

4.15.1 Electricity and Natural Gas

4.15.1.1 ENVIRONMENTAL SETTING

Electricity Service

The Azusa Light and Water Department (Department), a municipal utility, provides electricity to City residents and businesses. The Department maintains a joint-use agreement with Southern California Edison (SCE), permitting the Department to use SCE's transmission lines to transport electricity to the Azusa Substation located at 809 North Angeleno Street.^{1,2}

The Department currently serves approximately 15,000 residential and commercial customers. The Department does not maintain a design capacity but evaluates development projects' electrical needs on a case-by-case basis. When determining if the existing infrastructure can accommodate a project's electrical demands, the Department compares the forecasted electrical load to the existing capacity of its electrical distribution lines. If proposed uses require the Department to expand its existing electrical distribution lines, the City requires the distribution lines to be installed underground. This requirement can create challenges for the Department when distribution lines must be extended to serve a project site as the Department does not always maintain the necessary right of way needed to extend its distribution lines and/or extending the existing distribution lines requires roadway construction.

Table 4.15.1-1, Azusa TOD Specific Plan Area Existing Development Electricity Usage, provides the existing development's electricity consumption in the specific plan area. As shown in **Table 4.15.1-1**, existing development in the specific plan area currently consumes 16.1 gigawatt hours (GWh) of electricity per year.

¹ Azusa Light and Water Department FAQ, <http://www.ci.azusa.ca.us/FAQ.aspx?TID=23>, accessed March 5, 2015,

² Azusa Light and Water Department, Assistant Director for Electrical Services, Federico Langit, verbal communication March 26, 2015

Table 4.15.1-1
Azusa TOD Specific Plan Area Electricity Usage

Land Use	Existing Development ¹	Generation Rate	Annual Consumption (Kwh)	Annual Consumption (GWh)
Retail	322,558 sf	13.55 Kwh/sf/y	4,370,660.9	4.4
Services	110,903 sf	13.55 Kwh/sf/y ²	1,502,735.6	1.5
Office	198,198 sf	12.95 Kwh/sf/y	2,566,664.1	2.6
Lodging	44,116 sf	9.95 Kwh/sf/y	438,954.2	0.4
Institutional	52,029 sf	11.55 Kwh/sf/y ³	600,934.9	0.6
Residential ⁵	952 units	5,626.5 Kwh/du/y	5,356,428	5.4
Civic	96,357 sf	12.95 Kwh/sf/y ⁴	1,247,823.1	1.2
		Total	16,084,200.8	16.1

Source: SCAQMD 1993 CEQA Air Quality Handbook, Table A9-11-A

Notes: Services land use category includes: restaurants, banks, personal services

Institutional land use category includes: religious facilities and mortuaries

sf=square feet; kWh/unit/yr = kilowatt-hour/unit/year; kWh/sf/yr = kilowatt-hour/square feet/year

¹ = The Specific Plan district's existing development does not include development within the areas of no change

² = Retail generation rate was used as a proxy for services

³ = College/university generation rate was used for institutional

⁴ = Office was used as a proxy for Civic

⁵ = See **Appendix A** of the Water Supply Assessment located in Appendix 4.15-4 for the methodology used to determine the number of residential units

Natural Gas Service

The Southern California Gas Company (SCGC) provides natural gas service to the City. SCGC's service area is comprised of approximately 20,000 square miles and includes central and southern California. The utility provides natural gas service to over 21 million customers (SCGC does not keep track of the number of customers it serves in each City). SCGC maintains facilities in the specific plan area. Natural gas services would be provided in accordance with SCGC's policies and extension rules at the time contractual arrangements for individual projects are made.³ As shown in **Figure 4.15.1-1, Southern California Gas Company Natural Gas Lines Located in the City of Azusa**, high pressure natural gas distribution lines are located directly south of the specific plan area. These natural gas pipelines operate at pressures above 60 pounds per square inch (psi) and deliver small volumes of natural gas throughout the SCGC's distribution system.⁴ **Table 4.15.1-2, Azusa TOD Specific Plan Area Natural Gas Usage**, provides the existing development's natural gas consumption in the specific plan area. As shown in

³ Southern California Gas Company, written communication with James Chuang, Environmental Specialist/Land Planner, March 13, 2015

⁴ Southern California Gas Company Website, Gas Transmission and High Pressure Distribution Pipeline Interactive Map, <http://www.socalgas.com/safety/pipeline-maps/LA.shtml>

Table 4.15.1-2, the existing consumption in the specific plan area is estimated at 86 million cubic feet (MMcf) of natural gas per year.

**Table 4.15.1-2
Azusa TOD Specific Plan Area Natural Gas Usage**

Land Use	Existing Development ¹	Generation Rate	Monthly Consumption (cf/m)	Yearly Consumption (MMcf/y)
		6,665 cf/SFR/m		
Residential ²	1,007,616 sf	4,011.5 cf/MFR/m 4,011.5 cf/mobile home unit/m ²	5,005,062.5	60.1
Retail	322,558 sf	2.9 cf/sf/m	935,418.2	11.2
Services	110,903 sf	2.9 cf/sf/m ⁴	321,618.7	3.9
Office	198,198 sf	2.0 cf/sf/m	396,396	4.8
Lodging	44,116 sf	4.8 cf/sf/m	211,756.8	2.5
Institutional ³	52,029 sf	2.0 cf.sf.m ⁵	104,058	1.2
Civic	96,357 sf	2.0 cf.sf.m ⁶	192,714	2.3
		Total	7,167,024.2	86

Source: SCAQMD 1993 CEQA Air Quality Handbook, Table A9-12-A

sf = square feet; cf = cubic feet; cf/m = cubic feet per month; MMcf = million cubic feet; MMcf/y; million cubic feet per year; cf/du/m = cubic feet/dwelling unit/ month; cf/sf/m = cubic feet/square feet/month

¹ = The Specific Plan district's existing development does not include development within the areas of no change

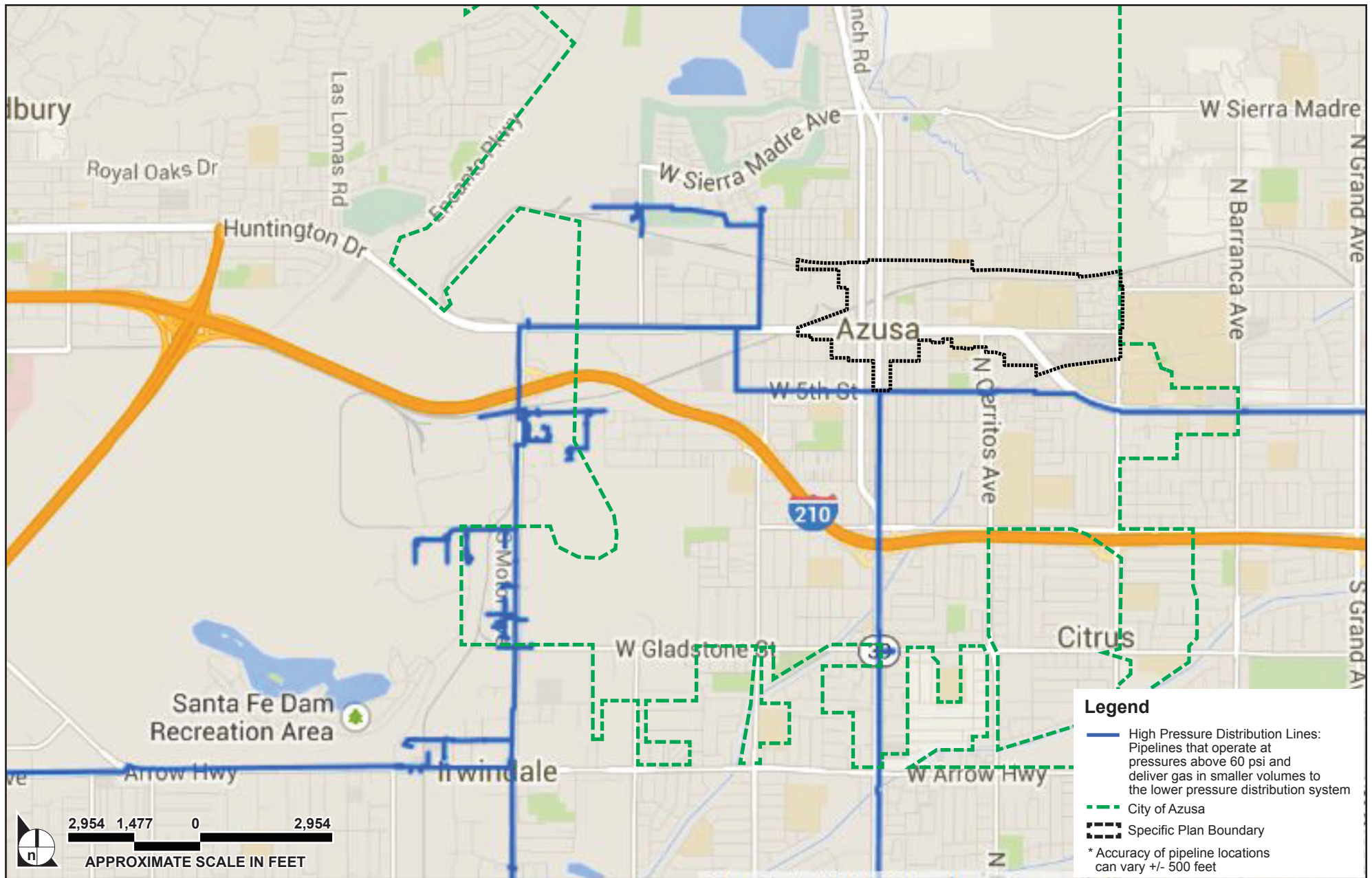
² = See **Appendix A** of the Water Supply Assessment for the methodology used to determine the number of single-family, multi-family, and mobile home units

³ = The multi-family generation factor was used as a proxy for mobile home units

⁴ = The retail generation factor was used as a proxy for services

⁵ = The office generation factor was used as a proxy for institutional

⁶ = The office generation factor was used as a proxy for civic



SOURCE: Southern California Gas Company, 2015

FIGURE 4.15.1-1

Southern California Gas Company Natural Gas Lines Located in the City of Azusa

4.15.1.2 REGULATORY FRAMEWORK

Federal

Public Utility Regulatory Policies Act of 1978 (Public Law 95-617).

The Public Utility Regulatory Policies Act of 1978 (PURPA) was passed in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of nonutility generators, small power producers, from which, along with qualified cogenerators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. Utility companies are required to buy all electricity from “Qfs” (qualifying facilities) at avoided cost (avoided costs are the incremental savings associated with not having to produce additional units of electricity). PURPA expanded participation of nonutility generators in the electricity market, and demonstrated that electricity from nonutility generators could successfully be integrated with a utility’s own supply. PURPA requires utilities to buy whatever power is produced by Qfs (usually cogeneration or renewable energy). Utilities want these provisions repealed, critics argue that it will decrease competition and impede development of the renewable energy industry. The Fuel Use Act (FUA) of 1978 (repealed in 1987) also helped Qfs become established. Under FUA, utilities were not allowed to use natural gas to fuel new generating technologies but Qfs which were by definition not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined cycle). The technologies lowered the financial threshold for entrance into the electricity generation business as well as shortened the lead time for constructing new plants.

Energy Policy Act of 2005.

On August 8, 2005, President George W. Bush signed the National Energy Policy Act of 2005 into law. This comprehensive energy legislation contains several electricity-related provisions that aim to:

- Help ensure that consumers receive electricity over a dependable, modern infrastructure;
- Remove outdated obstacles to investment in electricity transmission lines;
- Make electric reliability standards mandatory instead of optional; and
- Give federal officials the authority to site new power lines in DOE-designated national corridors in certain limited circumstances

State

California Energy Commission

The California Energy Commission is the state's primary energy policy and planning agency. Created by the Legislature in 1974 and located in Sacramento, six basic responsibilities guide the Energy Commission as it sets state energy policy:

- forecasting future energy needs;
- promoting energy efficiency and conservation by setting the state's appliance and building efficiency standards;
- supporting public interest energy research that advances energy science and technology through research, development and demonstration programs;
- developing renewable energy resources and alternative renewable energy technologies for buildings, industry and transportation;
- licensing thermal power plants 50 megawatts or larger;
- planning for and directing state response to energy emergencies.

California Building Energy Efficiency Standards: Title 24.

California established statewide building energy standards following legislative action. The legislation required the standards to:

- Be cost effective;
- Be based on the building life cycle; and
- Include both prescriptive and performance-based approaches.

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003, took effect October 1, 2005. The Energy Commission adopted the latest Building Energy Efficiency Standards in May 2012.

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards

include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings (envelope)
- Insulation and cool roofs
- Lighting control devices

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

Local

Southern California Gas Company

Natural gas supply and distribution to the City of Azusa is furnished by SCGC, a subsidiary of Sempra Energy. Natural gas services must be provided in accordance with SCGC policies and extension rules on file with the CPUC at the time contractual agreements are made.

City of Azusa Light and Water Department

The Azusa Light and Water Department (Department) provides the City with electricity. The Department is a public-owned utility company and a member of the Southern California Public Power Authority.

City of Azusa General Plan

The City's General Plan is primarily a policy document that sets goals concerning the community and gives direction to growth and development. In addition, it outlines the programs that were developed to accomplish the goals and policies of the General Plan. City policies pertaining to electricity and natural gas are included in Chapter 3, Built Environment, of the City's General Plan. Electricity and natural gas policies relevant to the Azusa Transit-Oriented District (TOD) Specific Plan include:

Policy 1.4	Minimize electrical consumption through site design, use of efficient systems and other techniques.
Policy 1.6	Continue to require the incorporation of electrical conservation features in the design of all new construction and site development. Encourage the retrofit to existing buildings and development to include electrical conservation features including, but not limited to wireless technology and solar energy.
Policy 1.7	Continue to underground all overhead electrical lines.
Policy 1.8	Ensure the costs of improvements to the existing electrical supply and distribution facilities necessitated by new development to be borne by the new development benefiting from improvements, either through the payment of fees, or the actual costs of construction, or both in accordance with State Nexus legislation.
Policy 6.1	Continue to work with service providers to maintain current levels of service and improved levels of service. Revise and replace programs that do not achieve their intended purpose.
Policy 6.2	Review requires for new utility facilities, relocations, or expansions to existing facilities.

4.15.1.3 ENVIRONMENTAL IMPACTS

Thresholds of Significance

The following thresholds for determining the significance of impacts related to electricity and natural gas resources are contained in contained in Appendix F of the most recent update of the *State CEQA Statutes*

and Guidelines. Adoption and/or implementation of the Azusa TOD Specific Plan could result in significant adverse impacts to electricity and natural gas resources, if any of the following could occur:

Threshold ENERGY/UTILITY-1 **Would the project create energy utility (electricity and natural gas,) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Impact Analysis

Threshold ENERGY/UTILITY-1 **Would the project create energy utility (electricity and natural gas,) system capacity problems, or result in the construction of new energy facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

Construction Impacts

Electricity

The construction of future projects associated with buildout of the Azusa TOD Specific Plan would require electricity to serve construction trailers, power tools, tool sheds, work and storage areas, and other facilities associated with development activities. Electricity would be expected to be supplied by gasoline, propane, or diesel-powered generators with minimal reliance on the electrical grid. Overall, electricity consumption that would be required during construction would be limited and temporary. Therefore, construction activities associated with buildout of the project would not create electrical system capacity problems or result in the construction of new or expanded electricity facilities. As a majority of the construction activities would not draw power from the local electrical grid, impacts on available electricity supplies would be less than significant.

Development under the Specific Plan could require the construction of additional electrical distribution lines and/or substations. While construction activities associated with the extension of the underground electrical lines would be temporary, in some cases the expansion activities would require the provisional demolition of roadways, as the City requires all electrical lines to be placed underground. Initial environmental effects could be potentially significant, however impacts associated with future projects would be subject to CEQA and would be reduced when applicable. Thus impacts would be less than significant.

Natural Gas

Natural gas is not expected to be needed during construction of future projects associated with buildout of the Specific Plan. Construction tools are generally powered by gasoline, diesel, or electricity. Natural gas used on-site would therefore be limited to the minor amounts of natural gas released during the installation and upgrade of natural gas facilities. The amount of natural gas consumed by such activities would be minimal and is not considered to significantly impact natural gas supplies or infrastructure.

Future development would not result in system capacity problems resulting in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects. While future projects may require the extension of the natural gas existing facilities, construction would be temporary, and would be conducted primarily by extending the existing path of natural gas lines. Because SCGC's long-term infrastructure planning takes local and regional general plans into account so that new developments are planned for, extending natural gas infrastructure to the future project sites would not result in the construction of new energy facilities or expansion of existing facilities, such that the construction of which could cause significant environmental effects. Impacts would be less than significant.

Operational

Electricity

Table 4.15.1-3, Azusa TOD Specific Plan Proposed Development Electricity Consumption, below, presents the projected electricity demand for uses proposed under the Azusa TOD Specific Plan. As demonstrated in **Table 4.15.1-3**, the proposed uses' electricity demands would be 10.6 GWh per year.

The Specific Plan supports the design and construction of energy efficient buildings to reduce environmental impacts resulting from energy production and consumption. This includes incorporating cool roofs to reduce a building's overall energy costs and its urban heat island effects, the use of solar panels, incorporating sustainable building materials, and considering the solar orientation of a building to better capture the sun's energy while reducing direct heat gains. While future projects would be more energy efficient compared to existing buildings, and the Specific Plan's emphasis on compact land use and growth patterns to facilitate transit and non-motorized transportation would result in less energy consumption when compared to the existing conditions, the Department has expressed that expansion of existing facilities and construction of new facilities to generate electricity may be required.

**Table 4.15.1-3
Azusa TOD Specific Plan Proposed Development Electricity Consumption**

Use Type	Proposed Development	Generation Rate	Annual Consumption (Kwh)	Annual Consumption (GWh)
Retail	226,000 sf	13.55 Kwh/sf/y	3,062,300	3.1
Services	84,000 sf	13.55 Kwh/sf/y ¹	1,138,200	1.1
Office	93,000 sf	12.95 Kwh/sf/y	1,204,350	1.2
Lodging	48,750 ² sf	9.95 Kwh/sf/y	485,063	0.5
Multi-Family	840 units	5,626.5 Kwh/du/y	4,726,260	4.7
		Total	10,616,173	10.6

Source: SCAQMD 1993 CEQA Air Quality Handbook, Table A9-11-A

Notes: Services land use category includes: restaurants, banks, personal services

Institutional land use category includes: religious facilities and mortuaries

sf=square feet; kWh/unit/yr = kilowatt-hour/unit/year; kWh/sf/yr = kilowatt-hour/square feet/year

¹ = Retail generation rate was used as a proxy for services

² = Based on 150 rooms and the average hotel room size of 325 square feet. (150x325 = 48,750 sq ft)

Design and sizing of all electrical infrastructure would meet all applicable engineering requirements to the satisfaction of the Department. Proposed uses that would require the expansion of existing facilities would be the responsibility of individual project applicants/developers. Further, project applicants/developers would be responsible for the payment of applicable engineering and design fees, the acquisition of local permits and any required easements. As discussed above, the Department would evaluate the electrical needs of each project and expand existing electrical distribution lines and facilities on a case by case basis. Impacts would be less than significant and no mitigation measures are required.

Natural Gas

Table 4.15.1-4, Azusa TOD Specific Plan Proposed Development Natural Gas Consumption below, presents the projected natural gas demand associated with buildout of the Specific Plan. As shown in **Table 4.15.1-4**, the proposed uses' natural gas demands would be 4,688,660 cubic feet per month (cf/m) or 56.2 million cubic feet per year (MMcf/y).

To meet the operational requirements of future projects associated with the Specific Plan, installation and extension of additional natural gas lines may be required in the immediate vicinity of the specific plan area. Design and sizing of all natural gas infrastructure would support the future projects and meet all relevant engineering requirements to the satisfaction of SCGC and the City. Serving new areas and upgrading the size of existing gas mains is routine for SCGC. While the additional demand for natural gas could require new supply and construction of conveyance and distribution infrastructure, existing natural gas facilities in the area would be used to provide natural gas service to future developments.

**Table 4.15.1-4
Azusa TOD Specific Plan Proposed Development Natural Gas Consumption**

Land Use	Existing Development	Generation Rate	Monthly Consumption (cf/m)	Yearly Consumption (MMcf/y)
Retail	226,000 sf	2.9 cf/sf/m	655,400	7.9
Services	84,000 sf	2.9 cf/sf/m ¹	243,600	2.9
Office	93,000 sf	2.0 cf/sf/m	186,000	2.2
Lodging	48,750 ² sf	4.8 cf/sf/m	234,000	2.8
Multi-Family	840 units	4,011.5 cf/du/m	3,369,660	40.4
		Total	4,688,660	56.2

Source: SCAQMD 1993 CEQA Air Quality Handbook, Table A9-12-A

sf = square feet; cf = cubic feet; cf/m = cubic feet/month; MMcf = million cubic feet; MMcf/y = million cubic feet/year cf/du/m = cubic feet/dwelling unit/ month; cf/sf/m = cubic feet/square feet/month

¹ = The retail generation factor was used as a proxy for services

² = Based on 150 rooms and the average hotel room size of 325 square feet. (150x325 = 48,750 sq ft)

The availability of natural gas service is based upon conditions of natural gas supply and regulatory agencies. The ability for SCGC to provide service could be affected by actions of federal regulatory agencies. The potential short-term impacts from construction of conveyance and distribution facilities for natural gas would be similar to construction of the electricity generation and transmission facilities described above. Thus impacts would be less than significant.

Level of Significance Before Mitigation

Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant.

4.15.1.4 CUMULATIVE IMPACTS

Future development resulting from the implementation of the Specific Plan, in combination with other future development within the Department's and SCGC's service area would result in the long-term and continued use of natural gas and electricity resources. Potential natural gas and electricity impacts

associated with new developments would be evaluated on a project-by-project basis. Future development would be required to pay any necessary fees associated with the expansion of electricity and natural gas services. Further, if adequate supply is not available to meet the anticipated demands (electrical and natural gas) of future projects, the Department and SCGC would not expand or construct new facilities. Both utilities maintain projection demands to ensure minimal disruption (if any) for existing customers and to be able to meet the future demand (of natural gas and electricity) of future projects. Therefore, the Specific Plan would not result in cumulatively considerable impacts to natural gas service and infrastructure.

Level of Significance Before Mitigation

Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Impacts would be less than significant.