

3-18 WATER QUALITY

Changes Since the Draft EIS/EIR

Subsequent to the release of the Draft EIS/EIR in April 2004, the Gold Line Phase II project has undergone several updates:

Name Change: To avoid confusion expressed about the terminology used in the Draft EIS/EIR (e.g., Phase I; Phase II, Segments 1 and 2), the proposed project is referred to in the Final EIS/EIR as the Gold Line Foothill Extension.

Selection of a Locally Preferred Alternative and Updated Project Definition: Following the release of the Draft EIS/EIR, the public comment period, and input from the cities along the alignment, the Construction Authority Board approved a Locally Preferred Alternative (LPA) in August 2004. This LPA included the Triple Track Alternative (2 LRT and 1 freight track) that was defined and evaluated in the Draft EIS/EIR, a station in each city, and the location of the Maintenance and Operations Facility. Segment 1 was changed to extend eastward to Azusa. A Project Definition Report (PDR) was prepared to define refined station and parking lot locations, grade crossings and two rail grade separations, and traction power substation locations. The Final EIS/EIR and engineering work that support the Final EIS/EIR are based on the project as identified in the Final PDR (March 2005), with the following modifications. Following the PDR, the Authority Board approved a Revised LPA in June 2005. Between March and August 2005, station options in Arcadia and Claremont were added.

Changes in the Discussions: To make the Final EIS/EIR more reader-friendly, the following format and text changes have been made:

Discussion of a Transportation Systems Management (TSM) Alternative has been deleted since the LPA decision in August 2004 eliminated it as a potential preferred alternative.

Discussions of the LRT Alternatives have eliminated the breakout of the two track configurations used in the Draft EIS/EIR (Double Track and Triple Track). The Final EIS/EIR reports the impacts of a modified triple track configuration (2 LRT tracks and 1 freight track with two rail grade separations) but focuses on the phasing/geographic boundaries included in the LPA decisions.

Two LRT alternatives in the Final EIS/EIR are discussed under the general heading “Build Alternatives,” and are defined as:

1. Full Build (Pasadena to Montclair) Alternative: This alternative would extend LRT service from the existing Sierra Madre Villa Station in Pasadena through the cities of Arcadia, Monrovia, Duarte, Irwindale, Azusa, Glendora, San Dimas, La Verne, Pomona, and Claremont, terminating in Montclair. The cities from Pasadena to Azusa are also referred to in the Final EIS/EIR as Segment 1. The cities from Glendora to Montclair are also referred to in the Final EIS/EIR as Segment 2. Key changes from the Draft EIS/EIR are the inclusion of Azusa in Segment 1, the elimination of the Pacific Electric right-of-way option between Claremont and Montclair, the inclusion of a 24-acre Maintenance and Operations facility in Irwindale (the site is smaller than in the Draft EIS/EIR), and the addition of two rail grade separations). Note that the Maintenance and Operations Facility is located in Segment 1 but is part of the Full Build Alternative. In other words, it would not be constructed as an element of the Build LRT to Azusa Alternative (described below). The length of the alternative is approximately 24 miles. One station (and parking) would be located in each city, except for Azusa, which would have two. There are two options for the station locations in Arcadia and Claremont. Segment 1 would include 2 LRT tracks throughout and 1 freight track between the Miller Brewing

- Company in Irwindale and the eastern boundary of Azusa. The freight track that now exists west of Miller Brewing, which serves a single customer in Monrovia, would be removed from service following relocation of that customer by the City of Monrovia. Segment 2 would include two LRT tracks throughout and 1 freight track between the eastern boundary of Azusa and Claremont. In Claremont, the single freight track joins up with the double Metrolink tracks (which are also used for freight movement) and continues through to Montclair (and beyond). This alternative also includes two railroad grade separations (in Azusa and in Pomona) so that LRT tracks would pass above the at-grade freight track. These allow the LRT and freight services to operate independently (thus eliminating the time-constrained double track option discussed in the Draft EIS/EIR). Implementation of the alternative would include relocation of the existing freight track within the rail right-of-way, but there would be no changes in the service provided to customers. The alternative includes 8 new traction power substations in Segment 2, as well as the 8 in Segment 1.
2. Build LRT to Azusa Alternative: This alternative (also referred to as Segment 1) would extend LRT service from the existing Sierra Madre Villa Station in Pasadena through the cities of Arcadia, Monrovia, Duarte, Irwindale, and to the eastern boundary of Azusa. (The main change from the Draft EIS/EIR is the inclusion of the City of Azusa.) The length of the alternative is approximately 11 miles. One station (and parking facility) would be located in each city, except for Azusa, which would have two. There are two options for the station location in Arcadia. Segment 1 would include two LRT tracks throughout and 1 freight track between the Miller Brewing Company in Irwindale and the eastern boundary of Azusa. The freight track that now exists west of Miller Brewing, which serves a single customer in Monrovia, would be removed from service following relocation of that customer by the City of Monrovia. This alternative also includes the railroad grade separation in Azusa so that LRT tracks would pass above the at-grade freight track. This allows the LRT and freight services to operate independently (thus eliminating the time-constrained double track option discussed in the Draft EIS/EIR). Implementation of the alternative would include relocation of the existing freight track within the rail right-of-way, but there would be no changes in the service provided to customers. The alternative also includes 8 new traction power substations.

As in the Draft EIS/EIR, impact forecasts use 2025 conditions, except for traffic impacts, which reflects a 2030 forecast based on the recently adopted 2004 SCAG Regional Transportation Plan.

Summary of Impacts

The No Build alternative would not have substantial water quality impacts within the study corridor.

The construction-related impacts from the LRT Build Alternatives would primarily be to surface water, specifically in the areas of channels/drainages. Compliance with regulations and best management practices is expected to reduce potential impacts to less than adverse/less than significant levels. Retrofitting of the bridge over the San Gabriel River, ~~or construction of a new, parallel bridge over the river,~~ and the development of the Maintenance and Operations Facility are the elements of the Build Alternatives with the greatest potential for water quality impacts during construction. Compliance with regulations and best management practices is expected to reduce potential impacts to less than adverse/less than significant levels.

Potential long-term impacts from operation of the LRT system are expected to be less than adverse/less than significant since the system, including the Maintenance and Operations Facility, would be operated in compliance with all applicable environmental permits.

3-18.1 Existing Conditions

The study area lies within the eastern portion of Los Angeles County and extends approximately two miles into the western portion of San Bernardino County. The cities within the study area from west to east include Pasadena, Arcadia, Monrovia, Irwindale, Azusa (cities within the Phase II Foothill Extension, Segment 1 portion), Glendora, San Dimas, La Verne, Pomona, Claremont, and Montclair (cities within the Foothill Phase II Foothill Extension, Segment 2 portion). These cities are highly urbanized, with a mix of residential, commercial, and industrial uses. Industrial uses are prevalent along the study area. Limited agricultural areas are located to the north of study area in the City of Azusa. The agricultural use will change as the Monrovia Nursery is redeveloped to a residential use.

3-18.1.1 Regional Setting

a. Climate

The climate of the Los Angeles region is Mediterranean with dry/warm summers, and wet/mild winters. The Pacific Ocean influences precipitation throughout the Los Angeles Coastal basin. Rainfall within the basin is normally negligible from spring to late October, but begins to increase during November as the storm track (i.e., the Jet Stream) from the Pacific Ocean begins to shift toward Southern California. Approximately 85 percent of the basin's 15-inch annual average rainfall occurs between November and March.

b. Topography

The study area is located along the southern foothills of the San Gabriel Mountains. Slopes in this area have a tendency to become milder as one travels east. Topography includes southwest and southeast trending slopes, ranging from mild slopes (an approximate 40-foot rise to every 0.25-mile), to very mild slopes (an approximate 40-foot to every 0.5-mile) and areas that are nearly flat. The topography of each city within the study area is indicated below in **Table 3-18.1**.

TABLE 3-18.1 STUDY AREA TOPOGRAPHY PER CITY			
Phase/Segment	City	Slope Declination	Grade
Foothill Extension, Segment 1	Pasadena	SE	Mild
	Arcadia	S-SE	Mild
	Monrovia	S-SW	Mild
	Duarte	S and SE	Mild
	Irwindale	SE	Very Mild
	Azusa	S	Very Mild
Foothill Extension, Segment 2	Glendora	SW	Very Mild
	San Dimas	SW	Nearly Flat
	La Verne	S-SW	Nearly Flat
	Pomona	SW	Nearly Flat
	Claremont	SW	Nearly Flat
	Montclair	SW	Nearly Flat
	Upland	SW	Nearly Flat

Source: USGS 7.5-Minute Quad Maps of Mt. Wilson, Azusa, Glendora, San Dimas, & Ontario, California.

c. Surface Hydrology

Surface hydrology considerations include sediment and contaminant input into local water bodies from runoff. Sediment and contaminant source locations in urban areas include parking lots, streets, rooftops, landscaped areas, and exposed earth at construction sites. Typical contaminants in urban runoff include hydrocarbons, metals, pesticides, bacteria, nutrients, and trash. Typical construction site related contaminants include fuels, hydraulic fluid, coolant, solvents, paints, etc. Construction site sediment runoff results from unprotected areas of exposed soil. The study area is located within an area that is comprised of primarily urban land uses consisting of residential, commercial, industrial, and sparse agricultural uses.

Study Area Drainages

The channels/drainages within the study area drain into the Los Angeles River, San Gabriel River, or Santa Ana River. Descriptions of channels/drainages within the study area are shown below in **Table 3-18.2**. All of the channels/drainages included are also shown on United States Geological Survey (USGS) 7.5-minute quadrangle maps as being blue line streams. Blue line streams are characterized by year-round water flow.

Beneficial Uses of Surface Waters

When discussing channels/drainages and groundwater basins (see *d. Groundwater Hydrology*) the Los Angeles Regional Water Quality Control Board (LARWQCB) and Santa Ana Regional Water Quality Control Board (SARWQCB) assign beneficial use designations to each water body. Beneficial use designations that are relevant to the study area are defined below and shown in correlation to their respective channels/drainages in **Table 3-18.3**.

**TABLE 3-18.2
CHANNELS AND DRAINAGES IN PROJECT VICINITY**

Phase/ Segment	City	Channel/Drainage	Description			
			Concrete Lined	Concrete Sides, Natural Bottom	Underground	Bridged
Foothill Extension, Segment 1	Pasadena	None in study area	N/A	N/A	N/A	N/A
	Arcadia	Arcadia Wash	•		•	
		East Branch Arcadia Wash	•		•	
	Monrovia	Santa Anita Wash	•			•
		Unnamed drainage east of Mayflower Avenue	• (small)			•
		Sawpit Wash	•			•
	Duarte/ Irwindale	Unnamed Wash west of San Gabriel River	• (small)		•	
		San Gabriel River		•		•
	Azusa	Unnamed drainage under-crossing Palm Drive	• (small)		•	
	Foothill Extension, Segment 2	Glendora	Little Dalton Wash	•		•
Big Dalton Wash			•			•
East Branch Wash			•		•	
San Dimas		San Dimas Wash	•			•
		Unnamed Wash at Amelia Avenue	--	--	•	
		Walnut Creek	•		•	
La Verne		Live Oak Wash	•			•
		Marshall Creek	•		•	
		Puddingstone Channel	•		•	
Pomona		Thompson Creek	•			•
Claremont		None in study area	N/A	N/A	N/A	N/A
Montclair		San Antonio Creek Channel	•			•
Upland		San Antonio Creek Channel	•			•

Notes: Exposed or Underground is only relevant to the portion of the channel or drainage underlying the rail right of way.

N/A Indicates "not applicable".

-- Indicates "no data".

Bridged denotes that the rails cross over channels/drainages on structures.

Sources: 1. Los Angeles County Department of Public Works, Hydrologic Report 1993-1994. Los Angeles Co.
2. Observations made during site reconnaissance on 10/31/03 and 11/03/03 by Bill Rice and Veronica Chan, Environmental Planners, Parsons Brinckerhoff Quade & Douglas.

**TABLE 3-18.3
BENEFICIAL USES OF STUDY AREA CHANNELS AND DRAINAGES**

Phase/ Segment	City	Water- Shed	Channel or Drainage	Beneficial Use														
				AGR	COLD	FRSH	GWR	IND	MUN	POW	PROC	RARE	REC1	REC2	WARM	WET	WILD	
Foothill Extension, Segment 1	Pasadena	--	None in study area	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Arcadia	LAR	Arcadia Wash				I			P				P	I	P		P
		LAR	East Branch Arcadia Wash				I			P				P	I	P		P
	Monrovia	LAR	Santa Anita Wash				E			P			E	E	E	E		E
		LAR	Unnamed drainage east of Mayflower Ave.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		LAR	Sawpit Wash				I			I				I	I	I		E
	Duarte/Irwindale	SGR	Unnamed wash west of San Gabriel River	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		SGR	San Gabriel River	E	E		E	E	E	E		E		E	E	E		E
	Azusa	SGR	Unnamed drainage under crossing Palm Dr.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Foothill Extension, Segment 2	Glendora	SGR	Little Dalton Wash				I		P				P	I	P		P	
		SGR	Big Dalton Wash				I		P				P	I	P		P	
		SGR	East Branch Wash	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	San Dimas	SGR	San Dimas Wash				I			P			E	I	I	I		E
		SGR	Unnamed wash at Amelia Ave.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		SGR	Walnut Creek	I						P				I	I	I	E	E

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Phase/ Segment	City	Water- Shed	Channel or Drainage	Beneficial Use														
				AGR	COLD	FRSH	GWR	IND	MUN	POW	PROC	RARE	REC1	REC2	WARM	WET	WILD	
	La Verne	SGR	Live Oak Wash			I	I		E				I	I	I		E	
		SGR	Marshall Creek				I		E				I	I	I	E	E	
		SGR	Puddingstone Channel				I		E				I	I	I		E	
	Pomona	SGR	Thompson Creek				I		P				I	I	I		E	
	Claremont	SGR	None in study area	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	Montclair	SAR	San Antonio Creek Channel	P/E	P/E		P/E	P/E	P/E	P/E	P/E	P/E		P/E	P/E			P/E
	Upland	SAR	San Antonio Creek Channel	P/E	P/E		P/E	P/E	P/E	P/E	P/E	P/E		P/E	P/E			P/E

Notes:

- P: denotes Potential Beneficial Use
- I: denotes Intermittent Beneficial Use
- E: denotes Existing Beneficial Use
- : denotes No Information Available

Water features in the Santa Ana River Watershed are not differentiated between existing or potential, but are shown as both.

LAR denotes Los Angeles River Watershed, SGR denotes San Gabriel River Watershed, SAR denotes Upper Santa Ana River Watershed.

Sources: Los Angeles Regional Water Quality Control Board, Regional Water Quality Control Plan, Los Angeles Region, February 23, 1995.
Santa Ana Regional Water Quality Control Board, Water Quality Control Plan, Santa Ana River Basin, January 24, 1995.

Agricultural Supply (AGR)

Agricultural supply beneficial uses consist of waters for farming, horticulture, or ranching including irrigation, stock watering, or support of vegetation for range grazing.

Cold Freshwater Habitat (COLD)

Cold freshwater habitat beneficial uses consist of waters that support coldwater ecosystems that may include preservation and enhancement of aquatic habitats, vegetation, fish, and wildlife, including invertebrates.

Fresh Water Replenishment (FRSH)

Fresh water replenishment beneficial uses consist of waters for natural or artificial maintenance of surface water quantity or quality (i.e., salinity).

Groundwater Recharge (GWR)

Groundwater recharge beneficial uses consist of waters for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Industrial Service Supply (IND)

Industrial service supply beneficial uses consist of waters for industrial activities that do not depend primarily on water quality including mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Municipal and Domestic Supply (MUN)

Municipal and Domestic Supply beneficial uses consist of waters for community, military, or individual water supply systems including drinking water supply.

Hydropower Generation (POW)

Hydropower generation beneficial uses consist of waters used for such uses as hydroelectric power generation.

Industrial Process Supply (PROC)

Industrial Process Supply beneficial uses consist of waters for industrial activities that depend primarily on water quality.

Rare, Threatened, or Endangered Species (RARE)

Rare, threatened, or endangered species beneficial uses consist of waters that support habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened, or endangered.¹

Water Contact Recreation (REC-1)

Water contact recreation (Category 1) beneficial uses consist of waters for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs.

Non-Contact Water Recreation (REC-2)

Water contact recreation (Category 2) beneficial uses consist of waters for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Warm Freshwater Habitat (WARM)

Warm freshwater habitat beneficial uses consist of waters that support warm water ecosystems, including preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Wetland Habitat (WET)

Wetland habitat beneficial uses consist of waters that support wetlands ecosystems, including preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions that enhance water quality, such as providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

Wildlife Habitat (WILD)

Wildlife habitat beneficial uses consist of waters that support terrestrial ecosystems, including preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, and invertebrates), or wildlife water and food sources.

Impaired Surface Water Bodies

In addition to listing of beneficial uses for each water body, the State Water Resources Control Board (SWRCB) is required by the *Federal Clean Water Act (CWA), Section 303(d)* to prepare a list of impaired water bodies. According to a listing of impaired water bodies in the *2002 CWA, Section 303(d) List of Water Quality Limited Segment²*, the San Gabriel River Estuary, Puddingstone Reservoir, and Walnut Creek and Channel all have impairments.

¹ Santa Ana Regional Water Quality Control Board 1995

² <http://www.swrcb.ca.gov/tmdl/docs/2002reg4303dlist.pdf>. Accessed 11/10/03.

The San Gabriel River Estuary is the terminus for many of the study area channels and drainages. The San Gabriel River Estuary has been listed as impaired for abnormal fish histology. The Puddingstone Reservoir is the terminus of the Puddingstone Channel, Marshall Creek, Live Oak Wash, and Walnut Creek. These are all channels or drainages that under-cross the study area. The Puddingstone Reservoir is listed as impaired for chlordane, DDT, mercury, organic enrichment, low dissolved oxygen, and PCBs. Walnut Creek is listed as impaired for pH and toxicity.

d. Groundwater Hydrology

Groundwater is found in subsurface water-bearing formations. Groundwater basins do not necessarily coincide with surface drainage basins, but are defined by surface features, political boundaries, and/or geological features such as faults, impermeable layers, and natural or artificial divides in the water table surface. The elevation of groundwater varies with the amount of withdrawal and the amount of recharge. Groundwater basins may be recharged naturally through filtrating precipitation, or artificially with imported or reclaimed water. The study area, from west to east, traverses the Raymond, Main San Gabriel, Lower San Gabriel, Upper San Gabriel Canyon, Glendora, and Way Hill groundwater basins and the Chino Sub-Basin of the Upper Santa Ana Valley Groundwater Basin. Groundwater within the Los Angeles River Watershed and San Gabriel River Watershed portions of the study area are maintained by the Raymond Basin Watermaster, the Main San Gabriel Basin Watermaster, and the Six Basins Watermaster. Groundwater within the Santa Ana River Watershed portion of the study area is maintained by the Chino Basin Watermaster. These basins discussed below and are shown in **Table 3-18.4**.

**TABLE 3-18.4
STUDY AREA GROUNDWATER**

Phase/ Segment	City	Underlying Groundwater Basin	Maintained By	Approximate Depth to Groundwater (in feet)	Beneficial Uses			
					AGR	IND	MUN	PRO
Foothill Extension, Segment 1	Pasadena	Raymond	Raymond Basin Watermaster	260	E	E	E	E
	Arcadia							
	Monrovia	Main San Gabriel	San Gabriel Basin Watermaster	Between 230 and 320 traveling west to east	E	E	E	E
	Duarte							
	Irwindale							
Azusa	Lower San Gabriel		20	--	--	--	--	
Foothill Extension, Segment 2	Glendora	Upper San Gabriel Canyon	San Gabriel Basin Watermaster	260	--	--	--	--
		Glendora		260	E	E	E	E
		Way Hill		100	E	E	E	E
	San Dimas	San Dimas		350	E	E	E	E
	La Verne							
	Pomona	Pomona	Six Basins Watermaster	Between 440 and 480 traveling west to east	E	E	E	E
	Claremont							
	Montclair	Chino Sub- Basin of Upper Santa Ana Valley	Chino Basin Watermaster	Between 510 and 600 traveling west to east	E	E	E	E
	Upland							

E: Indicates Existing Beneficial Usage
 --: Indicates no data available
 Note: Some cities overlay more than one basin

Sources:

1. For Basin Locations: Los Angeles County Department of Public Works, Hydrologic Report, 1993-1994
2. For Depth to Groundwater (Raymond Basin): Extrapolated from the Los Angeles Department of Water and Power's well measurement data for Raymond Basin Reference well (key well #4057H) found at <http://www.ladpw.com/wrd/report/9900/conserv/hydgrph.cfm> accessed 1:32 on 10/31/03.
3. For Depth to Groundwater in Main San Gabriel, Lower San Gabriel, Upper San Gabriel Canyon, Glendora, Way Hill and San Dimas Basins: From comparison between grade-level elevations of USGS 7.5-Minute Quad Maps of Mt. Wilson, Azusa, Glendora, San Dimas and Ontario, California and *Main San Gabriel Basin Groundwater Contours Map*, January 2001, Main San Gabriel Basin Watermaster found at <http://www.watermaster.org/gisdata/january01.jpg>.
4. For Depth to Groundwater in Pomona and Chino Sub-Basins: From comparison between grade-level elevations of USGS 7.5-Minute Quad Maps of San Dimas and Ontario, California and *Optimum Basin Management Program: Chino Basin Watermaster, Figure 2.5 Management Zones and Fall 1997 Groundwater Elevation Contours*, August 1999, Wildermuth Environmental, Inc.
5. For Beneficial Uses: *Water Quality Control Plan, Los Angeles Region*, February 1995, California Regional Water Quality Control Board, Region 8.

Raymond Groundwater Basin

The western end of the study area, from the Sierra Madre Villa Station in Pasadena to approximately one-mile west of the Arcadia Station in Arcadia, lies atop the Raymond Groundwater Basin. The depth to groundwater in this basin is approximately 180 feet below grade.³ The Metropolitan Water District of Southern California (MWD) was given the authority to store up to 9,000 acre-feet of water in the basin during wet years, and remove up to 3,000 acre-feet per year during times of drought.

Main San Gabriel Groundwater Basin

The portion of the study area, from approximately one mile west of the Arcadia Station in Arcadia to approximately one mile east of the Irwindale Station in Azusa, lies atop the Main San Gabriel Groundwater Basin. The basin is a sediment-filled depression that underlies an approximately 167-square mile area under much of the San Gabriel Valley. The depths to groundwater in this basin in the vicinities of the proposed Arcadia, Monrovia, Duarte, and Irwindale Stations are approximately 260, 230, 240 and 320 feet below grade, respectively.

Lower San Gabriel Groundwater Basin

The portion of the study area, from approximately one mile east of the Irwindale Station in Azusa to approximately a half mile east of the Azusa Station in Azusa, lies atop the Lower San Gabriel Groundwater Basin. The depth to groundwater in this basin in the vicinity of the proposed Azusa Alameda Station is approximately 20 feet below grade.

Upper San Gabriel Canyon Groundwater Basin

The portion of the study area, from approximately a half-mile east of the Azusa Station in Azusa to the approximate vicinity of Barranca Avenue in Glendora, lies atop the Upper San Gabriel Canyon Groundwater Basin. The depth to groundwater in this basin in the vicinity of the proposed Azusa Citrus Station is approximately 260 feet below grade.

Glendora Groundwater Basin

The portion of the study area, from approximately Barranca Avenue in Glendora to the approximate location of the intersection of Alostia Avenue (Route 66) and the existing rail alignment in Glendora, lies atop the Glendora Groundwater Basin. The depth to groundwater in this basin in the vicinity of the proposed Glendora Station is approximately 260 feet below grade.

Way Hill Groundwater Basin

The portion of the study area, from the approximate location of the intersection of Alostia Avenue (Route 66) and the existing rail alignment in Glendora to the approximate location of the Interstate-210 overcrossing of the rail alignment in San Dimas, lies atop the Way Hill Groundwater Basin. The average depth to groundwater in this basin in the vicinity of the existing rail alignment is approximately 100 feet below grade.

³ As extrapolated from the Los Angeles Department of Water and Power's well measurement data [for Raymond Basin Reference well \(key well #4057H\)](#) found at <http://www.ladpw.com/wrd/report/9900/conserv/hydgrph.cfm> accessed 1:32 on 10/31/03.

San Dimas Groundwater Basin

The portion of the study area, from the approximate location of the Interstate-210 over-crossing of the Metro Rail in San Dimas to the approximate location of the Puddingstone Channel over-crossing of the Metro Rail in La Verne, lies atop the San Dimas Groundwater Basin. The depth to groundwater in this basin in the vicinity of the proposed San Dimas Station is approximately 350 feet below grade.

Pomona Groundwater Basin

The portion of the study area, from the approximate location of the Puddingstone Channel over-crossing of the Metro Rail in La Verne to the approximate location of the Metro Rail crossing at Indian Hill Boulevard in Claremont, lies atop of the Pomona Groundwater Basin. The depths to groundwater in this basin in the vicinities of the proposed La Verne and Pomona Stations are approximately 440 and 480 feet below grade, respectively. The northeastern portion of the Pomona Groundwater Basin contains high levels of nitrates. A plume of volatile organic compounds is also present in the southern portion of the basin⁴.

Chino Sub-Basin of the Upper Santa Ana Valley Groundwater Basin

The portion of the study area, from the approximate location of the Metro Rail crossing at Indian Hill Boulevard in Claremont to the east end of the study area, lies atop the Chino Sub-Basin of the Upper Santa Valley Ana Groundwater Basin. The depths to groundwater in this basin in the vicinities of the proposed Claremont and Montclair Stations are approximately 510 and 600 feet below grade. The groundwater quality in the Chino Sub-Basin is generally very good, with better groundwater quality found in the northern portion of the basin where recharge occurs.⁵

e. Floodplains and Flooding

The study area is primarily urban, which is characterized by a relatively high percentage of impervious surfaces and relative lack of vegetation. When ground surfaces are covered by impervious surfaces, such as pavement, direct absorption of rainfall is prevented and runoff is increased. The relative lack of vegetation also reduces the ability to disperse runoff. These factors cause the hydrologic peak of a runoff event to be increased in magnitude and to occur sooner after rainfall begins. The Federal Emergency Management Agency (FEMA) designates and maps flood zones. The 100-year flood was adopted as the national standard by the Federal Insurance Administration for floodplain management and insurance purposes. Also included in floodplains are floodways.

Floodways are the primary location that conveys flood flows, and are typically channels of a stream, including any adjacent areas. The area between the floodway and the 100-year floodplain boundary is the floodway fringe. Encroachment on floodplains by constructing levees, road embankments, buildings, etc., may reduce flood-carrying capacity and increase flood elevations. According to the guidelines established by the Federal Insurance Administration, an increase in 100-year height in the floodway due to any encroachment may not exceed 1 foot, and hazardous velocities may not be produced in the water body.

FEMA's Flood Insurance Rate Maps (FIRM) include zone designations that indicate the covered area's probability for flood-related hazards. Zone A is the flood insurance rate zone that corresponds to the 100-

⁴ http://www.waterplan.water.ca.gov/groundwater/basindescript/4-13_San_Gabriel.pdf . Accessed 11/10/03.

⁵ http://www.wild-environment.com/cbwm/Draft_SOB/index.html . Accessed 11/10/03.

year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations or depths are shown within this zone. Zone designations relevant to the study area include Zones B, C, and X. Zones B, C and X are the flood insurance rate zones that correspond to areas outside the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within these zone.⁶ Segments of the study area that are indicated in FIRM maps include the following:

- From Rosemead Boulevard in Pasadena east to Baldwin Avenue in Arcadia is indicated as a Zone C and is shown on FIRM Map # 0650430690B.
- From Palm Avenue in Azusa to Valencia Street in Glendora is indicated as a Zone C and is shown on FIRM Map # 0650430860B.
- From Lone Hill Avenue in Glendora to San Dimas Canyon Road in San Dimas is indicated as a Zone B and is shown on FIRM Map # 0601540001C.
- From the western Claremont City Boundary to the Los Angeles-San Bernardino County Line is indicated as a Zone X, and is shown in FIRM Map # 0601090005A.

No mapped areas within the study area are indicated as being within a Zone A. Additionally, all other areas, other than those indicated above, are not mapped by FEMA in FIRM maps.

3-18.1.2 Regulatory Setting

a. Federal Regulations

Clean Water Act

The federal Clean Water Act (Clean Water Act 33 USC 1251-1376) is the major federal legislation governing water quality. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s water.” Several sections of the Clean Water Act are relevant. Section 101 specifies the objectives of the Clean Water Act that are implemented largely through Title III (Standards and Enforcement) and Section 301 (Prohibitions). The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of the Clean Water Act and specifically under Section 404 (Discharges of Dredge or Fill Material) of the act. Section 401 (Certification) specifies additional requirements for permit review at the state level.

□ Section 303

Under Section 303 of the Clean Water Act, and the Porter-Cologne Water Quality Control Act of 1969, (discussed below), the State of California is required to establish beneficial uses of state waters and adopt water quality standards to protect those beneficial uses. Section 303(d) of the Clean Water Act establishes the Total Maximum Daily Load (TMDL) process to assist in guiding the application of state water quality standards (see discussion of state water quality standards below). TMDL is defined as the maximum quantity of a particular water quality parameter that a waterbody can assimilate without experiencing adverse effects. To identify candidate waterbodies for TMDL analysis, a list of streams with limited water

⁶ FEMA Flood Zone Definitions as found at http://www.fema.gov/fhm/fq_term.shtml#frequt6 Accessed 11/13/03.

quality is generated. These streams are considered impaired by the presence of certain pollutants and cannot assimilate additional quantities of these pollutants.

❑ Section 401

Section 401 of the Clean Water Act requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant must obtain a Water Quality Certification (or waiver). This section is implemented by the Los Angeles Regional Water Quality Control Board (LARWQCB) and Santa Ana Regional Water Quality Control Board (SARWQCB), and is discussed in more detail below.

❑ Section 402

Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources. The 1987 amendments to the Clean Water Act created a new section devoted to stormwater and nonpoint-source permitting (Section 402[p]). NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States. EPA has granted the State of California the predominant role in administering and enforcing the provisions of the Clean Water Act and NPDES, which are carried out by the State Water Resources Control Board and Regional Water Quality Control Boards. The State Water Resources Control Board issues both general and individual NPDES permits. Construction activities resulting in 1 acre or more of total ground disturbance are required to obtain coverage under the NPDES General Permit for Construction Activities.

To obtain coverage, a Notice of Intent must be filed with the Regional Water Quality Control Board, which administers and enforces the general permit. As part of this process, a stormwater pollution prevention plan must be prepared. The stormwater pollution prevention plan includes pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a best management practices (BMPs [see *b. State Regulations*]) monitoring and maintenance schedule. A Notice of Termination must be filed with the Regional Water Quality Control Board (RWQCB) when construction is completed. Discharges of construction dewatering wastewater to surface waters are governed by the RWQCB's General Waste Discharge Requirements for Discharges to Surface Waters which pose an Insignificant (De Minimus) Threat to Water Quality, Order 98-67 (NPDES CAG998001). The Regional Water Quality Control Board considers construction dewatering wastes to be "de minimus" discharges that pose an insignificant threat to water quality. Under Order 98-67, a discharger must apply to the board for approval to discharge. The order contains limits on the amount of certain substances that may be discharged, including oil and grease, sulfides, residual chlorine, suspended solids, and petroleum hydrocarbons, and requires monitoring to ensure that the terms of the permit are met.

❑ Section 404

Dredge and placement of fill materials in the waters of the United States are regulated by Section 404 of the Clean Water Act, which is administered by the U.S. Army Corps of Engineers (ACOE) with oversight from EPA. Based on its discretionary approval of the Section 404 dredge and fill permit, the U.S. Army Corps of Engineers must also ensure compliance with:

- NEPA, by preparing an environmental assessment or issuing a permit under an existing nationwide permit.
- Section 7 of the federal Endangered Species Act.

- Executive Orders 11988 (Floodplain Management) (see below) and 11990 (Protection of Wetlands).
- Section 106 of the National Historic Preservation Act.

Federal Flood Insurance Program

Congress responded to increasing costs of disaster relief by passing the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. These acts are intended to reduce the need for large publicly funded flood control structures and disaster relief by restricting development on floodplains. FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations that limit development in floodplains. FEMA issues Flood Insurance Rate Maps for communities participating in the National Flood Insurance Program. These maps delineate flood hazard zones in the community. The locations of FEMA-designated floodplains in the study area have been discussed in the Regional Setting discussion above.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. The order generally requires federal agencies constructing, permitting, or funding to avoid incompatible floodplain development, be consistent with the standards and criteria of the National Flood Insurance Program, and restore and preserve the natural and beneficial floodplain values.

b. State Regulations

Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act established the State Water Resources Control Board and divided the state into nine regional basins, each with a Regional Water Quality Control Board. The State Water Resources Control Board is the primary state agency responsible for protecting the quality of the state's surface and groundwater supplies. The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to draft state policies regarding water quality in accordance with Section 303 of the Clean Water Act. The act also authorizes the state board to issue Waste Discharge Requirements for projects that would discharge to state waters. In addition, the act requires that the State Water Resources Control Board or the Regional Water Quality Control Board adopt water quality control plans (Basin Plans) for the protection of water quality. A Basin Plan must identify beneficial uses of water to be protected, establish water quality objectives for the reasonable protection of the beneficial uses, and establish a program of implementation for achieving the water quality objectives. Basin Plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin Plans are updated and reviewed every three years in accordance with Article 3 of the Porter-Cologne Water Quality Control Act and Section 303(c) of the Clean Water Act.

LARWQB and SARWQCB Basin Plans

Water quality in channels, drainages and groundwater supplies within the region that includes the study area is regulated by the both the LARWQB and the SARWQCB. State policy for water quality control is directed at achieving the highest water quality consistent with the maximum benefit to the people of the state. To develop water quality standards consistent with the uses of a water body, the LARWQCB and SARWQCB attempt to classify historical, present, and future beneficial uses as part of their basin plans. These beneficial uses are defined above in the Regional Setting discussion. An impact on a beneficial use would occur where there is an actual or threatened loss, or reduction of that beneficial use.

Water Quality Objectives

Water Quality Objectives are established in the LARWQCB and SARWQCB basin plans in support of beneficial uses. Water Quality Objectives pertain to chemicals, sediments, color, tastes, odor, radioactivity and floatables in surface waters and groundwaters. Water Quality Objectives for many constituents vary based on the designated beneficial use of the specific water body.

TMDLs

As described above, Section 303(d) of the Clean Water Act requires preparation of TMDL programs for waters identified by the state as impaired. TMDL is a quantitative assessment of a problem that affects water quality, and specifies the allowable load of pollutants from individual sources to ensure compliance with water quality standards. Once the allowable load and existing source loads have been determined, reductions in allowable loads are allocated to individual pollutant sources.

Water Quality Certification

As discussed above, Section 401 of the Clean Water Act provides states with a mechanism to ensure that federally permitted activities meet applicable water quality requirements. Pursuant to Section 401, an applicant for a federal permit or license to conduct any activity that may result in a discharge into the waters of the United States must apply for water quality certification from the state in which the discharge originates or will originate. In issuing a certification, the state certifies compliance with certain provisions of the Clean Water Act, including water quality standards under Section 303. The certification must include any conditions necessary to meet requirements of the Clean Water Act and any other appropriate requirements of state law. The federal agency cannot grant the permit or license unless the state either issues or waives water quality certification, and the federal agency must include conditions of the state's certification as conditions of the federal permit or license.

The State Water Resources Control Board, through Regional Water Quality Control Boards, is the state agency responsible for water quality certification in California. For a Regional Water Quality Control Board to issue a water quality certification, it must determine that the activity would not violate water quality objectives, that beneficial uses are protected, and that the activity meets the requirements of the state's anti-degradation policy. Water quality certification must address the impacts on water quality resulting from the activity as a whole, including operation of the project, and not merely impacts resulting from the discharge (*PUD 1 of Jefferson County v Washington Dept. of Ecology* [1994] 511 U.S. 700 [114 S.Ct. 1900]). Consequently, in requiring an applicant to comply with water quality standards, a Regional Water Quality Control Board is not limited to enforcement of numerical criteria. A Regional Water Quality Control Board also may impose water quality conditions, including in-stream flow specifications, requiring the applicant to operate the project consistently with designated beneficial uses or as necessary to implement the state's anti-degradation policy.

Streambed Alteration Agreement

A Streambed Alteration Agreement (California Department of Fish and Game [CDFG] Code 1600 *et seq.*) is required for any work within a creek or stream and its floodplain. Streambed Alteration Agreements may impose conditions to protect water quality during project construction. These requirements are discussed in more detail in ~~Section 4.15, Natural Resources.~~ Section 3-3, Biology.

Best Management Practices (BMPs)

In 1993 the California Storm Water Quality Task Force introduced the *California Storm Water Best Management Practice Handbook*. This handbook includes storm water-related BMPs for construction and operation. These BMP handbooks are updated periodically to reflect the latest improvements in storm water management technology.

BMPs for construction include:

- Installation of check dams and filter berms to protect drainage ways
- Placing chemical stabilizers, mulch, seed, or sod over exposed soils
- Using geotextiles and gradient terraces to protect slopes
- Using silt fences and temporary diversion dikes to protect construction area perimeters
- Using on-site dust control (watering, covering areas prone to wind dispersion with plastic, etc.)
- Stabilizing construction area entrances (using aggregate or vehicle rinse mechanisms to minimize the amount of soil on-roadways from construction-related trucks)
- Adhering to the appropriate County measures guiding/governing the use of fertilizers, pesticides, and soil amendments.

BMPs for operation include:

- Using absorbent materials for spills
- Substituting toxic chemicals with non-toxic chemicals wherever possible
- Using clarifiers and designated wash areas
- Ensuring proper handling of potential contaminants
- Periodic catch basin/drainage inspection and cleaning
- Stenciling catch basin/drainages “No dumping. Drains to ocean” or equivalent
- Utilizing an efficient irrigation system that minimizes runoff
- Adhering to the appropriate County measures guiding/governing the use of fertilizers and pesticides.

c. Local Regulations

The cities of Pasadena, Arcadia, Monrovia, Duarte, Irwindale, Azusa, Glendora, San Dimas, La Verne, Pomona, Claremont, and Montclair all include regulations for surface runoff of contaminants and protection of structures in their respective municipal code documents.

3-18.2 Environmental Impacts

3-18.2.1 Evaluation Methodology

Construction-related potential impacts on water quality were ascertained qualitatively, based on standard professional practice. Construction activities with the potential to have an impact on water quality include:

- Soil-disturbing activities (e.g., excavation and grading), which can lead to erosion and sedimentation.
- Use of construction-related hazardous materials, which could result in spills that would impact surface waters.
- Excavation in areas of high groundwater, which could result in impacts to groundwater quality or quantity from dewatering activities and direct exposure of groundwater to sediment and other contaminants.
- Construction within a designated flood zone, which could pose a risk to workers.

Operational impacts would result from either ongoing activities of the rail, or the physical impact of project facilities on the landscape, including stations, traction power sub-stations (TPSSs), the maintenance facility, and parking areas. For the proposed ~~LRT~~ build alternatives, actions that were considered to potentially lead to an impact include:

- Increases in impervious surfaces as a result of the project, leading to increases in the timing and volume of water runoff.
- Changes or interruptions in the local drainage infrastructure as a result of the proposed project design, potentially leading to localized or regional drainage impacts (e.g., flooding).
- Creation of significant new sources of pollutants (e.g., parking lots, maintenance facilities), leading to new sources of contaminated runoff.
- Location of project facilities below the naturally occurring water table, with potential impacts related to flooding of project facilities and changes in groundwater quality and/or quantity.
- Location of project facilities within a designated floodplain, exposing the project to risks related to flooding, as well as subjecting other areas to impacts resulting from changes in the location and or direction of flood flows.
- Location of project facilities within areas subject to inundation by seiche, tsunami, or mudflow, resulting in potential damage to such facilities.

For each area of impact, the level of impact was compared against the significance criteria given below.

3-18.2.2 Impact Criteria

a. NEPA Impact Criteria

The project would be considered to have an adverse impact if it would:

- Generate a substantial discharge into surface waters that would create pollution, contaminants or other nuisance.
- Create a substantial safety hazard to construction workers.
- Generate a substantial change in the quantity and/or quality of groundwater either by direct additions, withdrawals or puncture of an aquifer.

b. CEQA Impact Criteria

According to Appendix G of the California Environmental Quality Act (CEQA), a significant impact would occur if the project would:

1. Violate any water quality standards or waste discharge requirements.

2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which the permits have been granted).
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.
4. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site.
5. Create or contribute to runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
6. Otherwise substantially degrade water quality.
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
8. Place within a 100-year flood hazard area structures that would impede or redirect flood flows.
9. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.
10. Inundation by seiche, tsunami, or mudflow.

3-18.2.3 Construction-Period Impacts

a. No Build Alternative

The No Build Alternative represents infrastructure development and programmatic changes to existing transportation services. Infrastructure development under this alternative includes SR 30/I-210 ongoing construction, and construction of the Gold Line Eastside Extension. Transportation services improvements include increasing service on Phase I of the Gold Line and countywide bus service improvements. Considering these activities, construction-period impacts to surface water would be likely to occur only for any construction of sufficient magnitude to change a drainage area, increase surface runoff, or add contaminants to surface waters and/or groundwaters.

Additionally, groundwater and flooding-related impacts may occur depending on the area of construction activity. However, it is assumed that all previously planned and approved projects under the No Build Alternative include provisions that would avoid, greatly limit, and/or mitigate water-water quality impacts.

Phase I – The Affected Cities and the Effects

The cities in Phase I are Los Angeles, South Pasadena, and Pasadena. Other than construction of the Eastside LRT Extension, there are no elements of the proposed transit service improvements that would result in water-water quality impacts. The construction period impacts for the Eastside LRT Extension were reported in the Draft Supplemental Environmental Impact Statement/ Draft Subsequent Environmental Impact Report.⁷

⁷ FTA and LACMTA, 2001

Foothill Extension, Segment 1 – The Cities Affected and the Effects

The cities in ~~Phase II Foothill Extension~~ Segment 1 are Pasadena, Arcadia, Monrovia, Duarte, Irwindale, and Azusa. The projects in the No Build Alternative affecting these cities during the ~~Phase II Foothill Extension~~ construction period are implementation of increased service on Phase I of the Gold Line LRT and countywide bus service improvements. There are no elements of the proposed transit service improvements that would result in water-water quality impacts.

Foothill Extension, Segment 2 – The Cities Affected and the Effects

The cities in ~~Phase II Foothill Extension~~ Segment 2 are Glendora, San Dimas, La Verne, Pomona, Claremont and Montclair ~~and Upland~~. The project in the No Build Alternative affecting the cities during the construction period of the proposed ~~Phase II Foothill Extension~~ is the Los Angeles county bus service improvements. Even though Montclair ~~and Upland~~ ~~are~~ is in San Bernardino County, ~~they are~~ it is affected by changes in Los Angeles County bus service because that service is linked to the Montclair TransCenter. There are no elements of the proposed transit service improvements that would result in water-water quality impacts. The proposed extension of I-210 eastward is more than 5 miles east of the eastern end of the ~~Phase II Foothill Extension~~ study area. Due to this distance, no effects from the freeway extension are expected within the study corridor.

b. Build Alternatives

The construction-related impacts from the Build Alternatives would primarily be to surface water, specifically in the areas of channels/drainages. The city of greatest potential impact is Irwindale because of the amount of construction that would occur with ~~the retrofitting of the bridge over the San Gabriel River and the~~ development of the maintenance facility. However, potential construction-period impacts to the nearby San Gabriel River would be considered temporary and thus less than adverse under NEPA. Construction impacts under CEQA would be potentially significant. The Build Alternatives would necessarily be implemented with all required permits. It is assumed that the project design and construction process will incorporate all appropriate permits from the ACOE, California Department of Fish and Game (CDFG), the Los Angeles County Flood, and/or the LARWQCB and/ or SARWQCB, the Los Angeles County Flood Control District (LACFCD), and the San Bernardino County Flood Control District. These permits include BMPs and other requirements to have been developed to reduce environmental impacts. Also required will be a Standard Urban Stormwater Mitigation Plan (SUSMP), which will be prepared during Final Design. With the implementation of construction-period permits and BMPs, surface water-water quality impacts in the maintenance facility area would be less than significant. In the other areas of Irwindale, along with all other cities within the study area, potential surface water-water quality impacts are considered less than significant. Permits would be obtained for affected resources in all parts of the alignment as appropriate.

No construction-related impacts to groundwater would occur in the study area from construction of the rail line itself. This is due to no excavation being conducted below groundwater tables, no anticipated dewatering, and the ability to minimize or prevent contaminants from entering groundwater through BMPs. Groundwater-related BMPs are assumed to include, at a minimum: installing check dams and filter berms to protect drainage ways, and adhering to the appropriate Los Angeles and San Bernardino County measures guiding/governing the use of fertilizers, pesticides and soil amendments. No construction-related impacts would occur with these alternatives and options because the study area is not located within any mapped 100-year flood zones.

Phase I – The Cities Affected and the Effects

The cities in Phase I are Los Angeles, South Pasadena and Pasadena. There are no elements of the Build Alternatives in the Phase I cities and thus no impacts to water quality would occur.

Foothill Extension, Segment 1 – The Cities Affected and the Effects

The cities in ~~Phase I~~ Phase II Foothill Extension, Segment 1 are Pasadena, Arcadia, Monrovia, Duarte, Irwindale, and Azusa. Potential impacts are reported below.

☐ Pasadena and Arcadia

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Pasadena and Arcadia would include: the relocation of the existing rail; addition of an adjacent rail; construction of the TPSSs; and activities related to the Arcadia Station and parking facilities. The action of relocating and adding rails to the existing ROW would necessitate minor modifications to the existing grade, such as adding fill to one side of the rail bed. The rail bed between these cities is raised above the adjacent ROW. Topographic slope within this segment of the study area is mild, and would facilitate slower runoff velocities than areas of higher gradient. Prior to project construction, an NPDES permit would be obtained. As part of the compliance with the NPDES permit, the project would implement construction-related BMPs to reduce runoff into local drainages. Considering the mild topography of this segment of the study area, and the implementation of construction BMPs, it is anticipated that the rail relocations and additions would result in less than significant surface level water quality impacts.

Channel/Drainage Surface Water Impacts

There are two channels/drainages (Arcadia Wash and East Branch Arcadia Wash) that are designated as blue line streams between these cities. These channels/drainages are underground in the existing ROW. Considering that the washes are underground, and that the project would implement BMPs, it is unlikely that significant amounts of construction-related sediments and/or contaminants would be introduced into local drainages. Hence, less than significant surface level water quality impacts would occur.

Station Surface Water Impacts

The Arcadia Station would include the development of parking facilities. Construction activity at the Arcadia Station and construction of the TPSSs would require some site grading. However, it is anticipated that ground disturbance would be minimal. These areas would also be required to implement construction BMPs. Therefore, less than significant surface level water quality impacts would occur.

Groundwater Impacts

The Arcadia station would include new parking facility construction. There would be no excavation below groundwater level and no construction dewatering. As a result, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

□ Monrovia

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Monrovia would include: the relocation of the existing rails; addition of ~~two~~ one pair adjacent rails; construction of the TPSS; and activities related to the Monrovia station facilities. The action of relocating and adding rails to the existing ROW would necessitate minor modifications to the existing grade, such as adding fill to one side of the rail bed. The existing rail bed ~~between these cities~~ is nearly even with the adjacent ROW topography. Hence, less filling to add rails would be required. As is typical of the area, topographic slope is mild and would facilitate slow runoff velocities. With the implementation of construction-related BMPs, it is anticipated that the rail relocations and additions would result in less than significant surface level water-water quality impacts.

Channel/Drainage Surface Water Impacts

There is one channel/drainage (Sawpit Wash) that is designated as a blue line stream ~~between these cities~~ in Monrovia. This channel/drainage is bridged in the existing ROW. The relocation and addition of tracks atop this bridge could generate minor sedimentation or contamination within the stream below as a result of bridge retrofits. However, with the implementation of BMPs, it is unlikely that significant amounts of construction-related sediments and/or contaminants would be introduced into this channel/drainage. Hence, less than significant surface level water-water quality impacts would occur.

Station Surface Water Impacts

Improvements to the Monrovia station would include the development of ~~a new parking structure and~~ platforms. Construction activity at the stations and construction of the TPSSs would require some site grading. However, it is anticipated that ground disturbance would be minimal. Project-related construction in these areas would also be required to include implementation of the construction BMPs. Considering this, station and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

~~Improvements to the Monrovia Station would include the development of a new parking facility.~~ No excavation below groundwater level would be required and no construction dewatering would occur. Therefore, there would be no impacts to groundwater as a result of intrusion or dewatering.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

Duarte

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Duarte would include: the relocation of the existing rails; addition of ~~two~~ one pair adjacent rails; construction of the TPSS; and activities related to the station facilities. The action of relocating and adding rails to the existing ROW would necessitate minor modifications to the existing grade, such as adding fill to one side of the rail bed. The existing rail bed ~~between these cities~~ is nearly even with the adjacent ROW topography. Hence, less filling to add rails would be required. As is

typical of the area, topographic slope is mild and would facilitate slow runoff velocities. With the implementation of construction-related BMPs, it is anticipated that the rail relocations and additions would result in less than significant surface level water-water quality impacts.

Station Surface Water Impacts

The Duarte Station would include the development of a ~~new parking structure~~ new surface parking and platform. Construction activity at the Duarte Station and construction of the TPSSs would require some site grading. However, it is anticipated that ground disturbance would be minimal. Project-related construction in these areas would also be required to include implementation of the construction BMPs. Considering this, station and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

Improvements to the Duarte Station would include the development of a new parking facility. No excavation below groundwater level would be required and no construction dewatering would occur. Thus, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

□ Irwindale

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction between Duarte and Irwindale would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; activities related to the Irwindale Station facility; and construction of the Irwindale maintenance facility. The existing rail bed is nearly flat within the ROW between Duarte and the west bank of San Gabriel River. However, the rail bed is raised within the ROW on the east bank of the San Gabriel River. Due to the topography of the ROW east of the San Gabriel River, it is likely that minor cuts and fill would be required to accommodate the additional rails. Furthermore, this area would require grading and filling to construct the rails to access the maintenance facility. Although more rail-related construction activity would take place in this area than in others within the study area, implementation of construction BMPs would reduce the potential surface level water-water quality impacts to less than significant levels.

Channel/Drainage Surface Water Impacts

There are two channels/drainages (an unnamed wash west of the San Gabriel River and the San Gabriel River) that are designated as blue line streams ~~between these cities~~. The unnamed wash is underground in the existing ROW. The San Gabriel River is bridged in the existing ROW. The relocation and addition of tracks above the unnamed wash would have the potential for surface water impacts due to the proposed rail locations being near the north opening of its tunnel (the south opening is far enough away from the proposed additional rails). However, with the implementation of the construction BMPs it is anticipated that related impacts would be reduced to less than significant.

With the development of the Build Alternatives, retrofits to the San Gabriel River Bridge would be required. These retrofits ~~may~~ require no additional structural supports to be placed within the San

Gabriel River bed; all work would be done from the existing structure. Impacts related to construction activity within the San Gabriel River would be subject to the measures specified by the ACOE, CDFG, RWQCB and ~~Los Angeles County Flood Control District (LACFCD)~~. Compliance with such mitigation is anticipated to reduce the levels of impact to less than significant with mitigation. Impacts may occur as a result of an accidental release of construction-related contaminants (paints, fuels, hydraulic fluids etc.) during the retrofitting of the bridge platform. Implementation of construction BMPs would reduce the likelihood of this occurring. Considering this, temporary and less than significant (with mitigation) surface level water-water quality impacts would occur.

Station Surface Water Impacts

The Irwindale Station would include the development of a new parking facility and platform. Construction activity at the Irwindale Station and construction of the TPSSs would require some site grading. ~~However, it is anticipated that ground disturbance would be minimal.~~ Access to the station parking would include tunneling under the existing right of way. These areas would also be required to implement the construction BMPs. As a result, station and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Maintenance and Operations Facility Surface Water and Groundwater Impacts

Note that the Maintenance and Operations Facility is physically located in Segment 1, but would not be built as part of the Build LRT to Azusa Alternative.

Construction for the development of the Maintenance and Operations facility in Irwindale would require substantial grading and excavation. The maintenance facility would be developed adjacent to ~~two~~ abandoned gravel quarries. One is located ~~to the north of~~ within the proposed maintenance facility, and the other is located to the southeast of the proposed maintenance facility. The quarry ~~to the north~~ within the Maintenance and Operations facility would not collect significant amounts of construction-related surface runoff from the development of the proposed maintenance facility because it is topographically up-gradient, and the facility plan would be designed to avoid drainage into the quarry. The quarry to the east would not collect significant amounts of construction-related surface runoff from the development of the proposed maintenance facility because ~~it is topographically level with the proposed maintenance facility drainage.~~ it is not near the proposed Maintenance and Operations facility. ~~Additionally, the surface drainage of the proposed maintenance facility drains past the eastern quarry.~~ There would be little chance of potentially contaminated surface runoff ponding in the adjacent quarry bottoms and infiltrating groundwater (which is approximately 40 feet below grade at the quarry bottoms). Additionally, construction-related BMPs would be implemented to reduce or stop any surface drainage from entering into the nearby San Gabriel River. Thus there would be less than significant construction-related surface water-water quality or groundwater impacts.

Groundwater Impacts

Improvements to the Irwindale Station would include the development of a new surface parking facility atop existing undeveloped land. No excavation below groundwater level would be required and no construction dewatering would occur. Therefore, there would be no impacts to groundwater as a result of intrusion or dewatering. Because the area is a groundwater recharge area and there are numerous monitoring wells in the area, a Standard Urban Stormwater Mitigation Plan (SUSMP) will be prepared during Final Design.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

□ Azusa

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction between Irwindale and Azusa would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the Azusa Alameda and Azusa Citrus Station facilities. The action of relocating and adding rails to the existing ROW would necessitate modifications to the existing ROW and rail bed grade, such as adding fill to one side of the ROW. The existing rail bed between these cities is level within the adjacent ROW topography. The rail ROW is higher than the surrounding topography in the vicinities of Foothill Boulevard and North Pasadena Avenue. Rail additions in these areas would require fill to widen the ROW. Although filling would be required, the filling of these areas is not anticipated to generate substantial increases in runoff or add substantial amounts of sediments and contaminants with the implementation of construction BMPs. Additionally, there are no blue line streams in this area. Thus, it is anticipated that the rail relocations and additions would result in less than significant surface level water-water quality impacts.

Channel/Drainage Surface Water Impacts

There is one channel/drainage (an unnamed drainage under-crossing Palm Drive) that is designated as a blue line stream between these cities. This channel/drainage is underground in the existing ROW. The relocation and addition of tracks atop this drainage could generate minor sedimentation or contamination within the stream below as a result of rail relocation and rail bed widening, since the opening of this channel/drainage is within the ROW. However, in channels/drainages with high potential for changes in the stream banks or beds, the project would be required to obtain the appropriate permits from the ACOE, CDFG, and/or LARWQCB/SARWQCB. These agencies specify mitigation that must be incorporated in the project in order to obtain permits. The project would comply with the mitigation specified. Therefore, surface water-water quality impacts to this drainage would be less than significant with mitigation. Additionally, the construction BMPs utilized throughout the project would also be implemented in this location, further reducing impacts.

Station Surface Water Impacts

The Azusa Alameda Station would include the development of a surface parking facility structure in an existing paved area. The Azusa Citrus Station would utilize existing parking at the Citrus College location ~~require the development of a parking structure at the Rosedale development~~. Both stations would require the development of a platform. Construction activity related to these station platforms and the TPSSs would require some site grading. However, it is anticipated that ground disturbance would be minimal. These areas would also be required to implement the construction BMPs. Thus, station and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

Improvements to the Azusa ~~Alameda~~ stations would include the development of a new parking lot at each station structure. No excavation below groundwater level would be required and no construction dewatering would occur. Considering this, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

□ Glendora

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Glendora would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the Glendora Station facility. The action of relocating and adding rails to the existing ROW is anticipated to not require fill, as the existing rail bed ~~between these cities~~ is level within the adjacent ROW topography. Thus, it is anticipated that the rail relocations and additions would result in less than significant surface level water-water quality impacts.

Channel/Drainage Surface Water Impacts

There is one channel/drainage (Little Dalton Wash) that is designated as a blue line stream between these cities. This channel/drainage is underground in the existing ROW. The relocation and addition of tracks atop this drainage would not have the potential to generate sedimentation or contamination within the stream below because the opening of the channel/drainage is located far out of the rail ROW. Thus, it is anticipated that no surface level water-water quality impacts would occur.

Station Surface Water Impacts

The Glendora Station would include the development of one parking lot in an existing unpaved area, ~~and parking structure atop an existing paved area~~. The Glendora Station would also require the development of a platform. Construction activity related to these parking facilities, the station platform and the TPSSs would require some site grading. However, is anticipated that ground disturbance would be minimal. Project-related construction in these areas would also be required to include implementation of the construction BMPs. Considering this, the parking facilities, station, and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

As indicated above, improvements to the Glendora Station would include the development of a new parking facilitiesy atop an existing ~~paved and~~ unpaved areas. No excavation below groundwater level would be required and no construction dewatering would occur. Therefore, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

❑ San Dimas

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting San Dimas would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the San Dimas Station facility. The action of relocating and adding rails to the existing ROW would necessitate modifications to the existing ROW and rail bed grades, such as adding fill to one side of the ROW and rail bed. The existing rail bed ~~between these cities~~ varies between being even within the adjacent ROW topography and being raised above it. Additionally, the ROW would need widening in some areas. Hence, some filling to add the adjacent rails would be required. The East Branch Wash exists within the study area, but is far enough outside of the ROW that no impacts would occur to the wash. An unnamed wash exists within the study area, but is underground. Thus no impacts would occur to this wash. With the implementation of construction-related BMPs, it is anticipated that the rail relocations and additions would result in less than significant surface level water-water quality impacts.

Channel/Drainage Surface Water Impacts

There are four channels/drainages (Big Dalton Wash, East Branch, San Dimas Wash and an unnamed wash at Amelia Avenue) that are designated as a blue line streams between these cities. The Big Dalton Wash is bridged in the ROW, the East Branch is underground in the ROW, the San Dimas Wash is bridged in the ROW, and the unnamed channel at Amelia Avenue is assumed to be underground (it is shown on the San Dimas, Calif. 7.5-minute quad sheet [photo-revised 1981], but is not evident on current aerial photographs and was not observed during field reconnaissance). The relocation and addition of track above the East Branch and unnamed drainage at Amelia would likely have little to no construction-related surface water quality impacts due to the East Branch's opening being outside the rail ROW, and the unnamed wash being unobserved in the ROW. The relocation and addition of tracks above the Big Dalton and San Dimas washes would require either widening of the existing bridge structures or additional adjacent bridge structures. In so doing, potential accidental releases of construction-related contaminants (paints, fuels, hydraulic fluids, etc.) could occur within the streambed. Considering this, there is the potential for construction-related surface water quality impacts. However, the proposed project would be required to comply with the measures under the relevant agency permits from ACOE, CDFG, and RWQCB. Additionally, implementation of construction BMPs would reduce the likelihood of this occurring, and the requirement for contractors to utilize only well-maintained equipment would further reduce the likelihood of occurrence. Therefore, only minor and temporary surface level water quality impacts would occur. With implementation of BMPs, impacts to water-water quality will be reduced to a less than significant level.

Station Surface Water Impacts

The San Dimas Station would include the development of one parking ~~facility~~ structure on an existing ~~unpaved~~ area. The San Dimas Station would also require the development of a platform. Construction activity related to the parking facility, the station platform, and the TPSSs would require some site grading. However, is anticipated that ground disturbance would be minimal. Project-related construction activities in these areas would also be required to include implementation of the construction BMPs. Considering this, the parking facility, station, and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

As indicated above, improvements to the San Dimas Station would include the development of a new parking facility atop existing developed land. No excavation below groundwater level would be required and no construction dewatering would occur. Thus, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

□ La Verne

Rail Relocation/ Rail Addition Surface Water Impacts

Project-related construction affecting La Verne would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the La Verne Fairplex Station facility. The action of relocating and adding rails to the existing ROW would not necessitate significant changes in the existing rail bed grade or ROW, due to the rail bed being at grade within the ROW and the ROW being in a nearly flat area. Thus, it is likely that no significant surface level water-water quality impacts would occur.

Channel/Drainage Surface Water Impacts

There are four channels/drainages (Walnut Creek, the Puddingstone Channel, Marshall Creek, and Live Oak Creek) that are designated as blue line streams. Walnut Creek, the Puddingstone Channel, and Marshall Creek are underground in the ROW. Hence, they are unlikely to have a significant level of construction-related surface water quality impacts. Live Oak Creek is bridged in the ROW. However, depending on the width required to accommodate the additional tracks, the bridge may require structural retrofitting. In so doing, potential accidental releases of construction-related contaminants (paints, fuels, hydraulic fluids, etc.) could occur within the streambed below. Considering this, there is the potential for construction-related surface water quality impacts. However, the proposed project would be required to comply with the measures under the relevant agency permits from ACOE, CDFG, and RWQCB. Additionally, implementation of construction BMPs would reduce the likelihood of this occurring, and the requirement for contractors to utilize only well-maintained equipment would further reduce the likelihood of occurrence. Therefore, only minor and temporary surface level water quality impacts would occur. With implementation of BMPs, impacts to surface level water quality will be reduced to a less than significant level.

Station Surface Water Impacts

The La Verne Station is not anticipated to require the development of new parking facilities. Parking would be provided on the grounds of the Fairplex, with some improvement to the existing parking. The La Verne Station would require the construction of a new platform. However, the construction and grading activities related to this facility would be minimal. Considering this, no significant surface level water-water quality impacts are likely to occur.

Groundwater Impacts

Improvements to the La Verne Station would not require excavation below groundwater level, and no construction dewatering would occur. As a result, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

☐ Pomona

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Pomona would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the ~~Pomona Towne and Pomona Garey Station~~ facilities. Similar to the San Dimas to La Verne ROW discussion above, the action of relocating and adding rails to the existing ROW in the La Verne to Pomona portion would not necessitate significant changes in the existing rail bed grade or ROW. This is due to the rail bed being at grade within the ROW and the ROW being in a nearly flat area. Thus, it is likely that no surface level water-water quality impacts would occur.

Channel/Drainage Surface Water Impacts

There is one channel/drainage (Thompson Creek) that is designated as a blue line stream between these cities. Depending on the width required to accommodate the additional tracks, this bridge may require structural retrofitting. In so doing, potential accidental releases of construction-related contaminants (paints, fuels, hydraulic fluids, etc.) could occur within the streambed below. Considering this, there is the potential for construction-related surface water quality impacts. However, the proposed project would be required to comply with the mitigation measures under the relevant agency permits from ACOE, CDFG, and RWQCB. Additionally, implementation of construction BMPs would reduce the likelihood of this occurring. Therefore, only minor and temporary surface level water quality impacts would occur. With implementation of BMPs, impacts to surface level water quality will be reduced to a less than significant level.

Station Surface Water Impacts

~~The Pomona Towne Station would include the development of one parking facility in an existing unpaved area.~~ The Pomona Garey Station would also require the development of one parking facility in an unpaved area. Construction activity related to the development of ~~these~~ this parking facility, the station platforms and the TPSSs would require some site grading. However, is anticipated that ground disturbance would be minimal. These areas would also be required to implement the construction BMPs. Considering this, development of these parking facilities, stations, and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

As indicated above, improvements to the ~~Pomona Towne Station and Pomona Garey Station~~ would include the development of new parking facilities atop existing undeveloped land. No excavation below groundwater level would be required and no construction dewatering would occur. Thus, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

☐ Claremont

Rail Relocation/Rail Addition Surface Water Impacts

Project-related construction affecting Claremont would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the Claremont Station and parking facilities. The action of relocating and adding rails to the existing ROW in the Pomona to Claremont portion would not necessitate significant changes in the existing rail bed grade or ROW. This is due to the rail bed being at grade within the ROW and the ROW being in a nearly flat area. Considering this, it is likely that no significant surface level water quality impacts would occur.

Channel/Drainage Surface Water Impacts

There are no channels/drainages designated as a blue line streams between these cities. Therefore, only minor and temporary surface level water quality impacts would occur. With implementation of BMPs, impacts to surface level water-water quality will be reduced to a less than significant level.

Station Surface Water Impacts

The Claremont Station (either option) ~~could~~ would require the conversion of surface parking to a parking structure ~~or development of one parking facility in an unpaved area~~. Construction activity related to the development of the parking facilities, the station platforms, and the TPSSs would require some site grading. However, is anticipated that ground disturbance would be minimal. These areas would also be required to implement the construction BMPs. Therefore, development of the parking facility, station, and TPSS construction would be temporary and would result in less than significant surface level water-water quality impacts.

Groundwater Impacts

As indicated above, improvements to the Claremont Station ~~could~~ would include the conversion of surface parking to a parking structure or development of a new parking facility atop existing undeveloped land. No excavation below groundwater level would be required and no construction dewatering would occur. Thus, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

☐ Montclair/Upland

Rail Relocation/Addition Surface Water Impacts

Project-related construction affecting Montclair ~~and Upland~~ would include: the relocation of the existing rail; addition of two adjacent rails; construction of the TPSSs; and activities related to the Montclair Station facility. The action of relocating and adding rails to the existing ROW in the Claremont to Montclair portion would not necessitate significant changes in the existing rail bed grade or ROW. This is due to the rail bed being at grade within the ROW and the ROW being in a nearly flat area. Thus, it is likely that no significant surface level water-water quality impacts would occur.

Channel/Drainage Surface Water Impacts

There is one channel/drainage (the San Antonio Creek) designated as a blue line stream.. The San Antonio Creek is bridged within the ROW. Depending on the width required to accommodate the additional tracks, this bridge may require structural retrofitting. In so doing, potential accidental releases of construction-related contaminants (paints, fuels, hydraulic fluids, etc.) could occur within the streambed below. Considering this, there is the potential for construction-related surface water quality impacts. However, the proposed project would be required to comply with the mitigation measures under the relevant agency permits from ACOE, CDFG, and RWQCB. Additionally, implementation of construction BMPs would reduce the likelihood of this occurring, and the requirement for contractors to utilize only well-maintained equipment would further reduce the likelihood of occurrence. Considering this, only minor and temporary surface level water quality impacts would occur. With implementation of BMPs, impacts to surface level water-water quality will be reduced to a less than significant level.

Station Surface Water Impacts

The Montclair Station is not anticipated to require the development new parking facilities. Thus, no significant surface level water-water quality impacts are likely to occur.

Groundwater Impacts

Improvements to the Montclair Station would not require excavation below groundwater level, and no construction dewatering would occur. Therefore, no impacts to groundwater are likely to occur.

Flood-Related Impacts

The study area is not located within a FEMA 100-year floodplain. Thus, no construction-related flood hazard impacts are anticipated to occur.

Summary of Impacts for Full Build (Pasadena to Montclair) Alternative

Less than significant surface water-water quality impacts would occur in ~~Phase II Foothill Extension, Segment 1 and 2 cities because all construction would include construction BMPs, and compliance with all regulatory permits, except for the San Gabriel River bridge area in Irwindale. Impacts in this area would not be reduced to less than significant with only BMPs and would require mitigation.~~ Any potential impacts related to the construction of the maintenance facility would be minor and temporary. No groundwater impacts are likely because there is no anticipated excavation below groundwater surfaces or related dewatering. No flood-related impacts would occur because the area is not within a mapped 100-year floodplain.

Summary of Impacts for Build LRT to Azusa Alternative

Impacts for Build LRT to Azusa Alternative for ~~Phase II Foothill Extension I~~, Segment 1 cities would be the same as described for the Full Build (Pasadena to Montclair) Alternative.

3-18.2.4 Long-Term Impacts

a. No Build Alternative

The No Build Alternative represents infrastructure development and programmatic changes to existing transportation services. There are no elements of the projects included in the No Build Alternative that

would create long-term impacts to water quality to any of the cities in Phase I or Foothill Extension Segment 1 or 2.

b. Build Alternatives

Under the Build Alternatives, no rail travel-related operational disruptions of existing storm drainage facilities is anticipated to occur. Less than significant impacts are anticipated to occur with the operation of the maintenance facility. No groundwater impacts and no flood-related impacts are anticipated to occur.

Any under-crossing or bridge retrofits in a water body would ~~have to be~~ have been built, constructed, and permitted according to the provisions of ACOE, CDFG, RWQCB, and LACFCD, including implementation of BMPs and mitigation measures. Considering this, there would be no operational disruption of existing storm drainage facilities. Hence, no surface water-water quality impacts would occur.

Potential operational surface water impacts could result from accidental spills or leaks along the rail ROW. However, considering the fact that the project trains are for the transport of passengers, it is unlikely that significant amounts of contaminants would be aboard and available to be spilled or leaked. The project trains would be required to have scheduled maintenance, thus further reducing the potential for spills and/or leaks that would enter local drainages. Additionally, since freight operations already exist, and will continue under Build Alternatives, the freight operations will continue to use the existing contaminant control measures. Hence, it is likely that less than adverse/ less than significant surface water-water quality impacts would occur.

Operation of the Maintenance Facility in Irwindale would be subject to the operational BMPs discussed in Section 3-1.1.2.b, Regulatory Setting. The use of clarifiers, designated wash and repair areas, and industrial hygiene practices under the BMPs would reduce the operational impacts to surface waters in the Irwindale maintenance facility area to less than significant levels.

The development of the station platforms, new parking facilities (in existing unpaved areas), and the Irwindale maintenance facility would introduce new impervious surfaces that would have the potential to increase runoff and inundate the existing local drainage network. However, based on their structural footprints and distribution throughout the study area, it is unlikely that these structures would contribute substantial amounts of runoff to the existing drainage network, thus less than significant surface level water-water quality impacts would occur.

Groundwater Impacts

The development of the station platforms, new parking facilities (in existing unpaved areas), and the Irwindale maintenance facility would introduce new impervious surfaces that would have the potential to reduce groundwater recharge in their respective areas. However, based on the size of their structural footprints and distribution of these facilities along the study area, it is unlikely that substantial reductions in groundwater recharge would occur. Hence, less than significant ground water quality impacts would occur. The depths to groundwater throughout the study area (with exception of Azusa) are more than 100 feet below grade. Considering this, the operational industrial hygiene practices, and BMPs to be implemented, less than significant water-water quality impacts would occur.

Flood-Related Impacts

None of the proposed structures would be located within a 100-year floodplain. Hence, no flood-related impacts would occur.

□ Summary of Impacts for Full Build (Pasadena to Montclair) Alternative

The Full Build (Pasadena to Montclair) Alternative would represent an increase in land area covered, and, therefore, would be more susceptible to potential spills or leaks from the project operation. However, as mentioned above, the industrial hygiene practices and BMPs that would occur as part of operations would reduce potential surface and groundwater impacts to less than significant levels. No flood-related impacts would occur.

□ Summary of Impacts for Build LRT to Azusa Alternative

The potential operational impacts related to the Build LRT to Azusa Alternative would be the same as those indicated above under the Full Build (Pasadena to Montclair) Alternative, with the exception that none would occur in ~~areas east of the Irwindale maintenance facility~~ or in areas east of Azusa.

3-18.2.5 Cumulative Impacts

The Southern California Association of Governments' (SCAG) 2004 Regional Transportation Plan (RTP) Final Program EIR is the most applicable certified planning document that provides a regional cumulative impact assessment for transportation improvements (including the proposed project) through the year 2030. SCAG's analysis of the 2004 RTP concludes that significant cumulative impacts to water quality would result due to potential for increased vehicle pollutants to migrate to surface and groundwater supplies. Because the proposed project would reduce vehicle miles traveled, vehicle pollutants would also be reduced. Thus, the proposed project would contribute beneficially to this cumulative effect.

~~Cumulative impacts to water quality could arise from the ongoing growth of the region. As individual residential and commercial projects are implemented over time, they place incremental demands on water resources. The transportation improvements included in the No Build and LRT Alternatives are all included in SCAG's 2025-2030 forecast of regional growth and in the plans of individual cities. Although these transportation projects may influence the location of development or redevelopment, they are not likely to induce additional, unaccounted-for demands.~~

3-18.2.6 Impacts Addressed by Regulatory Compliance

See Section 3-18.1.2, Regulatory Setting, for more information about the specific federal, state, and local regulatory requirements regarding water-quality.

a. Construction Period Impacts

Impacts that would arise from construction of any of the alternatives were identified in Section 3-18.2.3. Elimination or reduction of these construction period impacts would occur through two steps, as follows: (1) compliance with local, state or federal regulations or permits that have been developed by agencies to manage construction impacts, to meet legally established environmental impact criteria or thresholds, and/or to ensure that actions occurring under agency approvals or permits are in compliance with laws and policies. (2) Implementation of the proposed alternatives with additional construction period mitigation measures defined in Section 3-18.3.1. Following is a discussion of the construction period impacts for each of the alternatives that would be addressed by the first step, regulatory compliance.

For all alternatives, it is assumed that design and construction would incorporate all appropriate permits from the ACOE, CDFG, LARWQCB and/or SARWQCB, and LACFCD. Additional, more detailed design work, which would occur during ~~Preliminary Engineering~~ Final Design, is necessary to determine the exact types and conditions of permits and other regulatory compliance matters. However, based on the intent of these permits to reduce environmental impacts to levels required by their authorizing legislation or implementing regulations, it is assumed that construction period impacts for all alternatives would be less than adverse under NEPA and less than significant under CEQA.

It should be noted that although FTA, the Construction Authority, LACMTA, and SANBAG are not subject to local ordinances, to the extent feasible, local permits would be obtained to help assimilate proposed improvements into the communities in which they would occur.

b. Long-Term Impacts

Long-term impacts associated with of the alternatives were identified in Section 3-18.2.4. Elimination or reduction of these long-term impacts would occur through two steps, as follows: (1) compliance with local, state or federal regulations or permits that have been developed by agencies to manage construction impacts, to meet legally established environmental impact criteria or thresholds, and/or to ensure that actions occurring under agency approvals or permits are in compliance with laws and policies. (2) implementation of the proposed alternatives with additional mitigation measures defined in Section 3-18.3.2.

No long-term impacts that would be adverse under NEPA or significant under CEQA were identified in Section 3-18.2.4. It is assumed that proposed transportation improvements in all of the alternatives would be operated in compliance with industrial hygiene requirements and BMPs.

3-18.3 Mitigation

Section 3-18.2.6a identified construction period impacts for which compliance with local, state, and federal regulations, permits, or similar types of requirements would eliminate or reduce such impacts. The following sections identify ~~potential~~ mitigation measures that would need to be implemented in order to address any remainder impacts (i.e., impacts that would still exist after regulatory compliance). The combination of regulatory compliance and these construction period mitigation measures would result in the reduction of construction period impacts to levels that would be not adverse under NEPA and less than significant under CEQA.

3-18.3.1 No Build Alternative

There are no elements of the No Build Alternative that would require mitigation measures beyond those already identified for the Eastside LRT Extension. These measures apply only within Phase I, in Los Angeles.

3-18.3.2 Build Alternatives

a. Foothill Extension, Segment 1

All Cities

The following ~~proposed mitigation~~ preventative measures ~~would~~ will apply in all cities in ~~Phase II~~ the Foothill Extension, Segment 1:

- W-WQ 1** The proposed project will result in the disturbance of five or more acres of land. Prior to the issuance of preliminary or precise grading permits, the project proponent shall provide the City Engineers of the affected cities with evidence that a Notice of Intent (NOI) has been filed with the SWRCB. Such evidence shall consist of a copy of the NOI stamped by the SWRCB or the RWQCB, or a letter from either agency stating that the NOI has been filed.
- W-WQ 2** Prior to the commencement of soil disturbing activities, the project proponent shall submit for approval to the SWRCB, a NOI to be covered under the Storm Water Permit. Additionally, the project proponent shall prepare a Storm Water Pollution Prevention Plan (SWPPP) which will: 1) require implementation of BMPs so as to prevent a net increase in sediment load in storm water discharges relative to the preconstruction levels; 2) prohibit discharges of storm water or non-storm water at levels which would cause or contribute to an exceedance of any applicable water quality standard contained in the relevant basin plans; 3) discuss in detail the BMPS to be used for project-related control of the sediment and erosion, non-sediment pollutants, and potential pollutants in non-storm water discharges; 4) describe post-construction BMPs for the project; 5) explain the monitoring and maintenance program for the project's BMPs; 6) require reporting violations to the Regional Board; and 7) list the parties responsible for SWPPP implementation and BMP maintenance both during and after construction. Upon acceptance of the NOI by the SWRCB, the project proponent shall implement the SWPPP and will modify the SWPPP as directed by the Storm Water Permit.
- W-WQ 3** The project proponent shall develop a Water Quality Management Plan (WQMP) and shall submit the WQMP for review to each respective city within the study area. The cities shall approve the WQMP prior to the issuance of precise grading permits for project facility development. The WQMP shall: 1) describe the routine and special post-construction BMPs to be used, including both structural and non-structural measures; 2) describe responsibility for the initial implementation and long-term maintenance of the BMPs; 3) provide narrative with the graphic materials as necessary to specify the locations of the structural BMPs; and certify that the project proponent will strive to have the WQMP carried out by any future successors of the project facilities.
- W-WQ 4** Should the project contribute to offsite drainage deficiencies, the project proponent shall participate on a fair-share basis in the construction of improvements necessary, as determined by the cities affected by the project, to address these deficiencies in conjunction with the approval of the first final map for the project.
- W-WQ 5** Prior to construction, coordination with ACOE, CDFG, and the appropriate RWQCB shall be sought to determine the requirements for their respective permits for any blue-line streams affected by project construction.
- W-WQ 6** During Final Design, a Standard Urban Stormwater Mitigation Plan (SUSMP) will be prepared.

b. Foothill Extension, Segment 2

The same mitigation measures as described for Segment 1 cities would apply.

Summary of Construction-Period Mitigation Measures for the Full Build (Pasadena to Montclair) Alternative

The construction mitigation under the Full Build (Pasadena to Montclair) Alternative, is based on establishing project controls through formalized processes, agreements and permits that would minimize any surface water, groundwater or flood-related impacts to less than significant levels.

Summary of Construction-Period Mitigation Measures for the Build LRT to Azusa Alternative

The construction mitigation under the ~~Full Build (Pasadena to Montclair)~~ LRT to Azusa Alternative is based on establishing project controls through formalized processes, agreements and permits that would minimize any surface water, groundwater or flood-related impacts to less than significant levels.

3-18.3.3 Long Term Mitigation

None of the alternatives would require long-term mitigation, except for the Maintenance and Operating Facility that is part of the LRT Alternatives. Two measures to avoid or reduce potential impacts during operation are proposed.

W-WQ 67 A General Industrial Storm Water Permit will be required for the Irwindale maintenance facility. The SWPPP for this permit will contain or identify pollutant sources, source controls, material inventory, preventive maintenance program, spill prevention and response program, employee training, facility inspections, record keeping and elimination of non-storm water discharges. The SWPPPs will be developed in coordination with the RWQCB.

W-WQ 78 In the event of surface water contamination during the operation of the proposed corridor, appropriate emergency procedures would be followed to ensure a minimum of damage to surface water resources. An emergency response plan will be developed and approved prior to operation of the proposed project. This plan will include information on the nature of materials likely to be transported along the corridor, the types of remedial actions required in the event of a spill of such materials and an emergency notification and evacuation plan, if required. The plan will be developed in cooperation with adjoining jurisdictions and appropriate state agencies.

3-18.4 Impact Results with Mitigation

The following sections report the result of complying with regulatory requirements and proposed mitigation measures. The intent of this section is to summarize where identified impacts have been eliminated or reduced to less than adverse/less than significant levels, or whether there may be remainder impacts.

3-18.4.1 Construction Period

a. No Build Alternative

Other than the construction-period mitigation measure identified in the environmental document for the Eastside Extension, there are no elements of the No Build Alternative that require mitigation in cities in Phases I or II.

b. Build Alternatives

Foothill Extension – The Cities Affected and the Results of Construction Period Mitigation Measures

Construction period impacts in all Foothill Extension cities would be eliminated or reduced to less than adverse/less than significant levels by complying with the local, state, and/or federal regulatory requirements and/or permits identified in Section 3-18.2.6.a, and the additional measures to mitigate impacts identified in Section 3-18.3.1.c. As a result of these two conditions, construction period impacts would be not adverse under NEPA and not significant under CEQA.

Summary of Results of Construction Period Mitigation Measures for Full Build Alternative

Construction period impacts would be eliminated or reduced to less than adverse/less than significant levels.

3-18.4.2 Long Term

a. No Build Alternative

Long-term impacts for the No Build Alternative would not change from the level of impact initially identified since no mitigation measures would be required or implemented.

b. Build Alternatives

Long-term impacts in all Foothill Extension cities would be eliminated or reduced to less than adverse/less than significant levels by complying with the local, state, and/or federal regulatory requirements and/or permits identified in Section 3-18.2.6.b, and no additional measures to mitigate impacts were identified in Section 3-18.3.2.c. As a result of these two conditions, construction period impacts would be not adverse under NEPA and not significant under CEQA.