

CHAPTER 7: DESIGN GUIDELINES

“A true ‘place’ stays with you; it invites you back again and again to partake in feeling, activity and vitality of the built environment. The UI District will be this kind of urban place. The combination of uses, people places, and distinctive built environment should create a different kind of place—an innovative place unique to Chula Vista.”

7.1. Purpose & Intent

Because academic environments are generally defined by exceptional facilities with unique character, materials and open spaces, architecture, planning and landscape design play a significant role in the UI District Plan. Going forward, the buildings and spaces in the UI District should strive to advance environmental aesthetics, high-performance engineering and sustainability—and reflect the local San Diego landscape and climate in authentic and thoughtful ways. These design guidelines will address important design considerations for achieving a vibrant “place,” defined by a pedestrian and human-scaled built environment that serves a diverse and dynamic community of students and innovators.

The following design guidelines are not meant to be overly restrictive, but rather to establish design fundamentals that can be applied creatively over a wide range of design solutions. Each guideline shall be considered within the context of the building and its adjacencies. These guidelines are intended to be flexible and to allow for great adaptability to market changes.



Source: iStock

7.2. Identity Concept

7.2.1. UI District Identity

The UI District is conceived as a compact, walkable urban district that balances a unified scale and character with latitude for a variety of architectural styles and expressions. Its overarching vision reflects an authentic urban community that will grow over time to encompass a multiplicity of identities, in much the same way all cities do. Given how the UI District Identity is more urban than a traditional campus, these guidelines will differ from and be more inclusive than those written for a more historic university precinct. However, like most classic campus environments, well-defined open spaces and iconic placemaking will be overriding features.



7.2.2. Multi-Institutional Character

Unlike a single, traditional campus precinct, the UI District will encompass several university partners who will grow over time within different footprints. Given the changing nature of academic users and the long-range time-frame of the UI District, flexibility will be a key. The UI District Plan is flexible enough to reflect a wide range of academic planning scenarios—anything from academic spaces located in mixed-use multi-tenant buildings to larger ensembles of several buildings organized around a public space framework.

7.2.3. Streetscapes

Given the Plan’s urban vision and character, streetscapes play a particularly significant role in the UI District. As outlined in Chapter 4: Circulation Plan, a highly articulated network of complete streets will anchor key places and circulation corridors throughout the UI District. All of these streetscapes reflect best-practice in the social and ecological role of streets in community planning—with significant, well-defined pedestrian and bike zones, unique lighting and street furniture, and sustainable landscape features including shade trees, climate appropriate plantings, storm water swales, and public art. Wherever possible, academic- innovation and/ or retail spaces will anchor these streetscapes in urban zones, while landscapes and trails will do so wherever adjacent to parks, canyons, and squares.

7.2.4. Campus Entries

In order to create a unified, urban district, the UI District Plan avoids design strategies that physically or visually separate UI District facilities from their surroundings. These include gates, walls, freestanding signage features and deep setbacks— planning strategies that stress potential disconnects of university functions from their immediate neighborhood context.



University of California, Irvine

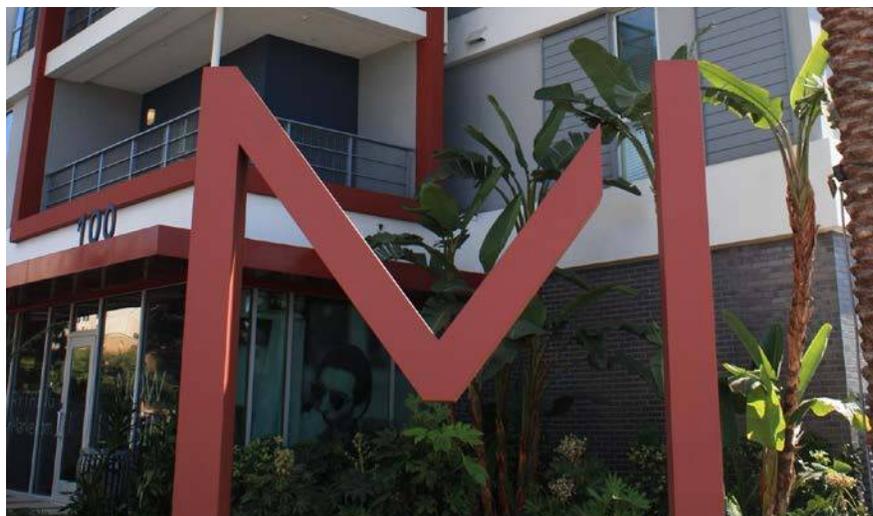
7.2.5. Signs

Signs and graphics will play a large role in creating and reinforcing the desired feel of the UI District. These guidelines establish a coordinated exterior signage program to achieve a unified and cohesive overall appearance. Controlled way-finding and identity signage is a major factor in creating and preserving the design character of the District.

The signage design should have a distinctive character that reflects the mixed-use, urban environment.

A. General Guidelines

- Selected sign colors and materials should contribute to legibility and design integrity.
- The design of the sign should be appropriate to the design of the building that it is placed on.
- All garage parking areas shall be identified.
- Signs should be clearly legible for universal accessibility. They should meet or exceed ADA standards for type size, type style, color contrast, messaging, and heights.
- Signs should use a brief message. A sign with a succinct message is simpler, faster to read, looks cleaner, and is more attractive.
- Typefaces used on identity signs should be easy-to-read fonts. Consideration must be given to colors and materials of the surrounding support walls.
- Sign conduits, transformers, junction boxes, etc. must be concealed from view.
- Construct signs of permanent, durable, and fade-resistant materials.



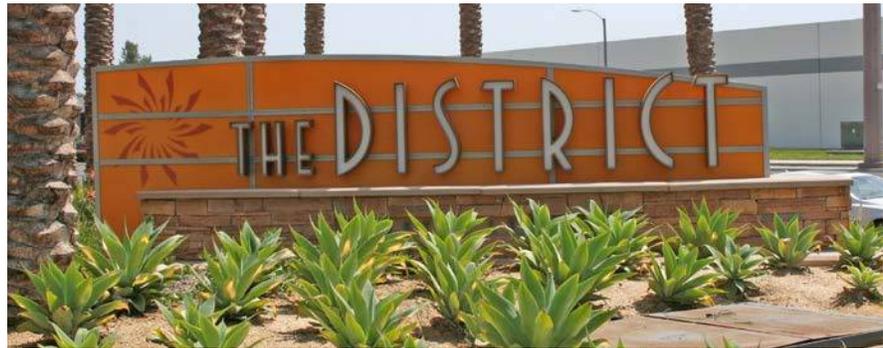
Source: WHA



Pylon Sign Example

B. Pylon and Monument Sign Guidelines

- Pylon signs should be designed with two (2) supports to house the sign area in a decorative frame. For signs where it is not possible to provide a frame proportional to the sign, a single support may be provided as long as the support is proportional to the sign face in size and shape.
- Monument signs should be designed with the width of the base of the sign equal to or more than the width of the sign face.



Monument Sign Example



Wall Sign Example

C. Wall and Projecting Sign Guidelines

- Locate signs as close to the building entrance as possible, where feasible.
- Wall signs shall consist of individual letters and be attached to a building without visible supports or raceways.
- Exposed neon is permitted for themed restaurants and other entertainment uses.
- Wall mounted internally illuminated permanent box signs and banners used as permanent signs are prohibited. Internally illuminated box signs may be used as projecting signs.
- Projecting signs shall have a minimum vertical clearance of eight (8) feet.
- Projecting signs shall be placed perpendicular to the building wall.
- Projecting signs shall be attached to the building fascia or canopy with attractive and decorative supports.
- Encourage use of a consistent color scheme on all exterior signs that is compatible with all other signs on a building and free-standing signs on a parcel.



Projecting Sign Example

D. Changeable Signage

The purpose of changeable signage is to create excitement and provide a visually-interesting streetscene. Three styles of this signage may be used to achieve this goal are “pageantry,” “mural graphics,” and “marquee signs.”

Pageantry

Pageantry includes flags, banners, cylinder kiosks, canopies, lights, directories, ground-mounted graphics, flower pots or other similar, temporary or permanent (but changeable) elements. The intent is to allow regular changes to the pageantry elements in terms of color, design and other visual content so the pageantry signage will always look current. Pageantry may be located within the right-of-way, within setbacks, or on private property. Pageantry could be used to feature on-site tenants or programming, or for off-site advertising and sponsorship opportunities.

- Paper, cardboard, styrofoam, stickers, and decals are not acceptable forms of pageantry (directories and kiosks excepted).
- Pageantry shall not include flashing, flickering, rotating, or moving lights.
- Temporary Promotional Advertising (banners) is not considered to be pageantry.
- Kiosks and directories should provide vertical breaks in the sign structure. Individual panels shall be recessed, framed, or otherwise treated to avoid a flat appearance of the sign face.



Pageantry Example - Kiosk



Pageantry Example - Directory



Pageantry Example - Canopies



Pageantry Example - Lights & Umbrellas



Mural Graphics

Mural graphics are intended to provide interest within the interior of the UI District. These graphics may include applied, vinyl, painted or printed graphics, electronic LED board, or tilework. These mural graphics blur the boundaries between advertising and public art. Some of the locations may feature public murals and art, while others will provide off-site advertising and sponsorship opportunities. These mural graphics will create an eclectic urban environment that also promotes change and evolution over time.

- The mural graphics, advertising and art pieces are encouraged to be placed at locations that will reduce the scale of large blank walls.
- Lighting of a mural graphic shall not spill over to an adjacent property or public street.
- The mural graphic shall be maintained in good condition.



Marquee Signs

Marquee signs are typically used to provide information about current showings or events for theaters, ticket outlets and live entertainment uses.

- Marquee signs may project or be integrated into the building to promote enhanced articulation.
- Plain, rectangular marquee signs without any articulation are discouraged.
- Marquee signs may be manual or electronic.



Mural Graphic Examples

E. Directional Signage

The purpose of directional signage is to facilitate the flow of traffic and pedestrians. Parking entry signs notate the entrance of parking structures while directional signs may direct vehicles or pedestrians to a particular destination.

Parking Entry Signs

- Parking entry signs should be illuminated signs so drivers can easily identify the entrance to parking areas.
- These signs shall be located on all non-residential parking garage entrances.

Directional Signs and Wayfinding Program

- Directional signs typically include individual tenant or place names and directional arrows.
- A wayfinding program detailed with the placement and location of directional signs shall be developed.
- To avoid confusion, directional signs will typically have no more than six (6) listings with arrows.
- The project name may be located on the sign in a smaller, more understated manner so as not to detract from the wayfinding.
- Vehicular directional signs should be located at major vehicular intersections and at strategic locations to also act as identity markers for pedestrians once they have parked their car.
- The placement of directional signs shall maintain sight lines.
- Pedestrian directional signs are highly encouraged in areas of high pedestrian activity.



Parking Entry Examples



Directional Signage Examples

Source: Ayers Saint Gross



Thames Street

Source: Ayers Saint Gross



Eckerd College

7.2.6. Tiered Development & Views

Slopes and stunning viewsheds are a singular feature of the UI District site—and the proposed plan will leverage these features to create unique and remarkable environments. The UI District site is largely graded to follow the natural contours and maintain three existing canyons, creating key landscape amenities including a network of canyon and rim trails. Blocks in the Plan are tiered to create viewsheds throughout the UI District. In particular, buildings along the Plan’s southern edge are all sited to maximize view corridors and offer sites for spectacular meeting and assembly spaces.



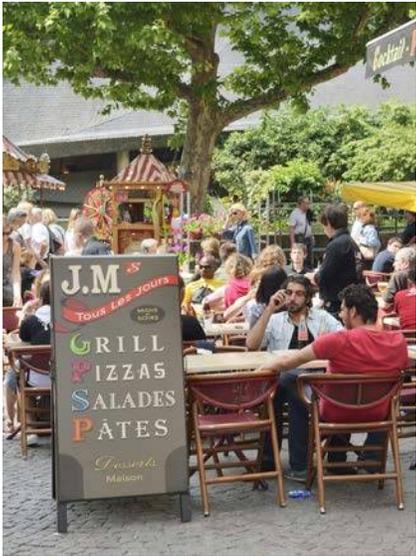
Temporary Buildings



Source: WHA

7.2.7. Interim Buildings & Places

Given that multiple university partners will likely grow on the site over time, the UI District is essentially “incubating” its academic footprint in a non-traditional way. In the Plan’s early stages, temporary and interim facilities will play a critical role in this process since most university footprints will likely be small and informal. This situation mandates the need for early phase projects and programming that encourages robust academic-innovation assemblies, events, and symposia. Ideally these facilities will also serve a “visitor center” function—drawing potential partners and visitors to the site years ahead of full build-out. Special care should be given to creating at least a few social hubs—food, entertainment or informal programming—that will draw both outside innovators and also existing neighbors.



Source: iStock

Source: iStock



Source: Ayers Saint Gross



Pratt Street

7.3. Site Planning & Building Placement

This section provides guidelines for block size, massing, building design, and landscape design to “break down” the scale of larger blocks and buildings to ensure pedestrian-oriented development and a high-quality pedestrian realm.

7.3.1. Mixed Use Facilities—“Open Chassis”

The urban nature of the UI District mandates a very different set of design guidelines from conventional academic environments. Here, while a unity of scale is desirable, a diversity of styles is also appropriate. From this perspective, the UI District guidelines are more akin to Form-Base Code that encourage coherent and harmonious massing, street walls, and public spaces, yet do not dictate specific styles or limited palette of colors and materials. This plan aspires to foster an authentic urban character that only arises from a diverse set of institutions, landowners and design teams working over time.

With that said, one coherent theme to future UI District development is “mixed use”—a broad, strategic goal that new UI District Plan will promote coordinated, urban cityscapes de-emphasizing physical design differences generated by disparate lands uses. Going forward, the majority of UI District buildings, whether they are



Source: Ayers Saint Gross

academic, corporate and/or residential buildings will reinforce defined street edges, squares, and public spaces irrespective of use. With the exception of residential structures, most buildings will be conceived as “open chassis” facilities that can accommodate a wide range of academic and non-academic users who change easily over time and wherever appropriate, co-locate in the same building footprint. In fact, it is the ability to accommodate a wide range of users—including ground-level spaces—that will define the UI District Plan.

Highly specialized and/or monumental structures like libraries and athletic facilities will occur in specified locations that preserve, enhance and reinforce the character of the overall district.

Characteristics contributing to a successful mixed-use setting include:

- Strong relationships between building form, street, and pedestrian walks.
- Building types that combine academic, employment, retail, service, and social uses.
- Architecturally interactive building facades.
- Activated pedestrian realm highlighted by plazas and connected spaces.
- Framing of internal and external views.



Pedestrian connections, variety of building form, parking hidden behind

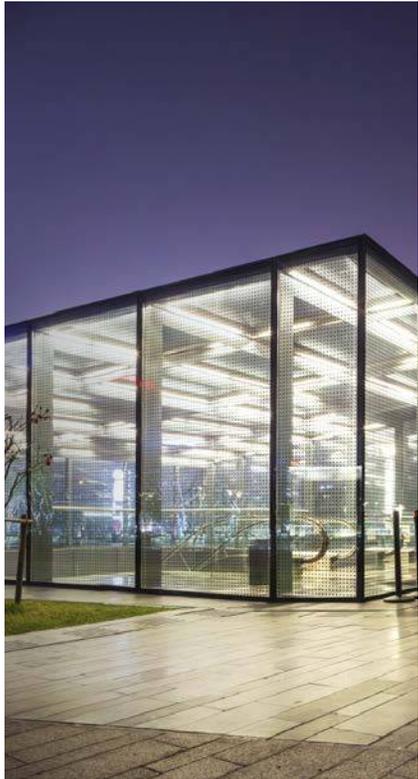
7.3.2. Block Planning & Pedestrian Connections

Building placement, massing, and facade details are essential to creating an aesthetically interesting place for pedestrian and business activity. Block development should support pedestrian connections to public walks, transit stops, and adjacent Villages:

- Encourage coordination between parcels for building scale, massing, architecture, and pedestrian amenities.
- Provide connectivity between buildings and through Transects to provide shorter distances between destinations.
- Incorporate appropriate Crime Prevention Through Environmental Design (CPTED) features in space design such as territorial reinforcement, strategic natural surveillance, well-lit spaces, and appropriate maintenance.
- Arrange buildings to create a variety of outdoor spaces including courtyards, plazas, squares, eating areas, arcades and/or usable open spaces.
- Consider sheltering walkways through architectural treatments, and/or landscape.
- Clearly identify the main building entry, if applicable, and distinguish it from the rest of the building.



Source: Ayers Saint Gross



Source: iStock

University of South Florida Health and Wellness

7.4. Innovative Architecture

Innovative architecture will play a central role in the UI District vision making it essential that future development exhibits design excellence on several fronts: aesthetics, emerging space planning trends, building technology and sustainability.

When completed, the UI District will offer one of the densest and most dynamic communities in the CaliBaja region—so its architecture must express this dynamism and the innovative energy of its students and entrepreneurs. Like many parts of Southern California, the UI District site calls out for a contemporary design vocabulary that features high performance building technologies and emerging pedagogic and work environments. The San Diego region has a rich tradition of modern and contemporary architects—work ranging from Irving Gill to Rob Wellington Quigley—that couples simple, prismatic forms with large openings, often articulated with trellises and shading devices.



Source: iStock



7.4.1. Parking

Parking will define future growth patterns in the UI District. Like most neighborhoods in Chula Vista, the UI District will rely heavily on passenger cars for local and regional mobility—at least in the near term. This in turn will drive the need for extensive on-site parking facilities.

Several proposed planning features—mixed-use residential developments, complete streets with dedicated bike lines, and eventually larger factors like the planned BRT and the rise of autonomous vehicles—promise to reduce these requirements. However, parking will remain a major physical feature of the UI District Plan.

All parking facilities must be sited and designed to limit negative visual and physical impacts. Wherever possible, these facilities should be incorporated into building footprints and screened to enhance their presence in the urban fabric. While the



Source: WHA

site’s dramatically sloping grade will allow for discreet pads of underground parking, strategic parking goals will focus on collecting cars at the UI District boundaries along Hunte Parkway and Orion Avenue.

At full build-out, the UI District aspires to house most cars in some sort of structured solution. However, in the short term, surface parking lots will likely play a role.

Three types of parking occur in the UI District:

- On-Street Parking
- Surface Parking Lots
- Parking Structures/Underground Parking

A. On-Street Parking

Parallel parking will line many of the UI District streets as part of the broader complete streets program. Street trees and bulb-outs to be added where appropriate.



Source: WHA

University of California, San Francisco

B. Surface Parking Lots

Parking lots should have landscape edges with trees planted every 8 to 10 spaces.

- Locate surface parking lots behind or to the side of buildings to reduce their frontage on the public street.
- Avoid designing surface parking lots that exceed 100 feet in length along the public street frontage (except for temporary surface lots on vacant sites slated for future development).
- Design entries into parking lots to be convenient and easy to find through location and/or signage.
- Provide adequate vehicle stacking distance at entrances to reduce traffic impacts on public streets.



University of California, San Francisco

Source: WHA



Source: WHA

C. Parking Structures/Underground Parking

Parking structures including underground parking should be screened with architectural features to match surrounding buildings, retail and/or related program space on ground level, entrances off side streets bundled with service areas. Parking structures include any multi-level garage or structure designed to serve one or more buildings or land use. Parking structures shall:

- Clearly delineate vehicular and pedestrian entries, and separate them where feasible.
- Share parking among uses.
- Clearly mark reserved and guest parking, where applicable.
- Incorporate a degree of transparency to permit light and visibility into the structure.
- Control vehicle headlight and rooftop lighting spill-over.
- Promote defensible space safety including warm lighting, ample heights, and clearly-defined pedestrian corridors.

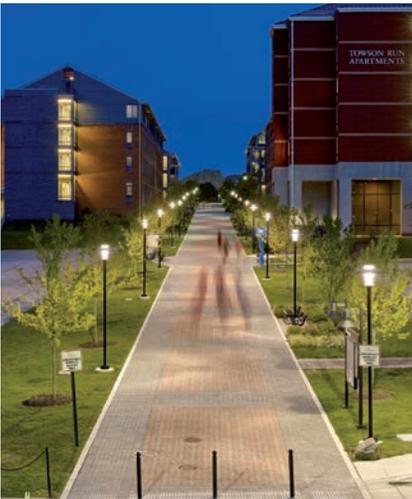


Source: iStock

7.5. Plazas & Walks

The design and prevalence of pedestrian spaces is key to the vitality of the UI District. Plazas and walks are open spaces designed for public or private use and defined by surrounding buildings, streets or open spaces. Their primary function are to encourage social interaction and activities, provide relief and relaxation, expand and reinforce the pedestrian realm and contribute to the livability and amenities of the UI District.

For ages, European squares and plazas have provided urbanites places to meet, trade, and celebrate. To reinforce the innovation of the UI District, plazas are not merely leftover areas between buildings, they should add to the quality of urban living.



Source: Ayers Saint Gross

Towson University



Source: iStock

- Provide areas for seating, shade, water or sound features.
- Incorporate active and passive amenities that could allow for regular programmed use of the spaces and special events.
- Incorporate practical features such as lighting, moveable seating, electrical outlets, and other simple infrastructure, to support future flexibility and encourage a wide range of uses.
- Provide bicycle racks.
- Reflect and reinforce the character of its location.
- Frame the plazas with architectural treatments that incorporate transparent windows, entrances that are directly accessible from the sidewalk, articulated facades and human-scaled elements that encourage pedestrian activity.



Source: WHA



Source: iStock



Source: iStock



Source: Ayers Saint Gross

Towson University



Source: Ayers Saint Gross

University of North Carolina

7.6. Pedestrian Realm Elements

Pedestrian spaces are a key design feature that sets the activity-level tone for the UI District. Promotion of pedestrian activity requires generous sidewalks and amenities such as street furniture, wayfinding, passive and active spaces, and lighting.

Bicycles are an intrinsic component of the circulation system and should be accommodated safely and appropriately with easily accessible way finding and secure parking.

7.6.1. Enhanced Paving

Design hardscape areas to unify the development and to emphasize public spaces. Distinctive paving treatments shall give visual cues to users.

- The use of brick, stone, textured concrete, tile, or other decorative pavers is encouraged in plazas and common open spaces.
- The use of permeable surfaces is recommended to reduce urban runoff.
- Painted paving surfaces should not be used except to indicate traffic lanes or parking spaces.



Source: iStock

7.6.2. Street Furniture

Street furniture includes all of the various objects generally found adjacent to the street such as seating, trash receptacles, bus shelters, bike racks, mailboxes, and similar functional or decorative elements. Several methods shall be used to reduce visual clutter, eliminate location conflicts, and enhance the community theme:

- Select furniture from a community list established by the master developer and approved by the City Engineer to ensure a consistent style and theme.
- Utilize compatible color, style, and materials for each item.
- Locate furniture so as not to conflict with public utilities and pedestrian walks.
- Consider furniture in the context of other design elements such as paving and landscaping.
- Locate furniture in locations that are safe and convenient for pedestrians, bicyclists, and nearby uses.



7.6.3. Lighting

Lighting for the UI District should provide interesting nighttime lighting that provides for the security and safety. Lighting plans shall be provided as part of each Design Review application. Four basic principles shall be considered:

- Promote public safety.
- Reduce or eliminate light pollution.
- Minimize energy use.
- Provide appropriate fixture style and scale for the different uses.

The size and scale of fixtures shall depend on the intended use. For instance, major arterial streets such as Hunte Parkway, will be lit with the City standard street lights on tall concrete poles, while pedestrian areas such as plazas and walks will be lit with luminaires chosen for their human-scale and aesthetics.



Source: Ayers Saint Gross

University of Arizona Health Science Education Building

7.7. Edge Development Design

The UI District, located at the edge of the Otay Ranch, has dramatic natural topography and overlooks the regional open space. The built environment should respond to this natural topography by providing contour grading and tiered building forms suitable for edge development adjacent to the regional open space (refer to Chapter 8 Grading). The design should.

- Take advantage of public views into, across, and from the District in the design of public spaces and orientation of buildings to create high-impact, visual “markers.”
- Incorporate special building or site elements at key vistas sites.



Source: Ayers Saint Gross

Travel Plaza Chesapeake House

Source: WHA



Source: Ayers Saint Gross



Pratt Street

7.8. Walls & Fences

Walls and fences should be the least visible element of the UI District. Use of these features should be limited to necessary use for wayfinding, security, screening of services, division of incompatible uses, and along the Edge to protect the OVRP open space or for fire protection. Trails and open space fencing along the preserve interface shall consist of lodge railing in accordance with the Preserve Edge Plan (Appendix D).

- Where walls and fences are used for the above listed reasons, design shall be inconspicuous, and cohesive with the architectural design and materials of the associated buildings.
- Except where used for necessary security, walls and fences should not be located between the pedestrian realm and a building.



Source: WHA



Source: WHA

7.9. Landscape

Landscape provides environmental benefits by creating shade, reducing heat island effect, filtering pollutants and assisting with storm water management. Trees and planters contribute to safer sidewalks by buffering pedestrians and/or bicyclists from vehicular traffic allowing the streets to contribute to the open space network of the District than merely a circulation element.

Landscaping should be used to define building entrances, key activity hubs, focal points, and parking lots. Landscape may also be used to define groups of buildings, reinforce campus identity, and/or provide thematic continuity throughout the entire District.

Street trees are the most important element of an enhanced streetscape. Size, type, pattern, and location of street trees should reflect the thematic intent of the street and reinforce the overall feel of the community. Street trees should be chosen for their ability to provide shade and maintain a visual field at pedestrian level.

Landscape planting should exhibit an effective contribution to crime prevention. Shrubs that create hiding places should not be placed in areas of pedestrian movement, such as along walkways and building entrances.



Source: WHA



Source: WHA

University of California, Irvine

7.10. Water Conservation & Quality

All landscape plans shall incorporate water conservation techniques and the thoughtful placement of water quality features. Drainage should be considered early in the design process to facilitate the requirements for Water Quality Management Plans (WQMPs) and Standard Urban Storm Water Mitigation Plans (SUSMPs) while contributing to the overall character of the landscape design.

- Plants should be grouped in high and low maintenance zones and shall coordinate with irrigation plans to minimize the use of water and the placement of irrigation tubing.
- All landscaped areas should have an automatic programmable irrigation system with a precipitation override mechanism, and appropriate valves and sprinkler heads for the proposed landscaping.
- Irrigation systems should be designed to apply water slowly to allow plants to be deep watered and to reduce runoff.
- Use of native and low water plants in conjunction with an efficient water system, such as drip irrigation, is strongly recommended.

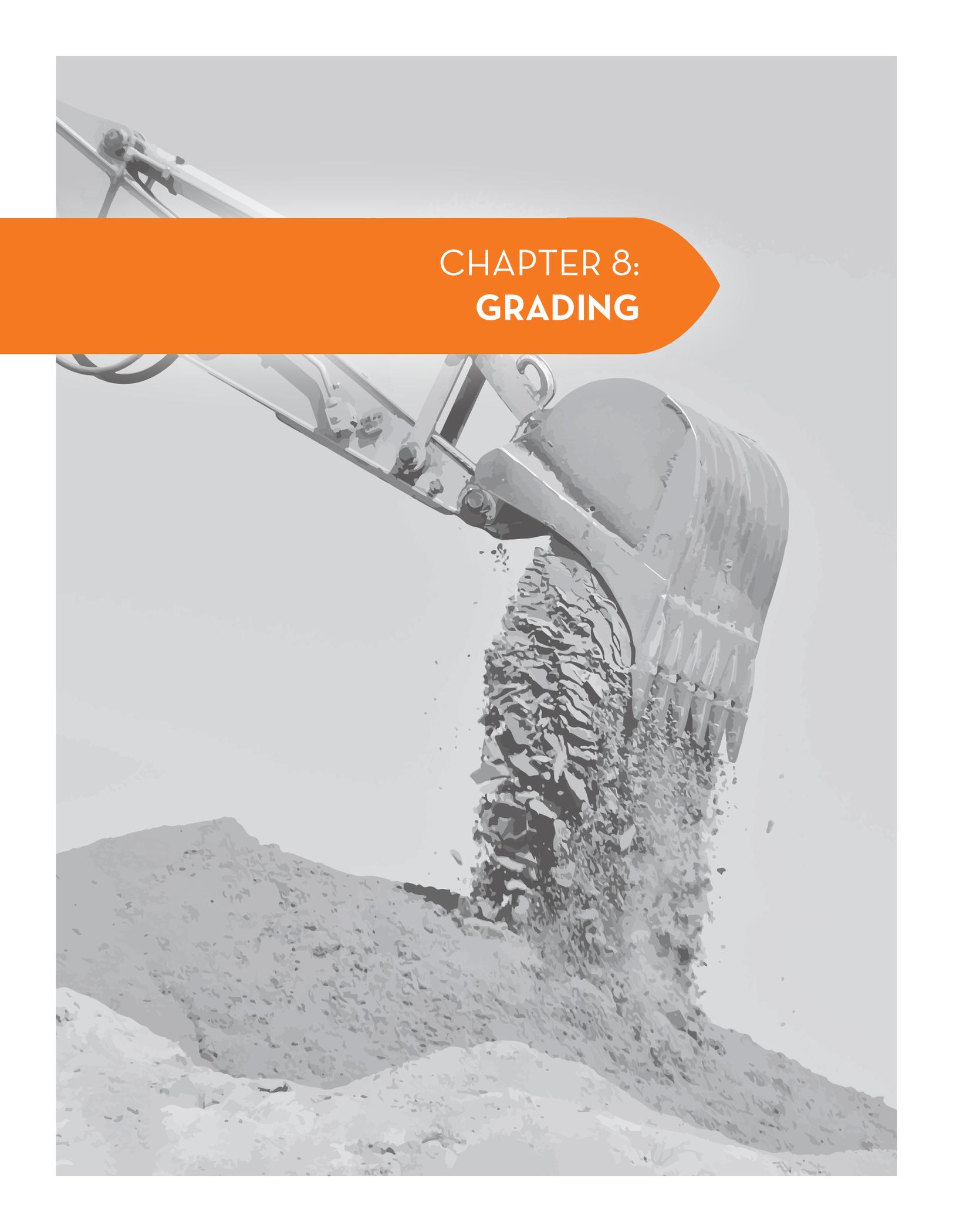


Source: WHA

7.11. Service & Utility Areas

Due to the strong emphasis on pedestrian activity, location and screening of unsightly service and utility areas is critical to ensuring a comfortable pedestrian atmosphere. Appropriate loading and service areas shall be provided for each block or building as appropriate. Loading and service areas shall be located away from the primary street frontage. Shielding the loading/service areas by the use of walls or landscape shall be employed to limit views. Screening of mechanical equipment, waste enclosures, service areas and other service-oriented building necessities shall be integrated into the site and building design.

- Locate waste containers away from public rights-of-way and building entries.
- Sensitive locate and screen rooftop mechanical equipment so they don't dominate the building appearance.
- Install exterior on-site utilities underground, where feasible.
- Screen and incorporate required above ground utilities into architecture or landscape whenever possible.
- Locate electrical equipment in the interior of a building whenever practical, where impractical, screen from public view with walls or landscape.
- Site service vehicle access to minimize conflict with primary pedestrian or bicycle circulation within the District.



**CHAPTER 8:
GRADING**

The Land Use and Transportation Element of the Chula Vista General Plan states that the mesas, hilltops, and gently rolling topography in Chula Vista offer the best conditions for development. Steeply sloped hills and valleys can serve as resources, linking developed regions and important natural features. A goal of the Otay Ranch GDP is concentrating urban development on flatter areas and retaining the sensitive natural topographic features. The SPA Plan is located primarily on mesa tops sloping south to the Otay River Valley. This chapter describes the guiding policies and requirements for grading and their application to the topographic characteristics of the SPA Plan.

8.1. Grading Requirements

To ensure that subsequent grading plans implement the City's policies regarding landform grading and hillside development, final grading design to implement the SPA Plan shall be consistent with the grading design concepts of the SPA Conceptual Grading Plan, and shall adhere to the grading standards and policies described below.

8.1.1. City of Chula Vista Municipal Code

CVMC § 15.04 – Grading Ordinance contains specific criteria to guide grading within the City:

- Create artificial slopes with curves and varying slope ratios designed to simulate the appearance of surrounding natural terrain.
- Incorporate created ravine and ridge shapes with protective drainage control systems and integrated landscaping design.
- Conventional grading shall mean the standard 2-to-1 slope and other uniform slope faces.
- Conventional grading should be restricted to those cases where adherence to landform grading principles would not produce any significant contribution to the high quality site planning goals established overall by the General Plan.
- Conventional grading is only appropriate where landform grading is demonstrated to be impractical or the location of the slope is in a very low visibility situation.
- The fact that landform grading may not produce the maximum size of building pad or development area is not sufficient justification for determining that landform grading is impractical.

8.1.2. GDP

The GDP also contains specific criteria to guide grading in the overall ranch area. Final grading designs implementing the SPA grading concept are required to incorporate the following:

- Grading shall be subject to CVMC Chapter 15.04 - Excavation, Grading and Fills.
- Ranch-wide, there shall be preservation of 83 percent of the existing steep slopes (property with gradients of 25 percent or greater).
- Geotechnical investigations shall be provided.
- Grading within each village is intended to minimize earth moving distances and to facilitate phased grading.
- Naturalized buffering shall be provided as a transition between development and significant existing landforms.
- Manufactured slope faces over 25 feet shall be varied to avoid excessive “flat planed” surfaces.
- Variable slope ratios not exceeding 2:1 should be utilized when developing grading plans.
- To complement landform grading, landform planting techniques will be utilized. As in a natural setting, major elements of the landscape are concentrated largely in the concave “drainages,” while convex portions are planted primarily with ground cover and minor materials.
- Contour grading shall be required adjacent to Salt Creek.

8.1.3. Otay Ranch Overall Design Plan

The Otay Ranch Overall Design Plan provides additional guidelines for grading within the project area:

- When grading in any of the defined scenic corridors, contours shall be carefully modulated and softened to blend with existing natural slopes to create a more natural and irregular appearance.
- Excessively long, uniform slopes shall be avoided.
- Contours should be rounded and blended without sharp or unnatural corners where cut or fill slopes intersect a natural canyon or slope.
- Transitions between new cut and fill slopes and natural slopes should be made by rolling the top or bottom of the new slope to integrate the two conditions.

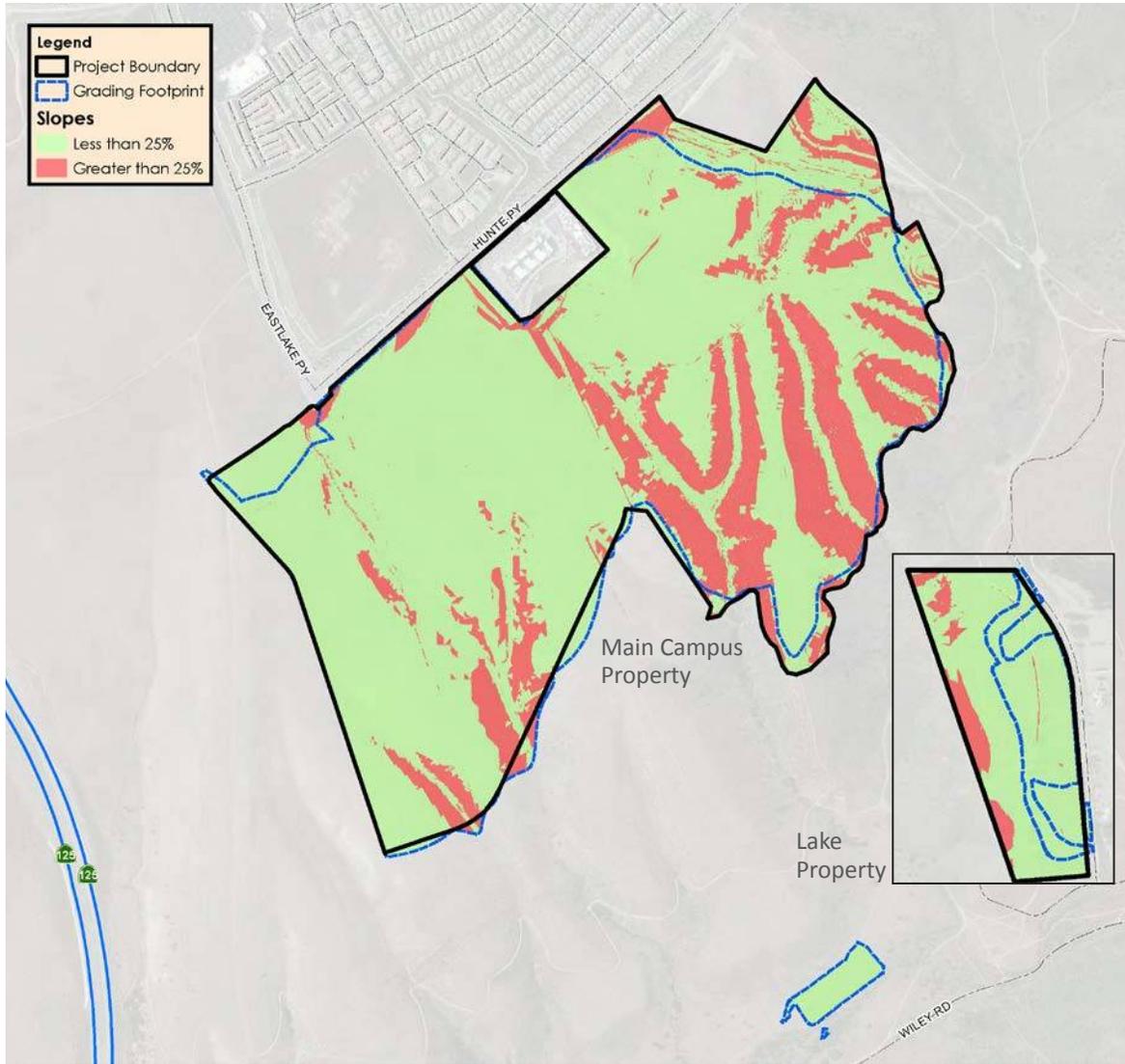
- When grading for development or where roadways intersect a natural slope without cut or fill slopes (daylight condition), a rounded top or bottom of the slope should be retained to blend the natural slope with the building or road pad.
- Create road alignments to meet the natural contours with minimal grading and blending of cut/fill slopes with natural topography is required.
- When feasible, divided roads may be split vertically to soften the impact of grading and to maximize potential scenic views.
- Landscape graded slopes with native and indigenous plant materials to blend with existing planting when adjacent to new landscaping.

The GDP and RMP establish a ranch-wide standard for landform modification that 83% of steep slopes (natural slopes with gradients of 25% or greater) shall be preserved within the Otay Ranch. Based on current data collection and updated modeling results, Otay Ranch contains 9,821 acres of land with gradients of 25% or greater. Applying the GDP/RMP requirement for 83% Ranch-wide steep slope preservation equates to 1,670 acres of steep slopes Ranch-wide that could be impacted.

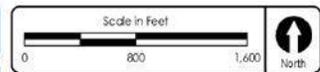
Potential development in the UI District could impact approximately 74.52 acres comprised of 73.20 acres (on-site) and 1.32 acres (off-site) of natural steep slopes within the Otay Valley Parcel of Otay Ranch refer to Figure 8A: Steep Slope Analysis.

Future build-out projections for remaining SPA Plan areas in the Otay Valley, Proctor Valley, and San Ysidro Parcels estimate that 1,160.4 acres of steep slopes will be impacted Ranch-wide including the 74.52 acres on- and off-site of the UI District refer to Table 8A: Otay Ranch Steep Slopes. Combined with existing steep slope impacts (approximately 445.0 acres from approved plans), Ranch-wide impacts are estimated at 1,605.4 acres. The 1,605.4 acres of impact equates to approximately 84% preservation which is above the 83% preservation standard in the RMP.

Manufactured internal slopes within the UI District are typically 2:1 maximum gradient. If slopes of 25 feet in height or greater in highly visible locations are proposed on the Tentative Map, landform grading techniques may be considered on a case-by-case basis as/and approved by the Development Services Director. It is anticipated that landform grading techniques will be used for slopes 25 feet in height or greater where they occur along prime arterial streets and natural open spaces.



Boundary	Slopes 25% and Greater	Acres
Main	Onsite within Grading Footprint	73.10
Main	Onsite outside Grading Footprint	9.44
Main	Offsite within Grading Footprint	1.27
East	Onsite within Grading Footprint	0.10
East	Onsite outside Grading Footprint	3.40
East	Offsite within Grading Footprint	0.04
South	Offsite within Grading Footprint	0.01



Date of Exhibit: 03.26.2014
DigitalGlobe Aerial Image: 06.2012

FIGURE 8A: STEEP SLOPE ANALYSIS

TABLE 8A: OTAY RANCH STEEP SLOPES

	Existing Steep Slopes (Slope Gradient ≥ 25%)	Steep Slope Impacts (City of Chula Vista)	Projected Steep Slope Impacts (San Diego County)
Otay Valley Parcel			
Approved Spa Plans: Villages 1 & 1 West, 2, 3, 4 (Park Portion), 5, 6, 7, 8 East, 8 West, 9, 10, 11, and Planning Area 12 (Eastern Urban Center and Freeway Commercial) Subtotals	630.9	445.0	-
Remaining Spa Plans: Village 4 (Remainder), University, and Planning Area 18 Subtotals	114.0	114.0 ⁽¹⁾	-
Proctor Valley			
Remaining SPA Plans: Village 13, 14, 16, and 19 Subtotals	486.3	-	486.3 ⁽³⁾
San Ysidro Mountains			
Remaining SPA Plans: Villages 15 and 17 Subtotals	560.1	-	560.1 ⁽²⁾
Outside Development Areas			
Subtotals	8,030.0	0	0
Ranch-wide Subtotals	9,821.3	559.0	1,046.4
Ranch-wide Totals	9,821.3	1,605.4 (or 16.3%)	

8.2. Grading Concept

The SPA level grading plan provides a preliminary maximum impact grading concept identifying major slope locations. This maximum preliminary grading design is indicated on Figure 8B: Maximum Grading Plan. Although the entire site may be graded at one time, it is more likely that up to six “stand-alone” phases will occur.

The Conceptual UI District grading plan considered the following objectives:

- Create efficient man-made landforms that visually respond to natural terrain characteristics where practical.
- Create and maintain on- and off-site views.
- Create usable areas that provide for a variety of commercial, mixed-use, and residential land uses.
- When significant land forms are modified for project implementation, round the land form as much as possible to blend into the natural grade.
- Utilize the grade for tuck-under parking structures.
- With approval of the City Engineer, round the tops and toes of slopes. When slopes cannot be rounded, utilize vegetation to alleviate sharp angular appearances.
- Create smooth transitions between the SPA and surrounding properties.
- Balance earthwork, utilizing an equal amount of cut for an equal amount of fill.
- Utilize elevation changes to separate potential land use conflicts.
- Minimize, where feasible, impacts to sensitive areas adjacent including the Otay River Valley and Salt Creek.
- Undulate slopes surrounding the UI District with variable horizontal and vertical gradients, to blend into the surrounding terrain and create an aesthetically pleasing setting.
- Design retaining walls to avoid conflicts with utilities.

Ayers Saint Gross has proposed a stepped grading plan allowing for parking to be located under each block to take up the grade (refer to Figure 8C: Conceptual Grading Plan).

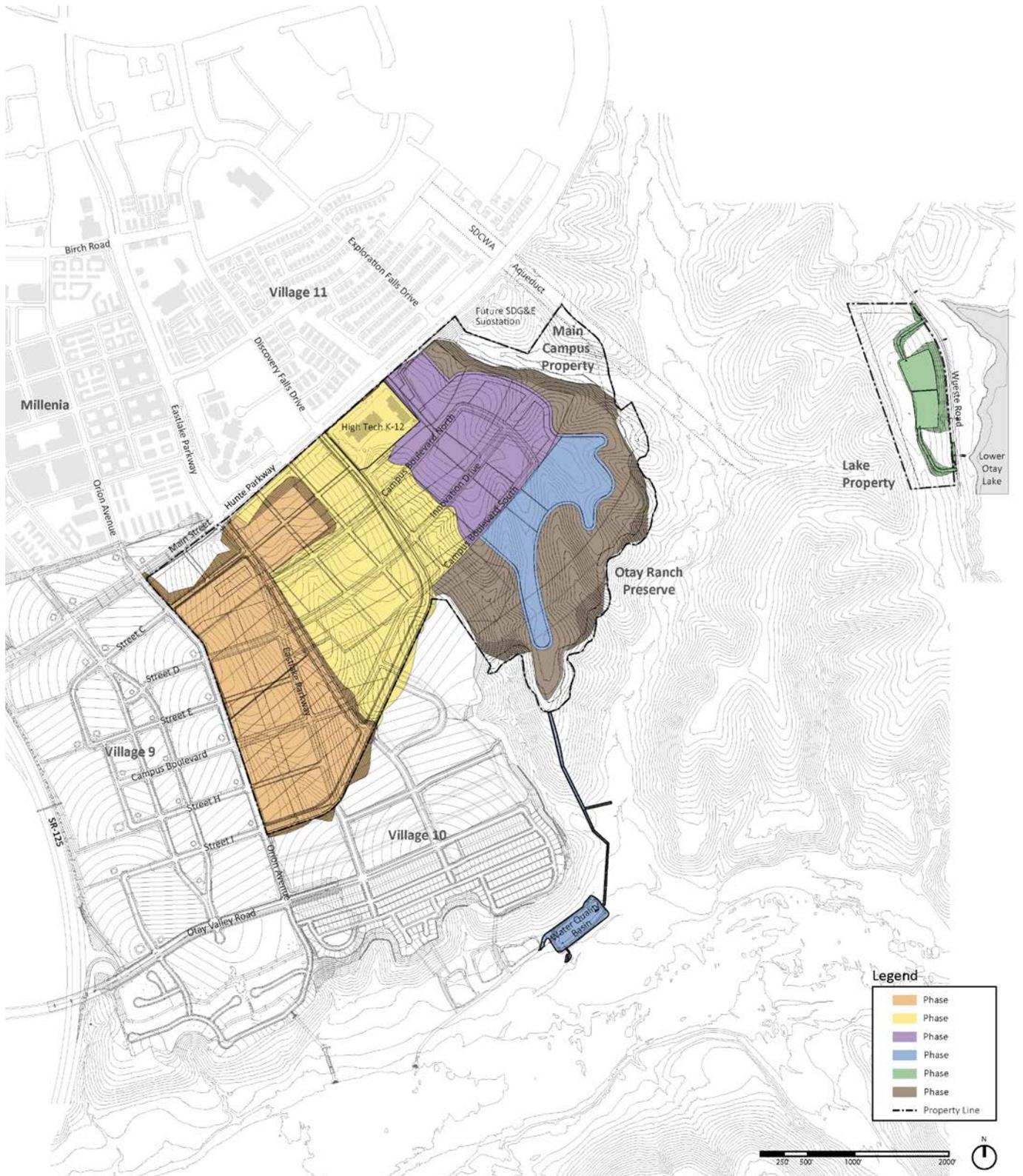


FIGURE 8B: MAXIMUM GRADING PLAN

8.3. Grading Practices

Preliminary soils and geotechnical reports have been prepared and have identified the site as being suitable for development. The combined raw grading quantity for the UI District and off-site infrastructure is approximately 13,537,000 cubic yards of balanced cut and fill material. Both the UI District and Village 10 site grading balance independently. This raw quantity is exclusive of remedial measures that may be required by the soils engineer. Actual quantities will be based on more detailed engineering at the tentative map, grading plan and final map stages. Grading does extend beyond the boundary of the UI District for the construction of roads and infrastructure.

Figure 8D: Maximum Cut and Fill Plan illustrates the locations of cut and fill. Based on actual field conditions, the erosion potential of slopes will be reduced with control measures such as berms at the tops of all slopes, paved interceptor ditches, and vegetation. Erosion control will be consistent with best management practices.

Project grading permits will provide assurances acceptable to the City Engineer that landscaped slopes will have adequate maintenance to ensure continued viability of landscaping. Generally, except for private lots, slopes which exceed ten feet in height will be maintained by a homeowners' or property owners' association or a landscape maintenance Community Facilities District (CFD).

The proposed development concept for the UI District does not use the maximum impact grading concept.

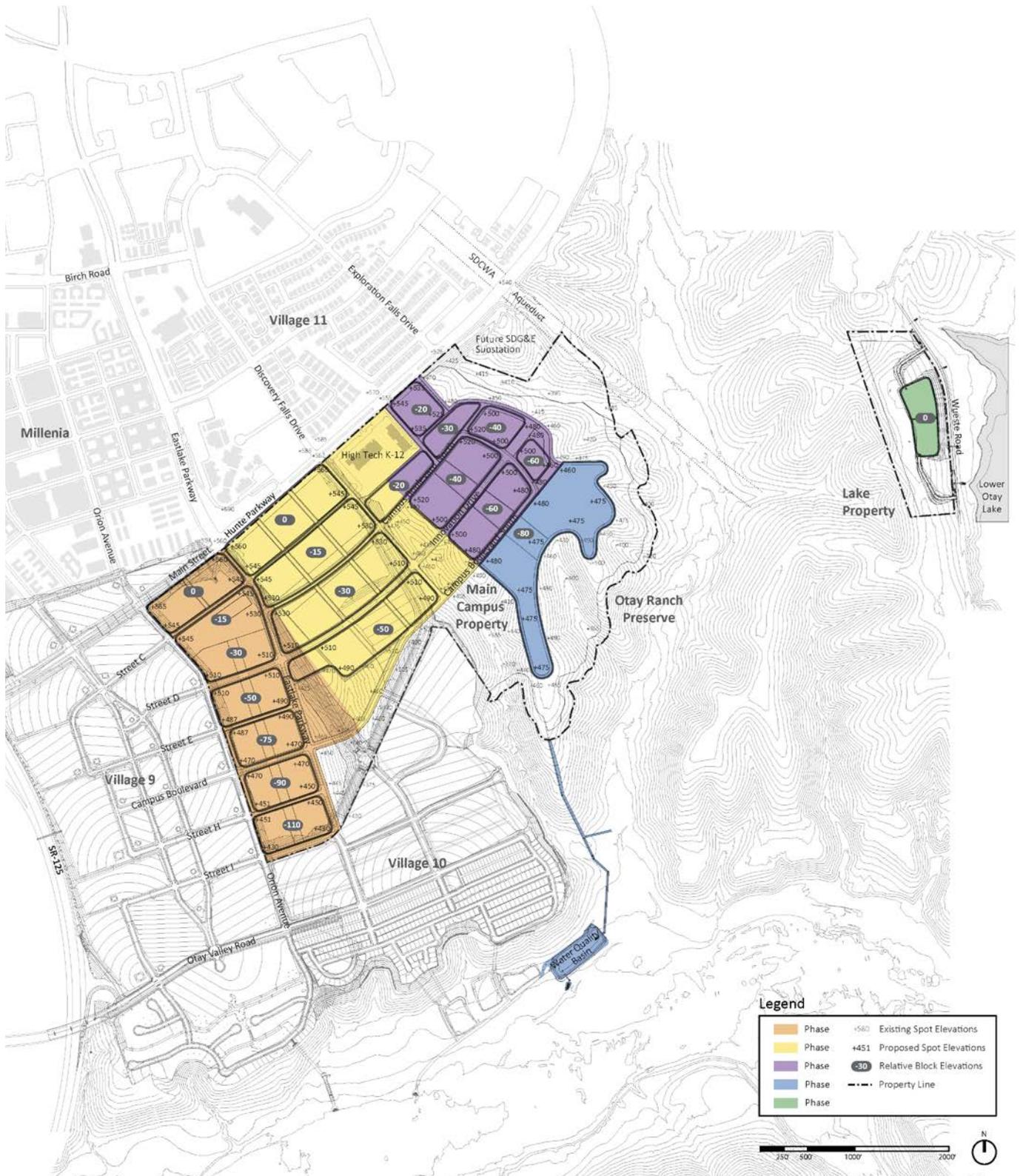


FIGURE 8C: CONCEPTUAL GRADING PLAN

8.4. Grading Review

Tentative Maps and grading plans will require conformance to the grading concepts and requirements contained in this SPA, and to all applicable City policies and ordinances.

Prior to grading plan approval by the City Engineer, all grading will be subject to the requirements of the CVMC, Title 15.04, Storm Water Management and Discharge Control Ordinance No 2854, the City of Chula Vista Subdivision Manual, Design and Construction Standards of the City of Chula Vista, San Diego Area Regional Standard Drawings, and Standard Specifications for Public Works Construction.

Prior to issuance of any land development permits including clearing, grubbing, and/or grading, the developer shall also comply with the applicable mitigation measures outlined in the EIR and the associated Mitigation Monitoring and Reporting Program.

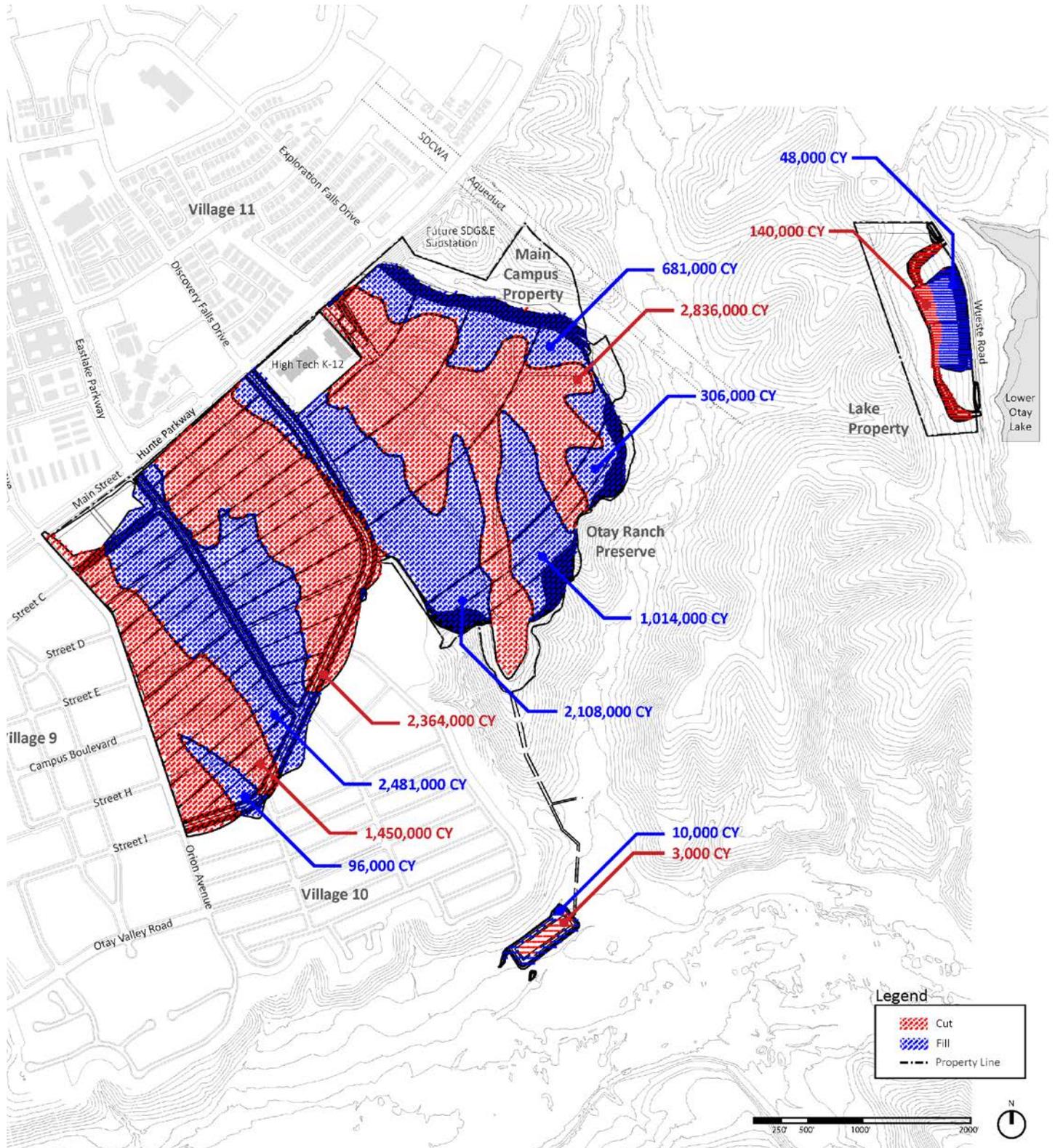


FIGURE 8D: MAXIMUM CUT AND FILL PLAN