacting the root zone and mechanical damage to trunks and limbs.
- c) Prohibit paving within the tree dripline by using porous materials such as gravel, loose boulders, cobbles, wood chips, or bark mulch where placement of hardscape in the vicinity of trees would be necessary for access.
- d) Prohibit trenching within the tree dripline and install any utility to located within the dripline by boring or drilling through the soil.
- e) Minimize the amount of landscape irrigation within the tree dripline by prohibiting turf or any landscaping with high water requirements and by limiting permanent irrigation improvements to bubbler, drip, or subterranean systems.
- f) Prohibit storage of construction equipment, materials, and stockpiled soils within the tree dripline.

Approved plant lists for streets, easements, common areas, and private yards will be provided as part of the LLV Design Guidelines. Figure 5.6-Street Tree

Concept indicates the preliminary conceptual approach to street tree planting that will be developed in

greater detail in the LLV Design Guidelines.

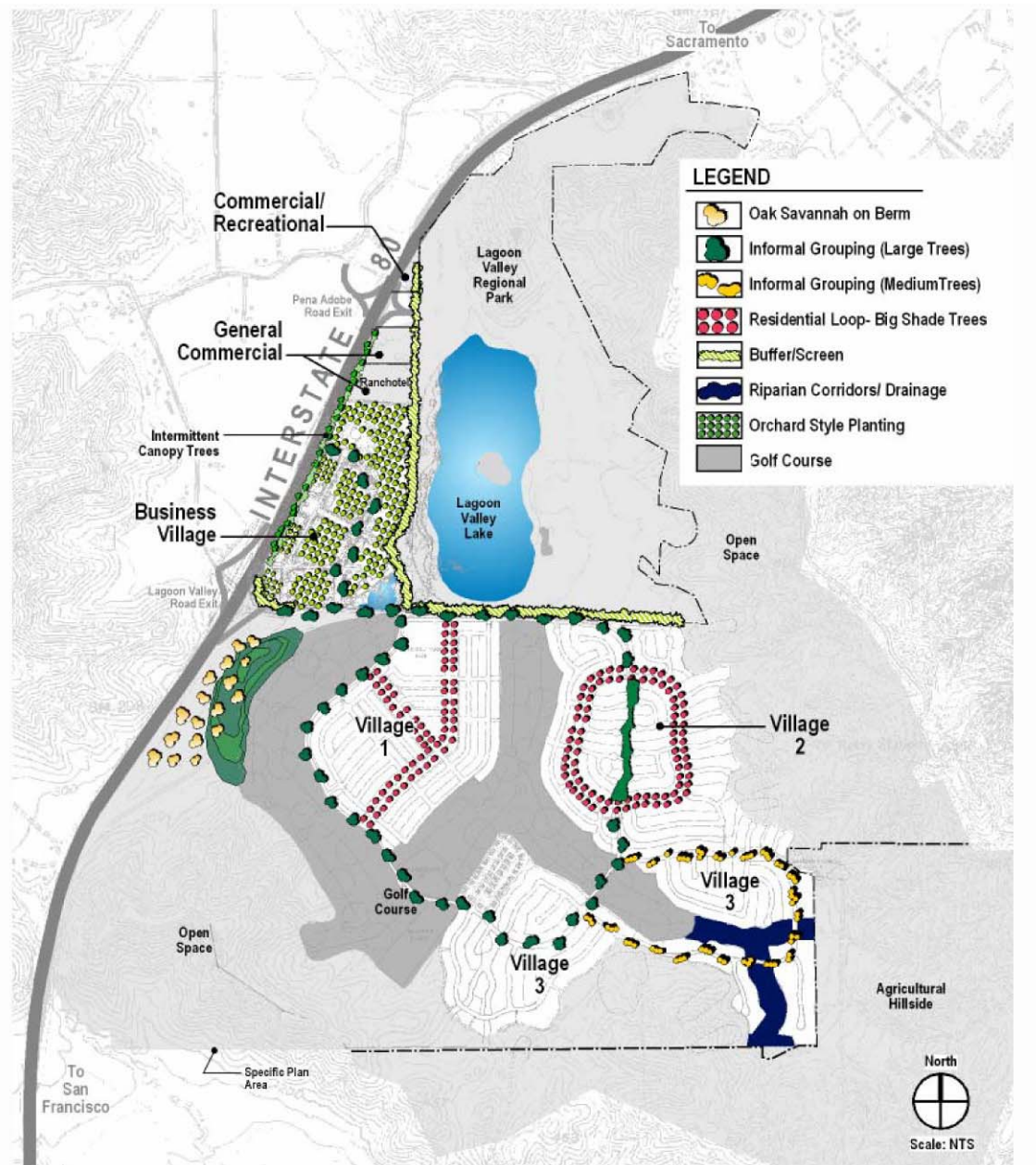


Figure 5.6: Street Tree Concept/Buffers

5.7 GRADING

Goal to create a land use pattern that ensures public health, safety and welfare.

5.7.1-P-1 Design all structures and utilities with adequate consideration for site-specific subsurface materials. This policy would apply to all utility corridors extending services throughout and to the Specific Plan areas. Seismic hazard potential for each location and each type of development is to be considered through the design process for development and utility projects.

5.7.1-P-2 In order to comply with all applicable and appropriate seismic design provisions of the Uniform Building Code, development within the Specific Plan area shall be designed to conform to current standards for development within Seismic Zone 4, in accordance with the California Building Code

5.7.1-P-3 In general, development within the Specific Plan area shall not require grading in areas of greater than 25% slope, consistent with the City's General Plan and subject to specific area policies regarding golf course development, utility construction, trails, and landslide repair.

5.7.1-P-3.1 An exception may be made for a limited area of golf course development based upon a more detailed design layout.

5.7.1-P-3.2 In order to protect native and non-native grasslands and reduce erosion potential, residential development should not

occur on hillside slopes of 25% or greater in the eastern area of Subarea 3D, in the eastern and southern areas of Subarea 3C.

5.7.1-P-4 Development within the Specific Plan area shall include protection for all development areas from landslide hazard. Development standards shall incorporate provisions for adequate investigation and repair of landslides potentially affecting areas to be developed with occupied structures or facilities that may involve large concentrations of people. Landslide repair/protection may extend beyond development areas into publicly owned open space lands. Landslide repair areas shall be subject to a monitoring policy that will provide for routine investigation and inspection of repair areas to monitor hazards and shall incorporate a methodology for implementing remedial repairs;

5.7.1-P-5 Geologic and geotechnical engineering investigations shall precede formulation of development plans in proposed hillside development areas, and project design shall incorporate detailed slope stability measures to be monitored during subsequent grading. This policy shall apply to construction of utility facilities placed in publicly owned lands.

5.7.1-P-6 Development sites adjacent to slide hazard areas shall be required to incorporate mitigation procedures to repair/correct slide hazards prior to occupancy of structures, including

funding for maintenance and repair requirements.

5.7.1-P-7 Development within the specific plan area shall require investigation and remediation of any land use hazards as described above, prior to occupancy of affected residential structures.

5.7.1-P-8 Environmental site assessments shall be prepared as part of all utility corridor projects.

5.7.1-P-9 Prior to the construction of the proposed school site, a Preliminary Endangerment Assessment (PEA) shall be conducted pursuant to Title 22 of the California Code of Regulations (Chapter 51.5, Section 69107(c)).

5.7.1-P-10 A detailed erosion and sedimentation control plan shall be submitted with any application for tentative subdivision map approval. The plan shall include measures to control erosion of stockpiled earth and exposed soil, provide for revegetation of exposed slopes before the first rainy season following construction, and specify procedures for monitoring the plan's effectiveness. The plan shall be reviewed for adequacy by the City Engineer, and plan compliance shall be made a condition of approval for the tentative map and all individual development projects within the area covered by the plan.

5.7.1-P-10.1 For the Project Master Tentative Map the erosion and sedimentation control plan is for protection of areas that are mass graded and for the associated hillside cuts and does not need to be at the construction level detail that

will be needed for the subsequent tentative subdivision maps.

Grading within the Specific Plan area shall comply with Division 14.19 of the Vacaville Municipal Code. Grading within hillside areas shall be done according to City guidelines and ordinance. Measures for protecting existing trees, native vegetation, rock outcroppings, and other natural features should be indicated on grading plans. In addition, grading related to hillside development shall be subject to the following standards:

1. Grading on slopes of 25 percent or greater shall be prohibited unless specifically approved by the Director of Community Development and the City Engineer;
2. The grading design shall use rounded or contoured graded slopes to provide a more naturalized appearance to graded areas;
3. Cut or fill slopes should be designed to blend into the existing slope. The top and toe of slopes should be rounded to provide a smooth transition between grade changes. Large cut and fill slopes should be contoured to create a natural appearance and to provide swales for clustering vegetation.
4. Generally, a 3:1 slope or less should be utilized for cut or fill slopes if it will not result in excessive grading or will not disrupt natural site features. A steeper slope is acceptable where it will conform to the natural terrain, will not be highly visible, and will comply with engineering standards.
5. Terracing shall be considered as an alternative to the use of tall or prominent retaining walls,

particularly in highly visible areas on hillsides.

6. If retaining walls are unavoidable, their height and length shall be minimized and screened with appropriate landscaping. Retaining walls shall incorporate design elements of other architectural or natural features of the project, including the use of native rock or a natural-looking texture or veneer. Walls should be buffered with landscaping.
7. The height of retaining walls is limited to five feet (5 ft.). The use of multiple-terraced, lower retaining structures is strongly preferred. Terraced, parallel walls retaining walls shall be separated by at least five feet (5 ft.) and include appropriate landscaping. A minimum separation of 15-foot is required for a third wall.
8. Retaining walls shall be used to minimize the height of cut and fill slopes. The design, height, and appearance of the retaining walls shall conform to the standards established by the City;
9. Erosion control planting should be provided on disturbed slopes. Jute netting or another acceptable erosion control measure should be placed on slopes steeper than 2:1 slope.
10. Cut and fill slopes may be required to be landscaped and irrigated. The plans for the landscaping and irrigation of all required landscaped areas shall be subject to the approval of the Director of Community Development;
11. Drainage ditches shall be made of concrete, unless specifically authorized by the City Engineer or

the Director of Public Works, and shall conform to the standards established by the appropriate official;

12. Fire access roads and firebreaks shall conform to the standards approved by the Fire Chief;

Although the Specific Plan has designated the most critical areas of hillside instability as open space or hillside agriculture, many areas proposed for development will still require mitigation to avoid impacts from unstable slopes and soils. Because of the range of conditions which exist in the Specific Plan area, site-specific studies will be required to evaluate the potential for impacts related to landslides, soil creep and other forms of instability. With this more detailed analysis there is the potential that the total number of lots may need to be reduced.

5.8 CULTURAL RESOURCES

Archival research and field reconnaissance conducted as part of the 1990 Certified EIR for the existing Lagoon Valley Policy Plan and as part of the Draft EIR for this Specific Plan, indicates that a number of prehistoric sites exist within the SP area. Preservation of archaeological and historic resources, whenever feasible, is recommended with this Plan. The preservation and enhancement of these resources can contribute to the creation of a unique sense of place by acknowledging the area's history.

Goal to preserve LLV's heritage as embodied in the area's history and cultural resources.

5.8.1-P-1 All properties with historic resources which may be impacted by future development shall be subjected to in-depth research to determine the significance of the resource prior to any alteration. Development activity shall be designed with the intent of avoiding impacts to historic resources.

5.8.1-P-2 Avoidance of buried cultural resources shall be emphasized during the planning for utility corridors.

5.8.1-P-3 All projects within areas containing known buried cultural

resources shall be subjected to site investigation during the planning review process to determine the most feasible way to avoid or otherwise reduce the impact to such resources.

5.8.1-P-4 The Master Developers shall incorporate design elements, such as signage or other monument markers, into the project that call attention to the historical elements of the valley. This may also include the naming of streets, parks, plazas or other features after the families that have lived in the valley.