



Chapter 9.0

Phasing and Infrastructure

This section describes the phasing and amenity timing of The Arboretum. It also details on- and off-site plans for the grading, water distribution, sewer services, and drainage systems necessary to accommodate build-out of The Arboretum. Within The Arboretum Specific Plan area, the developer will be responsible for constructing the required infrastructure improvements, such as streets, water lines, sewers, and storm drains. All necessary infrastructure improvements will be developed in conjunction with the roadway improvements. Lastly, this section provides an overview of nearby public facilities, such as hospitals, police and fire stations, public parks, schools, and transit facilities.



9.1 Village Phasing Plan

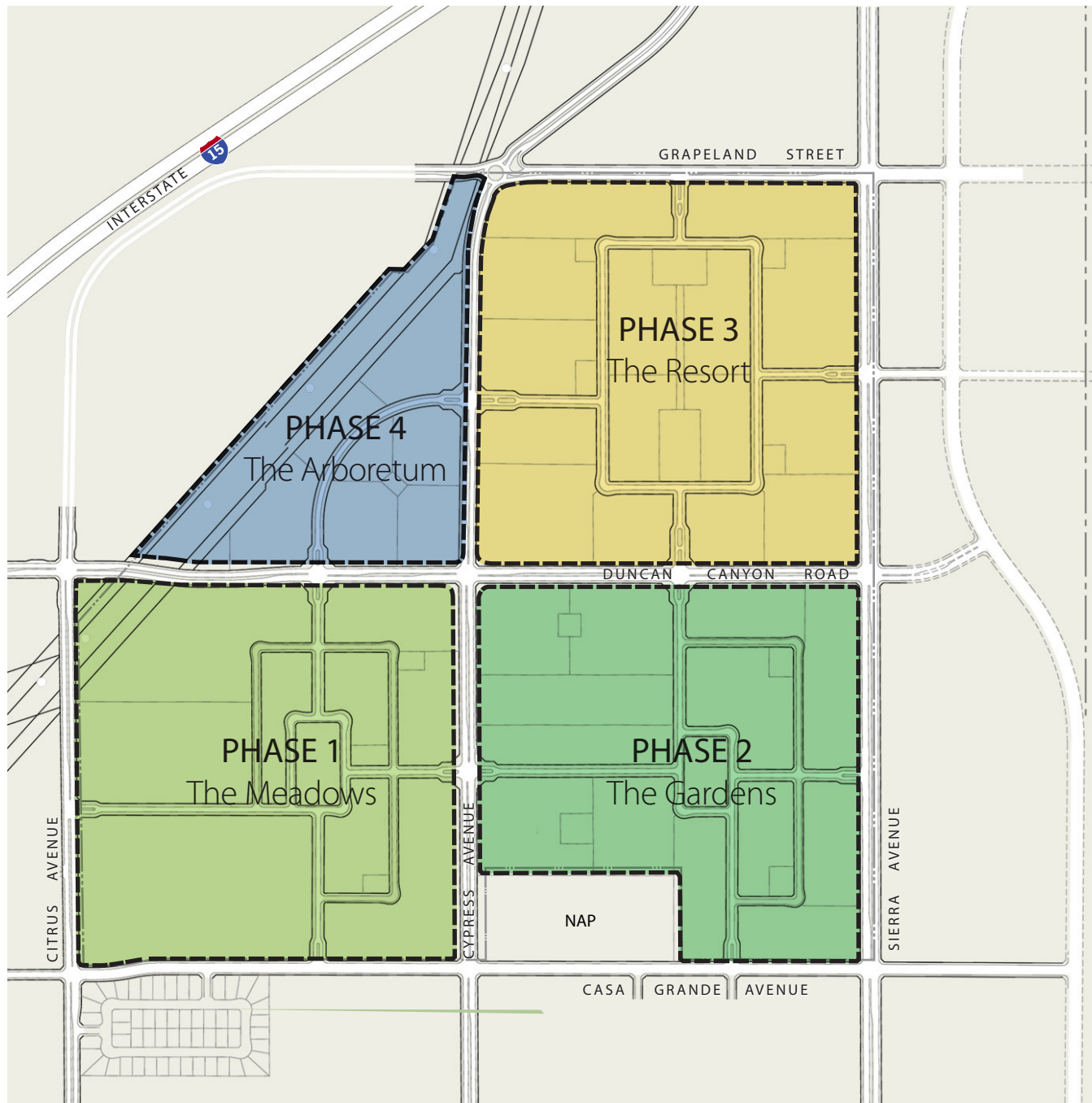
Development within the Arboretum community shall occur in four phases as shown in Figure 9.1, *Phasing Plan*. Construction of the project will be phased in a logical sequence, in response to market demands. Ultimate phasing by recordation of phased final tract maps will be finalized at time of sale to merchant builders based on market demands. Adjustments to the phasing sequence are permitted provided that utilities and public facilities are available to service the phase in question.

Development of the community will start in the Meadows village, followed by the Gardens, the Resort, and lastly, the Arboretum village.



PHASING PLAN

FIGURE 9.1



9.2 Circulation Phasing Plan

The phasing of the circulation system will correspond to the overall village phasing program. The circulation system as described in this section will be constructed by the master developer and/or guest builder. Phase 1 will include all collector streets in the Meadows Village as well as Citrus Avenue between Duncan Canyon Road and Casa Grande Avenue, Casa Grande Avenue from Citrus Avenue to Cypress Avenue, Cypress Avenue from Casa Grande Avenue to Duncan Canyon Road, and Duncan Canyon Road from Citrus Avenue to Cypress Avenue. Phase 2 will include all collector streets in the Gardens and Arboretum Villages, Sierra Avenue from Casa Grande Avenue to Duncan Canyon Road, and the remainders of Casa Grande Avenue and Duncan Canyon Road. Phase 3 will include all collector Resort Village streets, Grapeland Street, and the remainders of Cypress Avenue and Sierra Avenue. Circulation improvements to Sierra Avenue, Casa Grande Avenue, Citrus Avenue, and Grapeland Street shall be implemented as defined in the Development Agreement and in-lieu study. The circulation phasing plan is illustrated in Figure 9.2.



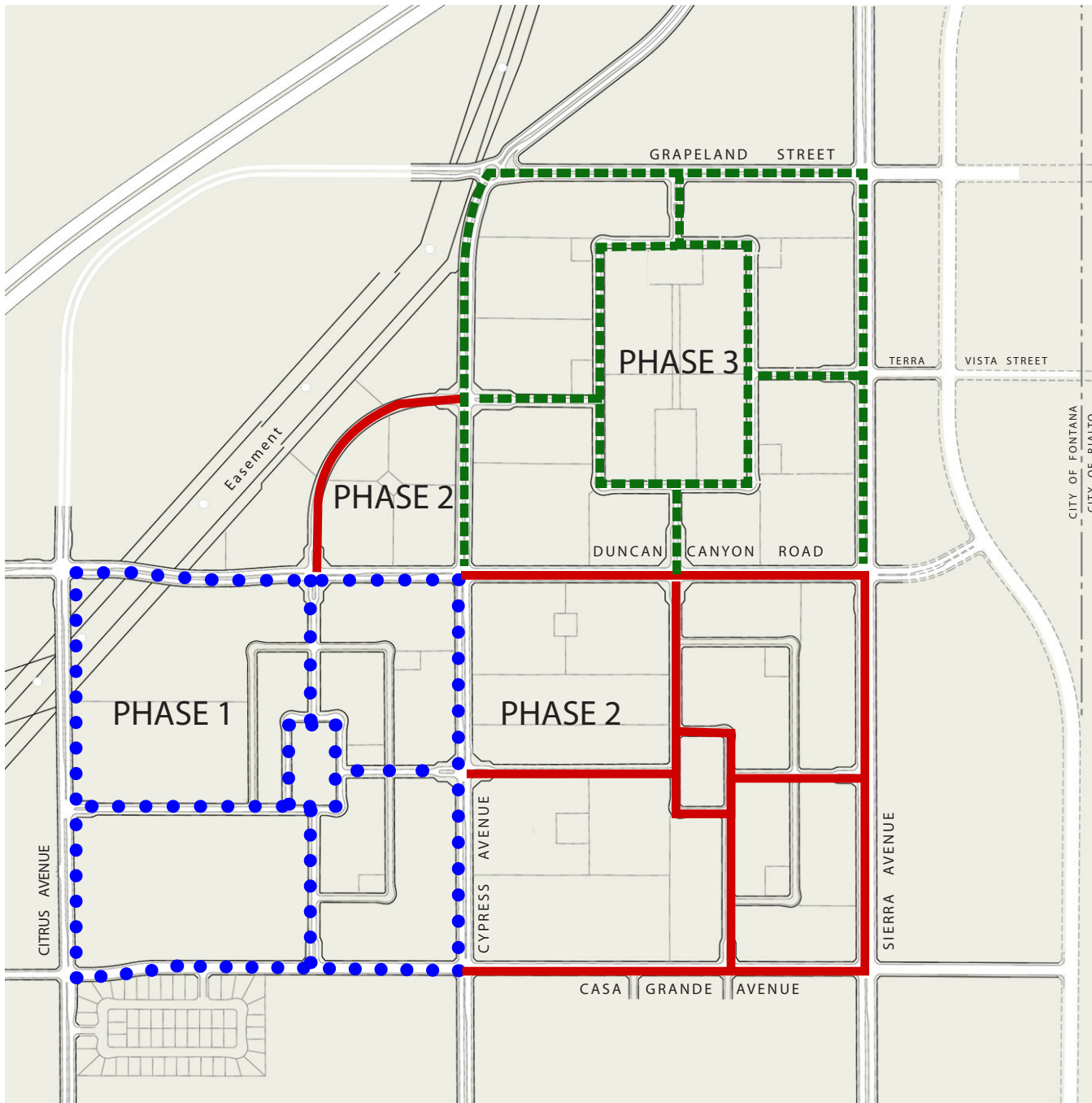
CIRCULATION PHASING PLAN

FIGURE 9.2

LEGEND

- ● ● ● Phase 1
- Phase 2
- - - Phase 3

Note: Necessary circulation improvements shall be constructed prior to the Arboretum Park being substantially complete.



9.3 Grading Concept

Grading for The Arboretum, shown in Figure 9.3, *Grading Plan*, is tailored to the existing topography of the project site which slopes down at approximately 3.2 percent north to south. The project site is part of a flat to gently sloping alluvial plain. Soils and geologic conditions present no significant constraints to grading. The primary objectives of the grading concept are to: (a) establish road grades that are consistent with those of the existing City streets around the site; (b) provide stable development pads for residential structures and recreation amenities; and, (c) balance the cut and fill grading quantities on-site.

Grading is expected to balance on-site and will not require import or export of materials. Approximately 1,400,000 cubic yards of cut and fill will be necessary to accommodate development of the site. This quantity may vary as final grading plans are developed. The grading plans shall be designed to accommodate drainage and a street system that meets City of Fontana standards and will be reviewed and approved by the City Building/Safety, Planning, and Engineering Departments prior to the issuance of grading permits. All grading plans and activities will conform to the City grading ordinance and dust control, erosion control, and WQMP requirements.

Mass grading of the project will occur in four phases as shown on Figure 9.3, *Grading Plan and Phasing*.

GRADING PLAN AND PHASING

FIGURE 9.3



9.4 Public Facilities

9.4.1 Water Distribution

West Valley Water District (WVWD) provides water service to the project area. WVWD draws water for supply to their service area from stream flow in the Lytle Creek region and from numerous wells within the Chino groundwater basin. The WVWD infrastructure consists of reservoir tanks, booster pump facilities, and a network of pipeline facilities to deliver water throughout its service area. Domestic water will service the residential, schools, parks, and common landscape areas of The Arboretum.

The primary connection points available for The Arboretum Specific Plan area are located in Citrus Avenue (existing 16-inch water line), Casa Grande Avenue (existing 24-inch water line), Duncan Canyon Road (existing 12-inch water line), and Sierra Avenue (existing 12-inch water line).

It should be noted that the Metropolitan Water District (MWD) has a 121-inch transmission main and San Gabriel Valley Municipal Water District has a 41-inch transmission main, both located in the proposed location of Casa Grande Avenue. Fontana Water Company has a 25-inch transmission main in Citrus Avenue. These lines will not be available to serve the community.

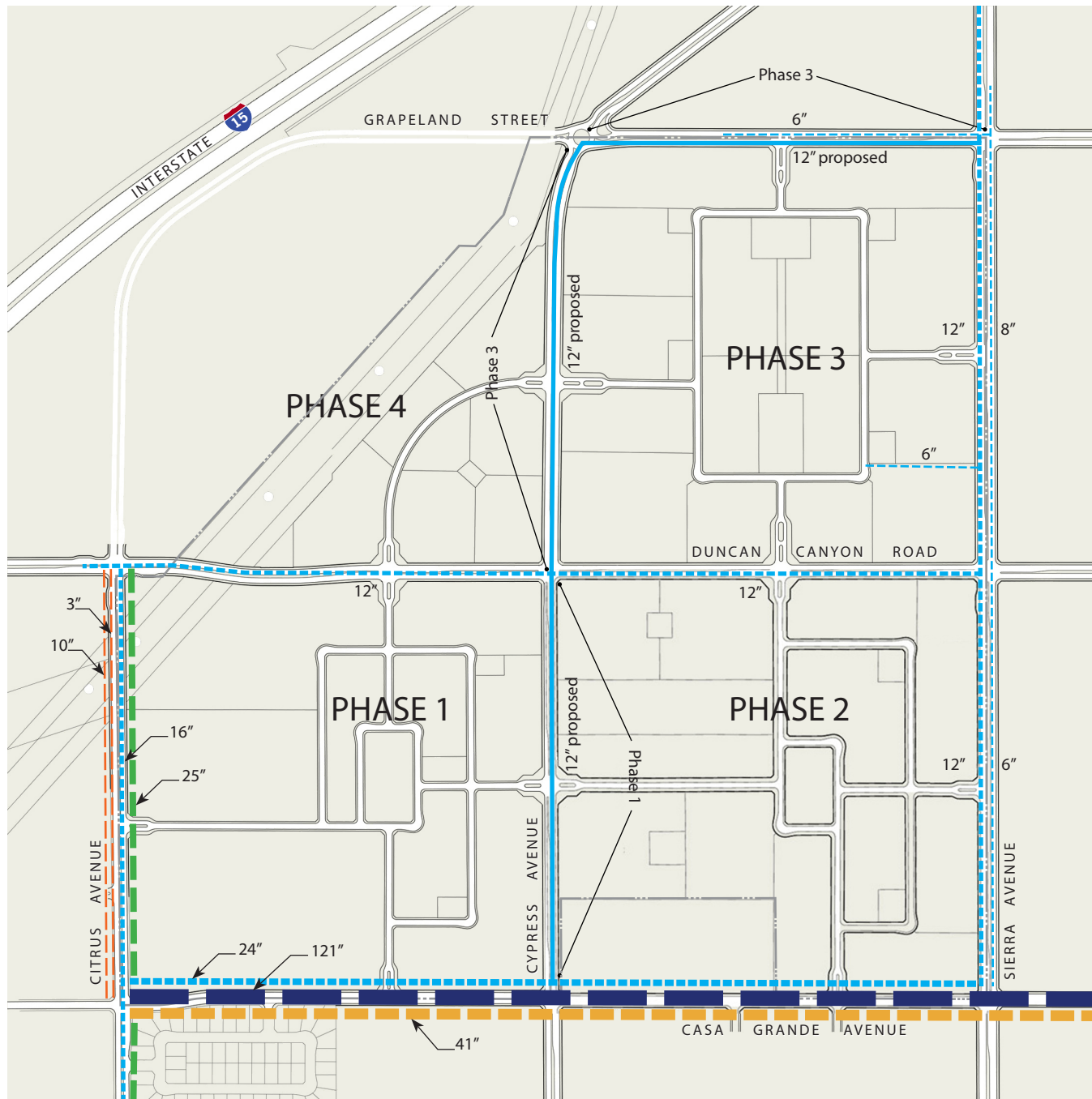
The proposed water system, as shown in Figure 9.4, Water Plan, will include a 12-inch water line in Cypress Avenue from Casa Grande Avenue to Duncan Canyon Road to be constructed with Phase 1. A 12-inch water line in Cypress Avenue from Duncan Canyon Road to Grapeland Street and a 12-inch water line in Grapeland Street from Cypress Avenue to Sierra Avenue will be constructed with Phase 3. Within the internal Planning Areas, being constructed in each of the four phases, 8-inch and 10-inch water lines owned and maintained by WVWD will serve to provide domestic service to each residential Planning Area, school, park and common landscape area as well as supplying sufficient fire flows to fire hydrants placed in accordance with San Bernardino County Fire Department standards.

WATER PLAN AND PHASING

FIGURE 9.4

LEGEND

- Existing Water Facilities
- Proposed Water Facilities
- West Valley Water District WWWD
- Metropolitan Water District MWD
- Fontana Water Company FWC
- San Gabriel Valley Municipal Water District SGVMWD
- Crawford Canyon Mutual Water Company CCMWC



9.4.2 Sewer Services

The City of Fontana is responsible for the collection of wastewater within its corporate limits. The City contracts with the Inland Empire Utilities Agency (IEUA) for wastewater treatment.

The project sewer will connect to an existing 15-inch sewer line in Citrus Avenue north of Casa Grande Avenue and an existing 18-inch sewer line in Casa Grande Avenue east of Citrus Avenue. Both of these lines connect in Citrus Avenue.

The proposed sewer plan consists of an extension of these existing lines, as shown in Figure 9.5, Master Plan of Sewer. The Master Plan phasing for the sewer will occur as follows:

Phase 1: The existing 15-inch sewer line in Citrus Avenue will be extended northerly to Duncan Canyon Road where it will reduce to a 12-inch sewer line and extend easterly in Duncan Canyon Road to just short of Cypress Avenue to service the future phase 4 of the project. The existing 18-inch sewer line in Casa Grande Avenue will be extended easterly to Cypress Avenue where a 15-inch sewer line will extend northerly in Cypress Avenue to Duncan Canyon Road.

Phase 2: A 12-inch sewer will connect to the proposed 18-inch sewer line in Casa Grande Avenue and extend easterly 1740 feet towards Sierra Avenue. A 15-inch sewer line in Duncan Canyon Road will connect to the proposed 15-inch sewer line in Cypress avenue and extend easterly to Sierra Avenue.

Phase 3: A 12-inch sewer line will connect to the proposed 15-inch sewer line in Cypress Avenue and extend northerly to Grapeland Street. 8-inch and 10-inch sewer lines will occur in each of the 4 phases for onsite purposes.

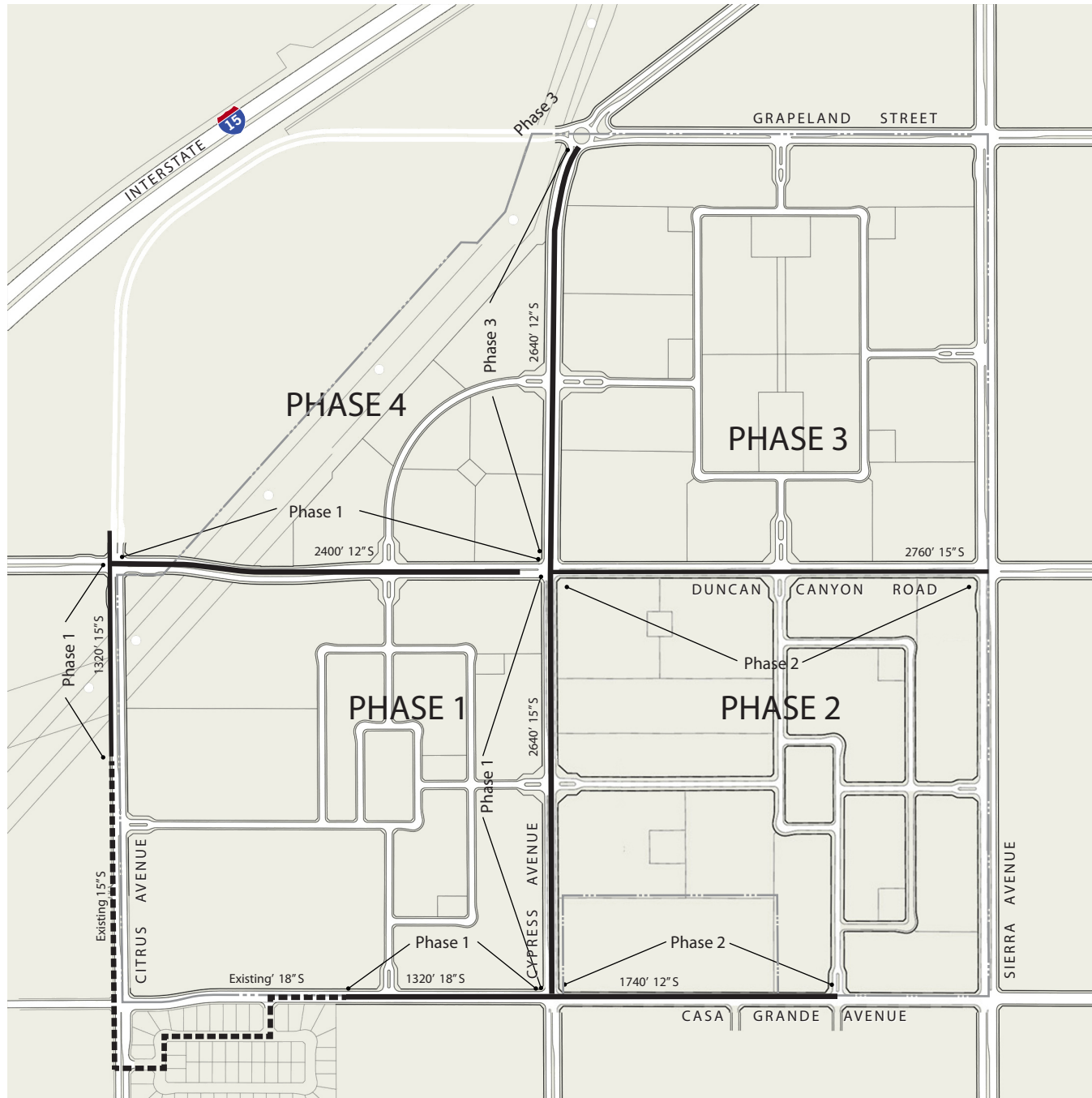
Use of force mains or pump stations is not required. Sewage disposal facilities shall be installed in accordance with the requirements and specifications of the State Department of Health Services and San Bernardino County Health Department, and reviewed by the City of Fontana Engineering Department.

MASTER PLAN OF SEWER

FIGURE 9.5

LEGEND

- Existing Sewer Facilities
- Proposed Sewer Facilities



9.4.3 Drainage Plan

The Arboretum is located generally in the San Sevaine Creek watershed. The site is within the Line “A” and “B” drainage areas of the revised Master Plan of Storm Drain. These lines are tributary to the existing Hawker-Crawford Channel located on the west side of Interstate 15 at Duncan Canyon Road and Summit Avenue respectively. Existing topographic relief consists of relatively flat contours, with the existing site drainage generally sheet-flowing to the south or southwest direction.

As shown on Figure 9.6, *Drainage Plan*, the proposed on-site drainage facilities for the Planning Areas within the “Arboretum” and “The Resort” segments of The Arboretum Specific Plan will drain to the proposed Line “A” within Duncan Canyon Road. The proposed on-site drainage facilities for the Planning Areas within the westerly portion of “The Meadows” segment of The Arboretum Specific Plan will drain to the existing Line “B” within Summit Avenue. The easterly portion of this segment and the westerly portion of “The Gardens” segment will drain to the proposed line “B-2” located in Cypress Avenue which will flow southerly to the Sierra Lakes infiltration system located south of Summit Avenue, as shown in Figure 9.7, as a resource to replenish the ground water through percolation. The Sierra Lakes Infiltration System will provide the water quality provision for the Line “B-2” tributary area, and therefore additional BMPs (Best Management Practice) will not be required for this tributary area.

Off-site storm drain facilities are required to serve and protect the project. For the area north of Duncan Canyon Road, storm drain facilities will need to be extended from the existing Hawker-Crawford Channel on the northwesterly side of Interstate 15, across the freeway, to Citrus Avenue to serve the site. It is anticipated that a portion of this facility will be constructed by the state and/or city as part of the Duncan Canyon Interchange project, potentially starting in 3 to 5 years, with the balance to be constructed by other adjacent developments. Development of The Arboretum could proceed in advance of these improvements with interim mitigation. See temporary drainage swales and temporary detention basins shown graphically on Figure 9.6. Additionally, there are a number of existing culverts which convey large flows under Interstate 15 from the canyons to the north. A storm drain facility constructed by the City or other adjacent developments would be required to pick up and carry these flows to the system to be constructed in Duncan Canyon Road.

For project areas south of Duncan Canyon Road, the downstream connection will be made to an existing system in Citrus Avenue at Casa Grande Avenue and an off-site storm drain will be constructed in Cypress Avenue from Casa Grande Avenue to Sierra Avenue. Development of The Arboretum could proceed prior to the completion of that phase of construction with interim mitigation. Storm drain will also need to be extended in Summit Avenue either by the City or other developments east of Cypress Avenue between Summit Avenue and Casa Grande Avenue, in order to serve planning areas near and adjacent to Sierra Avenue.

9.4.4 Water Quality Management Plan and Best Management Practices

The Arboretum Specific Plan may utilize the Sierra Lakes Golf Course Infiltration System for the BMP treatment of storm water runoff for The Gardens, The Resort, and an easterly portion of The Meadows segments of the project. See Figures 9.7A and 9.7B.

The use of the Sierra Lakes Infiltration System by said Project will lessen the maintenance burden on the affected portions of the facility. Off-site undeveloped lands presently generate fine-grain earthen materials that are transported via storm water flows to the same portions of the Sierra Lakes Infiltration System that will be utilized by said Project. The transition of the off-site areas into an urbanized ground cover will significantly reduce the content of fine-grain earthen materials in storm water flows, which will in-turn reduce the maintenance burden on the Sierra Lakes Infiltration System. While the maintenance burden to the facility will be reduced due to said Project, facility maintenance procedures, as presently defined, will remain unchanged.

The Arboretum segment of the Specific Plan will utilize a Lake/Water Oriented Garden for localized treatment. Site Design BMPs for future Planning Areas not utilizing the Arboretum Village or the Sierra Lakes Golf Course Infiltration System will provide treatment onsite with the use of vegetated swales, fossil filter, or other approved means. Site Design BMPs will be consistent with the project wide water quality management plan and approved on an individual tract basis prior to recordation of the tentative map.

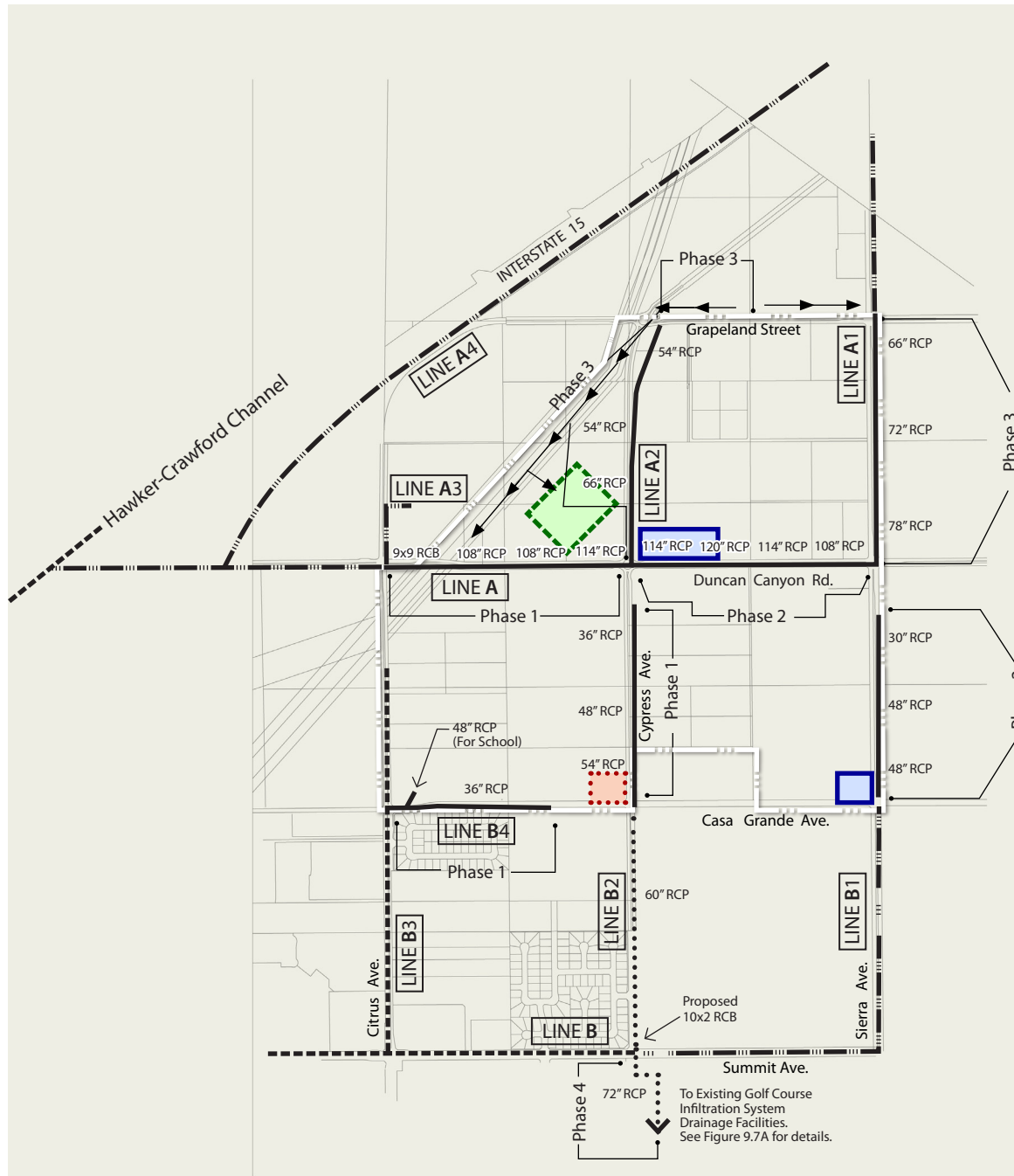


DRAINAGE PLAN AND PHASING

FIGURE 9.6

LEGEND

- Existing Storm Facilities
- Drainage Facilities by Others
- Proposed Drainage Facilities
- Proposed Offsite Drainage Facilities
- Temporary Drainage Swale
- 36" RCP Facility Size/Type
- Phase 1 Temporary Detention Basins
- Phase 2 Temporary Detention Basins
- Phase 1 and 3 Temporary Detention Basin (ultimately to be a proposed park/WQMP basin)

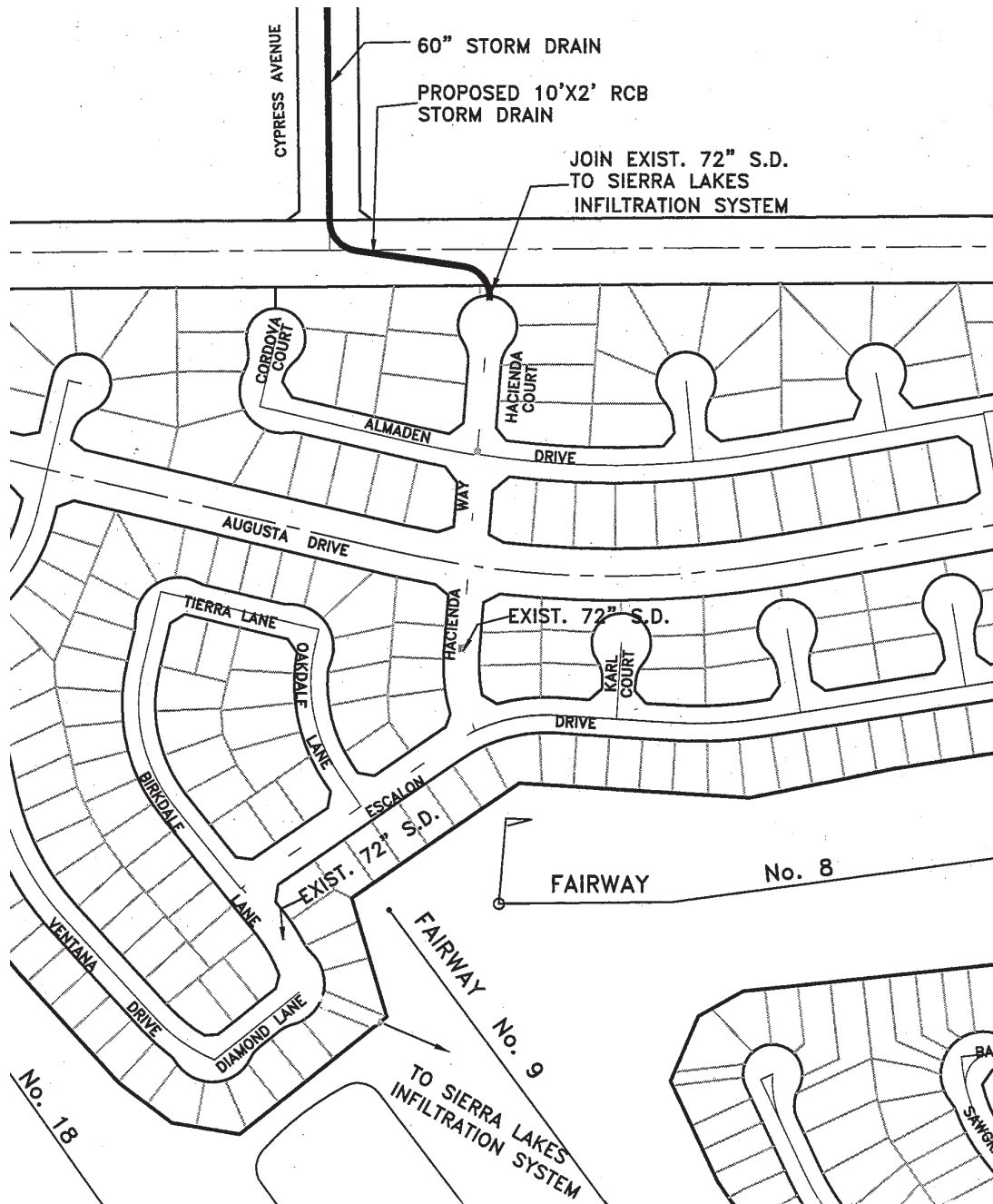


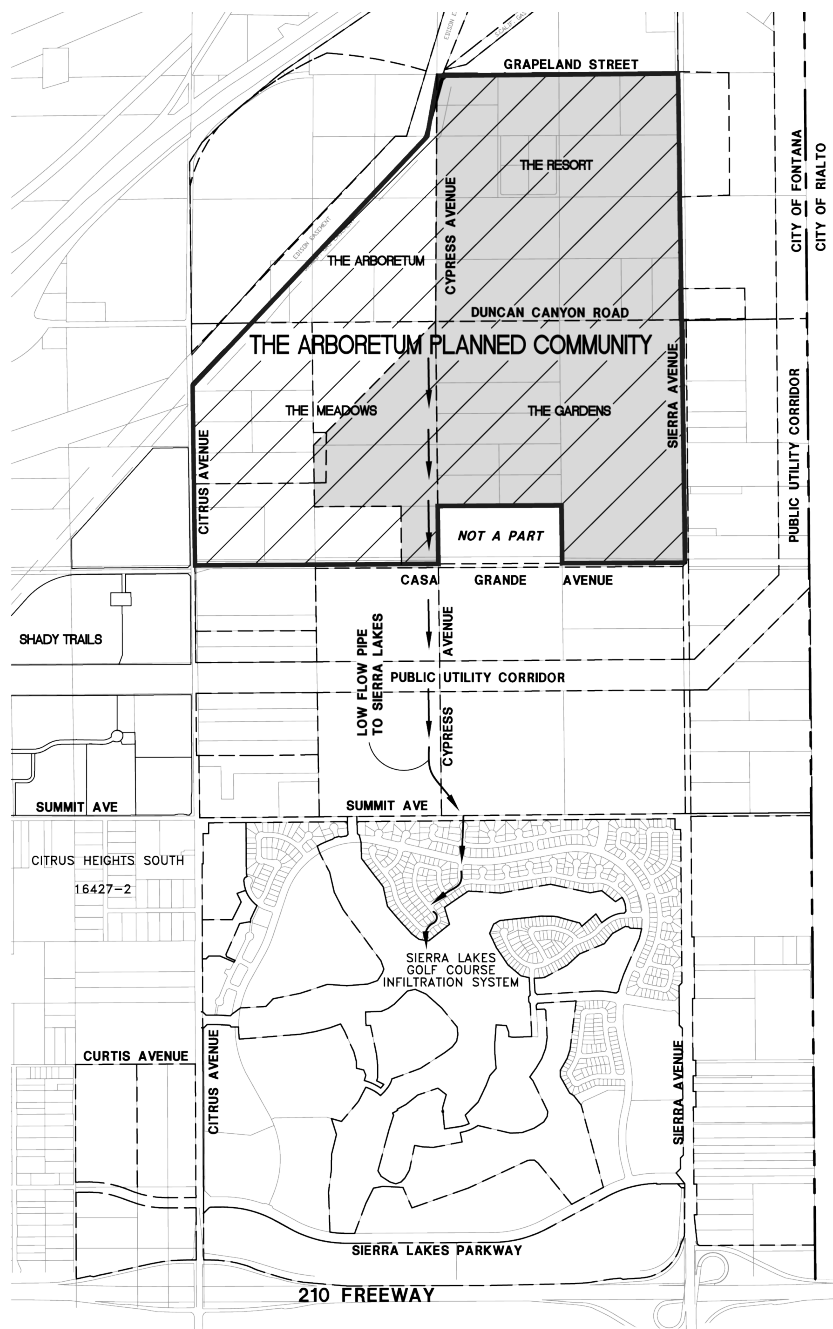
STORM DRAIN CONNECTION TO SIERRA LAKES INFILTRATION SYSTEM

FIGURE 9.7A

LEGEND

- Proposed Storm Facilities
- - - Existing Storm Facilities





WATER QUALITY MANAGEMENT PLAN AND BEST MANAGEMENT PRACTICES

FIGURE 9.7B

Note: Shaded area indicates the potential area of WQMP to be treated in Sierra Lakes.



The project will utilize the temporary drainage swales and temporary detention basins as shown on Figure 9.6, Drainage Plan and Phasing, until ultimate storm drain improvements are installed.

9.5 Public Services

The following information is a brief summary of services to be provided to The Arboretum. A more detailed discussion of facilities and service availability is presented in the Environmental Impact Report (EIR). A map showing the community service locations near the project site is provided as Figure 9.8, *Relationship to Off-Site Public Services and Facilities*.

9.5.1 Police and Fire Protection

The City of Fontana Police Department will provide law enforcement for The Arboretum. The City of Fontana currently maintains a ratio of 1.08 sworn officers per 1,000 residents; the City of Fontana General Plan suggests a ratio of 1.4 sworn officers and 0.6 nonsworn personnel per 1,000 residents.

The Central Valley Fire Protection District (CVFPD) provides fire protection to the site, which is part of the San Bernardino County Fire Agency. CVFPD also provides paramedic service in the area.

9.5.2 Public Schools

The Arboretum will be served by the Fontana Unified School District (FUSD). Students from the Arboretum will attend Elementary School #36 and Middle School #10 at the northeast corner of Citrus Avenue and Casa Grande Road. The development of Elementary School #37, located at the northeast corner of Duncan Canyon Road and Cypress Avenue, is still under discussion. This school is envisioned as being developed as another elementary school. In the event that a school is not developed in this second site, it is envisioned that residential units will be developed in its place. For more discussion on the implementation of school sites within The Arboretum, see Chapter 10, *Administration*.

9.5.3 Public Library

Library services to the City of Fontana are provided by the San Bernardino County Library system at the Lewis Library and Technology Center. The library is located at 8437 Sierra Avenue, approximately three miles south of the project site.

9.5.4 Hospitals

Residents of The Arboretum will be served by the Sierra San Antonio Medical Plaza located at 16465 Sierra Lakes Parkway and Kaiser Permanente Fontana Medical Center located at 9961 Sierra Avenue in Fontana. Other health facilities in the area include several Kaiser Permanente Medical Care Centers located throughout Fontana and the Arrowhead Family Health Center located at 16854 Ivy Avenue.

9.5.5 Utilities and Utility Providers

The Arboretum will be served with telephone, cable, internet (data), electric, natural gas, and solid waste collection service from private companies serving the North Fontana area as detailed below.

TABLE 9.1 UTILITY PROVIDERS

Electricity	Southern California Edison
Gas	Southern California Gas Company
Water	West Valley Water District
Sewer	City of Fontana
Solid Waste	Burrtec Waste
Telephone	AT&T
Cable	Time Warner

9.5.6 Public and Private Parks

Private parks within each village shall be substantially completed by the occurrence of the following two conditions:

1. Private parks located within a village Planning Area (as outlined in this Specific Plan) shall have an approved residential tentative tract map (TTM) and / or Design Review by Planning Commission; and
2. The City of Fontana's issuance of building permits within each village. Please see Table 9.2, Private Parks Timing, for specific building permit numbers. The Arboretum Park shall be constructed by the 1,200th building permit based on the total number of building permits issued for all villages.

“Substantially Completed” and “Substantial Completion” means that such Improvements are functional for their intended purposes and are approximately ninety five percent (95%) complete, based on the costs of such Improvements, in accordance with the improvement plans approved by the City, notwithstanding any final “punch list” items or nonessential items still required to be completed, all as approved in writing by the City inspector, which approval shall not be unreasonably withheld, conditioned or delayed. For purposes of this definition, non-essential items with respect to such Improvements shall include any replacement of miscellaneous (but not a majority of) damaged or deceased plant materials. Any Project Public Park that is open and formally accepted by the City (or in the case of a Project Private Park, approved by the City for use by the Project residents) shall also be conclusively deemed to be substantially complete for purposes of this definition.

Community gardens may be located within private or community parks and shall be substantially completed by the issuance of the building permit thresholds for private parks in each village, as identified in Table 9.2 (I.e. The first, second and third community gardens will be substantially complete by the 133rd, 375th, and 500th building permit respectively in the Meadows Village). The Arboretum Village will provide community gardens within the Arboretum Park; therefore all required community gardens shall be substantially complete by the 1200th building permit. Appendix B provides additional information regarding community garden implementation.

TABLE 9.2 TIMING FOR PRIVATE AND PUBLIC PARKS		
Village	Park	Building Permit
Meadows Village Up to 15 du/ac	1st Private Park	133
	Community Park	375
	2nd Private Park	500
	3rd Private Park	583
Gardens Village Up to 24 du/ac	1st Private Park	200
	Community Park	350
	2nd Private Park	625
	3rd Private Park	733
	4th Private Park	906
Resort Village Up to 20 du/ac	1st Private Park	250
	Primary Recreation Center	417
	2nd Private Park	592
	Secondary Recreation Center	1,000
	3rd Private Park	1,294
Arboretum Village Up to 24 du/ac	4th Private Park	1,449
	1st Private Park	250
	2nd Private Park	333
	3rd Private Park	450
All Villages	4th Private Park	560
	Arboretum Park	1,200 (See Section 9.5.6 Note 2)

Note: Recreational parks and amenities are representational and may change depending on market segmentation, engineering, site planning etc. Park amenities may shift locations within the site or be substituted with like kind amenities as approved by the Director of Community Development and in substantial conformance with the Specific Plan.



9.5.7 Off-Site Public Services and Facilities

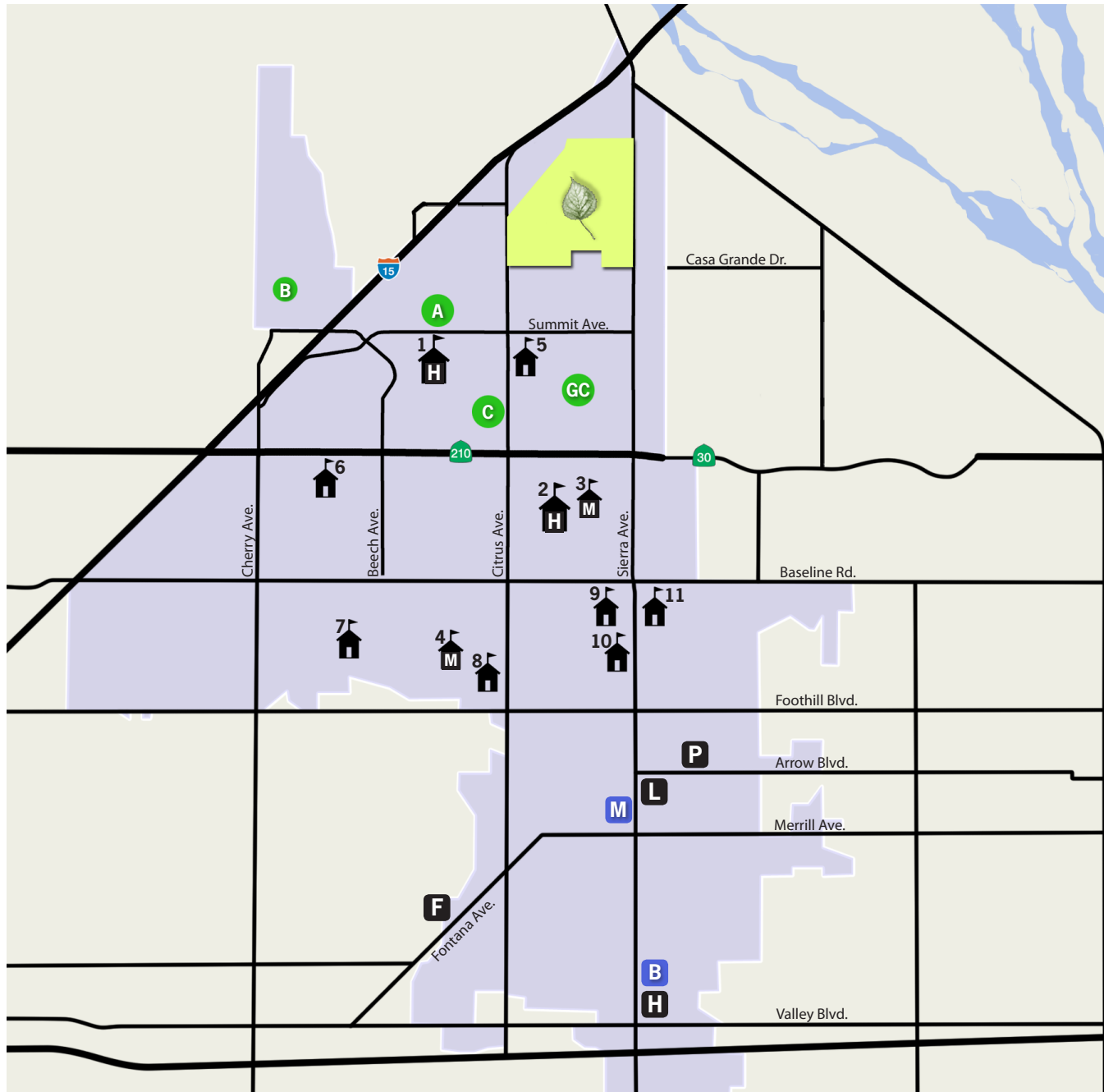
Several public parks and recreation facilities are located within the vicinity of The Arboretum, including the Sierra Lakes Golf Course, the Fontana Park, San Sevaine Park, and the Ralph M. Lewis Sports Complex. In addition to the recreational amenities provided to Arboretum residents within the project, these public facilities will offer additional opportunities for recreation.

RELATIONSHIP TO OFF-SITE PUBLIC SERVICES & FACILITIES

FIGURE 9.8

LEGEND

-  City of Fontana Boundary
-  1 Summit High School
-  2 A. B. Miller High School
-  3 Ruble Middle School
-  4 Almeria Middle School
-  5 Sierra Lakes Elementary
-  6 Grant Elementay
-  7 Hemlock Elementary
-  8 Tokay Elementary
-  9 Binks Elementary
-  10 Juniper Elementary
-  11 Mango Elementary
-  Sierra Lakes Golf Course
-  Fontana Park
-  San Sevaine Park
-  Ralph M. Lewis Sports Complex
-  Fontana Police Dept.
- Central Valley Fire Station 78
- Library / Technology Center
- Kaiser Permanente Fontana Medical Center
- Fontana Metrolink Station
- South Fontana TransCenter



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