The Trails at Santiago Creek Specific Plan

October 30, 2018

City of Orange, California
TRAILS AT SANTIAGO CREEK

SPECIFIC PLAN

October 30, 2018

Lead Agency:
City of Orange
300 East Chapman Avenue
Orange, CA 92866

Applicant:
Milan REI X
888 S. Disneyland Drive
Suite 103
Anaheim, CA 92802

Prepared by:
Milan REI X
888 S. Disneyland Drive
Suite 103
Anaheim, CA 92802
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## SPECIFIC PLAN
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CHAPTER 1 – INTRODUCTION

1.1 Background and History

The Trails at Santiago Creek is proposed as a low-density single-family detached residential neighborhood nestled against a protected greenway/open space, enhanced by Santiago Creek (a tributary stream to the Santa Ana River that meanders through the site in and east-to-west trend), and interlaced with a variety of multi-purpose recreational trails available for use by the public. The vision for the Trails at Santiago Creek is to upgrade the conditions of the site and highlight its underlying beauty while also introducing complimentary uses to enhance Specific Plan area and the overall community of Orange. Comprised of approximately 109.2 acres the Trails at Santiago Creek proposes approximately 68.5 acres of greenway and open space lands enriched with a network of multi-use recreation trails. The Specific Plan area’s open space and trails will provide a useful link between Santiago Oaks Regional Park to the east and downstream trails and recreation areas to the west, as well as to the City’s existing trail network adjacent to the property. The low-density single family detached residential neighborhood occupies approximately 40.7 acres and will be complimentary in character to the existing residential neighborhoods surrounding the Specific Plan area’s site. The maximum numbers of single-family detached dwelling units shall not exceed 128 units as established by this approved Specific Plan. The Trails at Santiago Creek Specific Plan has been prepared in order to implement the Land Use Element of the City’s General Plan (including the Orange Park Acres Plan and the East Orange General Plan) as amended by this project.

1.2 Location and Setting

The Trails at Santiago Creek Specific Plan area encompasses approximately 109.2 acres and is located in the City of Orange in central Orange County. The Specific Plan area is generally located between E. Santiago Canyon Road on the south, Mabury Avenue on the north, Cannon Street on the west and The Reserve residential neighborhood on the east. The current site address is 6118 East Santiago Canyon Road, Orange, CA 92869. The Orange County Assessor’s Parcel Numbers for the site are: 093-280-05, 093-280-07, 093-280-26, 093-280-29, 093-280-30, 370-011-08, 370-011-18, 370-011-21, 370-011-22, 370-041-12, 370-041-25 and 370-141-19.

The Specific Plan area is surrounded by predominantly residential areas with the Reserve tract to the east, Orange Park Acres and the Jamestown tract to the south, and Mabury Ranch to the north. With the exception of the Reserve tract, whose lots range from just under ½-acre to 1-acre, approximately two-thirds of the properties are lots less than 10,000 square feet.

Canon Street and a vacant parcel owned by the County that is a former non-government sanctioned landfill known as the Villa Park Landfill abut the Specific Plan area to the west. The
Mara Brandman Horse Arena is located across from the Specific Plan area on the south side of E. Santiago Canyon Road, which is a four-lane divided roadway, on land that is designated ESTR (Estate Low Density Residential) in the City’s General Plan Land Use Policy Map, and R1-40 (single-family residential district with a minimum lot area of one acre) on the City’s Zoning Map. Mabury Ranch Trail abuts the northerly boundary of the site adjacent to Mabury Avenue, with a short portion of the trail situated within an on-site easement along the northwest portion of the site. It is an unpaved off-road trail that connects to the regional trail system to the west and will eventually connect to Santiago Oaks Regional Park to the east. Santiago Creek bisects the Specific Plan area, trending east to west. A portion of the west side of the site is situated within the East Orange General Plan. A portion of the east side of the site is situated within the Orange Park Acres Plan (OPA Plan). Access to the Specific Plan area is from E. Santiago Canyon Road.

Please refer to Exhibit 1.1, Regional Map; Exhibit 1.2, Vicinity Map; and Exhibit 1.3, Specific Plan Area Boundary for depictions of the Specific Plan location and context.

1.3 Document Organization

The Trails at Santiago Creek Specific Plan implements the City’s General Plan as amended by this proposed project. It allows for planning issues to be addressed through site specific criteria, development standards and design controls to assure that the Specific Plan will be implemented as planned. The following is a summary of each chapter contained in this document.

Chapter 1.0, Introduction, includes a general discussion of the project site’s background and history, location and setting, and organization of the Specific Plan.

Chapter 2.0, Planning Context, discusses the Specific Plan’s purpose and intent, authority and requirements, goals and objectives, and relationship to applicable plans and policies. The goals and objectives are more general than the detailed guidelines and regulations contained in the other sections. However, these should be considered as the intent behind the more specific guidelines and should be used to check project consistency and development within the Specific Plan area.

Chapter 3.0, Environmental Factors, discusses the site’s existing land uses and physical site conditions, surrounding land uses and provides an assessment of compatibility of the proposed Specific Plan land uses to the surrounding environs.

Chapter 4.0, Development Plan, contains the components that provide the rationale for the development regulations and guidelines that will be used in the Site Plan Review process. Included is a summary of concerns raised by the community and includes the Specific Plan’s design response to these concerns. Other components include the development plan, site plan, circulation plans, and open space, trails and recreation plan.
Chapter 5.0, Facilities and Service Plan, contains the infrastructure, public services and utility components of the Specific Plan. Conceptual plans for the proposed water, sewer, grading/earthwork, erosion control and storm drainage systems are included, as is a discussion of public services (police, fire and schools) and utilities.

Chapter 6.0, Design Guidelines, contains guidelines to enhance the development of the Trails at Santiago Creek and provides visual order and continuity through Specific Plan build-out. The design guidelines cover site planning and architectural design of the proposed low-density single-family detached homes, and community landscape design guidelines including community gateways and monuments, streetscapes, residential landscape, trails, fences and walls, perimeter conditions, site furnishings and site lighting, as well as others. These guidelines will be adhered to for site plan review, as they convey the intent of this Specific Plan.

Chapter 7.0, Zoning and Development Regulations/Standards, contains development provisions, regulations and standards establishing the Trails at Santiago Creek zoning. Site development standards provide the parameters within which development will occur.

Chapter 8.0, Implementation and Administration, contains the implementation procedures for the Specific Plan. A discussion of the anticipated phasing, financing and maintenance responsibilities is included in this section. The Administrative Approval process for the review of site plans is discussed, as well as the Specific Plan’s Amendment procedure.
THE TRAILS AT SANTIAGO CREEK SPECIFIC PLAN AREA
CHAPTER 2 – PLANNING CONTEXT

2.1 Purpose and Intent

The Trails at Santiago Creek Specific Plan prescribes the land uses and circulation patterns proposed for the specific plan area, as well as the infrastructure improvements, design guidelines, development standards and implementation criteria necessary to develop the Trails at Santiago Creek. The purpose of this Specific Plan is the systematic implementation of the City’s General Plan as amended by the proposed project, including amendments to the East Orange General Plan and Orange Park Acres Plan to incorporate the Trails at Santiago Creek Specific Plan. It allows for planning issues to be addressed through site-specific criteria and development standards that apply only to this Specific Plan area, as well as additional criteria and standards available through the City of Orange Zoning Code. The Specific Plan content reflects numerous meetings over the course of 3 years with City Staff and representatives of the adjacent neighborhoods in an effort to determine community priorities for the future of the site, including Orange Park Association, Mabury Ranch Homeowners Association and The Reserve Homeowners Association. The Specific Plan process enables the development of the property and implementation of the proposed improvements, both short-term and long-term, while also addressing infrastructure improvements, community services and recognition/sensitivity to the importance of the character of the surrounding neighborhoods and natural areas of Orange Park Acres.

By pursuing this approach to the Specific Plan area, responsible development of the property can be ensured through the adoption of a development control mechanism. The most suitable control mechanism for this is the Specific Plan which, when adopted by the City, serves both a planning and regulatory function. The Specific Plan, as such, contains the necessary standards, guidelines and procedures to implement the desired improvements to the Trails at Santiago Creek in a manner that will be clearly defined, thus allowing for clarity in the processing and administration of improvement plans and related policies.

The Specific Plan implements an approved land use plan, adopted by the City of Orange by City Council Ordinance, in conjunction with a Zone Change. The Specific Plan and associated General Plan Amendment amends both the East Orange General Plan and Orange Park Acres Plan to incorporate the Trails at Santiago Creek Specific Plan. By doing so, the Trails at Santiago Creek Specific Plan is included as part of these two existing relevant plans, creating vertically consistent documents that cover and include the proposed project. Other components include a Development Agreement and certification of an Environmental Impact Report (EIR). The ordinance requires that information be included in the Specific Plan with respect to development standards, grading, site access and circulation, the completion of public infrastructure and facility improvements, and the Specific Plan area’s interface with adjacent land uses.
2.2 Authority and Requirements

The Trails at Santiago Creek Specific Plan is adopted pursuant to the provisions of the California Government Code, Title 7, Division 1, Chapter 3, Article 8, Sections 65450 through 65457, which grants authority to cities to adopt Specific Plans for the purposes of implementing the goals and policies of the General Plans. The California Government Code authorizes cities to adopt Specific Plans by resolution as policy or by ordinance as regulation and that Specific Plans must be consistent with the General Plan.

The Trails at Santiago Creek Specific Plan is intended to meet the requirements of the State of California Government Code and City of Orange General Plan. The Specific Plan is reflective of extensive technical analysis along with input from representatives of the adjacent neighborhoods, the community and the City of Orange, all of which helped form a collective vision for the site as a low-density single-family detached residential neighborhood integrated with and embraced by the surrounding greenway and open space lands. Included in the Specific Plan document are land use regulations, infrastructure plans, zoning and development regulations, design guidelines and implementation measures to ensure that the Project will be implemented in accordance with the goals and objectives established for the project area.

This Specific Plan, adopted by ordinance, serves as the zoning ordinance for the subject property. All other City codes and ordinances shall continue to be applicable, unless inconsistent with this Specific Plan, in which case they are superseded by this Specific Plan. Proposed parcel maps, site plans, agreements and any other development approval must be consistent with this Specific Plan. Projects which are found consistent with the Specific Plan will be deemed consistent with the City’s General Plan and its adopted elements.

Further, the Government Code states that Specific Plans may be amended as many times as necessary in the same manner as it was adopted. In the case of this Specific Plan, it is adopted by ordinance and shall be amended by ordinance. Refer to Section 8.6, Specific Plan Amendments, of this Specific Plan.

2.3 Goals and Objectives of the Specific Plan

The primary purpose of the Specific Plan is to serve as a planning tool that implements the physical design and development of the Trails at Santiago Creek. By providing the review mechanisms for implementation, the Specific Plan responds to a multiplicity of concerns.

The following goals and objectives are intended to provide guidance in the development of the Trails at Santiago Creek and will be used to check project consistency and development within the Specific Plan area.
**Goal 1** Attain the most suitable land uses for the future of the Specific Plan area, and the proper distribution of the future land uses, responsive to the concerns and wishes expressed by surrounding residences and the City of Orange.

*Objective 1a* To convert a degraded site zoned Sand and Gravel (SG) and used for the mining, crushing, stockpiling and recycling of aggregate materials into a planned community providing enhanced natural open space and riparian habitat, passive recreation, and low-density single-family detached housing opportunities.

*Objective 1b* To lessen the noise, improve air quality and reduce traffic impacts from materials recycling and backfilling operations.

*Objective 1c* To provide a well-rounded conceptual land use plan that shows the location of proposed land uses and distribution thereof.

*Objective 1d* To mitigate impacts on the surrounding neighborhoods by providing site plans, community design features and amenities, and the landscape design of perimeter edge conditions responsive to the interface concerns of the community.

*Objective 1e* To provide development standards for the land uses within the Specific Plan which are compatible with adjacent residential development and responsive to community concerns.

*Objective 1f* To preserve Santiago Creek and its surrounding wetland and riparian habitat by abating remnants of the resource extraction activities and establishing an enhanced greenway open space along the creek corridor.

*Objective 1g* Rezone the current Low Density Residential (LDR) land use adjacent to Mabury Ranch to Open Space (OS).

**Goal 2** Ensure the quality appearance for the Trails at Santiago Creek with consistent design and visual improvements blending the proposed residential neighborhood and project amenities with existing surrounding residential neighborhoods, thus providing a seamless transition between old and new.

*Objective 2a* To achieve architectural compatibility between existing and proposed neighborhoods through the incorporation of architectural design guidelines addressing architectural theme, building massing, materials and colors, etc.
Objective 2b  To provide landscape guidelines that address perimeter edge conditions sensitive to the existing landscape of the Specific Plan area and its surroundings, addresses restoration of the proposed greenway open space and Santiago Creek environs, and provides for neighborhood streetscapes in character with the quasi-rural equestrian theme of the surrounding neighborhoods.

Objective 2c  Require adherence to the Specific Plan design guidelines for architecture, landscape, signage and other design and development standards, consistent with the General Plans goals and objectives.

Goal 3  Have an efficient circulation system to alleviate unnecessary project-related traffic on adjacent streets while ensuring the functionality and emergency service.

Objective 3a  To provide an internal circulation pattern that allows efficient ingress and egress from E. Santiago Canyon Road.

Objective 3b  To provide a circulation system that will minimize adverse effects on local residential neighborhoods and encourage pedestrian and bicycle circulation.

Objective 3c  Address community circulation by providing system improvements to deficient intersection and roadway segments effect by project related traffic volumes.

Objective 3d  To provide traffic improvement plans that meet the requirements of the police and fire departments to ensure the public’s safety and efficient emergency service and eliminate track traffic associated with current site operations.

Objective 3e  To ensure that adequate emergency service is provided via alternative access points, improved intersection capacities on E. Santiago Canyon Road as necessary and acceleration/deceleration lanes where appropriate.

Objective 3f  To provide a publicly accessible open space and public trail network that encourages walking and bicycling and provides trail links to E. Santiago Canyon Road, the existing Mabury Ranch Trail along the north boundary of the Specific Plan area, and to existing and future city and county trail systems, thereby providing a vital link between Santiago Oaks Regional Park and downstream trail and recreation areas.
Goal 4  Provide a comprehensive, well-rounded master plan for the Specific Plan area that addresses environmental, water quality, drainage, circulation and public facilities and services.

Objective 4a  Provide an infrastructure system, including sewer, water and storm drain systems that will adequately serve full build-out of the Specific Plan development.

Objective 4b  Provide designs and plans that meet the requirements of police and fire departments to ensure the public’s safety and efficient emergency service.

Goal 5  Create a water quality and drainage system that minimizes the impact to off-site receiving waters and ensures that runoff from smaller events is infiltrated or otherwise addressed as applicable before entering Handy Creek and Santiago Creek.

Objective 5a  Provide a water quality and drainage system that includes source control BMP’s that limit water quality impacts downstream.

Goal 6  Incorporate design features to ensure that storm water flows in Santiago Creek do not erode adjacent slopes and jeopardize the integrity of the proposed residential neighborhoods and community amenities.

Objective 6a  Provide flood control improvements such as buttressing to minimize the potential for flooding and erosion on the south side and Santiago Creek.

Objective 6b  Protect the southern cotton-willow riparian forest that exists on-site, which provides habitat for the Least Bell’s Vireo.

Goal 7  Incorporate sustainable design techniques into the redesign plans for the Specific Plan area.

Objective 7a  Require adherence to the Specific Plan design guidelines for sustainable building design and sustainable landscape design strategies.

2.4 Relationship to the City of Orange General Plan

The Trails at Santiago Creek Specific Plan is located within the corporate limits of the City of Orange (City) and therefore subject to the provisions of the City of Orange General Plan.

The California Government Code (§65300) requires each city and county, as political subdivisions of the State, to adopt and update at regular intervals a general plan. In concert with
State law, the City completed a multi-year update to the City of Orange General Plan culminating with City Council adoption on March 9, 2010.

The City of Orange General Plan serves as the long-range and policy planning tool for the City to guide physical development within its borders. The General Plan is considered a “comprehensive” general plan by incorporating additional local issues related to cultural resources, economic development, urban design, and growth management.

The Trails at Santiago Creek Specific Plan area is governed by the City’s General Plan and Zoning Code. Per the City’s General Plan the property is designated Resource Area, Open Space and Low-Density Residential. Per the City’s Zoning Map zoning districts on the property are Sand and Gravel Extraction, and Single-Family Residential 8,000 square foot lot minimum (refer to Section 2.5 of this document, City of Orange Zoning Code). Portions of the property are also within the boundaries of the Orange Park Acres Plan and the East Orange General Plan (refer to Section 2.6).

The General Plan Amendment re-designates Planning Area C (refer to Exhibit 4.5, Development Plan) from Resource Area (RA) to Low Density Residential (LDR) as set forth in this Specific Plan. The existing LDR parcel north of the creek, and the remaining RA lands are designated Open Space (OS). The General Plan Amendment also amends both the East Orange General Plan and Orange Park Acres Plan to incorporate the Trails at Santiago Creek Specific Plan. By doing so, the Trails at Santiago Creek Specific Plan would be included as part of these two existing relevant plans, which would create vertically consistent documents that cover and include the proposed project.

Also, as referenced in the City of Orange General Plan, Goal 7.0, Policies 7.1 – 7.6, the concepts of Crime Prevention through Environmental Design (CPTED) shall be incorporated in this Specific Plan including structure orientation and placement, access and visibility of common areas, address and landscape.

Please refer to Exhibit 2.1, City of Orange General Plan Designation, Existing and Proposed.

2.5 Relationship to City of Orange Zoning Ordinance

The Zoning Code, part of the City Municipal Code, also implements the City of Orange General Plan. Generally, each zone district specifies the permitted land uses and applicable development standards.

The Zone Change associated with the Trails at Santiago Creek re-designates the City’s zoning designation of the Specific Plan area from Sand and Gravel Extraction (S-G) and Single-Family Residential 8,000 sq. ft. (R1-8) to Specific Plan with the following new zoning designations:

- SP-R1-8 (Specific Plan – Single Family Res. 8,000 sq. ft.)
The Zone Change request associated with the Trails at Santiago Creek Specific Plan was achieved pursuant to Section 17.26.030 of the City’s Zoning Ordinance. Please refer to Exhibit 2.2, City of Orange Zoning Designations, Existing and Proposed.

2.6 Relationship to East Orange General Plan and Orange Park Acres (OPA) Plan

Portions of the project site are within the boundaries of the East Orange General Plan and Orange Park Acres Plan. The East Orange General Plan was adopted in 1975 and encompasses approximately 1,900 acres. Approximately 37 acres of the project site are located within the boundaries of the 1975 East Orange General Plan and are designated “Regional Park.” The Orange Park Acres Plan was adopted on December 26, 1973 and encompasses approximately 1,794 total acres. The Orange Park Acres Plan designated approximately 39 acres of the Specific Plan area as “Open Space.” The East Orange General Plan and Orange Acres Plan are Specific Plans.

The Specific Plan and related entitlements include a General Plan Amendment that amends both the East Orange General Plan and Orange Park Acres Plan to incorporate the Trails at Santiago Creek Specific Plan. By doing so, the Trails at Santiago Creek Specific Plan would be included as part of these two existing relevant plans, which would create vertically consistent documents, that cover and include the proposed project.

Please refer to Exhibit 2.3, East Orange General Plan and Orange Park Acres Plan Boundaries, as provided by the City of Orange, August 24, 2017.

2.7 Relationship to the Santa Ana River, Santiago Creek Greenbelt Plan (1971) and the Santa Ana River/Santiago Creek Greenbelt Implementation Plan (1976)

The Santa Ana River, Santiago Creek Greenbelt Plan, approved by the Orange County Board of Supervisors in June of 1971 as a component of the Open Space Element of the County’s General Plan, represents a multi-city planning effort with the purpose of maximizing the recreation and open space potential of the Santa Ana River/Santiago Creek corridor in terms of multi-use possibilities and linkages among open spaces in and near the corridor. The plan proposes greenbelts, parks and trails along the 37 mile river/creek corridor that extends from the ocean inland to Prado Dam. The plan recommended the formation of a separate agency to coordinate the planning and actions for achievement of this goal.

The Santa Ana River/Santiago Creek Greenbelt Implementation Plan (1976) is a subsequent action to the above referenced document. The separate agency the 1971 document suggested became the Greenbelt Commission, who coordinated the multi-jurisdictional efforts of multiple
cities and the county. Each city prepared its own portion of the plan within its respective area with consideration given to plans proposed within adjacent areas, thus formulating a coordinated composite of local plans for greenbelt areas and/or facilities along the river and creek corridor.

It is the Specific Plan’s intent to be as responsive as possible to the goals and recommendations of the Implementation Plan, incorporating greenbelts, trails and recreational facilities into the Specific Plan responsive to community interests and as appropriate to the proposed plan and environmental conditions.

Please refer to Chapter 4, Section 4.2.1 and 4.2.4 for additional information.

2.8 Relationship to the 2018 Santiago Creek Vision Plan Update

The Santiago Creek Vision Plan is the result of a study conducted by the National Park Service’s Rivers, Trails and Conservation Assistance Program in collaboration with the City of Orange Community Services and Community Development Departments and with the Santiago Creek Greenway Alliance, a local non-profit creek and greenway advocacy organization. This plan is acknowledged by the City of Orange and used to inform development activity along the creek corridor. The primary goals of the plan are to:

1. Develop a continuous multi-purpose trail on the upper bank of the creek (uplands area).
2. Create a greenway along the creek by restoring the creek bed and its adjacent uplands with native trees and shrubs.
3. Maximize ground water recharge by restoring the creek bed in specific areas.
4. Maintain and improve existing levels of flood protection.

In the Santiago Creek Vision Plan the Trails at Santiago Creek Specific Plan area is classified as the “Mile 7” segment and described as “Cannon Street bridge to the east end of the Milan Capital Property.”

The Vision Plan describes four (4) projects intended for the Mile 7 site.

7.1 Construct underpass under Cannon Street.
7.2 Construct Class I bike path from Cannon Street to Santiago Oaks Park.
7.3 Restore land on both sides of trails with native plants as needed.
7.4 Provide pedestrian bridge crossing to Mabury Ranch Trail.

Figure 44 of the Vision Plan (page 33) shows proposed land uses for the Milan Capital property, reflective of items 7.1-7.4 above. In the southeast quadrant of the Mile 7 site the Vision Plan exhibit notes “Specific land uses and development proposal subject to city review and approval.”
The Trails at Santiago Creek Specific Plan is responsive to the Vision Plan for the Mile 7 segment by providing greenway open space within the majority of the site, restoring Santiago Creek and open space habitats with native species, providing for multi-purpose recreation trails and connectivity to adjacent trails, and limiting low-density single-family detached residences to the southerly portion of the site adjacent to E. Santiago Canyon Road.

Please refer to the letter from the Santiago Creek Greenway Alliance in support of the Trails at Santiago Creek in Appendix A.

Please refer to Exhibit 2.4, Santiago Creek Vision Plan Figure 44 – Mile 7 and Chapter 4, Sections 4.2.1 and 4.2.4 for additional information.

2.9 Relationship to California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1970 (CEQA) requires the decision-making body of a Lead Agency to consider the environmental consequences of a discretionary action prior to approving a project. For the purposes of implementing CEQA, the City is the Lead Agency.

As required by CEQA, the City adopted Local CEQA Guidelines on April 11, 2006, that implement the State CEQA Guidelines and includes procedures specific to the City. The City’s Community Development Department has primary responsibility for implementing CEQA.

The Local CEQA Guidelines state an EIR is required when the City determines that a project may have a significant effect on the environment. Therefore and EIR was prepared in conjunction with this Specific Plan that evaluates the characteristics of the Specific Plan along with the General Plan Amendment and change of zone.
**Existing City of Orange Zoning Designations**

**Proposed City of Orange Zoning Designations**

- **Designation Acres**:
  - R-1-8: 11.8 Ac.
  - S-G: 97.4 Ac.
  - Total: 109.2 Ac.

*Note: R-1-8 acres per the City of Orange. All other acres to be considered approximate.*
Map & Acreage is approximate Based on 1989 General Plan Land Use Map

Source: City of Orange 08.24.17

Exhibit 2.3
East Orange General Plan and Orange Park Acres Plan Boundaries
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Exhibit 2.4
Santiago Creek Vision Plan 2018, Figure 44 - Mile 7
The Trails at Santiago Creek Specific Plan
City of Orange, CA
CHAPTER 3 – ENVIRONMENTAL FACTORS

3.1 Existing Land Uses

3.1.1 Existing Land Uses and Physical Onsite Conditions

The approximately 109-acre project site contains disturbed, privately owned undeveloped land that previously supported mining activities and currently supports a sand gravel operator consistent with the existing Sand and Gravel zoning (Orange Municipal Code Chapter 17.32). The project site is comprised of 12 parcels and is bisected by Santiago Creek in an east-west direction. The site contains gently sloping terrain, with an overall change in elevation from 456 feet above mean sea level in the northeast corner to 344 feet above mean sea level in the southwest corner. An approximately 10-acre, semi-oval-shaped raised pad is located in the eastern portion of the site. The pad sits roughly 15 feet higher than the mining area to the west.

Santiago Creek enters the site at the eastern boundary, flows west, and exits the western boundary at N. Cannon Street. The creek originates at Irvine Lake and is tributary to the Santa Ana River. The drainage feature splits near the central portion of the project site, with an upland area separating Santiago Creek into two rivulets. The average width of the drainage feature is approximately 55 feet, which includes the area between the ordinary high water mark and the adjacent defined wetland areas. Wetland areas are generally located on either side of the active channel. The creek corridor is privately owned and is not accessible to the public.

Natural vegetation within the site is primarily located along Santiago Creek. Plant communities include coast live oak woodland, coastal sage scrub, eucalyptus woodland, non-native grassland, ornamental, southern cottonwood-willow riparian forest, and undifferentiated open woodland. There are 323 trees located with the project site, of which the most common species are blue gum (eucalyptus), oak, willow, and palm.

The Handy Creek storm drain operated by the Orange County Flood Control District (OCFCD) (Facility No. E08S06) is located in the central portion of the project site. The storm drain enters the project site from the south at the intersection of N. Nicky Way/E. Santiago Canyon Road. The storm drain conveys stormwater collected in areas south of E. Santiago Canyon Road into Santiago Creek. An unnamed storm drain located in the northwestern portion of the project site conveys stormwater collected in the Mabury Ranch neighborhood directly into Santiago Creek.

The Allen McCulloch Pipeline trunk water distribution line operated by the Metropolitan Water District (MWD) traverses the easterly portion of the project site and is located entirely below grade. The pipeline traverses the site within a 50-foot-wide easement. The easement crosses through the site in a northwest-southeast direction, entering the site from the north at the intersection of Mabury Avenue/Yellowstone Boulevard and exiting at the single-family...
residential subdivision to the south. The pipe measures 109 inches in diameter and is part of the MWD transmission system that supplies potable water to southern Orange County.

There are historic ground water and methane monitoring wells associated with the closed adjoining Villa Park Landfill that are located on the western portion of the project site.

3.1.2 Surrounding Land Uses

West

The closed County/Villa Park Landfill and N. Cannon Street form the western boundary of the Specific Plan area. The 18-acre landfill property occupies the northeast quadrant of the intersection of E. Santiago Canyon Road/N. Cannon Street and is owned by the County of Orange. The landfill operated from 1962 through 1966. The site is enclosed with a fence and contains groundwater monitoring wells and a landfill gas disposal system. Areas to the west also include detached, single-family dwelling units related to West of Cannon (typical lot size approximately 7,800-12,000 square feet).

N. Cannon Street is a four-lane divided roadway and crosses Santiago Creek via a concrete bridge. A paved Class I bicycle/pedestrian path (Santiago Creek Bike Trail) is located along the west side of N. Cannon Street south of Santiago Creek.

Please refer to Exhibit 3.1, Surrounding Land Uses, Exhibit 3.2, Community Character Summary, Exhibit 3.3, Surrounding Neighborhoods with Lots Less Than 1-Acre, Exhibit 3.4, Surrounding Neighborhoods with Lots Less Than 10,000 square feet, and Exhibit 3.5, West Cannon Residential Lot Sizes.

North

Single-family residential uses are located north of the Specific Plan area including Creekside Ranch (typical lot size approximately 9,200-12,000 square feet), The Colony-North (typical lot size approximately 8,600-12,000 square feet), Mabury Ranch (typical lot size approximately 7,600-11,000 7,000-20,000 square feet), Hidden Creek (typical lot size approximately 20,000-24,500 square feet), Serrano Heights (typical lot size approximately 4,500-9,000 square feet), and Parkridge (typical lot size approximately 8,000-12,000 square feet). Detached single-family dwelling units are located along the north bank of Santiago Creek.

Mabury Avenue is a two-lane undivided roadway. An unpaved trail (Mabury Ranch Trail) is located along the north bank of the creek, parallel to Mabury Avenue.

Please refer to Exhibit 3.6, The Colony-North & Creekside Ranch Residential Lot Sizes, and Exhibits 3.7-3.9, Mabury Ranch Residential Lot Sizes.
East

Santiago Oaks Regional Park and single-family residential uses associated with the Reserve (typical lot size approximately 20,000-44,000 square feet) form the eastern boundary of the Specific Plan area. The regional park contains the Santiago Creek corridor, which consists of the waterway and dense vegetation. Detached, single-family dwelling units are located east of the project site.

Please refer to Exhibit 3.10, The Reserve Residential Lot Sizes.

South

E. Santiago Canyon Road, a four-lane divided roadway, forms the southern boundary of the Specific Plan area. Detached single-family dwelling units associated with the Jamestown neighborhood (typical lot size approximately 8,000-12,000 square feet), Orange Park Acres (typical lot size approximately 5,000 to 1-acre plus square feet), Eichler Homes (typical lot size approximately 7,600-12,000 square feet), and The Colony (typical lot size approximately 7,000-10,000 square feet) are located south of the roadway.

The Mara Brandman Arena is located at the intersection of E. Santiago Canyon Road and N. Nicky Way.

Please refer to Exhibit 3.1, Surrounding Land Uses, Exhibit 3.2, Community Character Summary, Exhibit 3.11, Jamestown Residential Lot Sizes and Exhibit 3.12, Orange Park Acres Residential Lot Sizes.

3.2 Traffic and Circulation

Regional access to the Specific Plan area is provided via the State Route 55 (SR-55) Freeway, SR-91 Freeway and the SR-241/SR-261 Freeways (Toll Roads). The principal local network of streets serving the Specific Plan includes Santiago Canyon Road and Cannon Street. The Specific Plan area is located on the north side of Santiago Canyon Road between Cannon Street and Orange Park Boulevard.

3.2.1 Santiago Canyon Road

Santiago Canyon Road is generally a four-lane divided Major Arterial roadway that borders the project site on the south. Between Newport Boulevard and Jamboree Road, Santiago Canyon Road is a six-lane roadway. Santiago Canyon Road will provide ingress/egress to the Specific Plan area via one full access signalized driveway, located directly opposite Nicky Way. On-street parking is generally not permitted along this roadway within the vicinity of the Specific Plan area. The posted speed limit on Santiago Canyon Road is 55 miles per hour (mph) west of Hewes Street, 45 mph between Hewes Street and Cannon Street and 50 mph east of Cannon Street. Traffic signals control the study intersections of Santiago Canyon Road at Hewes Street,
Cannon Street, Orange Park Boulevard, Meads Avenue, Newport Boulevard, and Jamboree Road.

3.2.2 Cannon Street

Cannon Street is a four-lane divided roadway oriented in the north-south direction. On-street parking is generally not permitted along this roadway within the vicinity of the Specific Plan area. The posted speed limit on Cannon Street is 45 mph north of Santiago Canyon Road and 40 mph south of Santiago Canyon Road. Traffic signals control the study intersections of Cannon Street at Serrano Avenue, Taft Avenue and Santiago Canyon Road.
Exhibit 3.1
Surrounding Land Uses
The Trails at Santiago Creek Specific Plan
City of Orange, CA
### Neighborhood Name vs. Typical Lot Size

<table>
<thead>
<tr>
<th>Neighborhood Name</th>
<th>Typical Lot Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkridge</td>
<td>9,000 - 12,000 sq ft</td>
</tr>
<tr>
<td>Summer Heights</td>
<td>4,500 - 8,000 sq ft</td>
</tr>
<tr>
<td>Molino Ranch</td>
<td>7,600 - 11,000 sq ft</td>
</tr>
<tr>
<td>Hidden Creek</td>
<td>70,000 - 75,000 sq ft</td>
</tr>
<tr>
<td>The Colors - North</td>
<td>8,600 - 12,000 sq ft</td>
</tr>
<tr>
<td>Crestside Ranch</td>
<td>9,300 - 17,000 sq ft</td>
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<tr>
<td>West of Canyon</td>
<td>7,850 - 10,000 sq ft</td>
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<tr>
<td>The Reserve</td>
<td>20,000 - 44,000 sq ft</td>
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<tr>
<td>Jermyns</td>
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<tr>
<td>Eschler Ranch</td>
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<tr>
<td>The Colony - South</td>
<td>7,500 - 10,000 sq ft</td>
</tr>
<tr>
<td>Orange Park Acres</td>
<td>5,000 sq ft - 10,000 sq ft</td>
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</tbody>
</table>

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**Exhibit 3.2**

Community Character Summary

The Trails at Santiago Creek Specific Plan

City of Orange, CA
Exhibit 3.3
Surrounding Neighborhoods With Lots Less Than 1-Acre
The Trails at Santiago Creek Specific Plan
City of Orange, CA
CHAPTER 4 – DEVELOPMENT PLAN

4.1 Introduction

As presented in this Specific Plan the Trails at Santiago Creek is the result of numerous meetings over the course of 3 years with representatives of Orange Park Association, Mabury Ranch Homeowners Association and The Reserve Homeowners Association, as well as City Staff. In these meetings a variety of concerns were discussed as summarized below.

1. Rock Crushing Operations.
   A. The noise, dust and truck traffic generated by the operations.
   B. Years of rock crushing operations have negatively impacted the natural open space habitat and Santiago Creek riparian habitat.

2. Consideration should be given to the concepts described in the Santiago Creek Vision Plan (April 2018) and Santa Ana River/Santiago Creek Greenbelt Implementation Plan (1976).

3. Previous projects.
   A. Residential densities were too high.
   B. Residential types and lot sizes were incompatible with the surrounding neighborhoods.
   C. Active playfields and “pay-to-play” recreation elements are inappropriate for the site.

4. Existing traffic congestion will only be further exacerbated with the inclusion of project generated traffic.

5. Emergency level service to the project site will be inadequate.

6. Flood zone and slope erosion.

4.1.1 Memorandum to City of Orange and Pre-Development Agreement

1. Memorandum to the City of Orange, June 12th, 2015: Since 2015, over two years before the circulation of the Trails of Santiago Creek NOP, the Applicant conducted extensive outreach with representatives of the adjacent neighborhoods, including Orange Park Association, Mabury Ranch Homeowners Association, and The Reserve Homeowners Association, in an attempt to determine community priorities for the site.

In response to the outreach and as a good faith gesture to encourage further constructive dialogue regarding the long-term land uses for the property, the Applicant agreed, in a memorandum to the City of Orange, to curtail and modify the current sand and gravel operations on an interim basis, as follows:

   a. Suspend backfill and stockpiling operations effective September 15, 2015;
   b. After July 31, 2015, restrict rock crushing operations to a total of 15 consecutive business days within a six month period;
c. Continue dust abatement measures; and

d. Continue ongoing maintenance of the property and enhance Santiago Canyon Road
frontage.

e. The property owner reserved all right to resume sand and gravel operations consistent
with the City’s Zoning Code.

As part of the community outreach, City staff, as well as representatives from OPA, Mabury
Ranch, the Reserve, and the Applicant’s representatives worked together to establish a framework
for an appropriate land use entitlement.

2. Pre-Development Agreement: To formalize and ensure transparency for the entitlement
process, with input from Orange Park Association, Mabury Ranch Homeowners Association, and
The Reserve Homeowners Association, the City and the Applicant entered into a Pre-
Development Agreement (PDA) dated October 11, 2016 in accordance with the June 2015
Memorandum. This agreement established general parameters and set forth various development
alternatives that guided the processing of various requested land use approvals required for the
project as a byproduct of the public outreach.

The major provisions of the agreement are as follows:

- Evaluate proposed alternatives A through F for the project on approximately 109 acres with
  a range of 25 to 50 acres available for residential units as set forth in Exhibit B of the
  PDA.

- An obligation of the Applicant to submit an application for land use entitlement approvals
  that may include a General Plan Amendment, amendments to the Orange Park Acres and
  East Orange Plan to remove the project area from the coverage of both documents,
  Zoning Change, adoption of a stand-alone Specific Plan that will regulate development
  on-site, Major Site Plan Review, Design Review, CEQA compliance, Development
  Agreement, Park Planning and Development Committee consideration of project trails,
  and commitment by the City to expeditiously process these entitlements while complying
  with all legal requirements.

- Continue the cessation of the currently permitted operation of the sand and gravel operation
during the processing of the Project consistent with the June 12, 2015 memorandum
submitted by the Applicant to the City (attached within the PDA). The Applicant will also
commence the interim remediation of the property, which will result in the lowering of the
existing sand and gravel material stockpiles on the project site; subject to the Applicant’s
right to resume sand and gravel operations.

- Cooperation between the Applicant and the City for the evaluation of easements and
  the possible extension of the Santiago Creek Trail to the north side of the project site.
4.1.2 Project Benefits Over and Above Project Required Improvements

An extensive 3 year community outreach collaboration effort to address concerns related to traffic on Santiago Canyon Road and Cannon Street, the preservation of Santiago Creek as a greenway open space, flooding, and elimination of the current sand and gravel operation, as well as other matters related to the Property Owner resulted in the following modifications, reductions, and changes to the original proposal commitments.

1. The Specific Plan and associated project accommodates a maximum number of 128 single-family detached lots located in the southerly portion of the property and will consist of housing types and lot sizes compatible with the surrounding neighborhoods as previously depicted in Exhibits 3.1-3.4 and consistent with the development standards and guidelines set forth in this Specific Plan.

2. The implementation of the Specific Plan and associated project will fund up to $1,000,000.00 for traffic improvements to widen Santiago Canyon Road and restripe Cannon Road prior to the issuance of the 1st certificate of occupancy for the Project. Please refer to Exhibit 4.1, Areas of Traffic Congestion – Pre-Project, Exhibit 4.2, Area of Project Related Traffic Improvements, and Exhibit 4.3, Additional Project Related Traffic Improvements, and Section 4.2.3, Circulation Plan.

3. The implementation of the Specific Plan and associated project will fund up to a maximum of $4,100,000.00 in landscape and other improvements for the Santiago Creek Greenway. Said Improvements are to be completed or funded prior to the issuance of the 60th Certificate of Occupancy for the Project. Please refer to Section 4.2.4, Trails, Open Space and Recreation Plan, and Exhibit 4.14, Preliminary Greenway, Open Space and Trails Plan.

4. The implementation of the Specific Plan and associated project will fund $1,000,000.00 to be used for local area-wide equestrian trail purposes prior to the issuance of the first Certificate of Occupancy for the Project.

5. The implementation of the Specific Plan and associated project will finance and fund the City’s acquisition of the Ridgeline Property which will provide the community an additional approximately fifty (50) acres of public open space prior to the issuance of the first Certificate of Occupancy for the Project. Please refer to Exhibit 4.4, Sully Miller, Arena and Ridgeline Properties.

6. The implementation of the Specific Plan and associated project will provide $2,000,000.00 for equestrian and recreational purposes in the East Orange Area as determined by the City prior to the issuance of the first Certificate of Occupancy for the Project.
Exhibit 4.2
Area of Project Related Traffic Improvements
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Exhibit 4.3
Additional Project Related Traffic Improvements
The Trails at Santiago Creek Specific Plan
City of Orange, CA
4.2 The Project

The Trails at Santiago Creek Specific Plan transforms a rock and concrete materials recycling and backfilling operation to an environmentally enhanced, ecologically friendly open space environment complementing a well-planned and context-sensitive single-family detached residential neighborhood. The majority of the project site (62.7%) is intended for the enhancement and preservation of the natural greenway/open space and Santiago Creek environs (Planning Area A) in the northern portions of the project, as well as re-establishing open grasslands in the easterly portions of the site (Planning Area B) in areas that have been denuded by the project site’s history of commercial operations. Recreational trails will traverse both Planning Areas and will provide public access to the site.

The low-density single-family detached residential neighborhood (Planning Area C) is comprised of 40.7 acres and is located in the south-central and southwest portions of the site. 128 single-family detached residences are accommodated in the Specific Plan area, equating to 3.1 dwelling units per acre.

As described in Chapter 2, the General Plan and Zoning will re-designated Planning Area C of this Specific Plan from Resource Area (RA) to Low Density Residential (LDR). The existing LDR parcel north of the creek, and the remaining RA lands will be designated Open Space (OS).

Residential Development Standards for the Project are provided in this Specific Plan and are intended to be applied in concert with the standards contained in the City of Orange Zoning Code, Chapter 7.14, Residential District, Section 17.14.070, General Requirements, Table 17.14.070, Residential Development Standards R1-8 and R1-10 unless otherwise stated in this Specific Plan.

Residential streets will be public and shall be designed per the City of Orange 100 Series – Street Improvement Standards, Standard Plan 106 – Local Streets, Case I and Case II. Curb adjacent landscape parkways will be increased from 3 feet to 5 feet to allow for street tree plantings within the parkway. This has been discussed with City Staff and confirmed as acceptable within the public street standard.

The low density single-family detached residential land use, with lots ranging in size from a minimum 8,000 square feet to in excess of 10,000 square feet, and with an average lot size of approximately 10,300 square feet, is compatible with the surrounding residential neighborhoods. Furthermore, the re-designation of all other lands in the Specific Plan area to Open Space (lands that were once private and will now become publically accessible) interlaced with a network of multi-purpose recreation trails provides the opportunity for the Specific Plan area’s open space to become an integral part of the City and County’s open space and trails master plans via linkage and connectivity.
Please refer to Table 4.1, Land Use Summary, Exhibit 4.5, Development Plan and Exhibit 4.6, Site Plan, following which a detailed description of the plan is provided.

Table 4.1

Land Use Summary

<table>
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<th>Planning Area</th>
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<th>% of Site</th>
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<td>0</td>
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<tr>
<td></td>
<td>Total</td>
<td>68.5</td>
<td>62.7%</td>
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<tr>
<td></td>
<td>Low-Density Residential</td>
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<tr>
<td>C</td>
<td>Single-Family Detached Residential</td>
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<td></td>
<td>Area C1: 8,000sf min. lots</td>
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<td></td>
<td>Area C1 and C2: 9,200sf min. lots</td>
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<tr>
<td></td>
<td>Area C2: 10,000sf min. lots</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Grand Total</td>
<td>109.2</td>
<td>100%</td>
<td>128</td>
<td>3.1 du/ac</td>
</tr>
</tbody>
</table>
LAND USE SUMMARY

Open Space .................................. 68.5 acres
PA-A: Greenway .......................... 40.2 ac.
PA-B: Grasslands .......................... 20.3 ac.
Residential .................................. 40.7 acres
PA-C: Low-Density Residential .... 40.7 ac.
128 Single-Family Detached Lots, 3.1 du/ac
TOTAL ....................................... 109.2 acres
4.2.1 Santiago Creek Greenway and Open Space Areas (Planning Areas A and B)

The open space at the Trails at Santiago Creek is approximately 68.5 acres and is comprised of natural hillsides, re-established grasslands, a restored Santiago Creek riparian corridor and a managed vegetation/fuel modification zone. The open space will occupy approximately 62.7% of the site and will include:

- Planning Area A - Greenway Open Space and Santiago Creek Riparian Corridor: 40.2 acres
- Planning Area B - Grasslands Open Space (includes Santiago Canyon Road trail easement and the managed vegetation/fuel modification zone): 28.3 acres

The Specific Plan’s open space is populated by a variety of natural plant communities and habitats including:

- Willow Riparian Forests
- Coast Live Oak Woodlands
- Eucalyptus Woodlands
- Coastal Sage Scrub
- Black Willow Scrub
- Ornamentals
- Non-native grasslands
- Rock outcrop/cattail stands

The open space is also home to and has suitable habit for a variety of wildlife species including:

- Multiple bird species
- Salamanders and lizards
- Falcons
- Owls
- Hawks
- Jackrabbits
- Fox
- Coyotes

Santiago Creek, which meanders across the site in an east-to-west trend, is an incised perennial USGS blue-line drainage course that primarily supports southern cottonwood-willow riparian forests as well as the development of fringe wetlands. The creek bifurcates into two stream beds in the center of the site, ultimately rejoining in the western portion of the property.

Planning Area A, the Greenway Open Space and Santiago Creek, with its riparian and wetland habitats, provides an environment that supports both onsite “live-in” wildlife as well as a movement corridor for regionally oriented wildlife. Offsite to the east the Santiago Creek open
space corridor provides a link to Santiago Oaks Regional Park and the natural open space beyond. Offsite to the west the Santiago Creek open space corridor connects with the Santa Ana river environs with its ponds and tributaries.

Planning Area B, the Grassland area located south of Santiago Creek, has been disturbed over the years due to commercial operations on the site and will be restored as a natural grasslands interspersed with other plant communities and seasonal wildflowers. Planning Area B also includes the Managed Vegetation/Fuel Modification zone located north of and east of Planning Area C and acts as a vegetative buffer between the open space and residential neighborhood. This 130-foot wide buffer zone will be comprised of plantings that are compatible with onsite plant communities while being responsive to fuel management policies. A 20-foot wet zone falls within the rear yard of the residential lots along this edge. The Managed Vegetation/Fuel Modification Zone(s) complies with fuel modification requirements specified by Section 320 of the Orange Fire Code (per Orange Municipal Code Section 15.32.020). Upon dedication of the Specific Plan’s open space in Planning Areas A and B to the City of Orange, County of Orange or other entity the applicant/developer will retain an easement for fuel modification zone maintenance at the time of final mapping.

The Trails at Santiago Creek supports and restores the open space habitats onsite and cleans up and restores Santiago Creek onsite, both of which during the property’s life span have fallen, in some areas, to a degraded environmental state. Studies will be conducted and plans will be prepared and submitted to the City and/or other jurisdictional agencies for review and approval for the enhancement, restoration and re-establishment of the plant community habitats on the land on the north side of Santiago Creek, within the Santiago Creek corridor and within the grassland areas in the southeast portion of the Specific Plan area.

The uses within the open space planning areas will be compatible with and reflective of uses as described in the Santiago Creek Vision Plan (2018), Santa Ana River, Santiago Creek Greenbelt Plan (1971) and the Santa Ana River/Santiago Creek Greenbelt Implementation Plan (1976). Other documents that guided proposed uses and/or trails included the City of Orange General Plan Circulation and Mobility Section, the East Orange General Plan (1975), the Orange Park Acres (OPA) Plan (1973) and the Riding and Hiking Trails Map of Orange Park Acres and Vicinity.

Please refer to Section 4.2.4 Trails, Open Space and Recreation, for a detailed discussion of the trails and activities within the Specific Plan’s open space environs.

4.2.2 Low Density Single Family Detached Residential Neighborhood (Planning Area C)

The Trails at Santiago Creek includes a well-planned low-density single-family detached residential neighborhood in Planning Area C comprised of 40.7 acres, located in the south-central and southwest portions of the site. 128 single-family detached residences are accommodated in this planning area, equating to 3.1 dwelling units per acre. Reflective of
residential lots in the existing surrounding neighborhoods of Mabury Ranch; The Colony North and Creekside Ranch; Orange Park Acres at Orange Park Blvd. and E. Santiago Canyon Road; and Jamestown, the project includes three different single-family detached residential lot programs ranging in size from 8,000 square feet – 9,000 square feet; 9,200 square feet – 10,000 square feet; and 10,000 square feet and greater. The overall average lot size for Planning Area C is approximately 10,300 square feet. Homes will be one-story and two-story. The largest lots are located in the east side of Planning Area C adjacent to the Reserve.

Within the existing surrounding neighborhoods, including the Reserve and Orange Park Acres, the predominant architectural character for the one-story and two-story homes could be considered various interpretations of “California Ranch.” Materials and features common to all the neighborhoods include primarily gable or shed style roofs, stucco and or wood/wood-like siding on facades, covered entries or front porches with square posts and beams, primarily rectilinear window forms but occasional arched feature window, corbels, beams or rafter tails, and accent materials of stone, brick and occasionally a slate-like material. Pending the location and neighborhood some styles are more definitive, i.e. Craftsman or Spanish influenced, others less definitive. With the exception of Orange Park Acres streetscapes within these neighborhoods vary, but a common feature in several is a curb adjacent landscape parkway, some with trees, some without.

The Specific Plan’s residential neighborhoods in Planning Area C will be a current day interpretation of the existing surrounding neighborhoods, most specifically Orange Park Acres, complimentary to and in character with them. Similar materials will be used, rooflines and roof styles will be comparable, and the architectural theme will be an updated version of Orange Park Acres while adapting to the Specific Plan’s residential lot programs. Homes will be designed to reinforce the pedestrian scale of the neighborhood by incorporating second floor setbacks and covered front porches and entryways that address the sidewalk and reduce the scale of the homes. Building massing and setbacks will be in-keeping with existing adjacent neighborhoods. As stated earlier, Residential Development Standards are the standards contained in the City of Orange Zoning Code, Chapter 7.14, Residential District, Section 17.14.070, General Requirements, Table 17.14.070, Residential Development Standards R1-8 and R1-10 unless otherwise stated in this Specific Plan.

The influence of the project’s natural open space that surrounds the residential neighborhood, and the network of multi-use trails and amenities within the open space having a rustic equestrian character, provides the opportunity to establish a quasi-rural personality to the neighborhoods. Residential/local streets will have curb adjacent landscape parkways planted with street trees in character with the surrounding natural environs. Entry monumentation, signage and lighting will reinforce this character in design interpretation and materials (stone, timbers and rustic metals). Edge treatments and any public landscape within Planning Area C will utilize plant materials and be designed in character with the natural surroundings, i.e. drifts and swaths of grasses and shrubs, vines and accent plantings in informal/natural patterns.
Pedestrian and bicycle connectivity from the residential neighborhoods to the surrounding open space and trail network will be via trail paseos extending into the neighborhoods as well as via the Handy Creek Easement Linear Park.

Please refer to Exhibit 4.6, Site Plan and Chapter 6, Design Guidelines, for further detailed information.

4.2.3 Circulation

The Circulation Plan for the Trails at Santiago Creek provides for the movement of vehicular traffic while creating an environment for pedestrians, bicyclists and equestrian riders through the inclusion of both a regional and local onsite trail system. The trail system provides internal connectivity within the Trails at Santiago Creek, as well as the potential for external connections to the greater Orange community, Santiago Oaks Regional Park, the existing regional trail system and other offsite destinations and amenities. Please refer to Exhibit 4.7, Existing Circulation and Exhibit 4.8, Proposed Circulation.

4.2.3.1 Vehicle Circulation

Vehicle access to the Trails at Santiago Creek is provided via one proposed full access signalized entry road, located directly opposite Nicky Way, along Santiago Canyon Road. The entry road will provide one ingress travel lane (northbound) and two egress travel lanes (southbound) separated by a landscaped median. The egress lanes include one southbound left turn lane and one southbound shared through-right turn lane. No parking will be allowed along either side of the entry road. Sidewalks will be located on each side of the entry road separated by a landscaped parkway.

The project provides several improvements to the surrounding roadways and intersections that have the potential to be impacted by project related traffic, thus ensuring increased capacity and adequate traffic flow in the area. These are improvements that would not be incorporated in the absence of the project. These capacity improvements involve roadway widening and/or re-stripping to reconfigure (add lanes) to specific approaches of key intersections. The identified improvements will:

- Mitigate the impact of existing traffic, project traffic and future non-project (ambient traffic growth and cumulative project) traffic; and
- Improve Levels of Service to an acceptable range and/or to pre-project conditions.

To ensure that adequate ingress and egress to the project site can occur from Santiago Canyon Road without impeding through traffic flow, the following Project Feature Improvements will be provided at the project’s entry across from Nicky Way:
o Construct the project’s entry road on the north side of the intersection and provide one inbound lane and two outbound lanes (i.e. one left turn lane and one shared through-right turn lane). Widen and/or restripe Santiago Canyon Road to provide one eastbound left-turn lane and one westbound right-turn deceleration lane. Install a five-phase traffic signal with protected left-turn phasing in the east-west direction and permissive phasing in the north-south direction.

Please refer to Exhibit 4.9, Site Access Improvements and Exhibit 4.12, Street Cross-Sections.

In addition to the above the following additional improvements will be provided:

o Santiago Canyon Road - Widen and restripe the north side of Santiago Canyon Road approximately 4 to 6 feet from the easterly project boundary to the existing free-right turn lane at Cannon Street to provide a third westbound through lane.

o Cannon Street – Restripe Cannon Street from Santiago Canyon Road to Serrano Avenue to provide a third northbound through lane.

Please refer to Exhibits 4.10, Additional Improvements - Santiago Canyon Road and Exhibit 4.11, Additional Improvements - Cannon Street.

Within the residential neighborhood (Planning Area C) local streets will be designed per the City of Orange 100 Series – Street Improvement Standards, Standard Plan 106 Local Streets, Case I and Case II. Curb adjacent landscape parkways will be increased from 3 feet wide to 5 feet wide to allow for street tree plantings within the parkway. Streets will have one travel lane in each direction and sidewalks separated by a landscape parkway. Parallel parking will be allowed on one or both sides of the street pending neighborhood design.

Please refer to Exhibit 4.12, Street Cross-Sections.

4.2.3.2 Non-Vehicular Circulation

As described in Section 4.2.1, Santiago Creek Greenway and Open Space Areas, numerous documents have been reviewed and taken into consideration in preparing the pedestrian, bicycle and equestrian trail network for the project. Below is a brief description of the various components of this network. Please refer to Section 4.2.4, Trails, Open Space and Recreation, for a more detailed discussion.

A variety of public multi-use recreation trails will traverse the project site providing shared use of hiking, biking and horseback riding on decomposed granite trail surfaces. Along the north side of E. Santiago Canyon Road, in addition to the existing Class II bike lane, an off-street recreational trail will extend along the entire length of the project site.
This trail will provide continuity from the existing trail that parallels the roadway east of the project site, with the intention of connecting to future planned trails offsite to the west (provided by others). This 10-foot wide trail will be separated from Santiago Canyon Road by a 6-foot wide landscaped parkway (minimum, as measured from the back of curb) within an 18-foot minimum wide easement, as per the City of Orange Recreational Trail Master Plan (RTMP) Detail #2. Trail fencing between the trail and the street shall also be consistent with the City’s RTMP Detail #14 and shall be placed outside of the trail tread area. The fence will be consistent with the existing fencing along Santiago Canyon Road east of the project site.

Throughout the open space in Planning Area A and Planning Area B a network of 10-foot wide multi-use recreation trails will meander across the land providing public access to the restored open space and the Santiago Creek environs. A bridge span located in the northeast portion of the site will provide trail access across the Santiago Creek environs. The trail system will connect with the existing Mabury Ranch Trail on the Specific Plan’s west side at Cannon Street and will connect to the trail along the northerly boundary paralleling Mabury Avenue at select locations pending ongoing input from Mabury Ranch HOA. Trail access to the residential neighborhoods within Planning Area C will be via a number of trail paseos allowing for hiking and bicycle access, and via the Handy Creek Easement Linear Park in Planning Area B.

It is the intent of the Trails at Santiago Creek to provide a recreational trail system that avails the open space areas and the Santiago Creek environs to the community of Orange and the general public at large, as well as the project’s residential neighborhood, and becomes an integral part of the City’s and County’s trail master plans via connectivity opportunities.

Please refer to Exhibit 4.8, Proposed Circulation, Section 4.2.4, Trails, Open Space and Recreation, and Exhibit 4.14, Preliminary Greenway, Open Space and Trails Plan for additional information and a more detailed description of the individual trails.

4.2.3.3 Emergency Access

Emergency vehicle access will be provided on the Specific Plan area per the City of Orange Fire Department Fire Code and associated guidelines. The City Fire Department staff will review the project’s Site Plan and TTM upon preparation to verify the adequacy of the emergency vehicle access. As indicated on Exhibit 4.8, Proposed Circulation, emergency access is provided from Santiago Canyon Road to the single-family detached residential neighborhood (Planning Area C) in two locations. One access point is located in the southeast end of Planning Area C, and the other access point is located in the southwest portion of Planning Area C. Access will be controlled via a knockdown bollard or gate off of Santiago Canyon Road. A 20-foot wide all-weather travel surface
will be provided within a 32-foot wide easement allowing emergency access from Santiago Canyon Road to the interior neighborhood street system. Please refer to Exhibit 4.13, Emergency Access.

No public roadways are proposed within open space Planning Areas A or B. Currently, Orange County Flood Control accesses the site from the north via a gated access point at Mabury Ave. and Yellowstone Blvd. This access will still be provided once the project is complete and will be via the proposed trail system.

In addition, Orange County Flood Control and the City of Orange Fire Department will have access from Cannon Street via County owned property to the proposed 20-foot wide multi-use recreational trail/fire access road along the south side of Santiago Creek in Planning Area B. This trail/access road provides access for the managed vegetation and fuel modification zone maintenance and may also be used by emergency vehicles. All fire access roads shall comply with the City of Orange Fire Code and associated guidelines.
Exhibit 4.7
Existing Circulation
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Exhibit 4.8

Proposed Circulation

The Trails at Santiago Creek Specific Plan
City of Orange, CA
Widen and re-stripe the north side of Santiago Canyon Road to provide a third westbound through lane from the easternly project boundary to the existing full-right turn lane at Canyon Street.

PROPOSED SECTION A - A'

Source: Linscott, Law & Greenspan 10.26.17
RESTRIPE CANNON STREET BETWEEN SANTIAGO CANYON ROAD AND SERRANO AVENUE TO ADD A THIRD NORTHBOUND THROUGH LANE.

Source: Linscott, Law & Greenspan 07.16.18

Exhibit 4.11
Additional Improvements - Cannon Road
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Exhibit 4.12
Street Cross-Sections
The Trails at Santiago Creek Specific Plan
City of Orange, CA
4.2.4 Trails, Open Space and Recreation

Taking into consideration the previously referenced documentation as described in Section 4.2.1, and the quality, character and intended restoration of the project’s Specific Plan’s open space planning areas, the open space within the Trails at Santiago Creek avails itself to a variety of passive recreational uses including trailheads, multi-use recreational trails and trail-side resting areas emphasizing the quasi-rural and equestrian vernacular of the area. For the following descriptions please refer to Exhibit 4.14, Preliminary Greenway, Open Space and Trails Plan.

4.2.4.1 Trails

Complementing the invigorated plant communities and restored Santiago Creek riparian corridor, trails reflective of the before mentioned documentation will be introduced. These trails and amenities, located within a variety of open space environs, will provide for an opportunity to enjoy and recreate in a previously unavailable natural setting as well as provide for connectivity to the adjacent local and regional trail networks. These multi-use recreation trails are intended for shared use by hiker, bicyclists and horse-back riders. Trail design and construction will be per the standards provided in the City of Orange Recreational Trail Master Plan (RTMP), April 27, 1993, and as described below. The implementation of the Specific Plan and associated project will fund a maximum of $4,100,000.00 in landscape, trail and other improvements for the Santiago Creek Greenway and open spaces. The construction of multi-use recreational trails (A-F) and related amenities as described on the following pages, and the previously described enhancements of the Greenway and Grassland Open Space in Planning Areas A and B, shall be constructed or funded by the Applicant/Developer as described in Appendix C, Preliminary Landscape Opinion of Probable Costs.

The Trails at Santiago Creek provides a recreational trail system that avails the greenway open space and Santiago Creek environs in Planning Area A, and the grasslands environs in Planning Area B, to the community of Orange at large as well as the project’s residents, thus becoming an integral part of the City’s and County’s trail master plans via connectivity opportunities. With the exception of Trails A and E, following approval of this Specific Plan and prior to Site Plan Review and Tentative Tract Map submittal, final trail alignment and points of connectivity with existing and future adjacent trails will be accomplished via a collaborative effort involving the City of Orange, County of Orange, Community stakeholders including without limitation the adjacent Homeowners Associations, the Orange Park Acres Trail Committee, the Santiago Creek Greenway Alliance and representatives of the Applicant. Any easements outside of Planning Area A and B Open Space or the local streets in Planning Area C will be dedicated at the time of final mapping.
• **Trailhead**

In the southerly portion of the site within Planning Area B a signature trailhead is provided reinforcing the equestrian vernacular of the area. Intended to be an informative entryway into the greenway and open space environs there will be informational signage and trail maps, equestrian hitching rails and watering station, bike racks and rustic benches, a shade shelter and tables for resting and/or waiting for others. This area will be a gathering place for riders and hikers to meet and join up with friends and community colleagues for mutual recreation and trail enjoyment. Educational kiosks will inform the public about the ecology, biological resources, and special-status species of the area, as well as emphasizing the importance of staying on the trails, respecting seasonal trail closures, and the community’s responsibility in protecting the natural resources.

Please refer to Exhibit 4.15, Conceptual Trailhead Plan, Exhibit 4.16, Trailhead Perspective and Exhibit 4.17, Trailhead Information Signage Concepts.

• **Trail A**

Along the north side of E. Santiago Canyon Road, in addition to the existing Class II bike trail, an off-street recreational trail will extend along the entire length of the Specific Plan area. This trail will provide continuity from the existing recreation trail that parallels the roadway east of the Specific Plan area, with the intention of eventually connecting to future planned trails offsite to the west (provided by others). This 10’ wide trail will be separated from Santiago Canyon Road by a 6-foot wide landscaped parkway (minimum, as measured from the back of curb) within an 18-foot minimum wide easement as per the City of Orange Recreational Trail Master Plan (RTMP) Detail #2. Trail fencing between the trail and the street shall also be consistent with the City’s RTMP Detail #14 and shall be placed outside of the trail tread area. The fence will be consistent with the existing fencing along Santiago Canyon Road east of the project site.

Please refer to Exhibit 4.18, Multi-Use Recreation Trails and Exhibit 4.19, Multi-Use Trail Perspective.

• **Trail B**

This recreational trail will extend northward from the E. Santiago Canyon Road trail, pass through the trailhead and meander through the grassland area (Planning Area B). Within the northeast portion of the grassland parcel the trail will pass through open areas that can be used by the community at large for informal passive gatherings and activities such as casual picnics, kite-flying and Frisbee play.

Continuing northward Trail B will cross the Santiago Creek riparian corridor via a bridge which will span the creek environs. The bridge, with a span in excess of 100 feet, will be
constructed of wood and/or steel and be of a character in keeping with the quasi-rural locale and setting. The bridge will be located in the most feasible location to be the least intrusive to the creek environment.

This 10-foot wide trail will be set within an 18-foot minimum wide easement as per the City of Orange RTMP Detail #3.

Please refer to Exhibit 4.18, Multi-Use Recreation Trails and Exhibit 4.19, Multi-Use Trail Perspective.

- **Trail C**

This trail is an existing unpaved recreational trail known as the Mabury Ranch Trail. It is predominantly off-site abutting the Specific Plan area’s boundary and Planning Area A, the Greenway Open Space. The trail begins at Cannon Street and trends along the Specific Plan area’s northwesterly boundary to Mabury Avenue where it then turns east and runs offsite along the entire northern boundary of the Specific Plan area between Mabury Avenue and the Greenway Open Space. At the east boundary the trail continues offsite to the Santiago Oaks Regional Park via the Santiago Creek open space corridor.

- **Trail D**

This recreational trail trends east/west through Planning Area A, the greenway open space on the north side of the Specific Plan area and above Santiago Creek. The trail traverses the sloping land on the east and west sides and meanders through the gently sloping meadow area in the central portion of the site, providing for overviews of the Santiago Creek corridor and its woodland communities. The trail connects at three points with Trail C, the Mabury Ranch Trail, allowing for an enjoyable loop through varying terrain. It also connects with Trail B south through Planning Area B to Trail A and E. Santiago Canyon Road, and to Cannon Road abutting the westerly most portion of Planning Area A.

The final design and alignment of Trail D will be done to avoid or minimize impacts to coastal sage scrub and other native habitats, and to traverse through vegetation communities that already exhibit disturbance. Portions of the trail may be closed or partially closed seasonally when adjacent to habitat that may support special-status birds during breeding season.

This 10-foot wide trail will be set within an 18-foot minimum wide easement as per the City of Orange RTMP Detail #3.

Please refer to Exhibit 4.18, Multi-Use Recreation Trails and Exhibit 4.19, Multi-Use Trail Perspective.
• **Trail E**

Trail E is located in Planning Area B south of and above Santiago Creek and north of the residential neighborhoods in Planning Area C. It is oriented in an east/west trend and serves multiple purposes: as a multi-use recreation trail, as a seasonal access for servicing the managed vegetation/fuel modification zone, and as a fire access road (complying with the Orange Fire Code Section 320 and associated guidelines). This trail will have a 20-foot wide all-weather surface suitable to carry vehicle weight. Also, Trail E’s alignment is comparable to the trail depicted in the 2018 Santiago Creek Vision Plan, page 33, Figure 44.

Please refer to Exhibit 4.18, Multi-Use Recreation Trails.

• **Trail F**

Trail F is oriented in a north/south trend within the Handy Creek Linear Park in Planning Area B. It provides a direct link into the Planning Area B open space environs from the community entry and signalized intersection at Santiago Canyon Road and Nicky Way. A trail crossing signal for hikers, bicyclists and horseback riders will be provided for safe crossing of the residential street upon entering the community and Planning Area C.

This 10-foot wide trail will be set within an 18-foot minimum wide easement, as per the City of Orange RTMP Detail #3.

• **Trailside Rest Areas**

Within Planning Area A and Planning Area B trailside rest areas are proposed. These rest areas will have rustic benches, a horse hitching rail and a bike rack. They are provided to allow trail users the opportunity to rest and take a break, take in the view and setting, and enjoy the company of other trail users.

4.2.4.2 Parks

Through meetings and dialogues with representatives of adjacent residential neighborhoods including Orange Park Association, Mabury Ranch Homeowners Association and The Reserve Homeowners Association, it was mutually agreed upon that no active parks or recreational facilities would be included in the Specific Plan area, but rather passive recreational uses and trails would be incorporated into the plan as previously described in Sections 4.2.4.1. Within Planning Area B the existing Handy Creek OCFCD Easement provides for an open space extension to Santiago Canyon Road and the community entry. A linear park will be developed in this easement to provide trail connectivity and accented with shade shelter(s), benches and native plantings.
Please refer to Exhibit 4.20, Handy Creek Linear Park Concept Plan and Exhibit 4.21, Handy Creek Linear Park Perspective.

4.2.4.3 Perimeter Conditions

There are a variety of perimeter conditions which surround The Trails at Santiago Creek Specific Plan area. The primary goal is to provide visual continuity with the existing character of the surrounding community as follows:

- **Mabury Ranch**

Mabury Ranch is a single-family detached neighborhood to the north of the Trails at Santiago Creek. The Greenway Open Space (Planning Area A) is adjacent to this neighborhood. A recreation trail currently exists along the south side of Mabury Ave with a wooden split rail fence separating the recreation trail from the curb adjacent sidewalk and street. An existing chain link fence denotes the northerly property line of the Specific Plan area and separates the existing recreation trail from the adjacent open space. One controlled access point is provided at Mabury Ave./Yellowstone Blvd. for Orange County Flood Control.

Representatives from Mabury Ranch have indicated their desire to have limited access to Planning Area A, the Greenway Open Space and associated trail network, from Mabury Ave. by retaining the existing chain link fence or installing a similar fence. Therefore, following approval of this Specific Plan, and prior to Site Plan Review and Tentative Tract Map submittal, the final design of the Mabury Ranch edge condition will be accomplished via a collaborative effort involving representatives of Mabury Ranch, the City of Orange and the Applicant.

- **The Reserve**

The Reserve is a single-family gated neighborhood adjacent to and east of the Trails at Santiago Creek. This neighborhood is situated at a higher elevation with a planted slope extending into Planning Area B. Existing fencing conditions at the property line vary and will remain in place. As part of open space improvements the existing slope landscape will be enhanced with native vegetation as necessary.

- **Vacant County Owner Parcel**

At the intersection of E. Santiago Canyon Road and Cannon Street is a vacant lot owned by the County of Orange with no defining characteristics other than the methane monitoring and extraction system. This lot abuts a portion of the Specific Plan area’s western boundary and Planning Area C, Low Density Single-Family Detached Residential.
A thematic community block wall will be installed along the property line between the vacant county owned property and Planning Area C to allow future residents at The Trails at Santiago Creek privacy and security from future uses on the adjacent parcel.

- **E. Santiago Canyon Road**

For continuity with the adjacent neighborhoods, for privacy and a sense of security for the residents at the Trails at Santiago Creek, and for a proper maintenance boundary, a thematic community sound wall will be installed on the southerly boundary of Planning Area C, replacing the chain link construction fencing that currently exists along E. Santiago Canyon Road. This wall shall be limited to six feet in height, as measured from the highest elevation of land contiguous to the fence, and ten feet as measured from the lowest elevation contiguous to the fence, whichever is less. Between the community wall and the roadway will be the previously described Trail A, a multi-use recreation trail that will be an extension of the existing multi-use recreation trail that runs along the north side of E. Santiago Canyon Road adjacent to the Reserve. Landscape treatment and fencing will be consistent with the conditions along The Reserve frontage. The community wall will be setback 4-feet to 18-feet from the multi-use trail pending terrain conditions, allowing for trees, shrubs and ground cover to be planted to accent the wall and soften the development edge. Please refer Exhibit 4.12, Street Cross-Sections and Chapter 6, Section 6.4.10.4 for more detailed information. Where Planning Area B, the Grasslands, interfaces with the proposed multi-use recreation trail extension, no walls or fences are proposed between the trail and the grassland open space, thus allowing for an unimpeded interface.
Exhibit 4.15
Conceptual Trailhead Plan
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Source: Summers, Murphy + Partners
EXHIBIT 4.18
Multi-Use Recreation Trails
The Trails at Santiago Creek Specific Plan
City of Orange, CA

Source: Summers, Murphy + Partners
Keep large existing trees within open space.

Mix of preserved and new plantings along trails.

Thematic rail fencing pending terrain conditions.

10' wide compacted DG trail with thickened edges.

Source: Summers, Murphy + Partners
CHAPTER 5 - FACILITIES AND SERVICE PLAN

5.1 Infrastructure Plans

5.1.1 Water

The City of Orange Public Works Department – Water division provides domestic water service throughout the City of Orange as the “public water system” and will supply water to the Specific Plan area. The water system will be constructed in accordance with the City of Orange Water Department rates, rules, and regulations. As proposed, water service would be extended into the project site within public water easements. Service would be circulated throughout the project to provide a network for both domestic water demand and emergency fire flows. The primary connection will be to the water mains within Santiago Canyon Road.

Water supply lines and facilities shall be designed as part of the City’s Master Water System ultimately serving area-wide development. The master facilities and local mains, as such, will be sized to provide domestic and fire flow services in accordance with the City of Orange Water Department and Fire Prevention Bureau.

The land required for implementation of the water system shall be dedicated to the City in conjunction with streets and through easements at the time of final map recordation.

The location and alignment of the water supply lines is based upon the street system configuration, lot layouts, and area wide service requirements. All water supply planning shall be closely coordinated with and be subject to review and final approval by the City of Orange.

Please refer to Exhibit 5.1, Conceptual Water System Plan.

5.1.2 Sewer

Orange County Sanitation District (OCSD) will provide wastewater collection and treatment to the Specific Plan area. An existing OCSD trunk sewer main is located within E. Santiago Canyon Road that measures 18 inches in diameter.

A network of underground sewer piping will be installed within the project site that would connect to the existing sewer main within E. Santiago Canyon Road. Underground service laterals would be extended to each dwelling unit.

Please refer to Exhibit 5.2, Conceptual Sewer System Plan.

5.1.3 Water Quality Management Plan

Water quality strategies for the Trails at Santiago Creek may include, but are not limited to: minimizing impervious surfaces to maximize storm water retention, preservation of native vegetation, and promoting filtration of runoff through biological media. The goal of using Low
Impact Development (LID) features is to direct runoff through biotreatment systems before storm water enters Santiago Creek. By utilizing LID strategies in the project’s design, the project will effectively minimize the sources of storm water runoff pollutants potentially created by altering the site’s existing land use.

Another important aspect of water quality management includes source control Best Management Practices (BMPs). Source control BMPs effectively minimize the potential for known sources of urban pollutants to come into contact with runoff, thereby limiting water quality impacts downstream. This includes both non-structural measures, such as activity restrictions, maintenance, training, and structural measures such as proper design of material storage areas, trash storage enclosures, and utilizing drought tolerant landscaping. Source control BMPs will be integrated into the project Water Quality Management Plan and project design to minimize sources of pollutants for post-construction.

A variety of sustainable design measures will be included that address water quality and quantity by capturing and directing runoff to biotreatment features which utilize biological media for runoff filtering and treatment. One of the goals is to incorporate LID techniques into the design phase to reduce storm water runoff and to maximize water quality capture and treatment at the source. Rather than conveying runoff from small, frequent storm events to storm drains directly, runoff is directed to landscape features located on-site to dissipate and reduce the rate and volume of runoff. Examples of these techniques include pocket rain gardens within turf areas and use of cisterns for capturing rainwater for re-use from buildings.

In Planning Area A and B the land use is Open Space. No proposed LID measures or structural BMPs are proposed for this portion of the property as it will not undergo any development. In the event trails are constructed, storm water landscaping features adjacent to the trails will be incorporated for water quality treatment.

In Planning Area C the land use is Low Density Residential. A biotreatment water quality basin will provide treatment of residential and street runoff in addition to source control BMP’s.

With implementation of the selected LID strategies and BMPs as required by the City of Orange, water quality exceedances are not anticipated, and pollutants are not expected in project runoff that would adversely affect beneficial uses in Santiago Creek and the lower Santa Ana River.

Please refer to Exhibit 5.3, Conceptual Water Quality Management Plan and Exhibit 5.6, Conceptual Storm Drainage Plan.
5.1.4 Mass Grading and Earthwork Plan

The proposed project includes extensive remediation of soils unsuitable for construction left as a byproduct of the former mining operation. This will necessitate the import of approximately 877,000 cubic yards of new clean materials and the export of approximately 500,000 cubic yards of silty soils. The blend of imported materials will be based on the recommendation of the project’s soils engineer and will include asphalt, concrete, rock, and soil to be mixed in with the materials found on-site currently. These activities are expected to take place over an 18-month period.

Please refer to Exhibit 5.4, Existing Topography and Easements, and Exhibit 5.5, Conceptual Mass Grading and Earthwork Plan.

5.1.5 Storm Drainage Plan

The storm drain system for the Specific Plan area will extend from Santiago Creek into Planning Area C via underground pipes of various sizes. Runoff would be conveyed by a curb and gutter system into catch basins and the underground storm drain piping system to control runoff from the residential and open space areas. The storm drain system will discharge to a water quality basin within Planning Area B and then into Santiago Creek. Elevation of Planning Area C will be raised above the 100-year flood elevation. Storm water facilities will be provided on-site to adequately serve the residential and open space development.

The storm drain system located in public streets and public easements shall be dedicated to the City at the time of final map recordation.

Please refer to Exhibit 5.6, Conceptual Storm Drainage System.

5.2 Public Service

5.2.1 Law Enforcement

Law enforcement services will be provided by the City of Orange Police Department. Services include response to 911 calls, traffic collisions, medical, and other types of emergencies. Additional services provided include crime prevention, investigation, and enforcement of law, providing police support to the area with patrol responses, reporting, and investigative support.

5.2.2 Fire Protection

Fire protection and emergency response services will be provided by the City of Orange Fire Department. There are 8 fire stations distributed strategically throughout the City. 7401 Fort Road, engine 7 is the closest station to the propose project. Additional support may be provided by Orange County Fire Authority (OCFA) Fire Station #23 location at 5020 Santiago Canyon
Road. OCFA Division IV-Battalions 2 & 3 serve the unincorporated community of Orange Park Acres.

5.2.3 Schools

The Specific Plan area is located in the Orange Unified School District (OUSD). The site is in the attendance area for Linda Vista Elementary School, Santiago Charter Middle School, and El Modena High School.

5.2.4 Libraries

Library services will be provided by the Orange Public Library system. The closest branch library is located at 380 S. Hewes Street in Orange. The Main Library and History Center is located at 407 E. Chapman Avenue in Orange.

5.3 Utilities

5.3.1 Electricity

Electricity will be provided by Southern California Edison. Existing electrical service is in place along Santiago Canyon Road. The specific tie in location(s) will be coordinated with SCE and a backbone system will be extended through the site to serve each lot.

5.3.2 Natural Gas

The Gas Company will provide natural gas service. Existing gas service is in place within Santiago Canyon Road. The specific tie in location(s) will coordinated with the Gas Company and a backbone system will be extended through the site to serve each lot.

5.3.3 Solid Waste Recycling

Development within the Trails at Santiago Creek shall comply with the City of Orange requirements for the provision and placement of solid waste and recycling receptacles. For Single Family Residential products, refuse containers shall be stored within a residence’s garage or side yard and a paved path of travel from storage location to pick-up location shall be provided. The service provider will be that which is under contract to provide solid waste and recycling for the city at large.

5.3.4 Communication Systems

Telephone service will be provided by AT&T. Existing telephone service is in place along Santiago Canyon Road. The specific tie in location(s) will be coordinated with the Gas Company and a backbone system will be extended through the site to serve each lot.
LEGEND:

- PROPOSED WATER LINE
- EXIST. WATER LINE
- A DENOTES PLANNING AREA

Note: Interior street layout conceptual, for diagrammatic purposes only and subject to change.

Source: Fusco Engineering 07.26.2018

Exhibit 5.1
Conceptual Water System
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Source: Fuscoe Engineering 07.26.2018

Note: Interior street layout conceptual, for diagrammatic purposes only and subject to change.

Exhibit 5.2

Conceptual Sewer System
The Trails at Santiago Creek Specific Plan
City of Orange, CA
EASEMENT NOTES:

A  Existing Easement For Handy Creek
   Box Culvert For Drainage Purposes

B  Existing Easement For M.W.D.
   Pipeline

DENOTES PLANNING AREA

Note: Interior street layout conceptual, for diagrammatic purposes only and subject to change.

Source: Fuscoe Engineering 07.26.2018

Exhibit 5.4
Existing Site Topography and Easements
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Note: Interior street layout conceptual, for diagrammatic purposes only and subject to change.
CHAPTER 6 – DESIGN GUIDELINES

6.1 Introduction

The purpose of the Trails at Santiago Creek Specific Plan Design Guidelines is to establish a context for future development, one that ensures the project will be complimentary to and compatible with surrounding neighborhoods and the community-at-large. The design guidelines define and reinforce the vision, regulations and standards contained in the Specific Plan. These guidelines will be used by architects, landscape architects, engineers and others to assure a high-quality renovation of the project’s open space features and proposed amenities, as well as final residential site planning, architectural design of the single family homes, and the landscape design of the residential neighborhood and related features.

The premier goal of the Trails at Santiago Creek is the integration of the project with the adjacent neighborhoods and the community of Orange. By preserving and enhancing the project’s extensive open space and Santiago Creek corridor, the project provides for connectivity between adjacent open space corridors to the east and the west, an important greenway open space link in the long-term plans as defined in the Santa Ana River/Santiago Creek Greenway Implementation Plan and as embraced by local communities and regional agencies. The recreational trail network that traverses the project’s open space environs also provides the much desired connectivity to local and regional trail networks and open space corridors surrounding the site.

The underlying design theme for the Trails at Santiago Creek is “quasi-rural” with equestrian influences. With 62.7% of the site comprised of restored open space interlaced with a multi-use recreational trail network, the project becomes an integral part of the City and County’s trail master plan and Greenway corridor. Combined with the multi-use trails available to equestrians in the open space areas and the influences of the adjacent neighborhood’s fabric, the quasi-rural equestrian theme for the project will blend nicely with this part of the City of Orange.

Utilizing native plant materials in the open space restoration and community landscape; a network of decomposed granite trails with split rail fencing and trailside rest areas with rustic benches; the signature trailhead with shade shelter(s) and amenities accented with heavy timbers and stone; and the equestrian themed fencing along the recreation trail paralleling Santiago Canyon Road all work in unison to reinforce this theme.

The low density single-family detached residential neighborhood in Planning Area C will be compatible in lot sizes and architectural styles to existing neighborhoods surrounding the project. Building setbacks, height limits, landscape palettes and perimeter edge treatments will ensure a harmonious blending of the new to the existing.
To accomplish the above, the goals of these design guidelines are as follows:

A. To provide guidance to the land owner, architects, landscape architects, engineers and other professionals in order to maintain the desired design quality.
B. To provide guidance to the City’s Community Development Department, City staff and the Design Review Committee as well as Planning Commission and City Council when called upon, in the review of Site Plan submittals.
C. To recognize the City’s “Orange Goes Green” policy and incorporate elements of sustainable design to the degree possible.
D. To incorporate principals of Crime Prevention Through Environmental Design (CPTED) to the degree possible.
E. To provide guidance to ensure that new single family detached homes are designed to be compatible with the adjacent existing residential neighborhoods, and that improvements and enhancements to the Greenway Open Space are compatible with the existing native landscape fabric present on the site.
F. To provide perimeter edge and transition guidelines that respect the character of the existing open space conditions, as well as guidance in the enhancement of the E. Santiago Canyon Road streetscape and edge condition to ensure compatibility and connectivity with the existing condition to the east of the project site fronting The Reserve residential neighborhood.

6.2 Site Planning Guidelines

Every effort should be made to ensure there is a seamless transition from the Greenway Open Space (Planning Area A) to the Grassland Open Space (Planning Area B) via the utilization of appropriate plantings and the spacing of said plantings. There should be a landscape enhanced transition from open space to the project’s single-family detached residential neighborhood in Planning Area C. The managed vegetation/fuel modification zone within Planning Area B should be such that the plant materials selected and the thinning that is required is done in a manner that appears natural. Where walls or fences are required for safety, security and/or privacy landscape plantings should be incorporated to avoid extended length of unadorned sterile edges. Trail paseos should be provided from the residential area to the surrounding open space and trail network to ensure connectivity and the interface of lands uses.

Within Planning Area C the various lot size programs should be responsive to adjacent land uses with the largest lots (10,000 square feet and greater) located on the east side of the planning area adjacent to Planning Area B open space and the existing Reserve residential neighborhood.
6.2.1 Street Layout

The community entryway to the Trails at Santiago Creek will be at a signalized intersection on E. Santiago Canyon Road across from Nicky Way. The entry will be enhanced with native and/or native-like landscape plantings and trees, decorative walls and fencing, signage and landscape lighting, stone veneer and timber accents reinforcing the quasi-rural equestrian theme. Where the multi-use recreation trail (Trail A) that parallels E. Santiago Canyon Road crosses the entry road decorative/enhanced paving will be provided to define the crossing. Similarly, where Trail F crosses the residential street decorative/enhanced paving will be provided.

While the Specific Plan proposes one primary point of entry at the signalized intersection on E. Santiago Canyon Road, there are two additional access points provided for emergency vehicles. One emergency ingress/egress is located in the southeast portion of Planning Area C connecting to E. Santiago Canyon Road. The second emergency ingress/egress is located in the southwest portion of Planning Area C, connecting to E. Santiago Canyon Road. Both emergency access points also act as hike/bike trail paseos into the residential neighborhood and will be provided with vehicle barrier posts that can be easily unlocked and knocked down should the need for emergency access arise.

Within Planning Area C the residential street layout will be simple, easy to navigate, easy to understand one’s location and allow for clear lines-of-sight for safety. The single-family detached homes will take direct driveway access from the local streets. Residential (local) streets will be public and will be designed per the City of Orange 100 Series – Street Improvement Standards, Standard Plan 106 – Local Streets, Case I and Case II. Curb adjacent landscape parkways will be increased from 3 feet to 5 feet to allow for street tree plantings within the parkway. This has been discussed with City Staff and confirmed as acceptable within the public street standard. Streets will have one travel lane in each direction and sidewalks separated by a landscape parkway. Parallel parking will be allowed on one or both sides of the street pending neighborhood design.

Please refer to Chapter 4, Exhibit 4.12, Street Cross-Sections, Chapter 6, Exhibit 6.9, E. Santiago Canyon Road Enhancements, Exhibit 6.10, Community Entry Road Enhancements, and Exhibit 6.12, Local Residential Street Enhancements.

6.2.2 Pedestrian Circulation

Development within Planning Area C will incorporate connections to the surrounding recreational trail systems via trail paseos and the Handy Creek Linear Park. The paseos will provide hike/bike trail access to the recreational trail along E. Santiago Canyon Road (Trail A), and the recreational trails within the Grassland Area (Trail B and E). Connections to the project’s
trail system will be constructed of surface materials such as decomposed granite or a combination of asphalt and decomposed granite in keeping with the other recreation trails throughout the project. Please refer to Chapter 4, Exhibit 4.14, Preliminary Greenway, Open Space and Trails Plan.

Within the residential neighborhood all streets shall have sidewalks when fronted by homes, thus providing ease in pedestrian movement throughout the neighborhood. Sidewalks shall connect to trail paseos and the linear park.

6.2.3 Crime Prevention Strategies

The Rio Santiago project will incorporate Crime Prevention Through Environmental Design (CPTED) strategies to help deter crimes and increase perceived safety. The intent is to create a safe community by designing an environment that discourages criminal behavior and encourages people to “keep an eye out” for each other. CPTED strategies have been designed by the City of Orange Police Department and are described below.

To ensure adequate services are provided, and to minimize the demands on police service, security and design measures that employ defensible space concepts will be utilized in development and construction plans. These measures incorporate CPTED, which involves consideration such as access and visibility of common areas, street addressing and landscaping. CPTED promotes public safety, physical security and allows for the ability to monitor activity in neighboring areas. CPTED involves four key strategies designed to reduce fear and crimes, and improve quality of life. These strategies are:

- **Natural Surveillance:** Criminals do not want to be seen. Discourage potential offenders by placing physical features, structures, activities and people in ways that maximize visibility and encourage positive intersection among users of public and private spaces. Natural surveillance measures shall include, but are not limited to, placing windows so they overlook walkways, streets and parking areas, creating landscape designs that allow for natural surveillance, providing adequate nighttime lighting and ensuring potential problem areas are well lit, etc. Providing diversified, complementary programming and events in public spaces encourages positive use, increases public surveillance and discourages inappropriate behaviors. Residential lots having reduced street frontage or flag lot configurations shall have additional illuminated monument addressing at the street. Group or gang mailboxes shall be located in an area having a high volume of activity within the respective development.

- **Territorial Reinforcement:** Physical design can create or extend a sphere of influence around the project or a segment of the project. People then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Territorial
reinforcement occurs by using buildings, entry treatments, landscape, hardscape, fences, gates, etc. to convey ownership and define public and private areas. All residential fencing along common areas, public spaces, trails, etc. shall be of open construction where feasible, to provide natural surveillance from residences to the surrounding areas. The plants and shrubbery chosen for the landscaping around public spaces and trails shall be installed in a graduated height, from lower to higher. Landscaping shall be planted away from the access areas to prevent blind corners and maintain maximum visibility of surrounding area for those using the facilities. Plant types shall be chosen that will prevent future overgrowth and maintain maximum visibility.

- **Natural Access Control:** Natural access control is directed primarily at decreasing crime opportunity by clearly differentiating between public and private spaces. This type of control can be implemented by designing streets, walkways, building entrances and gateways to clearly indicate public routes and discourage access to private areas with structural elements.

- **Target Hardening:** This strategy is directed at denying or limiting access to a crime target through the use of physical barriers such as window locks, dead bolts for doors, interior door hinges, alarm systems, etc. All structures shall comply with the requirements of Municipal Code-Chapter 15.52 (Building Security Standards), which relates to the use of specific hardware, doors, windows, lighting, etc. (Ord. 7-79). Architect drawings shall include sections of the Ordinance that apply under “Security Notes”. An “Approved Products List 07/04” of hardware, windows, etc. is available upon request.

### 6.2.4 Single-Family Homes

#### 6.2.4.1 Plotting and Spatial Considerations

- The plotting of the single-family residences shall be designed in a manner that achieves visual diversity and interest in the street scene. Such diversity shall be achieved through articulated building massing and/or enhanced elevations on residences plotted on corner lots.
- No identical floor plan and elevation are permitted side by side. Reverse footprints of identical plans are allowed adjacent to one another provided each has a different elevation and color scheme.
- The two houses on either side of a specific lot must all use different color schemes than that specific lot.
- The living portion of a residence, including porches, shall be a prominent feature of the front elevation to enliven the street scene.
- Articulation of side and rear elevations that are visible from E. Santiago Canyon Road, Mabury Ranch, The Reserve, or Planning Area A and Planning Area B open
space areas shall be consistent in design, materials and details with the front elevation.

6.2.4.2 Circulation

- Front entry driveways that exceed 18’ in width along the street must be enhanced. Enhancement options include but are not limited to decorative pavers, integral color, contrasting textures, decorative scoring, paving bands or other similar treatments to break up expansive areas of pavement. Front entry driveways that are 18’ in width or less do not require such enhancement.
- For parking standards please refer to Chapter 7, Section 7.4.2, City of Orange Residential Parking Standards for Single Family Dwellings.

6.3 Architectural Design Guidelines

6.3.1 Architectural Character and Style

The City of Orange has a rich architectural heritage upon which to draw inspiration for development within the Trails at Santiago Creek. Much of the City’s early architecture had a distinctly rural flavor due to its agrarian roots. As described in the City of Orange General Plan, Historic Preservation Section, some of the earliest architectural styles included Victorian, Classical Revival, Craftsman, Bungalow, and Mediterranean Revival. Driving through the City of Orange today there are additional architectural styles influenced by the post-World War II era including Ranch, Spanish Adobe, Monterey, American Revival, and California Contemporary.

As previously stated in Chapter 4, Section 4.2.2 the architectural styles for the single-family detached residences in Planning Area C will be a current day interpretation of the existing surrounding neighborhoods, most specifically Orange Park Acres, complimentary to and in character with them. Similar materials will be used, rooflines and roof styles will be comparable, and the architectural theme will be an updated version of Orange Park Acres while adapting to the Specific Plan’s residential lot programs. Materials and features will include primarily gable or shed style roofs, stucco and or wood/wood-like siding on facades, covered entries or front porches with square posts and beams, primarily rectilinear window forms but occasional arched feature window, corbels, beams or rafter tails, and accent materials of stone, brick and occasionally a slate-like material.

However, with generational influences, life-style variations and varying market demand constantly affecting the design of residential homes the final architectural style(s), and the design composition of such, will be proposed by the home builder(s) who are most attuned to current trends. Architectural plans and elevations will be presented to the Design Review Committee for review and approval at the time of Site Plan Review and Tentative Tract Map submittal.
6.3.2 General Architectural Standards

6.3.2.1 Building Form and Mass

All residential building elevations shall be well detailed and articulated, incorporating building forms, masses, roof design, details and accent features that are consistent with the architectural style of the building.

Sufficient massing and articulation of building walls shall be incorporated into the building design to provide visual interest to building facades and to reduce the visual length of long walls. Such articulation may be achieved in a variety of ways, including, but not limited to:

- Articulation of wall planes, using horizontal or vertical offsets.
- Accentuated building elements such as entries, stair towers, or other similar features that provide horizontal or vertical offsets and break the eave line of the building.
- Simple bold forms.
- Projections and recesses to provide shadow and depth.

Long building wall planes, particularly on the front elevation, shall be staggered to create interest along the street scene, to provide a desirable human scale, and to avoid visual monotony.

Articulation and detail shall be provided to the rear and side of dwellings when visible from perimeter edges of the residential planning area or from public spaces throughout the project and the surrounding community.

Single-Family Detached residences shall not exceed two stories in height.

6.3.2.2 Building Materials and Color

The use of building materials shall be consistent with the home builder’s defined architectural style of the residence and shall include but no bet limited to the following materials:

- Stone.
- Brick.
- Cementitious Siding, Shakes, Board and Batten and similar treatments.
- Stucco.
- Wood or simulated wood siding.
(No one material shall comprise more than 80% of the surface of the building’s wall planes that are visible from the street.)

All surface treatments or materials shall be designed to appear as an integral part of the design, and not merely applied. All materials visible from a street or rear yard shall wrap architectural elements in their entirety. Material changes shall occur at inside corners. Natural tones and colors that harmonize with the site’s natural context shall be used.

6.3.2.3 Roofs

Roof treatments shall be consistent with the architectural style of the building.

Overall variety in roof forms, ridge heights, and direction of gables are required to provide visual interest as viewed from streets, open space, adjacent off-site neighborhoods, or any other public space. The use of gable, cross-gable, hip, shed or a combination of these roof forms are encouraged to achieve a varied rooflines within the project. Repetitious gable ends framed side to side on rear elevations of Single-Family Detached dwellings shall be avoided along perimeter edges of the residential planning area.

- **Roof Pitch:**
  Basic roof pitch shall range from 3:12 to 8:12. Secondary roof elements that accentuate special features of the building’s architecture may be less than 3:12 or in excess of 8:12 provided these elements are consistent with the architectural style.

- **Permitted Roof Materials:**
  - Flat Concrete Tiles or Shakes.
  - “S”-tiles.
  - Architectural Grade Asphalt Shingle.
  - Photo-Voltaic Roof Tiles (must match size and shape of main roof tile).
  - Cool or “green” roofs. (where applicable)
  - Roof flashings, rain gutters and downspouts, vents and other roof protrusions shall be finished to match adjacent finish materials and/or colors. Unfinished galvanized metal is not acceptable unless appropriate to a particular architectural style.
  - Fascia elements shall be consistent with the architectural style of the building. The use of heavy exposed wood members is encouraged for rafter tails, brackets, braces and other decorative elements as appropriate to the architectural style of the building.
6.0 Design Guidelines

- **Prohibited Materials:**
  - Wood Shake.
  - Rolled roofing material (except for flat roofs with parapet).

- **Roof Colors:**
  Colors ranging from light brown to dark brown with mottled blends of warm grey, tans, and other earth colors preferred. Monterey roof colors shall range from rust to earth red tones.

- **Skylights:**
  Skylights are permitted, but shall be designed as an integral part of the roof. Skylight framing material shall be colored to match the adjoining roof. White “bubble” skylights are not permitted.

- **Solar Panels:**
  Solar Shingles and Solar Panels, if used, are to be integrated into the roof design, flush with the roof slope. Frames must be colored to complement the roof. Mill finish aluminum frames are prohibited. Support solar equipment shall be enclosed and screened from view. Solar panels shall not extend past eave or fascia.

6.3.2.4 Garages

Garage doors shall be compatible with the architectural style of the residence. Residential design shall de-emphasize the garage door to the extent feasible. This can be accomplished through incorporating one of the following design techniques into a roll-up door style:

- Provide a minimum of a two-foot offset and separate entries for 3+ car garages (i.e., 2-car with separate 1-car). A one-foot offset may be incorporated with inclusion of a separate roof element either on the one- or two-car garage.
- Garages should incorporate the same level of design detail and should incorporate the major themes and elements of the front elevation of the house.
- Garage doors should be recessed into the garage wall a minimum of four inches to six inches. Garage doors should be multi-paneled or otherwise provided with subtle adornment to provide shadow relief. Decorative panels, windows, arched doorways or ornamental trim are strongly encouraged. The garage door should be simple, clean and unadorned and relate to the particular architectural style. A variety of styles should be used within individual neighborhood sub-areas.
- The use of side drive or turn-in garages is encouraged.
6.3.2.5 Architectural Features and Accents

Windows
- Prominent windows (as defined in Appendix B) on highly visible elevations shall be articulated in a manner consistent with the architectural style, such as:
  - Window recesses or projections.
  - Bay windows.
  - Pot shelves.
  - Shutters
  - Multiple windows grouped or organized in a manner consistent with the architectural style or theme.
- All windows and openings shall feature trim surrounds or header and sill consistent with the architectural style of the building.
- The style of windows, including mullion and muntin patterns, shall be compatible with the architectural style of the building.
- The shape and size of shutters, when used, shall be sized proportionate to the window opening.
- Aluminum or vinyl extruded frame windows shall be appropriately colored to match or complement the house or trim colors.
- Glazing may be either clear or lightly tinted. Highly reflective coated glass is not permitted.
- Window offsets shall occur between windows on adjacent buildings where building separations allow 10’ or less to occur.
- Translucent windows are appropriate for privacy, specifically in bathrooms with building separations of 10’ or less.

Entries
Building entries shall be articulated as a focal point of the building’s front elevation through the appropriate use of roof elements, porches, stoop, columns, tower or turret elements, recesses or projections, windows or other architectural features specific to the architecture style.

Residences with a front door that is not visible from the street, if any, shall feature a courtyard, trellis, portal element or similar architectural feature to provide articulation and sense of arrival from the street.

Courtyards
Courtyards provide a transition from the public space of the street to the entrance of the building and, when provided, shall appear as an extension of the architecture of the structure. Courtyard walls shall be finished to be compatible with the building and may
be embellished with stone, ceramic tiles, steps, recesses, cut-outs, or wrought iron accents appropriate to the architectural style of the building. Pedestrian amenities such as site furnishings, shade devices, paving, water features, and landscaping shall be carefully integrated into a unified design.

**Balconies and Decks**
Balconies and decks, when provided, shall be designed as an integral component of the building’s architecture and shall be designed appropriate to the architectural style of the residence.

- Deck and balcony railings can be open rail, solid, or a combination of both but must be constructed of ignition-resistant materials.
- Open rail decks that project from the face of the building shall have corner columns that are appropriate in scale to the deck.
- Decks with solid railings require the use of scuppers or internal drains for drainage.

**Patio Covers**
Patio covers, when used, shall be designed as an integral component of the building architecture. Columns used in conjunction with patio covers shall convey a sense of strength and support, in scale and proportion with the architecture of the building.

Patio covers, when used, shall be consistent with the architectural style of the residence and be treated in one of the following ways:

- Sloping roof element with roof tile matching the home.
- Flat roof with parapet.
- Trellis element.

Columns shall be proportionate to the roof element.

**Front Porches**
Reminiscent of traditional City of Orange and Orange Park Acres neighborhoods, front porches are encouraged to provide an inviting neighborhood streetscene and promote friendly interaction among neighbors.

Porches, when used, shall have railings and be fully covered in one of the following ways:

- Roof element and tile matching the residence.
- Trellis structure covering the entire porch area.
- Second floor balcony or overhang (may be cantilevered or supported).
- Porch to be sized for livability and shall have a minimum dimension of 6’ measured from the exterior of the house to the inside of the front railing.
Columns & Archways
The use of columns and archways adds articulation to the residence and are encouraged where appropriate to the architectural style. Columns and archways shall be scaled appropriately to provide a sense of strength and support that are compatible with the architectural style of the dwelling.

Trellis and Arbors
Trellises and arbors are encouraged to enhance the architectural character or residential design. When used, they must be designed to maintain their appearance considering the climatic conditions of the area (such as direct sun and termite damage).

6.3.2.6 Architectural Detail Elements

Detail elements including, but not limited to, shutters, exposed rafter ends or cross beams, cupolas, decorative grille work, decorative stucco or clay pipe vents, decorative ceramic tile and/or other similar features shall be used to provide visual interest to the residence, consistent with its architectural style. As a note, exterior wall vents shall be screened with a corrosion-resistant wire mesh with ¼ “ (6mm) openings or its equivalent.

Chimneys
Chimneys, when provided, shall be compatible in design, material, and color with the building. Chimneys, particularly chimney caps, should be simple in design, so as not to distract from the building. Exposed flues and overly elaborate fireplace caps are prohibited.

Walls and Fences
Walls and fences that are visible from streets, open space, or other public areas shall be compatible in material, color, and design with adjacent architectural elements.

Exterior Lighting
Exterior lighting shall be used for entries, patios, outdoor living spaces, courtyards, porches etc., and shall be shielded to minimize glare and “light spill” to adjacent properties and streets. The level of on-site lighting and lighting fixtures shall comply with any and all applicable requirements and policies of the City of Orange. Energy conservation, safety and security shall be emphasized when designing any lighting system. Exterior lighting fixtures shall be compatible with the architectural style of the building. Accent lights may be used to highlight significant architectural elements and for special features such as providing direction for pedestrian and vehicular circulation. The project has been designed to minimize night lighting. Any necessary lighting will be
shielded or directed away from natural open space areas and existing adjacent neighborhoods.

**Awnings**
Awnings must be designed as an integral part of the architecture. Unacceptable awning treatments include metal louvers (except for Bermuda style shutters) and untreated fabric.

**Gutters and Downspouts**
Exposed gutters and downspouts, when used, shall be colored to either match or complement the surface to which they are attached.

### 6.3.2.7 Non-Architectural Elements

**Mechanical Equipment**
- No mechanical equipment (air conditioning/heating units, HVAC, etc.) shall be mounted on, or attached to, any sloped roof. Solar panels are permitted.
- Ground mounted air conditioning (HVAC) units must be screened by walls or landscaping maturing at least 6” higher than the unit(s) and located away from pedestrian paths and project amenities where applicable.
- Mechanical devices such as exhaust fans, vents and pipes shall be painted to match adjacent wall or roof surfaces. Such elements shall be located to minimize visual impact to building elevations.
- Builders are encouraged to gang up plumbing vents to reduce the number of roof penetrations where possible.

**Satellite Dishes**
- All antenna and satellite dishes shall be screened from public view to the extent feasible and are subject to all applicable Federal regulations and Home Owner’s Association (HOA) rules.

### 6.4 Landscape Design Guidelines

#### 6.4.1 Overview
The landscape design for the Trails at Santiago Creek is based on a commitment to creatively balance the demands of human use with the need for connection to nature through landscape and open space. Per the City of Orange General Plan and the Natural Resource Section, the City desires that future residential projects respond to the presence of Santiago Creek as a community and ecological amenity to be incorporated in their site plans, building design and orientation, and landscaping. The Trails at Santiago Creek embraces this with its open space preservation, creek
restoration and network of multi-use trails. The use of native plant materials and others that are compatible with the Santiago Creek Greenway Open Space environs in Planning Areas A and B enhances the habitat value of the creek corridor in addition to being visually compatible. The Natural Resource Section of the City’s General Plan also references the Santiago Creek Vision Plan, which this Specific Plan also embraces. As previously discussed in Section 2.8, Relationship to the 2018 Santiago Creek Vision Plan Update, the Trails at Santiago Creek Specific Plan is responsive to the Vision Plan for the Mile 7 segment of the Vision Plan by providing greenway open space within the majority of the site, restoring Santiago Creek and open space habitats with native species, providing for multi-purpose recreation trails and connectivity to adjacent trails, and limiting low-density single-family detached residences to the southerly portion of the site adjacent to E. Santiago Canyon Road. Please refer to Exhibit 2.4, Santiago Creek Vision Plan Figure 44 – Mile 7 as well as the letter from the Santiago Creek Greenway Alliance in support of the Trails at Santiago Creek in Appendix A.

The landscape design embraces regional and site specific environmental influences and incorporates these elements with the features and amenities of the project. The Trails at Santiago Creek will employ a unified landscape character for the various uses associated with the plan. Additional elements which will provide cohesion to the site development will include rough-hewn materials such as river rock, brick, decomposed granite, heavy timbers, and natural metal finishes intended to reinforce the underlying quasi-rural equestrian theme.

6.4.1.1 Landscape Design Principles

The landscape design principles for the Trails at Santiago Creek include:

- Establish an identity for the project along East Santiago Canyon Road through the use of enhanced planting material, entry monumentation and enhanced wall and fence materials. Fencing materials along Santiago Canyon Road shall be consistent with the existing fencing east of the project site.
- Incorporate the character of Santiago Creek into the community design through organic planting drifts with an emphasis on native shrubs and grasses, native trees, and creek-compatible plant materials, meandering pathways and trails and the use of wood or wood-like fencing and structures.
- Recall historical elements of the City of Orange and Santiago Oaks Regional Park through the use of similar building materials and forms within the open space environs (i.e. trailhead features, shelters, benches, fencing, trails).
- Recognize the value of the Specific Plan’s open space elements in the City and County’s open space and trails framework/master plan and provide linkage and connectivity to/from the project site via a multi-use recreation trail network available to both the residents at the Trails at Santiago Creek and the public-at-large.
- Preserve mature trees existing on site with the use of a tree conservation plan. This plan maps out all healthy trees with a minimum diameter at breast height (DBH) of 6 inches or greater to be protected in place during the development of the project. See Exhibit 6.3, Tree Conservation Plan.
- Maintain a strong connection with nature at the community’s wildland interface. This will be accomplished with intentional landscape programming comprised of healthy, native tree and shrub conservation and specific native and habitat-promoting plant species in the replanting efforts. Native plant material that is compatible with the habitat of the creek corridor will be used to enhance the wildland interface.
- Create a connected and walkable community with access to trails and walking paths from both within and outside the Specific Plan area.
- Design with sustainability as a key component through the use of drought tolerant planting, state-of-the-art irrigation techniques, and local building materials when possible.

6.4.1.2 Landscape Framework

It is the intent of the Trails at Santiago Creek to provide a seamless transition from the Greenway Open Space and Santiago Creek environs (Planning Area A) to the Grasslands Open Space (Planning Area B) via the utilization of site appropriate plantings and the spacing/distribution of them. There should be a landscape enhanced transition from open space to the project’s single-family detached residential neighborhood in Planning Area C. The managed vegetation/fuel modification zone within Planning Area B should be such that the plant materials selected and the thinning that is required is done in a manner that appears natural while complying with Section 320 of the Orange Fire Code (per Orange Municipal Code Section 15.32.020). Where walls or fences are required for safety, security and/or privacy landscape plantings will be incorporated to avoid extended length of unadorned sterile edges. Trail paseos will be provided from Planning Area C to the surrounding open space and trail network in Planning Area B to ensure connectivity and the interface of lands uses.

6.4.1.3 General Planting Requirements

- Street trees shall be a minimum of 24” box, unless otherwise approved by the DRC.
- Refer to Section 6.4.16, Plant Material Palette, for suggested plant materials, and the City of Orange Street Tree Master Plan for Species Palette, Standard Specifications, Municipal Code (Chapter 12.28 Street Trees).
- Refer to Section 6.4.5.3 of this Specific Plan, Local (Residential) Streets, for street tree spacing requirements within Planning Area C.
- Shrub planting areas will be 2’ minimum width outside the curb area. Tree planting areas will be 4.5’ minimum width.
• Shrubs for trail planting shall be at a minimum 1 gallon.
• Planting installed adjacent to street edges must appropriately provide for vehicular sight distances at intersections and driveways.
• Where a fence is not provided for trails, an unbroken plant barrier shall be installed in parkway areas between vehicular traffic and the trail to prevent trail users from leaving the trail. In areas where a parkway planting is specified, vines, shrub, and tree planting must be of a non-toxic selection to horses.
• Turf areas will be designed to be large enough to be usable (minimum 150 square feet). Turf areas smaller than 150 square feet shall not be permitted.
• Planting which requires low amounts of supplemental water is required (except turf).
• Trees shall not conflict with lights standards to ensure proper light coverage.
• Planting design shall comply with the Orange Municipal Code, Chapter 16.50 Landscaping Requirements.
• Trail planting shall comply with the City of Orange Recreational Trails Master Plan.
• Root barriers shall be used for any tree or large shrub within 5’ of any structure or hardscape element to minimize the damage caused by migrating roots which can uplift streets, sidewalks, parking lot paving, and other hardscapes.

6.4.2 Plant Material Palette

All plants selected have been made in consideration of the natural and open-space beauty of the Trails at Santiago Creek, naturalized aesthetic, drought tolerance, plant size to planting area compatibility, low maintenance requirements, overall plant resilience. Please refer to Table 6.1, Plant Material Palette, Exhibit 6.1, Community Landscape Zone Plan and Exhibit 6.2, Planting Zone Plan, for the planting Zones 1-4 referenced below, as well as the bio-retention basin, Zone 5, and Exhibit 6.3, Tree Conservation Plan.
Table 6.1 - Plant Material Palette

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
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<tbody>
<tr>
<td><strong>Zone 1 – Santiago Creek Edge</strong></td>
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<tr>
<td><strong>Plant Species List</strong></td>
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<td><strong>Trees</strong></td>
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<tr>
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<td>Rhus integrifolia</td>
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<td>Mallow</td>
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<tr>
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<tr>
<td>Solanum xantii</td>
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### Groundcovers

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<tr>
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<tr>
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### Grasses

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<td>Hordeum californicum</td>
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<tr>
<td>Muhlenbergia rigens</td>
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<tr>
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### Zone 2 – Community Streetscape/Trails/Edges

#### Plant Species List

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<tr>
<td><em>Quercus agrifolia</em></td>
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<tr>
<td><em>Quercus engelmanni</em></td>
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<tr>
<td><em>Quercus ilex</em></td>
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<tr>
<td><em>Quercus suber</em></td>
<td>Cork Oak</td>
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<tr>
<td><em>Quercus virginiana</em></td>
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<tr>
<td><strong>Shrubs</strong></td>
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</tr>
<tr>
<td><em>Arbutus unedo</em></td>
<td>Strawberry Tree</td>
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<tr>
<td><em>Artemesia pycnocephala</em></td>
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### Zone 3 – Community Landscape

#### Plant Species List

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<tr>
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<tr>
<td><em>Arbutus unedo</em></td>
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<td><em>Pinus pinea</em></td>
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<td><em>Yucca whipplei</em></td>
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<td><em>Distictis buccinatoria</em></td>
<td>Blood-red Trumpet Vine</td>
</tr>
<tr>
<td>Encelia spp.</td>
<td>Encelia</td>
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<td>----------------------</td>
<td>--------------------------------</td>
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<td>Epilobium canum</td>
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<tr>
<td>Escallonia spp.</td>
<td>Escallonia</td>
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<td>Feijoa sellowiana</td>
<td>Pineapple Guava</td>
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<td>Fremontodendron spp.</td>
<td>Flannel Bush</td>
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<td>Galvezia speciosa</td>
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<td>Silktassel</td>
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<tr>
<td>Grevillea spp.</td>
<td>Greville</td>
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<td>Hesperaloe</td>
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<td>Heteromeles arbutifolia</td>
<td>Toyon</td>
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<tr>
<td>Hemerocallis spp.</td>
<td>Daylily</td>
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<td>Hesperaloe spp.</td>
<td>Hesperaloe</td>
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<td>Hemerocallis spp.</td>
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<td>Heuchera spp.</td>
<td>Coral Bells</td>
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<td>Bladderpod</td>
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<tr>
<td>Lavatera spp.</td>
<td>Tree Mallow</td>
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<td>Ligustrum japonica 'Texanum'</td>
<td>Japanese Privet</td>
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<tr>
<td>Liriope spp.</td>
<td>Lily Turf</td>
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<td>Lotus scoparius</td>
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<td>Malosma laurina</td>
<td>Laurel Sumac</td>
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<td>Nandina domestica</td>
<td>Heavenly Bamboo</td>
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<td>Oenothera californica</td>
<td>California Evening Primrose</td>
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<tr>
<td>Oenothera hookeri</td>
<td>Hooker’s Evening Primrose</td>
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<td>Oenothera primiveria</td>
<td>Yellow Sun Cups</td>
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<td>Opuntia spp.</td>
<td>Prickly Pear</td>
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<td>Philodendron</td>
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<td>Prunus caroliniana</td>
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<td>Prunus lyonii</td>
<td>Catalina Cherry</td>
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<td>Pomegranate</td>
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<td>Indian Hawthorne</td>
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<td>Rhamnus californica</td>
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<td>Rhamnus crocea 'ilicifolia’</td>
<td>Redberry</td>
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<td>Ribes spp.</td>
<td>Currant</td>
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<td>Romneya coulteri</td>
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<td>Rhus integrifolia</td>
<td>Lemonade Berry</td>
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<td>Salvia clevelandii</td>
<td>Cleveland Sage</td>
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<td>Salvia gregii</td>
<td>Autumn Sage</td>
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<td>Salvia melifera</td>
<td>Black Sage</td>
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<td>Salvia sonomensis</td>
<td>Creeping Sage</td>
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<td>Salvia spathacea</td>
<td>Hummingbird Sage</td>
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<tr>
<td>Scientific Name</td>
<td>Common Name</td>
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<tr>
<td>------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td><strong>Sisyrinchium bellum</strong></td>
<td>Blue-Eyed Grass</td>
</tr>
<tr>
<td><strong>Solanum jasminoides</strong></td>
<td>Potato Vine</td>
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<tr>
<td><strong>Strelitzia reginae</strong></td>
<td>Bird of Paradise</td>
</tr>
<tr>
<td><strong>Trichostema lanatum</strong></td>
<td>Wolly Blue Curls</td>
</tr>
</tbody>
</table>

**Succulents**
- Agave spp.
- Aloe spp.
- Opuntia spp.

**Grasses**
- Aristida purpurea
- Carex barbara
- Carex praegracilis
- Carex spissa
- Festuca californica
- Festuca occidentalis
- Juncus patens
- Juncus polyanthemos
- Leymus tritichoides
- Muhlenbergia spp.
- Nassella pulchra
- Poa erecta

**Zone 5 – Bio-retention**

**Plant Species List**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Large Shrubs</strong></td>
<td></td>
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<tr>
<td>Aesculus californica</td>
<td>California Buckeye</td>
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<tr>
<td>Amorpha californica</td>
<td>California False Indigo</td>
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<tr>
<td>Cercis obiculata</td>
<td>Western Redbud</td>
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<tr>
<td>Cornus sericea occidentalis</td>
<td>California Dogwood</td>
</tr>
<tr>
<td>Garrya elliptica ‘James Roof’</td>
<td>Silk Tassel</td>
</tr>
<tr>
<td>Sambucus mexiana</td>
<td>Tapiro</td>
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<td>Spiraea douglasii</td>
<td>Western Spiraea</td>
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<tr>
<td><strong>Shrubs</strong></td>
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<tr>
<td>Baccharis pilularis</td>
<td>Coyote Brush</td>
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<tr>
<td>Epilobium canum ‘Catalina’</td>
<td>Island California Fuchsia</td>
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<td>Epilobium canum ‘Uvas Canyon’</td>
<td>San Jose California Fuchsia</td>
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<tr>
<td><strong>Perennials</strong></td>
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<td>Achillea millefolium</td>
<td>Yarrow</td>
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<td>Anemopsis californica</td>
<td>Yerba Mansa</td>
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<tr>
<td>Bidens laevis</td>
<td>Joaquin Sunflower</td>
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<td>Calliandra eriophylla</td>
<td>Fairy Duster</td>
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<tr>
<td><strong>Epipactis gigantea</strong></td>
<td>Stream Orchid</td>
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<tr>
<td><strong>Eschscholzia californica</strong></td>
<td>California Poppy</td>
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<tr>
<td><strong>Iris douglasiana</strong></td>
<td>Douglas Iris</td>
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<td><strong>Lilium pardalinum</strong></td>
<td>Leopard Lily</td>
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<tr>
<td><strong>Lobelia cardinalis</strong></td>
<td>Cardinal Flower</td>
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<td><strong>Mimulus cardinalis</strong></td>
<td>Scarlet Monkey Flower</td>
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<td><strong>Mimulus guttatus</strong></td>
<td>Seep Monkey Flower</td>
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<td><strong>Rudbeckia californica</strong></td>
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<td><strong>Salvia spathacea</strong></td>
<td>Hummingbird Sage</td>
</tr>
<tr>
<td><strong>Sisyrinchium bellum</strong></td>
<td>Blue-Eyed Grass</td>
</tr>
<tr>
<td><strong>Solidago californica</strong></td>
<td>California Goldenrod</td>
</tr>
</tbody>
</table>

**Grasses**

| **Carex barbara** | Santa Barbara Sedge |
| **Carex praegracilis** | California Field Sedge |
| **Carex spissa** | San Diego Sedge |
| **Elymus condensatus** ‘Wild Rye’ | Canyon Prince Wild Rye |
| **Juncus effusus** | Common Rush |
| **Juncus patens** ‘Elk Blue’ | Elk Blue California Gray Rush |
| **Muhlenbergia rigens** | Deer Gras |
| **Isolepis cernua** | Low Bulrush |
6.4.3 Community Gateways and Monuments

The Community Gateway Monument and Wayfinding Monuments are intended to define and express the visual character of the community and provide wayfinding upon arriving at and/or traveling through the project. These monuments shall create an overall language of signage that will be used throughout the Specific Plan area to provide cohesive design and directionality.

6.4.3.1 Community Gateway Monument

Located in Planning Area C the Community Gateway Monument announces the arrival to the Trails at Santiago Creek and is the main threshold from Santiago Canyon Road. In conjunction with the Handy Creek Linear Park this gateway visually links the community’s neighborhoods in Planning Area C to the Greenway/Open Space and Santiago Creek environs in Planning Area B and sets the tone for the community at large. Materials, finishes, and scale of monumentation should embrace the quasi-rural equestrian theme evident in this part of the City of Orange.

Materials used in the community gateway will reflect that found in the surrounding neighborhoods and will include some combination of heavy timbers, river rock, stone veneer, brick and natural metal finishes.

Key Community Gateway elements include:

- Enhanced vehicular paving at the community entry
- Connections to the multi-use recreation trail along Santiago Canyon Road and in the Handy Creek Linear Park
- Community pilasters for threshold experience
- Low mounding shrubs in foreground with layered shrubs and tall grasses in the background planted in a natural-like manner
- A mixture of deciduous and evergreen trees along the vehicular corridor
- Materials and finishes to complement the project and the surrounding area.

All Gateway Monumentation and associated landscape massing shall comply with the City of Orange vehicular line-of-sight regulation standards.

Please refer to Exhibit 6.4, Community Trails, Nodes and Monumentation, and Exhibit 6.5, Community Gateway Monumentation.

6.4.3.2 Wayfinding Monuments

The Community Wayfinding Monuments will be comprised of a series of signs, markers, pilasters, and monuments that assist with vehicular, equestrian, and pedestrian circulation throughout the site while maintaining the quality and character of the community. The
Wayfinding Monuments shall be used to call out amenities within the community such as connections to the existing Mabury Ranch Trail and new amenities and connections along the proposed trail network traversing Planning Area A and Planning Area B open spaces. Acceptable materials for Wayfinding Monuments include: wood, stone, metal, and brick.

Please refer to Exhibit 6.6, Wayfinding Signage Concepts.

6.4.4 Walkways and Trails

As the project name suggests, the Trails at Santiago Creek shall promote a system of walkways and multi-use recreation trails for walking/hiking, bicycling and horseback riding. In Planning Area A and Planning Area B multi-use recreation trails shall connect to the existing recreation trail along Santiago Canyon Road east of the project site, and to the existing Mabury Ranch Trail along the Specific Plan area’s northerly boundary. Trail connectivity shall be coordinated with the City of Orange.

Within Planning Area C a network of sidewalks and trail paseos will provide connectivity to the open space trail network in Planning Area A and Planning Area B. Sidewalks will be constructed per City of Orange Standard Plans 118-121. As noted on Standard Plan 118 concrete shall be 520-C-2500. Trail paseos will be constructed of decomposed granite or similar. Trail paseos connecting to Santiago Canyon Road will be constructed to support vehicle weight and comply with the Orange Fire Code and associated guidelines.

6.4.4.1 Sidewalks

Sidewalks shall be built as per City of Orange standards. Pedestrian and bicycle access from Planning Area C to the open space trail system in Planning Area A and Planning Area B is required and shall be via trail paseos.

6.4.4.2 Multi-Use Recreation Trails

Multi-Use recreation trails are intended to provide hiking, biking and equestrian movement on both year-round and seasonal trails within Planning Area A and Planning Area B and shall provide connectivity to existing and future trail systems adjacent to the project. Trails paseos will be provided from Planning Area C to the surrounding open space trail network to ensure connectivity and the interface of lands uses.

6.4.4.3 Trail Materials

Due to shared use of the project’s trails by hikers, bicyclists and equestrians, a consistent and durable material that allows for the various functions is required. The multi-use recreation trails will consist of a minimum of 10’ wide compacted, decomposed granite path with thickened edges. Additional furnishings will be located along the trails in
designated Resting Areas and may include benches, picnic tables, bike racks, trash receptacles and equestrian hitches.

Please refer to Exhibit 6.7, Multi-Use Recreation Trails.

6.4.4.4 Trailhead Portal and Trailside Resting Areas

The Trailhead Portal and the Trailside Resting Areas in Planning Area A and Planning Area B act as special gathering areas within open space trail system. These areas will provide a location for hikers and riders to gather and/or rest and enjoy the views of the open space environs. Amenities such as bike racks, equestrian hitch posts, benches, information kiosks and shade shelters shall be provided at the trailhead and throughout the site at the trailside resting areas.

Please refer to Exhibit 6.8, Trailhead Perspective.

6.4.4.5 Handy Creek Linear Park (Planning Area B)

The linear park in Planning Area B set within the Handy Creek Easement will provide connectivity to the open space trail system from the community entry and signalized intersection at Santiago Canyon Road/Nicky Way, and from the residential neighborhoods in Planning Area C. Due to the Handy Creek easement/culvert, planting is limited to grasses, low shrubs, and groundcovers. Trees are encouraged between the easement and residential edge to promote screening and visual interest in the linear park. Shade structures and benches maybe installed outside of the drainage easements, as well as turf areas.

6.4.4.6 Water Quality Basins and Features

All water quality basins and other project biofiltration water quality features shall be designed to be aesthetic seamless components to the project. Tall grasses and low shrubs will be planted to soften edge conditions and create seamless transitions between water quality features and adjacent environments in Planning Area B and Planning Area C.

6.4.5 Streetscapes

Streetscapes are intended to visually support the community’s distinctive character. Landscape treatments in curbside parkways and street edges are major components of the Trails at Santiago Creek landscape plan. The primary function of these areas is to convey the immediate impression of the overall community image, provide primary pedestrian and circulation routes, and provide a landscape interface between traffic corridors and adjacent land uses. For example, the white 3-rung split rail fence along East Santiago Canyon Road will be continued at the street frontage of
The Trails at Santiago Creek Specific Plan

6.0 Design Guidelines

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the project. This will maintain and enhance the equestrian character for which the neighborhood is known.

As part of the program design, all internal local streets within Planning Area C will be public and designed per the City of Orange Standard Plan No. 106, Case I and Case II. Street tree spacing shall be as per Section 6.4.5.3 of this Specific Plan. Street lighting will meet the City’s lumens standards.

East Santiago Canyon Road will be landscaped to meet and exceed the City of Orange Municipal Code standards. A 6-foot wide landscape parkway for tree, shrub and groundcover plantings is provided between the 10-foot multi-use trail and East Santiago Canyon Road. Canopy trees are proposed within the parkway, thus reinforcing the quasi-rural theme while ensuring that there is neither visual obstruction of project addressing nor the vision of motorists or pedestrians. Where the thematic community sound wall will exist there will be a setback of 4-feet to 18-feet from the multi-use trail (Trail A) pending terrain conditions, allowing for trees, shrubs and ground cover to be planted to accent the wall, soften the development edge and further reinforce the quasi-rural theme of the surrounding area and Orange Park Acres. Please refer Exhibit 4.12, Street Cross-Sections and Chapter 6, Section 6.4.10.4 for more detailed information.

6.4.5.1 E. Santiago Canyon Road

East Santiago Canyon Road is a four lane divided roadway along the southern boundary of the project site. This street shall be landscaped according to the City of Orange Municipal Code standards and will be complimentary to the existing streetscape to the east. Key design elements include:

- Multiple height (vertical and horizontal) street trees designed to relate to pedestrian and vehicular scales, and the adjacent residential architecture.
- Vertical screening between the road and the residential neighborhood (Planning Area C).
- 6’ wide minimum parkway between the street curb and trail edge planted with drifts of shrubs and groundcovers.
- 10’ wide Recreation Trail tread and split rail equestrian fencing to match the existing condition east of the project.
- Community sound wall adjacent to the residential neighborhood (Planning Area C) with vine and shrub plantings to soften its presence.
- Proposed installation of street lights per the City standards and lighting design policy.

Please refer to Exhibit 6.9, East Santiago Canyon Road Enhancements.
6.4.5.2 Main Entry Road

Landscape forms shall be informal, reflective of the project’s quasi-rural setting, and respectful of the below grade drainage easement and related constraints. The design shall promote pedestrian connectivity. Due to the Handy Creek culverts below the street, trees will not be permitted within the easement. Evergreen canopy trees are encouraged immediately adjacent to the drainage easement with drifts of shrubs and groundcovers. Key design elements include:

- 5’ curb separated concrete sidewalk on both side of the road.
- 7’ wide parkways on both sides of the road.
- 10’ wide Trail F separated from the sidewalk by a 10’ parkway
- Community tubular steel fence or block wall at the residential edges.
- Shrubs, grasses and groundcover planted in natural drifts in the parkways.
- Screening shrubs and vertical screen tree masses along the residential edges.
- Street trees planted in the parkway where applicable due to existing drainage easements.
- Enhanced vehicular paving at trail crossings.
- Equestrian Crossing Demand Light
- A minimum 8’ wide raised landscape median separating inbound and outbound lanes.

Please refer to Exhibit 6.10, Community Entry Road Enhancements and Exhibit 6.11, Equestrian Crossing Demand Light.

6.4.5.3 Local (Residential) Streets

Local streets are within Planning Area C and shall be designed as per City of Orange Standard Plan No. 106, Case I and Case II. Curb adjacent landscape parkways will be increased from 3 feet to 5 feet to allow for street tree plantings within the parkway. This has been discussed with City planning staff and confirmed as acceptable within the public street standard. These streets incorporate design constraints such as driveways, therefore the continuity of the street character is essential to establish a safe pedestrian friendly environment. Key design elements include:

- One (1) canopy tree will be required to be placed within the curb adjacent parkway of each residential lot within Planning Area C to enhance the neighborhood streetscape and create the appropriate scale for the residential street, thus encouraging slower vehicular travel and providing an enjoyable pedestrian experience.
- Curb separated sidewalks with shrub and/or groundcover plantings in parkway.
- Upgraded light standards with pedestrian scaled dimensions.
Landscape design to retain small event storm water and minimize or eliminate runoff where possible.

Please refer to Exhibit 6.12, Local Residential Street Enhancements.

6.4.6 Perimeter Conditions

The Specific Plan area has a variety of perimeter conditions. The primary goal is to establish visual continuity in the landscape with the surrounding areas and providing a sense of security.

6.4.6.1 Mabury Ranch

Mabury Ranch is a single-family detached neighborhood to the north of the Trails at Santiago Creek. Planning Area A Greenway Open Space is adjacent to this neighborhood. Mabury Ranch Trail currently exists along the south side of Mabury Ave with a wooden split rail fence separating the recreation trail from the street and its curb adjacent sidewalk. An existing chain link fence denotes the northerly property line of the project and separates the existing recreation trail from the adjacent open space.

There currently exist four (4) openings in the split rail fence to allow for trail access as follows:
- At the intersection of Lassen Blvd. and E. Mabury Ave.
- At the intersection of Yellowstone Blvd. and E. Mabury Ave.
- Between Yellowstone Blvd. and Orange Park Blvd.
- At the east end of E. Mabury Ave. at Orange Park Blvd.

The existing chain link fence allows for restricted/controlled access of Orange County Flood control at the intersection of Yellowstone Blvd. and E. Mabury Avenue.

Representatives from Mabury Ranch have indicated their desire to have limited access from Mabury Ave. to Planning Area A, the Greenway Open Space and associated trail network by retaining the existing chain link fence or installing something similar. Therefore, following approval of this Specific Plan and prior to Site Plan and Tentative Tract Map submittal, the final design of the Mabury Ranch edge condition will be accomplished via a collaborative effort involving representatives of Mabury Ranch, the City of Orange, appropriate trail committees and the project representatives.

Please refer to Exhibit 6.13, Perimeter Condition, Mabury Ranch.

6.4.6.2 The Reserve

The Reserve is a single-family gated neighborhood adjacent to and east of the Trails at Santiago Creek. This neighborhood is situated at a higher elevation with a planted slope
extending into Planning Area B. Existing fencing conditions at the property line will remain in place. As part of open space improvements the existing slope landscape will be enhanced with native vegetation as necessary.

Please refer to Exhibit 6.14, Perimeter Condition, The Reserve.

6.4.6.3 Vacant County Owned Parcel

This area is currently a vacant lot owned by the County of Orange with no defining characteristics other than the methane monitoring and extraction system. Planning Area C, Low Density Single-Family Detached Residential, is adjacent to the county owned parcel. A thematic community block wall will be installed along the property line between the county owned property and Planning Area C to allow future residents at the Trails at Santiago Creek privacy and security from future uses on the adjacent parcel.

Please refer to Section 6.4.10.4, Material Options, for a further description of the community wall and Exhibit 6.15, Perimeter Condition, Vacant County Owned Parcel.

6.4.7 Open Space

The Trails at Santiago Creek’s open space consists of 68.5 acres covering 62.7% of the project area and is home to a variety of plant communities and habitats. Comprised of varying topographic conditions and bisected by Santiago Creek, the open space is intended to remain as a natural environment, upgraded and enhanced in those areas which were previously disturbed, and available for use by the public for passive recreational enjoyment via a network of multi-use recreational trails.

6.4.7.1 Planning Area A – Greenway Open Space and Santiago Creek Environs

The greenway open space and Santiago Creek environs that comprise Planning Area A are intended to be maintained in their natural condition and will undergo selective invasive plant removal to support the vitality of the greenway’s natural habitats. Areas that have been disturbed by the sand and gravel operations and maintenance, historic to the site, will be restored with native plant materials and grasses. Debris and rubble associated with the sand and gravel operations will be removed. Multi-use recreation trails with decomposed granite surfaces (or similar) will traverse this planning area and connect to existing and future trails adjacent to the site, thus becoming part of the City and County’s trail system. A bridge spanning the creek environs will provide a crossing for hikers, bicyclist and horseback riders.
6.4.7.2 Planning Area B – Grasslands

The grasslands open space area is intended to be just that, an open meadow-like area. It may contain a few "focal" tree groupings and shrub massings set in the meadow, but the majority of the trees and other plantings will be located at the edges of the planning area. Visible from Santiago Canyon Road, existing and proposed residences and from the greenway/open space, the prevailing image is intended to be that of a carpet of native grass laid over the topography. The project’s trailhead will accent the grassland area and be the signature portal to the project’s network of multi-use recreational trails.

Within Planning Area B the managed vegetation/fuel modification zone is located south of Santiago Creek bordering the north and east boundaries of Planning Area C and acts as a vegetative buffer between the open space and proposed residential neighborhood. This 130-foot wide buffer zone will be comprised of plantings that are compatible with onsite plant communities while complying with fuel management policies as per the Orange Fire Code and associated guidelines. The managed vegetation and fuel modification zone shall comply with City of Orange standards. A 20-foot wide trail with an all-weather surface and constructed to carry vehicle weight will parallel the north side of Planning Area C to provide maintenance and emergency vehicle access.

Please refer to Section 6.4.17 for a detailed description of the Conceptual Fuel Modification Plan.

6.4.8 Residential Landscape – Planning Area C

Landscape plays an important role in supporting the quasi-rural theme of the residential area within the Trails at Santiago Creek. It is intended that the landscape be compatible in character with the architectural styles of the homes, compatible with the landscape of the surrounding open space, and be in keeping with the character of the City of Orange and Orange Park Acres.

Key elements of the landscape within the single-family detached residential neighborhood will include:

- Natural colors such as browns and tans and materials such as wood and stone drawn from the site’s context.
- Street trees that provide for shade covered sidewalks.
- The use of both evergreen and deciduous plant materials.
- Walls and fences as described in Section 6.4.10.
- Landscape paseos providing trail connections to the surrounding multi-use recreation trail network within the project’s open space areas.
Landscape criteria within the residential neighborhood includes:
- One 24” box tree minimum shall be planted per home in the front yard. Tree location shall be carefully considered in relationship to street tree location.
- For each planting area, finished grades of landscaping shall be lowered 1” to 2” below the mulch and curb to avoid runoff from the area.
- Refer to plant palette for suggested plant material (Table 6.1).

6.4.9 Irrigation

6.4.9.1 Irrigation Systems

Private residential lot landscaping is required to have irrigation to sustain the health and maintenance of the planted materials and will be operated and maintained by individual homeowners. The community landscaping irrigation systems will control the public areas and will be maintained by the Homeowner’s Association.

6.4.9.2 Hydrozones

All community landscaping should use hydrozones, areas that contain similar water-use plants on a valve, to allow for best watering practices. Keeping similar water-use plants together also assists with the health of the plants and allows water amount adjustments in times of water ordinance changes.

6.4.9.3 Drip Irrigation

All residential landscaping will use drip irrigation to better manage the amount and flow of water to the site. Any damage to the drip irrigation lines should be reported immediately. No overhead spray heads are to be used on a residential design.

6.4.9.4 Temporary and Establishment Period Irrigation

Temporary irrigation and Establishment period irrigation are systems designed to be used for a designated amount of time and then to be turned off. Areas such as the Greenway and Santiago Creek Environs will have areas temporary irrigation systems. These temporary or establishment period irrigation systems may use overhead spray heads as designed within the City of Oranges water standards.

Please refer to Exhibit 6.16, Irrigation Water Use Plan, Table 6.2A, Irrigation Water Use Calculations, Non-Residential Zones, Table 6.2B, Irrigation Water Use Calculations, Typical 8,000 square feet Residential Lot, Table 6.2C, Irrigation Water Use Table – Average 9,200 square feet Residential Lot and Table 6.2D, Irrigation Water Use Table – Average 10,000 square feet Residential Lot.
6.4.10 Fences and Walls

Fences and walls denote the boundaries between private residential areas in Planning Area C and the public open space and trail areas in Planning Area A and Planning Area B, as well as denoting some of the boundaries of the Specific Plan area. Fences and walls help to create a vocabulary that other site furnishings and amenities can reflect. Please refer to Exhibit 6.17, Wall and Fence Plan, and Exhibit 6.18, Character Images - Walls and Fences, reflective of the descriptions below.

6.4.10.1 Theme Fencing

Theme fencing for the Trails at Santiago Creek shall reflect the equestrian centric character of the community and surrounding areas. This rail fencing shall match the existing rail fencing along East Santiago Canyon Road and along East Mabury Avenue.

6.4.10.2 Community Walls

Perimeter walls consist of solid walls, view fences and accent walls. Thematic Community Walls exposed to heightened public view or in strategic high traffic areas should be solid to allow for privacy for the proposed residential lots.

When a large grade change is experienced over a portion of wall or fence, the overall specified height should be maintained. In general, walls and fences will step down with the grade to accommodate grade changes.

Please refer to Section 6.4.10.4, Material Options, for a further description of the Community Walls.

6.4.10.3 Residential Fences and Walls

The homeowner is responsible for the structural integrity of all private/product walls and fences located on their residential lot. Absolutely no additional structures are to be mounted or affixed to the property line wall. When adhering vine connectors to the wall, silicone adhesive should be used rather than screws drilled into the wall. Loose blocks, caps or veneer will be the maintenance responsibility of the homeowner. Graffiti removal along the exterior side of the private wall shall be the responsibility of the homeowner, with the exception of lots along the perimeter of the site. In these instances, the Home Owners Association will be responsible for the Community Walls (project perimeter block walls). The Home Owners Association will also be responsible for Community Pilasters and any Community Monument Walls.

6.4.10.4 Material Options

- Perimeter Community Walls: 8” W x 8”H x 16” Precision or one-side Split face, integral colored block to be used for block walls. When a one-side Split face
block wall is used, the wall is to be built with split face side facing the public viewed side. Perimeter Community Wall to have a precision block cap, brick cap, tile cap, or pre-cast cap to match pilasters and monumentation materials.

- Enhanced Community Walls: Enhanced Community Walls are to be constructed no less than 6” and no more than 12” taller than Perimeter Community or Product Walls. Enhanced walls may be finished with thin stone veneer, tile, brick, or a combination of these materials.

- Privacy or Product Walls: Privacy or Product walls/fences are interior and used to separate homeowner yards. These walls are to be 8” W x 8”H x 16” Precision integral colored block with precision block cap, brick cap, tile cap, or pre-cast cap to match perimeter block wall.

- Privacy or Product Fences: The fences to be full height vinyl fence in community approved color, with full height vinyl or tubular steel gate where applicable.

- Pilasters: Block pilasters are to match Perimeter Community Walls in color, style of block, and selection of cap material. Pilasters may be used as part of the wayfinding language of the community. Pilasters may be enhanced with thin stone veneer, tile, brick enhancements or signage to match Enhanced Community Walls or Community Gateway Monuments. Pilasters are to be constructed no less than 6” and no more than 12” taller than adjacent Perimeter Community, Private/Product or Enhanced Community Walls.

- View Fence: View fences shall be used at the rear and side yard location when a lot is adjacent to open space planning areas (Planning Areas A and B). View fences shall consist of full height Tubular Steel Fence or Block and Tubular Steel combo walls. The block base of combo walls shall match block size, type, and color of Perimeter/Community Walls. Block base of combo walls may receive a veneer to match walls and pilasters within the community. All tubular steel fence used within the community shall be painted to match pre-approved community colors.

- Theme Fence: Community Theme Fence to consist of vinyl 2 or 3 rail fence in enhanced community areas. These rail fences shall have finished caps on posts and end conditions, or terminations. These rail fences shall match the height, color, and material of rail fencing existing along East Santiago Canyon Road and East Mabury Avenue.
• Retaining Walls: Retaining walls, when required, shall be constructed of the same materials and color as the privacy walls and shall be built to the height determined by the project engineer.

6.4.10.5 Prohibited Materials

Painted or unfinished CMU block (standard grey concrete block) or wood fence/gates are not permitted within the Trails at Santiago Creek.

6.4.10.6 Height

Product walls and Perimeter Community walls shall be limited to six feet in height, as measured from the highest elevation of land contiguous to the fence, and ten feet as measured from the lowest elevation contiguous to the fence, whichever is less. If additional height is needed due to retaining conditions, a view fence may be used atop the solid wall or walls may be terraced.

6.4.11 Paving

Paving design is important in reinforcing the character of the community. The concept is to create a sense of quality while enhancing the pedestrian and vehicular experience. For water quality purposes, the use of porous concrete and pervious pavers or other pervious alternatives to traditional concrete shall be used and coordinated with the Project Civil Engineer where feasible.

• Enhanced paving shall be used to celebrate project entries, vehicular thresholds, pedestrian nodes, etc. Enhanced paving shall also be used to bring focus and attention to areas where pedestrian traffic and vehicular traffic intersect.
• Enhanced paving shall include: stone, brick, pavers, exposed aggregate concrete, colored and textured concrete.
• Stamped concrete and stamped asphalt paving are not permitted.

6.4.12 Mailboxes

Mailboxes within the Trails at Santiago Creek will be located in groupings or clusters (“gang” boxes) at specific locations within the neighborhood as approved by the United States Postal Service (USPS). The community mailboxes shall meet all requirements of and be approved the USPS.

• Mailbox groupings shall be located near available short-term parking and must meet accessibility standards
• All mailbox groupings/clusters will be secured to a concrete pad meeting the USPS size requirements
• All mailboxes shall have a powder coated finish to match street light and site furniture
• When cluster boxes such as “gang” boxes are used, structures shall be constructed around the box units to create a more substantial feel while integrating materials from the Trails at Santiago Creek pallet
• These structures surrounding box units shall match the architectural style of the community and shall have similar finishes such as stone or brick

Please refer to Exhibit 6.19, Character Images - Mailboxes.

6.4.13 Trash Enclosures

Trash receptacles and trash enclosures play an important role within the Trails at Santiago Creek. Removable, personal trash receptacles are intended for use by the private homeowners. These personal trash receptacles are to be approved by the local trash collection company/City of Orange and shall be maintained by the homeowner.

• Personal trash receptacles shall include: trash, recycling and green waste containers issued to each homeowner
• Personal trash receptacles are to be stored in garages or side yards and away from public view

Other, permanent, trash receptacles are to be stand-alone trash container units which can be placed for the general use of pedestrians within the residential and open space portions of the project.

• Public trash receptacles shall be placed so as not to obstruct trails or accessible pathways
• Publicly placed trash receptacles shall be constructed of durable materials that match the color, finish and style of other proposed site furnishings
• Public trash receptacles are to be permanently secured in place for ease of use along recreation trails and at other identified locations throughout the project site
• Public trash receptacles are to be constructed for ease of waste removal by contracted personnel.

Larger, permanent trash enclosure structures are to be used to screen dumpster containers from general view, if such dumpsters are deemed necessary. The trash enclosures must be easily accessible by contracted trash collection personnel and machinery while meeting City of Orange standards.

• Trash enclosure structures shall be architecturally compatible with the project in color, finish and style
• The use of screen walls, enhanced gates and trellises on top are encouraged to further match the architectural style
• Large shrubs, grasses, vines, and espaliers shall be used to soften the visual impact of the trash enclosure

6.4.14 Site Furnishings

Site furnishings in the common areas play a large role in the usable effectiveness of an area. The selected site furnishings should represent and extension of other common area amenities such as monument, signs, and street lighting. The various pieces that make up the site furnishings shall coordinate in design, style, color, and material with the principal neighborhood themes and shall reinforce the overall feel of the community. Site furnishings refers to amenities such as benches, picnic tables, residential post lighting, bollard lighting, street signs, trash receptacles, drinking fountains, bike racks, and pet waste stations.

• All site furnishings shall be constructed of durable material that enhance the community design elements
• Wherever possible, site furnishings should be selected from a specific manufacturer line to assure cohesiveness of style and finish
• Materials such as powder-coated or finished metals, wood, brick, and stone shall be used along with any anti-graffiti measures to finishes
• Site furnishings shall be permanently mounted to solid surfaces and footings
• Placement of site furnishings shall not obstruct or impede any path of accessibility but should be located at gathering points within the common space areas

Please refer to Exhibit 6.20, Character Images - Site Furnishings.

6.4.15 Community Lighting

Community lighting within the residential neighborhoods will provide adequate illumination while reducing the amount of light overspill on the site. The use of directed light fixtures will aid in minimizing the amount of sky glow and preserving the night sky.

• Light fixture style shall draw from the design vocabulary of community gateway and entry monumentation
• Lighting levels and placement shall be used to reinforce the rural character of the site
• Intersections and pedestrian crossing of vehicular path ways shall be higher levels of illumination to provide safe interactions
• All light fixtures shall be automatically controlled
• Uplights shall not be used. Directed lights with appropriate cut off measures may be used at entryways and monumentation
• LED lighting is highly encouraged throughout the site
All policies within the City of Orange lighting requirements are to be followed within the project site.

6.4.16 Screening

Screening is an important part of the overall community landscape design and plays a large role in how the community is experienced. Screening shall be used when aesthetically unappealing elements are otherwise viewable from the common areas. Plant material, earthen berming/mounding, walls and other structures may be used in combination to provide visual screening as needed throughout the community. Maintaining views at entrances for security or law enforcement personnel is encouraged.

- Large scale items such as trash enclosures shall be screened using a combination of built walls and plant materials
- Utilities located within planting areas including gas meter, electrical boxes, transformers, and irrigation components shall be screened with plant materials while maintaining accessibility to the utilities by the appropriate agency
- Utilities located adjacent to buildings and built structures shall be screened with a combination of walls and planting

6.4.17 Conceptual Fuel Modification

Fuel modification is defined by controlling the types, density, and moisture content of plants. It consists of a strip of land where combustible vegetation has been removed and/or modified in order to provide a reasonable level of protection to structures from wildland fires. Fuel modification zones are to be designed, as per the Orange Fire Code, Section 320 (per Orange Municipal Code Section 15.32.020). The intent of these zones is to create breaks between wildland areas and structures (specifically homes). The Trails at Santiago Creek is in a Climate and Topographic Very High Fire Hazard Zone as defined in O.M.C. Section 15.36.010. Fuel modification zones shall also comply with the vegetation clearance requirements prescribed in the California Public Resource Code 4291 California Government Code Section 51182. Within the Project site a 150’ fuel modification zone has been established along the northern and eastern edge of Planning Area C of which a 20’ wet zone is located within the rear yard of the residential lots abutting the fuel modification zone.

The project applicant will submitted a conceptual fuel modification plan to the City Fire Department for review as part of the Specific Plan process. Detailed fuel modification plans will be required for submittal and review by the City Fire Department prior to issuance of building permits.

Specific discussions with the City of Orange Fire Department will take place during the Major Site Plan Review process (as well as sub-level project specific reviews) for the City of Orange.
All new construction in the very high fire hazard zone will need to comply with the California Fire and Building Codes for local agency very high fire hazard severity zones unless otherwise approved by the City of Orange Fire Department. The project landscaping will need to consist of plants from the approved fuel modification planting list, specifically in Zone 1. Fuel modification plans are to be checked and approved by the Fire in accordance with City of Orange Ordinance 12-10 Section 319, Fuel Modification Requirements for New Construction.

During the Major Site Plan review process for the project, a Fire Master Plan will be required. At this time, City Fire staff will review the design and will require emergency vehicle access, per City of Orange Fire Department standards, to the Santiago Creek area. A water infrastructure plan for fire-fighter purposes will also be required.

Upon dedication of the Specific Plan’s open space in Planning Areas A and B to the City of Orange, County of Orange or other entity the applicant/developer will retain an easement for fuel modification zone maintenance at the time of final mapping.

Please refer to Exhibit 6.21, Conceptual Fuel Modification Plan, and Exhibit 6.22, Conceptual Fuel Modification Section.

6.4.18 Maintenance

6.4.18.1 Irrigation Maintenance

State-of-the-art irrigation equipment along with the latest water management technologies and practices will be used for the Trails at Santiago Creek landscape. At installation, the irrigation system will have head-to-head coverage and designed to spray away from paving surfaces, fences and building walls. The regular maintenance of the system will be performed with the purpose of maintaining these intentional design criteria for maximum efficiency.

Backflow preventers will be tested once a year by a professional certified by the local jurisdiction of (water district, city, etc.) a contractor obtaining a valid license. Irrigation system testers shall be familiar with local agencies, cities, and counties in their area prior to testing any device. Auditors must also be familiar with any special qualification requirements or documentation that must be completed.

The automatic and weather-sensing irrigation smart controllers are to be kept clean, free of rust, and in good working condition throughout the year. During the cleaning process, the objectives are to keep the controller cabinet bases free of vegetation that contribute to rust, ensure the cabinet lids have a secure lock and are functioning to keep water out, check for wire component damage and implement any necessary insect and/or rodent control, and
lastly, confirm that seasonal irrigation schedules be posted inside each cabinet and copies made available at the Supervisor’s office.

The remote irrigation control system for the Trails at Santiago Creek will be monitored from the base station to ensure proper function of irrigation schedules and monitor potential mainline breaks. During inspection, the irrigation auditor will ensure that all schedules are properly adjusting to changing weather conditions to ensure maximum water conservation. In the instance of a mainline break, the operator will be able to shut down the system at the master control valve. The water manager will then need to be notified and repairs are then to be scheduled to get the system up and running as soon as possible. The irrigation pumping equipment should be inspected and serviced (if necessary) on a weekly basis during the watering season.

While the Trails at Santiago Creek is situated in a relatively mild climate area where the lows are on average between 43° and 48° F (6° and 9° C), extreme lows can reach as low as 27° to 34° F (-3° to 1° C). This is why during the cold weather months, all backflow preventers, valves, and exposed plumbing shall be drained and/or covered adequately to prevent damage from freezing. It is also important that the material used to insulate the plumbing devices must be installed so that it stays dry.

During inspection, particular attention should be paid to how plants are watered by the irrigation system. A newly installed landscape with young plants requires more frequent watering than older, established plants. This allows for the shallower roots of the young plants to become established over time. Shallow-rooted plants, such as lawns and certain shrubs and groundcovers, require frequent watering for short periods of time. Trees and larger shrubs require less frequent but deeper watering due to their deep root systems.

In general, drought tolerant native trees and shrubs require less water once they become established. Because much of the Trails at Santiago Creek is planted with Southern California native plants, it is important to keep in mind that natives should be watered only as often as recommended during the establishment period and some native plants require only rainfall after the first few years of growth. Inspectors should look for week wood, excessive top growth, and fungi as these are indicators of over-watering.

6.4.18.2 Plant Maintenance

Trees shall be inspected with regular visual surveillance to ensure that no limbs extend into areas that may be a hazard to traffic, pedestrians, highways, electrical utility lines, and adjacent properties. Trees and shrubs that are too close to the edge of pavement or right of way shall be trimmed or removed. Groundcovers shall be controlled to prevent spreading into pathways, sidewalks, bicycle trails, shoulders, plant basins, drainage facilities, fences, tree wells, ornamental planting areas, and other areas where groundcovers are not intended.
As plants mature, overcrowding can occur. The following criteria shall be employed when plant removal is necessary:

- Plant removal may be necessary for a continual line of sight in areas of high security concern.
- In the instance of plant damage due to traffic accidents, affected plants must be replaced in like size and species.
- Ornamental trees and shrubs that have died and are within the right-of-way shall be removed (including removal and grinding of the stump, hauling the brush, and removing the clippings).
- If multiple rows of plantings are overcrowded, the removal of front row shrubs along the walkway or roadway allows for the second row to grow with sufficient space.

Proper use of mulch material will promote conservation of soil moisture and weed prevention in planted areas. The best materials for mulch include shredded bark, compost, wood chips, green waste and only clean mulches are acceptable. Mulches containing plastics, heavy metals, trash, poisonous shredded plants, construction waste, or undesirable plant seeds are not to be used. Mulches should be placed around trees at least 6 inches away from tree trunks to prevent crown rot which can kill the plant. Obtain clean mulches from district tree crews or from local cities, municipalities, utility companies, recyclers, lumber mills, and arborists.

Tree pruning within the Trails at Santiago Creek shall follow the current ANSI A-300 standards in place at the time the work is performed. For the safety of vehicles, bicycles, and pedestrians, trees should be trimmed to maintain visibility of highway signs and safety signals. Young and newly planted trees should not be pruned unless it is for the removal of broken or damaged limbs. For deciduous trees, pruning should only be done during dormancy. Low branches of young pyramid-shaped trees should not be pruned to encourage scaffolding branch growth and a strong mature trunk.

In general, low branching and ground coverage should be encouraged in pruning of shrubs.

Please refer to Exhibit 6.23, Maintenance and Responsibility Exhibit.

**6.5 Sustainable Design Guidelines**

**6.5.1 Energy Conservation**

**6.5.1.1 Energy Conservation through Site Planning**

Appropriate building orientation is a key component of energy consumption. With proper consideration for building orientation and fenestration, a building’s energy needs can be
greatly reduced. Where feasible, the most effective way to maximize natural day light without compromising solar heat gain is to limit the amount of windows facing east/west and maximize north-facing windows. With proper shading devices on south-facing windows (such as awnings, shutters, or overhangs), summer sun can be deflected while winter sun can still infiltrate.

A good strategy for optimizing solar orientation is to situate buildings along the east/west axis to whatever extent possible. This orientation should provide more opportunities for north/south-facing windows. In addition, window placement allowing cross-ventilation through the building’s interior spaces provides the occupants with natural ventilation, thus reducing the dependency on a mechanical air conditioning system. Building orientation also affects the ability for onsite energy generation. If roof mounted solar panels are planned, south-facing roof planes will provide the most optimum solar efficiency.

The Preliminary Site Plan for the Trails at Santiago Creek (Exhibit 4.6) has oriented as many lots as possible on an east/west axis given the physical site dimensions and constraints of Planning Area C and the residential lot programs.

6.5.1.2 Energy Conservation through Building Design and Technologies

In addition to building orientation, the most effective way to conserve energy use is to integrate measures which use less energy. This can be achieved by creating a tight building envelope. Since temperatures remain more stable within a tight building envelope rather than a leaky one, less energy is necessary to heat and cool the building. The California Building Code - Energy Code (Title 24, Part 6) establishes a baseline for energy efficiency. The builder(s) at The Trails of Santiago Creek are asked to go above and beyond the standards set forth in Title 24 by incorporating additional elements of energy efficient design. A minimum 5% energy efficiency baseline will be required for all builders within the Trails at Santiago Creek, which is more than is required by Title 24. Such energy efficient elements include, but are not limited to:

- Increased insulation/R-value in walls, ceilings, and roofs.
- Improved installation of insulation.
- Radiant barrier with low emittance.
- Windows with low U-value.
- Overhangs or other shading device to limit solar heat gain.
- Roofs with high Solar Reflectance Index (SRI).
- Proper HVAC and duct sizing (not oversized).
- Improved duct sealing (limited leakage).
- Improved duct insulation.
• Increased thermal mass.
• Energy Star rate individual buildings.

When a tight building envelope has been designed, builders shall incorporate additional measures geared to reduce energy consumption during the operation of the building. This includes energy efficient appliances and lighting such as:
• Improved hot water heating efficiencies (tankless or solar).
• Improved water distribution (re-circulating or parallel piping to limit point-source distance).

Another method of improving energy efficiency, and practical for this location is the incorporation of photovoltaic systems (solar panels, PV tile, etc.) into the building design. This is encouraged and should conform to the guidelines per Section 6.3.2.3 of this document.

6.5.1.3 Energy Conservation through Landscape Practices

Efficient energy use in the landscape at the Trails at Santiago Creek is maximized by matching plant material with the regional climate and microclimate. Plants on the above mentioned “Plant Material Palette” have been selected and zoned appropriately based on the location of the site and it is encouraged that they be grouped based on similar water needs. Minimal use of turf, amending existing soils for optimal nutrient and water retention and plant growth, and the use of mulches are all encouraged for the efficient function of the landscape.

In general, the Trails at Santiago Creek will practice the following energy-conserving design practices appropriate for the temperate region of Southern California as recommended by energy.gov:

• Maximize warming effects of the sun in the winter
• Maximize shade during the summer
• Deflect winter winds away from buildings with windbreaks of trees and shrubs on the north and northwest side of buildings
• Tunnel summer breezes toward the home

6.5.2 Resource Conservation

Rapid renewable resources are materials made from plants that are typically harvested within a ten-year or shorter cycle. This type of resource regenerates itself faster than the demand for the product, thus making it rapidly renewable. Good examples are bamboo flooring and wheat straw board for cabinetry.
Wherever possible, rapidly renewable materials shall be used instead of non-renewable resources such as fossil fuel-based plastics or slowly regenerating resources like old growth wood. The use of materials with recycle content is encouraged. Materials with a high recycle content should be given preference when project materials are selected.

Other building techniques which help to conserve resources include the use of engineered wood products and/or prefabricated/pre-cut lumber and lumber certified by the Forest Stewardship Council (FSC).

6.5.3 Water Conservation

6.5.3.1 Water Conservation in Homes

Water is a precious resource in Southern California. Buildings in Rio Santiago shall be designed with water conservation in mind. A minimum goal shall be a 10% reduction from the water use requirements of the California Green Building Code. Water reducing features include, but are not limited to:

- Low-flow water fixtures (showerheads and lavatory faucets).
- Low-flow kitchen faucets.
- Innovative hot water piping or hot water recirculation system.
- High-efficiency pressure assist or dual-flush toilets.
- High-efficiency clothes washer and dishwashers.

6.5.3.2 Water Conservation in the Community Landscape

Outdoor water use is a critical component to the sustainability of the Trails at Santiago Creek and is addressed with the scarcity of our natural resources in mind. In accordance with the requirements of the California Green Building Standards Code (also known as CalGreen), the Trails at Santiago Creek shall comply with current California Department of Water Resources’ Model Water Efficient Landscape Ordinance (MWELO). One of the most essential items of an efficient irrigation system is the controller. The Trails at Santiago Creek will use a remote irrigation control system which will be monitored from the base station to ensure proper function of irrigation schedules. This state-of-the art system discourages water waste by changing the irrigation schedule based on up-to-date weather conditions. This remote-control system maximizes water conservation by alerting the operator of mainline breaks allowing the system to be shut down at the master control valve in a timely manner.

In addition, proper use of mulches in planter areas will promote conservation of soil moisture. The best materials for mulch include shredded bark, compost, wood chips and green waste. Only clean mulches are acceptable and can be obtained from district tree
crews or local cities, municipalities, utility companies, recyclers, lumber mills, and arborists.

6.5.4 Indoor Air Quality

Indoor air quality is an important component of occupant health and comfort. Within the built environment of the Trails at Santiago Creek, builders should implement measures and practices which limit the amount of indoor pollutants. This includes product off-gassing (VOC’s) often found in finishes, cabinetry, flooring, paints, and adhesives. Indoor air quality measures that should be included are:

- All adhesives and sealants to conform to the VOC limits established by SCAQMD.
- Paints and coatings should meet the VOC content of the most current Green Seal Standard.
- All carpet should meet Green Label plus requirements of the Carpet and Rug Institute.
- Hard surface flooring should be compliant with the FloorScore Standard.
- Composite wood and agrifiber products (plywood, particleboard, strawboard, MDF) installed inside the building waterproofing system should contain no added urea-formaldehyde resins.

In addition, builders should incorporate filters sized appropriate to reduce particle contaminants while not compromising the efficiency of the mechanical ventilation system.

6.5.5 California Appropriate Landscape Practices

This Specific Plan shall implement sustainable landscape design practices that are California appropriate. They include but are not limited to the following practices:

- Minimize turf and hardscape areas within community common areas.
- Minimize hardscape areas which are largely impervious to water filtration.
- Situate plant material based upon solar orientation and shading from buildings.
- Install evapotranspiration weather based controllers for irrigation systems.
- Use a climate driven plant selection. (Native, Non-invasive, Drought Tolerant).
- Use low growing plant material in parkways instead of turf.
- Incorporate high efficiency irrigation (low-flow drip, weather-based controllers).
- Use Recycled water for irrigation, if available
- Minimize irrigation run-off.
- Use green waste mulch and soil amendments to retain soil moisture.
- Incorporate heat island reduction (hardscape paving materials with high solar reflectance values).
- Minimize impervious paving (include the use of porous concrete and pervious pavers or other pervious alternatives to traditional concrete).
- Purchase materials from local sources, as feasible.
Provisions for storm water management and Best Management Practices (BMPs), considering first flush pollutants and point source pollutants, shall be designed and incorporated into the design.

6.5.6 Sustainable Evaluation

Before project approval, a sustainable evaluation shall be conducted by the Community Development Director or Community Development Staff as part of the required City review process, to examine whether the builder has made an effort to incorporate sustainable practices into the development of Rio Santiago. Project approval shall not occur unless two of the following steps listed below have occurred:

1. Presentation to City staff by Builder, showcasing sustainable design techniques that will be incorporated into the project.
2. Written letter to City staff from Builder listing the sustainable elements that will be incorporated into the project.
3. A minimum of one (1) Meeting with City staff and Builder to discuss the sustainable practices that will be incorporated into the project.
Note: Plan is for diagrammatic purposes only. Final trail alignments, as well as access points from Mabury Ave, to be determined by representatives of Mabury Ranch, the City of Orange, the County of Orange and associated trail committees prior to Site Plan Review and Tentative Tract Map submittal.

Source: Summers, Murphy + Partners

Exhibit 6.4
Community Trails, Nodes and Monument Plan
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Source: Summers, Murphy + Partners
Wayfinding Signage Concepts

The Trails at Santiago Creek Specific Plan
City of Orange, CA
Source: Summers, Murphy + Partners

Exhibit 6.7
Multi-Use Recreation Trails
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Section

5' MIN CLASS II BIKE LANE
EAST BOUND VEHICLE LANES
MEDIAN
WESTBOUND VEHICLE LANES
5' MIN CLASS II BIKE LANE
6' MIN PARKWAY
10' TRAIL
2' MIN

E. SANTIAGO CANYON RD

Plan

PA-C LOW DENSITY RESIDENTIAL
MAIN ENTRY
TRAIL A
TRAIL A
TRAIL B
TRAIL B

Source: Summers, Murphy + Partners

Exhibit 6.9
Santiago Canyon Road Enhancements
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Source: Summers, Murphy + Partners
Local Residential Street Enhancements

The Trails at Santiago Creek Specific Plan
City of Orange, CA

Source: Summers, Murphy + Partners
Perimeter Condition - The Reserve

Exhibit 6.14

The Trails at Santiago Creek Specific Plan
City of Orange, CA
Exhibit 6.16
Irrigation Water Use Plan
The Trails at Santiago Creek Specific Plan
City of Orange, CA

Source: Summers, Murphy + Partners
## Table 6.2A - Irrigation Water Use Calculations, Non-Residential Zones

### Water Efficient Landscape Worksheet

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<thead>
<tr>
<th>Hydrozone/Planting Description</th>
<th>ETWU Requirement</th>
<th>ETWU Requirement</th>
<th>ETWU Requirement</th>
<th>MAWA Requirement</th>
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<tr>
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<td>Plant Factor (PF)</td>
<td>Irrigation Method</td>
<td>Irrigation Efficiency (IE)</td>
<td>ETAF (PS/E)</td>
<td>Landscape Area (LA) (sq. ft.)</td>
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<td>1) PA-A (40% irrigated)</td>
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<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Estimated Total Water Use (ETUW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Allowed Water Allowance (MAWA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ETWU must be Less than MAWA**

**ETWU will be "0" for 100% recycled water systems**

### Plant Water Use Type

<table>
<thead>
<tr>
<th>Plant Water Use Type</th>
<th>Plant Factor</th>
<th>Irrigation Method</th>
<th>Irrigation Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>very low</td>
<td>0.0-0.1</td>
<td>overhead spray</td>
<td>0.75</td>
</tr>
<tr>
<td>low</td>
<td>0.1-0.3</td>
<td>drip</td>
<td>0.81</td>
</tr>
<tr>
<td>medium</td>
<td>0.4-0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>0.7-1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAWA (annual gallons allowed) = (Eto) (0.62) [(ETAF x LA) + (1-ETAF) x SLA]**

Where 0.62 is a conversion factor that converts acre-inches per acre/year to gallons per sq. ft./year. LA is the total landscape area in sq. ft., SLA is the total special landscape area in sq. ft., and ETAF is 0.55 for residential areas and 0.45 for non-residential areas.

### ETAF Calculations

**Regular Landscape Areas**

| Total ETAF x Area          | 749,505 |
| Total Area                 | 1,799,033 |
| Average ETAF               | 0.42    |

**All Landscape Areas**

| Total ETAF x Area          | 749,505 |
| Total Area                 | 1,799,033 |
| Sitewide ETAF              | 0.42    |

Source: Summers, Murphy + Partners
# Table 6.2B - Irrigation Water Use Calculations, Typical 8,000SF Residential Lot

<table>
<thead>
<tr>
<th>Water Efficient Landscape Worksheet</th>
<th>49.6 Orange</th>
<th>8000sf lot</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reference Evapotranspiration (ETo)</strong></td>
<td><strong>ETWU</strong></td>
<td><strong>ETWU</strong></td>
</tr>
<tr>
<td>Hydrozone/Planting Description</td>
<td>Plant Factor (PF)</td>
<td>Irrigation Method</td>
</tr>
<tr>
<td>Regular Landscape Areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
</tr>
<tr>
<td>2) Med water use Shrubs 30%</td>
<td>0.5</td>
<td>Drip</td>
</tr>
<tr>
<td>3) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
</tr>
<tr>
<td>4) Rear Yard Lawn (30%)</td>
<td>0.8</td>
<td>Overhead Spray</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Landscape Areas (SLA): Recycled Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Low water use Shrubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Med water use Shrubs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) High water use Turf</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Total Water Use (ETWU)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Allowed Water Allowance (MAWA)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **ETWU must be Less than MAWA**
- **ETWU will be "0" for 100% recycled water systems**

### Plant Water Use Type

<table>
<thead>
<tr>
<th>Plant Water Use Type</th>
<th>Plant Factor</th>
<th>Irrigation Method</th>
<th>Irrigation Efficiency</th>
<th>% of MAWA used</th>
</tr>
</thead>
<tbody>
<tr>
<td>very low</td>
<td>0-0.1</td>
<td>overhead spray</td>
<td>0.75</td>
<td>98%</td>
</tr>
<tr>
<td>low</td>
<td>0.1-0.3</td>
<td>drip</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>0.4-0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>0.7-1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### MAWA (annual gallons allowed) = (ETo) (0.62) [(ETAF x LA) + ((1-ETAF) x SLA)]

where 0.62 is a conversion factor that converts acre-inches per acre/year to gallons per sq. ft./year. LA is the total landscape area in sq. ft., SLA is the total special landscape area in sq. ft., and ETAF is .55 for residential areas and .45 for non-residential areas.

### ETAF Calculations

**Regular Landscape Areas**

- Total ETAF x Area: 2,352
- Total Area: 4,368
- Average ETAF: 0.54

**All Landscape Areas**

- Total ETAF x Area: 2,352
- Total Area: 4,368
- Site wide ETAF: 0.54

Source: Summers, Murphy + Partners
Table 6.2C - Irrigation Water Use Calculations, Typical 9,200SF Residential Lot

<table>
<thead>
<tr>
<th>Water Efficient Landscape Worksheet</th>
<th>49.6</th>
<th>Orange</th>
<th>9,200 sf lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Evapotranspiration (ETo)</td>
<td>ETWU requirement</td>
<td>ETWU requirement</td>
<td>ETWU requirement</td>
</tr>
<tr>
<td>Hydrozone/Planting Description</td>
<td>Plant Factor</td>
<td>Irrigation Method</td>
<td>Irrigation Efficiency</td>
</tr>
<tr>
<td>Regular Landscape Areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>2) Med water use Shrubs 30%</td>
<td>0.5</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>3) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>4) Rear Yard Lawn (30%)</td>
<td>0.8</td>
<td>Overhead Spray</td>
<td>0.75</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Estimated Total Water Use (ETWU)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Allowed Water Allowance (MAWA)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special Landscape Areas (SLA): Recycled Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Low water use Shrubs</td>
</tr>
<tr>
<td>2) Med water use Shrubs</td>
</tr>
<tr>
<td>3) High water use Turf</td>
</tr>
<tr>
<td>Totals</td>
</tr>
</tbody>
</table>

| ETWU must be Less than MAWA       |
| ETWU will be "0" for 100% recycled water systems |

<table>
<thead>
<tr>
<th>Plant Water Use Type</th>
<th>Plant Factor</th>
<th>Irrigation method</th>
<th>Irrigation Efficiency</th>
<th>% of MAWA used</th>
</tr>
</thead>
<tbody>
<tr>
<td>very low</td>
<td>0-0.1</td>
<td>overhead spray</td>
<td>0.75</td>
<td>98%</td>
</tr>
<tr>
<td>low</td>
<td>0.1-0.3</td>
<td>drip</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>0.4-0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>0.7-1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MAWA (annual gallons allowed) = \((\text{ETo} \times 0.62) \times ((\text{ETAF x LA}) + ((1-\text{ETAF}) x \text{SLA}))\)

where 0.62 is a conversion factor that converts acre-inches per acre/year to gallons per sq. ft./year. LA is the total landscape area in sq. ft., SLA is the total special landscape area in sq. ft., and ETAF is 0.55 for residential areas and 0.45 for non-residential areas.

ETAF Calculations

<table>
<thead>
<tr>
<th>Regular Landscape Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total ETAF x Area</td>
</tr>
<tr>
<td>Total Area</td>
</tr>
<tr>
<td>Average ETAF</td>
</tr>
</tbody>
</table>

Lot Summary

- lot area: 9,200
- Front LA Low: 1076
- Front LA Med: 460
- Rear LA Low: 2438
- Rear LA High: 1049
- est. house: 3241
- est conc: 1139

Source: Summers, Murphy + Partners
### Table 6.2D - Irrigation Water Use Calculations, Typical 10,000SF Residential Lot

<table>
<thead>
<tr>
<th>Water Efficient Landscape Worksheet</th>
<th>49.6</th>
<th>Orange</th>
<th>10,000 sf lot</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reference Evapotranspiration (Eto)</strong></td>
<td><strong>ETWU</strong></td>
<td><strong>ETWU</strong></td>
<td><strong>ETWU</strong></td>
</tr>
<tr>
<td>Hydrozone/Planting Description</td>
<td>Plant Factor (PF)</td>
<td>Irrigation Method</td>
<td>Irrigation Efficiency (IE)</td>
</tr>
<tr>
<td><strong>Regular Landscape Areas</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>2) Med water use Shrubs 30%</td>
<td>0.5</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>3) Low water use Shrubs 70%</td>
<td>0.3</td>
<td>Drip</td>
<td>0.81</td>
</tr>
<tr>
<td>4) Rear Yard Lawn (30%)</td>
<td>0.8</td>
<td>Overhead Spray</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Landscape Areas (SLA): Recycled Water</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Low water use Shrubs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Med water use Shrubs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) High water use Turf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimated Total Water Use (ETWU)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum Allowed Water Allowance (MAWA)</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ETWU must be Less than MAWA**

ETWU will be “0” for 100% recycled water systems

<table>
<thead>
<tr>
<th>Plant Water Use Type</th>
<th>Plant Factor</th>
<th>Irrigation Method</th>
<th>Irrigation Efficiency</th>
<th>% of MAWA used</th>
</tr>
</thead>
<tbody>
<tr>
<td>very low</td>
<td>0-0.1</td>
<td>overhead spray</td>
<td>0.75</td>
<td>98%</td>
</tr>
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<td>0.1-0.3</td>
<td>drip</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>medium</td>
<td>0.4-0.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>0.7-1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MAWA (annual gallons allowed)** = \((\text{Eto}) \times (0.62) \times [(\text{ETAF} \times \text{LA}) + ((1-\text{ETAF}) \times \text{SLA})]\)

where 0.62 is a conversion factor that converts acre-inches per acre/year to gallons per sq. ft./year.
LA is the total landscape area in sq. ft., SLA is the total special landscape area in sq. ft., and ETAF is .55 for residential areas and 0.45 for non-residential areas.

**ETAF Calculations**

**Regular Landscape Areas**

| Total ETAF x Area | 2,939 |
| Total Area        | 5,460 |
| Average ETAF      | 0.54  |

**All Landscape Areas**

| Total ETAF x Area | 2,939 |
| Total Area        | 5,460 |
| Sitewide ETAF     | 0.54  |

Source: Summers, Murphy + Partners
Exhibit 6.18
Character Images: Walls and Fences
The Trails at Santiago Creek Specific Plan
City of Orange, CA

Source: Summers, Murphy + Partners
Exhibit 6.19
Character Images: Mailboxes
The Trails at Santiago Creek Specific Plan
City of Orange, CA

Source: Summers, Murphy + Partners
CHAPTER 7 – DEVELOPMENT STANDARDS

7.1 Purpose and Intent

The Trails at Santiago Creek development standards will regulate design and development within the Specific Plan area. The following regulations have been written to ensure that future development within the Trails at Santiago Creek conforms to the vision described in this Specific Plan as approved by the City Council. Concurrently with the adoption of the Trails at Santiago Creek Specific Plan by the City of Orange, a Zone Change will be approved for the Specific Plan area implement the Trails at Santiago Creek Specific Plan standards. The new zoning designations shall be:

- SP-R1-8 (Specific Plan - R1-8)
- SP-R1-10 (Specific Plan - R1-10)
- SP-RO (Specific Plan – Recreation Open Space)

When conflicts arise between the Trails at Santiago Creek Specific Plan and Title 17 of the Orange Municipal Code, the provisions of this Specific Plan shall prevail. If the Trails at Santiago Creek Specific Plan is silent, then provisions of Title 17 of the Orange Municipal Code shall prevail. The regulations of this Specific Plan shall reinforce specific site planning, architectural design, and landscape design guidelines contained in Chapter 6, Design Guidelines.

7.2 Definitions

The meaning and construction of words, phrases, titles, terms, etc. shall be the same as provided in the City of Orange Municipal Code under Chapter 17.04 “Definitions,” unless otherwise specified in each Section of the Specific Plan or in Appendix A of this Specific Plan.

7.3 Permitted Uses

All the following uses are permitted as defined herein.

7.3.1 Permitted Uses, Open Space (Planning Areas A and B)

- Multi-use trails
- Trailside rest-stops
- Trailhead, informational signage, shade shelters and kiosks and related amenities
- Storm Water and flood control improvements
- Managed vegetation and fuel modification
- Passive outdoor uses
7.3.2 **Permitted Uses, Low Density Single-Family Detached Residential (Planning Area C)**

- Accessory uses/structures including:
  - Garages.
  - Patios and patio covers; decks and balconies.
  - Accessory to primary residence (storage, garden structure, pool room and/or recreational room and greenhouses).
  - Fences.
  - Swimming pools, tennis courts, sports courts, and other similar outdoor recreational amenities.
  - Mailboxes.
  - Monument signage for residential development.
  - Model home and sales offices or trailers; temporary construction parking, offices, and facilities; real estate signs, signage indicating future development and directional signage in accordance with the City’s Municipal Code.
- Agriculture/horticulture.
- All permitted uses not referenced in Section 7.3 shall adhere to the standards of the City of Orange Municipal Code.
- Antennas, private radio/TV (A).
- Antennas, Private satellite dish (A).
- Outdoor Seating (A).
- Private recreation facility, park or open space for passive activities and swimming.
- Shade Structures (A).
- Single-Family detached residences: maximum of 129 lots.
- Small Animal keeping (per OMC).
- Temporary Garage or yard sale per OMC (A).
- Walking Paths and Trails Paseos.

*(A) Refers to Accessory Use*

### 7.4 General Provisions

#### 7.4.1 City of Orange Residential Development Standards for Low Density Single-Family Detached Residential, R1-8 and R1-10

The following development standards for Low Density Single-Family Detached Residential land uses in Planning Area C, shall be as per Title 17 of the Orange Municipal Code (OMC), Chapter 17.14 Residential Districts, Section 17.14.070 General Requirements, Table 17.14.070 Residential Development Standards R1-8 and R1-10, and associated footnotes, as provided
below for reference. For 8,000 square feet lot programs and 9,200 square feet lot programs the City of Orange Development Standards R1-8 apply. For 10,000 square feet lot programs the City of Orange Development Standards R1-10 apply. Please also refer to Exhibit 7.1, Residential Zoning Designations, Exhibit 7.2, Single Family Residential Building Setback Diagram and Exhibit 7.3, Single Family Residential Garage Setback Diagram.

**City of Orange Municipal Code Table 17.14.070**

**Residential Development Standards R1-8**

<table>
<thead>
<tr>
<th>District</th>
<th>Units Per Lot</th>
<th>Min. Lot Area (x)</th>
<th>Min. Lot Frontage (a)</th>
<th>Min. Lot Depth</th>
<th>Min. Yard Setback (b, h)</th>
<th>Max. Ht. (the less) (g)</th>
<th>Max FAR (o) or Lot Coverage (p)</th>
<th>Min. Useable OS (q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1-8</td>
<td>1</td>
<td>8,000sf.</td>
<td>60ft. (k)</td>
<td>100ft.</td>
<td>20ft. 5ft. (c) 20ft.</td>
<td>32ft. or 2-Stories</td>
<td>0.60 1,000sf.</td>
<td></td>
</tr>
</tbody>
</table>

**Residential Development Standards R1-10**

<table>
<thead>
<tr>
<th>District</th>
<th>Units Per Lot</th>
<th>Min. Lot Area (x)</th>
<th>Min. Lot Frontage (a)</th>
<th>Min. Lot Depth</th>
<th>Min. Yard Setback (b, h)</th>
<th>Max. Ht. (the less) (g)</th>
<th>Max FAR (o) or Lot Coverage (p)</th>
<th>Min. Useable OS (q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1-10</td>
<td>1</td>
<td>10,000sf.</td>
<td>80ft. (k)</td>
<td>100ft.</td>
<td>20ft. 5ft. (c) 20ft.</td>
<td>32ft. or 2-Stories</td>
<td>0.50 1,000sf.</td>
<td></td>
</tr>
</tbody>
</table>

Footnotes:

(a) Lot frontage is the distance between the side lot lines measured at the front setback line parallel with the street property line.

(b) See Section 17.14.090 of the OMC.

(c) The following exceptions apply:

1. Corner and reverse corner lots shall have a minimum ten-foot street site yard.

2. Wherever a garage opening faces onto a street, a minimum 20-foot side yard shall be provided.

3. When the main entrance to a building faces the side lot line, the entrance shall be located at least ten (10) feet from the property line.
4. Footnote (c)4 is not applicable to the Trails at Santiago Creek Specific Plan.

(d) Extensions into the required rear yard are permitted subject to the conditions stated in Section 17.14.090.C of the OMC.

(e) Corner or reverse corner lots—extensions within five feet of the rear property line are permitted providing that all requirements for usable open space are met.

(f) Where the rear lot line abuts and is common to the boundary of a street, alley, or permanent open space, the rear yard setback may be reduced by five feet. However, any garage opening onto a street shall be set back a minimum of 20 feet.

(g) Building height is the vertical distance from the average finished grade, as measured around the perimeter of the structure five feet out from the exterior wall surface to the highest point of the structure, that being the ridgeline of the roof or the top of the parapet wall on a flat roof. Chimneys and other similar devices may exceed the height requirement. Greater height or additional stories for habitable space may be permitted under Section 17.14.100 of the OMC.

(h) The following provisions apply to garages:

1. Regardless of other setback requirements, garages which open into an abutting street require a minimum 20-foot setback;

2. Footnote (h)2 is not applicable to the Trails at Santiago Creek Specific Plan;

3. The City Council, upon recommendation by the Planning Commission, may allow a minimum 10-foot front yard setback for side entry garages (garage door faces a side property line and driveway access is from the front property line) under the following conditions:

   i. The reduced setback is requested and approved as part of the application process for a tentative tract map, planned unit development or planned community zoning, at the time of initial application or as a modification prior to sale of any units;

   ii. The access drive provides a 30-foot paved back-up area, as measured from the garage door to the far side of the driveway.

(k) Adjustments to minimum lot frontage requirements for cul-de-sac and knuckle lots shall be considered part of the discretionary approval of the subdivision.

(p) Lot coverage shall include the area devoted to the principal and accessory structures, patios enclosed on three sides, garages, and covered parking.

(q) See Section 17.14.110 of the OMC for specific usable open space standards.
(x) Minimum lot area in square feet shall be subject to Section 17.14.080 of the OMC.

7.4.2 City of Orange Residential Parking Standards for Single Family Dwellings, Planning Area C

Residential Parking Standards shall be as per Title 17 of the Orange Municipal Code (OMC), Chapter 17.34, Off-Street Parking and Loading, Section 17.34.060, Required Number of Parking Spaces, Table 17.34.060A, Required Number of Parking Spaces for Residential Use, in place at the time of Specific Plan adoption by City Council and as provided below for reference.

<table>
<thead>
<tr>
<th>Use</th>
<th>Required Number of Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Dwelling</td>
<td>2 enclosed garage spaces/unit up to 4 bedrooms accessed by a 12-foot wide, 20-foot long driveway. For 5 or more bedrooms, 1 additional enclosed space.</td>
</tr>
</tbody>
</table>

7.4.3 Landscape Development Standards

These landscape standards apply in conjunction with the City of Orange Municipal Code and City of Orange General Plan and are applicable to Open Space Planning Areas A and B, and the Low Residential Single-Family Detached Neighborhood, Planning Area C.

7.4.3.1 Fences and Walls

- Walls, retaining walls, and fencing will be constructed of material, finish, and color complimentary to the adjacent building architecture.
- Prohibited materials include: grape stake, glass, crib wall, railroad ties and razor wire (and no chain-link fence with residential Planning Area C).
- Pilasters shall be used at changes in wall direction and wall type.
- The split rail equestrian fence shall be dark brown or white in color.
- The view fence at the rear and side yards (when adjacent to the Creek edge or other open space) shall be a combination low block wall with tubular steel view fence on the top.
7.4.3.2 Paving
- Enhanced paving shall be used to celebrate project entries, vehicular thresholds, pedestrian nodes, etc. Enhanced paving shall also be used to bring focus and attention to areas where pedestrian traffic and vehicular traffic intersect.
- Paving finishes shall complement the architectural style of buildings.
- Enhanced paving shall include: stone, brick, pavers, exposed aggregate concrete, colored and textured concrete.
- Stamped concrete and stamped asphalt paving are not permitted.

7.4.3.3 Screening
- Utilities, including gas meters, electrical boxes, transformers, and irrigation components such as controllers and backflows, shall be screened with vegetation (to the extent allowed by Fire and Utility companies) when located in planting areas away from buildings. If these utilities are located within close proximity to a building, the apparatus shall be screened by walls.
- All fire protection devices, such as backflow preventers and detector checks, shall be screened with planting but accessible to agencies.
- Trash dumpsters and utility areas shall be screened with the use of walls and enclosures, and enhanced with plant materials.

7.4.3.4 Planting Requirements
- Street trees shall be a minimum of 24" box, unless otherwise approved by the DRC.
- Refer to Section 6.4.2 of this Specific Plan, Plant Material Palette for suggested plant materials, as well as the City of Orange Street Tree Master Plan for Species Palette, Standard Specifications, Municipal Code (Chapter 12.28 Street Trees), and Spacing Requirements for planting street trees along E. Santiago Canyon Road. Refer to Section 6.4.5.3 of this Specific Plan, Local (Residential) Streets for street tree spacing requirements within Planning Area C.
- Shrub planting areas will be 2’ minimum width outside the curb area. Tree planting areas will be 4.5’ minimum width.
- Shrubs for trail planting shall be 5 gallon minimum and should be selected to reach a maximum height of 3.5 feet at maturity, dwarf varieties.
- Planting installed adjacent to street edges must appropriately provide for vehicular sight distances at intersections and driveways.
- Where a fence is not provided for trails, a unbroken plant barrier shall be installed in parkway areas between vehicular traffic and the trail to prevent trail users from leaving the trail. In areas where a parkway planting is specified, vines, shrub, and tree planting must be of a non-toxic selection to horses.
- Planting which requires low amounts of supplemental water is required (except turf).
- Trees shall not conflict with lights standards to ensure proper light coverage.
7.4.3.5 Irrigation
The intent of the irrigation standards is to encourage efficient use of water resources through proper selection of equipment and maintenance.

- Irrigation design shall meet the City of Orange Water Efficiency Guidelines.
- All landscaped areas shall be irrigated by a fully automatic, permanent underground irrigation system, with equipment provided by a reputable nationally recognized manufacturer.
- Irrigation design shall incorporate environmental considerations, such as plant material, sun and shade, soils, wind, and percolation rates.
- Moisture sensing and rain shut-off devices are required.
- Above ground irrigation devices, such as backflow preventers and irrigation controllers, are to be completely screened from off-site views.
- Valve boxes shall be grouped where possible.
- Irrigation systems shall be maintained at regular intervals to ensure proper application rates, discourage water waste and ensure plant health.
- Plans shall be prepared by a Certified Irrigation Designer (CID).
- Irrigation systems shall be installed by a qualified licensed irrigation contractor.

7.4.3.6 Paths and Paseos
Accessibility will be a key factor for trail design and its use by the residents and visitors of the Trails at Santiago Creek.

- To the extent possible trails, sidewalks, paseos, and paths shall be designed to accommodate mobility assisted devices.
- Trails shall adhere to the Grade Standards as outlined in the City of Orange Recreational Trails Master Plan.
- General handicap accessibility shall conform to the standards set forth by the State of California.

7.4.3.7 Signage and Monumentation
The Development Standards promote the character of the project through quality signage design, monumentation, and materials as follows:

- Signage and monumentation shall be designed and illuminated in context of the surrounding community and the character of the project.
The signage at the project entry shall be appropriately lit to assist visitors at night.

- Signage shall be consistent with the overall landscape design principals, community character, and common elements.
- Signage and monumentation shall also be used for pedestrian orientation and wayfinding, project identity, vehicular circulation, trails and trail access, and parks.
- Signs and monumentation must avoid conflict with vehicular line of sight at intersections, driveways and entrances.
- Monumentation at the project entry shall be designed to an appropriate scale.
- All trail signage shall adhere to the guidelines and standards outlined in the City of Orange Recreational Trails Master Plan.
Exhibit 7.1
Residential Zoning Designations
The Trails at Santiago Creek Specific Plan
City of Orange, CA
Notes:
- Refer to section 7.4.1 for specific development standard criteria and dimensions.
- All front and corner side setbacks are measured from the back of sidewalk, back of curb, or back of pavement if there is no curb or sidewalk. All other setbacks are measured from the property line unless otherwise noted.
CHAPTER 8 – IMPLEMENTATION AND ADMINISTRATION

8.1 Purpose and Intent

The City of Orange shall administer the provisions of the Trails at Santiago Creek Specific Plan in accordance with the State of California Government Code, Subdivision Map Act, the City of Orange General Plan, the City of Orange Municipal Code, and other applicable State and City regulations. The Specific Plan development procedures, regulations, standards, and specifications shall supersede the relevant provisions of the City’s Municipal Code, as they currently exist or may be amended in the future. Any development regulation and building requirement not addressed in the Specific Plan shall be subject to the City’s adopted codes and regulations. Where there is a question of interpretation, the Community Development Director or Planning Commission shall make a determination as to the intent of any disputed clause, paragraph, section, or development standard.

8.2 Phasing

The phasing of the Trails at Santiago Creek improvements shall follow the objectives described below:

- Protection of public health and welfare.
- Orderly build-out of the development based upon market and economic conditions.
- Residential building construction shall occur concurrently or upon completion of the mass grading for the site.
- Provision of adequate infrastructure and public facilities concurrent with development.
- Subject to those conditions, project build-out is expected to occur within five (5) years after completion of grading and subject to market conditions.

The site development of the three (3) individual Planning Areas within the Trails at Santiago Creek may occur in any order, or may be developed concurrently with one another, subject to the objectives described above. It is anticipated that phased residential construction will begin in Planning Area C once grading is complete. Additional information can be found in the project Development Agreement.

The donation of land to a public entity, i.e. Planning Areas A and B, shall follow the process outlined in the project’s Development Agreement and/or a Conveyance Agreement.

8.3 Financing

Several types of financing strategies and tools are available for financing master planned communities such as the Trails at Santiago Creek. It is anticipated that the project will build-out using a variety of these strategies and tools including, but not limited to, the following:
8.3.1 Mello-Roos Community Facilities Act of 1982

The Mello-Roos Act enables cities, counties, special districts, and school districts to establish community facilities districts and levy special taxes to fund a variety of facilities and services required by a Specific Plan. A Mello-Roos assessment can be applied to the planning and design work directly related to the improvements being financed and may also fund services on a pay-as-you-go basis, including police and fire protection, ambulances, flood protection, recreational programs, parks, and schools.

8.3.2 Impact Fees and Exactions

Impact fees and exactions are another tool for paying for new development resulting from increased population or demand for services. The master developer for the Trails at Santiago Creek will provide the required fees and exactions, to the appropriate agencies, which shall be identified in the Development Agreement.

8.3.3 Developer Funding

In certain instances, funding for on-site facilities may be tied directly to the Trails at Santiago Creek project. The developer may pay a fair share portion of the facility in exchange for development rights. Onsite streets, utility connections from the main trunk lines, and drainage facilities are typical examples of facilities that shall be funded by the developer. Such improvements are required concurrent with the project development.

8.3.4 Infrastructure Financing

A. The timing and the responsibility for financing and construction of the local storm drain shall occur in accordance with project construction.
B. The backbone water facilities and infrastructure shall be owned, operated, and serviced by the City of Orange Department of Public Works Water Division. The fair share cost of designing and constructing the water system shall be borne by the developer.
C. The backbone sewer facilities and infrastructure shall be built by the developer and owned by the City. The cost associated with designing and constructing the sewer system shall be borne by the developer.
D. Roadway improvements shall be designed, financed, and constructed by the project master developer and/or builders and shall occur in accordance with project construction.
E. All necessary infrastructure (e.g., roads, sewers, water lines, storm drains, drainage improvements, etc.) shall be phased and installed concurrently with development.
8.4 Maintenance Responsibilities

Improvements constructed as part of the development of the Trails at Santiago Creek will be maintained through a combination of public and private entities such as private Homeowners Associations, Mello-Roos Community Facilities Districts, 501c3 non-profit organization, or similar financing mechanisms. Additional details regarding maintenance responsibilities will be determined in the Development Agreement for the Trails at Santiago Creek.

8.4.1 Public Maintenance/Default Homeowner Association Maintenance

All public trails as shown in Exhibits 4.6, Preliminary Site Plan, 4.8, Proposed Circulation, and 4.14 Preliminary Greenway, Open Space and Trails Plan shall be offered for conveyance for ownership and maintenance to Orange County, the City of Orange, or a public entity as a publically available trail system. All conveyances will be subject to specific guidelines defined by the grantor in conformance with City standards and project approvals. Unless and until the applicant’s offer is accepted, the public trails shall be privately owned and maintained by the Master Homeowner’s Association (HOA) or a similar entity not excluded for public use. The maintenance of any other land or facilities conveyed to any public entity shall be the responsibility of the receiving entity. The Master Developer and/or project homeowner’s associations shall retain the right to assist the owners of the public trails in the maintenance and upkeep of said trails. All on-site pedestrian circulation shall be the responsibility of either the master developer or builder to design, fund, and construct. All public trails shall be constructed prior to completion of development of the entire site. All on-site trails that are not conveyed to a public entity or 501c3 non-profit organization will be owned and maintained by either the Master Association or the Planning Area C Homeowner’s Association (HOA). In addition to trails, other public facilities are planned for public maintenance by either the City of Orange, a special district, or by the appropriate utility service provider including but not limited to the following:

- Public traffic signals and traffic control signs.
- Telephone, electricity, gas lines, and cable television lines installed and maintained by the appropriate utility companies.
- Public right-of-way improvements adjacent to the project boundary completed as part of the development within the Trails at Santiago Creek.
- All privately constructed public on-site water facilities and sewer facilities within the Trails at Santiago Creek project.

8.4.2 Homeowner Association/Private Property Owner Maintenance

The Homeowner’s Association for Planning Area C or the Master Homeowner’s Association shall be responsible for installation, maintenance, and upkeep of all common landscape areas,
hardscape areas, water quality features, and irrigation systems within Planning Area C. Areas of responsibility shall include, but not be limited to:

- Landscaped parkways and medians.
- Streets.
- Signage and monumentation.
- Common open space, sidewalks, trail paseos and slopes.
- Community themed walls, fences and monumentation.
- Storm drains and all on-site community water quality features and BMPs. No water quality features shall be incorporated into the public street right-of-ways.

All project roadways will be public and maintained by the City of Orange. Roads will be designed and constructed to the City of Orange standards. One tree shall be planted in the front yard of each single family lot within Planning Area C by the Master Developer. It is the responsibility of the residential lot owner to maintain this tree. If the tree shall die, it is the responsibility of the homeowner to replace the tree within 60 days. These requirements and others will further be described in the CC&R’s for Planning Area C.

### 8.5 Specific Plan Administration and Implementation

This Specific Plan shall generally be enforced in a manner identical to the prevailing City of Orange procedure(s) to enforce the provisions of the zoning and subdivision codes. The City of Orange Community Development Department in consultation with the Public Works Department shall enforce the site development standards and design guidelines set forth herein, in accordance with the State of California Government Code, Subdivision Map Act, the Orange General Plan, and the Orange Municipal Code. The development procedures, regulations, standards, and specifications contained in this adopted Specific Plan shall supersede the relevant provisions of the City’s Municipal Code, as they currently exist or may be amended in the future. Please refer to Exhibit 8.1, Site Plan Review Process.

#### 8.5.1 Compliance with the Adopted Specific Plan

The City of Orange shall monitor compliance with the adopted Specific Plan and mitigation measures at these stages, as appropriate:

A. During review and approval of the Major Site Plan Review.
B. During the review and approval of Tentative Tract Map (TTM).
C. During the review of working drawings, and prior to the issuance of grading or building permits.
D. Prior to final inspection and/or the issuance of a certificate of occupancy for any building or improvement within the Specific Plan area.
E. Prior to the recordation of any parcel map or final map within the Specific Plan boundaries.
F. During review of a Conditional Use Permit (CUP).

8.5.2 Implementing Development Applications

The following City administrative standards apply to the implementation of future development applications (including plot plans, tract maps, parcel maps, conditional use permits, or variances) for projects within the Specific Plan area. Please refer to Exhibit 8.1, Site Plan Review Process.

8.5.2.1 Major Site Plan Review

Following the review and approval by the City of Orange of the Trails at Santiago Creek Specific Plan, a Tentative Tract Map will be submitted for Major Site Plan Review by the City per Section 17.10.060, Site Plan Review.

A. Mandatory Findings for Site Plan Approval

The Community Development Director, Design Review Committee, Parks Planning and Development Commission (when applicable), or Planning Commission shall make the following written findings, as well as the findings contained in Sections 17.10.060 and 17.10.070 of the City of Orange Municipal Code, before approving or conditionally approving any Site Plan:

1. The proposed project is compatible with other projects within the Specific Plan area; and,
2. The Site Plan is compatible with the regulations, design criteria and guidelines of the Trails at Santiago Creek Specific Plan.

B. Site Plan Review Approval Time Limitations

Major Site Plan approval shall be valid for the period of time identified in the Trails at Santiago Creek Development Agreement.

C. Site Plan Revisions

Revisions that are minor in nature and do not adversely impact the overall design or concept of the project, or reasonable extensions other than those applied as a condition of approval, shall be submitted for review and approval administratively by the Community Development Director. Significant changes, additions, or
omissions shall be submitted for review by the Community Development Director and approval by the Planning Commission. Planning Commission action shall be deemed final unless an appeal to the City Council is filed within 15 days of the decision in accordance with Section 17.08.050 of the City of Orange Municipal Code.

8.5.2.2 Design Review

Detailed plans for future implementing projects in the Trails at Santiago Creek Specific Plan area shall be submitted to the City for Design Review approval, in accordance with the policies and procedures of the Orange Municipal Code Section 17.10.070.

8.5.2.3 Rough Grading Permits

Rough grading plans shall be consistent with the Specific Plan, and permits shall be issued in accordance with the policies and procedures of the Orange Municipal Code.

8.5.2.4 Precise Grading Permits

Precise grading plans shall be consistent with the Specific Plan and permits shall be issued in accordance with the policies and procedures of the Orange Municipal Code.

8.5.2.5 Tentative Tract Map(s)

Any Tentative Tract Map shall be consistent with the Specific Plan, and processed in accordance with the policies and procedures of the Orange Municipal Code.

8.5.2.6 Parcel Map

Any Parcel Map shall be consistent with the Specific Plan, and processed in accordance with the policies and procedures of the Orange Municipal Code.

8.5.3 Specific Plan Interpretations

In instances where any chapter, subsection, sentence, clause, phrase, portion, or word contained within this Specific Plan is undefined, unclear, or vague, then the Community Development Director shall make a determination as to its meaning and intent. This determination may be
appealed to the Planning Commission. In addition, any decision by the Planning Commission may be appealed to the City Council for final determination. All decisions by the City Council shall be deemed final.

8.5.4 Severability

If any chapter, subsection, sentence, clause, phrase, or portion of this Specific Plan, or any future amendments or additions thereto, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Specific Plan, or any future amendments or additions thereto. The City hereby declares that it would have adopted these requirements and each sentence, subsection, clause, phrase, or portion or any future amendments or additions thereto, irrespective of the fact that any one or more chapters, subsections, clauses, phrases, portions or any future amendments or additions thereto may be declared invalid or unconstitutional.

8.6 Specific Plan Substantial Conformance and Specific Plan Amendments

8.6.1 Substantial Conformance

Minor modifications to the plans, guidelines, regulations, and standards contained in the Trails at Santiago Creek Specific Plan may be approved by the Community Development Director or designee without requiring a Specific Plan Amendment; provided, however, that such deviations are deemed to be in substantial conformance with the Specific Plan and are not detrimental to the public health, safety, and welfare. Decisions of the Community Development Director may be appealed to the Planning Commission. Decisions of the Planning Commission may be appealed to the City Council. All decisions by the City Council shall be considered final. The following list of items constitutes minor modifications to the Specific Plan which shall be deemed to be in substantial conformance with the adopted Specific Plan and, as such, shall not require a Specific Plan Amendment:

A. Changes to the conceptual circulation plan, up to 50’ from the locations shown in this Specific Plan, to accommodate actual on-site conditions or modify ingress and egress locations within the project, or to respond to new information that was not available at the time the Specific Plan was adopted.

B. Changes to the roadway cross-sections, at the discretion of the City Engineer.

C. Minor increase or decrease in the number of single-family detached dwelling units, provided that the maximum numbers of single-family detached dwelling units shall not exceed 128 units as established by the approved Specific Plan.

D. Adjustment of a Planning Area boundary provided that the total acreage of the affected area does not increase or decrease by more than 10% of the Planning Area acreage stated in the approved Specific Plan and that the adjusted boundary does not impact any
previously identified mitigation area(s). Planning Area A may only increase in acreage. The total maximum unit counts allowed in the Specific Plan shall remain the same regardless of any acreage transfer.

E. Minor changes to landscape materials, wall materials, wall alignment, entry design, and streetscape design which are consistent with the conceptual design set forth in the design guidelines contained within the Specific Plan.

F. Minor changes to the Design Guidelines. The Design Guidelines are conceptual in nature, and are intended to be flexible in implementation. Changes must be consistent with the project’s design principles.

G. Modifications to the grading, water, sewer and/or drainage plans, at the discretion of the City of Orange Public Works Director.

H. Other modifications of a similar nature to those listed above that are deemed acceptable by the Community Development Director, are in keeping with the purpose and intent of the approved Trails at Santiago Creek Specific Plan, and are in substantial conformance with the City of Orange General Plan.

8.6.2 Specific Plan Amendments

A. Amendments to the Trails at Santiago Creek Specific Plan may be requested by the applicant or by the City at any time pursuant to Section 65453(a) of the Government Code. Amendments shall be processed pursuant to the provisions of the Government Code for Specific Plan Amendments. In the event the proposed amendment requires supplemental environmental analysis pursuant to the California Environmental Quality Act (CEQA), the applicant(s), or the City if initiated by the City, are responsible for preparing the necessary CEQA documentation.

B. Said amendment shall not require a concurrent General Plan Amendment unless it is determined by the City of Orange that the proposed amendment would substantively affect the General Plan goals, objectives, policies, or programs for the Trails at Santiago Creek Specific Plan area.

C. All Specific Plan Amendments shall be subject to the requirements of the California Environmental Quality Act (CEQA) of 1970 and any applicable City of Orange Environmental Guidelines (and as subsequently amended).

D. Specific Plan Amendments may be limited to specific planning areas within the overall Specific Plan Area.

E. The Planning Commission and City Council shall each hold a public hearing on the proposed amendment of the Specific Plan.

F. The Planning Commission shall review all proposed amendments to the adopted Specific Plan. Upon the close of the required public hearing, the Planning Commission shall act by resolution to adopt, reject, or modify the proposed Specific Plan Amendment and forward its recommendation and findings to the City Council for action.
G. The City Council shall review the Planning Commission’s findings and recommendations. Upon the close of the required public hearing, the City Council shall act by ordinance to adopt, reject, or modify the proposed Specific Plan Amendment. If approved by the City Council, any proposed Specific Plan Amendment shall be adopted by ordinance.

H. Prior to approving or conditionally approving any Specific Plan Amendment, the following findings shall be made by the Planning Commission and City Council that the Specific Plan Amendment:
   1. Is consistent with the goal and policies of the General Plan and with its purposes, standards and land use guidelines;
   2. Results in development of desirable character which will be compatible with existing and proposed development in the surrounding neighborhoods; and,
   3. Respects the environmental and aesthetic assets of the community consistent with current economic realities.

8.6.3 Public Notification

Notifications of public hearings and decisions shall be mailed out in accordance with Section 17.08.040 or the Orange Municipal Code, except as provided otherwise herein. For all public hearings requiring public notification, including but not limited to Specific Plan Amendments, as well as decisions by the Community Development Director, notices shall be mailed out via U.S. First Class mail to all residents, property owners and business owners located within 300 feet of any portion of the Notification Area.

8.7 Appeals

The applicant(s) or interested parties shall have the right to appeal the decision of the Community Development Director or Planning Commission on any determination by filing an application on forms provided by the City of Orange within 10 calendar days following the final date of action for which an appeal is made. Appeals from any determination of the Community Development Director shall be made to the Planning Commission. Appeals from any determination of the Planning Commission shall be made to the City Council. All decisions by the City Council shall be deemed final. Appeals shall be processed consistent with the provision of the City of Orange Municipal Code.
APPENDIX A – LETTER OF SUPPORT FROM SANTIAGO CREEK GREENWAY ALLIANCE

Mr. Robert Garcia, Senior Planner
City of Orange, Community Development Department, Planning Division
300 E. Chapman Avenue
Orange, CA 92866

Re: Draft EIR – The Trails at Santiago Creek

Dear Mr. Garcia,

This letter provides comments on the draft Environmental Impact Report dated February 23, 2018 for the Trails at Santiago Creek Specific Plan (the “EIR”). We appreciate this opportunity to comment on the project.

The Santiago Creek Greenway Alliance is a nonprofit charitable organization dedicated to improving public use and enjoyment of Santiago Creek. Our mission statement is:

To create a greenway and trail system along the general course of Santiago Creek and to preserve and enhance its ecological, scenic, historical and recreational resources.

We Support Creek Trails and Open Space. We have reviewed the EIR from the perspective of our mission statement and we believe that the trail system and open space allocation described in the EIR are very supportive of our vision for the Santiago Creek Trail and Greenway. They provide a major part of the added trail needed to link the existing Santiago Creek Trail to Santiago Oaks Regional Park. In addition, the provided open space can become a very scenic element of the Greenway. For these reasons we support this project. We take no position on the many concerns regarding the housing elements of the project. However there are other concerns that we would like to comment on. They are: trail connectivity, site remediation and site care and maintenance.

Trail Connectivity and Circulation. The proposed trail plan does not include a link to the existing Santiago Creek Trail which currently ends on the west side of Cannon Street. Without this linkage, the proposed trail system will not provide its valuable addition to the Santiago Creek Trail. It will be merely an amenity to the proposed housing project. It is essential that one of the proposed trails connect to the existing Santiago Creek Trail west of Cannon and to the existing Maturi Ranch Trail on the east side of the project site.

Site Remediation. We saw little in the EIR describing any remediation steps the property owner is committing to take with respect to the creek and surrounding open space. We would like the City to make sure that the site is cleaned up and put back to a natural state (free of hazardous mining debris and waste) as part of any approval of this project.

Care and Maintenance. We would love to see this section of Santiago Creek turned into an extension of Santiago Oaks Regional Park, or other similar park, cared for and maintained by OC Parks as part of the regional park system in the area. This will assure the trees and plants will be maintained, the trails cared for, and the creek properly managed in perpetuity. In order to have a long-lasting greenway and public enjoyment of the site, we believe a permanent steward such as OC Parks is necessary.

Sincerely,

John Moore
President, SCGA

Pamela Galera
Vice President SCGA
APPENDIX B - DEFINITIONS

This Appendix includes definitions for key words and concepts discussed within the Trails at Santiago Creek Specific Plan. Definitions of any terms or phrases not listed below shall be the same as the Orange Municipal Code, Chapter 17.04, unless otherwise defined within the Trails at Santiago Creek Specific Plan.

Backfilling Operation - To restore previously mined portions of the site, a portion of the project site is presently being backfilled. The project site is being over excavated (i.e., removal of unsuitable materials) and filled in the backfill operation. The backfilling operation addresses both mixed and silt pond areas. This approved, ongoing backfill operation currently is separate and distinct from the proposed project. However, some of this grading would have to occur to construct the proposed project. As a practical result, therefore, from the date of project approval, the backfilling and grading will become project site preparation activities and, as such, are analyzed as part of the construction phase of the project.

East Orange General Plan - The East Orange General Plan, dated August 1975 and adopted by the City Council on December 19, 1989, is a multi-jurisdictional document whose planning boundary includes portions of the City and portions of unincorporated County of Orange territory, together known as Orange Park Acres. The City has determined that the East Orange General Plan is the Land Use Element of the City’s General Plan for that geographical area covered by the East Orange Plan.

General Plan - The Orange General Plan serves as the long-range and policy planning tool for the City to guide physical development within its borders. The Orange General Plan is considered a “comprehensive” general plan by incorporating additional, local issues related to cultural resources, economic development, urban design, and growth management.

Low Density Residential (LDR) – As defined in the City of Orange General Plan, Table LU-1 Land Use Designations, Low Density Residential equates to 2.1-6.0 dwelling units per acre comprised of conventional single-family residential development characterized by individual single-family homes constructed in subdivisions, or by custom units built on individual lots.

Mabury Ranch - The Mabury Ranch residential neighborhood falls within the jurisdiction of the City of Orange and is located north of and adjacent to the project site.

Materials Recycling Operation - Approximately five acres in the southeastern portion of the project site are used as a materials recycling area. This area includes apparatus for the crushing of boulders, bricks, rocks, etc. for recycling. The materials recycling area additionally includes operations that provide for the cement treatment of base materials. Material for this operation originates primarily from off-site sources. Access to the materials recycling area is from a controlled entrance along East Santiago Canyon Road. Materials generated by this operation have historically been used on and transported off the project site. The materials generated by this operation at issuance of the NOP were being taken off-site. Materials recycling will continue on the project site through the construction of the proposed project.
Natural Open Space - Un-programmed and undeveloped property left in a natural state of existing flora and fauna with minimal impacts to the site. The Santiago Creek is a scenic riparian corridor considered natural open space. Planning Areas A and B are examples of natural open space on the project site.

Orange Park Acres Community (OPA) - Orange Park Acres Community falls within the jurisdiction of the City of Orange, with a “central island portion” under the purview of the unincorporated County of Orange. The “county island” is located just south of the intersection of Frank Lane and Orange Park Boulevard.

Orange Park Acres Plan - The Orange Park Acres Plan, dated September 1973 and adopted by the City Council on December 26, 1973, is a multi-jurisdictional document whose planning boundary includes portions of the City and portions of unincorporated County of Orange territory, together known as Orange Park Acres. The City has determined that the Orange Park Acres Plan (hereafter referred to as the “OPA Plan”), is the Land Use Element of the City’s General Plan for that geographical area covered by the OPA Plan.

Passive Outdoor Uses – For the purposes of this Specific Plan, non-structured non-team oriented activities such as horse-back riding, bicycling, walking/hiking/running, free play, picnicking, gardening, sunning, people watching, etc.

Project – The term “project” refers to the Trails at Santiago Creek and those improvements as defined in this Specific Plan.

Prominent Window – A window on the building façade that is noticeable, projects, is distinguished from other windows as being larger, and stands out from the rest.

Single-Family Detached Residential - A single dwelling unit on a building site or lot, occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use.

Specific Plan - The word “Specific Plan” shall mean the Trails at Santiago Creek Specific Plan.

The Reserve - The Reserve residential neighborhood falls within the jurisdiction of the City of Orange and is located east of and adjacent to the project site.

Zoning Ordinance - The City of Orange Zoning Ordinance in force at the time the Trails at Santiago Creek Specific Plan is approved by ordinance.
# APPENDIX C

**SUMMERS MURPHY & PARTNERS**

**ENVIRONMENTAL DESIGN**

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## The Trails at Santiago Creek

*Preliminary Landscape Opinion of Probable Cost*  
*10/24/2018*

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<td>Horse Watering Station</td>
<td>1</td>
<td></td>
<td>EA</td>
<td>$2,200.00</td>
<td>$2,200.00</td>
</tr>
<tr>
<td>Horse Trail Hitch</td>
<td>2</td>
<td></td>
<td>EA</td>
<td>$300.00</td>
<td>$600.00</td>
</tr>
<tr>
<td>Restroom Facility</td>
<td>1</td>
<td>ALLOW</td>
<td></td>
<td>$200,000.00</td>
<td>$200,000.00</td>
</tr>
<tr>
<td>Parking Lot (DG)</td>
<td>1</td>
<td>ALLOW</td>
<td></td>
<td>$50,000.00</td>
<td>$50,000.00</td>
</tr>
<tr>
<td>Picnic Tables</td>
<td>4</td>
<td></td>
<td>EA</td>
<td>$2,000.00</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>Bike Rack</td>
<td>2</td>
<td></td>
<td>EA</td>
<td>$600.00</td>
<td>$1,200.00</td>
</tr>
<tr>
<td>Trash Receptacles</td>
<td>4</td>
<td></td>
<td>EA</td>
<td>$300.00</td>
<td>$1,200.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$467,867.50</strong></td>
</tr>
</tbody>
</table>

### Trail "A" (10' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>24,550</td>
<td></td>
<td>SF</td>
<td>$1.80</td>
<td>$44,190.00</td>
</tr>
<tr>
<td>Decomposed Granite Trail with Thickened Edge</td>
<td>24,550</td>
<td></td>
<td>SF</td>
<td>$2.50</td>
<td>$61,375.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$105,565.00</strong></td>
</tr>
</tbody>
</table>

### Trail "B" (10' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>32,050</td>
<td></td>
<td>SF</td>
<td>$1.80</td>
<td>$57,690.00</td>
</tr>
<tr>
<td>Decomposed Granite Trail with Thickened Edge</td>
<td>32,050</td>
<td></td>
<td>SF</td>
<td>$2.50</td>
<td>$80,125.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$137,815.00</strong></td>
</tr>
</tbody>
</table>

### Trail "C" (Existing 10' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep at connections</td>
<td>1,000</td>
<td></td>
<td>SF</td>
<td>$1.80</td>
<td>$1,800.00</td>
</tr>
<tr>
<td>Decomposed Granite at connections</td>
<td>1,000</td>
<td></td>
<td>SF</td>
<td>$2.50</td>
<td>$2,500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$4,300.00</strong></td>
</tr>
</tbody>
</table>

### Trail "D" (10' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>45,380</td>
<td></td>
<td>SF</td>
<td>$1.80</td>
<td>$81,684.00</td>
</tr>
<tr>
<td>Decomposed Granite Trail with Thickened Edge</td>
<td>45,380</td>
<td></td>
<td>SF</td>
<td>$2.50</td>
<td>$113,450.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>$195,134.00</strong></td>
</tr>
</tbody>
</table>
### Trail "E" (20' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>84,800 SF</td>
<td>1</td>
<td>$1.80</td>
<td>$152,640.00</td>
<td></td>
</tr>
<tr>
<td>All-weather Surface Trail</td>
<td>84,800 SF</td>
<td>1</td>
<td>$6.00</td>
<td>$508,800.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$661,440.00</td>
</tr>
</tbody>
</table>

### Trail "F" (10' wide Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>8,290 SF</td>
<td>1</td>
<td>$1.80</td>
<td>$14,922.00</td>
<td></td>
</tr>
<tr>
<td>Decomposed Granite Trail with Thickened Edge</td>
<td>8,290 SF</td>
<td>1</td>
<td>$2.50</td>
<td>$20,725.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$35,647.00</td>
</tr>
</tbody>
</table>

### Rest Areas (6 Total each 1.175sf)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Grading and Soil Prep</td>
<td>7,050 SF</td>
<td>1</td>
<td>$1.80</td>
<td>$12,690.00</td>
<td></td>
</tr>
<tr>
<td>Decomposed Granite Trail with Thickened Edge</td>
<td>7,050 SF</td>
<td>1</td>
<td>$2.50</td>
<td>$17,625.00</td>
<td></td>
</tr>
<tr>
<td>Bench (2 per Rest Area)</td>
<td>14 EA</td>
<td>2</td>
<td></td>
<td>$21,000.00</td>
<td></td>
</tr>
<tr>
<td>Picnic Tables (1 at every other Rest Area)</td>
<td>3 EA</td>
<td>1</td>
<td></td>
<td>$6,000.00</td>
<td></td>
</tr>
<tr>
<td>Bike Rack (1 per Rest Area)</td>
<td>6 EA</td>
<td>1</td>
<td></td>
<td>$3,600.00</td>
<td></td>
</tr>
<tr>
<td>Horse Trail Hitch (1 per Rest Area)</td>
<td>6 EA</td>
<td>1</td>
<td></td>
<td>$1,800.00</td>
<td></td>
</tr>
<tr>
<td>Trash Receptacles (1 per Rest Area)</td>
<td>6 EA</td>
<td>1</td>
<td></td>
<td>$1,800.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$64,515.00</td>
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### Site Wide Misc

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split Rail Trail Fencing at Specific Locations</td>
<td>250 LF</td>
<td>1</td>
<td></td>
<td>$25.00</td>
<td>$6,250.00</td>
</tr>
<tr>
<td>Wayfinding Signage</td>
<td>1 ALLOW</td>
<td>1</td>
<td></td>
<td>$7,500.00</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Proposed Bridge</td>
<td>1 ALLOW</td>
<td>1</td>
<td></td>
<td>$450,000.00</td>
<td>$450,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$463,750.00</td>
</tr>
</tbody>
</table>

**Subtotal**                                     | $2,136,033.50 |

### Total - Hardscape

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$2,136,033.50</td>
</tr>
</tbody>
</table>

## Landscape Planting and Irrigation

### Trees at Trailhead and Rest Area

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Gallon</td>
<td>35 EA</td>
<td>35</td>
<td></td>
<td>$80.00</td>
<td>$2,800.00</td>
</tr>
<tr>
<td>24&quot; Box</td>
<td>25 EA</td>
<td>25</td>
<td></td>
<td>$225.00</td>
<td>$5,625.00</td>
</tr>
<tr>
<td>60&quot; Box (Specimen Tree)</td>
<td>4 EA</td>
<td>4</td>
<td></td>
<td>$4,000.00</td>
<td>$16,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$24,425.00</td>
</tr>
</tbody>
</table>

### Shrubs at Trailhead and Rest Area

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gallon</td>
<td>8,903 EA</td>
<td>1</td>
<td></td>
<td>$6.00</td>
<td>$53,418.00</td>
</tr>
<tr>
<td>5 Gallon</td>
<td>10,195 EA</td>
<td>1</td>
<td></td>
<td>$16.00</td>
<td>$163,120.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$216,538.00</td>
</tr>
</tbody>
</table>

### Trees Along Trails (1 Tree per 25LF of Trail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Gallon (60%)</td>
<td>540 EA</td>
<td>1</td>
<td></td>
<td>$80.00</td>
<td>$43,200.00</td>
</tr>
<tr>
<td>24&quot; Box (40%)</td>
<td>360 EA</td>
<td>1</td>
<td></td>
<td>$225.00</td>
<td>$81,000.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$124,200.00</td>
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</tbody>
</table>

### Shrubs Along Trails

<table>
<thead>
<tr>
<th>Description</th>
<th>Size</th>
<th>Qty</th>
<th>UOM</th>
<th>Unit Price</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gallon (60%)</td>
<td>9,780 EA</td>
<td>1</td>
<td></td>
<td>$6.00</td>
<td>$58,680.00</td>
</tr>
<tr>
<td>5 Gallon (40%)</td>
<td>6,520 EA</td>
<td>1</td>
<td></td>
<td>$16.00</td>
<td>$104,320.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$163,000.00</td>
</tr>
</tbody>
</table>
### Trees in Open Space (1 Tree per 2,000 SF - Trail Area)

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Gallon (60%)</td>
<td>330</td>
<td>EA</td>
<td>$80.00</td>
<td>$26,400.00</td>
</tr>
<tr>
<td>24&quot; Box (40%)</td>
<td>220</td>
<td>EA</td>
<td>$225.00</td>
<td>$49,500.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$75,900.00</strong></td>
</tr>
</tbody>
</table>

### Shrubs in Open Space

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gallon (60%)</td>
<td>7,335</td>
<td>EA</td>
<td>$6.00</td>
<td>$44,010.00</td>
</tr>
<tr>
<td>5 Gallon (40%)</td>
<td>10,195</td>
<td>EA</td>
<td>$16.00</td>
<td>$163,120.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$207,130.00</strong></td>
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</tbody>
</table>

### Site

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil Prep &amp; Fine Grade</td>
<td>245,000</td>
<td>SF</td>
<td>$0.25</td>
<td>$61,250.00</td>
</tr>
<tr>
<td>2&quot; Organic Mulch/Top Dressing (at trail edge only)</td>
<td>139,350</td>
<td>SF</td>
<td>$0.45</td>
<td>$62,707.50</td>
</tr>
<tr>
<td>Automatic Irrigation</td>
<td>245,000</td>
<td>SF</td>
<td>$2.00</td>
<td>$490,000.00</td>
</tr>
<tr>
<td>90 Day Maintenance</td>
<td>245,000</td>
<td>EA</td>
<td>$0.15</td>
<td>$36,750.00</td>
</tr>
<tr>
<td>Root Barriers</td>
<td>90</td>
<td>EA</td>
<td>$8.00</td>
<td>$720.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$651,427.50</strong></td>
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</tbody>
</table>

### Revegetation Zone

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Price/Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroseed (Native/Naturalized Seed Mix)</td>
<td>132,100</td>
<td>SF</td>
<td>$0.50</td>
<td>$66,050.00</td>
</tr>
<tr>
<td>Automatic Irrigation (Temporary for establishment)</td>
<td>132,100</td>
<td>SF</td>
<td>$2.00</td>
<td>$264,200.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>$330,250.00</strong></td>
</tr>
</tbody>
</table>

**Subtotal**                                         | $1,792,870.50 |

**Total - Hardscape, Landscape Planting & Irrigation**: $3,928,904.00

**Contingency (5%)**                                  | $196,445.20 |

**Grand Total**                                        | **$4,125,349.20**