

CHAPTER EIGHT
ENERGY AND TELECOMMUNICATIONS

CHAPTER EIGHT: ENERGY AND TELECOMMUNICATIONS

8.1	INTRODUCTION	8.1
8.2	ELECTRICITY	8.1
8.3	NATURAL GAS	8.3
8.4	TELECOMMUNICATIONS SYSTEMS	8.5
	8.4.1 Overall Telecommunications System	8.7
	8.4.2 Residential Communications	8.8
	8.4.3 Business Communications	8.8
	8.4.4 Community Services	8.9
8.5	SITING CRITERIA FOR PUBLIC FACILITIES	8.9
8.6	PHASING AND COSTS	8.10
	8.6.1 Capital Facility Cost and Phasing	8.10
	8.6.2 Operations and Maintenance	8.12
8.7	SPECIFIC PLAN REQUIREMENTS	8.12

LIST OF FIGURES

Figure 8.1: Electrical Distribution System	8.4
Figure 8.2: Natural Gas Distribution System	8.6
Figure 8.3: Telecommunications Network Diagram	8.11

CHAPTER EIGHT: ENERGY AND TELECOMMUNICATIONS

8.1 INTRODUCTION

The following chapter addresses energy and communications requirements for the Mountain House community. Also included here are policies and implementation measures to facilitate energy efficiency and use of alternative energy sources, and to ensure that the community is provided with high quality telecommunications services. Chapter Ten: Air Quality and Transportation Management, provides additional provisions for energy efficient transportation. Chapter Six: Public Health and Safety discusses safety requirements relating to fuel lines and pipelines.

Mountain House will be well-positioned to take advantage of the latest advances in energy and telecommunications technology. As a new community, Mountain House will not be saddled with obsolete and inefficient utility systems and infrastructure. New services can be provided quickly and at low cost by private enterprises and/or public utilities.

Some services, such as the in-community network, may be directly owned and administered by the community. Because the technology is advancing rapidly, it is not possible to predict the degree to which the community will directly participate. Therefore, the following provisions assume that other entities will provide most services. Regardless of service provider, these provisions are intended to allow the installation of current technology with resulting savings in energy, pollution, traffic and other impacts.

8.2 ELECTRICITY

Figure 8.1: Electrical Distribution System shows the proposed layout of the “backbone” electrical power distribution system for Mountain House. Existing and proposed transmission facilities consist of substations and those electrical lines generally operating above 34.5 kilovolts (kV). These backbone systems identify the routing of electrical lines to insure adequate planning in coordination with street construction. Siting of all major electrical facilities are subject to approval of the California Public Utility Commission.

Chapter Six: Public Health and Safety addresses public health issues associated with electric and magnetic fields.

Assumptions:

- a) A 20% margin of safety is provided in determining community power needs to provide protection against power interruptions.
- b) Existing local substation capacity will only be able to supply power to the approximately first 25% of the community’s development. Beyond that, new distribution circuits will need to be supplied. A new five-acre 21-kV substation will eventually need to be built inside the Mountain House area. This will happen at the construction of about 4,100 homes and a corresponding amount of commercial/industrial development.

- c) The length of time required for the acquisition of property and rights-of-way, for the purchase and delivery of equipment and material, and for the design of the proposed substation facilities is currently five years.
- d) To accommodate future development, approximately three miles of PG&E's Westside Tap 60 kV electrical power transmission line (#268) will be relocated within the Byron Road right-of-way.
- e) A 230 kV power transmission line passes through the community on an easement that is restricted to certain uses. Safety considerations for this line are covered in Chapter Six: Public Health and Safety.

Objective: To provide an electrical power system that will deliver a reliable and cost-efficient source of power while minimizing risks to public health and risks of damage to utilities and properties adjacent to utility easements.

Policies:

- a) The community shall be planned to achieve a 25% energy saving by efficient community design.
- b) The community shall adhere to conditions and restrictions of use applicable to areas within the easement rights-of-way of primary power transmission lines. This includes setbacks along either side of the 60 kV and 230 kV lines.
- c) The electrical transmission and distribution system shall be designed and constructed in a manner that will assure a reliable and cost-effective source of electricity to the Mountain House community.
- d) Public health and safety issues shall be considered in developing and implementing the electric transmission and distribution systems.
- e) The Rio Oso-Tesla transmission line easements shall be designated for open space uses when they pass through residential areas. Where the transmission lines pass through industrial, commercial, and public land uses they shall reflect that land use designation, but uses under or adjacent to the easement shall be restricted to uses compatible with the easement, such as parking lots.

Implementation:

- a) PG&E Review. Each Specific Plan shall specify land uses and development standards within and adjacent to transmission lines. The County shall submit the Specific Plans to PG&E for review and comment on any proposed development in the vicinity of electric power utilities that cross the project site. As part of the Development Plan review and approval, PG&E shall be responsible for ensuring that the operation and condition of their electrical facilities are in compliance with PUC regulations for proposed land uses on and adjacent to their easement.

- b) Approved Land Uses within Easements. The project's proposed land uses within PG&E's electric power transmission line easements of 230 kV shall be subject to PG&E approval and in compliance with PG&E approved land uses.
- c) Easement Setbacks. Structure and setbacks outside but adjacent to powerline easements shall comply with the provisions of this Master Plan (see Section 6.9: Electric and Magnetic Fields).
- d) Undergrounding of Lines. All electrical distribution lines shall be underground where practical.

8.3 NATURAL GAS

Figure 8.2: Natural Gas Distribution System shows the proposed layout of the "backbone" natural gas distribution and transmission systems for Mountain House. The gas transportation system includes facilities such as regulator stations or pumping stations and pipelines generally operating above 100 psig, that transfer large loads of natural gas from point-to-point in the overall natural gas system. The distribution system includes pipelines, generally operating at 60 psig or less and individual gas regulators that take the natural gas directly into homes and businesses.

Existing infrastructure includes PG&E's line #2, a 26-inch diameter transmission line which crosses through the southern part of the Master Plan area from I-205 to Grant Line Road. Also running along Mountain House Parkway is the 6" and 8" diameter natural gas transmission line #176. This line turns and parallels Byron Road, to the northwest corner of the Master Plan area.

Assumptions:

- a) A 10% safety margin has been assumed in the calculation of the community's gas demand.
- b) A 25% natural gas savings is assumed in the calculation of the community's gas demand.

Objectives: To provide a natural gas transmission and distribution system that will deliver a reliable and cost-efficient source of natural gas to the community, while minimizing the risks to public health and the risk of damage to utilities and properties located adjacent to utility easements.

Policies:

- a) The natural gas transmission and distribution systems shall be designed and constructed to assure a reliable and cost-effective source of natural gas to the Mountain House community, and to achieve a 25% savings in the consumption of natural gas as compared to standard usage.

MOUNTAIN HOUSE MASTER PLAN

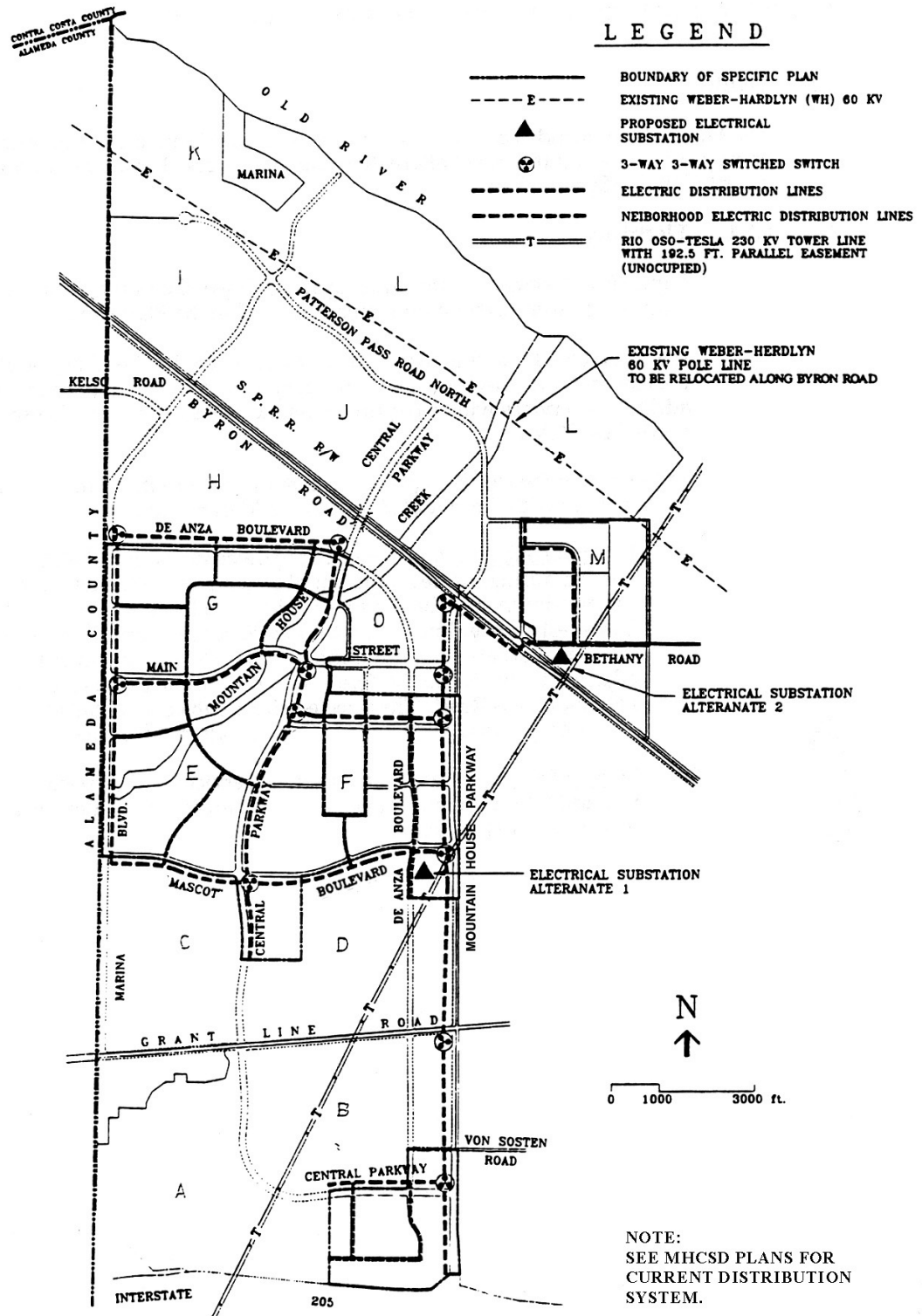


FIGURE 8.1 – ELECTRICAL DISTRIBUTION SYSTEM

- b) Public safety issues shall be considered during construction near natural gas transmission and distribution systems.

Implementation:

- a) PG&E Review. Each Specific Plan shall specify land uses and development standards adjacent to natural gas lines. The County shall submit the Specific Plans to PG&E for review and comment on any proposed development in the vicinity of natural gas utilities that cross the project site.
- b) Approved Land Uses within Easements. The project's proposed land uses within natural gas transmission pipeline easements shall be subject to PG&E approval and in compliance with PG&E approved land uses.
- c) Pipeline Relocation. A detailed proposal to relocate the eight-inch natural gas pipeline located north of Byron Road shall be included in the first residential Neighborhood Specific Plan north of Byron Road. A preliminary response from PG&E regarding the proposed relocation shall be secured and documented prior to approval of the Specific Plan.

8.4 TELECOMMUNICATIONS SYSTEMS

This section contains the telecommunications plan for Mountain House, including discussions of voice, data, video, and special services as they relate to residential, business and community services. Figure 8.3: Telecommunications Network Diagram illustrates the plan for telecommunications.

The telecommunications industry is currently achieving major breakthroughs in such areas as interactive television, nearly unlimited line service, and other innovative telecommunications services. As a new community, Mountain House will be able to take advantage of such state-of-the-art technologies. While it is not possible to strictly mandate selected services, it is possible to set a policy framework to allow advanced telecommunications services to proceed quickly.

Some basic services such as telephone, low speed data and video are common to all users. However, there are variations and specific requirements depending on the type of users. This section identifies the following groups and discusses each separately:

- Residential Uses
- Business Uses
- Community Services

MOUNTAIN HOUSE MASTER PLAN

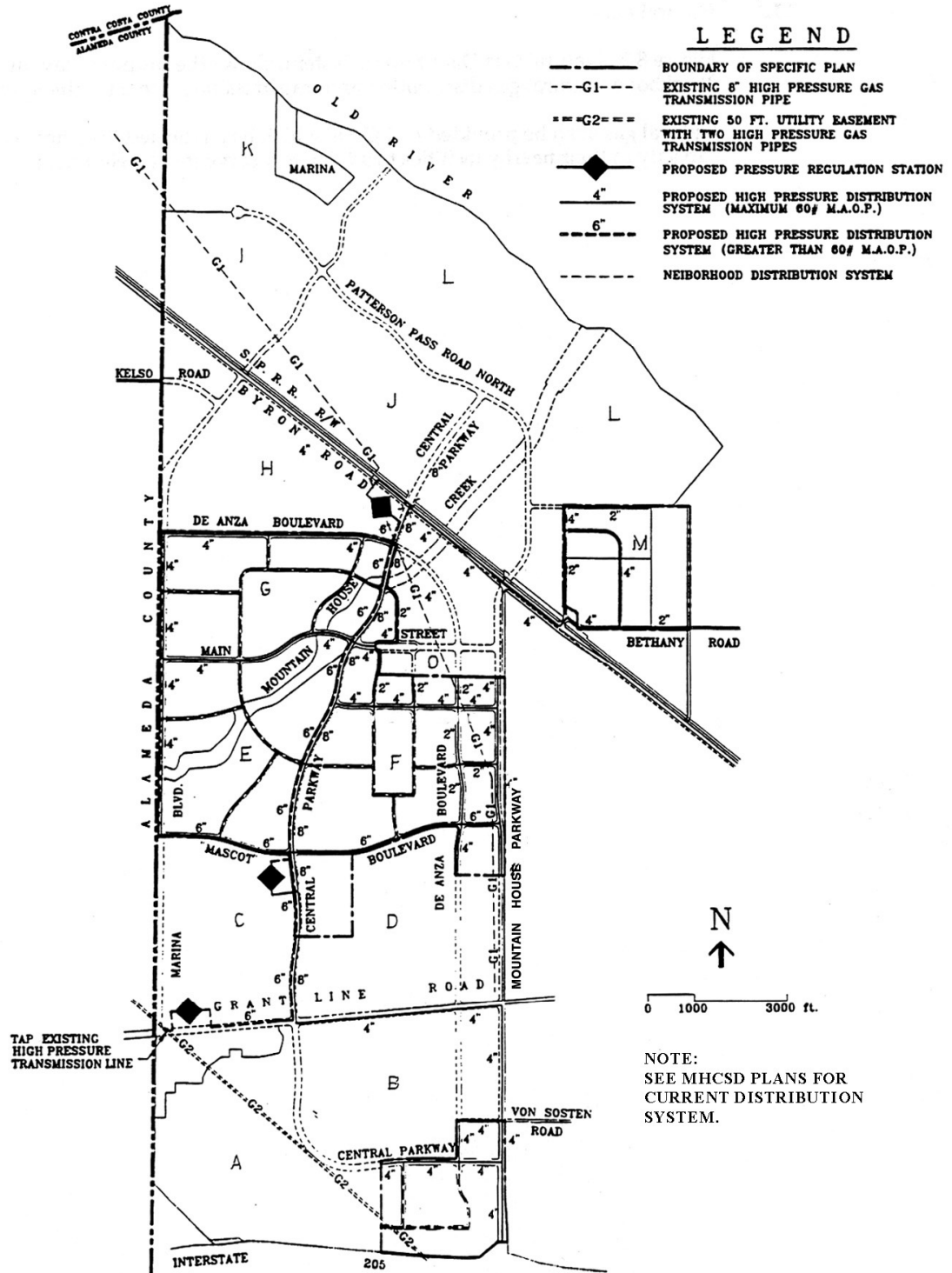


FIGURE 8.2 – NATURAL GAS DISTRIBUTION SYSTEM

Residential users have a need for basic telephone service, low speed data service and CATV. Each dwelling will be equipped to provide these types of services. In addition, high speed data, expanded telephone (multi-line facilities) and video services may be required for larger residential building complexes and/or for individual dwellings.

It is assumed that the business community of Mountain House will consist of individual stores, shopping centers, office complexes and light industry. The telecommunications needs for businesses is for multiple telephone lines, low and high speed data and special video services.

8.4.1 Overall Telecommunications System

Objective: To provide Mountain House with extensive telecommunication services to satisfy current and anticipated future needs for the next several decades.

Policies:

- a) The telecommunications transport system shall consist of a high speed digital fiber optics network. The hub of the network shall be centrally located. It shall be the communication center and focal point for all forms of telecommunications within the community and to and from the community.
- b) The backbone transmission facilities shall be constructed underground to connect designated substation in the individual subdivisions to the communications center.
- c) The underground backbone conduits shall be installed to accommodate fiber optics and/or other cables required to satisfy the needs of a given service area.

Implementation:

- a) Uninterrupted Power Supply. Uninterrupted Power Supply shall be provided via battery back-up for the telephone service and any other declared "critical" component (fire, security, life-support).
- b) Communications Facilities. Communications facilities shall provide for splicing of fiber optic cables and other requirements, as needed. Preliminary locations, which are subject to change as designs are refined, are in Neighborhood Centers, at the Town Center, and at Mountain House Business Park.
- c) Undergrounding. The backbone telecommunications facilities shall be constructed underground and follow the main routes of the other service utilities.

8.4.2 Residential Communications

The standard telecommunications service for residences is telephone service. In addition, automatic meter reading and video entertainment via standard CATV, video on demand and interactive video will be provided.

Typical examples of telecommunications services for homes are telecommuting and homeshopping. With an advanced telecommunications transport system, residential users will be able to communicate with banks, stores, local governments, schools, libraries and brokers; pay bills, vote, register complaints, and read meters remotely; attend community meetings and school board meetings; check on children's homework assignments; attain computer based information; and make investments without the use of a motor vehicle.

With these and other possibilities, it is apparent that these telecommunications services will have a major impact on traffic reduction and improved air quality, including reduced road maintenance and reduced use of fuels.

Objective: To provide all forms of modern telecommunications to enable the users to conduct many job and business functions from the home.

Objective: To provide adequate spare communication lines for expansion of services within the community as needed for the next 20 to 40 years.

Policy:

- a) Provisions shall be made that allow residents to take advantage of advanced communications technologies.

Implementation:

- a) Residential Equipment. As a condition of Tentative Map approval, each residential unit shall have an appropriate "in unit" hook-up terminal.

8.4.3 Business Communications

High speed facilities will be used to provide multi-line telephone service, low and high speed data and video conferencing for businesses within the community.

By providing for high-speed and broad-band transport, many business functions may be performed without the user having to commute to an office. For example, employees who utilize computer terminals may perform their work from home, and inquiries for information and business transactions may be performed by business and residential clients.

Objective: To provide high speed digital transport facilities for all forms of telecommunications that will serve businesses within the community.

Objective: To provide closed circuit TV for security, telemetering for alarms and remote power controls.

Policy:

- a) Businesses shall be able to take advantage of advanced communications technologies.

Implementation:

- a) Business Equipment. As a condition of Tentative Map approval, each business shall have an appropriate “in unit” hook up terminals and equipment.

8.4.4 Community Services

Community services include police, fire, MHCSD administration, schools, emergency services, parks and recreation, and infrastructure services. All of these organizations require basic and special telephone service. In addition, there is a need for low and high speed data transmission facilities, and for video and telemetry (low speed data) transport between many control and surveillance points.

Objective: To provide telecommunications transport facilities to satisfy the needs of MHCSD administrative and general services, schools, libraries and recreation facilities.

Objective: To provide fast response to emergencies (police, fire and major medical).

Policy:

- a) Communications systems of the latest technology shall be provided for use by all of the following:
 - Police;
 - Fire;
 - Emergency medical services;
 - Community administration;
 - Schools;
 - Parks and recreation; and
 - Public infrastructure including wastewater and water treatment plants.

8.5 SITING CRITERIA FOR PUBLIC FACILITIES

The following section addresses siting criteria for public utilities. Siting criteria for other public facilities are found in the relevant chapters of this report. Setback conditions for

schools near transmission corridors are discussed in Chapter Five: Education, Child Care and Library Services. Chapter Six: Public Health and Safety discusses safety requirements for electric and magnetic fields, fuel lines and pipelines.

Objective: To minimize adverse impacts of public utilities and facilities on the aesthetics of the new community.

Policies:

- a) Electrical and gas facilities shall be located and treated so as to have a minimum of visual and other impacts on the community, especially residential Neighborhoods and other sensitive land uses.
- b) Utilities (electrical distribution, telephone, cablevision, natural gas, and other) underground or conceal public facilities, including surface access boxes or manholes, shall be located such that they will have a minimum impact on maintenance and vehicular pedestrian traffic.
- c) Future development plans shall closely coordinate the placement of surface mounted public facilities with the architectural design of the community to minimize the adverse impact on aesthetics.
- d) Public safety and convenience shall be considered in the design and placement of public utilities and facilities.
- e) Whenever possible, electrical substation facilities shall be located in commercial or industrial areas. Electrical substations sites shall be buffered around its perimeter by tall fences and landscaping.
- f) Electrical transformers within residential Neighborhoods shall be in underground vaults. Where located in commercial and industrial areas and in the downtown area, transformers may be mounted above-ground provided they are adequately shielded by landscaping. All setbacks shall comply with County codes.

8.6 PHASING AND COSTS

8.6.1 Capital Facility Cost and Phasing

The capital costs associated with utility and communication facilities that are not provided by private service vendors are included in the cost estimates for individual roadways, educational facilities, and public safety buildings. Installation costs associated with gas and electricity distribution are paid by the utility companies or agencies and recouped through charges to the end user. Installation of the telecommunications network will also be paid by the company providing the service and, ultimately, will be charged to end users through hook-up fees.

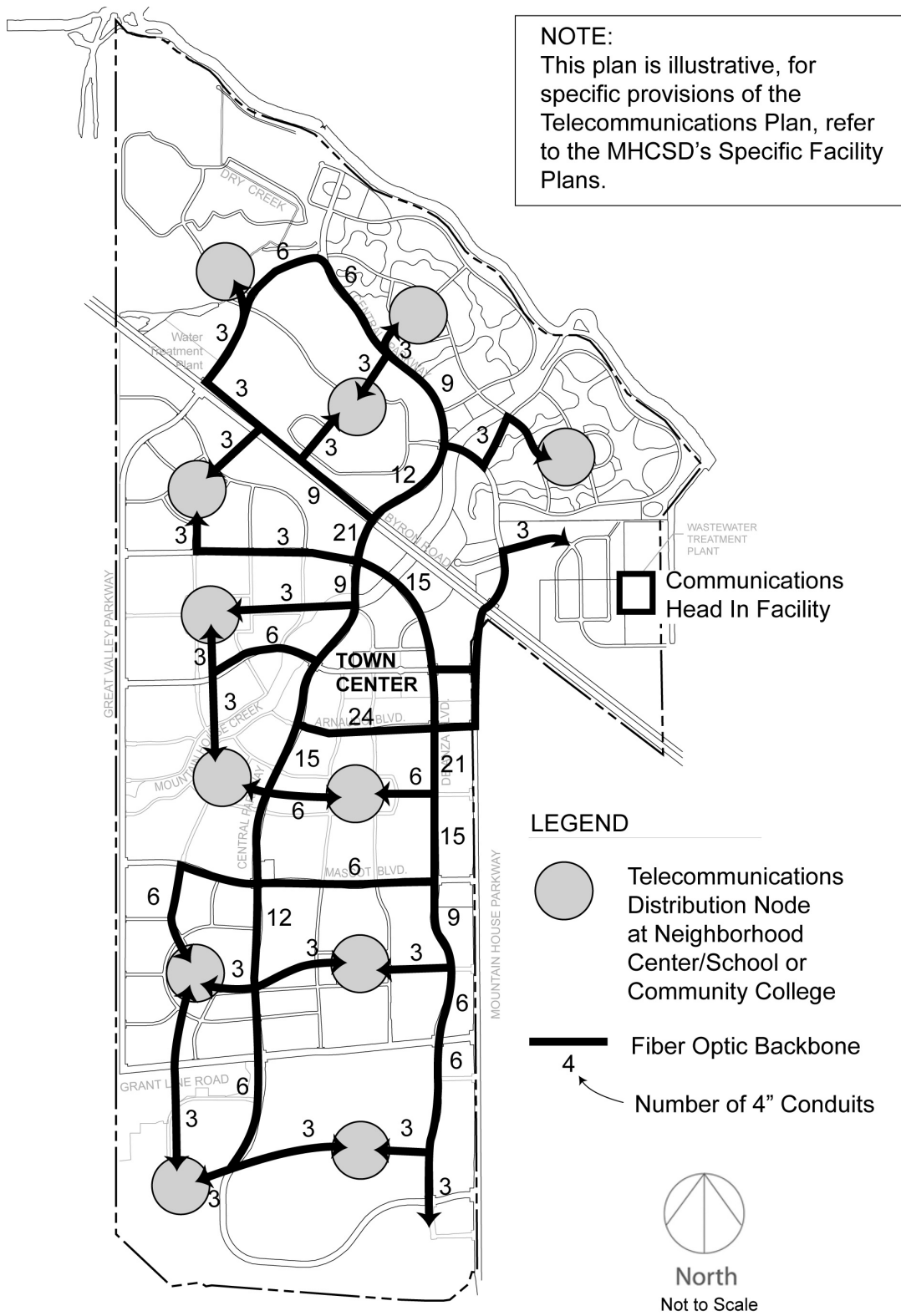


FIGURE 8.3 - TELECOMMUNICATIONS NETWORK DIAGRAM

Electrical power distribution will be installed on an as-needed basis as part of the on-site roadways. The only exceptions to this incremental construction will be the extension of the initial temporary service lines for the first Specific Plan and the siting and construction of the permanent community electrical substation. The initial service line extensions will require accelerated planning and construction to coincide with the start of residential development.

The detailed planning and design for the community electrical substation will begin immediately upon approval of the Master Plan. The planning and construction processes will take approximately five years, with completion in time for development of the second Specific Plan.

Natural gas will also be provided on an as-needed basis as part of the on-site roadways. However, the relocation of the existing gas line from Mountain House Parkway to Central Parkway will require detailed planning and phasing. The planning for this relocation will be included in a Natural Gas service program, the preparation of which will begin immediately after final approval of the Master Plan. It is anticipated that the relocation would take place in stages as development occurs.

Telecommunications will also be provided on an as-needed basis and will be developed along with on-site roadways.

8.6.2 Operations and Maintenance

Operations and maintenance of public utilities and communication facilities will be the responsibility of the service provider and will be paid by user charges levied on a monthly service bill. Therefore, these costs are not included in the fiscal analysis in the PFP.

8.7 SPECIFIC PLAN REQUIREMENTS

The following list is a compilation of all Specific Plan requirements contained in this chapter:

- a) Electrical Transmission Lines. Each Specific Plan shall specify land uses and development standards within and adjacent to transmission lines. The County shall submit the Specific Plans to PG&E for review and comment on any proposed development in the vicinity of electric power utilities that cross the project site.
- b) Natural Gas Lines. Each Specific Plan shall specify land uses and development standards adjacent to natural gas lines. The County shall submit the Specific Plans to PG&E for review and comment on any proposed development in the vicinity of natural gas utilities that cross the project site.

