

CHAPTER 7

Infrastructure

7.0 INTRODUCTION

7.1 POTABLE WATER: DISCUSSION AND OBSERVATIONS.

7.1.1 General. The study area has a city owned and operated water system mostly consisting of 12", 8", and 6" diameter water lines serving the area. The water supply comes from city owned deep wells that pump groundwater. The city system also includes storage tanks, wells, pumps and other facilities. These facilities are mainly located outside the study area. The city system provides a more than adequate water supply to the study area. Most of the pipelines in the study area are either of AC or PVC construction and are less than 50 years old. However, there are a few 4" lines and several lines, which are either steel or cast iron. Most of those were installed between 1920 and 1950. These lines are serviceable now, but will likely be replaced by the city as part of a maintenance program in the coming years.

7.1.2 Loop System. There is a primary loop around the study area consisting of modern 12" or 8" lines in 10th Ave, Douty Street, Tenth Street and 4th street. Additionally there is a 12" line along the entire length of Seventh Street connecting Douty and 10th Ave. This looped system should provide adequate fire flow for the area. The portion of the study area north of Seventh Street between Harris and Green Streets may need replacement of some of the 4" and steel or cast iron lines to satisfy Fire

Flow demands on an individual basis, if proposed structures are large or have high fire flow demands. Except for large structures, fire flow will most likely be adequate without upgrade, and in some areas, large structures will be fine without upgrade.

7.1.3 Water Lines in Alleys. Much of the study area has water lines in the alleys. Frequently those lines provide domestic service while larger lines in the streets provide primary fire flow. The lines in the alleys and streets are generally connected to each other. Sixth Street between Harris and Green, and Eighth Street between Harris and Brown, do not have water lines. Therefore, if a project is proposed that occupies an entire block and abandons the alleys then a rerouting of water lines may be required.

7.1.4 Fire Hydrants. Fire hydrants are adequately placed throughout the district. However, additional hydrants may be required if a building sprinkler system is installed.

7.1.5 Summary. The existing water system is adequate for the contemplated redevelopment. The preliminary assessment of the water system involved a general review of the water system for its general ability to provide adequate water quantities to the study area. The assessment did not include review of water pressures, specific fire flow demands, building water demands and other factors for specific locations or uses.

7.2 SANITARY SEWER: DISCUSSION AND OBSERVATIONS

7.2.1 General. All sewer lines in the study area are gravity sewer lines. The entire area (except for Sixth Street between Green and 10th Ave) drains into the Irwin Street trunk line. From there it drains south to the City Waste Water treatment Plant on Houston Ave.

7.2.2 Capacity. There appear to be no significant capacity issues within the study area. However, there may eventually be some capacity issues with the Irwin Street trunk main south of the study area. There are sections of that line in poor condition, with adverse grade and inadequate size. The city reports that it intends to upgrade this line sometime in the future, if and when needed. That section of line is near capacity. A typical conservative city staff review of capacity for a new use with a large waste discharge would show concern about being able to provide service without upgrading the sanitary sewer system. The current City Assistant Public Works Director is unconcerned. His office is monitoring that line's performance continuously and providing whatever maintenance is necessary to maximize capacity. He states that if the line ever failed to adequately function, the city would do what is necessary to upgrade it so as not to inhibit redevelopment. Furthermore, his office has studied the matter and believes the amount of redevelopment possible in the study area can be accommodated without further expansion of the subject trunk line.

7.3 STORM DRAINAGE: DISCUSSION AND OBSERVATIONS

7.3.1 General. Storm drainage for the study area is by surface flow into inlets and gravity pipes, which drain into the Brown Street Basin or the East Fifth Street basin. The East Fifth Street basin accepts water from a lift station at the intersection of Sixth Street and the Railroad via a pipeline in Fifth Street. The city has made a number of improvements to the storm drainage in the last 20 years, which have solved most of the previous flooding problems.

7.3.2 Flooding Potential. The only current area subject to flooding is near the intersection of Visalia and East Streets. Current city capital Improvement budgets allocate a budget to fix that problem. For the

purposes of this study, it is assumed it will be fixed during fiscal year 2012-13.

7.3.3 Impact of New Development. The study area will create an increased amount of storm water runoff as the area redevelops adding more roofs and paved parking lots. However, the increase will not be as great as would be if virgin land were instead converted to urban uses. Significant paved areas and roofs already exist in areas, which would merely be replaced with similar amounts of runoff. Complete area redevelopment is estimated to increase run off by up to 15% to 20%. This increase will have little effect during normal rain events. Considerable development, or redevelopment, can occur before any reevaluation of possible flooding, and solutions to that flooding if any, might occur.

7.4 DRY UTILITIES

7.4.1 Key Issues. Quad Knopf has conducted a preliminary study of the project area by receiving utility plat maps from Southern California Edison (SCE), AT&T, Comcast, and Southern California Gas, showing existing aerial and buried facilities within the limits of the project. Coordination and notification would be required with each utility to support future upgrades to their infrastructure to accommodate new developments, as required.

The City may want to consider undergrounding overhead utilities within three (3) alleys to become more pedestrian friendly in nature. The City would have the option of declaring an Underground District and utilizing Rule 20A funds, if available, for SCE's facilities.

Undergrounding may also take place without declaring Underground Districts by utilizing a Rule 20C option, which the City would be responsible for paying the entire costs of the underground.

Should it be determined that overhead relocations are required within the alleys to support the project, the City may wish to approach Southern California Edison and seek an approval for a Rule 20B option. This option would allow SCE to credit the underground project for the costs of the overhead relocations, and the City pays the difference, if approved.

If relocations are required on a City project to support street improvements, then AT&T and Comcast typically relocate at their expense.

7.4.2 Phase 1. Currently, the area within Phase 1 has both residential and commercial development, and is served by Southern California Edison (SCE), AT&T, Southern California Gas Company, and Comcast. The suggested development options within the Precise Plan may require utility companies to upgrade their existing infrastructure to support the increase in housing, should a senior housing development and mixed use development be constructed. The utilities will upgrade facilities on an as-needed basis and upon demand.

Phase 1 has a mixture of aerial and buried facilities within the alleys and along the main streets. Rerouting of aerial facilities within the alleys that could have a high concentration of pedestrian traffic may be an option and would need to be approved by the respective utility company. Undergrounding within these areas is also an option, should the City deem it necessary, and would require approval of the respective utility company.

In addition to undergrounding and relocation of existing aerial facilities, existing streetlights can be retrofitted to decorative lights and pedestrian lighting to make the area more aesthetically pleasing. The cost for decorative lights would be in the range of \$3,500 to \$4,500 per light, depending upon the type selected. The City's downtown core currently installs double and single "acorn" light standards on white fluted poles. Most lights are available in varying ranges of wattage and lumens to provide the ambiance this City is seeking.

Suggested locations of undergrounding within Phase 1 would be along Visalia Street and China Alley. The estimated costs to underground SCE facilities are typically within the range of \$400.00 to \$500.00 per foot, depending upon the number of SCE circuits on the poles. If the poles have high transmission lines, this cost would increase significantly. High transmission lines typically remain on the poles due to the cost, and the distribution lines undergrounded.

AT&T and Comcast are also on the poles and their costs to underground could range between \$150 to \$250 per foot, depending upon the size of the cable and the types of services provided, such as T1's, high speed internet, business class cable, etc.

AT&T also has an existing underground system with manholes along the south side of Visalia Street that would need to be protected in place, and runs through the entire project limits.

The costs to upgrade the infrastructure to accommodate the increase in demand would be on a case-by-case basis, and depending upon the increase in electrical and gas loads, the allowances could offset any costs.

AT&T and Comcast typically do not charge to upgrade facilities due to demand within an area they are currently serving. However, this too would need to be addressed on a case-by-case basis, and analyzed at the time the City is ready to move forward with the renovations, and new construction.

7.4.3 Phase 2. The area within Phase 2 has some residential, but is mostly comprised of commercial development. As with Phase 1, the suggested development options within the Precise Plan may require that utilities upgrade their existing infrastructure to support the increase in mixed use development, commercial, and hospitality core options. The utilities will upgrade facilities on an as-needed basis and upon demand.

Undergrounding would be recommended in the alley running north and south, between Brown and Green Street, south of 9th Street. The same rules and cost estimates would apply within Phase 2 and stated in the above report for Phase 1.

The areas requiring utility upgrades would be solely dependent upon the City's final decision as to what type of development they choose, and depending on the location of a mixed use area with hotel. Phase 2 can also be upgraded to decorative street lights and pedestrian lighting, with the same options available within Phase 1.