SECTION 4.4
SUB-AREA MASTER PLAN DEVELOPMENT

4.4.1 PURPOSE

The purpose of this section is to identify specific information to be included in developer sub-area master plans (SAMPs). This section will help develop uniformity and consistency in development projects and will be used to help the District assess whether they are or will become deficient in transmission, storage, pumping or treatment capacity. SAMPS are typically required on tract map subdivisions, complex industrial/commercial developments, and other unique high water demands developments.

The Engineer of Work shall use the format and information presented in this section as a basis for SAMP development.

If the Engineer of Work desires to deviate from the criteria presented in this section only the Engineer can approve the change.

4.4.2 GENERAL

It is the responsibility of the user of these documents to make reference to and/or utilize industry standards not otherwise directly referenced within this document. The Engineer of Work may not deviate from the criteria presented in this section without prior written approval of the District Engineer.

A. The District shall approve the Engineer of Work to perform the Sub Area Master Plan (SAMP).

B. The District shall determine the necessity for a SAMP for water, sewer and/or recycled water.

4.4.3 UNITS OF MEASUREMENT

Units of measurement to be used in design calculations are listed in Appendix B.

4.4.4 SAMP FORMAT

The following outlines the information required in the chapters and appendices for a SAMP and the format of the information (description, table, figure, appendix).

1. Executive Summary
2. Chapter 1: Introduction
    a. Introduction-description
    b. Project Overview-description
    c. Vicinity Map-figure
    d. Development Information
        i. Total gross acreage of development-description

ii. Dwelling unit density obtained from Section 4.1 or actual dwelling unit density from developer for each unit/area
iii. Land use description (ie. Single family)-table
iv. Unit/areas grouped by pressure zone-table
v. Gross acres for each unit/area (Note that sum of gross acres for each unit/area must total gross acreage of development and include a category that covers street/ROW)-table
vi. Total dwelling units and EDUs for each unit/area-table
vii. Figure of development showing all unit/areas geographically-figure

e. Pressure Zones

i. Water-description
ii. Recycled water-description

f. Drainage Basin (Sewer)

i. Sewer-description

3. Chapter 2: Planning Criteria

a. Planning Criteria-Reference source of data (eg. District Master Plan)-description

b. Water Planning Criteria

i. Residential dwelling unit density and unit water demand factors used for development-Identify from list in Section 4.1
ii. Non-residential water demand factors used for development-Identify from list in Section 4.1
iii. Peaking factors used for development See Section 4.1, put peaking factor graph(s) in SAMP-figure(s)
iv. Fire flow rate and duration required from governing fire department-description, fire letter-appendix
v. Static and dynamic pressure criteria-Obtain from Section 4.1
vi. Velocity criteria-Obtain from Section 4.1
vii. Pump station criteria-Obtain from Section 4.1. Discuss whether off and semi-peak pumping is required-description
viii. Operational storage reservoir criteria-Obtain from Section 4.1

c. Sewer Planning Criteria

i. Residential and non-residential sewer flow factors-Identify from list in Section 4.2
ii. Peaking factors used for development-See Section 4.2. Put peaking factor graph(s) in SAMP-figure(s)
iii. Depth to diameter ratios-Obtain from Section 4.2
iv. Slope and velocity criteria-Obtain from Section 4.2
v. Sewer lift station criteria-Obtain from Section 4.2
vi. Wetwell volume-Obtain from Section 4.2
vii. Force main velocity criteria-Obtain from Section 4.2

4. Chapter 3: Projected Demand and Flow

a. Water Demand-Note that if actual dwelling unit densities are used from developer, then unit densities in Table 4-1-1 need to be interpolated-table

b. Sewer Flow-table

c. Recycled Water Demand

i. Permanent

- Potential recycled water use areas-figure
- Projected recycled water demand-table

ii. Temporary (grading, dust control, etc. if allowed by District)-description

5. Chapter 4: Existing Facilities

a. Existing Water Facilities

i. Treatment and Supply-description
ii. Transmission and distribution system and pressure zones-show existing pipelines as dashed and pressure zones different color-description and figure
iii. Storage reservoirs-description, table, and figure
iv. Pump stations-description and figure

b. Existing Sewer Facilities

i. Treatment-description
ii. Collection system-show existing pipelines as dashed-description and figure
iii. Sewer lift stations and force mains-description and figure

c. Existing Recycled Water Facilities

i. Treatment and Supply-description
ii. Transmission and distribution system and pressure zones-show existing pipelines as dashed and pressure zones different color-description and figure
iii. Storage reservoirs-description, table, and figure
iv. Pump stations-description and figure

6. Chapter 5: Recommended Water Facilities

a. Recommended Onsite and Offsite Water System-description and figure

i. Transmission and Distribution Systems-description and figure
ii. Pump Station Capacity Analysis-description
iii. Storage Capacity Analysis-description
iv. Capital Improvement Program Facilities-description and figure

b. Onsite (and offsite if not covered by District Master Plan) Water System Analysis-description

i. Computer Model-description
ii. Computer Modeling Summary-appendix

7. Chapter 6: Recommended Sewer Facilities

    a. Recommended Onsite and Offsite Sewer System-description and figure

        i. Distribution System-description and figure
        ii. Lift Station, Wet well, and Force Main Capacity Analysis-description
        iii. Treatment Capacity Analysis-description
        iv. Capital Improvement Program Facilities-description and figure

    b. Onsite (and offsite if not covered by District Master Plan) Sewer System Analysis-description

        i. Computer Model-description
        ii. Computer Modeling Summary-appendix

8. Chapter 7: Recommended Recycled Water Facilities

    a. Recommended Onsite and Offsite Recycled Water System-description and figure

        i. Transmission and Distribution Systems-description and figure
        ii. Pump Station Capacity Analysis-description
        iii. Storage Capacity Analysis-description
        iv. Capital Improvement Program Facilities-description and figure

    b. Onsite (and offsite if not covered by District Master Plan) Recycled Water System Analysis-description

        i. Computer Model-description
        ii. Computer Modeling Summary-appendix

9. Chapter 8: Project Phasing

    a. Phasing-Development Phase, Units, Year-description, table, and figure

    b. Phasing-Water Pipelines by Phase-figure

    c. Phasing-Sewer Pipelines by Phase-figure

    d. Phasing-Recycled Water Pipelines by Phase-figure

10. Chapter 9: Cost and Financing (at District's option)

    a. Cost and Financing-description

    b. Capital Improvement Program-description
    c. CIP Pipelines-Water, sewer, and recycled water CIPs shall have one table each with the following information:

        - CIP number-table
        - Project where pipeline will be constructed-table
        - Project phase-table
        - Street name-table

- Pipeline size-table
- Approximate pipeline length, LF-table
- Unit cost, $/LF-table
- Cost of each CIP-table
- Total cost of all CIP pipelines-table
- Pressure zone-table

d. Development Pipelines-Water, sewer, and recycled water shall have one table each with the following information:

- Unit/area-table
- Estimated water meters-table
- Size of pipelines in unit/area-table
- Approximate pipeline length, LF-table
- Unit cost, $/LF-table
- Cost of pipelines in each unit/area-table
- Total cost of pipelines-table
- Pressure zone-table

11. Bibliography-Include all referenced material

12. Appendices

4.4.5 SAMP REVIEW PROCESS

Water and/or Sewer SAMPs

A. A water and/or sewer SAMP for the proposed development shall be submitted to the District for review prior to improvement plan preparation as determined by the District. Typically, SAMP preparation should occur prior to filing a tentative map for the development so that impacts related to new reservoirs, pump stations and/or pipelines in easements can be identified. A written request for the District's "facility commitment" form shall be sent with the first SAMP submittal.

B. Correction comments will be indicated on the SAMP and returned to the Engineer of Work. Depending on the complexity of the development, more than one submittal may be necessary.

C. The SAMP will be reviewed by the District, taking into account the following:
   1. Existing pipeline locations, size and capacity
   2. The proposed points of connection and system
   3. The estimated water demands and/or sewer flow calculated
   4. Governing fire department's fire flow requirements (flow rate, duration, hydrant spacing, etc)
   5. District's Master Plan
   6. District planning criteria (Sections 4.1 through 4.2)
   7. Water quality maintenance
   8. Size of system and number of lots to be served

4.4.6 REFERENCE

Should the reader have any suggestions or questions concerning the material in this section, please contact the District Engineer.

The publications listed below form a part of this section to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said publications unless otherwise called for. The following list of publications, as directly referenced within the body of this document, has been provided for the user's convenience. It is the responsibility of the user of these documents to make reference to and/or utilize industry standards not otherwise directly referenced within this document.

1. Valley Center Municipal Water District Standards:

    A. Design Guideline:

        i. Section 4.1, Water Planning
        ii. Section 4.2, Sewer Planning

END OF SECTION