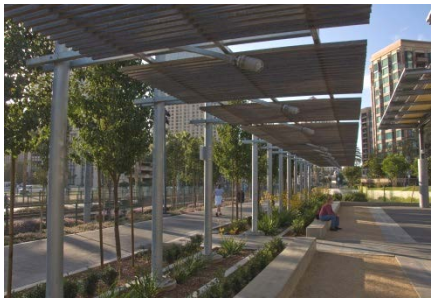
Residential Model Block ***and West Residential Amenities***

The residential model block represents an area within the University District, which utilizes a wide range of landscape and other Low-Impact Development (LID) options within the streetscape. Street tree canopies provide shade and visual interest, wide flow through inverted medians~~planters buffer pedestrians walking on the sidewalk from automobiles in the street~~, front porch entries are bordered by shrubs to signify the transitional space between the public and private rights-of-way, and street corners are designed with highly landscaped plazas for residents and/or visitors to gather throughout various times of the day. In addition to the Residential Model Block are the West Residential Amenities, which consist of public and private common space.

Public common open space consists of passive green space, active recreational amenities, open flexible fields, tot lots, seating areas, picnic areas, community gardens, or other passive or active outdoor areas. The public common open space may be provided as one large area or a series of smaller areas spread throughout the residential areas west of Twin Oaks Valley Road.



Private common usable space provides private, easily accessible, and neighborhood-scaled recreational and passive areas for residents. These spaces include passive green space, active recreational amenities, open flexible fields, tot lots, seating areas, picnic areas, community gardens, or other passive or active outdoor areas. Also included are courtyard areas and interior spaces, including fitness centers, entertainment rooms, and other private common indoor uses. Leasing offices, common mailrooms, and other similar uses do not count toward private common usable spaces. Private common open space is required for all residential units constructed on the west side of Twin Oaks Valley Road.

These common areas requirements are in addition to private usable open space required for each unit, as specified in Section VI, the Form-Based Code. Actual locations for common spaces will be determined during project-level site design, and may be consolidated among several developments to provide larger, centralized amenities. Parking is not required for these neighborhood amenities as they are intended to serve the local neighborhood, are within walking distance of many residences, and could utilize on-street parking, where provided.

Refer to ~~Figure IV.L: Residential Model Block Perspective or~~ Section VI.5 – Public Park and Gathering Space Standards in the Form-Based Code for more detailed information.

~~FIGURE IV.L: Residential Model Block Perspective~~

IV.3 Open Space Statistical Summary

Table IV.A: Open Space Statistical Summary below summarizes the proposed park and open space calculations for the entire *University District* project area:

Table IV.A: Open Space Statistical Summary

Type	*Name*	*Size (Acres)*	*Proposed Program*	*Linkages*	*Location*
Urban Plazas	East Urban Plazas	~~2.09~~2.01	Market, special event and performance spaces, café and public gathering areas, public art/ water feature	Connects to east side paseos, University residential courtyards and *University District* bike and pedestrian paths	East
	Twin Oaks Plaza (East)	~~0.73~~0.25	Urban hardscape plaza, ~~seating and gathering areas, iconic grove, major~~ project gateway, public art/water feature/ monument	Connects to Twin Oaks and Barham urban trails ~~and pedestrian bridge across Twin Oaks~~ and commercial/retail core	East
	East Paseos and Mini Plazas	~~0.43~~1.79	Plazas, seating areas, chess/checkers tables, public art/ water feature, cafes, stroll garden	Connects to Barham urban trail, East Urban Plazas, University residential courtyards and *University District* bike and pedestrian paths	East
	~~South Mini Plazas~~	~~0.13~~	~~Public seating and café areas with special emphasis on University-related programs and users~~	~~Connects to Barham urban trail and internal University District bike and pedestrian paths~~	~~East~~
	Twin Oaks West Plazas and Paseos ~~(West)~~	~~1.91~~0.45	~~Terraced plazas and gardens, seating, special event and gathering areas, major~~ Urban hardscape plaza, project gateway, public art/water feature/ monument, seating areas, public gardens, café areas.	Connects to Twin Oaks and Discovery ~~Barham~~ urban trails, residential areas, ~~and pedestrian bridge across Twin Oaks~~ and internal *University District* bike and pedestrian paths. Connects to internal *University District* bike and pedestrian paths and Twin Oaks plaza West	West
	~~West Paseos~~	~~1.84~~	~~Plazas, sSeating areas, public gardens, café areas~~	~~Connects to internal *University District* bike and pedestrian paths and Twin Oaks plaza West~~	~~West~~
	~~West Mini Plaza~~	~~0.27~~	~~Seating and café zone with special emphasis on office park-related program and users~~	~~Connects to internal University District bike and pedestrian paths~~	~~West~~

	~~Green Link Plazas~~	~~0.26~~	~~Seating and gathering area with special emphasis on residential and mixed-use program and users~~	~~Connects to Green streets and links, internal University District bike and pedestrian paths~~	~~West~~
	Total Urban Plazas	~~7.96~~4.5	**Acres**		

Table IV.A: Open Space Statistical Summary (Continued)					
Type	*Name*	*Size (Acres)*	*Description*	*Linkages*	*Location*
Urban Parks	Knoll Park and Neighborhood Greens	~~9.32~~16	Community Center, playground, basketball court climbing/ adventure play areas, hiking trail, ~~Disc golf,~~ open field/play space, picnic areas, overlook, interpretive signage	~~Pedestrian bridge across Barham Drive to Discovery Hills trails~~Primary park amenity accessible through pedestrian walkways	West
	~~North Neighborhood Green~~	~~1.1~~	~~Stroll gardens, seating areas, community gathering space, iconic grove and neighborhood gateway, public art/water feature~~	~~Connects to Creekside trail and internal University District bike and pedestrian paths~~	~~West~~
	~~South Neighborhood Green~~	~~1.77~~	~~Open field/play space, shaded picnic areas~~		~~West~~
	East Creek Park	~~1.79~~0.5	Fitness stations, sports courts, rest areas, open field/play space	Connects to Creekside trail, proposed 78 flyover bridge urban trails and internal *University District* bike and pedestrian paths	West
	~~Mid-Creek Park~~	~~0.44~~	~~Public seating and gathering area, community garden, riparian overlook and bridge~~	~~Connects to Creekside trail and internal University District bike and pedestrian paths~~	~~West~~
	West Creek Park	~~1.55~~1.63	Dog park, open field/play space, playground/ tot-lot, shaded seating areas	Connects to Grand Avenue urban trail, Creekside trail and internal *University District* bike and pedestrian paths	West
	East Green	~~1.4~~1	Open field/play space, playground/ tot-lot, shaded picnic and gathering area	Connects to internal *University District* bike and pedestrian paths	East
	West Residential Amenities	2	Common usable open space consisting of green space, tot lots, community gardens, picnic areas, seating areas or other active or passive amenities	Connects to local *University District* neighborhoods through pedestrian paths	West
	Total Urban Parks	~~17.37~~21.13	**Acres**		

Total Parks and Plazas	~~25.33~~25.63	**Acres**		

Table IV.A: Open Space Statistical Summary (Continued)					
Type	*Name*	*Length*	*Proposed Program*	*Linkages*	*Location*
Trails and Paths	Wetland Trail	0.20	Boardwalk trail with shaded rest areas and interpretive displays	Connects to Grand Avenue and Discovery Street urban trails	West
	Creek Side Trail	0.54	Soft surface multi-use trail with picnic and rest areas and fitness circuit	Connects to Grand Avenue and proposed 78 flyover bridge urban trails and internal *University District* bike and pedestrian paths	West
	Green Links	0.3	Publicly accessible passages to Creekside trail system	Connects to Creekside trail and internal *University District* bike and pedestrian paths	West
	Green Streets	0.34	Widened sidewalks adjacent to bio-swales and mini-plazas	Connects to Green links and internal *University District* bike and pedestrian paths	West

Total Trails and Paths	**1.38**	**Miles**

IV.4 Conceptual Plan Landscape Zones

Like much of the central heart of San Macros, the *University District* encompasses old and new. Owing to its proximity to both major urban and transit centers and the lush San Marcos Creek riparian corridor, the *University District* landscape concept balances a largely native and naturalizing plant material palette with a simple, clean, modern aesthetic.

The District has been divided into four landscape zones that bridge the rustic and the urban palettes. Figure IV.~~G~~I: Landscape Zones Diagram, in conjunction with Table IV.B: Conceptual Plant Palette – Perennials, Table IV.C: Conceptual Plant Palette – Shrubs / Groundcovers, and Table IV.D: Conceptual Plant Palette – Trees, identifies the appropriate landscape options for individual projects within the District. The plant palettes have been carefully selected to prioritize the use of drought-tolerant and native plants, in addition to locally-significant ornamentals.

FIGURE IV.~~M~~I: Landscape Zones Diagram


LEGEND
0'
400'
800'
1600'
Conceptual Landscape Character (See accompanying narrative description)
NORTH
Neighborhood Green
Urban
Rustic
Open Space

0' 400' 800' 1600'

NORTH

LEGEND

Conceptual Landscape Character (See accompanying narrative description)

- Neighborhood Green
- Urban
- Rustic
- Open Space

Open Space

Open Space refers to areas contiguous with San Marcos Creek that are existing or restored riparian landscape and habitat, and are barred from any pedestrian or recreational uses. These areas provide essential buffer and shelter for the creek and its denizens. These areas also serve as essential contextual and iconic environments for the District, providing a sense of place and valuable visual amenity for visitors and residents. The plant palette for these areas is limited to appropriate native riparian species that are currently present in and around the creek.

Rustic

The Rustic landscape zone refers to areas that are immediately adjacent to open space or to other significant natural features, such as the granite outcroppings at the Knoll Park. The rustic plant palette uses native plant materials to create a naturalistic setting that is easily maintained and feels like an extension of the surrounding riparian and coastal sage scrub landscape.

Neighborhood Green

These areas serve as the critical transition zones between urban and rustic landscapes within the *University District*. They employ a combination of native and naturalizing plant materials in more maintained park-like settings. For example, Neighborhood Green streets may employ native species for street trees or feature a lush bio-swale adjacent to a paved plaza. Plant materials in this landscape zone should be drought-tolerant, easily maintained and provide a rich variety of foliage textures and color for visual interest.

Urban

The Urban landscape has the broadest plant palette, drawing on the native plant materials used elsewhere within the District, as well as incorporating existing landscape motifs and materials where appropriate. Plants may be massed for architectural and sculptural effect, to create focal points, boundaries and defined gathering spaces. Trees are planted in groves and bosques to provide shade zones for the many urban parks and plazas in the District. Succulents and flowering accents create visual interest in the ground plane. As in the rest of the project, all plant materials should be drought-tolerant, site appropriate and easily maintained to minimize water and pesticide use.

Table IV.B: Conceptual Plant Palette – Perennials

Botanic name	Common Name	Open space	Rustic	Neighborhood Green	Urban	Parking Lots	Medians + Parkways	CA Native	Notable Features	
Agave spp.	Agave			•	•	•	•		Succulent; Sculptural form	
Aloe spp.	Aloe			•	•		•		Succulent; Rosette form; Flowering	
Anigozanthus flavidus	Kangaroo Paw		•	•	•	•	•		Perennial; Spiked leaves; Clumping; Flowering	
Aristida purpurea	Purple Three Awn	•	•					•	Ornamental Grass; Clumping; Fine textured	
Bougainvillea spp.	Bougainvillea			•	•	•	•		Sprawling vine or mounding shrub; Colorful bracts	
Bulbine frutescens	Bulbine				•				Succulent; Clump forming; Flowering	
Cistus hybridus	Rockrose		•	•		•			Shrubby perennial; Flowering	
Chondropetalum tectorum	Cape Rush			•	•				Rush-like perennial; Clump forming	
Echeveria spp.	Hen and Chicks			•	•				Succulent; Rosette form; Flowering	
Encelia californica	California Bush Sunflower	•	•	•		•	•	•	Shrubby perennial; Flowering	
Erigeron karvinskiana	**Santa Barbara Daisy**	•	•	•		•	•	•	**Shrubby perennial; Flowering**	**added**
Eschscholzia californica	California Poppy	•	•	•			•	•	Short-lived perennial; California State flower	
Eriogonum spp.	Buckwheat	•	•				•	•	Shrubby perennial; Flowering	
Euphorbia rigida	Gopher Plant			•	•				Shrubby perennial; Flowering	
Galvezia speciosa	Island Bush Snapdragon	•	•	•				•	Shrubby perennial; Flowering	
Hesperaloe parviflora	Red Yucca			•	•	•	•		Succulent; Clump forming; Flowering	
Keckiella cordifolia	Heartleaf Penstemon			•	•		•	•	Shrubby perennial; Flowering	
Lantana hybridus	Lantana			•	•	•	•		Shrubby perennial; Flowering	
Lavandula spp.	Lavender			•	•				Shrubby perennial; Flowering	
Lobelia laxiflora	Mexican Bush Lobelia	•	•			•		•	Shrubby perennial; Flowering	
Muhlenbergia rigens	Deer Grass	•	•	•	•	•		•	Ornamental Grass; Large, clumping; Fine textured	
Phormium tenax	New Zealand Flax			•	•	•	•		Perennial; Spiked leaves; Clumping; Flowering	
Salvia spp.	Sage	•	•	•				•	Shrubby perennial; Flowering	
Verbena spp.	Verbena	•	•			•	•	•	Shrubby perennial; Flowering	
Vitis californica	California Grape	•	•	•	•			•	Deciduous vine; Fruiting; Fall color	
Yucca whipplei	Our Lord's Candle	•	•					•	Perennial; Spiked leaves; Clumping; Flowering	

Shrubs and Groundcovers	Common Name	Open Space	Rustic	Neighborhood Green	Urban	Parking lots	Medians	
Acacia redolens	NCN		●	●		●		Drought tolerant; shrub, groundcover
Arctostaphylos spp.	Manzanita	●	●	●	●	●	●	Native; shrub, groundcover
Baccharis pilularis	Coyoute brush	●	●	●			●	Native; groundcover
Baccharis sarothroides	Desert broom	●	●					Drought tolerant; flowering perennial
Callistemon 'Little John'	Compact Bottlebrush			●	●	●	●	Drought tolerant; shrub
Ceanothus spp	Coast Live Oak	●	●	●	●	●	●	Native; flowering shrub, groundcover
Echium fastuosum	Pride of Madeira			●	●	●		Drought tolerant; flowering shrub
Fragaria chiloensis	Beach strawberry	●	●	●	●	●	●	Native; groundcover
Grevillea spp	Grevillea			●	●	●	●	Drought tolerant; flowering shrub
Heteromeles arbutifolia	Toyon	●		●	●		●	Native; flowering shrub
Iva hayesiana	Poverty weed	●	●					Native; groundcover
Laurus nobilis	Sweet Bay		●	●	●	●	●	Drought tolerant; shrub
Myrica californica	California Wax Myrtle	●	●	●		●		Native; shrub
Olea euroapea 'Little Ollie'	Fruitless Olive			●	●	●	●	Drought tolerant; shrub
Opuntia spp	Prickly pear	●	●					Succulent
Pittosporum spp.	Mock orange			●	●	●	●	Drought tolerant; shrub
Prunus ilicifolia	Holly leaf cherry		●	●	●	●		Native; shrub
Rhamnus californica	Coffeeberry	●	●	●			●	Native; shrub
Rosmarinus spp	Rosemary			●	●	●	●	Drought tolerant; flowering shrub, groundcover
Rhus Ovata	Sugar Bush	●	●	●			●	Native; shrub
Rhus integrifolia	Lemonadberry	●	●	●		●	●	Native; flowering shrub
Ribes viburnifolium	Evergreen currant	●	●	●		●		Native; shrub
Senecio mandraliscae	Blue chalk sticks			●	●		●	Succulent; groundcover
Senna spp	Flowering senna		●	●	●	●	●	Native; flowering shrub
Tecoma stans	Yellow bells		●	●				Native; flowering shrub
Westringia spp	Coast rosemary			●	●	●	●	Drought tolerant; flowering shrub

Table IV.C: Conceptual Plant Palette – Shrubs / Groundcovers

Botanic name	Common Name	Open space	Rustic	Neighborhood Green	Urban	Parking Lots	Medians	CA Native	Notable Features
Acacia redolens	Spreading Acacia		•	•		•			Evergreen, dense, shrubby groundcover; Flowering
Arctostaphylos spp.	Manzanita	•	•	•	•	•	•	•	Evergreen, sprawling, shrubby groundcover; Flowering
Baccharis pilularis	Coyote Brush	•	•	•			•	•	Evergreen, dense, shrubby groundcover; Tolerant
Baccharis sarothroides	Desert Broom	•	•					•	Evergreen shrub; Loose form; Tolerant
Callistemon 'Little John'	Dwarf Bottlebrush			•	•	•	•		Evergreen shrub; Flowering
Ceanothus spp.	California Lilac	•	•	•	•	•	•	•	Evergreen shrub; Flowering
Echium fastuosum	Pride of Madeira			•	•	•			Evergreen shrub; Loose form; Flowering
Fragaria chiloensis	Beach Strawberry	•	•	•	•	•	•	•	Evergreen, vining groundcover; Flowering
Grevillea spp.	Grevillea			•	•	•	•		Evergreen shrub; Loose form; Flowering
Heteromeles arbutifolia	Toyon	•		•	•		•	•	Evergreen shrub to small tree; Flowering, fruiting
Iva hayesiana	San Diego Marsh Elder	•	•					•	Evergreen, spreading, perennial groundcover; Tolerant
Laurus nobilis	Sweet Bay		•	•	•	•	•		Evergreen shrub to small tree; Aromatic foliage
Myrica californica	California Wax Myrtle	•	•	•		•		•	Evergreen shrub; Flowering
Olea europaea 'Little Ollie'	Dwarf Olive			•	•	•	•		Evergreen shrub; Loose form; Fruitless
Opuntia spp.	Prickly Pear Cactus	•	•					•	Succulent perennial; Flowering, fruiting
Pittosporum spp.	Mock Orange			•	•	•	•		Evergreen shrub; Flowering
Prunus ilicifolia	Holly Leaf Cherry		•	•	•	•		•	Evergreen shrub; Flowering, fruiting
Rhamnus californica	Coffeeberry	•	•	•			•	•	Evergreen shrub; Flowering, fruiting
Rosmarinus spp.	Rosemary			•	•	•	•		Evergreen shrub; Flowering; Aromatic foliage
Rhus ovata	Sugar Bush	•	•	•			•	•	Evergreen shrub; Large, dense form; Tolerant
Rhus integrifolia	Lemonadeberry	•	•	•		•	•	•	Evergreen shrub; Sprawling form; Tolerant
Ribes viburnifolium	Evergreen Currant	•	•	•		•		•	Evergreen shrub; Sprawling form; Flowering, fruiting
Senecio mandraliscae	Blue Chalk Sticks			•	•		•		Succulent perennial groundcover
Senna spp.	Feathery Cassia		•	•	•	•	•		Evergreen shrub; Loose form; Flowering
Tecoma stans	Yellow Bells		•	•					Evergreen shrub; Loose form; Flowering
Westringia fruticosa	Coast Rosemary			•	•	•	•		Evergreen shrub; Flowering

Trees	Common Name	Open Space	Rustic	Neighborhood Green	Urban	Parking lots	Street tree	Accent Tree	
Alnus rhombifolia	White Alder	●	●						Native; Deciduous, seasonal interest, riparian
Arbutus 'Marina'	Madrone hybrid			●	●		●		Flowering, evergreen, ornamental bark
Arbutus unedo	Strawberry tree			●	●			●	Flowering, evergreen, ornamental bark
Cercis canadensis	Redbud		●	●	●			●	Flowering, deciduous
Chitalpa tashkentensis	Chitalpa			●	●			●	Native; Flowering; deciduous
Cupressus forbesii	Tecate Cypress		●	●	●				Native; coniferous evergreen
Jacaranda mimosifolia	Jacaranda			●	●			●	Flowering, deciduous
Lagerstroemia 'Muskogee'	Lavender Crape Myrtle			●	●		●	●	Flowering, deciduous
Magnolia grandiflora	Southern Magnolia			●	●			●	Broadleaf evergreen; showy white flowers
Quercus agrifolia	Coast Live Oak	●	●	●					Native; Broad leaf evergreen
Quercus ilex	Holly leaf oak	●	●	●			●		Native; Broad leaf evergreen
Quercus suber	Cork Oak			●	●		●	●	Drought tolerant; Broad leaf evergreen
Olea euroapea	Fruitless Olive			●	●		●		Drought tolerant; evergreen
Pinus Halepenisis	Aleppo Pine			●	●	●			Drought tolerant; coniferous evergreen
Pinus pinea	Italian Stone Pine			●			●	●	Coniferous evergreen
Platanus racemosa	California Sycamore	●	●	●	●	●	●	●	Native; Deciduous, ornamental bark
Populus fremontii	Western Cottonwood	●	●						Native; Deciduous, seasonal interest, riparian
Rhus lancea	African Sumac		●	●	●	●	●		Drought tolerant; Evergreen; narrow willow-like leaf
Salix goodingii	San Joaquin Willow	●							Native; Deciduous, seasonal interest, riparian
Schinus molle	California Pepper		●	●	●	●			Drought tolerant; Evergreen
Syagrus romanzoffianum	Queen palm				●			●	Vertical accent; focal point
Tipuana tipu	Rosewood			●	●	●	●		Briefly deciduous; showy yellow flowers
Ulmus parvifolia	Chinese Evergreen Elm			●	●	●	●		Evergreen canopy tree
Washingtonia filifera	California Fan Palm			●	●			●	Native; vertical accent; focal point

Table IV.D: Conceptual Plant Palette – Trees

Botanic name	Common Name	Open space	Rustic	Neighborhood Green	Urban	Parking Lots	Street Tree	Accent Tree	CA Native	Notable Features	
Alnus rhombifolia	White Alder	•	•						•	Deciduous shade tree; Fast-growing; Riparian	
Arbutus 'Marina'	Marina Strawberry Tree			•	•		•			Evergreen canopy tree, Flowering; Ornamental bark	
Arbutus unedo	Strawberry Tree			•	•			•		Evergreen canopy tree, Flowering; Fruiting	
Callistemon viminalis	**Weeping Bottlebrush**			•	•		•	•		**Evergreen canopy tree, Flowering**	**added**
Cassia leptophylla	**Gold Medallion Tree**			•	•		•	•		**Evergreen canopy tree, Flowering**	**added**
Cercis canadensis 'Oklahoma'	Oklahoma Redbud		•	•	•			•		Deciduous canopy tree; flowering	
Chitalpa tashkentensis	Chitalpa			•	•			•		Deciduous canopy tree; flowering; Crossbred variety	
Hesperocyparis forbesii	Tecate Cypress		•	•	•				•	Evergreen coniferous tree	updated taxonomy
Jacaranda mimosifolia	Jacaranda			•	•			•		Briefly deciduous canopy tree; flowering	
Lagerstroemia 'Muskogee'	Lavender Crape Myrtle			•	•		•	•		Deciduous canopy tree; flowering	
Magnolia grandiflora	Southern Magnolia			•	•			•		Evergreen shade tree; Flowering	
Quercus agrifolia	Coast Live Oak	•	•	•					•	Evergreen shade tree	
Quercus ilex	Holly Leaf Oak	•	•	•			•			Evergreen shade tree	
Quercus suber	Cork Oak			•	•		•	•		Drought tolerant; broad leaf evergreen	
Olea europaea 'Swan Hill'	Fruitless Olive			•	•		•			Evergreen canopy tree; Fruitless variety	
Phoenix dactylifera	**Date Palm**			□	•		•	•		**Vertical accent palm; Dramatic silhouette**	**added**
Pinus halepensis	Aleppo Pine			•	•	•				Drought-tolerant; coniferous evergreen	
Pinus pinea	Italian Stone Pine			•			•	•		Evergreen coniferous tree	
Platanus racemosa	California Sycamore	•	•	•	•	•	•	•	•	Deciduous, ornamental bark	
Populus fremontii	Western Cottonwood	•	•						•	Deciduous, seasonal interest, riparian	
Rhus lancea	African Sumac		•	•	•	•	•			Evergreen canopy tree	
Salix gooddingii	San Joaquin Willow	•							•	Deciduous canopy or multi-trunk tree; Riparian	
Schinus molle	California Pepper		•	•	•	•	•			Evergreen shade tree; Weeping form	
Syagrus romanzoffianum	Queen Palm				•			•		Vertical accent palm; Loose, flowing fronds	
~~*Tipuana tipu*~~	~~Tipu Tree~~	~~-~~	~~-~~	~~•~~	~~•~~	~~•~~	~~•~~			~~Deciduous shade tree; Flowering~~	
Ulmus parvifolia	Chinese Elm			•	•	•	•			Briefly deciduous shade tree	
Washingtonia filifera	California Fan Palm			•	•			•	•	Vertical accent palm; Bold silhouette	

IV.5 Low Impact Development (LID) Strategies

IV.5.1 *LID Purpose and Background*

Low Impact Development (LID) is a storm water management approach that seeks to preserve or mimic natural drainage systems and retain storm water run-off on-site. There are numerous advantages from employing LID strategies over conventional storm water management techniques. In addition to the environmental benefits of restoring stream quality in watersheds that are already burdened by existing developments, there are significant economic benefits to employing this type of sustainable design practice. LID strategies focus on intelligent, dual-purpose design of functional landscape and hardscape treatments.

Besides conveying these benefits, LID satisfies federal requirements for managing storm water. In brief, the National Pollutant Discharge Elimination System (NPDES) requires development projects to capture storm water run-off at the source, detain and retain a portion of the peak storm water run-off flow, and then treat the captured flow through natural filtration systems (e.g. constructed wetlands, underground basins, grassy areas with opportunities for percolation, etc.). Ultimately, the toxins and debris that generally exist in more urban environments are captured and naturally managed so they do not filter into our streams, watersheds, and oceans.

IV.5.2 *LID Goals for University District*

The *University District* conceptual plan has been designed to integrate a wide array of LID strategies, within nearly every portion of the project site with the goal of demonstrating how storm water run-off can be reduced in compliance with ~~San Diego County's Draft~~City of San Marcos Standard Urban Storm water Mitigation Plan (SUSMP) and the most current NPDES permit. Overall, the conceptual plan identifies potential publicly- and privately-owned space for LID improvements such as vegetated roofs, flow through medians/planters, permeable paving, bio-retention, and infiltration. Developers may choose to employ any combination of one or more LID strategies to

successfully manage the storm water run-off resulting from development on their individual project site.

~~The vegetated roofs LID option has been incorporated primarily within the Commercial/Retail Core and Mixed Use areas of the Plan.~~ Given the arid climate, reducing irrigation water use is a high priority in southern California. Consequently, green roofs are recommended for buildings that are likely to have a supply of supplemental water, such as air conditioning blow-down water. In addition to treating air conditioning waste water, green roofs reduce heat island effect and can also serve as outdoor dining areas or communal open space.

The flow through medians/planters LID option has been incorporated within the entire project site, along nearly every street ~~and sidewalk~~. The conceptual plan has been designed to provide large landscape buffer areas adjacent to many of the streets and sidewalks, for the expressed purpose of managing storm water run-off and providing shaded, walkable streets. In addition, urban street trees planted in structural soil ~~can also serve~~ may be able to capture storm water run-off, as well as promote healthy tree growth and reduce sidewalk maintenance issues. Chapter VI – Form-Based Code provides more detailed requirements for how to integrate this LID option into the streetscape design.

The permeable paving LID option has been incorporated within the conceptually-planned surface parking lots throughout the District.

The bio-retention LID option has been incorporated into the District's large landscaped areas, Knoll Park vicinity, Twin Oaks Plaza (West), East Green Park, East Paseos near the Student Housing Village, and residential open space areas along the northwestern portion of the site.

~~The infiltration LID option has been incorporated into the District's North and South Neighborhood Green Parks, Knoll Park area, and along the Creek Trail.~~

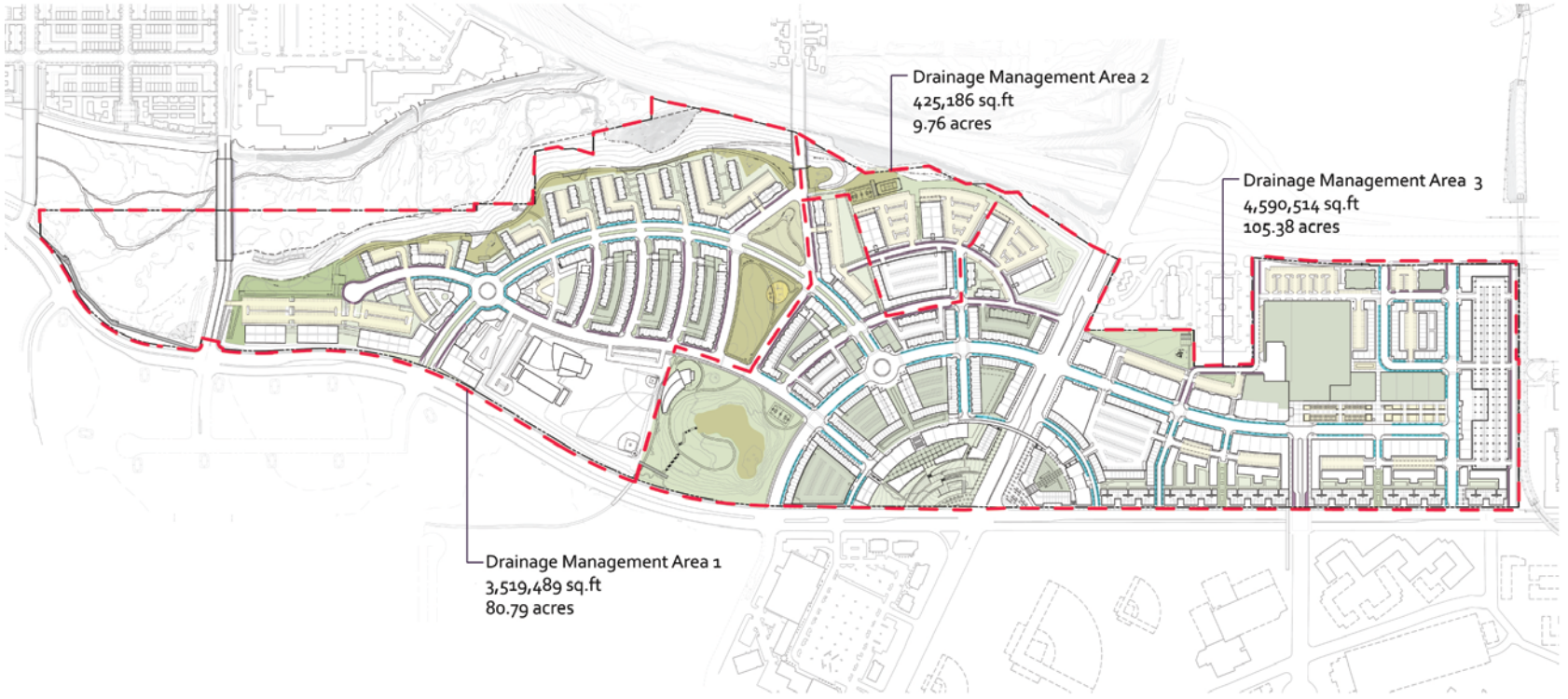
~~In order for LID measures to be most effective throughout an urban development project such as *University District*, the City of San Marcos and development community will need to jointly plan for its implementation through a detailed cost-sharing~~

~~program.~~ Beyond the applicable NPDES storm water management permit process currently required of developers, this Specific Plan does not establish explicit requirements for where developers should install certain LID features. Instead, this Plan provides a comprehensive menu of LID strategies from which developers may choose to implement project-wide.

The intent is to maximize the overall flexibility for the City and developers in installing a variety of different LID strategies. Every site within the District will have different storm water run-off constraints, based on the size and types of uses to be developed, and some project sites may have more or less opportunity to implement these strategies.

See Figure IV.~~N~~J: Menu of LID Strategies and Figure VI.~~O~~K: Conceptual Plan LID Strategies as well Chapter VI – Form-Based Code, for more detailed information regarding Low-Impact Development. Further, Appendix Item A.2: Low-Impact Development (LID) Matrix provides a detailed analysis of the proposed strategies and their respective effectiveness throughout the project site.

FIGURE IV.~~O~~K: Conceptual Plan LID Strategies (East)



LEGEND

0' 400' 800' 1600'

NORTH

Low Impact Development Features

- Vegetated Roof
- Bioretention
- Infiltration
- Permeable Paving
- Tree Grate Flow Through Planter
- Flow Through Planter
- Drainage Management Area Boundary

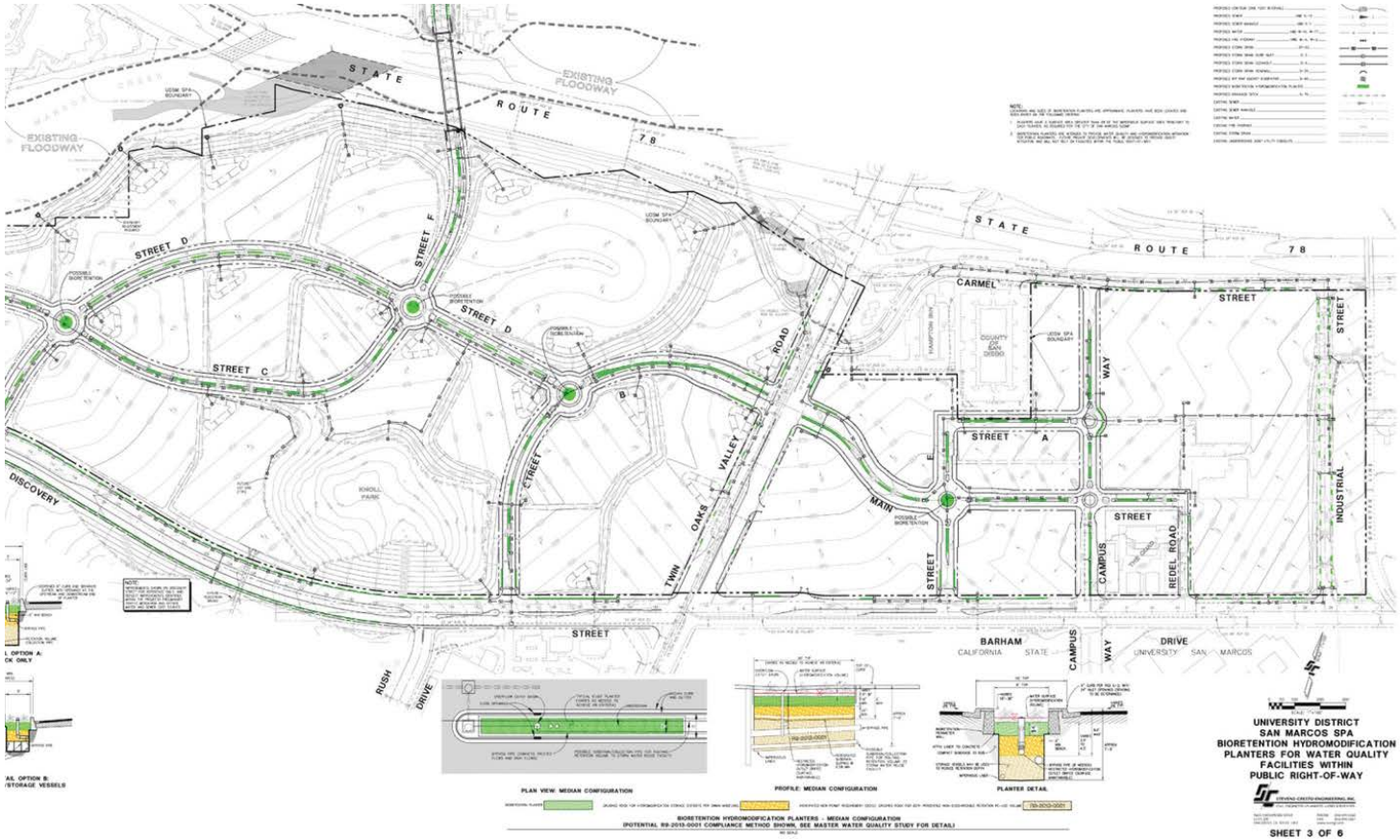


Figure to be revised to make it more legible

0' 400' 800' 1600'

Tree Grate Flow Through Planter

NORTH

FIGURE IV.K: Conceptual Plan LID Strategies (West)

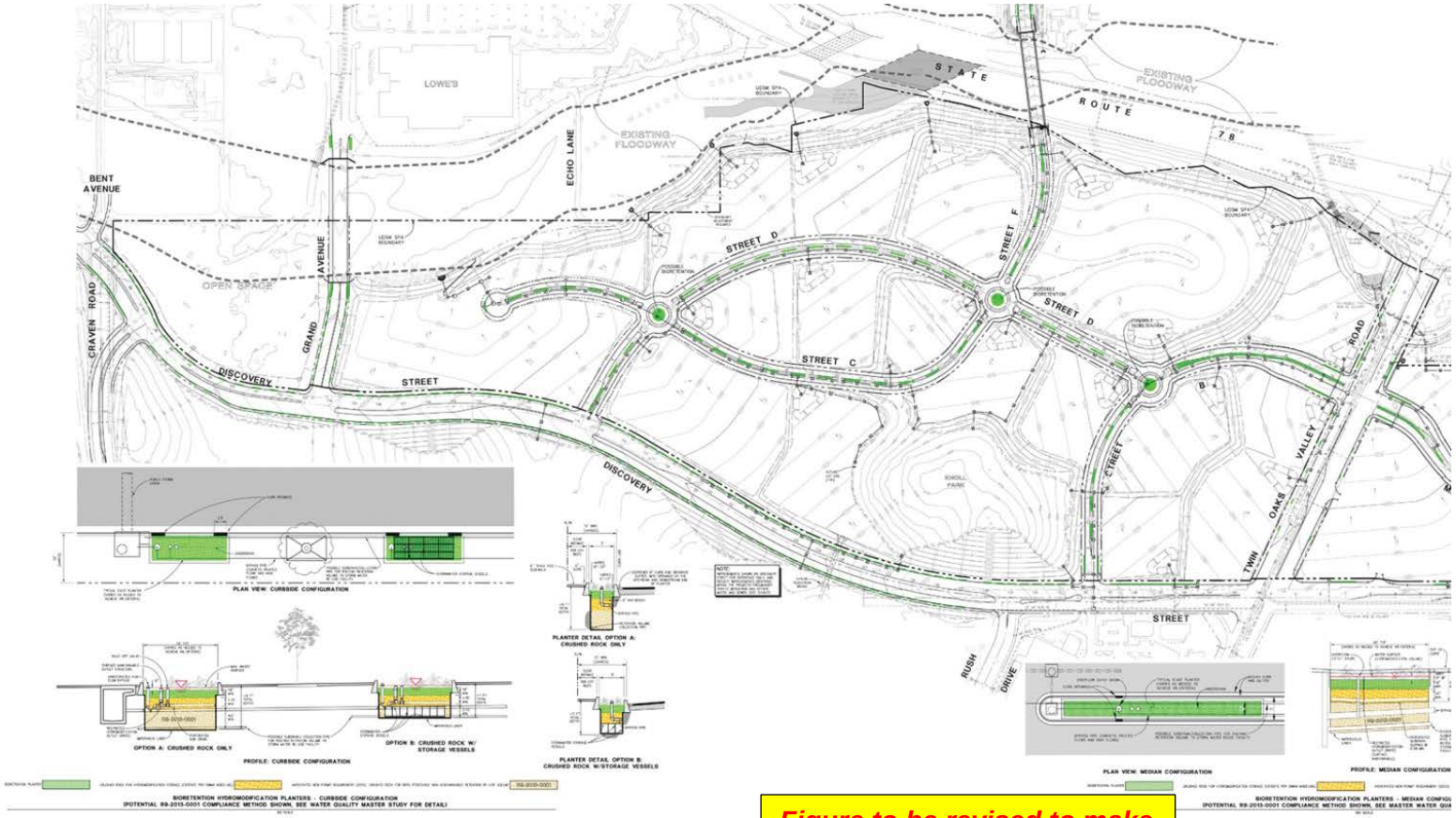


Figure to be revised to make it more legible

0

LEGEND

Bioretention

Tree Grate Flow Through Planter

V. TRANSPORTATION | CIRCULATION

V.1 Mobility Is Key

Understanding that mobility is of paramount importance to the success and economic vitality of mixed-use developments, the *University District* project has been designed to provide a wide range of alternative transportation choices to both residents and visitors. Transportation design solutions, both in and around the project area, focus on strong connections for pedestrians, bicyclists, public transit patrons, as well as automobiles.

Further, the circulation concepts incorporated into this Specific Plan emphasize access to the Civic Center, California State University San Marcos (CSUSM), Kaiser Medical Center, and future adjacent developments such as the *Creek District*. The *University District* project will employ both Transportation Demand Management (TDM) and Parking Demand Management (PDM) strategies.

(Continued on Next Page)

"The point of cities is multiplicity of choice, which applies to transportation too."

- Jane Jacobs, The Death and Life of Great American Cities

V.2 Circulation Concept and Illustrative

The *University District* street network is intended to foster connectivity for residents and visitors within the project area, as well as to the rest of the City of San Marcos. The District is envisioned to provide an interconnected network of curvilinear streets which are fed through primary project roads.

Primary project roads include Discovery Street/East Barham Drive to the south, East Carmel Street to the northeast, and Twin Oaks Valley Road. Grand Avenue is located on the western side of the project area.

V.2.1 Urban Form and Circulation

The master plan of *University District* emerged in response to existing site conditions such as topography, views, solar orientation, surrounding land uses, and existing vehicular and pedestrian transportation networks. The circulation concept for the project is comprised of two main spine streets that traverse east to west through the project area. The primary factor in establishing the street network was the existing topography. Care was taken to maintain existing topographical features and natural drainage patterns, where possible.

On the west side of Twin Oaks Valley Road, an existing 100-foot (approximately) knoll will be preserved and enhanced as a public park. The main network of streets on the west side curve around this landform and radiate outwards towards the creek. Proposed drainage patterns ~~follow this radial grid and~~ mimic the existing flow of water. ~~North from Knoll Park is the South and North Neighborhood Green. This provides a centralized system of park space that connects to the San Marcos Creek Trail and provides a 'green link' to the future Westlake Drive flyover bridge.~~ The network of streets on the west side also has been shaped to preserve and enhance existing views of the mountains and the creek. A spine street gentl<u>y</u>~~ling~~ arcs around the knoll and serves as the District's main commercial/residential boulevard on the west side of the project.

A second ~~curving~~ spine street extends from the knoll across Twin Oaks Valley Road to the east side. This road becomes the main spine on the east side and the location for the commercial core. Topography on the east side is relatively flat with a very slight slope towards the creek, serving more commercial uses. East of Twin Oaks Valley Road, the street grid is decidedly more rectilinear. These two spine roads are the primary circulation routes through the project area.

The intersection of these two spine roads on the west side becomes a major node within the project and is highlighted with traffic circles and unique landscaping. Secondary roads throughout the project radiate out from these main spine roads.

The spine streets were designed to provide clear links to key points throughout the City. The proposed Westlake Drive Bridge and Twin Oaks Valley Road connect *University District* to the area north of State Route 78 and the San Marcos Civic Center. Discovery Street connects to the Grand Avenue Bridge and Creek District. Twin Oaks Valley Road connects to State Route 78, the CSUSM campus, and residential neighborhoods to the south. Barham Drive connects to residential neighborhoods and Sprinter Rail Line to the east. Campus Way provides a direct link from the heart of CSUSM directly into the main street commercial core. The existing Industrial Street connection, linking Barham Drive and Carmel Way, is retained. ~~but relocated further west, aligning it closer to the urban core of *University District* and creating sufficient depth along the Sprinter Rail Line to construct one of the proposed "Park Once" parking structures to serve the project.~~

The circulation network created by these streets also highlights the open space amenities throughout the project. A continuous system of dedicated bicycle paths, pedestrian-oriented streets, sidewalks, and recreational trails link to the many plazas and parks dispersed throughout the project, as well as to the San Marcos Creek Trail.

See Figures V.A: Required Streets Diagram, V.B: Pedestrian Linkages Diagram, and V.C: Pedestrian and Vehicular Gateways Diagram.

FIGURE V.A: Required Streets Diagram

LEGEND

0′ 400′ 800′ 1600′

NORTH

- Streets Required by Specific Plan
- Existing Major Street Network
- Existing SR-78 Freeway
- Existing Sprinter Line Route

FIGURE V.A: Required Streets Diagram

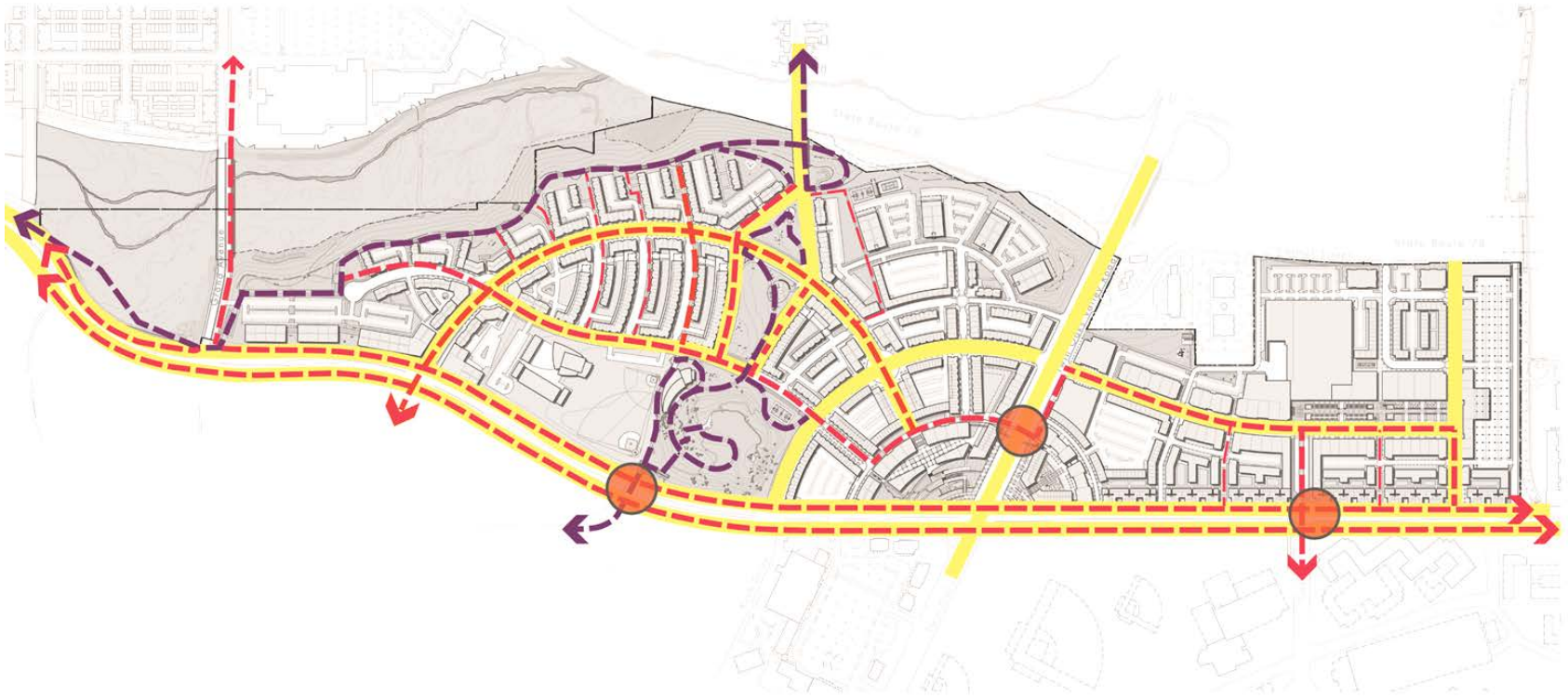
0' 400' 800' 1600'

NORTH

LEGEND

- Streets Required by Specific Plan
- Existing Major Street Network
- Existing SR-78 Freeway
- Existing Sprinter Line Route

FIGURE V.B: Pedestrian Linkages Diagram



LEGEND

- Pedestrian Bridge
- Primary Pedestrian Routes
- Secondary Pedestrian Routes
- Multi Use Trail
- Bicycle Lanes

FIGURE V.B: Pedestrian Linkages Diagram

0' 400' 800' 1600'

NORTH

LEGEND

- Pedestrian Bridge
- Primary Pedestrian Routes
- Secondary Pedestrian Routes
- Multi Use Trail
- Bicycle Lanes

FIGURE V.C: Pedestrian and Vehicular Gateways Diagram

FIGURE V.C: Pedestrian and Vehicular Gateways Diagram

0' 400' 800' 1600'

NORTH

LEGEND

- Pedestrian Entrance
- Vehicular Entrance
- Pedestrian and Vehicular Entrance

V.2.2 Parking and Transportation Demand Management

Parking and Transportation Demand Management (PTDM) refers to a comprehensive set of strategies for controlling parking, reducing traffic congestion and Vehicle Miles Traveled (VMT), as well as providing alternative modes of travel and access. These measures may include, but are not limited to "Park Once" strategies and parking benefit districts, establishment of an intra-city shuttle service, creation and/or improvement or interconnecting bicycle and pedestrian paths, provision of public transit passes, and instituting a ridesharing and/or car-sharing program.

A comprehensive PTDM program can help to improve efficiency on existing roadways and transportation system networks, and provide opportunities for implementing innovating transportation measures within redeveloping or newly developing areas. The PTDM to be created and approved by the City of San Marcos for *University District* will include a menu of possible management strategies to be implemented within the District, "Park Once" strategies, City formation of a Parking Benefit District, and an intra-city shuttle service.

V.2.3 "Park Once" Strategy

Fundamental to the creation of a thriving, compact mixed-use district is the creation of a "Park Once" environment, which encourages visitors to developments like *University District* to literally park their vehicle once upon arrival and then walk (or use some other form of public transit, trolley system, or bicycle) to access various parts of the project during the remainder of their visit. The typical suburban pattern of isolated, single-use buildings, each surrounded by parking lots, requires two vehicular movements and a parking space to be dedicated for each visit to a shop, or office, or civic institution. To accomplish three errands in this type of environment requires six movements in three parking spaces for three tasks.

With virtually all parking held in private hands, spaces are not efficiently shared between uses, and each building's private lots are therefore typically sized to handle a worst case parking load. If a proposed transit-oriented district attempts to provide typical suburban quantities of parking, with little or no sharing, the result will be a system that is costly and inefficient, and a land use pattern that is anything but transit-oriented.

The design of *University District* lends itself to the "Park Once" strategy because it allows operation of the parking supply as a single shared pool where spaces are efficiently shared between uses with differing parking demands during peak hours, days, and seasons.

As development proposals are submitted for review, the City of San Marcos will employ a variety of parking and transportation demand management strategies to ensure that parking and travel mode opportunities are sufficient to meet demand. Specific to implementing a "Park Once" strategy, the City of San Marcos may choose to form a parking benefit district to manage parking similar to a shared utility, such as streets and other public facilities, with "available-to-the-public" parking provided in strategically-placed lots and garages.

The following sections describe potential locations within the *University District* project area that are most suited for parking structures and/or garages that support the "Park Once" strategy (based on the Conceptual Land Use Plan provided in Chapter III):

Eastern Boundary

A parking structure in this location would abut the existing Sprinter Rail Line wall and elevated tracks (as a neighboring use), eliminating the need to shield one side of the structure, and support the Mixed-Use Commercial/Retail Core. Further, a parking structure in this location would buffer other west side uses from the tracks. This location offers ideal parking for transit riders in proximity to the Cal State San Marcos Sprinter Rail Line Station. In addition, the peak transit ridership parking needs are different from the anticipated parking needs within the commercial area, providing multiple uses for each parking space, as well as an additional source of parking revenue.

Western Edge of Commercial/Retail Core

Parking in this location offers the ability to support both the Mixed-Use Commercial/Retail Core, as well as the eastern side of the Mixed-Use Residential Area, allowing the potential for sharing of parking between retail, office, residential and hotel uses. This proposed location will enable visitors entering from Twin Oaks Valley Road to be quickly diverted from the main street into the parking structure without generating significant traffic along the main pedestrian-oriented main corridor.

West Side Mixed-Use Commercial/Retail Area

Parking in this location anticipates a structure with driveway access from both Twin Oaks Valley Road, as well as Discovery Street. The concentrated mix of uses proposed in this area will allow for substantial shared-parking opportunities during the course of a typical day.

West Side Freeway-Oriented Office Area

Parking in this location, to the south of the primary office uses, would encourage shared-parking by the planned office users with neighboring residential, retail, and hotel uses to the south and west.

Far West Side Location

Parking in this location would serve the Discovery Street office parking area, as well as neighboring retail and residential uses.

V.2.4 Sprinter Line and Bus Transit Services

Although automobiles may serve as the primary mode of transportation to the *University District* project, a major transportation component of the project is the Sprinter Rail Line. North County Transit District (NCTD) Sprinter Rail Line is a light rail system that runs approximately 22 miles along State Route 78 from, between Oceanside and Escondido. Passengers use the Sprinter Rail Line to travel from the coast to inland areas, and vice versa. Stations 12 (San Marcos Civic Center) and 13 (Cal State San Marcos) are located within walking distance to *University District*.

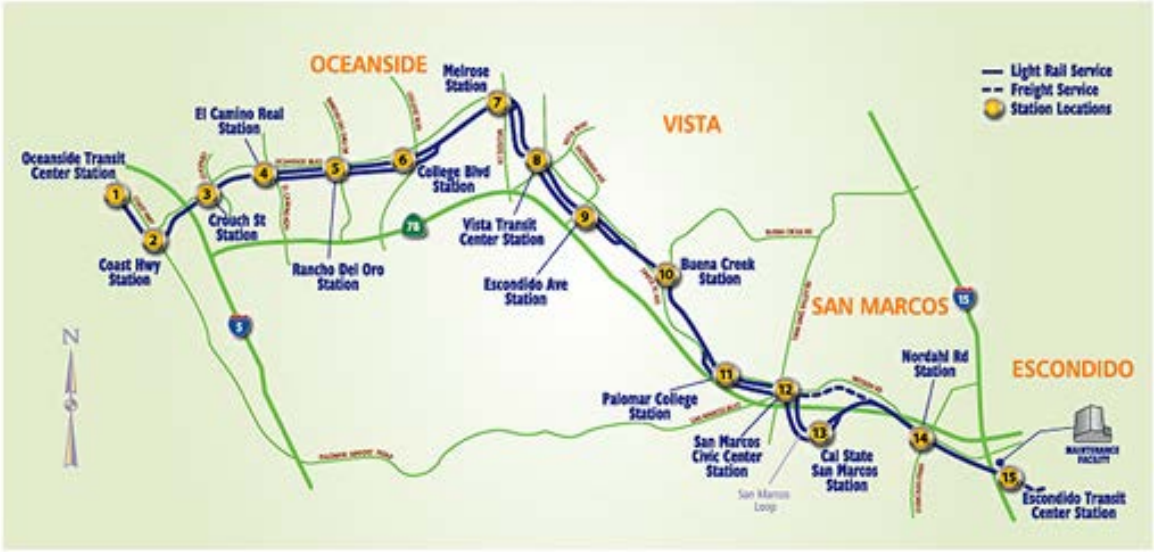
In 2008/2009, Sprinter Rail Line trains served Stations 12, 13, and other nearby Stations with approximately 65 trains per weekday and 50 trains each weekend day, connecting the *University District* project site with major regional employment, retail and recreation centers along the State Route 78 corridor. Ridership counts at the Cal State San Marcos Station average approximately 420 riders daily, with nearly one-quarter of the Sprinter Rail Line passes being sold to University students.

As of 2008, total average weekday ridership for the Sprinter Rail Line is approximately 8,300 passengers. It is projected that average daily ridership will increase by nearly 40 percent in 2009. Weekend ridership averages about 4,500 passengers on Saturdays and 3,500 passengers on Sundays. Given its projected ridership counts, this public transit system has strong potential to attract large volumes of visitors to *University District* who are already traveling through the State Route 78 corridor cities.

Separately, NCTD operates two bus lines through the *University District* project site, which include Route 341/442 and Route 347.

See Figure V.D: Sprinter Line Stations and Route for the existing light rail line route and stations between the Cities of Escondido and Oceanside.

FIGURE V.D: Sprinter Line Stations and Route



V.3 Intra-City Shuttle

As part of the Creek District Specific Plan process, the City of San Marcos developed and approved a plan for high-frequency shuttle service to connect the San Marcos Creek District, University Office and Medical Park, Civic Center, CSUSM, and multiple other destinations including the *University District*. An important part of the Transportation Demand Management (TDM) Plan for *University District* will be for this high-frequency shuttle service to serve the project. The City is developing a funding plan for this shuttle, such as the formation of a Community Facilities District (CFD).

The proposed shuttle routes, which are conceptual only, consist of the three (3) phases as shown in Figures V.E: TDM Route (Phase 1), V.F: TDM Route (Phase 2), and V.G: TDM Route (Phase 3). Actual shuttle route alignments are subject to change.

Phase 1 would be an employer shuttle taking workers from the University Office and Medical Park to the CSUSM Sprinter station during peak hours. Phase 2 would be expanded as an intra-city shuttle with two (2) routes that include sites such as *University District*, Palomar Station, and CSUSM. Phase 3 would be a slight variation to include the Creek District, as it is anticipated to be the final development constructed within the downtown core of San Marcos.

The proposed routes serve employment centers and commuter rail stations. In the first phase, the shuttle is designed to carry employees only during peak commute hours of the day (approximately 6:00–9:00 am and 4:00–7:00 pm). With the possible expansion of the shuttle into an intra-city system in the second phase, the schedule would change to cover the entire weekday beginning at 6 am in order to allow morning connections for residents living along the route and for people to get to their employers. The weekday service is anticipated to run until 11:30 pm in order to catch the entire commuter market as well as allow shoppers and retail employees a way to get home.

On Saturdays and Sundays, the service span would reflect the store hours since major non-retail employers like the City will be closed. On Saturdays the service would begin at around 7:00 am and end at around 11:30 pm once again allowing shoppers a way home once stores close for the evening. A shorter service span is suggested for Sundays since stores often open later and close earlier. Sunday hours are anticipated to be from around 8:00 am to 10:30 pm. Service span hours are based on assumptions of retail store, dining, an entertainment operating hours and employee shift hours.

To make the shuttle an attractive option for possible patrons, the shuttle must be frequent. While Phase 1 is simply timed to Sprinter train arrivals and departures, Phases 2 and 3 have been designed to operate on headway-based service without schedules, with vehicles arriving at least every 15 minutes. For Phases 2 and 3, it has been recommended that the shuttle run on 10-minute headways during the peak and 15-minute headways at non-peak times. With 10-minute headways, the average patron is anticipated to be waiting only five (5) minutes for a vehicle to arrive in the area where the routes overlap.

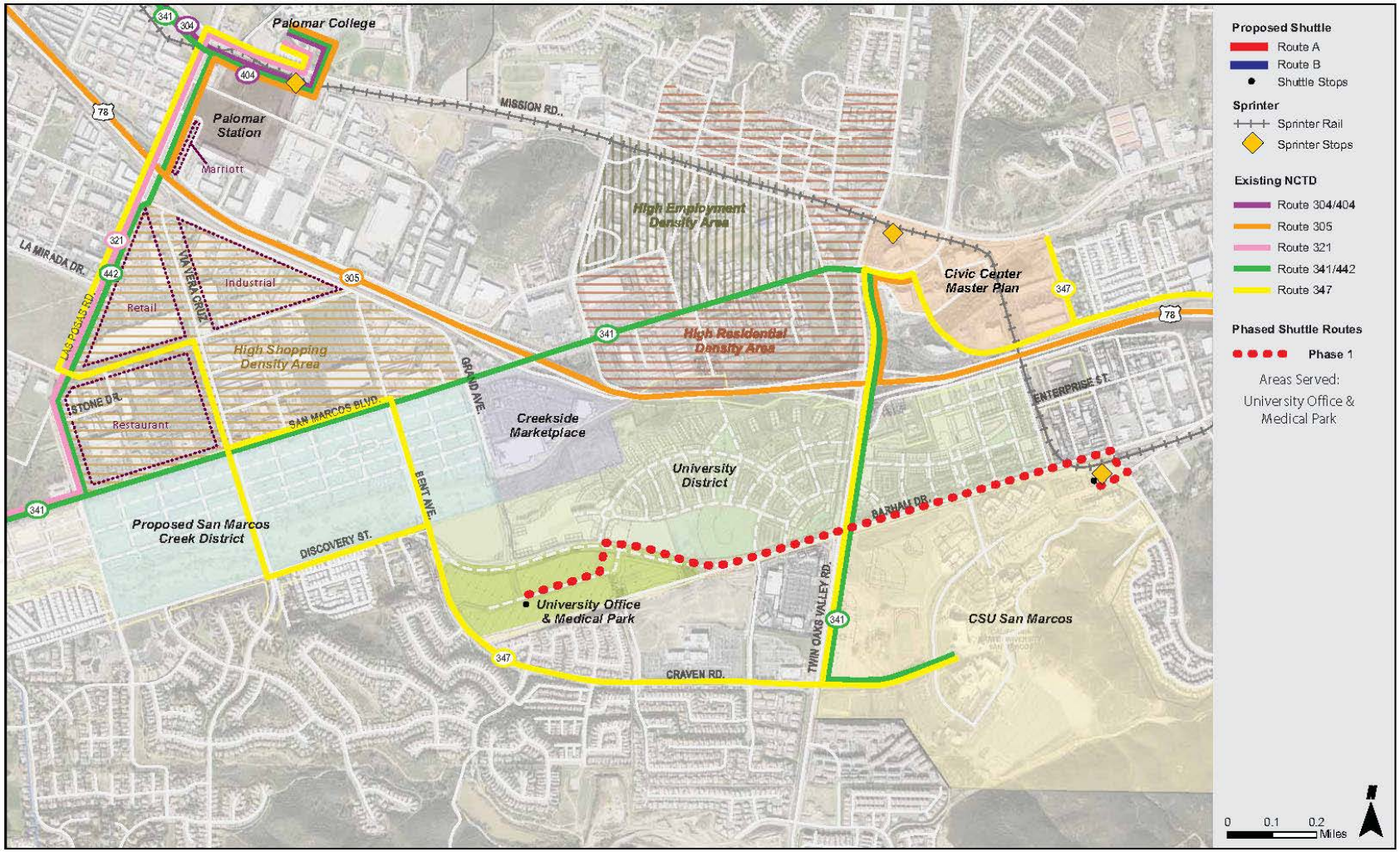
Phase 1 Routing

As noted above, Phase 1 routing would simply take employees and visitors from the University Office and Medical Park to the CSUSM station during peak commute hours (6:00–9:00 am and 4:00–7:00 pm) along East Barham Drive.

The route would be approximately 1.5 miles long. At an average speed of 15 mph (due to no interim stops), the route would take approximately five (5) minutes from end to end, with a 15-minute layover at the Sprinter station to pick up and drop off passengers for east- and westbound trains. At this frequency, only one (1) 30-passenger vehicle is necessary.

See Figure V.E: TDM Route (Phase 1) for route details.

FIGURE V.E: TDM Route (Phase 1)



Phase 2 Routing

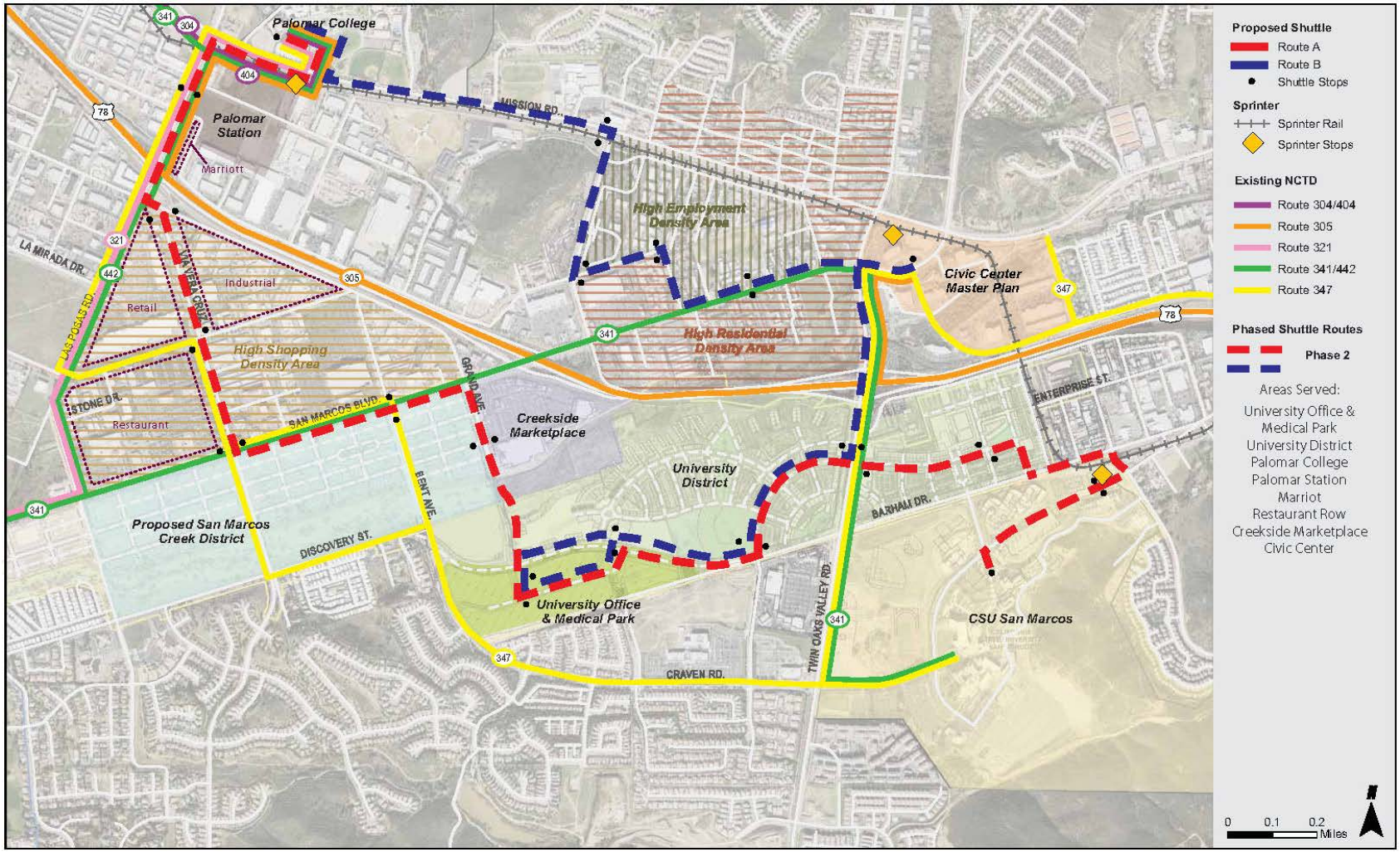
Phase 2 routing of the shuttle plan consists of two (2) partially overlapping routes (A and B), which both terminate at the bus station across Mission Road from the Palomar Sprinter station. These two (2) routes essentially cover all of the major downtown developments except for the Creek District, which is assumed to not yet be constructed.

Route A travels down from Palomar College by Restaurant Row, cutting south on Grand Avenue to the University Office and Medical Park and then heading east through the *University District* to CSUSM. Route B runs towards Civic Center via Mission and Knoll Roads, cuts south on Twin Oaks Valley Road and proceeds east through the *University District* to the University Office and Medical Park.

Route A is approximately 4.5 miles long and route B is almost 3.6 miles long. At an average speed of 11.5 mph, route A and route B would take approximately 23 and 18 minutes to complete, respectively.

See Figure V.F: TDM Route (Phase 2) for route details.

FIGURE V.F: TDM Route (Phase 2)



Phase 3 Routing

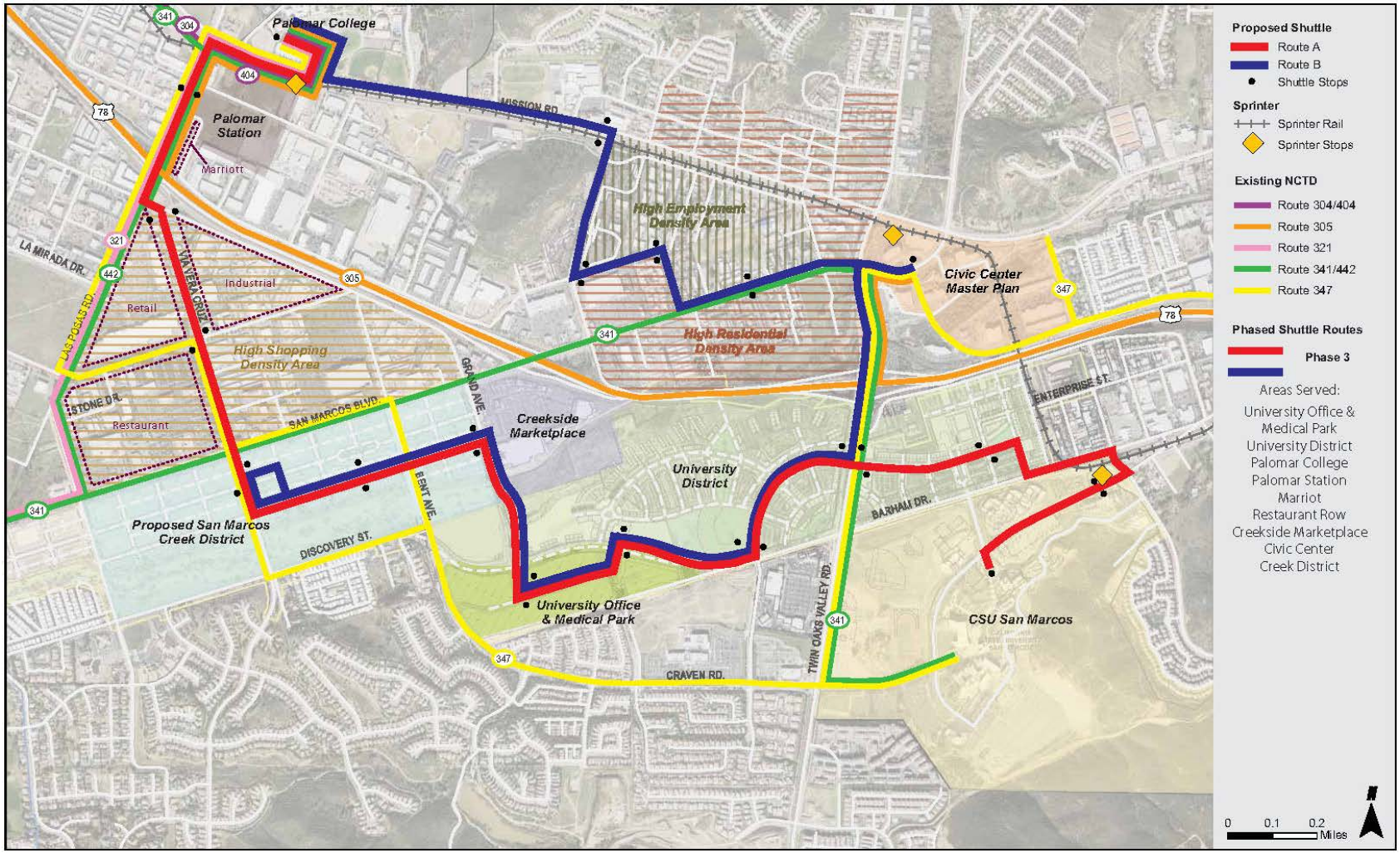
The Phase 3 route would alter the Phase 2 route by expanding shuttle service to the newly constructed Creek District.

Route A would be diverted off of San Marcos Boulevard to pass directly through the Creek District en-route to the Creekside Marketplace. Route B would be extended to terminate in the Creek District rather than at the University Office and Medical Park.

Route A's length would remain unchanged from Phase 2 while Route B would be extended almost one (1) mile, making the total route length approximately 4.6 miles. At an average speed of 11.5 mph, Route B would take about 23 minutes, the same time as route A.

See Figure V.G: TDM Route (Phase 3) for route details.

FIGURE V.G: TDM Route (Phase 3)



V.4 Transportation Conditions and Mitigations

A Circulation Plan has been created to identify the improvements necessary to mitigate traffic and parking impacts that will occur as a result of the estimated land use build-out associated with the *University District* Specific Plan Amendment (UDSPA). An updated ~~detailed~~ Traffic ~~Analysis~~ Impact Assessment was prepared for the *University District* Specific Plan Addeundum EIR, and includes recommended mitigation measures that are incorporated in the text and plans of this Chapter. The focus of the traffic impact assessment is a determination of whether the SPA will introduce additional traffic impacts that were not identified in the original UDSP EIR Traffic Impact Analysis prepared in 2009. This traffic impact assessment includes a review of various traffic-related factors that have a primary influence on the potential for the revised project to generate traffic impacts. The key traffic-related factors include:

- Land use changes and associated traffic generation;
- Changes to project-related trip assignment at build-out on study area roadways and at study area intersections;
- Changes to project-related traffic impacts;
- Changes to required mitigation measures;
- Changes to on-site traffic circulation needs; and
- Changes to mitigation phasing requirements.

~~A preliminary~~ The initial traffic analysis was prepared for the *University District* Specific Plan in accordance with SANTEC/ITE Traffic Study Guidelines, County of San Diego Congestion Management Plan (CMP) guidelines and Caltrans Guidelines for Preparing Traffic Impact Studies. The analysis forecasts the number of vehicle trips generated by the project. The SANDAG Traffic Generators (April 2002) trip generation rates were utilized in accordance with SANTEC/ITE Traffic Study Guidelines.

The project was analyzed with 2030 being the Horizon Year (final year) in which traffic generated would be at its greatest ~~height~~level, and traffic impacts may be the most adverse. In addition, interim analyses were also provided during ~~the years of 2015 and~~

~~2020. These incremental time periods provide focal points which are crucial in determining final traffic counts during the Horizon year of the project~~for a five-year and 10-year project horizon. A summary of the Traffic Analysis is provided below; please refer to the EIR for full analysis and discussion of traffic impacts and mitigation.

Methodology

The traffic study analyzed the followings study scenarios:

- Existing Conditions
- Horizon Year 2030 Conditions with Project (Specific Plan Land Uses)
- Horizon Year 2030 Conditions without Project
- Horizon Year 2030 Conditions with General Plan Land Uses
- Horizon Year 2030 Conditions with Project (w/ TDM-based Trip Generation Reductions)
- Interim Year 2015 (5-year horizon) Conditions without Project
- Interim Year 2015 (5-year horizon) Conditions with Project
- Interim Year 2020 (10-year horizon) Conditions without Project
- Interim Year 2020 (10-year horizon) Conditions with Project

Analysis of all intersections and roadway segments in the project study area is based on the SANTEC/ITE traffic study guidelines, and is consistent with the City of San Marcos ~~General Plan Circulation Element~~requirements. As required, the 2000 Highway Capacity Manual (HCM) operation methodology for Signalized and Un-signalized Intersections was used to determine the operating Levels of Service (LOS) of the study intersections. The Traffix™ software package was used to evaluate the study intersections using the HCM methodology. The HCM methodology describes the operation of an intersection using a range of levels of service (LOS) from LOS "A" (free-flow conditions) to LOS "F" (severely congested conditions), based on corresponding delay per vehicle thresholds for signalized and un-signalized intersections. The City of San Marcos considers Level of Service (LOS) "D" or better to be acceptable intersection operating conditions during peak traffic periods.

Study Area

A total of 42 existing intersections and 48 existing roadway segments were identified for inclusion in this traffic study (see Figure V.H: Study Area Intersections). Based on the requirements of the SANTEC/ITE traffic study guidelines, the study area consists of the following 48 existing and future intersections:

Mission Road / Knoll Road
Mission Road / Pico Avenue
Las Posas Road / State Route 78 Westbound Ramps
Las Posas Road / Grand Avenue
Via Vera Cruz / Grand Avenue
Via Vera Cruz / Linda Vista Drive
Bent Avenue / Grand Avenue
Knoll Road / Los Vallecitos Boulevard
San Marcos Boulevard / Rancho Santa Fe Road
San Marcos Boulevard / Discovery Street
San Marcos Boulevard / Las Posas Road
San Marcos Boulevard / Via Vera Cruz
San Marcos Boulevard / Bent Avenue
San Marcos Boulevard / Grand Avenue
San Marcos Boulevard / State Route 78 Eastbound Ramps
San Marcos Boulevard / State Route 78 Westbound Ramps-Knoll Road
San Marcos Boulevard / Westlake Drive
San Marcos Boulevard / Pico Avenue
San Marcos Boulevard / Twin Oaks Valley Road
San Marcos Boulevard / Rancheros Drive
San Marcos Boulevard-Vineyard Road / Mission Road
Discovery Street / La Sombra Drive
Discovery Street / Via Vera Cruz
Discovery Street / Bent Avenue-Craven Road *(only Bent in future)*
Discovery Street / Craven Road *(future intersection)*

Discovery Street / Grand Avenue *(future intersection)*
Discovery Street / Rush Drive *(future intersection)*
Discovery Street-Barham Drive / Twin Oaks Valley Road
Barham Drive / Campus Way
Barham Drive / La Moree Road
Barham Drive / Hill Street
Barham Drive / State Route 78 Eastbound Off-Ramp
Barham Drive / Woodland Parkway
Woodland Parkway / Rancheros Drive
Rancheros Drive / State Route 78 Westbound Ramps
Twin Oaks Valley Road / Borden Road
Twin Oaks Valley Road / Richmar Avenue
Twin Oaks Valley Road / State Route 78 Westbound Ramps
Twin Oaks Valley Road / State Route 78 Eastbound Ramps
Twin Oaks Valley Road / Carmel Street
Twin Oaks Valley Road / Campus Marketplace Driveway
Twin Oaks Valley Road / Craven Road
Craven Road / Rush Drive
Twin Oaks Valley Road / (North) Village Drive
Twin Oaks Valley Road / (South) Village Drive
Twin Oaks Valley Road / Street "C" *(Project Intersection)*
Discovery Street / Street "A" *(Project Intersection)*
Barham Drive / Street "E" *(Project Intersection)*

The City of San Marcos considers Level of Service (LOS) "D" or better to be acceptable intersection operating conditions during peak traffic periods. The following existing intersections are operating below this standard during peak hours:

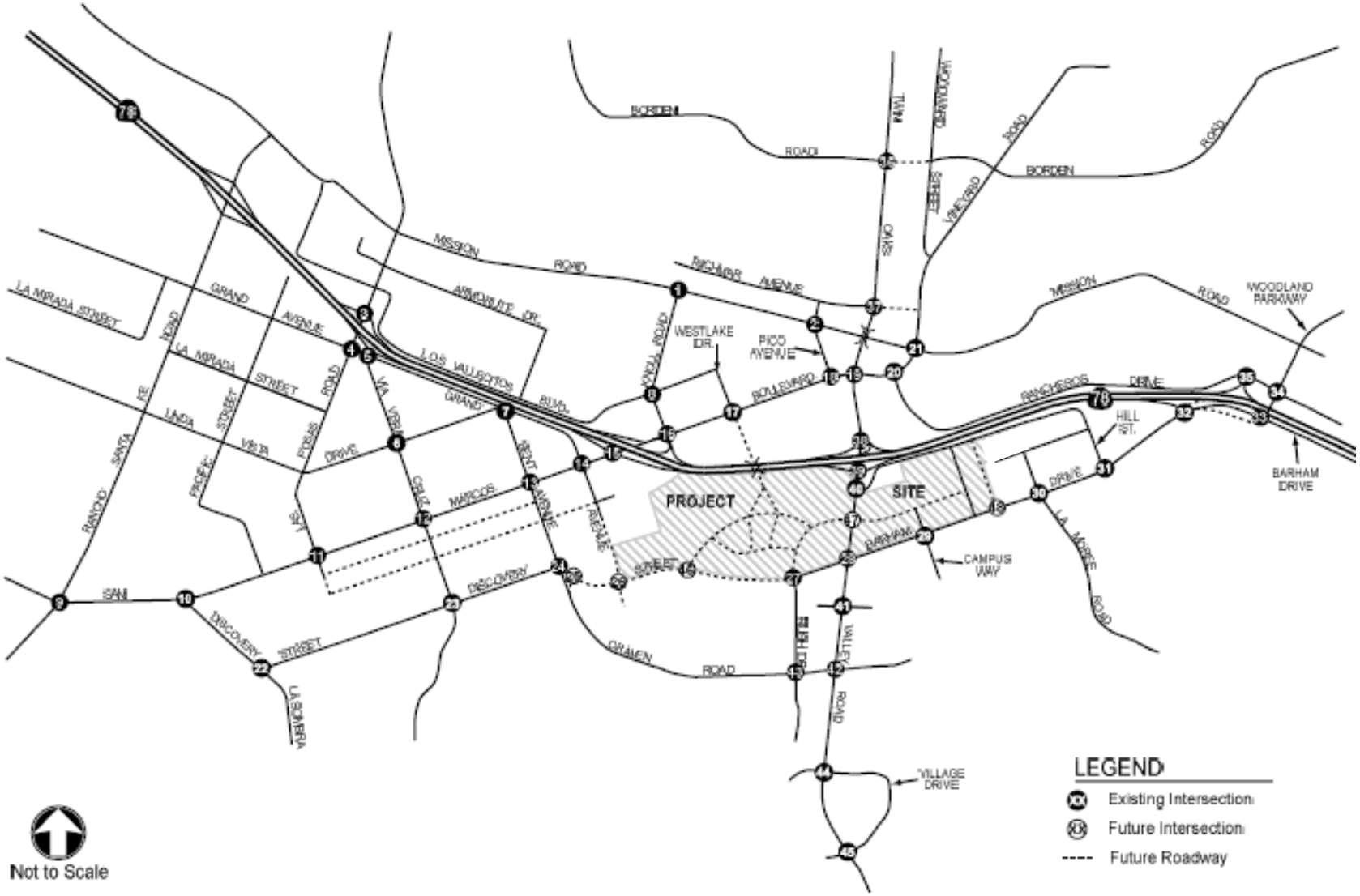
- San Marcos Boulevard / Rancho Santa Fe Road
- San Marcos Boulevard / Bent Avenue
- San Marcos Boulevard / Westlake Drive
- Discovery Street / Via Vera Cruz

- Barham Drive / Campus Way
- Barham Drive / Hill Street
- Twin Oaks Valley Road / Borden Road
- Twin Oaks Valley Road / Carmel Street

In addition, the following roadway segments were identified as operating below LOS "D" based on daily volume capacities:

- San Marcos Boulevard, from Rancho Santa Fe Road to Discovery Street
- San Marcos Boulevard, from Discovery Street to Las Posas Road
- San Marcos Boulevard, from Las Posas Road to Via Vera Cruz
- San Marcos Boulevard, from Via Vera Cruz to Bent Avenue
- Discovery Street, from Rush Drive to Twin Oaks Valley Road
- Barham Drive, from State Route 78 Eastbound Off-Ramp to Woodland Parkway
- Twin Oaks Valley Road, from Borden Road to Richmar Avenue
- Woodland Parkway, from Rancheros Drive to Barham Drive

FIGURE V.H: Study Area Intersections



V.4.1 Horizon Year 2030 (Project Build Out)

Analysis of Horizon Year 2030 conditions was conducted using the SANDAG Series 11 North San Diego County Sub-Area traffic model, which was modified to include the land uses and roadway network associated with the proposed University District Specific Plan project. A Select Zone Assignment model run was conducted by SANDAG for Year 2030 conditions that included the proposed land uses for the University District Specific Plan project, the proposed bridge crossing over State Route 78 between the San Marcos Boulevard and Twin Oaks Valley Road freeway interchanges, and an internal street network throughout the project site. All build-out roadway improvements in the project study area are included in the analysis of Horizon Year 2030 Conditions.

Specific Plan Amendment Project Description

At full build-out the proposed UDSPA project will consist of the following uses:

- 3,400 Mixed-Use Multi-Family Dwelling Units
- 700,000 square-feet Mixed-Use Community Commercial
- 652,000 square-feet Mixed-Use Office
- 300,000 square-feet Mixed-Use Medical Office
- 450 Hotel Rooms
- 30,000 square-foot Community Center
- 850-student Elementary School (pending School District decision)

The UDSPA project will continue to include construction of a new bridge crossing over the SR-78 freeway to provide direct access to the site from San Marcos Boulevard between SR-78 and Twin Oaks Valley Road. The proposed bridge crossing will be generally aligned with Westlake Drive, and a new signalized four-way intersection will be constructed at San Marcos Boulevard / Westlake Drive. An internal street network will be built throughout the project site, with access intersections provided on Discovery Street, Barham Drive, and Twin Oaks Valley Road. The project will also

provide a third westbound lane on Barham Drive along the project frontage between Twin Oaks Valley Road and the eastern boundary of the project site.

Specific Plan Amendment Project Trip Generation

The trip generation estimated for the original UDSP is summarized below in Table V.A.

Table V.A: Original UDSP Project Trip Generation at Project Build-Out

Land Use	Intensity	Unit	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out
Mixed Use Multi-Family Residential	3,400	DU	20,400	1,632	326	1,306	1,836	1,285	551
Mixed Use Community Commercial	1,000	KSF	80,000	3,200	1,920	1,280	8,000	4,000	4,000
Mixed Use Office	750	KSF	12,750	1,658	1,492	166	1,785	357	1,428
Mixed Use Medical Office	300	KSF	15,000	900	720	180	1,650	495	1,155
Hotel	450	Rooms	4,500	270	162	108	360	216	144
Community Center	30	KSF	686	49	30	19	49	14	35
Elementary School	850	Students	1,360	435	261	174	122	49	73
Sub Total			134,696	8,143	4,911	3,232	13,803	6,416	7,386
10% Mixed Use Reduction [(1)]			*-13,265*	*-766*	*-462*	*-304*	*-1,363*	*-635*	*-728*
5% Transit Reduction			*-6,735*	*-407*	*-246*	*-162*	*-690*	*-321*	*-369*
NET PROJECT TRIPS			**114,697**	**6,970**	**4,203**	**2,767**	**11,749**	**5,460**	**6,289**

Note: *(1) SANDAG allows a 10% trip rate reduction for mixed-use developments where residential and commercial are combined.*

(2) SANDAG does not have a trip rate available for a Community Center; therefore, the ITE trip generation rate for Community Center was used instead. Source: Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition, 2003.

Table V.B presents the UDSPA project trip generation at project build-out. As shown in this table, at project build-out, the proposed UDSPA project is forecast to generate approximately 92,880 trips per day, with approximately 5,970 trips occurring during the a.m. peak hour, and 9,511 trips occurring during the p.m. peak hour. In comparison, the original UDSP project was estimated to generate approximately 114,697 trips per day, with approximately 6,970 trips occurring during the a.m. peak hour, and 11,749 trips occurring during the p.m. peak hour. The trip generation comparison shows the UDSPA will reduce the UDSP daily and p.m. peak hour trips by 19% and the a.m. peak hour trips by 14%.

Table V.B: Proposed UDSPA Project Trip Generation at Project Build-Out

Land Use	Intensity	Unit	Daily Trips	AM Trips	AM In	AM Out	PM Trips	PM In	PM Out
Mixed Use Multi-Family Residential	3,400	DU	20,400	1,632	326	1,306	1,836	1,285	551
Mixed Use Community Commercial	700	KSF	56,000	2,240	1,344	896	5,600	2,800	2,800
Mixed Use Office	652	KSF	11,084	1,441	1,297	144	1,552	310	1,241
Mixed Use Medical Office	300	KSF	15,000	900	720	180	1,650	495	1,155
Hotel	450	Rooms	4,500	270	162	108	360	216	144
Community Center	30	KSF	686	49	30	19	49	14	35
Elementary School	850	Students	1,360	435	261	174	122	49	73
		Sub Total	109,030	6,967	4,140	2,827	11,169	5,170	6,000
		10% Mixed Use Reduction [(1)]	*-10,698*	*-648*	*-385*	*-263*	*-1,100*	*-511*	*-589*
		5% Transit Reduction	*-5,452*	*-348*	*-207*	*-141*	*-558*	*-258*	*-300*
		NET PROJECT TRIPS	**92,880**	**5,970**	**3,548**	**2,422**	**9,511**	**4,401**	**5,110**

Note: *(1) SANDAG allows a 10% trip rate reduction for mixed-use developments where residential and commercial are combined.*

(2) SANDAG does not have a trip rate available for a Community Center; therefore, the ITE trip generation rate for Community Center was used instead. Source: Institute of Transportation Engineers (ITE) Trip Generation, 7th Edition, 2003.

Specific Plan Amendment Project Traffic Impact Assessment

A comparison of project traffic generation for the daily and a.m. and p.m. peak hour, demonstrate that in all cases the UDSPA will result in fewer project trips on roadway segments and at intersections throughout the study area. As such, there is no possibility for the UDSPA project to introduce new off-site traffic impacts that were not identified in the original UDSP EIR Traffic Impact Analysis.

Specific Plan Amendment Project Buildout (Year 2030) Impacts and Mitigation

Although the UDSPA project will have a lower level of traffic impact due to the lower trip generation, the same list of off-site mitigation measures have been maintained that were identified in the original EIR Traffic Impact Analysis.

The following 11 intersections were previously identified as being significantly impacted by the project under Horizon Year 2030 conditions:

- Mission Road / Knoll Road
- San Marcos Blvd. / Rancho Santa Fe Road
- San Marcos Blvd. / Las Posas Road
- San Marcos Blvd. / Via Vera Cruz
- San Marcos Blvd. / Bent Avenue
- San Marcos Blvd. / Twin Oaks Valley Road
- Discovery Street / La Sombra Drive
- Barham Drive / La Moree Road
- Barham Drive / Woodland Parkway
- Twin Oaks Valley Road / Borden Road
- Twin Oaks Valley Road / SR-78 Eastbound Ramps

The following five roadway segments were identified as being significantly impacted by the project under Horizon Year 2030 conditions:

- Discovery Street, from San Marcos Blvd. to La Sombra Drive
- Discovery Street, from La Sombra Drive to Via Vera Cruz
- Bent Avenue, from San Marcos Blvd. to Discovery Street
- Westlake Drive, North of San Marcos Blvd.
- Twin Oaks Valley Road, from Richmar Avenue to San Marcos Blvd.

Mitigation measures have been identified for all of the above-listed intersections and roadway segments. The recommended mitigation measures for each significantly impacted intersection and roadway segment under Horizon Year 2030 conditions are described in detail below:

Specific Plan Amendment Project Buildout (Year 2030) Recommended Mitigation

Recommended Intersection Improvements

Mission Road / Knoll Road

- Northbound: Restripe approach to provide one left-turn lane, one shared left-turn/through/right-turn lane, and one right-turn lane.

San Marcos Boulevard / Rancho Santa Fe Road

- Westbound: Provide a third left-turn lane.

Note: The recommended improvements at San Marcos Boulevard / Rancho Santa Fe Road would mitigate the significant impact by reducing the average intersection delay to lower than the delay without the project. Improving intersection operations to an acceptable level of service would require additional widening at the intersection approaches to increase capacity, which may not be feasible due to development constraints.

San Marcos Boulevard / Las Posas Road

- Northbound: Restripe approach to provide one left-turn lane, one shared left-turn/through lane, and one shared through/right-turn lane.
- Southbound: Provide a second right-turn lane. Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding eastbound left-turn phase.
- Convert signal phasing to split phasing for the northbound and southbound approaches.

San Marcos Boulevard / Via Vera Cruz

- Southbound: Reduce existing dual left-turn lanes to a single left-turn lane; restripe approach to provide one left-turn lane, one through lane, and one shared through/right-turn lane.
- Eastbound: Provide a dedicated right-turn lane.

San Marcos Boulevard / Bent Avenue

- Convert signal phasing to split phasing for the northbound and southbound approaches.
- Northbound: Restripe approach to provide one left-turn lane, one shared left-turn/through lane, and one right-turn lane.
- Southbound: Restripe approach to provide one left-turn lane, one shared left-turn/through lane, and one right-turn lane.
- Westbound: Provide a second left-turn lane.

San Marcos Boulevard / Twin Oaks Valley Road

- Northbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding westbound left-turn phase.
- Southbound: Provide a dedicated right-turn lane.
- Westbound: Provide a third left-turn lane.

Discovery Street / La Sombra Drive

Install traffic signal and provide the following lane geometries:

- Northbound: Provide one shared through/right-turn lane (same as existing conditions).
- Southbound: Restripe approach to provide one left-turn lane and one shared left-turn/through lane.
- Westbound: Restripe approach to provide one left-turn lane and one right-turn lane. Provide a right-turn overlap phase.
- Provide split phasing for the northbound and southbound approaches.

Barham Drive / La Moree Road (West)

- Northbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding westbound left-turn phase.
- Southbound: Restripe approach to provide one left-turn lane and one shared through/right-turn lane.

Barham Drive / Woodland Parkway

- Westbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding southbound left-turn phase.

Twin Oaks Valley Road / Borden Road

- Eastbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding northbound left-turn phase.

Twin Oaks Valley Road / SR-78 Eastbound Ramps

- Eastbound (Off-Ramp Approach): Restripe approach to provide one left-turn lane, one shared left-turn/through/right-turn lane, and one right-turn lane. (Note that this improvement has already been implemented by the City of San Marcos)

Recommended Roadway Segment Improvements

Discovery Street, from San Marcos Boulevard to La Sombra Drive

- Improve roadway segment to four-lane Secondary Arterial standards.

Discovery Street, from La Sombra Drive to Via Vera Cruz

- Improve roadway segment to four-lane Secondary Arterial standards.

Note: The current City Circulation Element now has different designations for 4-lane roadways and the future widening of Discovery Street should be consistent with the current Circulation Element design standards.

Bent Avenue, from San Marcos Boulevard to Main Street (Creekside District)

- Improve roadway segment to four-lane roadway standards.

Note: The City Circulation Element classifies Bent Avenue as a two-lane roadway between San Marcos Boulevard and Discovery Street. The addition of traffic from the Creekside District Specific Plan project and other larger-scale projects results in daily roadway segment operations worsening to LOS F by Year 2030. The forecast Year 2030 ADT volume of 11,900 on Bent Avenue between San Marcos Boulevard and Discovery Street is an average of daily volumes along shorter segments within the Creekside District project, with the highest daily volume between San Marcos Boulevard and Main Street, and the lowest daily volume between Creekside Drive and Discovery Street. It is recommended that Bent Avenue from San Marcos Boulevard to Main Street be improved to four-lane roadway standards.

Bent Avenue, from Main Street (Creekside District) to Discovery Street

- Upgrade roadway segment to a two-lane roadway with continuous two-way left-turn lane (TWLTL).

Note: The existing daily capacity of Bent Avenue between San Marcos Boulevard and Discovery Street is 8,000 ADT is based on its current pavement width. Although Bent

Avenue south of Main Street can remain with two travel lanes to operate at LOS D or better, it is recommended that Bent Avenue from Main Street to Discovery Street be improved to a two-lane roadway with a continuous two-way left-turn lane (TWLTL).

Westlake Drive, North of San Marcos Boulevard

- Improve Westlake Drive from Dusty Lane to San Marcos Boulevard to a two-lane roadway with a two-way left-turn lane.

Note: This improvement can most likely be accommodated without physical widening; however, on-street parking would need to be prohibited to restripe the roadway as recommended.

Twin Oaks Valley Road, from Richmar Avenue to San Marcos Boulevard

- Improve intersection of Twin Oaks Valley Road / San Marcos Boulevard to provide peak hour operations at LOS D or better. The recommended improvements at Twin Oaks Valley Road / San Marcos Boulevard will also serve to mitigate the significant impact on this segment of Twin Oaks Valley Road.

Note: This 4-lane segment is totally access-controlled between the two intersections at either end and it is the operations of these two intersections during the peak hours that would most influence operations on this roadway segment. A close look at the peak hour directional volumes on this segment of Twin Oaks Valley Road showed that during the peak hours, a maximum of 1,600 vehicles would travel between Richmar Avenue and San Marcos Boulevard, or approximately 800 vehicles per lane. This is equivalent to the directional volumes per lane on most segments of San Marcos Boulevard, which are forecast to have daily operations at LOS D or better.

Table V.C and Table V.D summarize the recommended Horizon Year 2030 mitigation measures for the impacted intersection and roadway segment locations, respectively, as described above.

Table V.C: Summary of 2030 Mitigation Measures (Intersections)

Intersection	2030 NP	2030 WP	Recommended Mitigation Measure
Mission Rd. / Knoll Rd.		X	**NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane.
San Marcos Blvd. / Rancho Santa Fe Rd.	X	X	**WB:** Provide a third left-turn lane.
San Marcos Blvd. / Las Posas Rd.	X	X	**NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 shared through / right-turn lane. **SB:** Provide a second right-turn lane, and modify signal to provide a right-turn overlap phase. Convert NB and SB signal phasing to split phasing.
San Marcos Blvd. / Via Vera Cruz	X	X	**SB:** Restripe approach to provide 1 left-turn lane, 1 through lane, 1 shared through / right-turn lane. **EB:** Provide a dedicated right-turn lane.
San Marcos Blvd. / Bent Ave.	X	X	Convert NB and SB signal phasing to split phasing. **NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 right-turn lane. **SB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 right-turn lane. **WB:** Provide a second left-turn lane.
San Marcos Blvd. / Twin Oaks Valley Rd.	X	X	**NB:** Modify signal to provide a right-turn overlap phase. **SB:** Provide a dedicated right-turn lane. **WB:** Provide a third left-turn lane.
Discovery St. / La Sombra Dr.	X	X	Install traffic signal. Provide split phasing at NB and SB approaches. **NB:** No changes to existing lane geometry. **SB:** Restripe approach to provide 1 left-turn lane and 1 shared left-turn / through lane. **WB:** Restripe approach to provide a dedicated left-turn lane, and modify signal to provide a right-turn overlap phase.
Barham Dr. / La Moree Rd.	X	X	**NB:** Modify signal to provide a right-turn overlap phase. **SB:** Provide 1 left-turn lane and 1 shared through/right-turn lane.
Barham Dr. / Woodland Pkwy.		X	**WB:** Modify signal to provide a right-turn overlap phase.
Twin Oaks Valley Rd. / Borden Rd.		X	**EB:** Modify signal to provide a right-turn overlap phase.
Twin Oaks Valley Rd. / SR-78 EB Ramps	X	X	**EB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane. (Note: this improvement has already been implemented)

Note: *2030 NP = Year 2030 Without Project*

2030 WP = Year 2030 With Project (Specific Plan Land Uses)

Table V.D: Summary of 2030 Mitigation Measures (Roadway Segments)

Roadway Segment		2030 NP	2030 WP	Recommended Mitigation Measure
Discovery St., from San Marcos Blvd. to La Sombra Dr.		X	X	Improve to four-lane roadway.
Discovery St., from La Sombra Dr. to Via Vera Cruz		X	X	Improve to four-lane roadway.
Bent Ave.	From San Marcos Blvd. to Main St.	X	X	Improve to four-lane roadway.
	From Main St. to Discovery St.	X	X	Improve to two-lane roadway with two-way left-turn lane.
Westlake Dr., North of San Marcos Blvd. Bent Ave.			X	Improve to two-lane roadway with two-way left-turn lane.
Twin Oaks Valley Rd., from Richmar Ave. to San Marcos Blvd.		X	X	Improve intersection of Twin Valley Rd. / San Marcos Blvd. to provide LOS D or better peak hour operations (see Table 5 for recommended improvements at this intersection).

Note: *2030 NP = Year 2030 Without Project*

2030 WP = Year 2030 With Project (Specific Plan Land Uses)

V.4.2 Intersection and Roadway Mitigation Phasing Requirements

The primary purpose of this analysis is to evaluate the phasing requirements of the mitigation measures identified in the 2030 scenario with the project as well as the proposed phasing needs of new planned roadways such as the Discovery Street extension from Craven Road to Twin Oaks Valley Road and the new Westlake Drive bridge crossing.

To update the phasing analysis of mitigation measure improvements, several factors were considered including:

- Current traffic volumes at the intersections that are impacted by the project.
- Estimated traffic associated with City of San Marcos approved or pending projects.
- The City's current Capital Improvement Program (CIP) transportation projects and the anticipated timing of those projects.
- Findings of the original mitigation phasing analysis that was performed for interim 5 and 10-year forecast periods (e.g. 2015 and 2020)
- Estimated traffic associated with the UDSPA

The phasing analysis also included a review of the updated 2030 traffic forecast from the SANDAG Series 11 North County Traffic Model. This model includes the most up to date information relative to the City's General Plan land use and circulation element. For reference purposes, the current transportation projects included in the City's CIP are summarized in Table V.E.

The results of the mitigation phasing analysis for mitigation measures at study area intersections are summarized in Table V.F. The analysis has determined the maximum level of project trip generation that can occur before each mitigation measure must be constructed. In all cases, the project trip generation threshold applies to the number of trips generated during the more critical p.m. peak hour. The threshold is considered to be reached if ether the inbound or outbound threshold is achieved during the p.m. peak hour.

Also noted, is whether there is a CIP transportation project that is related to the mitigation measure and the currently programmed timing for the transportation project. In some cases, the UDSPA mitigation measure would be a component of the planned transportation project and coordination would be required. In these cases, the schedule of the CIP project would dictate the timing of the mitigation measure implementation. In other cases, the completion of the CIP transportation project would influence travel patterns in a manner that would accelerate the need for the mitigation measure. In these cases, the schedule of the CIP project would also dictate the need to implement the mitigation measure and this may be in advance of reaching the project trip generation threshold identified. While the timing of the related CIP Transportation project could be in advance of reaching the project trip generation threshold identified herein, the project would need to participate on a "fair share" basis to the cost of the mitigation measure at the time of the CIP project construction.

The results of the mitigation phasing analysis for mitigation measures on study area roadway segments are summarized in Table V.G. It should be noted that the extension of Discovery Street from Rush Street to Bent Street occurs at the first trip generation threshold level (760 total, 350 inbound, 410 outbound p.m. peak hour project trips) and this improvement is related to the CIP transportation construction project identified for Discovery Street between 2017 and 2019. The updated analysis indicates that Discovery should be constructed as a four-lane divided roadway from Bent to Rush Street and as a six-lane divided roadway from Rush Street to Discovery. The extension of Grand Avenue to Discovery could be delayed until the project meets the second trip generation threshold level (1,760 total, 795 inbound, 915 outbound p.m. peak hour project trips).

Table V.E: City of San Marcos Capital Improvement Program Transportation Projects

ID#-Roadway Name	From	To	Improvement	Start Year of Construction	Year Open to Traffic
SM1--South Santa Fe Ave	Bosstick Blvd	Smilax Rd	Realign & Signalize Intersection	2017	2018
SM2--Woodland Pkwy	La Moree Rd	Rancheros Blvd	Interchange Improvements w/ Barham Widening	2017	2019
SM3--Discovery St	Via Vera Cruz Rd	Bent Ave/Craven Rd	Widen Roadway	2017	2019
SM4--Via Vera Cruz Rd	San Marcos Blvd	Discovery St	Street Improvements	2017	2019
SM5--Discovery St	Craven Rd	Twin Oaks Valley Rd	Street Improvements	2017	2019
SM6--Barham Dr	Twin Oaks Valley Rd	La Moree Rd	Widen Roadway	2018	2019
SM7--Creekside Dr	Via Vera Cruz Rd	Grand Ave	Street Improvements	2018	2019
SM8--Borden Rd	Mulberry Rd	Vineyard Rd	Street Reconstruction	2018	2019
SM9--Borden Rd	Wulff St	Redhill Ln	Street Widening	2018	2019
SM10--E. La Moree Rd	Williamsburg Dev.	Sandy Ln	Street Widening	2018	2019
SM11--Twin Oaks Valley Rd	Buena Creek Rd	Sycamore Dr	Street Widening	2019	2020
SM12--Twin Oaks Valley Rd	La Cienega Rd	Cassou Rd	Street Improvements	2019	2020
SM13--Twin Oaks Valley Rd	Cassou Rd	Buena Creek Rd	Street Improvements	2019	2020
SM14--Richland Rd	Borden Rd	Rock Springs Rd	Street Improvements	2020	2021
SM15--Rancho Santa Fe SM16--Interchange	& SR78	& SR78	Interchange Improvements	2020	2021
SM17--Rancho Santa Fe Rd	South Santa Fe Rd	Grand Ave	Street Improvements	2020	2021
SM18--Richmar Ave	Twin Oaks Valley Rd	Woodward St	Street Improvements	2020	2021
SM19--San Marcos Blvd	Knoll Rd	Pico Ave	Street Widening	2020	2021
SM20--Rancho Santa Fe Rd	Grand Ave	San Marcos Blvd	Street Widening	2020	2021
SM21--Borden Rd	Via Barquero	Palomar College Entrance	Street Widening	2020	2021
SM22--Mulberry Dr	Woodward St	Olive St	Street Widening	2020	2021
SM23--San Marcos Blvd	Discovery Street	Bent Ave	Street Improvements	2025	2027

~~*V.4.1 Interim Year 2015*~~

~~The primary purpose of including the interim Year 2015 conditions scenario is to evaluate the phasing requirements of the mitigation measures identified in the 2030 "With Project" Scenario with the project as well as the proposed new Westlake Drive bridge crossing.~~

~~To determine the interim Year 2015 conditions in the project study area, forecast project traffic associated with City of San Marcos approved or pending projects was added to existing traffic volumes. This formed the base conditions upon which traffic generated by the proposed project was added. The interim Year 2015 conditions analysis assumes that several of the larger scale projects will only be partially developed. The assumed development status of the larger-scale cumulative projects by 2015 is listed as follows:~~

- ~~Palomar College Master Plan – 50percent of planned student increase~~
- ~~San Marcos *Creek District* Specific Plan – 10percent built and occupied~~
- ~~University Medical and Office Park – 33percent built and occupied~~
- ~~Kaiser Permanente Master Plan – 20percent built and occupied~~
- ~~CSU San Marcos Master Plan – 38percent of planned student increase~~

~~The interim Year 2015 analysis assumes the following summary of City-wide roadway and intersection improvements to be in place and that the proposed Westlake Drive flyover State Route 78 is not yet constructed (see EIR for full discussion):~~

~~*Description of Roadway Improvements*~~

~~**San Marcos Boulevard**~~
~~Widened to a six-lane Prime Arterial from Rancho Santa Fe Road to Las Posas Road~~

~~**Grand Avenue:**~~
~~Extended south to Discovery Street and constructed as a four-lane Major Arterial~~

~~**Discovery Street:**~~
~~Widened to four lanes from Via Vera Cruz to Bent Avenue-Craven Road; Extended east from Bent Avenue-Craven Road to Rush Drive, constructed as a four-lane Major Arterial from Bent Avenue / Craven to Grand Avenue, and constructed as six-lane Prime Arterial from Grand Avenue to Twin Oaks Valley Road~~

~~**Barham Drive:**~~
~~Widened to a six-lane Prime Arterial from Twin Oaks Valley Road to Woodland Parkway; The proposed University District Specific Plan project would be responsible for widening Barham Drive along the project frontage between Twin Oaks Valley Road and the eastern boundary of the project site.~~

~~***Description of Intersection Improvements***~~

~~**Discovery Street / Via Vera Cruz**~~
~~Installation of a traffic signal~~

~~**Discovery Street / Bent Avenue-Craven Road**~~
~~Re-alignment of intersection into two offset "T" intersections; Installation of traffic signals at both new intersections~~

~~**Discovery Street / Grand Avenue**~~
~~New signalized intersection constructed~~

~~**Discovery Street / Rush Drive**~~
~~New signalized intersection constructed~~

~~**Barham Drive / Campus Way**~~
~~Installation of traffic signal and second westbound left-turn lane for inbound CSUSM traffic~~

Twin Oaks Valley Road / Carmel Street
Installation of a half traffic signal, which would provide southbound protection, left-turn phasing and control of northbound traffic

Barham Drive / La Moree Road
A second westbound left-turn lane provided for inbound CSUSM traffic.

See Table V.A: Summary of 2015/2020 Mitigation Measures for a detailed description of physical improvements for interim years 2015 and 2020.

V.4.2 Interim Year 2020

The interim Year 2020 analysis assumes the same summary of City-wide roadway and intersection improvements for 2015, as noted above, to be in place along with the following additions (see EIR for full discussion):

Description of Roadway Improvements

Woodland Parkway
Widened to four-lane Major Arterial from Rancheros Drive to Barham Drive

Description of Intersection Improvements

Barham Drive / Hill Street
Installation of a traffic signal

Barham Drive / SR-78 Eastbound Ramps
Eastbound on-ramp constructed adjacent to existing off-ramp, designed as "hook" ramps; Additional lanes provided to increase intersection capacity

Rancheros Drive / SR-78 Westbound Ramps
Installation of traffic signal and additional lanes provided to increase intersection capacity

~~Under interim Year 2020 conditions, the addition of traffic generated by the proposed project results in significant impacts at the following six intersections:~~

- ~~San Marcos Boulevard / Grand Avenue~~
- ~~San Marcos Boulevard / State Route 78 Westbound Ramps-Knoll Road~~
- ~~San Marcos Boulevard / Twin Oaks Valley Road~~
- ~~Discovery Street / Grand Avenue~~
- ~~Discovery Street - Barham Drive / Twin Oaks Valley Road~~
- ~~Twin Oaks Valley Road / State Route 78 Eastbound Ramps~~

~~The results of the interim Year 2020 conditions roadway segment analysis show that the addition of traffic generated by the proposed project results in significant impacts at the following three roadway segments:~~

- ~~San Marcos Boulevard, from Grand Avenue to State Route 78~~
- ~~Twin Oaks Valley Road, from San Marcos Boulevard to State Route 78~~
- ~~Twin Oaks Valley Road, from State Route 78 to Street "C"~~

~~Mitigation measures are found to be required for the above listed intersections and roadway segments if the planned Westlake Drive Bridge is not constructed by 2020. A close evaluation of each of these intersections was conducted to identify any improvements that could be implemented without the Westlake Drive Bridge. The evaluation results showed that there are no feasible improvements due to high right-of-way acquisition costs and other considerations to mitigate the intersections of San Marcos Boulevard/Grand Avenue and Twin Oaks Valley Road/State Route 78 Eastbound Ramps to a LOS that is better than without the project. Therefore, the only reasonable mitigation measure is to construct the Westlake Drive Bridge to divert traffic from these two intersections.~~

~~The mitigation measures recommended under Horizon Year 2030 conditions show the ultimate intersection improvement needs after the bridge is constructed. The only exception is at San Marcos Boulevard / Grand Avenue, where it is recommended that an~~

~~eastbound right turn lane be provided by 2020 in addition to the improvements recommended under Interim Year 2015 conditions.~~

~~A close evaluation of the three significantly impacted roadway segments under Interim Year 2020 conditions showed that all three roadway segments are already built up to or beyond their ultimate General Plan Circulation Element classification. Therefore, the only feasible mitigation measure is the construction of the Westlake Drive Bridge, which would divert daily traffic away from these roadway segments.~~

~~It should be noted that the following phasing schedule is recommended for the Interim Year 2015 and Year 2020 mitigation measures that have previously been described. This phasing schedule may be modified as an Administrative Amendment to this Specific Plan, as outlined in Chapter IX – Implementation, based on the results of subsequent traffic analysis accepted by the City.~~

~~Improvements Required Prior to Year 2015 (Before 15 Percent Build-Out of Project)~~

- ~~San Marcos Boulevard / Grand Avenue Improvements~~
- ~~San Marcos Boulevard / Twin Oaks Valley Road Improvements~~
- ~~Twin Oaks Valley Road / State Route 78 Eastbound Ramps Improvements~~

~~Improvements Required Prior to Year 2020 (Before 50 Percent Build-Out of Project)~~

- ~~Construction of Westlake Drive Bridge (before 25 Percent Build-Out of Project)~~
- ~~Eastbound Right Turn Lane at San Marcos Boulevard / Grand Avenue (before 20 Percent Build-Out of Project)~~

~~It should be noted that mitigation measures recommended under Horizon Year 2030 conditions with the proposed project, but not in either 2015 or 2020, need to be implemented between 2020 and 2030 as development progresses toward build-out of the project.~~

~~See Table V.A: Summary of 2015/2020 Mitigation Measures.~~

Table V.A: Summary of 2015/2020 Mitigation Measures

Intersections	Deficient Scenario				Recommended Mitigation Measure (Intersections)
	2015 NP	2015 WP	2020 NP	2020 WP	
Interim Year 2015 Conditions					
San Marcos Boulevard / Grand Avenue	X	X			NB: Convert signal phasing to protected left-turns. Re-stripe approach to provide 2 left-turn lanes, 1 through lane, and 1 right-turn lane. SB: Convert signal phasing to protected left-turns. Re-stripe approach to provide 2 left-turn lanes, 1 through lane, 1 shared through/right-turn lane. EB: Re-stripe approach to provide 1 left-turn lane, 3 through lanes, 1 shared through/right-turn lane.
San Marcos Boulevard / Twin Oaks Valley Road	X	X			NB: Modify signal to provide right-turn overlap phase. SB: Provide a dedicated right-turn lane. WB: Provide a third left-turn lane.
Twin Oaks Valley Road / SR-78 EB Ramps		X			EB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane.
Interim Year 2020 Conditions					
San Marcos Boulevard / Grand Avenue	X	X	X	X	EB: Provide a dedicated right-turn lane (in addition to the improvements recommended under Interim Year 2015 conditions). Construct Westlake Drive bridge over SR-78.
San Marcos Boulevard / WB Ramps -Knoll Road			X	X	Construct Westlake Drive bridge over SR-78.
San Marcos Boulevard / Twin Oaks Valley Road	X	X	X	X	Construct Westlake Drive bridge over SR-78 (in addition to the improvements recommended under Interim Year 2015 conditions).
Discovery Street / Grand Avenue				X	Construct Westlake Drive bridge over SR-78.
Discovery Street – Barham Drive / Twin Oaks Valley Road				X	Construct Westlake Drive bridge over SR-78.
Twin Oaks Valley Road / SR-78 EB Ramps		X	X	X	Construct Westlake Drive bridge over SR-78 (in addition to the improvements recommended under Interim Year 2015 conditions).

Table V.F: Summary of Mitigation Measure Phasing Requirements – Intersection Improvements

Intersection	Project Trip Generation Threshold	Required Coordination w/ CIP Project Construction Period	Recommended Mitigation Measure
Twin Oaks Valley Rd. / SR-78 EB Ramps	760 PM Peak Hr. Inbound: 350 Outbound: 410		**EB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane. (Note: This improvement has already been implemented)
San Marcos Blvd. / Via Vera Cruz	760 PM Peak Hr. Inbound: 350 Outbound: 410	SM4 (Est. 2017 – 2019)	**SB:** Restripe approach to provide 1 left-turn lane, 1 through lane, 1 shared through / right-turn lane. **EB:** Provide a dedicated right-turn lane.
San Marcos Blvd. / Bent Ave.	760 PM Peak Hr. Inbound: 350 Outbound: 410	SM3 & SM5 (Est. 2017 – 2019)	Convert NB and SB signal phasing to split phasing. **NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 right-turn lane. **SB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1right-turn lane. **WB:** Provide a second left-turn lane.
San Marcos Blvd. / Las Posas Rd.	760 PM Peak Hr. Inbound: 350 Outbound: 410		Convert NB and SB signal phasing to split phasing. **NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1shared through / right-turn lane. **SB:** Provide a second right-turn lane, and modify signal to provide a right-turn overlap phase.
Barham Dr. / La Moree Rd.	760 PM Peak Hr. Inbound: 350 Outbound: 410	SM6 (Est. 2018 – 2019)	**NB:** Modify signal to provide a right-turn overlap phase. **SB:** Provide 1 left-turn lane and 1 shared through/right-turn lane.
Discovery St. / La Sombra Dr.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM3 & SM5 (Est. 2017 – 2019)	Install traffic signal. Provide split phasing at NB and SB approaches. **NB:** No changes to existing lane geometry. **SB:** Restripe approach to provide 1 left-turn lane and 1 shared left-turn / through lane. **WB:** Restripe approach to provide a dedicated left-turn lane, and modify signal to provide a right-turn overlap phase.

Intersection	Project Trip Generation Threshold	Required Coordination w/ CIP Project Construction Period	Recommended Mitigation Measure
Barham Dr. / Woodland Pkwy.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM2 (Est. 2017 – 2019)	**WB:** Modify signal to provide a right-turn overlap phase.
Twin Oaks Valley Rd. / Borden Rd.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM8 & SM9 (Est. 2018 – 2019)	**EB:** Modify signal to provide a right-turn overlap phase.
San Marcos Blvd. / Grand Ave.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM5 (Est. 2017 – 2019)	**NB:** Convert signal phasing to protected left-turns. Restripe approach to provide two left-turn lanes, one through lane, and one right-turn lane. **SB:** Convert signal phasing to protected left-turns. Restripe approach to provide two left-turn lanes, one through lane, and one shared through/right-turn lane. **EB:** Reduce existing dual left-turn lane to a single left-turn lane. Restripe approach to provide three through lanes and one shared through/right-turn lane. (Note: Some of these improvements have already been implemented)
San Marcos Blvd. / Twin Oaks Valley Rd.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM19 (Est. 2020 – 2021)	**NB:** Modify signal to provide a right-turn overlap phase. **SB:** Provide a dedicated right-turn lane. **WB:** Provide a third left-turn lane.
San Marcos Blvd. / Rancho Santa Fe Rd	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM20 (Est. 2020 – 2021)	**WB:** Provide a third left-turn lane.
Mission Rd. / Knoll Rd.	2,855 PM Peak Hr. Inbound: 795 Outbound: 915		**NB:** Restripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane.

Note: *Mitigation measure is required prior to project trip threshold being exceeded or completion of related CIP project, whichever occurs first.*

Table V.G: Summary of Mitigation Measure Phasing Requirements – Roadway Improvements

Roadway Segment	Project Trip Generation Threshold	Required Coordination w/ CIP Project Construction Period	Recommended Mitigation Measure
Bent Ave. from San Marcos Blvd. to Main St.	760 PM Peak Hr. Inbound: 350 Outbound: 410	SM5 (Est. 2017 -2019)	Improve to four-lane roadway
Bent Ave. from Main St. to Discovery St.	760 PM Peak Hr. Inbound: 350 Outbound: 410	SM5 (Est. 2017 -2019)	Improve to two-lane roadway with two-way left-turn lane.
Discovery St., from San Marcos Blvd. to La Sombra Dr.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM3 & SM5 (Est. 2017 -2019)	Improve to four-lane roadway
Discovery St., from La Sombra Dr. to Via Vera Cruz	1,760 PM Peak Hr. Inbound: 795 Outbound: 915	SM3 & SM5 (Est. 2017 -2019)	Improve to four-lane roadway
Twin Oaks Valley Rd., from Richmar Ave. to San Marcos Blvd.	1,760 PM Peak Hr. Inbound: 795 Outbound: 915		Improve intersection of Twin Valley Rd. / San Marcos Blvd. to provide LOS D or better peak hour operations (see Table 5 for recommended improvements at this intersection).
Westlake Dr. Bridge from San Marcos Blvd. to Project Street D on West Side of Project	2,855 PM Peak Hr. Inbound: 795 Outbound: 915		Construct minimum two-lane bridge. Monitor directional peak hour volume and widen to four lanes if single direction volume reaches 800 vehicles per hour prior to project build-out.
Westlake Dr., North of San Marcos Blvd. Bent Ave.	2,855 PM Peak Hr. Inbound: 795 Outbound: 915		Improve to two-lane roadway with two-way left-turn lane.

Note: *Mitigation measure is required prior to project trip threshold being exceeded or completion of related CIP project, whichever occurs first.*

Freeway Analysis

A freeway analysis of the project was conducted in accordance with Cal Trans Requirements, using criteria from the 2000 Highway Capacity Manual and the 2000 Highway Design Manual. Cal Trans has a target level of service at project transitions between LOS "C" and LOS "D" for peak hour traffic volumes. In addition, Cal Trans requires freeway ramp interchanges to be evaluated using the Intersection Lane Volumes (ILV) methodology for evaluating intersection performance. To be classified as a stable intersection, the intersection must operate at 1,500 vehicles per hour or less. Although the UDSPA will generate fewer trips and fewer project trips will use the freeway, the reduction in project trips is not anticipated to significantly change the findings of the initial traffic study analysis.

Ramp Intersections

Based on the analysis, the following ramp intersections are forecast to operate at deficient levels of service under the Horizon Year 2030 Scenario:

- Las Posas Road / State Route 78 Westbound Ramps
- San Marcos Boulevard / State Route 78 Westbound Ramps — Knoll Road
- Twin Oaks Valley Road / State Route 78 Eastbound Ramps
- Barham Drive / State Route 78 Eastbound Ramps

Freeway Mainline Segments

In addition, the following freeway mainline segments are forecast to operate at LOS "F" under the Horizon Year 2030 Scenario. An "ON" in the description below denotes where motorists would merge onto the freeway, and an "OFF" denotes where motorists would exit:

- State Route 78 Eastbound, from Las Posas Road ON to San Marcos Blvd OFF (pm)
- State Route 78 Westbound, from Twin Oaks Valley Road ON to San Marcos Boulevard OFF (am)

- State Route 78 Eastbound, from San Marcos Boulevard ON to Twin Oaks Valley Road OFF (pm)
- State Route 78 Eastbound, from Twin Oaks Valley Road ON to Barham Drive OFF (pm)
- State Route 78 Westbound, from Rancheros Road ON to Twin Oaks Valley Road OFF (pm)
- State Route 78 Westbound, from Nordahl Road ON to Rancheros Road OFF (am)
- State Route 78 Eastbound, from Barham Drive ON to Nordahl Road OFF (pm)

Freeway Ramp Junction / Merge Analysis

It is also estimated that the following freeway ramp junction points will also operate at LOS "F" under the 2030 Horizon Year Scenario:

- Las Posas Road Eastbound On-Ramp (PM)
- San Marcos Boulevard Eastbound On-Ramp (PM)
- Twin Oaks Valley Road Westbound On-Ramp #1 (AM)
- Twin Oaks Valley Road Westbound On-Ramp #2 (AM)
- Twin Oaks Valley Road Westbound Off-Ramp (AM)
- Twin Oaks Valley Road Eastbound On-Ramp (PM)
- Barham Drive Eastbound Off-Ramp (PM)
- San Marcos Boulevard Eastbound Off-Ramp (PM)
- Barham Drive Eastbound On-Ramp (PM)

Given that the project will add traffic and affect levels of service for the freeway ramp intersections, mainline segments, and junctions discussed above, the impacts of the proposed University District Specific Plan project are considered significant and mitigation measures are required.

While the addition of one HOV lane in each direction as included in the SANDAG Regional Transportation Plan (RTP) would mitigate the impacts associated with 2030 forecast traffic with the proposed University District project, the HOV project is not

currently in the "reasonably funded" highway program. The City of San Marcos has initiated discussions with Caltrans and SANDAG that are aimed at identifying interim State Route 78 corridor projects and various potential corridor study alternatives that could be participated in on a fair share basis. These discussions are currently underway but are not advanced enough at this time to reference the specific projects or studies in detail. Once the City's participation options have been identified by Caltrans, the appropriate participation level for the University District can be assessed, and potential mitigation measures can be discussed.

Transportation Demand Management Plan and Recommended Parking and TDM Monitoring Plan

A Transportation Demand Management (TDM) study prepared in late 2008 indicates that, with an aggressive TDM program in place, the trip generation for the proposed University District Specific Plan project is potentially reduced by over 50 percent for the Horizon Year 2030 with project conditions. Based on the initial traffic analysis report, a reduction in project trips of this magnitude could eliminate the need for some of the mitigation measures that are projected to be needed in the later phases of the project

The intent of the Monitoring Plan is to prescribe a means in which the City of San Marcos can monitor the effectiveness of its overall parking supply requirements and demand as individual projects within the University District Specific Plan Amendment area are being constructed. The Monitoring Plan would also consider the effectiveness of various Parking and Transportation Demand Management (PTDM) programs. If certain measures are proving to be unproductive following the City's review of Annual Transportation Reports, then adjustments can be made.

~~***Note:*** *2015 NP = Year 2015 without Project / 2015 WP = Year 2015 with Project / 2020 NP = Year 2020 without Project / 2020 WP = Year 2020 with Project*~~

~~***V.4.3 Horizon Year 2030 (Project Build Out)***~~

~~Analysis of Horizon Year 2030 conditions was conducted using the SANDAG Series 11 North San Diego County Sub-Area traffic model, which was modified to include the land uses and roadway network associated with the proposed *University District* Specific Plan project. A Select Zone Assignment model run was conducted by SANDAG for Year 2030 conditions that included the proposed land uses for the~~

University District Specific Plan project, the proposed bridge crossing over State Route 78 between the San Marcos Boulevard and Twin Oaks Valley Road freeway interchanges, and an internal street network throughout the project site. All build-out roadway improvements in the project study area are included in the analysis of Horizon Year 2030 Conditions.

It should be noted that the 2030 Build-Out Analysis was run under the assumption that by the year 2030, the same summary of City-wide roadway and intersection improvements for 2015 and 2020, as noted above, will be in place with the Westlake Drive flyover and the following additions (see EIR for full discussion):

Description of Roadway Improvements

San Marcos Boulevard
Widened to a six-lane Prime Arterial from Rancho Santa Fe Road to Twin Oaks Valley Road; however, only two westbound lanes are assumed on San Marcos Boulevard west of Rancho Santa Fe Road

Barham Drive
Widened to a six-lane Prime Arterial from Twin Oaks Valley Road to Woodland Parkway; Re-aligned from State Route 78 eastbound ramps to Woodland Parkway

Woodland Parkway
Widened to a four-lane Major Arterial from Rancheros Drive to Barham Drive.

Description of Intersection Improvements

San Marcos Boulevard / Rancho Santa Fe Road
A second northbound right-turn lane and one westbound right-turn lane provided

TDM-Based Project Conditions

A Transportation Demand Management (TDM) study prepared in late 2008 indicates that, with an aggressive TDM program in place, the trip generation for the proposed *University District* Specific Plan project is potentially reduced by over 50 percent for the Horizon Year 2030 with project conditions.

~~The study intersections and roadway segments in this scenario are limited to those locations where significant impacts were identified under Horizon Year 2030 with project conditions. The purpose of this scenario is to determine if the mitigation needs can potentially be reduced if an aggressive TDM program were put in place for the proposed project.~~

~~Under Horizon Year 2030 conditions with project, with the TDM-based trip generation reduction, the addition of traffic generated by the proposed project results in significant impacts at the following nine intersections:~~

~~Mission Road / Knoll Road~~
~~San Marcos Boulevard / Rancho Santa Fe Road~~
~~San Marcos Boulevard / Via Vera Cruz~~
~~San Marcos Boulevard / Bent Avenue~~
~~San Marcos Boulevard / Twin Oaks Valley Road~~
~~Discovery Street / La Sombra Drive~~
~~Barham Drive / La Moree Road~~
~~Barham Drive / Woodland Parkway~~
~~Twin Oaks Valley Road / State Route Eastbound Ramps~~

~~The results of the Horizon Year 2030 conditions roadway segment analysis with the project, with the TDM-based trip generation reduction show that the addition of project-generated traffic significantly impacts the following five roadway segments:~~

~~Discovery Street, from San Marcos Boulevard to La Sombra Drive~~
~~Discovery Street, from La Sombra Drive to Via Vera Cruz~~
~~Bent Avenue, from San Marcos Boulevard to Discovery Street and Westlake Drive, North of San Marcos Boulevard~~
~~Twin Oaks Valley Road, from Richmar Avenue to San Marcos Boulevard~~

~~***Intersection Improvements Required Prior to Year 2030 (Before Full Project Build-Out)***~~

~~**Mission Road / Knoll Road**~~
~~Northbound: Re-stripe approach to provide one left-turn lane, one shared left-turn/through/right-turn lane, and one right-turn lane~~

~~**San Marcos Boulevard / Rancho Santa Fe Road**~~
~~Westbound: Provide a third left-turn lane~~

~~San Marcos Boulevard / Via Vera Cruz~~
~~Southbound: Reduce existing dual left-turn lanes to a single left-turn lane; re-stripe approach to provide one left-turn lane, one through lane, and one shared through/right-turn lane; Eastbound: Provide a dedicated right-turn lane~~

~~San Marcos Boulevard / Bent Avenue~~
~~Convert signal phasing to split phasing for the northbound and southbound approaches; Northbound: Re-stripe approach to provide one left-turn lane, one shared left-turn/through lane, and one right-turn lane; Southbound: Re-stripe approach to provide one left-turn lane, one shared left-turn/through lane, and one right-turn lane; Westbound: Provide a second left-turn lane~~

~~San Marcos Boulevard / Twin Oaks Valley Road~~
~~Northbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding westbound left-turn phase; Southbound: Provide a dedicated right-turn lane; Westbound: Provide a third left-turn lane~~

~~Discovery Street / La Sombra Drive~~
~~Install traffic signal and provide the following lane geometries; Northbound: Provide one shared through/right-turn lane (same as existing conditions); Southbound: Re-stripe approach to provide one left-turn lane and one shared left-turn/ through lane; Westbound: Re-stripe approach to provide one left-turn lane and one right-turn lane. Provide a right-turn overlap phase. Provide split phasing for the northbound and southbound approaches~~

~~Barham Drive / La Moree Road (West)~~
~~Northbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding westbound left-turn phase; Southbound: Provide one left-turn lane and one shared through/right-turn lane~~

~~Barham Drive / Woodland Parkway~~
~~Westbound: Modify signal to provide right-turn overlap phase. Prohibit u-turns during the corresponding southbound left-turn phase~~

~~Twin Oaks Valley Road / State Route 78 Eastbound Ramps~~
~~Eastbound (Off-Ramp Approach): Re-stripe approach to provide one left-turn lane, one shared left-turn/through/right-turn lane, and one right-turn lane.~~

Roadway Improvements Required Prior to Year 2030 (Before Full Project Build-Out)

Discovery Street, from San Marcos Boulevard to La Sombra Drive
Improve roadway segment to four-lane Secondary Arterial standards

Discovery Street, from La Sombra Drive to Via Vera Cruz
Improve roadway segment to four-lane Secondary Arterial standards

It should be noted that The City Circulation Element classifies Discovery Street as a four-lane Major Arterial from San Marcos Boulevard to Grand Avenue, and the SANDAG Series 11 2030 North County Sub-Area Model assumes the build-out of all City Circulation Element roadways to their ultimate street classification. Due to the right-of-way impacts that would be associated with widening Discovery Street between San Marcos Boulevard and Via Vera Cruz, the existing roadway classification was used for all future scenarios to determine improvements needs under Year 2030 conditions with the proposed project. It is recommended that Discovery Street from San Marcos Boulevard to Via Vera Cruz be widened to four-lane Secondary Arterial standards (64 feet curb-to-curb width) rather than improving to its ultimate four-lane Major Arterial standards (76 feet curb-to-curb width). This improvement would mitigate the project impact to an acceptable level of service, and it is recommended that the City Circulation Element be revised to downgrade Discovery Street between San Marcos Boulevard and Via Vera Cruz to a four-lane Secondary Arterial.

Westlake Drive, North of San Marcos Boulevard
Improve Westlake Drive from Dusty Lane to San Marcos Boulevard to a two-lane Collector with a two-way left-turn lane

It should be noted that Improvement can most likely be accommodated without physical widening. However, on-street parking would need to be prohibited to re-stripe the roadway as recommended.

Bent Avenue, from San Marcos Boulevard to Main Street (Creek District)
Improve roadway segment to four-lane Secondary Arterial standards.

It should be noted that the City Circulation Element classifies Bent Avenue as a two-lane Collector between San Marcos Boulevard and Discovery Street. The addition of traffic from the Creekside District Specific Plan project and other larger-scale projects results in daily roadway segment operations worsening to LOS "F" by Year 2030. The forecast Year 2030 ADT volume of 11,900 on Bent Avenue between San Marcos Boulevard and Discovery Street is an average of daily volumes along shorter segments within the Creekside District project,

~~with the highest daily volume between San Marcos Boulevard and Main Street, and the lowest daily volume between Creekside Drive and Discovery Street. It is recommended that Bent Avenue from San Marcos Boulevard to Main Street be improved to four lane Secondary Arterial standards.~~

~~**Bent Avenue, from Main Street (Creek District) to Discovery Street**~~
~~Upgrade roadway segment to a two-lane Collector with a continuous two-way left-turn lane (TWLTL).~~

~~It should be noted that the existing daily capacity of Bent Avenue between San Marcos Boulevard and Discovery Street is 8,000 ADT is based on its current pavement width. Although Bent Avenue south of Main Street can remain with two travel lanes to operate at LOS "D" or better, it is recommended that Bent Avenue from Main Street to Discovery Street be improved to a two-lane Collector with a continuous two-way left-turn lane (TWLTL).~~

~~**Street "C", from Twin Oaks Valley Road to Industrial Street** *(Project Access Roadway)*~~
~~Improve roadway segment to four-lane Secondary Arterial standards from Twin Oaks Valley Road to the parking garage access located between Twin Oaks Valley Road and Street "D", and implement the proposed TDM program.~~

~~**Twin Oaks Valley Road, from Richmar Avenue to San Marcos Boulevard**~~
~~Improve intersection of Twin Oaks Valley Road / San Marcos Boulevard to provide peak hour operations at LOS "D" or better. The recommended improvements at Twin Oaks Valley Road and San Marcos Boulevard will also serve to mitigate the significant impact on this segment of Twin Oaks Valley Road~~

~~It should be noted that although the City of San Marcos General Plan Circulation Element classifies Twin Oaks Valley Road from Richmar Avenue to San Marcos Boulevard as a six-lane Prime Arterial, this segment, most of which consists of the bridge crossing over Mission Road, is currently built as a four-lane Major Arterial. Since this segment is totally access-controlled by the two intersections at either end, it is the operations of these two intersections during the peak hours that would most influence operations on this roadway segment. A closer look at the peak hour directional volumes on this segment of Twin Oaks Valley Road showed that during the peak hours, a maximum of 1,600 vehicles would travel between Richmar Avenue and San Marcos Boulevard, or approximately 800 vehicles per lane. This is equivalent to the directional volumes per lane on most segments of San Marcos Boulevard, which are forecast to have daily operations at LOS "D" or better.~~

~~Since the identified impacts occur at some locations that are forecast to operate at a deficient LOS in the "With Project" Scenario and in the "Without Project" Scenario, a fair-share contribution has been calculated for the project under Horizon Year 2030 with project~~

conditions, with the TDM-based trip generation reduction. Fair share contributions were calculated by dividing the project trips by the total increase in traffic forecast through the intersections and on the roadway segments from existing to Horizon Year 2030 conditions.

See Table V.B: Summary of 2030 Mitigation Measures (Intersections) and Table V.C: Summary of 2030 Mitigation Measures (Roadway Segments).

Table V.B: Summary of 2030 Mitigation Measures (Intersections)

Intersections	Deficient Scenario			Recommended Mitigation Measure (Intersections)
	2030 NP	2030 GPLU	2030 WP	
Mission Road / Knoll Road			X	NB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane.
San Marcos Boulevard / Rancho Santa Fe Road	X	X	X	WB: Provide a third left-turn lane.
San Marcos Boulevard / Las Posas Road	X	X	X	NB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 shared through / right-turn lane. SB: Provide a second right-turn lane, and modify signal to provide a right-turn overlap phase. Convert NB and SB signal phasing to split phasing.

San Marcos Boulevard / Via Vera Cruz	X	X	X	SB: Re-stripe approach to provide 1 left-turn lane, 1 through lane, 1 shared through / right-turn lane. EB: Provide a dedicated right-turn lane.
San Marcos Boulevard / Bent Avenue	X	X	X	Convert NB and SB signal phasing to split phasing. NB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 right-turn lane. SB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through lane, and 1 right-turn lane. WB: Provide a second left-turn lane.
San Marcos Boulevard / Twin Oaks Valley Road	X	X	X	NB: Modify signal to provide a right-turn overlap phase. SB: Provide a dedicated right-turn lane. EB: Provide a third left-turn lane.
Discovery Street / La Sombra Drive	X	X	X	Install traffic signal. Provide split phasing at NB and SB approaches. NB: No changes to existing lane geometry. SB: Re-stripe approach to provide 1 left-turn lane and 1 shared left-turn / through lane. WB: Re-stripe approach to provide a dedicated left-turn lane, and modify signal to provide a right-turn overlap phase.
Barham Drive / La Moree Road	X	X	X	NB: Modify signal to provide a right-turn overlap phase. SB: Provide 1 left-turn lane and 1 shared through/right-turn lane.
Barham Drive / Woodland Parkway		X	X	WB: Modify signal to provide a right-turn overlap phase.
Twin Oaks Valley Road / Borden Road			X	EB: Modify signal to provide a right-turn overlap phase.
Twin Oaks Valley Road / SR-78 EB Ramps	X	X	X	EB: Re-stripe approach to provide 1 left-turn lane, 1 shared left-turn / through / right-turn lane, and 1 right-turn lane.

Note: *2030 NP = Year 2030 without Project / 2030 GPLU = Year 2030 with General Plan Land Uses / 2030 WP = Year 2030 with Project (Specific Plan Land Uses)*

Table V.C: Summary of 2030 Mitigation Measures (Roadway Segments)

Roadway Segments	Deficient Scenario			Recommended Mitigation Measure (Roadway Segments)
	2030 NP	2030 GPLU	2030 WP	
Discovery Street, from San Marcos Boulevard to La Sombra Drive	X	X	X	Improve to four-lane Secondary Arterial.
Discovery Street, from La Sombra Drive to Via Vera Cruz	X	X	X	Improve to four-lane Secondary Arterial.
Bent Avenue (from San Marcos Boulevard to Main Street)	X	X	X	Improve to four-lane Secondary Arterial.
Bent Avenue (from Main Street to Discovery Street	X	X	X	Improve to two-lane Collector with TWLTL.

Westlake Drive, North of San Marcos Boulevard to Bent Avenue			X	Improve to two-lane Collector with TWLTL.
Twin Oaks Valley Road, from Richmar Avenue to San Marcos Boulevard	X	X	X	**Improve intersection of Twin Valley Rd. / San Marcos Blvd. to provide LOS "D" or better peak hour operations.**
Street "C", from Twin Oaks Valley Road to Industrial Street			X	**Improve to four-lane Secondary Arterial from Twin Oaks Valley Road to parking garage access, and implement the TDM program.**

Note: *2030 NP = Year 2030 without Project / 2030 GPLU = Year 2030 with General Plan Land Uses / 2030 WP = Year 2030 with Project / TWLTL = Two-Way Left-Turn Lane*

Freeway Analysis

A freeway analysis of the project was conducted in accordance with Cal Trans Requirements, using criteria from the 2000 Highway Capacity Manual and the 2000 Highway Design Manual. Cal Trans has a target level of service at project transitions between LOS "C" and LOS "D" for peak hour traffic volumes. In addition, Cal Trans requires freeway ramp interchanges to be evaluated using the Intersection Lane Volumes (ILV) methodology for evaluating intersection performance. To be classified as a stable intersection, the intersection must operate at 1,500 vehicles per hour or less.

Ramp Intersections

Based on the analysis, the following ramp intersections are forecast to operate at deficient levels of service under the Horizon Year 2030 Scenario:

- Las Posas Road / State Route 78 Westbound Ramps
- San Marcos Boulevard / State Route 78 Westbound Ramps – Knoll Road
- Twin Oaks Valley Road / State Route 78 Eastbound Ramps
- Barham Drive / State Route 78 Eastbound Ramps

Freeway Mainline Segments

In addition, the following freeway mainline segments are forecast to operate at LOS "F" under the Horizon Year 2030 Scenario. An "ON" in the description below denotes where motorists would merge onto the freeway, and an "OFF" denotes where motorists would exit:

- State Route 78 Eastbound, from Las Posas Road ON to San Marcos Blvd OFF (pm)
- State Route 78 Westbound, from Twin Oaks Valley Road ON to San Marcos Boulevard OFF (am)
- State Route 78 Eastbound, from San Marcos Boulevard ON to Twin Oaks Valley Road OFF (pm)
- State Route 78 Eastbound, from Twin Oaks Valley Road ON to Barham Drive OFF (pm)
- State Route 78 Westbound, from Rancheros Road ON to Twin Oaks Valley Road OFF (pm)
- State Route 78 Westbound, from Nordahl Road ON to Rancheros Road OFF (am)
- State Route 78 Eastbound, from Barham Drive ON to Nordahl Road OFF (pm)

Freeway Ramp Junction / Merge Analysis

It is also estimated that the following freeway ramp junction points will also operate at LOS "F" under the 2030 Horizon Year Scenario:

- Las Posas Road Eastbound On-Ramp (PM)
- San Marcos Boulevard Eastbound On-Ramp (PM)
- Twin Oaks Valley Road Westbound On-Ramp #1 (AM)
- Twin Oaks Valley Road Westbound On-Ramp #2 (AM)
- Twin Oaks Valley Road Westbound Off-Ramp (AM)

- ~~Twin Oaks Valley Road Eastbound On-Ramp (PM)~~
- ~~Barham Drive Eastbound Off-Ramp (PM)~~
- ~~San Marcos Boulevard Eastbound Off-Ramp (PM)~~
- ~~Barham Drive Eastbound On-Ramp (PM)~~

~~Given that the project will add traffic and affect levels of service for the freeway ramp intersections, mainline segments, and junctions discussed above, the impacts of the proposed *University District* Specific Plan project are considered significant and mitigation measures are required.~~

~~While the addition of one HOV lane in each direction as included in the SANDAG Regional Transportation Plan (RTP) would mitigate the impacts associated with 2030 forecast traffic with the proposed *University District* project, the HOV project is not currently in the "reasonably funded" highway program. The City of San Marcos has initiated discussions with Caltrans and SANDAG that are aimed at identifying interim State Route 78 corridor projects and various potential corridor study alternatives that could be participated in on a fair share basis. These discussions are currently underway but are not advanced enough at this time to reference the specific projects or studies in detail. Once the City's participation options have been identified by Caltrans, the appropriate participation level for the *University District* can be assessed, and potential mitigation measures can be discussed.~~

~~Recommended Parking and TDM Monitoring Plan~~

~~The intent of the Monitoring Plan is to prescribe a means in which the City of San Marcos can monitor the effectiveness of its overall parking supply requirements and demand as individual projects within the *University District* Specific Plan area are being constructed. The Monitoring Plan would also consider the effectiveness of various Parking and Transportation Demand Management (PTDM) programs. If certain measures are proving to be unproductive following the City's review of Annual Transportation Reports, then adjustments can be made.~~

VI. FORM-BASED CODE

VI.1 Introduction

The purpose of this Form-Based Code is to provide a set of development regulations and procedures for property owners or developers to implement the envisioned future for the University District project. Specifically, it is intended to:

- Facilitate development of walkable urban neighborhoods.
- Require compact, pedestrian-oriented, and mixed-use development patterns.
- Provide a range of housing opportunities to accommodate diverse ages and incomes.
- Develop a range of public spaces, including parks, linear trails and plazas.
- Respect the topographic features of the site.
- Incorporate sustainable site, building and landscape design features to minimize consumption of natural resources, water and energy.
- Provide compatible uses to support California State University at San Marcos.
- Establish clear design standards while allowing flexibility in future land uses to account for adjustments in market conditions.

(Continued on Next Page)

"Without an architecture of our own, we have no soul of our own civilization."

- Frank Lloyd Wright

(Continued from Previous Page)

Applicability

This Form-Based Code applies to all future development/redevelopment projects within the *University District* and represents the community's intentions regarding urban form and design. As intended, this code regulates massing of the proposed development through height restrictions, setbacks, building form and orientation, as well as mix of land uses.

This Specific Plan establishes development patterns that are very different than the existing patterns of development within the *University District*. Currently, the District consists of a variety of small and large lots that form very large and disconnected block patterns. Existing developed properties contain a mix of building types and uses. In order for development to occur in compliance with this Specific Plan, major changes are required. Existing properties may be consolidated, demolished, subdivided, and graded (as needed) to create new blocks and development sites. Certain properties may not be developable without a coordinated effort between neighboring property owners. The City of San Marcos ~~and the San Marcos Redevelopment Agency~~ may assist in the process of consolidating properties or forming development partnerships to create new blocks and development sites.

Severability

The provisions of this Form-Based Code are declared to be severable and if any section, sentence, clause or phrase of this Form-Based Code shall for any reason be held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining sections, sentences, clauses, and phrases of this Form-Based Code but they shall remain in effect, it being the legislative intent that this Form-Based Code shall stand notwithstanding the invalidity of any part.

Interpretation

Interpretation of the standards within this Form-Based Code shall be the responsibility of the San Marcos Development Services Staff. All uses not specifically listed or defined within the Form-Based Code are subject to approval and/or interpretation by the Planning Director.

The images within this Form-Based Code are meant to illustrate planning and urban design concepts; they intended, but are for illustrative purposes only.

User's Guide

The following steps should be used to assist users of this Form-Based Code:

- Step 1: Review Section VI.2 to determine compliance with the regulating plans for the *University District*. Regulating plans include street types, buildings and public spaces, and building heights.
- Step 2: Review Section VI.3 to gain an understanding of the block standards that shall be used to create new blocks within the *University District*.
- Step 3: Review Section VI.4 to gain an understanding of the allowed street types and streetscape standards for pavement, streetlights, and street furniture within the *University District*. The allowed locations of each street type are provided on *Figure VI.AVI.1: Street Type Regulating Plan*.
- Step 4: Review Section VI.5 to gain an understanding of the allowed public spaces within the *University District* and standards for what shall and may be provided within each public space. The allowed locations of the public spaces are provided on *Figure VI.BVI.2: Building and Public Space Regulating Plan*.
- Step 5: Review Section VI.6 to gain an understanding of the allowed building types within the *University District* and development standards for each building type. The allowed locations of the building types are provided on Figure VI.BVI.2: Building and Public Space Regulating Plan.

- Step 6: Review Section VI.7 to determine the design standards for the frontages and projections for buildings within the *University District*.
- Step 7: Review Section VI.8 to gain an understanding of the architectural design standards and guidelines for buildings within the *University District*, including materials, colors, roofs, and podium parking structure facades.
- Step 8: Review Section VI.9 to gain an understanding of the landscaping standards for public and private properties within the *University District*.
- Step 9: Review Section VI.10 to gain an understanding of the types of business identification signs that are allowed within the *University District*, as well as standards for each sign type.
- Step 10: Review Section VI.11 to gain an understanding of the terms, acronyms, and definitions of such used throughout this Form-Based Code.
- Step 11: Contact the City of San Marcos Planning Department ~~and/or San Marcos Redevelopment Agency~~ to discuss specific questions, potential projects, or opportunities for public/private partnerships:

  City of San Marcos
  1 Civic Center Drive
  San Marcos, CA 92069
  Phone: 760/744-1050
  www.ci.san-marcos.ca.us

VI.2 Regulating Plans

Intent

A regulating plan is a plan or map that designates how building form standards, street design standards, and public space standards are applied to properties within a planning area boundary. The intent of a Regulating Plan is to provide an urban design and regulatory framework to ensure that the vision for the planning area is implemented.

Regulating Plans

This Form-Based Code contains the following three Regulating Plans:

- *Figure VI.A: Street Type Regulating Plan*: The Street Type Regulating Plan shows the planned street and block network and the locations of various street types within the District. Standards for each street type are provided in Section VI.4 (Street Standards).
- *Figure VI.B: Building and Public Space Regulating Plan*: The Building and Public Space Regulating Plan shows the general locations of public spaces and development sites for the various building types that are allowed within the District. Development standards for each public space are provided in Section VI.5 (Public Space Standards). Development standards for each building type are provided in Section VI.6 (Building Type Standards).
- *Figure VI.C: Height Regulating Plan*: The Height Regulating Plan shows the minimum and maximum number of floors that are allowed on the development sites within the project.

Conceptual Grading Plan

To create the street and block network as illustrated within the Regulating Plans, properties will need to be consolidated, demolished, subdivided, and graded (as needed) to create new blocks that are defined by both existing and new street right-of-ways. The Regulating Plans for the *University District* have been developed based on a conceptual grading plan (see *Figure VI.D: Conceptual Grading Plan*). As individual projects are presented to the City of San Marcos, more precise grading plans for the project area(s) will be created to further define the grading which is intended to meet the goals of this Specific Plan to create a walkable, urban community and to maintain functional connectivity. Buildings shall adhere to the regulations in Chapter VI, the Form Based Code, and are encouraged to utilize a terraced design approach and/or other measures to avoid "table top" style development. The intent of this Specific Plan

is to ensure functional connectivity between the building and sidewalk/paseo/street, as well as between the sidewalk/paseo/street and the rest of the project.

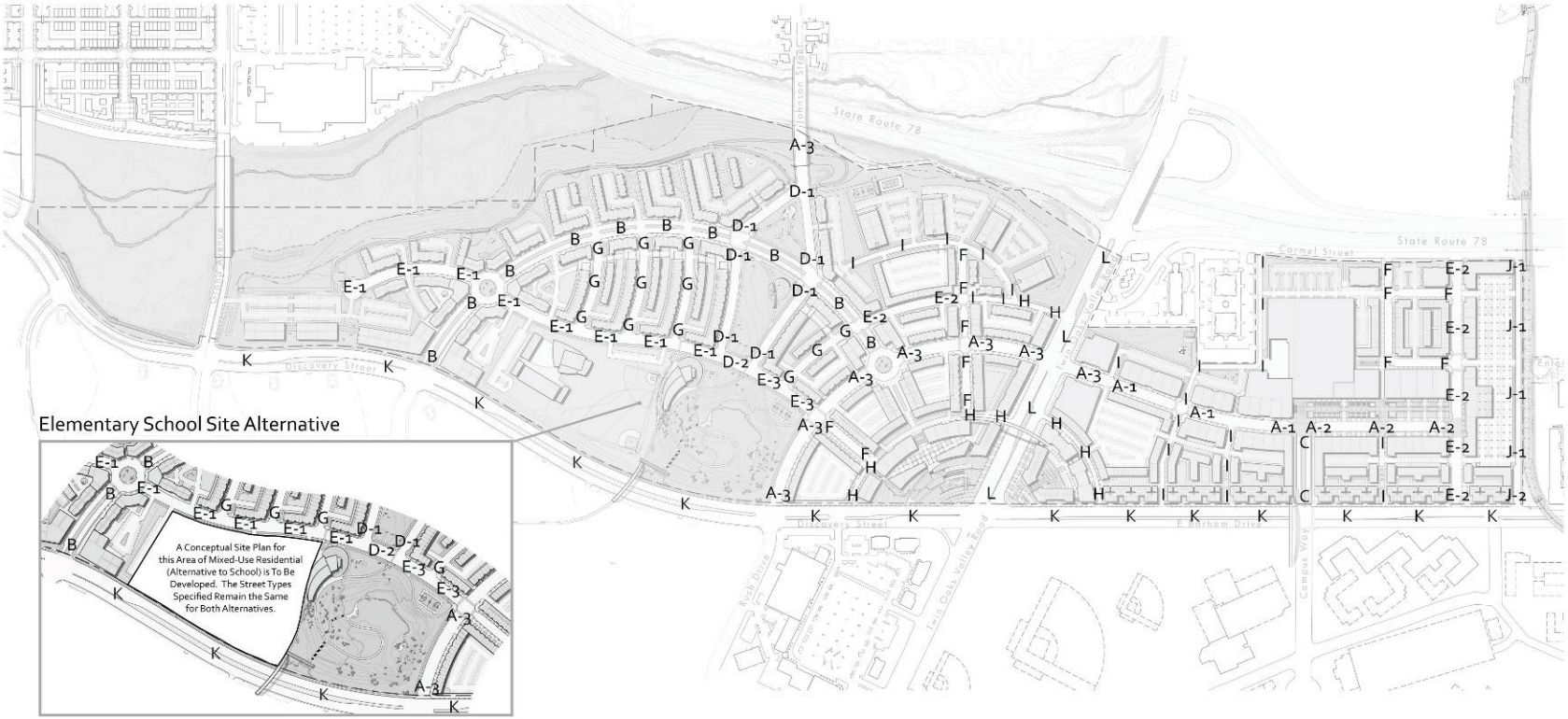
Grading along the northwesterly project frontage shall not impact the proposed San Marcos Creek restoration area and conservation easement.

Modifications

The exact locations, layouts, and elevations of the streets, blocks, public spaces, and development sites (as illustrated by the Regulating Plans and Conceptual Grading Plan) are illustrative in nature and are subject to change and refinement through the subdivision process based on actual field measurements and other unforeseen constraints. Provided that the block standards of Section VI.3 of this Form-Based Code are met, minor adjustments to streets, blocks, public spaces, and zones may result without amendment to the Specific Plan. However, the final street locations, layouts, and elevations should generally comply with the Regulating Plans and Conceptual Grading Plan.

See Chapter IX – Implementation and Administration for the process of obtaining approval for deviations from the Regulating Plan and Conceptual Grading Plan.

FIGURE VI.A: Street Type Regulating Plan



LEGEND

0′ 400′ 800′ 1600′

NORTH

Following are the street types for which specific cross sections and design standards are referenced in Section VI.4 of this Chapter:

- A-1: Spine Street
- A-2: Spine Street at Plaza
- A-3: Spine Street Collector
- B: Residential Avenue
- C: Campus Way Entrance
- D-1: One-Way Parkway
- D-2: Two-Way Parkway
- E-1: Two-Lane Collector Street at Park / School
- E-2: Two-Lane Collector Street
- E-3: Four-Lane Collector Street
- F: Mixed-Use Street
- G: Residential Street
- H: One-Way Access Street
- I: Two-Way Access Street
- J-1: Sprinter Line Access Street
- J-2: Sprinter Line Access Street w/ Turn Lane
- K: Barham Drive / Discovery Street
- L: Twin Oaks Valley Road

FIGURE VI.A: Street Type Regulating Plan

0' 400' 800' 1600'

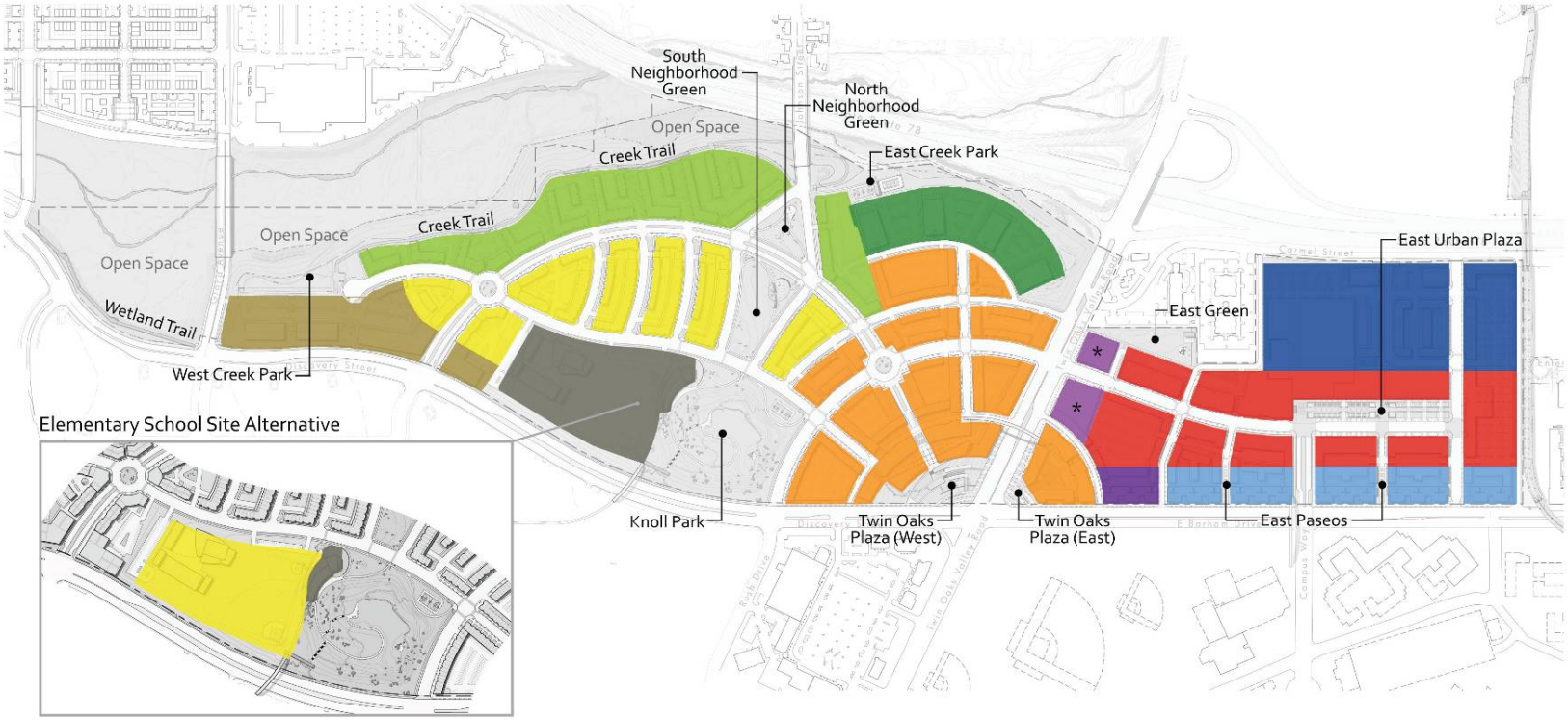
NORTH

LEGEND

Following are the street types for which specific cross sections and design standards are referenced in Section VI.4 of this Chapter:

A1: Standard Street Type
A2: Transition Street Type
A3: Street Type at Collector
B: Residential Avenue
C1: Campus Way
E1: Industrial Street
G: Residential Street
J: Redel Road
K: Barham/Discovery
L: Twin Oaks Valley Road

FIGURE VI.B: Building and Public Space Regulating Plan



LEGEND

0′ 400′ 800′ 1600′

Following are the building types permitted in each of the colored zones referenced:

- Mixed-Use Building A
- Mixed-Use Building A - or - Commercial Building *
- Mixed-Use Building A - or - Freeway Commercial Building A
- University Flats
- Community Buildings / School Facilities
- Mixed-Use Building B
- Mixed-Use Building B - or - University Flats
- Freeway Commercial Building B
- Creek Side Townhomes / Flats
- Townhomes / Flats
- Office Flats

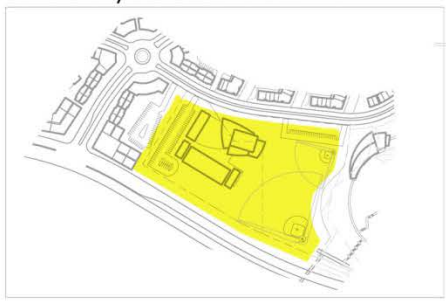
NORTH

* A Commercial Building is only allowed on one side of Street Type A-3. The other side shall be developed as Mixed-Use Building A. Both sides may alternatively be developed as Mixed-Use Building A.

Figure to be updated to show Mixed-Use Building B in the northeast corner of the Knoll Park and Neighborhood Greens

FIGURE VI.B: Building and Public Space Regulating Plan

Elementary School Site Alternative



0' 400' 800' 1600'

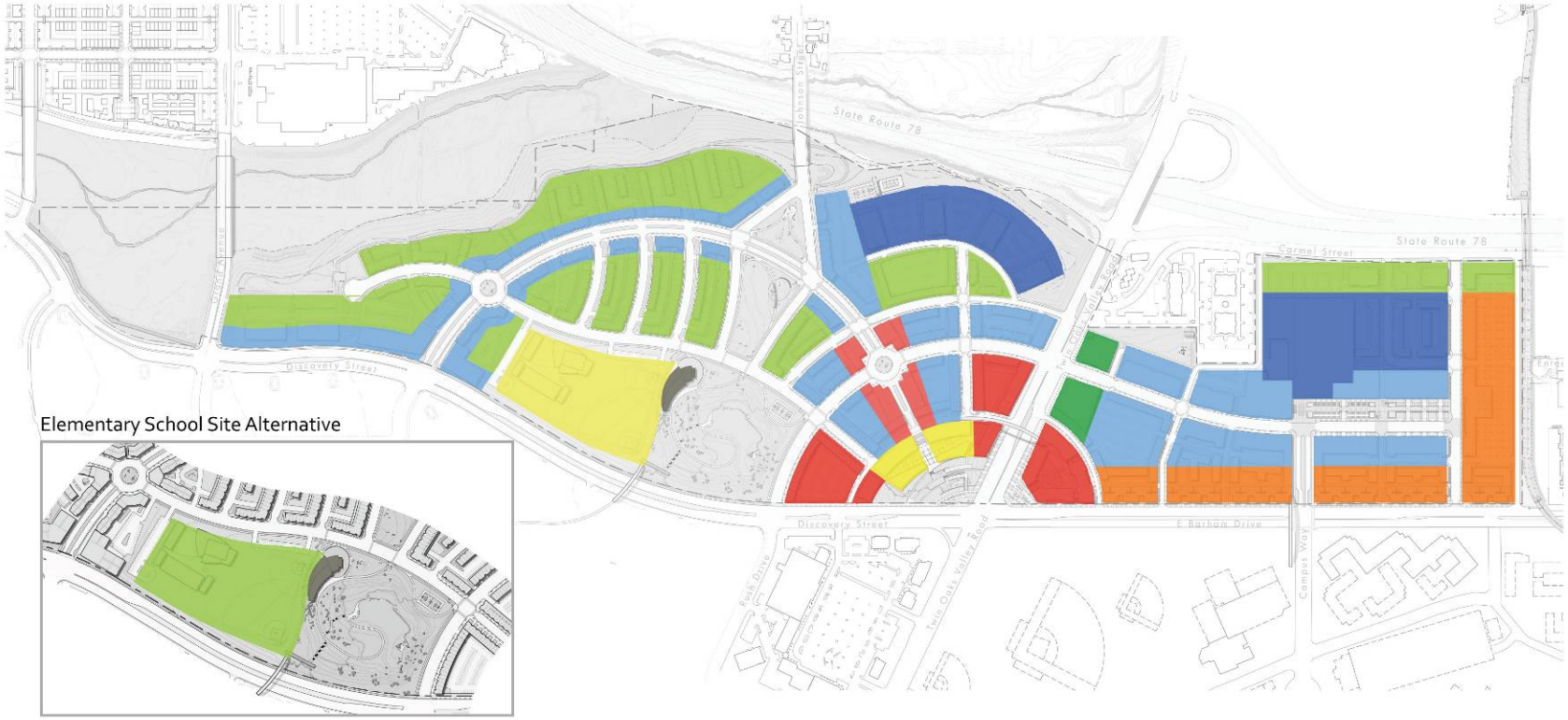
LEGEND

Following are the building types permitted in each of the colored zones referenced:

NORTH

- Mixed-Use Building A
- Mixed-Use Building A or Commercial Building
- Mixed-Use Building A or Freeway Commercial Building A
- University Flats
- Community Buildings / School Facilities
- Mixed-Use Building B
- Mixed-Use Building B or University Flats
- Freeway Commercial Building B
- Creek Side Townhomes / Flats
- Townhomes / Flats
- Office Flats
- Elementary School Site

FIGURE VI.C: Building Height Regulating Plan



LEGEND *NOTE: Additional building height categories may be approved by the Planning Director.*

0′ 400′ 800′ 1600′

Following are the minimum and maximum heights permitted in each colored zone referenced:

NORTH

- 1-story min. / 2-stories and 30′ max.
- 1-story and 18′ min. / 4-stories and 60′ max.
- 2-stories min. / 4-stories and 60′ max.
- 2-stories min. / 6-stories and 90′ max.
- 3-stories min. / 5-stories and 70′ max. if developed as Mixed-Use Building A and 1-story and 28′ min. / 3-stories and 70′ max. if developed as Commercial Building
- 3-stories min. / 5-stories and 70′ max. if developed as Freeway Commercial Building B or Mixed-Use Building A and 1-story and 36′ min. / 3-stories and 70′ max. for parts of the building designed for an anchor retail store.
- 3-stories min. / 6-stories and 80′ max.
- 3-stories min. / 7-stories and 90′ max.

FIGURE VI.C: Building Height Regulating Plan

LEGEND *Note: Additional building height categories may be approved by the Planning Director.*

Following are the minimum and maximum heights permitted in each colored zone referenced:

- 1-story min. / 2-stories and 30' max.
- 1-story and 18' min. / 4-stories and 60' max.
- 2-stories or 20' min. / 4-stories and 60' max.
- 2-stories or 20' min. / 6-stories and 90' max.
- 3-stories min. / 5-stories and 70' max. if developed as Mixed-Use Building A and 1-story and 28' / 3-stories and 70' max. if developed as Commercial Building
- 3-stories min. / 5-stories and 70' max. if developed as Freeway Commercial Building B or Mixedi-Use Building A and 1-story and 36' min. / 3-stories and 70' max. for parts of the building designed for an anchor retail store.
- 3-stories or 30' min. / 6-stories and 80' max.
- 3-stories or 30' min. / 7-stories and 90' max.

FIGURE VI.D: Conceptual Grading Plan
(West of Twin Oaks Valley Road)

FIGURE VI.D: Conceptual Grading Plan
(West of Twin Oaks Valley Road)

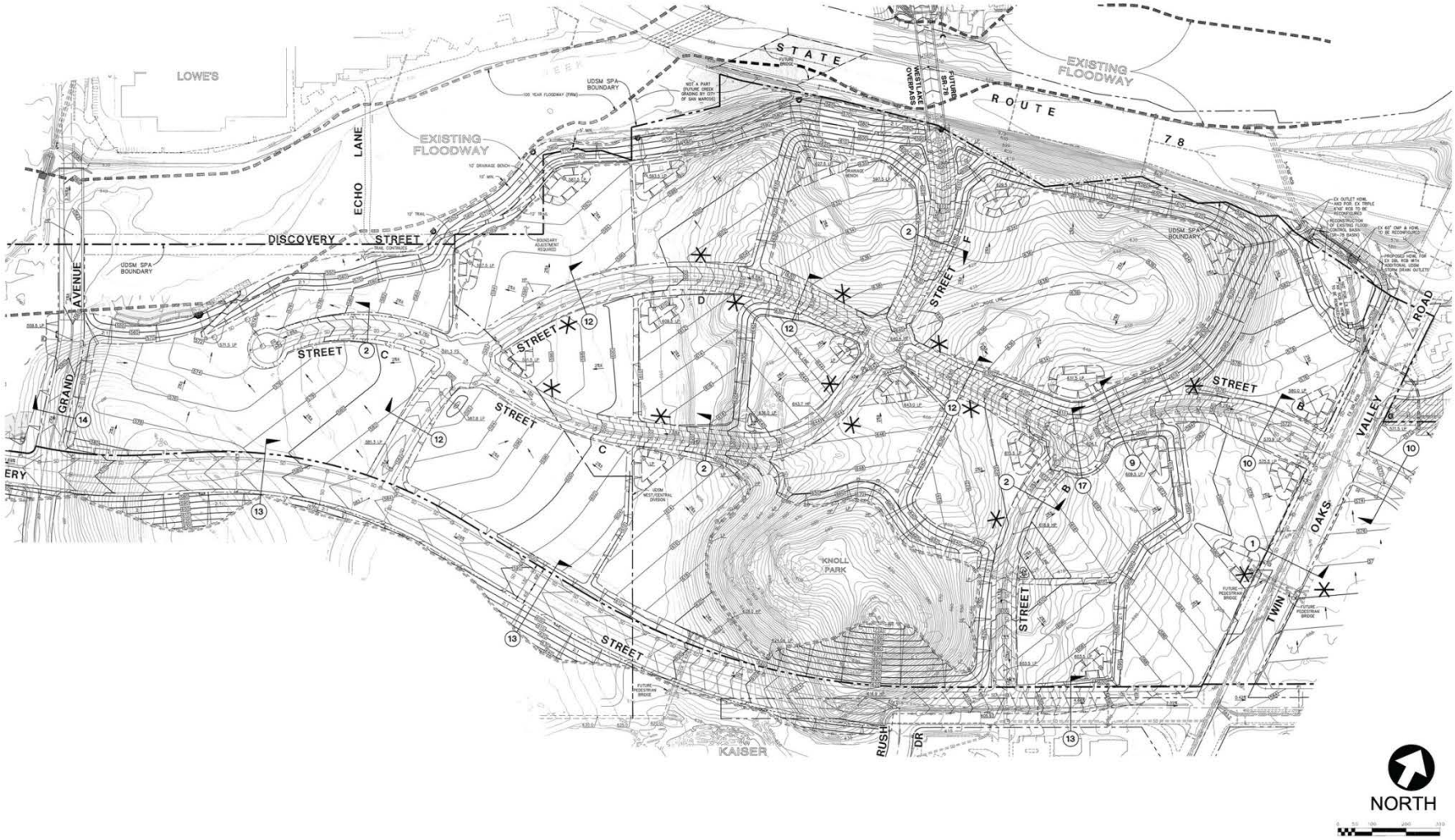


FIGURE VI.D: Conceptual Grading Plan
(East of Twin Oaks Valley Road)

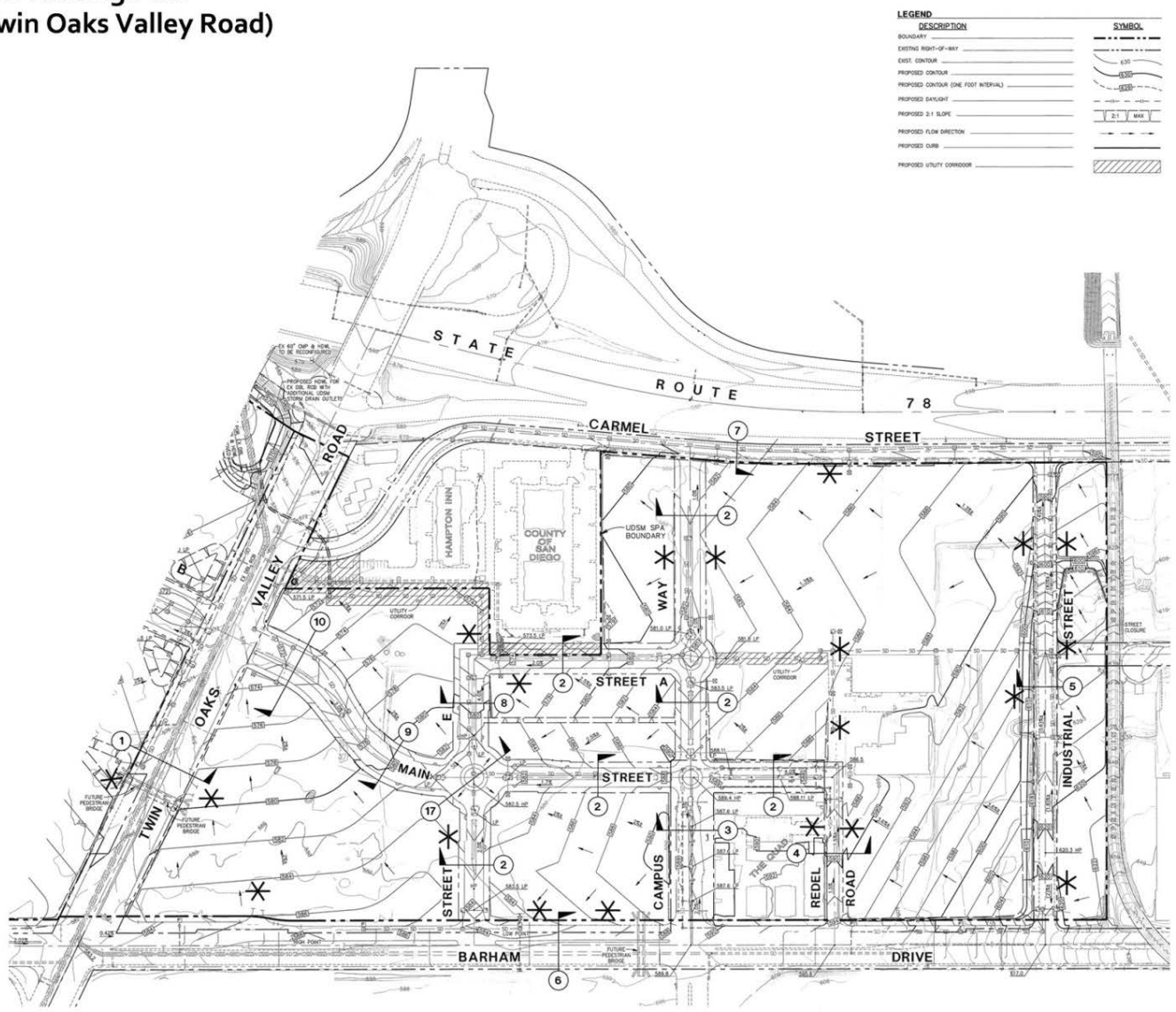


FIGURE VI.D: Conceptual Grading Plan
(West of Twin Oaks Valley Road)