



HARVEST LANDING SPECIFIC PLAN CIRCULATION AND INFRASTRUCTURE

3.0 CIRCULATION AND INFRASTRUCTURE PLAN

3.1 Introduction

The Harvest Landing Specific Plan will transform a mostly undeveloped area into a commercial, industrial, and business center with convenient access to major transportation routes. Presently, the area lacks sufficient infrastructure to effectively support this type of project development, and existing infrastructure is generally limited to supporting the limited uses on and around the area. Infrastructure improvements will be required to address the service needs of the Specific Plan area.

This Circulation and Infrastructure Plan shall serve as a guide for the development of more detailed plans for circulation, domestic water distribution, wastewater collection, stormwater collection, and other utilities that are deemed necessary as development occurs within this Specific Plan area. The conceptual Infrastructure Plans provide a schematic approach to identify the route and location of public facilities within the Specific Plan area. Future development proposals will determine the exact size and location of facilities; however, the design of the infrastructure improvements shall closely adhere to the facilities depicted in the Circulation and Infrastructure Plan.

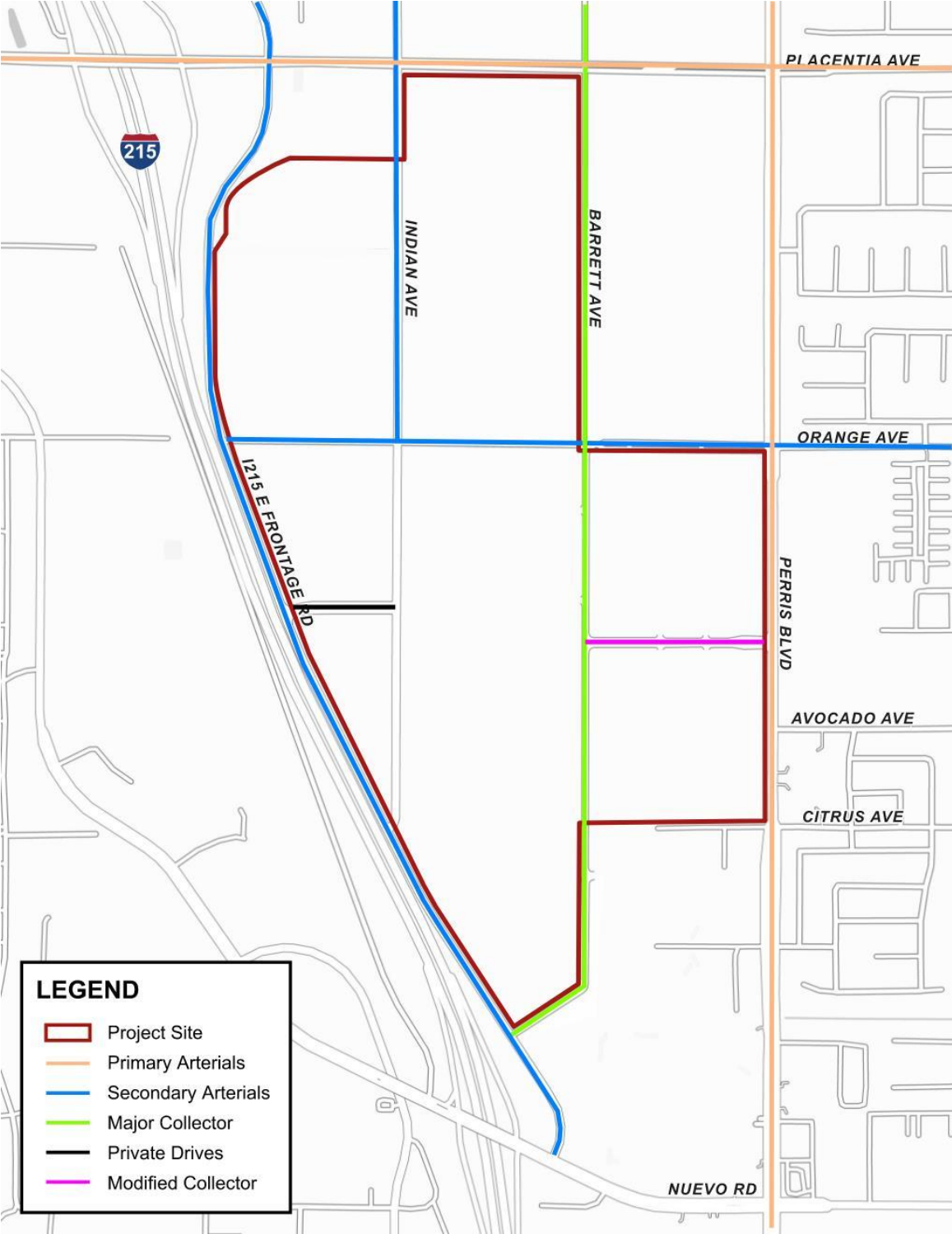
3.2 Circulation

The Circulation Plan provides Standards and Guidelines intended to ensure the safe and efficient movement of people and goods within the Harvest Landing Specific Plan area meet future transportation needs city-wide. The Circulation Plan addresses several aspects of circulation throughout the Harvest Landing Specific Plan including vehicle, truck and transit circulation, and non-vehicular circulation (pedestrian and bike). The Circulation Plan is depicted in Figure 3.0-1, *Circulation Plan*.



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Figure 3.0-1, Circulation Plan





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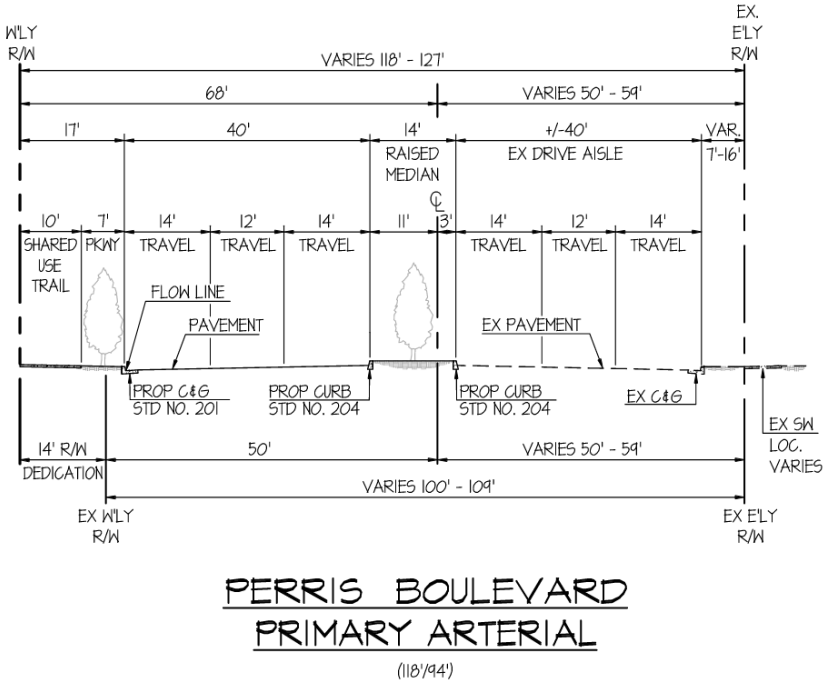
3.2.1 Vehicular Roadway Network

Harvest Landing is well positioned to take advantage of existing regional transportation corridors. I-215 runs along the western edge of the project, providing access to Riverside and other areas within southern California. Regional north-south access to the Harvest Landing Specific Plan area is provided via Interstate-215, Perris Boulevard, and Indian Avenue. Two existing interchanges located just south of the Specific Plan Project site at Nuevo Road and north of the Specific Plan area at Placentia Avenue provide direct access from the Project to the freeway.

The Harvest Landing Specific Plan includes a vehicular circulation plan that fits into and complements the existing surrounding roadway system. Like the City's General Plan Circulation Element, the Project's roadway system consists of a hierarchy of streets including primary arterials, secondary arterials, collectors, and private streets.

All streets within Harvest Landing meet or exceed the City's General Plan future right-of-way standards for each roadway designation. Typical street sections are found on Figures 3.0-2a – g, *Standard Street Sections*, and described below.

Figure 3.0-2a, Standard Street Sections – Primary Arterial (Perris Boulevard)





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Figure 3.0-2b, Standard Street Sections – Secondary Arterial (Orange Avenue)

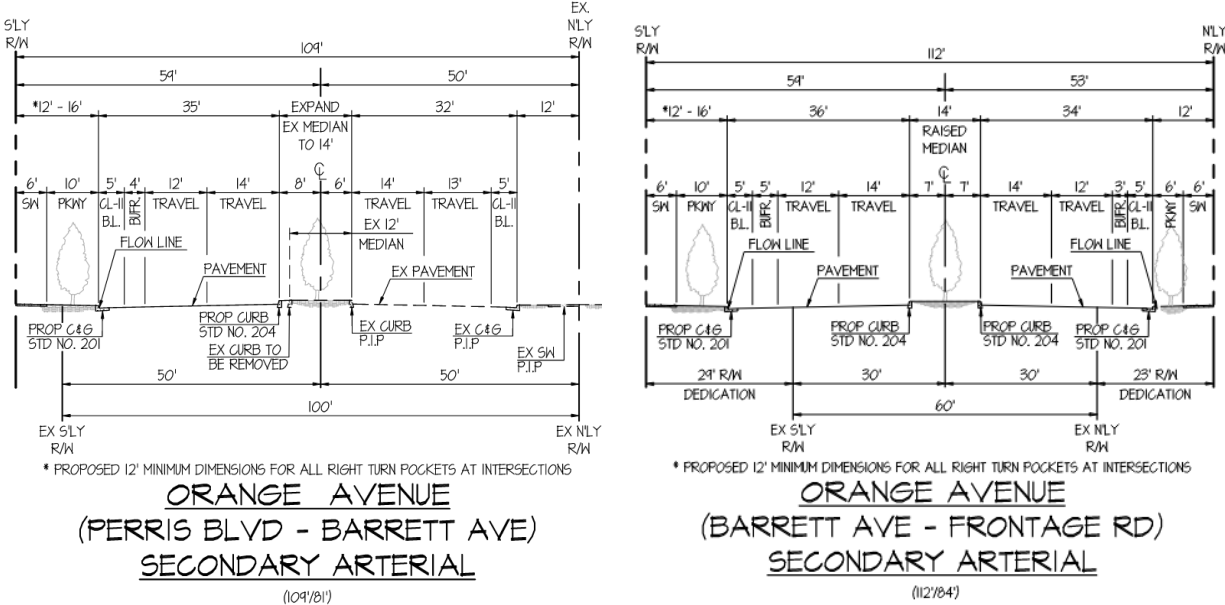
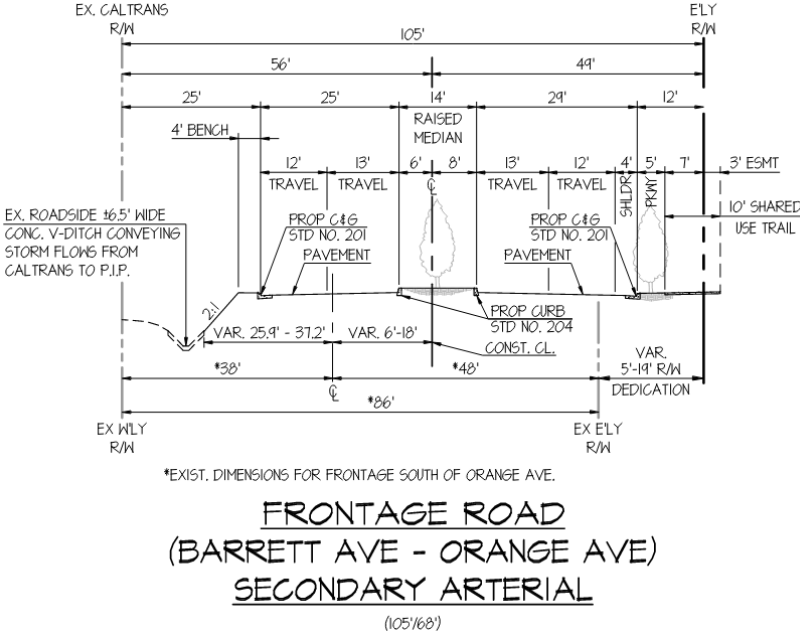


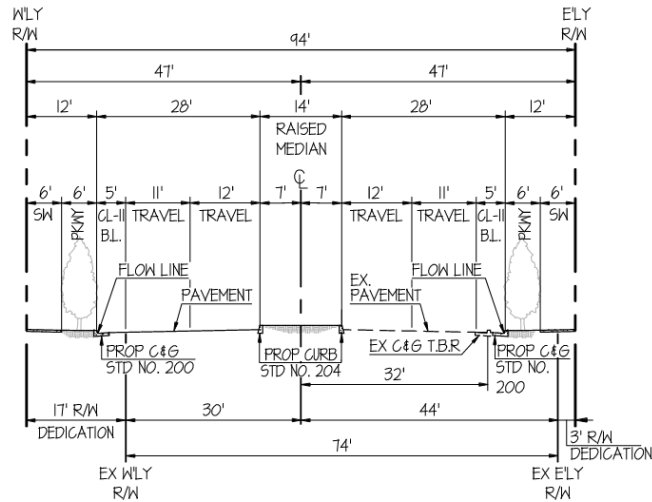
Figure 3.0-2c, Standard Street Sections – Secondary Arterial (Frontage Road)



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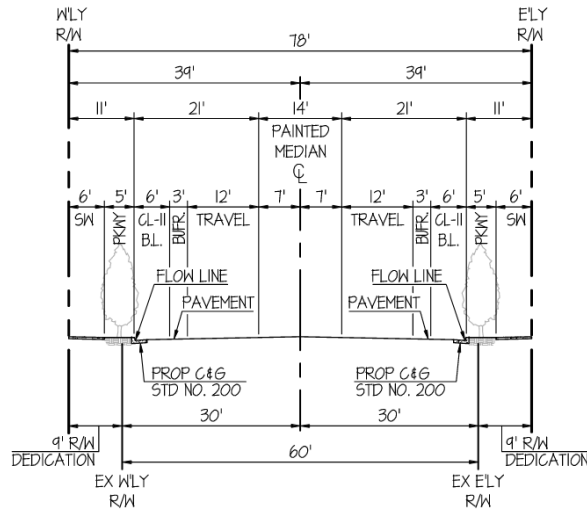


Figure 3.0-2d, Standard Street Sections – Secondary Arterial (Indian Avenue)



INDIAN AVE
 (ORANGE - VAL VERDE SCHOOL)
SECONDARY ARTERIAL
 (94'/70')

Figure 3.0-2e, Standard Street Sections – Major Collector (Barrett Avenue)

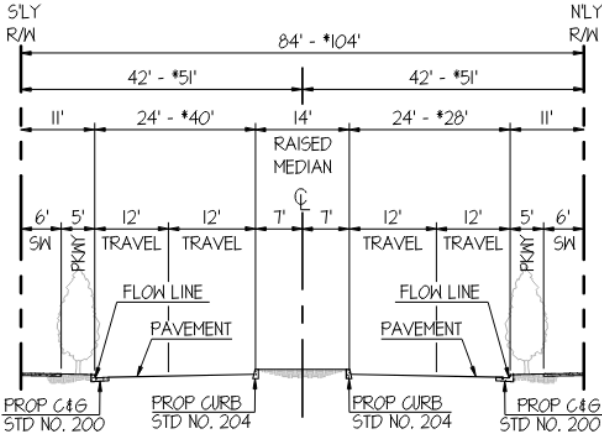


BARRETT AVENUE
 (N'LY WALMART DWY - ORANGE AVE)
MAJOR COLLECTOR
 (78'/56')



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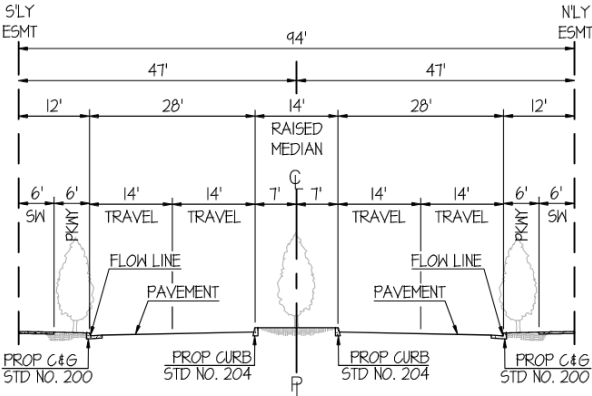
Figure 3.0-2f, Standard Street Sections – Modified Collector (Harvest Landing Way)



*PROPOSED DIMENSIONS FOR INTERSECTION WITH PERRIS BLVD.

**HARVEST LANDING WAY
MODIFIED COLLECTOR**
(84'/62')

Figure 3.0-2g, Standard Street Sections – Private (Private Drive A)



**PRIVATE DRIVE "A"
SECONDARY ARTERIAL**
(44'/10')



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Freeway

Interstate-215: Interstate-215 (I-215) runs north-south along the western boundary of Harvest Landing. Existing freeway on and off-ramps are located at Nuevo Road and Placentia Avenue.

Primary Arterials

Primary arterials serve major traffic movements or major traffic corridors within a 118-foot to 127-foot right-of-way. While they may provide access to abutting land, their primary function is to serve traffic moving through the area. Primary arterial streets generally have a curb-to-curb width of 90-feet to 94-feet.

Primary arterial streets serving the Harvest Landing Specific Plan area include:

- **W Placentia Avenue:** Placentia Avenue runs east-west along the northernmost boundary of the site. An interchange at Placentia Avenue and I-215 has provided improved access from the northern portion of the Specific Plan area to surrounding areas and I-215.
- **N Perris Boulevard:** Perris Boulevard serves as a main corridor within the City. It runs north-south along the eastern edge of the Project, providing direct access between the Specific Plan area and the downtown area.

Secondary Arterials

A secondary arterial is intended to carry local traffic between the local street system and the primary arterial system. Secondary arterial streets generally vary from a curb-to-curb width of 81 feet to 86 feet and may have one or two lanes in each direction with a 12-foot to 14-foot raised median. Median requirements of section 19.70.050B shall also include Orange Avenue and Indian Avenue. (See Figure 3.0-1, *Circulation Plan*)

Secondary arterial streets serving the Harvest Landing Specific Plan area include:

- **Orange Avenue:** Orange Avenue is an east-west roadway which traverses through the center of Harvest Landing. It will act as the primary east-west corridor in Harvest Landing.
- **Indian Avenue:** Indian Avenue is a north-south roadway on the western side of Harvest Landing. It will serve as a direct link from Placentia to Orange Avenue.
- **Frontage Road:** Frontage Road is a north-south roadway on the most western edge of Harvest Landing. It serves as a main north-south corridor adjacent for Harvest Landing.

Collectors

A major collector road is a low- or moderate-capacity road that tends to lead traffic from local roads or sections of neighborhoods to activity areas within communities, arterial roads, or occasionally directly to expressways or freeways within a 66-foot to 84-foot right of way within the Harvest Landing Specific Plan. Collector streets typically range from 44 feet to 62 feet wide curb



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to curb with 6 feet of sidewalk on both sides depending on the design and traffic volumes to be served.

Major collectors in Harvest Landing include:

- **Barrett Avenue:** Barrett Avenue is a public, local north-south roadway throughout Harvest Landing intersecting with Nuevo Road at the south and Placentia Avenue to the north.
- **Harvest Landing Way:** Harvest Landing Way is a modified collector with a short east-west roadway connecting Barrett Avenue and Perris Boulevard. Harvest Landing Way is tapered at the intersection of Perris Boulevard to allow for turning in and out of the commercial center.

Private Drives

Harvest Landing has one private drive servicing the site:

- **Private Drive "A":** Private Drive "A" will be a short east-west roadway connecting MBU parcel to Frontage Road to allow for trucks to enter and exit the site directly onto Frontage Road and avoid entry onto Orange or Barrett Avenues. The Private Drive will have a right-of-way of 94 feet and an 70-foot width curb to curb.

Roadway Development Standards

The circulation plan of Harvest Landing establishes the general alignments and right-of-way sections to safely meet the transportation needs of its businesses and visitors. The improvements required for development of individual projects along segments of roadways will be confirmed at the development stage.

Roadway Design Requirements

All intersection spacing and/or access openings shall be in compliance with Table 3.0-1, *Roadway Design Requirements and Intersection Spacing*, below, or as otherwise approved by the City Engineer.

Cross-Sections

All Specific Plan roads shall be constructed per the standard cross-sections shown in Figures 3.0-2a – g, above.

Lane Requirements/Expanded Intersections

All Specific Plan roads shall be constructed per the lane requirements outlined in Table 3.0-2, *Lane Requirements*, below and provide expanded intersections as depicted in Figures 3.0-3a to 3.0-3b.

No Textured Pavement Within City Right-of-Way

Textured pavement accents shall not be permitted within the City maintained rights-of-way, unless otherwise approved by the City Engineer.



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Gateway Entries

The gateway entries as shown in Figure 3.0-4, have been strategically located at the entries of Harvest Landing at key intersections. The design for these gateways shall include a consistent application of elements, all within the street rights-of-way, such as landscaping, signage on one or both sides of the street, walls/fencing and lighting within the designated monumentation area as depicted on Figure 3.0-4. For signage, please see Section 6.

Nuisance Storm Flows

Roadway intersections shall be free of nuisance water by providing storm drains for nuisance flows.

Table 3.0-1, Roadway Design Requirements and Intersection Spacing

		Road Type				
		Private Drive	Collector	Major Collector	Secondary Arterial (Raised Median)	Primary Arterial
Traffic Index		5.5	7.0	8.0	9.5	10.0
Right-of-Way (b)		112' ¹	66' ³	78'	94'	1278'
Curb to Curb		68' ²	44' ³	56'	70'	94'
Minimum Radii (d) (Horizontal)	Predominantly Flat					
Minimum Grade (%) (d)	Predominantly Flat					
Preferred Design Speed	Predominantly Flat	30	35	40	50	60
Intersection Intervals (c) (D)		200'	330' (a)	330' (a)	660' (a)	1200' (a)

- a) Commercial/Industrial driveway access as determined by City Engineer.
- b) Additional right-of-way required at intersections to accommodate dual left turns. Additional right-of-way may be required on opposite side of intersection to align through lanes.
- c) All intersections and approaches along designated truck routes shall be concrete section for a minimum of 150 feet on either side of centerline.
- d) Intersections do not include driveways, driveways spacing is provided in Table 3.0-3 below.
 - ¹ Harvest Landing Way tapers from 84 feet to 102 feet to support the intersection of Harvest Landing Way and Perris Blvd.
 - ² Harvest Landing Way tapers from 62-foot curb to curb to 82-feet to support the intersection of Harvest Landing Way and Perris Blvd.
 - ³ Per prior city standards.

Table 3.0-2, Lane Requirements

Classification	Number of Through Lanes Along Segment	Number of Intersection Turn Lanes Required for Intersection with Secondary Arterial and Greater	
		Left	Right
Primary Arterial*	3	2 or 1**	1



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Secondary Arterial	2	2 or 1**	1
Collector	1	1	1

*Perris Blvd and Placentia are the only primary Arterial. These streets only boarder the Specific Plan.

**Dependent on traffic study.

Figure 3.0-3a, Expanded Intersection – Arterial

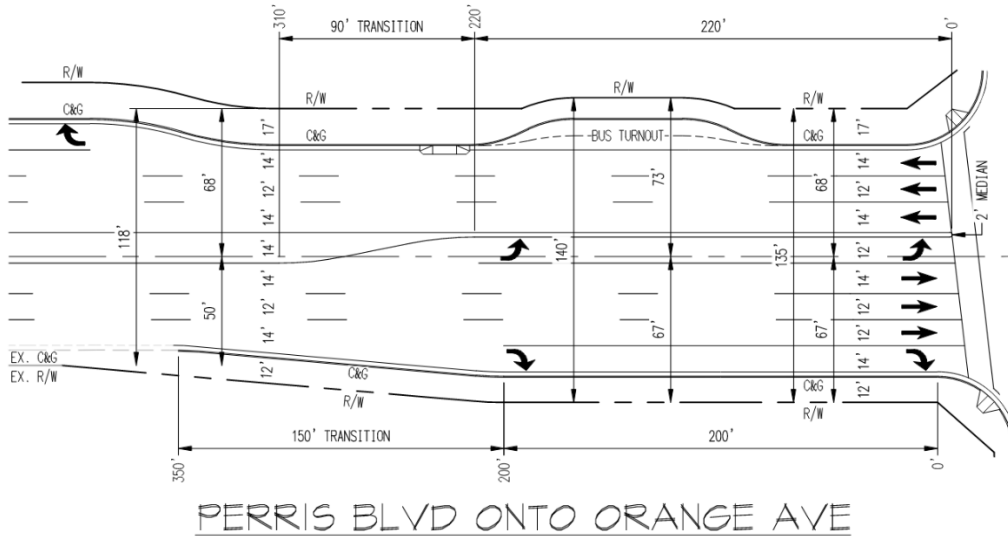


Figure 3.0-3b, Expanded Intersection – Secondary Arterial (Raised Median)

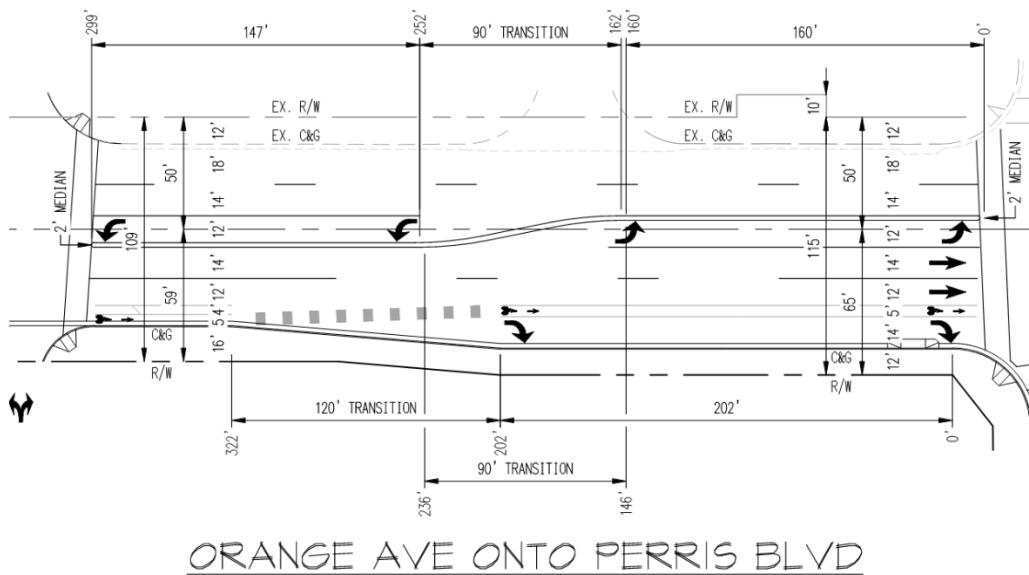




Figure 3.0-4, Gateway Entries





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Entrances and Driveway Spacing

Table 3.0-3, *Driveway Spacing*, lists appropriate driveway spacing based on roadway type within Harvest Landing.

Table 3.0-3, Driveway Spacing

	Road Type					
	Private	Collector	Major Collector	Secondary Arterial (Painted Median)	Secondary Arterial (Raised Median)	Primary Arterial
Intersection Intervals (feet)	200'	200'	200'	200'	200'	300'

Site access shall promote safety, efficiency, convenience, and minimize conflict between employee/customer vehicles and large trucks by creating separate access points as shown in Figure 3.0-5.

Figure 3.0-5, Separated Driveways





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Emergency Vehicle Access

Design of primary drive aisles shall allow for emergency vehicle access. Typically, this requirement is a minimum of 20 feet. However, applicants are encouraged to check with the City's Fire Marshall.

Adequate Vehicle Spacing For Drive-Thrus

In addition to the conditional use requirements set forth in Section 19.38.030 of the City Municipal Code, the Harvest Landing Specific Plan requires Businesses with drive-thru service(s) to provide adequate stacking to accommodate sufficient vehicles per the anticipated use prior to each pick-up window to avoid conflict with on-site circulation.

Avoid Back-up onto Public Streets

To avoid back-up onto public streets, entry drive approaches shall avoid conflict points such as parking stalls, internal drive aisles, or pedestrian crossings. Final determination of the driveway approach length shall be determined by the Planning Manager and the City Engineer.

Consideration of Large Truck Maneuverability

The design and location of loading facilities shall take into consideration the specific dimensions required for the maneuvering of large trucks and trailers into and out of loading positions at docks or in stalls and driveways.

3.2.2 Truck Routes

The Harvest Landing Specific Plan area accommodates commercial, business, and industrial uses and requires a greater need for established truck routes to serve future businesses. Existing truck routes that have been designated by the City include I-215 and Placentia Avenue.

Inbound trucks to Harvest Landing will exit I-215 east onto Placentia Avenue, then utilize Frontage Road to access the MBU land uses in the western portions of Harvest Landing and return to Placentia Avenue to exit Harvest Landing.

To access Commercial land uses on the eastern portions of Harvest Landing, trucks will use Orange Avenue and enter Harvest Landing south from Orange Avenue to access retail buildings, exiting on Harvest Landing Way and continuing east to North Perris Boulevard to return to Orange Avenue to exit Harvest Landing along Frontage Road. Trucks exiting the site to Frontage Road will be limited to right-turns only onto Frontage Road.

The truck routes in Harvest Landing are shown on Figure 3.0-6, *Truck Route Plan*.

Truck Route Development Standards

Routes in which large trucks will travel shall be established in order to improve the flow of traffic through the City. I-215 and Placentia Avenue are designated as City truck routes. Inbound trucks to Harvest Landing will exit I-215 east onto Placentia Avenue, then utilize Frontage Road to access



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the MBU land uses in the western portions of Harvest Landing and return to Placentia Avenue to exit Harvest Landing. Trucks exiting the Specific Plan area onto Frontage Road will be limited to right-turns only.

Delivery Truck access to the Commercial land uses on the eastern portions of Harvest Landing, shall use Orange Avenue and Barrett Avenues access retail buildings. Delivery trucks servicing the retail uses will exit the Commercial Land use from Orange Avenue and turn southbound onto Perris Boulevard and directly right into Harvest Landing, followed with a right turn onto Harvest Landing Way to Barrett Avenue and exiting Harvest landing via Orange Avenue.

Large Turning Radius

A 50-foot turning radius shall be provided at intersections along truck routes. Entrances used primarily or solely by dual axle vehicles shall provide a minimum 50-foot radius curb returns. A minimum 40-foot turning radius shall be required for driveways with 40 feet being the preferred driveway turning radius. Excluding the commercial delivery truck route.

Concrete Intersections and Approaches

All intersections and approaches shall be paved the full width of the street with concrete for a minimum distance of 150 feet on either side of the curb return.

Increased Stacking

Typical stacking distance at turn pockets is 150 feet. Increased stacking distance in turn pockets along the truck routes shall be provided as deemed necessary by the City and City Engineer.

Acceleration/Deceleration Lanes

Acceleration, deceleration, as well as right turn lanes shall be required where deemed necessary by the City and/or City Engineer to prevent traffic congestion at entrances and exits.

Mitigation Measures

Each development project shall comply with the on-site and off-site street improvement recommendations and mitigation measures outlined in the subsequent traffic studies for each individual project, or as otherwise interpreted by the City Engineer.



Figure 3.0-6, Truck Route Plan





Figure 3.0-7, Retail Delivery Truck Route Plan





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3.2.3 Public Transit

Currently, two primary Riverside Transportation Agency (RTA) bus lines provide service to the Harvest Landing Specific Plan area. These are Routes 19 and 30, which run north/south along Perris Boulevard, which is the eastern boundary of the Specific Plan area. Route 19 provides service from the Moreno Valley Station in the City of Moreno Valley to the Perris Station Transit Center at “C” Street and Perris Boulevard at its south terminus. Route 30 extends from the Perris Transit Station Center to/from May Ranch, near the Perris Boulevard/Ramona Expressway intersection. Bus stops are provided on Perris Boulevard along the Harvest Landing Specific Plan area boundary near the intersection of Perris Boulevard and Harvest Landing Way and the intersection of Perris Boulevard and Orange Avenue.

Bus Route Development Standards

Bus Stops at Commercial Centers

Harvest Landing Retail Center shall provide two turnout pockets for bus stops along North Perris Boulevard.

Bus Route Design Guidelines

Projects Along Identified Routes

Projects located along existing and/or future bus routes should coordinate with the Riverside Transit Authority (RTA) early in the process to determine transit requirements such as location, bus turnouts and seating and shelters.. Refer to RTA’s Design Guidelines for Bus Transit.

Additional Public Right-of-Way

Additional public right-of-way may be required, as determined by RTA, to accommodate the bus turnout and the minimum sidewalk requirement.

Bus stops should be designed to allow convenient access by transit, which includes a covered shelter, trash receptacle, and safety lighting in accordance with the City’s selected standard for the area.

3.2.4 Bicycle Circulation

The pedestrian and bicycle circulation system, shown in Figure 3.0-8, *Bicycle and Pedestrian Circulation Plan*, joins the northernmost Multiple Business Use area with the southern Multiple Business Area and the eastern commercial area.

The City’s climate makes bicycling a viable year-round recreational opportunity and alternative mode of transportation. Bicycle circulation in Harvest Landing occurs with a mix of Class II bike lanes and shared use trails as follows:

- 5-foot-wide Class II bike lanes along both sides of Indian Avenue (north of Orange Avenue).
- 10-foot-wide shared use trail along the east side of Frontage Road.



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- 10-foot-wide shared use trail along the west side of Perris Boulevard.
- 5-foot-wide Class II bike lanes along both sides of Orange Avenue (west of Perris Boulevard and west of Barrett Avenue).
- 6-foot-wide Class II bike lane along both sides of Barrett Avenue from Frontage Road to Placentia Avenue.

Bicycle Route Development Standards

The City of Perris bike trail design standards are based on Caltrans Highway Design Manual, Bikeway Planning and Design Standards. The minimum Class II bike lane width shall be 5 feet. Bike lane development within Harvest Landing will utilize design criteria found in the Perris General Plan Circulation Element.

3.2.5 Pedestrian Circulation

Pedestrian sidewalks (6 feet wide) are adjacent to all roadways to allow pedestrian access throughout Harvest Landing. Additionally, walking paths are located within the perimeter of the WQMP Detention/Drainage area to provide an outdoor amenity for employees of the area to utilize and take advantage of green space.

Primary walkways shall be 5 feet wide at a minimum and conform to ADA/Title 24 standards for surfacing, slope, and other requirements. A minimum 5-foot wide sidewalk or pathway, at or near the primary drive aisle, shall be provided as a connecting pedestrian link from the public street to the building(s), as well as to systems of mass transit, and other on-site building(s).

Pedestrian Connectivity Design Guidelines

Pedestrian connections should be created within the multiple business use area, and the commercial area. These connections should tie into the walkways to create a cohesive pedestrian and circulation system within the Project.

The pedestrian linkage promotes safe nonvehicular movement throughout the entire Project and between the Project and adjacent uses.



Figure 3.0-8, Bicycle Circulation Plan





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3.3 Utilities

3.3.1 Water System

The water plan for Harvest Landing is based on the availability of water and capacity of water systems surrounding the Project as well as the maximum build-out of the Project. The Harvest Landing Project site is within the service area of the Eastern Municipal Water District (EMWD) for water supply.

Water Supply

The Harvest Landing Retail Center & Business Park will be served by the Eastern Municipal Water District (EMWD), which has accounted for the Project's water demand in its 2020 Urban Water Management Plan (UWMP). The Project's estimated total water demand is 561.68 acre-feet per year (AFY), which remains within the demand projections previously considered for the site. Water supply for the Project will be met through a combination of imported water from the Metropolitan Water District and EMWD's local supply resources, including potable groundwater, desalinated brackish groundwater, and recycled water where applicable. The Project will be required to implement water-efficient devices and landscaping in accordance with EMWD's "Water Efficient Guidelines for New Development" to enhance conservation efforts.

Recycled water will be the preferred source for all non-potable uses, such as irrigation for landscaped areas, in alignment with EMWD's policies. Prior to construction, the Project developer must coordinate with EMWD to establish development design conditions, which may include the installation of on-site and off-site water infrastructure improvements. Any changes to the Project's land use or density will require updates to EMWD to ensure accurate tracking of water demand projections. Additionally, the Project will undergo periodic review every three years until construction begins to verify that no significant changes to EMWD's water supply or the Project's demand have occurred.

Water System Plan

Figure 3.0-9, *Existing and Proposed Water Infrastructure*, shows the existing and proposed water infrastructure system for Harvest Landing. Existing infrastructure is located along Indian Avenue, Barrett Avenue, Placentia Avenue, Orange Avenue, and Perris Boulevard. However, the water system will be expanded to accommodate buildout of Harvest Landing. Expanded water infrastructure is proposed to extend Orange Avenue infrastructure between Indian Avenue and Barrett Avenue; expand infrastructure along Barrett Avenue south of Orange Avenue, and along Frontage Road.

Non-Potable Water System

Figure 3.0-10, *Proposed Non-Potable Water Infrastructure*, illustrates the proposed non-potable water system for the Project. Recycled water will ultimately be available for future connections throughout the Specific Plan area. All landscaped areas will be irrigated with recycled water provided by EMWD once the Indian Avenue recycled water line is extended to the Project Site. In



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the interim, until that connection is established, landscaping will be irrigated with potable water. Potable water use will continue only until EMWD's recycled water facilities are fully extended to serve the site at ultimate buildout..

Water Development Standards

Design Standards

All waterlines shall be designed and located per Eastern Municipal Water District (EMWD) standards. All waterline facilities shall require the approval of both EMWD and the City of Perris.

Water Supply Assessment

Individual projects shall be required to comply with Senate Bills 610 and 221 for the preparation of a Water Supply Assessment as follows:

- Retail shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space.
- Commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.
- Industrial, manufacturing or processing plants and industrial parks housing more than 1,000 persons, occupying more than 40 acres of land or having more than 650,000 square feet of floor area.

Plan of Service

Developers shall coordinate with EMWD to determine water service requirements through EMWD's Plan of Service process.

Fire Protection

All water facilities shall be sized to provide adequate fire protection per the requirements of the City of Perris Building and Safety Department.

Irrigation Water Demand

Developers shall provide information that estimates a project's irrigation water demand, and submit conceptual landscape/irrigation conceptual plans to EMWD for review during the plan of service process.

Conservation Measures

The Harvest Landing Retail Center & Business Park will incorporate comprehensive water conservation measures to promote long-term sustainability and reduce overall water demand. These measures will align with the Eastern Municipal Water District (EMWD)'s Water Efficient Guidelines for New Development, as well as state and local water conservation policies.

The development will implement high-efficiency plumbing fixtures in all buildings, including low-flow toilets, urinals, faucets, and water-efficient dishwashers where applicable. Irrigation systems will utilize weather-based controllers, drip irrigation or equally water efficient water systems. All



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landscaping will be designed with drought-tolerant and native plant species, reducing the need for supplemental irrigation.

Additionally, non-potable water sources, such as recycled water, will be prioritized for irrigation and other permissible uses in coordination with EMWD's recycled water infrastructure. Indoor and outdoor conservation strategies will be continuously monitored, and future tenants may be required to adhere to EMWD's water efficiency programs, including ongoing conservation incentives and education initiatives.

By incorporating advanced water-saving technologies, sustainable landscaping, and efficient irrigation systems, the Harvest Landing Retail Center & Business Park will significantly reduce its overall water footprint while supporting regional water conservation efforts.

Existing Facility Relocation

Relocation of existing water facilities will require coordination with and approval by EMWD. All relocation costs shall be incurred by the development.

Inspection

All waterlines shall be placed underground and inspected by EMWD and the City of Perris.

3.3.2 Recycled Water

Recycled Water Candidates

Projects located within one mile of existing EMWD recycled water facilities and that require more than 3,000 square feet of landscape are potential recycled water candidates. EMWD shall be contacted early in the development process to determine if a recycled water connection will be required or if recycled water facilities need to be constructed.

On-Site Recycled Waterline

All projects within the Harvest Landing Specific Plan area will be required to install on-site recycled waterlines (purple pipe) and an irrigation meter for connection to existing or future recycled facilities.

3.3.3 Sewer

The Harvest Landing Project lies within the service area of EMWD and the sewer plan for Harvest Landing is based on their regional master plan, the projected demand generated at project build-out, and the capacity of the sewer systems surrounding the Project.

Figure 3.0-11, *Existing and Proposed Sewer Infrastructure*, shows the existing and proposed sewer infrastructure for Harvest Landing. Existing infrastructure is located primarily throughout the northern half of the Project site. Development of Harvest Landing would expand sewer infrastructure throughout the southern half of the Project site.



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Sewer Development Standards

Design Standards

All sewer lines shall be designed and located per EMWD standards. All sewer facilities shall require the approval of both EMWD and the City of Perris.

Plan of Service

Developers shall coordinate with EMWD to determine sewer service requirements through EMWD's Plan of Service process.

Existing Sewer Lines May be Relocated to Facilitate Development

Relocation of existing sewer facilities will require coordination with and approval by EMWD. All relocation costs shall be incurred by the development.

On-Site Sewage Disposal Systems

On-site sewage disposal systems are prohibited for all non-residential land uses, unless otherwise approved by the City Engineer.

3.3.4 Stormwater Drainage

Perris Valley Area Drainage Plan

The Harvest Landing Specific Plan area is located within the Perris Valley Area Drainage Plan that was prepared by the Riverside County Flood Control and Water Conservation District (RCFC&WCD) and adopted by the City of Perris. The Perris Valley Area Drainage Plan provides the necessary storm drain infrastructure required to provide flood protection for the surrounding area. Moreover, the Perris Valley Area Drainage Plan has adopted a fee of \$8,875 per acre that is used to finance the required storm drain infrastructure identified within the Perris Valley Area Drainage Plan watershed area.

The adopted Perris Valley Area Drainage Plan has a total of 10 storm drain facilities within the Project boundary, listed in Table 3.0-4, *Perris Valley Area Drainage Plan Storm Drain Facilities*.



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Table 3.0-4, Perris Valley Area Drainage Plan Storm Drain Facilities

Proposed Storm Drain Facility	Storm Drain Size	Perris ADP Equivalency
Line K	12'x8' RCB 102" RCP 96" RCP	Line K
Lateral K-15	60" RCP	Line K-15, Line K-17 & K-18
Lateral K-19	48" RCP	Line K-16 & Line K-19
Lateral K-17	48" RCP	Line K-23
Line K-20	48-90" RCP	Line K-20
Lateral K-22	36" – 60" RCP	Line K-21 & Line K-22
Lateral K-24	36" RCP	Lateral K-24

Based on research conducted for the Project area, the Perris Valley Area Drainage Plan identified 75% of the area as single family one-quarter-acre dwelling units. Please note, the Perris Valley Area Drainage Plan was based on a land use map that pre-dates Perris Valley Area Drainage Plan adoption date of July 1987. The critical storm drain system is Line K, which is the mainline that collects all other storm drain systems. At the downstream end of the Project boundary, Line K has a design flow rate of 626 cubic feet per second (cfs). The proposed Harvest Landing development area has been planned to discharge storm flows into Line K. As a result, the Project will be required to ensure that the design flow rate of 626 cfs is not exceeded.

Existing Drainage

Prior to the development of Harvest Landing and the surrounding master planned drainage improvements, a total of 963.48 acres of drainage (327.48 on-site and 636 off-site from the west and north) and a peak flow rate of approximately 1,090 cfs impacted the site. Of the total existing drainage area and flow, 27 acres and 40 cfs drain to Line J and the remaining 950 acres and 1,050 cfs drain to Line K. Prior to implementation of Harvest Landing and Perris Valley Area Drainage Plan improvements, off-site drainage came from the following sources:

- **Culvert 1 (Orange Avenue):** a 4-foot by 3-foot reinforced concrete box that accommodated 240 cfs of off-site drainage from approximately 130 acres to the west. Water from Culvert 1 flowed into an existing lateral and headwall at the intersection of Orange and Barrett Avenues via a natural earthen channel.
- **Culvert 2 (approximately 1400 feet South of Orange Avenue):** a 6-foot by 3-foot reinforced concrete box that accommodated 360 cfs of off-site drainage from approximately 380 acres to the west.
- **Culvert 3: Line J,** which runs through the southern portion of the site and conveys off-site drainage from the west through Harvest Landing via an underground pipe.
- **Northwest:** Approximately 70 acres and 64 cfs of surface flows from the northwest.



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- **Line H**, an existing storm drain facility, begins at Indian Avenue along Placentia Avenue extending easterly and constructed as part of the I-215 interchange project. It provides a regional basin to collect and mitigate storm runoff from west of Indian and I-215. Captured Storm flows are metered down within basin and discharged into an underground 36-inch storm drain pipe system that is maintained and operated by the City. Line H storm flows are mitigated from what is shown in the Perris Valley MDP by the 215 interchange improvement project.
- **Frontage Road:** Existing concrete roadside channel running parallel to the Caltrans I-215 right-of-way from the intersection of Frontage Road and Orange south to the intersection of Frontage Road and Walmart Supercenter (Barrett Ave.), approximately 4,410 ft. Interstate 215 (Caltrans) is located to the west of the site; has multiple road inlets with underground storm drain lines that collect and convey storm water from the Caltrans right-of-way to the existing roadside concrete ditch along the west side of Frontage Road. Approximately six (6) underground drain lines are connected to the existing ditch that conveys flows to the south, to an existing inlet and 24" lateral connecting to the existing MDP Line J (11'x5' RCB).

Figure 3.0-12, *Existing and Proposed Storm Drain Infrastructure*, shows the existing and proposed storm drain infrastructure for Harvest Landing. Limited storm drain infrastructure exists around the perimeter of the Project site. Buildout of the Harvest Landing Specific Plan would expand storm drain infrastructure throughout the Project site.

Proposed Drainage System

The storm drain design of the Project is maintaining the connection to Line K downstream of Perris Boulevard. The total allowable flow rate for the Line K system cannot exceed 626 cfs. Due to the change in land use associated with the Project, each development site within the Specific Plan will incorporate subsurface storage basins or where feasible above ground basins to mitigate flow rates in order regulate outflow rates where the cumulative total will be at or less than 626 cfs. The Project is proposing to construct the Line K system from the westerly Project boundary to the east to Medical Center Drive. This will allow the Line K system to be constructed to the existing Line K Channel that is maintained and operated by RCFC&WCD. The existing Line K Channel downstream and east of Medical Center Drive is a 100 year facility that has been designed to meet the requirements of the Perris Valley Area Drainage Plan. Moreover, the existing Line K Channel conveys the flows to the Perris Valley Channel which is also maintained and operated by RCFC&WCD.

The Project is proposing to construct 6 storm drain infrastructure facilities. The design of the proposed planning area will eliminate the need for some of the existing storm drain facilities. The Specific Plan area will be designed as follows:

- Site 1, located between Indian Avenue and Barrett is an industrial site that will eliminate the need for Line K-16, Line K-18 and Line K-19.
- Sites 2, 3, 4, and 5 will discharge into proposed Lateral K-16 and will eliminate the need for Line K-18 and Line K-19.



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- The Commercial Retail Center will include a large 12.91-acre water quality bio-retention basin with a subsurface storage basin to mitigate for water quality.
- The Big Box Commercial Retail site will implement onsite storm drain and eliminate the need for Line K-15 and Line K-17. However, proposed Lateral K-15 will be proposed to perpetuate the flow patterns that identified in the Perris Valley Area Drainage Plan.
- Site 6 is a proposed industrial site located south of Site 1. The Project proposes to realign the storm drain systems in Barrett Avenue with the proposed Lateral K-15 system. Site 6 is tributary to the proposed Line K system; therefore, the drainage area is being perpetuated as planned. The Line K-15 system defined in the Perris Valley Area Drainage Plan will be deleted.
- Site 7 is a proposed industrial site located south of Site 6 and represents the most southerly limit of the Project. Based on the Master Drainage Plan hydrology, about 50% of the Site 7 project was proposed to drain into Line J. However, due to existing development that has occurred, a drainage path to Line J is not accessible. As a result, the proposed Project has been planned to discharge into Lateral K-15. It should be noted, the overall Project will ensure that the peak flow rate for Line K at the downstream end of the Project does not exceed the Master Drainage Plan flow rate, to allow the entire Site 7 to be re-routed into Line K.

Table 3.0-5, *Harvest Landing Specific Plan Proposed Storm Drain Facilities*, below summarizes the proposed storm drain systems and the equivalent system shown in the existing Perris Valley Area Drainage Plan.

Table 3.0-5, Harvest Landing Specific Plan Proposed Storm Drain Facilities

Proposed Storm Drain Facility	Storm Drain Size	Perris Valley Area Drainage Plan Equivalency
Line K	12'x8' RCB 102" RCP 96" RCP	Line K-16 Line K-18 & Line K-19
Line K-13	48" RCP	Line K-13
Link K-14	Exist. 3.5 x 11 RCB, 3.5x 8 RCB, & 36"	Line K-14
Lateral K-15	60" RCP	Line K-15 & Line K-17
Lateral K-16	48" RCP	Line K-16 & Line K-19
Lateral K-17	48" RCP	Line K-23
Line K-20	84" RCP	Line K-20
Lateral K-22	36" – 60" RCP	Line K-22 & Line K-24

The proposed solution provided by the Project is an alternative to the approved Perris Valley Area Drainage Plan. The alternative is required since the approved Perris Valley Area Drainage Plan never accounted for a development site or final street locations. The proposed design along with proposed onsite detention basins will ensure that all Project flows are mitigated cumulatively to be below the 626 cfs for Line K at Perris Boulevard. Moreover, the proposed solution provides storm



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drain alignments that perpetuate the drainage patterns as envisioned by the Perris Valley Area Drainage Plan.

On-Site Detention Basins

The Project will contain a 12.91-acre WQMP Drainage/Detention Facility extending south from the Perris Boulevard/Orange Avenue intersection adjacent to the Commercial Area. The WQMP Drainage/Detention Facility is comprised of two on-site bio-retention basins and one underground detention basin. The WQMP area will include landscaping and walking paths to simultaneously serve as a green and open space amenity for employees of Harvest Landing. Stored stormwater from the underground detention system will be pumped to sub-regional basins for treatment.

To mitigate the flow from the site to Line K down to the required 626 cfs, the on-site detention basins shall have a minimum capacity to store 92 acre-feet of storm water.

General Standards

Refer to NPDES Permit Board Order R8-2013-0024 for comprehensive and up-to-date information regarding water quality management standards, including specific guidelines for reducing pollutants in stormwater runoff. This order outlines the requirements for both construction and post-construction phases, focusing on maintaining compliance with State and Federal water quality laws. To further ensure adherence, detailed design strategies, such as Best Management Practices (BMPs), can be found in the Water Quality Management Plan (WQMP) Manual and the Low Impact Development (LID) Manual. Both documents are published by the Riverside County Flood Control and Water Conservation District, providing essential tools for managing stormwater, enhancing infiltration, and minimizing runoff impact in new developments.

Water Quality Management Plan

Most developments are required to implement a Water Quality Management Plan (WQMP) in accordance with the most recently adopted Riverside County MS4 NPDES Permit (Board Order R8-2013-0024). Approval by the City of a WQMP plan requires submittal of a complete document with supporting data which includes at a minimum, a site "Post-Construction BMP Plan," and treatment control facility sizing calculations. Site design based on Low Impact Design (LID) and source control best management practices (BMPs) shall be incorporated into the civil site design. If these two types of BMPs do not sufficiently manage hydromodification or treat expected pollutants, treatment control facilities shall be implemented in order to assure proper pollutant treatment. Treatment control BMPs are in accordance with Riverside County Storm Water Best Management Practice Hand Book. The Regional Water Quality Control Board (RWQCB) continuously updates impairments as studies are completed, the most current version of impairment data should be reviewed prior to preparation of Preliminary or Final WQMP document.



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Water Quality Standards

In accordance with the MS4 Permit, applicable new development and redevelopment projects shall adhere to the following:

- Design the site to minimize imperviousness, detain runoff, and infiltrate, reuse, or evapotranspire runoff where feasible.
- Cover or control sources of stormwater pollutants.
- Use LID to infiltrate, evapotranspire, harvest and use, or treat runoff from impervious surfaces.
- Ensure runoff does not create a hydrologic condition of concern.
- Maintain Stormwater BMPs.

Where feasible, roadways and parking aisles shall incorporate medians to enhance site functionality and support Low Impact Development (LID) principles. Instead of traditional raised or mounded landscaped medians, these depressed landscaped areas are designed to capture runoff from parking lots and streets. This helps reduce directly connected impervious surfaces, promotes infiltration, and provides initial treatment of runoff through a swale or trench before it reaches a treatment control facility. The design shall include a flow line slope or a grated inlet to ensure proper drainage of the depression within a maximum of 72 hours.

Sitewide Drainage Standards

The development of the drainage system in Harvest Landing will be subject to the following standards:

- The Riverside County Flood Control and Water Conservation District (RCFC&WCD) conducts a separate review and conditioning process independent of the City's review and approval procedures. Harvest Landing shall coordinate directly with RCFC&WCD to obtain any future Conditions of Approval required by the District. In the event of any conflict between RCFC&WCD requirements and the requirements herein, the most stringent requirement, as determined by the City of Perris, shall apply.
- All drainage facilities will be designed and constructed in accordance with the Riverside County Flood Control and Water Conservation District (RCFC&WCD) standards and specifications, the City of Perris standards, and the Standard Specifications for Public Works Construction.
- Storm drain facilities shall be designed to collect and discharge storm water runoff without damage to streets or adjacent properties.
- The Eastern Municipal Water District (EMWD) will review the design of drainage facilities in conjunction with their review of the sewer and water facilities.
- Drainage plans shall be submitted to EMWD for review and approval. This is to ensure that all proposed drainage facilities are compatible with the existing EMWD facilities.
- The capital cost of all on-site facilities will be the applicant's responsibility. Such facilities will be dedicated to RCFC&WCD, the City of Perris or County Service area for maintenance and operations. There may be Area Drainage Plan (ADP) fee credits and/or reimbursements from RCFC&WCD for the construction of ADP facilities in the area. Applicable ADP fee credits and/or reimbursement are for ADP facilities larger than 36" in diameter.
- All areas within the Specific Plan area will be required to prepare a Water Quality Management Plan (WQMP) and a Storm Water Pollutant Prevention Plan (SWPPP) in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) standards. Any industrial developments will require an additional SWPPP to operate.

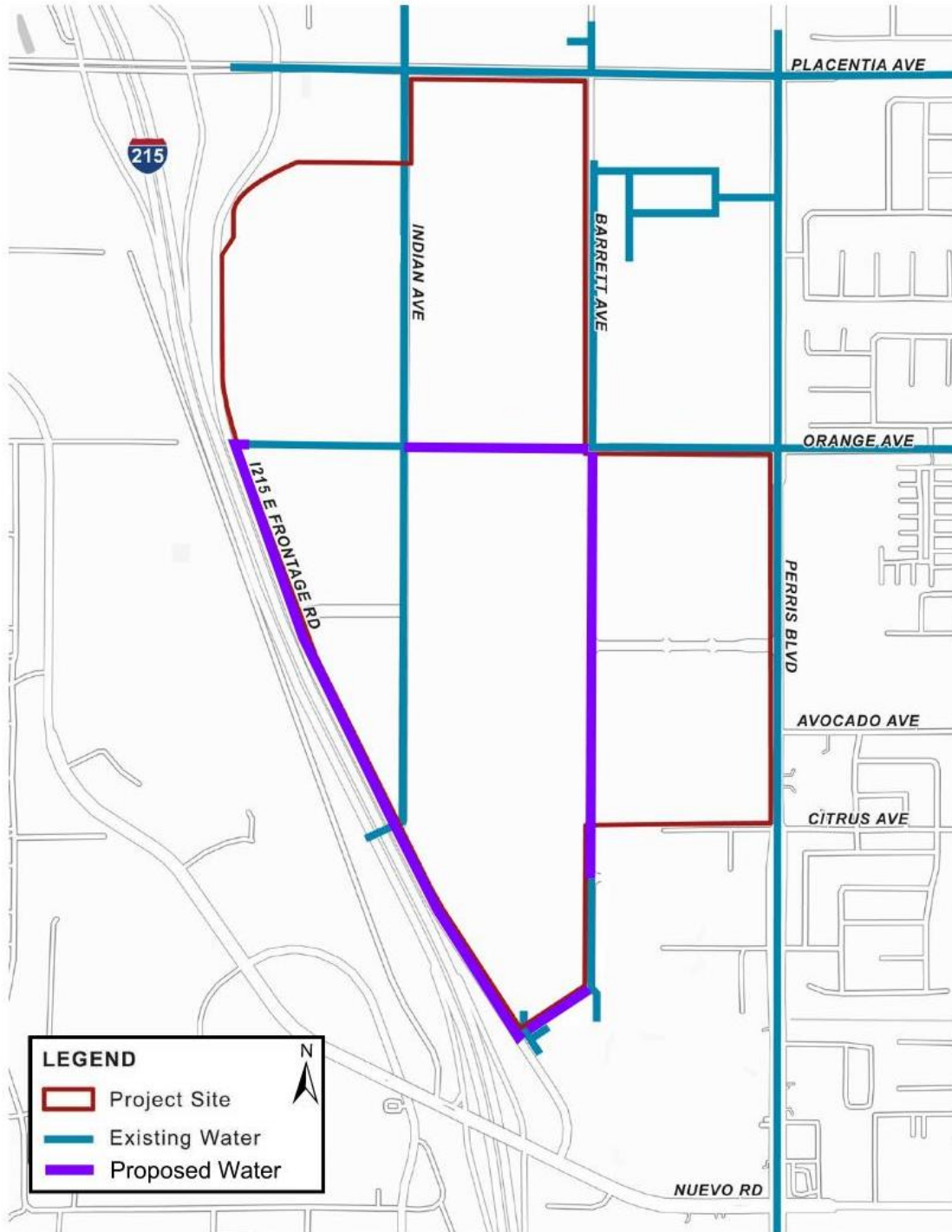


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- All projects proposing construction activities including clearing, grading, or excavation that results in the disturbance of at least one acre of total land area, or activity which is part of a larger common plan of development of one acre or greater shall obtain the appropriate NPDES construction permit and pay the appropriate fees. All development within the Specific Plan boundaries shall be subject to future requirements adopted by the County to implement the NPDES program. Mitigation measures may include, but not be limited to, on-site detention, water quality basins, covered storage of all outside facilities, vegetated swales, and monitoring programs, etc.
- In the case of phased development, existing on-site drainage and drainage facilities that are outside of the improvement area will need to be accounted for. The developer's engineer shall provide solutions that address the drainage from any unimproved areas during the permitting process.



Figure 3.0-9, Existing and Proposed Water Infrastructure





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Figure 3.0-10, Proposed Non-Potable Water Infrastructure

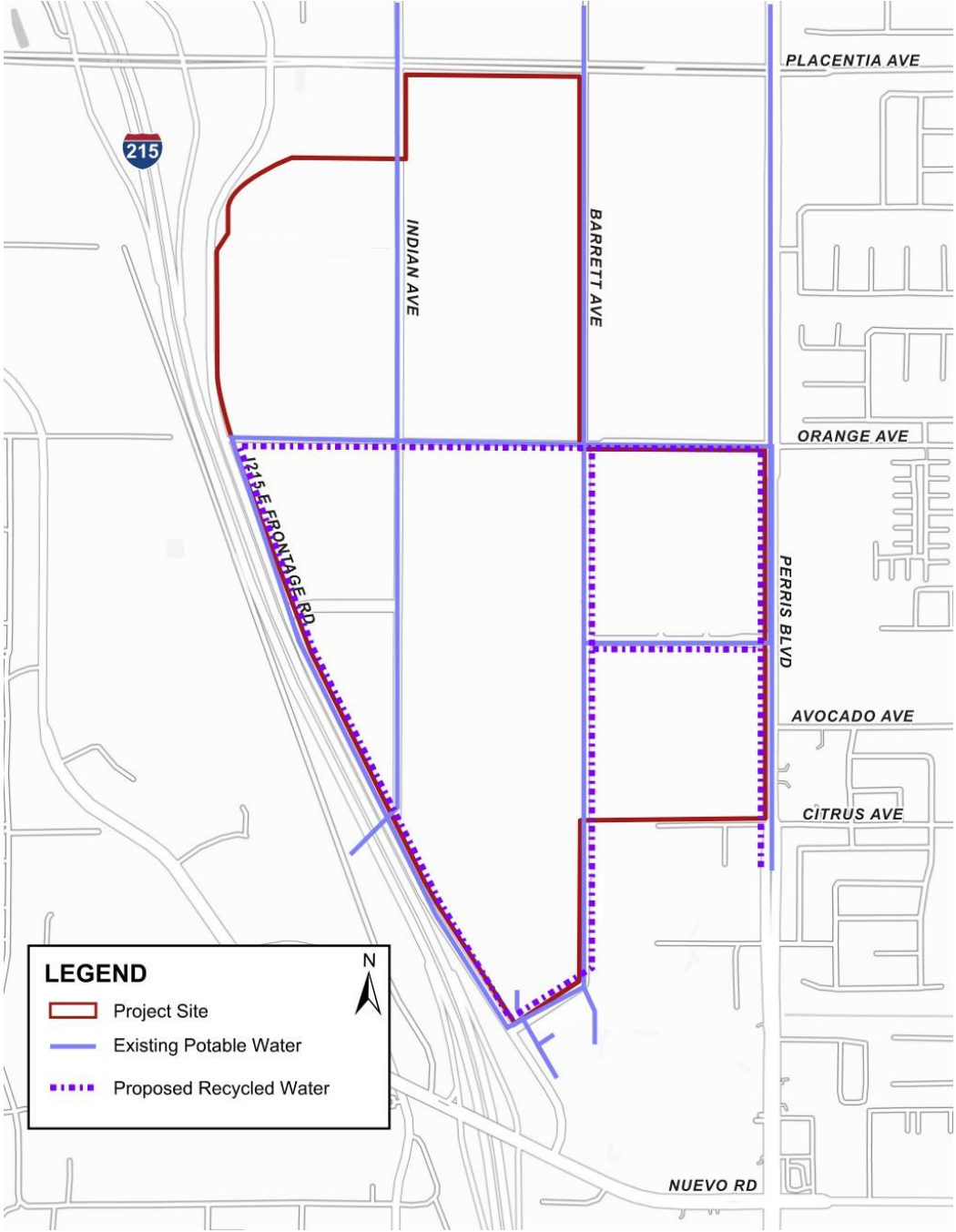




Figure 3.0-11, Existing and Proposed Sewer Infrastructure

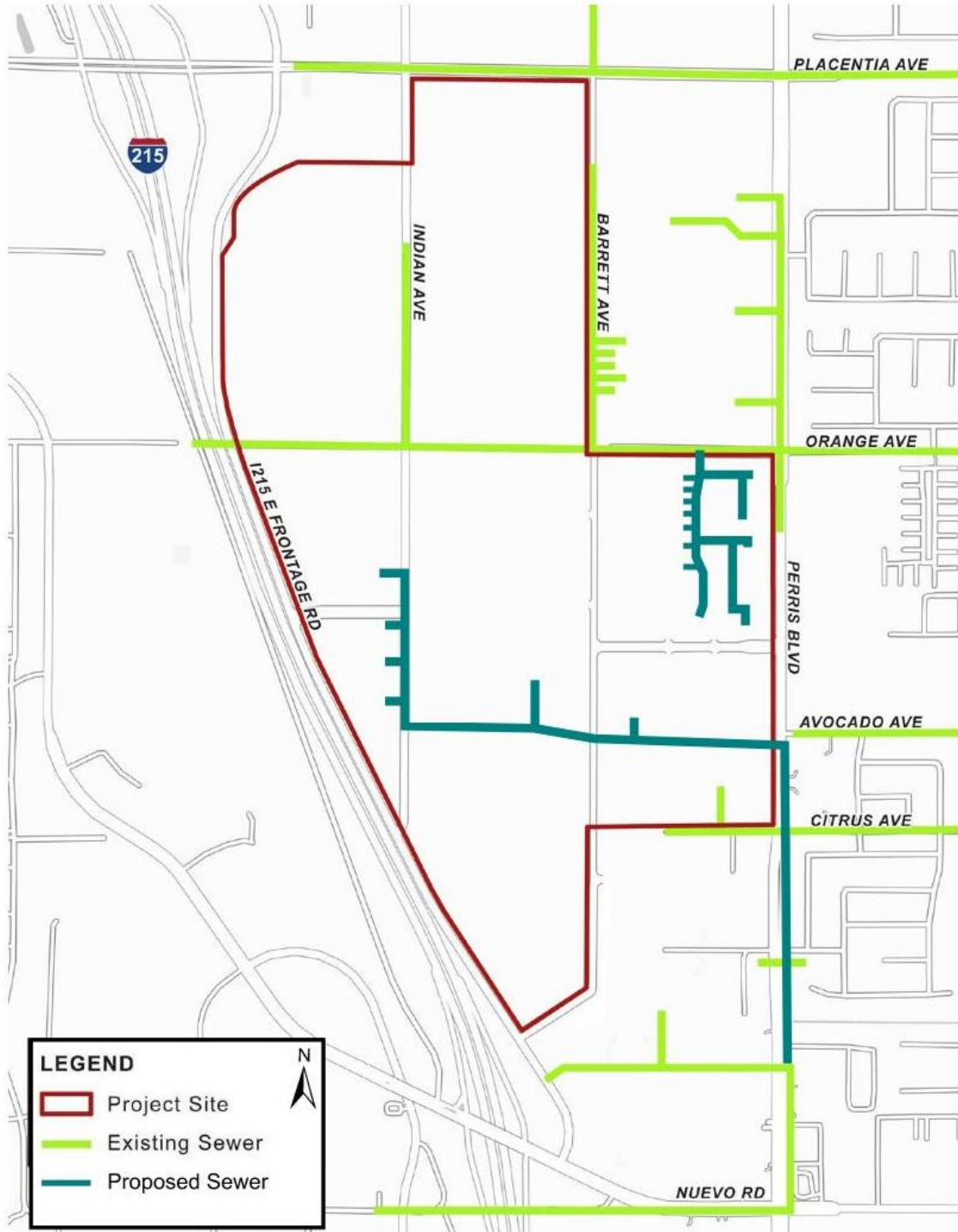
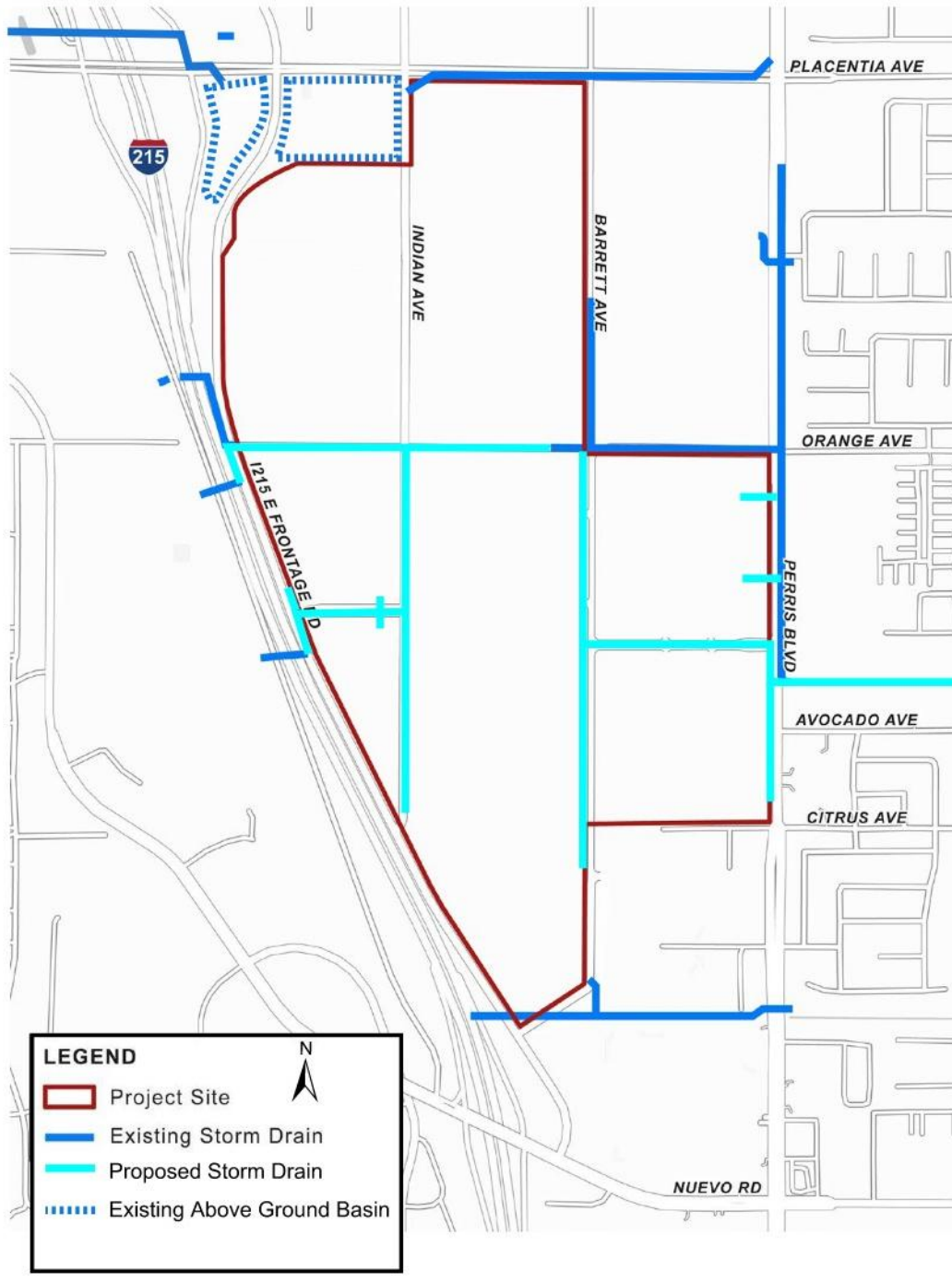




Figure 3.0-12, Existing and Proposed Storm Drain Infrastructure



Harvest Landing
City of Perris



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Water Quality Site Design

Low Impact Design

According to the State Water Resources Control Board, Low Impact Design (LID) is, “a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm runoff BMPs, LID takes a different approach by using site design and storm water management to maintain the site’s pre-development runoff rates and volumes. The goal of LID is to mimic a site’s predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate and detain runoff close to the source of rainfall.

As stated in the Riverside County LID Manual, when LID is implemented correctly on a site, it provides two primary benefits: (1) hydromodification flows are managed across the site, and (2) expected pollutants are reduced in the remaining runoff. In order to meet RWQCB requirements in the Santa Ana Watershed, the design capture volume (VBMP) is based on capturing the volume of runoff generated from an 85th percentile, 24-hour storm event. There are eight mandatory BMP types to be implemented on project sites:

- Infiltration Basins
- Infiltration Trenches
- Permeable Pavement
- Harvest and Use
- Bioretention Facilities
- Extended Detention Basins
- Sand Filter Basins
- LID Biotreatment

The NPDES Permit requires that the design capture volume be first infiltrated, evapotranspired, or harvested and reused. When such retention methods are infeasible, the remainder of the volume can be biotreated. The steps to this approach include:

- Optimize the Site Layout
- Preserve Existing Drainage Patterns
- Protect Existing Vegetation and Sensitive Areas
- Preserve Natural Infiltration Capacity
- Minimize Impervious Area
- Disperse Runoff to Adjacent Pervious Areas
- Delineate Drainage Management Areas
- Classify and Tabulate DMAs, and Determine Runoff Factors
 - Self-treating areas
 - Self-retaining areas
 - Areas draining to self-retaining areas
 - Areas draining to BMPs

Where feasible, roadways and parking aisles shall incorporate medians to enhance site functionality and support Low Impact Development (LID) principles. Instead of traditional raised



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or mounded landscaped medians, these depressed landscaped areas are designed to capture runoff from parking lots and streets. This helps reduce directly connected impervious surfaces, promotes infiltration, and provides initial treatment of runoff through a swale or trench before it reaches a treatment control facility. The design shall include a flow line slope or a grated inlet to ensure proper drainage of the depression within a maximum of 72 hours.

3.3.5 Dry Utilities Standards

The Harvest Landing Specific Plan area is surrounded by existing development and utility infrastructure. Utilities for Harvest Landing will connect to existing infrastructure, with future projects coordinating with utility providers and the City to ensure adequate provision.

Natural Gas

The Southern California Gas Company (SoCalGas) is the natural gas provider for the area, and will provide natural gas service to Harvest Landing via an existing 6" gas main in Perris Boulevard. Individual projects will coordinate with the utility provider for connection to existing utilities and expansion of existing infrastructure, if needed.

Electricity

The Specific Plan area will be served by Southern California Edison for electric service. Developers of individual projects will coordinate with the utility provider for connection to existing utilities and expansion of existing infrastructure, if needed. All overhead lines under 33kVA will be undergrounded as directed by the City Engineer.

Telecommunications/Cable

There are multiple companies in the area that provide telecommunications and cable service. Developers of individual projects will coordinate with the utility provider for connection to existing utilities and expansion of existing infrastructure, if needed.

Utility Connections and Meters

All utility connections and meters shall be coordinated with the development of the site and shall not be exposed, except where deemed appropriate or necessary by the City of Perris Building Official. To the greatest extent possible, these utility connections should be integrated into the building or the architectural design.

Pad-Mounted Transformers and Meter Box Locations

Pad-mounted transformers and/or meter box locations shall be screened from view from surrounding properties and public rights-of-way. Utilities shall be located underground, unless waived by the City Engineer.



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Electrical, Telephone, CATV and Similar Service Wires and Cables

All electrical, telephone, CATV and similar service wires and cables which provide direct service to the property being developed, within the exterior boundary lines of such property, shall be installed underground.

Electrical Transmission Lines

Electrical transmission lines 66kv and less shall be installed underground.

All Equipment Shall be Internalized

All equipment shall be internalized into the building design to the greatest extent possible. When infeasible, they shall be screened and not prominently visible from public rights-of-way.

Solid Waste

Solid waste collection service in the City of Perris and Harvest Landing is provided by CR&R Disposal. Solid waste is first transported to Perris Materials Recovery Facility where recyclable materials are separated from solid wastes. Non-recyclable solid wastes are then transported to either the El Sobrante Landfill or to the Badlands Landfill in Moreno Valley. Construction and other waste disposal shall be hauled to a City approved facility.

3.4 WQMP Basin

3.4.1 WQMP/Drainage Detention

The Water Quality Management Plan (WQMP)/Drainage Detention land use is intended to be utilized for drainage/detention basin areas that double as green spaces with walking trails and/or light recreation equipment (e.g., benches, picnic tables, exercise equipment along walkways), but is not designated as Open Space or Park land use. Land uses other than for stormwater drainage and detention are not permitted.

3.4.2 WQMP/Drainage Detention Site Design

The WQMP land use area in Harvest Landing is intended to be incorporated as a major part of the Specific Plan area's stormwater treatment and drainage. Site design shall incorporate detention basins, retention basins, underground stormwater storage, designed to a capacity to accommodate stormwater drainage from the Harvest Landing Specific Plan area.

Site-wide stormwater drainage requirements are included above under Section 3.3.4, *Stormwater Drainage*.

On-Site Circulation

On-site circulation is limited to pedestrian and bicycle access via walking paths. Vehicular access is not permitted. Internal walkways shall provide connection through and/or around the site.



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Paving and walkways in the WQMP/Drainage Detention area shall consist of, but are not limited to, concrete pedestrian walkways and decomposed granite trails. Paved walkways shall be a minimum of 8 feet in width for passing and two-way use. Unpaved paths shall be no less than 4 feet in width minimum. Both shall be free of any debris or obstructions, including but not limited to: brush, stumps, logs, and large rocks. The trail surface should be kept free of rocks and debris greater than 1.5 inches in diameter.

Site design will consider pedestrian access when adjacent to trails or other community amenities.

Furnishings

To enhance versatility, specifically for the amenity of Phase 1's Buildings, the WQMP land use area, passive recreational furnishings such as benches, covered areas, picnic tables, and exercise equipment are allowed along walkways and in a manner not interfering with or in the way of stormwater drainage/detention.

Landscaping

Landscaping shall be limited to minimal ground cover, to be compliant with California Drought Tolerant measures, as well as reduce impact of roots on the drainage facilities for the Project.

When possible, these areas shall be designed to blend in with the surrounding development, be landscaped, and be designed to accommodate uses that can be flooded, such as active/passive recreation and natural open space.