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Filed:	March 25, 1999 (HMB) November 10, 1999 (SMC)
Substantial Issue:	July 15, 1999 (HMB) February 18, 2000 (SMC)
Staff:	SLB-SF
Staff Report:	July 25, 2003
Hearing Date:	August 6, 2003

APPEAL STAFF REPORT
DE NOVO REVIEW

APPEAL NO.: **A-1-HMB-99-20**
A-2-SMC-99-63

APPLICANT: **Coastside County Water District**

LOCAL GOVERNMENT: **City of Half Moon Bay (A-1-HMB-99-20)**
San Mateo County (A-2-SMC-99-63)

PROJECT LOCATION: In the City of Half Moon Bay, along Highway 1 in the vicinity of Bev Cunha's Country Road (Sewer Plant Road) and Wave Avenue (A-1-HMB-99-20) and in unincorporated El Granada within San Mateo County from San Clemente Road south along Columbus Street, Moro Avenue, Ventura Avenue, and terminating at Santiago Avenue (A-2-SMC-99-63).

PROJECT DESCRIPTION: Replacement of two sections of an existing 10-inch diameter water pipeline with a new 16-inch diameter pipeline as the first phase of the planned replacement of the entire 3.5-mile long pipeline connecting the Coastside County Water District's Nune's Treatment Plant (Crystal Springs Project) in Half Moon Bay to its Denniston Treatment Plant in El Granada, San Mateo County (**Exhibits 1 & 2**).

APPELLANTS:

A-1-HMB-99-20:	Carol Cupp
A-2-SMC-99-63:	Coastal Commissioners Mike Reilly and Christina Desser; Ric Lohman

EXECUTIVE SUMMARY

The proposed development is for replacement of two sections of the existing, 54-year old, 10-inch, welded steel El Granada water transmission pipeline with a new, 16-inch, ductile iron water pipeline. The portion of the project within the City consists of 2,200 lineal feet, which would be constructed on the east side of the Frontage Road from the south side of Sewer Plant Road to approximately 200 feet north of Wave Avenue in Half Moon Bay. The second portion would be constructed in the unincorporated area of El Granada from San Clemente Road south along Columbus Street, Moro Avenue, and Ventura Avenue, and terminating at Santiago Avenue within San Mateo County. The existing, 10-inch transmission pipeline runs from the Carter Hill West pipeline and the Nunes Water Treatment Plant in Half Moon Bay to the Denniston treatment plant in El Granada and supplies water for residential, commercial, agricultural, and industrial uses and fire suppression within a large portion of Coastside County Water District ("CCWD") service area (**Exhibit 3**). The proposed development is the first phase of a planned, larger project which would eventually replace the entire length of the approximately 3.5 mile El Granada pipeline, running from the Carter Hill West pipeline in Half Moon Bay to the Denniston Storage Tank near the Denniston Water Treatment Plant in El Granada.

At issue under the public works policies of the Half Moon Bay and San Mateo County LCPs is whether the capacity of new, larger pipeline (1) would exceed that needed to serve projected water demand at LCP buildout, and (2) is in phase with the existing capacity of other regional infrastructure facilities. Although the actual operating capacities of the existing and proposed pipelines are effected by numerous factors such as friction, head losses due to bends and valves, and pumping, for purposes of a simple comparison, the theoretical capacity of a 16-inch pipeline is roughly 3.4 times that of a 10-inch pipeline. CCWD has provided extensive analysis and factual information supporting its proposed sizing of the transmission line. The City of Half Moon Bay opposes the project on the grounds that the proposed pipeline is oversized and would therefore be growth inducing. The City advocates a smaller, 12-inch diameter line as an alternative.

After reviewing the various technical reports and studies provided by CCWD and the substantial public comments concerning the project and meeting with both staff and elected officials from the water district and each of the effected local governments, Commission staff determined that the information contained in the permit applications did not fully justify the proposed sizing of the replacement pipeline. In particular, reliance on outdated LCP buildout figures and theoretical rather than actual use data resulted in overstated demand projections. Commission staff therefore conducted an independent analysis of the probable future demand for water service in the area served by the El Granada pipeline, taking into account updated population data from the 2000 census, reductions to the allowable rate of growth in both the City and County under anticipated amendments to the current growth control ordinances, and ongoing LCP updates in both jurisdictions. Staff also employed a 20-year planning horizon for this analysis rather than the maximum potential development under full LCP buildout consistent with the requirements in both the City and County LCPs for the phased development and expansion of public works facilities.

Based on this analysis, the staff has determined that while the applicant's demand projections are overstated, the capacity of the proposed replacement pipeline would not exceed demand for

water service in 2020. However, staff recognizes that a substantial margin of error exists in this analysis due to necessary assumptions used to project growth, demand by user type, and to determine the operating capacity of the proposed pipeline as part of a complex water supply and distribution system.

Road access to the Mid-Coast region of San Mateo County including the City of Half Moon Bay and the portion of the California coast within this region is limited to Highways 1 and 92. The current volume of traffic on these highways exceeds their capacity and the regional transportation studies conclude that even with substantial investment in transit and highway improvements, congestion will only get worse in the future. As a result, the level of service on the highways at numerous bottleneck sections is currently and will in the future continue to be rated as LOS F. The most recent Countywide Transportation Plan predicts far greater congestion on these two corridors by 2010, stating "in 2010 the most congested corridor [in San Mateo County] will be Western 92." This report projects increases in the traffic volumes of 197 and 218 percent on Highways 1 and 92, respectively, in the Mid-Coast region, and attributes these increases to "the anticipated levels of new development on the Coastside and the continued pattern of Coastsiders out-commuting to jobs in San Francisco and on the Bayside." As the Commission has previously found in its actions on the Pacific Ridge and Beachwood Subdivision projects in Half Moon Bay, Highways 1 and 92 in the Mid-Coast Region are not adequate to serve either the current or the expected future demands of development. As such, the proposed expansion of CCWD water service capacity would not be in phase with either the existing or probable future capacity of the region's highways.

Nevertheless, because the land use plans and zoning currently in effect provide for potential continued growth at a level that could generate additional demand for water service and because the application of certified LCP policies and standards, rather than the size of the pipe, will ultimately determine the level of development allowable given the existing and probable future capacity of the region's highways, staff recommends approval of the proposed project.

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EXHIBITS

1. Vicinity Map
2. Regional Map
3. CCWD Service Area Map & Schematic Diagram
4. El Granada Pipeline Service Area Map, Project Area Map & Schematic Diagram
5. Table 9.1 from City of Half Moon Bay LUP
6. Correspondence from Jack Liebster, Planning Director, City of Half Moon Bay, 7/24/2003
7. Email correspondence from CCWD District Engineer James Teter 7/15/03

1.0 LOCAL GOVERNMENT ACTION

City of Half Moon Bay

On January 28, 1999, the City of Half Moon Bay Planning Commission conditionally approved Coastal Development Permit PDP-44-98 for the replacement of 2,200 lineal feet of the existing 10-inch welded steel water line with a 16-inch ductile iron water line to be constructed on the east side of the Frontage Road from the south side of Sewer Plant Road to approximately 200 feet north of Wave Avenue. This first phase of the El Granada Pipeline Replacement Project is called the Casa del Mar Pipeline Replacement Project, named after the Casa del Mar subdivision adjacent to it.

The City's approval was appealed to the Half Moon Bay City Council, on February 7, 1999 by appellant Carol Cupp. On March 2, 1999, the City Council heard the appeal and voted on it, but failed, by a 2-2 vote, to reach a decision. The City's March 15, 1999 Notice of Final Action therefore transmitted the notice of the Planning Commission's January 28, 1999 conditional approval of the project as the City's final action notice. A March 9, 1999 determination by the City Attorney that the Planning Commission's action did in fact constitute the City's final action on the project accompanied the March 15 Notice of Final Action. The appellant then filed the appeal to the Commission in a timely manner, on March 25, 1999, within the ten-working day appeal period.

San Mateo County

On May 26, 1999, the County of San Mateo Planning Commission on a 2 to 1 vote denied Coastal Development Permit PLN 1999-00192 for the proposed CCWD pipeline project in El Granada. The project consists of replacement of 3,200 lineal feet of an existing 10-inch welded steel water line with a 16-inch ductile iron water line to be constructed in the unincorporated area of El Granada, from San Clemente Road south along Columbus Street, Moro Avenue, and Ventura Avenue, and terminating at Santiago Avenue.

The Planning Commission denial was appealed to the Board of Supervisors by CCWD, and was brought before the Board on August 3, 1999. At that hearing, the Board decided to require an independent engineering review of the sizing and other calculations for the project performed prior to a decision. The analysis, prepared by the firm of Brian Kangas Foulk (BKF) was presented to the Board, which then approved the CDP for the project at its October 19, 1999 hearing.

The County's Notice of Final Action was received by the Commission on October 27, 1999. The appellants then filed appeals to the Commission in a timely manner, on November 10, 1999, within the ten-working day appeal period.

2.0 APPEAL PROCESS

2.1 APPEAL JURISDICTION

Coastal Act Section 30603 provides that action taken by a local government on a coastal development permit application may be appealed to the Coastal Commission for certain kinds of developments located within certain geographic appeal areas, including those located between

the sea and the first public road paralleling the sea or within three hundred feet of the mean high tide line or inland extent of any beach or top of the seaward face of a coastal bluff, those located in a sensitive coastal resource area or those located within 100 feet of any wetland, estuary, or stream. Furthermore, permits may be appealed for either developments approved by counties which are not designated the principal permitted use under the county's certified LCP or developments constituting a major public works or a major energy facility whether approved or denied by a city or county.

The two portions of the pipeline (the 2,200 lineal feet and 3,200 lineal feet) now before the Commission as well as the entire 3.5 mile-long project is appealable to the Commission as a major public works project because it is a public transmission facility for water with a cost greater than $100,000. The portion of the water pipeline that is the subject of the appeal would cost more than $300,000.

2.2 FILING OF APPEAL

City of Half Moon Bay

Appeal to the Commission was timely filed on March 25, 1999, within ten working days of receipt by the Commission of notice of final local action on March 15, 1999. On March 26, the Commission sent notice of the appeal to the CCWD and the City of Half Moon Bay. Pursuant to Section 30621 of the Coastal Act, an appeal hearing must be set within 49 days from the date an appeal of a locally issued coastal development permit is filed. In accordance with the California Code of Regulations, on March 26, 1999 staff requested all relevant documents and materials regarding the subject permit from the City, to enable staff to analyze the appeal and prepare a recommendation as to whether a substantial issue exists. Consistent with Section 13112 of the California Code of Regulations, since the Commission did not timely receive all requested documents and materials, at the April 16, 1999 meeting the Commission opened and continued the hearing. Subsequently, all of the remaining file materials were transmitted to the Commission.

Section 30625(b) of the Coastal Act requires the Commission to hear an appeal unless the Commission determines that no substantial issue is raised by the appeal. Hearing of the question of substantial issue, originally scheduled for June 1999, was postponed at the applicant's request to the July 1999 Commission meeting. At its July 1999 meeting, the Commission found that the proposed development raised a substantial issue of conformity with the policies of the certified LCP.

The applicant subsequently requested postponement of the Commission's de novo review of the project, pending review and reconsideration of the project by the applicant. In 2002, CCWD requested that the appeal proceed, and it was agendized for the December 2002 meeting; however, at the applicant's request the hearing schedule on the appeal was postponed pending additional information. In the interim, CCWD has provided updated water usage figures for its service area and additional analysis of the capacity of the replacement project.

San Mateo County

Appeal to the Commission was timely filed on November 10, 1999, within ten working days of receipt by the Commission of notice of final local action on October 27, 1999. On November 12,

1999, the Commission sent notice of the appeal to the CCWD and the City of Half Moon Bay. Pursuant to Section 30621 of the Coastal Act, an appeal hearing must be set within 49 days from the date an appeal of a locally issued coastal development permit is filed. In accordance with the California Code of Regulations, on November 12, 1999 staff requested all relevant documents and materials regarding the subject permit from the City, to enable staff to analyze the appeal and prepare a recommendation as to whether a substantial issue exists. Consistent with Section 13112 of the California Code of Regulations, since the Commission did not timely receive all requested documents and materials, at the December 10, 1999 meeting, the Commission opened and continued the hearing. Subsequently, all of the remaining file materials were transmitted to the Commission.

Section 30625(b) of the Coastal Act requires the Commission to hear an appeal unless the Commission determines that no substantial issue is raised by the appeal. At its February 2000 meeting, the Commission found that the proposed development raised a substantial issue of conformity with the policies of the certified LCP.

The applicant subsequently requested postponement of the Commission's de novo review of the project, pending review and reconsideration of the project by the applicant. In 2002, CCWD requested that the appeal proceed, and it was agendized for the December 2002 meeting; however, at the applicant's request the hearing schedule on the appeal was postponed pending additional information. In the interim, CCWD has provided updated water usage figures for its service area and additional analysis of the capacity of the replacement project.

2.3 STANDARD OF REVIEW

City of Half Moon Bay

The proposed development is located in the Coastal Zone within the City of Half Moon Bay. Section 30604(b) states that after certification of a local coastal program, a coastal development permit shall be issued if the issuing agency or the Commission on appeal finds that the proposed development is in conformity with the certified local coastal program. The standard of review for this project is therefore the City's certified LCP. Because a portion of the project is located between the sea and the first public road, pursuant to Section 30604(c) of the Coastal Act, the standard of review also includes the public access and recreation policies of the Coastal Act (Sections 30210 through 30224).

Pursuant to Policy 1-1 of the City's certified Land Use Plan (LUP), the City has adopted the coastal planning and management policies of the Coastal Act (Sections 30210 through 30264) as the guiding him policies of the LUP. Policy 1-4 of the City's LUP states that prior to issuance of any development permit, a finding shall be made that the development meets the standards set forth in all applicable LUP policies. Thus, the LUP incorporates the Chapter 3 policies of the Coastal Act and these policies are included in the standard of review for the proposed project.

San Mateo County

The proposed development is located in the Coastal Zone within San Mateo County. Section 30604(b) states that after certification of a local coastal program, a coastal development permit shall be issued if the issuing agency or the Commission on appeal finds that the proposed development is in conformity with the certified local coastal program. The standard of review

for this project is therefore the County's certified LCP. Because a portion of the project is located between the sea and the first public road, pursuant to Section 30604(c) of the Coastal Act, the standard of review also includes the public access and recreation policies of the Coastal Act (Sections 30210 through 30224).

Pursuant to the County's certified Land Use Plan (LUP), the County has adopted policies consistent with the coastal planning and management policies of Chapter 3 of the Coastal Act as the guiding policies of the LUP. Thus, the LUP incorporates the Chapter 3 policies of the Coastal Act and these policies are included in the standard of review for the proposed project.

3.0 STAFF RECOMMENDATION

3.1 Motion and Resolution – City of Half Moon Bay

The staff recommends conditional approval of Coastal Development Permit Application No. A-1-HMB-99-20.

Motion: *I move that the Commission approve Coastal Development Permit Application No. A-1-HMB-99-20, subject to the conditions specified below.*

Staff Recommendation of Approval

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution

The Coastal Commission hereby **grants** permit No. A-1-HMB-99-20, subject to the conditions below, for the proposed development on the grounds that (1) the development is in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures other than those specified in this permit that would substantially lessen any significant adverse impact that the activity may have on the environment.

3.2 Motion and Resolution – San Mateo County

The staff recommends conditional approval of Coastal Development Permit Application No. A-2-SMC-99-63.

Motion: *I move that the Commission approve Coastal Development Permit Application No. A-2-SMC-99-63, subject to the conditions specified below.*

Staff Recommendation of Approval

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution

The Coastal Commission hereby **grants** permit No. A-2-SMC-99-63, subject to the conditions below, for the proposed development on the grounds that (1) the development is in conformity

with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures other than those specified in this permit that would substantially lessen any significant adverse impact that the activity may have on the environment.

3.3 Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

3.4 Special Conditions

All previous conditions of approval imposed on the project by the City of Half Moon Bay and San Mateo County pursuant to an authority other than the California Coastal Act remain in effect. To the extent such City of Half Moon Bay and San Mateo County conditions conflict with the Coastal Commission's conditions for Coastal Development Permits A-1-HMB-99-20 and A-2-SMC-99-63, the applicant will be responsible for obtaining permit amendments to resolve any such conflicts.

1. Erosion Control

   A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall provide, for the review and approval of the Executive Director, an Erosion Control Plan to reduce erosion and, to the maximum extent practicable, retain sediment on-site during and after construction. The plan shall be designed to minimize the potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plan shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. The Erosion Control Plan shall incorporate the Best Management Practices (BMPs) specified below.

1. **Erosion & Sediment Source Control**

   a. Sequence construction to install **sediment-capturing devices** first, followed by runoff control measures and runoff conveyances. Land clearing activities should only commence after the minimization and capture elements are in place.

   b. Time the clearing and grading activities to avoid the rainy season (October 15 through April 30).

   c. Minimize the area of bare soil exposed at one time (phased grading).

   d. Clear only areas essential for construction.

   e. Within five days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative BMPs, such as mulching or vegetative erosion control methods such as seeding. Vegetative erosion control shall be established within two weeks of seeding/planting.

   f. Construction entrances should be stabilized immediately after grading and frequently maintained to prevent erosion and control dust.

   g. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.

   h. Soil and/or other construction-related material stockpiled on site shall be placed a minimum of 200 feet from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.

   i. Excess fill shall not be disposed of in the Coastal Zone unless authorized through either an amendment to this coastal development permit or a new coastal development permit.

2. **Runoff Control and Conveyance**

   a. Intercept runoff above disturbed slopes and convey it to a permanent channel or stormdrains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.

   b. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.

3. **Sediment-Capturing Devices**

   a. Install stormdrain inlet protection that traps sediment before it enters the storm sewer system. This barrier could consist of filter fabric, straw bales, gravel, or sand bags.

   b. Install sediment traps/basins at outlets of diversions, channels, slope drains, or other runoff conveyances that discharge sediment-laden water. Sediment traps/basins shall be cleaned out when 50% full (by volume).

   c. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acre or less per 100 feet of fence. Silt fences should be inspected regularly and sediment removed

when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.

4. **Chemical Control**

   a. Store, handle, apply, and dispose of pesticides, petroleum products, and other construction materials properly.

   b. Establish fuel and vehicle maintenance staging areas located away from all drainage courses, and design these areas to control runoff.

   c. Develop and implement spill prevention and control measures.

   d. Provide sanitary facilities for construction workers.

   e. Maintain and wash equipment and machinery in confined areas specifically designed to control runoff. Thinners or solvents should not be discharged into sanitary or storm sewer systems. Washout from concrete trucks should be disposed of at a location not subject to runoff and more than 50 feet away from a stormdrain, open ditch or surface water.

   f. Provide adequate disposal facilities for solid waste, including excess asphalt, produced during construction.

   g. Develop and implement nutrient management measures. Properly time applications, and work fertilizers and liming materials into the soil to depths of 4 to 6 inches. Reduce the amount of nutrients applied by conducting soil tests to determine site nutrient needs.

B. The applicant shall undertake development in accordance with the final erosion control plans approved by the Executive Director. No proposed changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required. The applicant shall be fully responsible for advising construction personnel of the requirements of the Erosion Control Plan.

C. Erosion Control Maintenance. All of the above described erosion control measures shall be maintained pursuant to the following requirements.

1. All BMP traps/separators and/or filters shall be cleaned at minimum prior to the onset of the storm season and no later than October 15th each year.
2. Sediment traps/basins shall be cleaned out at any time when 50% full (by volume).
3. Sediment shall be removed from silt fences at any time when it reaches 1/3 the fence height.
4. All pollutants contained in BMP devices shall be contained and disposed of in an appropriate manner.
5. Non-routine maintenance activities that are expensive but infrequent, such as detention basin dredging, shall be performed on as needed based on the results of the monitoring inspections described above.

D. **Erosion Control Monitoring.** Throughout the construction period, the applicants shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved Erosion Control Plan. Authorized representatives of the Coastal Commission and/or the City of Half Moon Bay and San Mateo County shall be allowed to enter the property as needed to conduct on-site inspections throughout the construction period.

2. Archaeology

A. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit an archaeological mitigation and monitoring plan prepared by a qualified subsurface archaeologist, for review and approval of the Executive Director. The plan shall address the requirements of LCP ordinance 18.38.040 and include a description of monitoring methods, frequency of monitoring, procedures for halting work on the site and a description of reporting procedures that will be implemented during ground disturbing activities to ensure that cultural resources are not disturbed. This shall include a list of the personnel involved in the monitoring activities and their qualifications, and shall include qualified local Native Americans as project monitors.

B. **DURING ALL GROUND DISTURBING ACTIVITIES**, the applicant shall retain a qualified archaeologist, approved by the Executive Director, to monitor all earth disturbing activities per the approved monitoring plan. The applicant shall also include qualified local Native Americans as project monitors. If an area of cultural deposits is discovered during the course of the project, all construction shall cease in the vicinity of the resource, and a new plan shall be submitted for the review and approval of the Executive Director that illustrates avoidance of such resources to the maximum extent practicable.

C. **PRIOR TO COMMENCEMENT OF CONSTRUCTION**, the archaeological monitor shall conduct a brief training session with construction personnel discussing the cultural sensitivity of the area and the protocol for discovery of cultural resources during construction. The archaeological monitor shall also inform all qualified local Native Americans of the timing of construction and their opportunity to participate in construction monitoring.

4.0 FINDINGS AND DECLARATIONS

4.1 Project Description

4.1.1 Project Location and Site Description

The portion of the pipeline to be replaced within the City of Half Moon Bay begins approximately 0.65 miles north of the Highway 1 and Highway 92 intersection near downtown Half Moon Bay and continues north for 2,200 feet along the east side of Frontage Road, which lies parallel to Highway 1 on its west side. This 2,200-foot distance runs from a south terminus near the south side of Sewer Plant Road to a north terminus approximately 200 feet north of Wave Avenue. The 3,200-foot portion of the pipeline located in the County's jurisdiction would be constructed predominantly in County street right-of-ways between San Clemente Road and Santiago Avenue (**Exhibit 4**).

CCWD Water System

CCWD's service area, shown in **Exhibit 3**, includes the City of Half Moon Bay and several unincorporated coastal communities in San Mateo County, including Miramar, Princeton by the Sea, and El Granada. The service area's boundaries extend approximately 9.5 miles north to south along the coast and 1.5 miles east to west. The service area boundaries for the less extensive service area of the El Granada Pipeline are shown in **Exhibit 4**. **Exhibit 3** also shows various components of the CCWD system, including the Crystal Springs Pipeline ("CSP"), CCWD's two water treatment plants (in the south, the Nunes plant, and in the north, the Denniston plant in El Granada), the main transmission lines west of the Nunes plant, storage tanks for treated water, pump stations, and wells.

Water is supplied to the CCWD service area by the Nunes treatment plant, located on Carter Hill in Half Moon Bay, and the Denniston treatment plant, located in El Granada approximately 1.3 miles north of the Highway 1 and Highway 92 intersection. The Nunes treatment plant, with a rated capacity of 3,125 gpm, or 4.5 mgd, and a normal operational production capacity, according to CCWD, in excess of rated capacity during periods of low untreated water turbidity during summer and fall months of 3,848 gpm, or 5.54 mgd, supplies the majority of the water consumed in the CCWD service area.[1] The Nunes plant treats water pumped from the Pillarcitos well field and the Crystal Springs Reservoir, which is connected to the Nunes plant by the CSP (**Exhibit 3**).[2] The Crystal Springs Reservoir, in turn, is connected to and can receive water from the San Francisco water system. The CCWD has had this direct link to the San Francisco Water Department's Hetch Hetchy system since completion of the CSP in 1994. The normal summer treatment capacity of the Nunes Plant of 3,848 gpm is the full, rated capacity of the CSP pump station.[3] The Denniston treatment plant draws water from a CCWD well field and the Denniston Reservoir, which collects water from Denniston Creek. The production capacity of the Denniston plant, ranging seasonally from a maximum production rate of 700 gpm, or 0.50 mgd, to 258 gpm, or 0.37 mgd, under drought conditions, is dependent on adequate water supply from the Denniston well field and Denniston Reservoir and is substantially less than that of the Nunes treatment plant.[4] Average August production from Denniston is 436 gpm, or 0.31 mgd.[5]

The normal annual production capacity after several normal years of precipitation, or "normal yield," of both plants is 1,086 mg, according to CCWD's 2001 Water Supply Evaluation.[6] CCWD's estimated "safe yield" from both plants, the annual production under drought conditions, is 760 mg.[7]

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[1] CCWD Year 2001 Water Supply Evaluation, at II-7.
[2] The Nunes treatment plant was upgraded and the CSP constructed in 1994. Capacity of the expanded Nunes Water treatment plant was limited to that needed to serve Phase I buildout; transmission capacity of the CSP was limited to that need to serve long-term buildout under the County LCP. The Commission found in September 1985 that appeals of SMC permit CDP 84-68 did not raise a substantial issue of conformity with the County LCP.
[3] CCWD Year 2001 Water Supply Evaluation, at II-7.
[4] CCWD Year 2001 Water Supply Evaluation, at II-6.
[5] CCWD Evaluation of Future Scenarios for the Water Distribution System ("Future Scenarios"), at 5-6.
[6] CCWD Year 2001 Water Supply Evaluation, at II-5. CCWD's Evaluation of Future Scenarios gives a slightly higher normal annual yield of 1,093 mg. (Future Scenarios, at B-1).
[7] CCWD Year 2001 Water Supply Evaluation, at II-5. CCWD's Evaluation of Future Scenarios gives a lower annual safe yield of 730 mg. (Future Scenarios, at B-1).

The El Granada transmission pipeline runs between the two CCWD treatment plants, and supplies a large portion of the CCWD service area with water. At its southern end, treated water is supplied from the Nunes Treatment Plant to the El Granada and Main Street pipelines by the Carter Hill West pipeline (**Exhibit 3**). The southern portion of the El Granada pipeline lies within the City's LCP jurisdiction; the northern portion is within San Mateo County. The El Granada pipeline thus forms the backbone of the CCWD water transmission and delivery infrastructure from Half Moon Bay northward and is critical to delivery of water to CCWD customers. Flow within the existing El Granada pipeline is currently enhanced by the Frenchman's Creek booster pump, which was installed in 1972 when gravity flow within the existing pipeline was no longer adequate to meet demand, and by a portable booster pump, which is required to supplement flow at peak demand periods. The booster pump can pump 250 gpm southward and 350 gpm northward, and is operated northward under normal system operation.

The El Granada transmission line can be operated in several different modes, according to the location of the available water source and prevailing water demand. Under normal circumstances, the pipeline is operated bi-directionally, with treated water from the Denniston plant flowing southward and treated water from the Nunes treatment plant flowing northward to CCWD customers arrayed along the length of the pipeline and concentrated in Half Moon Bay and El Granada. However, the pipeline can also be operated uni-directionally, for example, under extreme drought conditions where the Denniston plant production capacity is reduced, with water from the Nunes treatment flowing northward and supplying water for the entire service area.

The pipeline is augmented by several storage tanks placed along the length of the pipeline, with a total, existing storage capacity of 8.05 million gallons. These storage tanks serve to maintain system pressure and meet water demand during peak periods when demand exceeds production capacity. In addition to providing water storage for "operating reserve" (the difference between supply capacity and peak demand rates), the tanks serve to meet fire flows and provide an emergency reserve for equipment and/or facilities outages. Although a recent CCWD study of future system operations indicates that existing storage capacity is less than required to meet all excess capacity needs by 0.34 million gallons,[8] CCWD staff has verbally indicated to Commission staff that due to overlaps in transmission pipeline pressure zones existing storage capacity is in fact adequate for system needs.

On the demand side of the equation, the number of water connections served by CCWD has increased steadily for the last several decades.[9] There are presently a total of 6,169 water service connections installed. CCWD has water treatment plant capacity for an additional 1,900 connections, of which 1,416 have been purchased (1,314 non-priority, 102 priority connections), over next 15 to 20 years. 1,052 of the 1,416 connections that have already purchased, but not yet installed, are within the El Granada pipeline service area. Of these, 510 are in the County, and 542 in the City. Thus the total currently projected number of water connections at LCP build-out is the sum of the 6,169 currently installed connections plus 1,900 additional connections, or a

[8] Future Scenarios, Table 4, at 7.
[9] From 2,163 connections in 1970, by June 30, 2000 CCWD had 5,527 connections installed. As of November 6, 2001, CCWD served 6,150 installed connections, and had sold, but not yet installed, 1,416 connections. Future Scenarios, at 5.

total of 8,069 connections.[10]

CCWD's future water demand projections for its system modeling are based on 6,150 current connections as of November 6, 2001 plus 1,416 connections sold but not installed, a total of 7,566 meters.[11] These demand projections, derived as the number of equivalent meters multiplied by average water sales per meter for the period from July 1, 1999 to June 30, 2000, are discussed in detail below.

"Unmetered water," the difference between water produced and water sold, which includes water lost to leakage and water used for fire suppression, has historically varied widely.[12] CCWD assumed a figure for unaccounted-for water of 7 percent of production in calculating future system demand.[13]

4.1.2 El Granada Pipeline Line Replacement

The proposed development, located within the City of Half Moon Bay and the San Mateo County, involves replacement of two sections of the existing, 10-inch El Granada water transmission pipeline with new, 16-inch pipe. 2,200 lineal feet of the pipeline would be constructed on the east side of the Frontage Road from the south side of Sewer Plant Road to approximately 200 feet north of Wave Avenue in Half Moon Bay. The remaining 3,200 lineal feet of the proposed project would be constructed predominantly in County street right-of-ways between San Clemente Road and Santiago Avenue. The proposed development is the first phase of the planned, eventual replacement of the entire, approximately 3.5-mile long El Granada pipeline, running from the Carter Hill West Pipeline and Nunes Water Treatment Plant in Half Moon Bay to Storage Tank No. 1 near the Denniston Water Treatment Plant in El Granada. These two projects would be the first phase of the planned replacement of the entire 3.5-mile long 10-inch diameter water transmission pipeline that connects CCWD's Nunes and Denniston Treatment Plants.

A future, segment of pipeline would connect to the south end of the section of pipe proposed to be replaced under CDP A-1-HMB-99-20 in the City and run south to terminate approximately 900 feet northeast of the Highway 1 and Highway 92 intersection, near the north end of Main Street at Lewis Foster Drive. The remaining approximately 2½ miles of piping would connect as part of a future project to the north end of the currently proposed replacement section within the City and extend north to terminate at CCWD's existing El Granada Water Storage Tank No. 1 in unincorporated San Mateo County, approximately 1.3 miles north of the city limits.

The existing, 10-inch transmission pipeline, with a total length of 18,600 feet, runs from the western terminus of the Carter Hill West Pipeline in Half Moon Bay to near the Denniston treatment plant in El Granada and supplies water for residential, commercial, agricultural,

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[10] Future Scenarios, at 5. (CCWD's earlier Urban Water Management Plan, 2000-2005, gives total projected connections in 2020 of 7,314, with a corresponding annual demand of 1,052 mg, or about 394 gallons per connection per day).

[11] Future Scenarios, at 5. This report defines an equivalent meter as "a 5/8-inch meter or the number of 5/8-inch meters that would have the same rated maximum capacity as that of a larger meter. For example, a 5/8-inch meter has a rated maximum capacity of 20 gallons per minute (gpm) and a 1-inch meter has a rated maximum capacity of 50 gpm. A 1-inch meter is considered to be 2.5 equivalent meters (50/20 = 2.5)."

[12] CCWD Year 2001 Water Supply Evaluation, App. D., Table 4.

[13] Future Scenarios, at B-3.

industrial and fire safety use within the majority of the CCWD service area. Originally built in 1947**,** the existing pipeline is now over 50 years old and has exceeded its useful service life. As part of the project, the old pipeline would be abandoned (taken out of service, sealed, and left in place). The replacement pipeline segments that are the subject of these appeals would be installed in a 3-foot-deep trench next to the old pipeline. The project also includes the transfer of existing distribution pipeline connections to the new pipe along with installation of new fire hydrants, valves and other supporting facilities.

4.2 Matching Public Works Capacity to Anticipated Demand for Services

The Half Moon Bay (HMB) and San Mateo County (SMC) Local Coastal Program Land Use Plans both contain policies that limit the development and expansion of public works facilities to the capacity required to serve the demand generated by the level of development allowable under buildout of the LCPs. These policies form the standard of review under the City and County LCPs for determining the size of the proposed El Granada Pipeline relative to future demand for water service.

Half Moon Bay LUP Policies

Policy 10-3

> The City shall limit development or expansion of public works facilities to a capacity which does not exceed that needed to serve build-out of the Land Use Plan, and require the phased development of public works facilities in accordance with phased development policies in Section 9 and the probable capacity of other public works facilities.

Policy 10-6

> The City shall limit the size of each permitted public works facility to that size and capacity required for the extent and amount of development existing and proposed within the first two phases of development as shown on Table 9.3.

Policy 10-9

> The City will support an increase in the water supply to capacity which will provide for, but not exceed, the amount needed to support build-out of the Land Use Plan of the City and County within the Coastside County Water District.

Policy 10-10

> The City will support the phased development of water supply facilities (chiefly pumping stations and water treatment facilities) so as to minimize the financial burden on existing residents and avoid growth-inducing impacts, so long as adequate capacity is provided to meet the City needs in accordance with the phased development policies (including expected development to the year 2000) and allocations for floriculture.

San Mateo County LUP Policies

2.6 Capacity Limits

> Limit development or expansion of public works facilities to a capacity which does not exceed that needed to serve buildout of the Local Coastal Program.

2.7 Phased Development of Public Works Facilities

Require the phased development of public works facilities in order to insure that permitted public works capacities are limited to serving needs generated by development which is consistent with the Local Coastal Program policies.

2.9 Phase I Capacity Limits

Base the first phase capacity of public works facilities on documentable and short-term need (approximately 20 years or less) consistent with the Local Coastal Program. Monitor the needs of existing land uses and use these results and the existing and probable future capacity of related public works and services to document the need.

2.11 Monitoring of Phase I

a. Require that public agencies, utilities or special districts monitor the needs of land uses for public works capacity during Phase I.

b. Notify affected public agencies, utilities and special districts of the requirements for monitoring included in this plan.

2.12 Timing and Capacity of Later Phases

a. Use the results of Phase I monitoring to determine the timing and capacity of later phase(s).

b. Guide timing by allowing later phase(s) to begin when Phase I capacity has been or will be consumed within the time period required to construct additional capacity.

c. Establish the capacity by: (1) estimating the capacity needed to serve the land use plan at buildout, (2) considering the availability of related public works to establish whether capacity increases would overburden the existing and probable future capacity of other public works and (3) considering the availability of funds.

d. Require every phase to go through the development review process.

2.13 Coordination with the City of Half Moon Bay

Coordinate with the City of Half Moon Bay's certified Local Coastal Program to take into consideration the policies of the City's LCP when determining: (1) Phase I sewer capacity and (2) when and how much to increase the capacity of all public works facilities after Phase I.

2.25 Phase I Capacity Limits

Require that Phase I capacity not exceed the water supply which: (1) serves the development which can be sewered by the Phase I 2.0 mgd adwf sewer capacity allocated for Mid-Coast areas within the urban boundary and (2) meets the documented needs of floriculturalists within the existing Coastside County Water District Service Area. Use recent data on the amount of water consumed by land use to determine the actual water supply capacity allowed.

2.26 Monitoring of Phase I

Require that the water service providers, presently Coastside County Water District (CCWD) and the Citizens Utilities Company (CUC), monitor: (1) the actual amount of water consumption by land use, and (2) the rate of growth of new development. Require them to submit an annual data report to the County summarizing the results of this monitoring.

2.27 Timing and Capacity of Later Phases

a. Use the results of Phase I monitoring to determine the timing and capacity of later phase(s).

b. Guide timing by allowing later phase(s) to begin when Phase I capacity has been consumed or will be consumed within the time required to construct additional water supply capacity.

c. Establish the capacity by: (1) estimating the water supply capacity needed to serve the land use plan at buildout, (2) considering the availability of related public works and whether expansion of the water supply would overburden the existing and probable future capacity of other public works and (3) considering the availability of funds.

2.28 Phase I Capacity Allocations

Require, as a condition of permit approval, that the Phase I capacity to a particular area does not exceed the proportion of buildout that Phase I sewage treatment allocations permit.

2.29 Reservation of Capacity for Priority Land Uses

a. Reserve water supplies for each land use given priority by the Coastal Act or the Local Coastal Program. These priority uses are shown on Table 2.17. Amend this table to reflect all changes in the Land Use Plan which affect these land uses.

b. For each phase of water supply development, reserve capacity adequate to allow each priority land use to develop to the percent of buildout allowed by the phase.

c. Allow capacity to be reallocated to non-priority land uses in accordance with Policy 2.8.

2.35 Pipeline Project Proposal

a. Require, if a pipeline to Crystal Springs or San Andreas Lake is proposed to increase water supplies, assurance from CCWD and the San Francisco Water Department of the long-range availability of the water supply.

b. Require the phased development of pump stations and treatment facilities in accordance with Policy 2.25.

c. Require that the pipeline size not exceed the closest nominal size to what is required to carry peak daily demand at buildout.

d. Require that storage facilities be located consistent with LCP policies, particularly the Agricultural, Sensitive Habitats and Hazards Components.

4.2.1 Planning Horizon

The term *buildout* can be interpreted to mean the maximum level of development allowable under the applicable land use plans and zoning. Under this interpretation, public works facilities would be designed to serve existing development plus the maximum level of additional development that could occur under current land use policies and zoning with no consideration to the time horizon required to reach this theoretical buildout level. This is the interpretation proposed by CCWD in its review of the proposed pipeline replacement project for conformity with the HMB and SMC LCPs.

Because the accuracy of growth projections decreases further into the future and because such factors as new technologies, and regulatory and social changes may significantly alter future per

capita demand for public services, demand projections over too great a time horizon are likely to be inaccurate. Development of public works capacity in excess of that required to serve the actual demand generated by development may contribute to future pressure for plan changes to accommodate increased development and/or to accelerate the rate of growth.

In recognition of the potential growth-inducing effects of public works development, both the HMB and SMC LCPs require phased development of new and expanded public works facilities. For example, SMC LUP Policy 2.7 states: "Require the phased development of public works facilities in order to insure that permitted public works capacities are limited to serving the needs generated by development which is consistent with the Local Coastal Program policies." HMB LUP Policy 10-10 "The City will support the phased development of water supply facilities (chiefly pumping stations and water treatment facilities) so as to minimize the financial burden on existing residents and avoid growth-inducing impacts, so long as adequate capacity is provided to meet the City needs in accordance with the phased development policies (including expected development to the year 2000) and allocations for floriculture." However, while both LCPs require the phased development of infrastructure, neither plan specifically defines the planning horizon to be used for this purpose.

HMB LUP Policy 10-6 limits public works expansion projects to "the first two phases of development as shown on Table 9.3," and Table 9.3 shows population growth in the City for the period of 1990 through 2020. LCP buildout is also addressed in Tables 1.1 and 1.2 of the HMB LUP, both of which project anticipated levels of development within the city. Table 1.1, Maximum Housing and Population Half Moon Bay Land Use Plan, projects population growth and residential development in the City through 2020 based on a maximum annual population growth rate of 3%. Table 1.2, Half Moon Bay Maximum Projected Housing and Population Mid-Coastside Urban Areas, projects growth in both the incorporated and unincorporated areas of the Mid-Coast over a 20-year period from 1980 through 2000. None of the policies or tables in the HMB LUP related to growth and buildout address development beyond 2020. SMC LUP Policy 2.9 states: "Base the first phase capacity of public works facilities on documentable and short-term need (approximately 20 years or less) consistent with the Local Coastal Program."

In reviewing the proposed development, the Commission must apply both the planning horizon of approximately 20 years or less from SMC LUP Policy 2.9 along with the buildout and phasing projections through 2020 contained in the HMB LCP. Consistent with these policies, the Commission finds that under both the SMC and HMB LCPs for purposes of reviewing the proposed development, the term *buildout* as used in the above-cited policies must be interpreted to mean the next phase of buildout reasonably likely to occur under the LCPs by the year 2020 within the area served by the proposed pipeline. Therefore, in accordance with the above-cited policies requiring the phased development of public works facilities, the capacity of the proposed water transmission pipeline must not exceed the demand for water necessary to serve the anticipated level of development in 2020.

Determining whether the proposed 16-inch pipeline is appropriately sized to accommodate growth over a 20-year planning horizon (starting in 2000 and ending in 2020) involves a comparison of the projected water demand in 2020 on the one hand, with pipeline transmission capacity on the other. An analysis of projected water demand and pipeline transmission capacity is presented in the following sections.

4.2.2 2020 Projected Growth

Both the San Mateo County and City of Half Moon Bay certified LCPs provide a starting point for understanding the question of projected water demand in the CCWD service area in 2020. Tables 1.1 and 9.3 of the City's LCP show that at the time of certification (1985) the projected buildout population and number of housing units was estimated to be 20,857 to 21,065 and 7,991 to 8,071 respectively in the City by 2020.[14][15] These housing unit numbers and corresponding population were based on the estimated theoretical maximum buildout allowed under the LCP at the time of certification (2,726 units existing in 1985 plus a maximum of 5,265 to 5,345 potential new units). The phasing or rate of increase in population was based on a projected 3% annual growth rate under Measure A (**Exhibit 5**, Appendix B). Table 9.1 further breaks down the number of potential new units by geographic area in the City.

Similarly, the San Mateo County LCP projects buildout for different areas of the coastal zone, including for the portion of the CCWD water service area in the County. The CCWD Engineering Master Plan looks directly to the County's water usage projections contained in SMC LUP Table 2.10 to estimate water usage at LUP buildout. These water usage projections are based on the County's growth projections at buildout in the area served by CCWD, and are broken down by land use type. Residential growth within the County's Mid-Coast is regulated by SMC LUP Policy 1.22a, which sets annual growth limits for the Mid-Coast of 125 new units per year "unless the County Board of Supervisors makes the finding that water, schools and other public works have sufficient capacity to accommodate additional growth."

Although each LCP contains estimates of theoretical buildout, both City and County are engaged in an LCP update process, which may significantly reduce these buildout targets. This is important to consider in evaluating the CCWD project. In particular, the City has expressed concern that obsolete buildout numbers were used to size and justify the pipe expansion. The City also points to an inconsistency in the LCP between the stated buildout levels and the rate of growth permissible under the its new local growth control law Measure D. The City asserts that under the rate of growth permissible under Measure D, it would take 60 years to reach buildout, well in excess of the LCP's recommended 20-year planning horizon.

The Commission agrees that the growth projections contained in the LCPs are out of date and do not reflect plan changes, including new growth control measures, that are likely to be implemented in the near future. Nor do they include updates to reflect developments that may have occurred at lower densities then originally projected, or that may not ever occur due to changed circumstances. Thus, the Commission finds that in order to rationally evaluate the proposed CCWD pipeline replacement, it is necessary to review the buildout projections contained in the LCPs in light of current information regarding actual past and likely future growth rates and the pending plan updates.

One method for calculating projected water demand involves determining the anticipated level of development in 2020 and the corresponding water usage for the various types of development. The El Granada pipeline serves both residential uses (single-family and multidwelling units) and nonresidential uses (marine related, floriculture, beaches and parks, recreation, restaurants,

[14] The LUP's population projections are based on an assumed average household size of 2.61 persons per household taken from 1990 ABAG and San Mateo County household size estimates corresponding to the 1990 Census tally. Household size assumptions are discussed separately below.

commercial, hotel and motels, schools, and irrigation). Growth rates and water usage differ between these two general use categories. Accordingly, projected growth of water demand ideally should be calculated separately for residential and nonresidential uses. In addition, water usage can be calculated as a daily average and a peak daily average. Thus, total projected average and peak water demand in 2020 will equal the sum of future residential and nonresidential average and peak water demands. More specifically, the Commission's analysis involves the following seven steps:

1. Project residential growth in the City and County portions served by the El Granada pipeline to find total population within the service area in 2020;
2. Estimate average daily water usage per capita;
3. Multiply the total projected population by the average daily water usage per capita to find total daily average water demand for residential uses in 2020;
4. Estimate and project daily average water use for nonresidential uses;
5. Add projected daily average water demand for residential uses and projected average daily water demand for nonresidential uses to find total daily average water demand for pipeline service area;
6. Find peak water demand by multiplying average daily water demand by a range of peak day multipliers; and
7. Correct for unmetered water.

As detailed below, following the above steps, the range of average water demand for the CCWD El Granada service area ranges from 1.83 million gallons of water per day (mgd) to 2.04 mgd, and peak water demand ranges from 2.74 mgd to 3.88 mgd in the year 2020.

2020 Population

The first use category for which growth by 2020 needs to be projected is residential (single-family and multi-unit dwellings). As noted above, the El Granada pipeline serves residential populations in both Half Moon Bay and San Mateo County. The City and County LCPs both contain policies that control population growth; however, their approach is somewhat different. The County controls growth under LCP Policy 1.22, which limits the number of building permits in the Mid-Coast per year to 125, while the City controls the rate of growth by restricting the allowed population increase to 3% per year under LCP Policy 9.4. Since the City and County LCPs use different approaches to control the rate of growth, it is necessary to calculate the projected population for the portions of the El Granada pipeline in the City and County separately.

In addition, as a noted in Section 4.2.2, both the County and City will likely make the current LCP growth control measures more restrictive through anticipated plan amendments and updates. Presently, County planners are reevaluating the County's annual growth rate limitations in LUP Policy 1.22, as well as the buildout figures given in the certified LCP as part of an LCP update process. More specifically, County planners have recommended, and the County is presently considering, substantially lowering the annual growth rate from 125 building permits to between 30 to 80 permits per year. The City has already significantly lowered the rate of growth permissible by reducing it from 3% to 1% under the recently approved local growth control initiative Measure D. Although the measure has yet to be certified by the Commission, staff anticipates it will become part of the LCP in some form. Lowering the number of building

permits allowed per year within the County's Mid-Coast region under LCP Policy 1.22 and lowering the 3% growth rate allowed in the City to 1% would significantly lower the projected total population and dwelling units for 2020. To understand the question of appropriate utility sizing, it is informative to calculate the projected population in 2020 under various scenarios, including applying the growth control limits from the certified LCP, as well as the more restrictive limits, which will likely be implemented following LCP amendments, and/or comprehensive LCP updates.

Half Moon Bay Population projections for 2020

CCWD provides water to the entire City of Half Moon Bay; however, the El Granada pipeline only serves the portion north of Highway 92. Using the US census data, Commission staff calculates that the approximate population in the areas within the city served by the pipeline in 2000 was 5,409. Under the certified LCP Policy 9.4, growth is allowed to occur up to 3% a year. Therefore, using the estimated base 2000 population of 5,409, the total projected population in the service area would equal 10,062 in 2020 under a 3% growth scenario.

This projected population, though, exceeds the theoretical maximum buildout in the certified LCP. As discussed previously, Table 9.1 in the Half Moon Bay LCP lists both existing units and the maximum potential new units that could occur in various sub-areas of the City, including areas within the El Granada service area. Thus, it is possible to calculate the estimated maximum amount of development allowed at buildout by adding the total number of existing units within the service area to the maximum number of potential units, which totals 2,936 units. Further, an estimated maximum population for the City's El Granada pipeline service area can also be projected by multiplying this maximum potential number of units by a number of persons per household conversion factor. According to the 2000 Census, average household size in Half Moon Bay is 2.75 persons per household in 2000. Using this factor, there would be an approximate population of 8074 in the City portion of the El Granada pipeline service area – considerably less than the straight 3% growth projection of 10,062. In other words, this area of the City would be builtout well before 2020 at 3% annual growth (approximately 2013-14)

Whereas the population estimate of 8074 establishes an upper range for the 2020 population in the City's El Granada pipeline service area, the lower end of a range can be estimated by assuming implementation of the lower 1% growth rate required by the as yet uncertified Measure D passed by the voters.. . Projecting growth at a 1% rate from the base 2000 population of equals 6,666. Thus, as shown in the Table 1 below, the projected population in 2020 within the City portion of El Granada pipeline service area would range from 6,666 (Scenario B) to 8,074 (Scenario A).

Table 1

Growth Scenarios	2020 Population HMB Service Area
Growth Scenario A (3% Annual Increase)	8,074
Growth Scenario B (1% Annual Increase)	6,666

San Mateo County Mid-Coast 2020

In San Mateo County, the El Granada pipeline serves the communities of El Granada, Miramar, and Princeton-by-the-Sea. According to the most recent census data, the population in these

communities in 2000 totaled 5,412. As indicated by the February 2002 Mid-Coast Local Coastal Program up (LCP) Update Project document, the maximum potential for growth at buildout is 1,140 units. Using the same persons per household conversion factor of 2.75, employed in the calculations related to the City, the total number of additional population at buildout would be 3,135. This document shows that a maximum of 930 additional units could be developed in El Granada and 210 units in Miramar.[15] Within the Mid-Coast, the undeveloped lots in El Granada and Miramar represent 52% of potential units. Whether all the units are developed by 2020 depends on how growth control limits are applied and whether the growth limits become more restrictive through the LCP update process. Thus, to determine the potential new units/people over a 20 year planning horizon, it is necessary to consider impacts of LCP growth control limits.

As stated above, SMC LCP Policy 1.22 limits the number of building permits per year; however, the policy does not specify how those permits should be distributed throughout the various communities of the Mid-Coast. Thus, it is possible, although highly unlikely that development could concentrate on an annual basis in El Granada and Miramar. It is more realistic that growth would be spread evenly throughout the various communities of the Mid-Coast, which also include Montara and Moss Beach. In this case, development may occur at a rate proportional to the total amount of growth potential in the Mid-Coast (i.e. 52% of new growth is allocated to El Granada and Miramar). Considering growth limitations of 125 permits per year under the current LCP and 80 permits per year under an updated LCP, as well as how new development is distributed annually throughout the Mid-Coast, population growth could be calculated in the following four ways:

C. The County allocates the entire 125 permits allowed under LCP Policy 1.22 to the El Granada and Miramar areas;
D. The County allocates 65 permits (52% of the 125 permits allowed per year) to El Granada and Miramar;
E. The County allocates 80 permits per year of allowed under an updated LCP, are allocated to the El Granada and Miramar with the areas; and
F. The County allocates 42 permits, (52% of the 80 permits allowed per year under updated LCP) to the El Granada and Miramar areas.

Table 2 below lists additional units that could be developed in El Granada and Miramar by 2020 under Scenarios C, D, E, and F and the increased population that could result from the development of those units. To calculate the total amount of additional units that could result by 2020, the number of permits allocated per year to El Granada and Miramar under Scenarios C through F were multiplied by 20 (the results are presented in the second column of the table below). Multiplying the additional units allowed under each growth scenario (Column 2 in the table below) by 2.75 persons per household gives the total number of residents that could be added to the County areas served by pipeline under each growth scenario (totals found in third column of Table 2).

[15] Princeton-by-the-Sea does not contain land zoned for residential uses; those residential uses that currently exist are nonconforming.

Table 2

Growth Scenarios	2020 Maximum Units	2020 Maximum Population
Growth Scenario C (125 permits per year)	1,140	3,135
Growth Scenario D (65 permits per year-52% of 125)	1,140	3,135
Growth Scenario E (80 permits per year)	1,140	3,135
Growth Scenario F (42 permits per year -52% of 80)	840	2,310

Under Growth Scenarios C, D, and E, all of the remaining units in El Granada and Miramar could be developed by 2020; however, calculating growth using Scenario F, only 840 units of the potential 1,140 could be developed. Therefore, Scenarios C through F present a potential residential population increase of 2,310 to 3,135 as shown in the third column above.

In addition to this potential growth, two parcels exist within the service area that are exempt from LCP Policy 1.22 growth limits and could be developed by 2020: (1) Moss Beach Highlands site, which could result in 128 new units and 352 people (128 multiplied by 2.75 persons per household), and (2) El Granada site, which could result in 104 new units and 286 people (104 multiplied by 2.75 persons per household). Together, if the affordable housing sites are both developed before 2020, they could introduce an additional 232 units/638 people to the pipeline service area.

To calculate the total potential population increase by 2020, it is necessary to add the potential population increases shown in Column 3 of Table 2 to the potential population increase from the development of the affordable housing sites (638 persons), as shown in Table 3 below.

Table 3

	Growth Scenario F	Scenario C, D & E
Projected population increase under growth scenarios	2,310	3,135
Projected population increase from affordable housing	638	638
Total projected population	2,948	3,773

The population growth allowed within the County section of the El Granada pipeline service area under the current and potentially updated LCP Policy 1.22 and the exempt affordable housing sites represent a range of 2,948 to 3,773 within the County section of the El Granada pipeline service area as shown in the third row of Table 3 above. Adding the figures for new potential growth to the 5,412 population figure from the 2000 census, the Commission concludes that the total projected population in the County section served by the pipeline could range from 8,360 to 9,185 in 2020 as shown in the Table 4 below:

Table 4

	Growth Scenario F	Growth Scenarios C, D & E
2000 population	5,412	5,412
Projected 2020 population increase (from Table 3)	2,948	3,773
Total projected 2020 population	8,360	9,185

Total Projected 2020 Population within Project Service Area

Calculating the total projected population within the service area, involves adding the 2020 projected population for the City under Growth Scenarios A and B and the projected population for the County under Growth Scenarios C through F. It should be noted that although four

growth scenarios are evaluated for the County, the maximum potential development of 1,440 units will be reached before 2020 under each of the Growth Scenarios C, D, and E. Therefore only two possible population figures 8,360 (Scenario F) and 9,185 (Scenarios C, D, & E) are projected.

Table 5 below presents a range of projected populations in the service area in 2020. The first column lists the projected population totals under Growth Scenarios A and B and the second column lists the two projected populations within the County. The third column gives the ranges of total projected population, which results from adding Column 1 to Column 2. The extreme ends of the range are in bold.

Table 5

HMB 2020 Population	SMC 2020 Population	Total 2020 Service Area Population
6666 (Growth Scenario B)	8,360 (Growth Scenario F)	**15,026** (B + F)
8074 (Growth Scenario A)	8,360 (Growth Scenario F)	16,434 (A + F)
6666 (Growth Scenario B)	9,186 (Growth Scenarios C, D, and E)	15,851 (A + C, D, E)
8074 (Growth Scenario A)	9,186 (Growth Scenarios C, D, and E)	**17,259** (A + C, D, E)

4.2.3 2020 Water Demand

The next step in assessing 2020 water demand in the project service area involves projecting both residential and non-residential water use based on the foregoing population growth forecasts.

Residential Use

CCWD has provided data summarizing actual, average daily residential usage on an annual basis for the period from 1975 to 2002. According to CCWD's published information, the average daily usage figure per single-family residence for the last 27 years, 1975 through 2002, was 247 gallons per residence per day. Given the household size of 2.75 persons per household, the daily per capita usage figure for this period is 89.8 gallons.

In order to find the total projected daily water demand for residential uses in 2020 within the pipeline service area, it is necessary to multiply the range of projected population for 2020 found in Table 5 by the daily water usage per capita (89.8 gallons per day). In Table 6 below, Column 1 list the projected population in 2020 under the various growth scenarios and Column 2 list the daily per capita water usage multiplier of 89.8 gallons. The last column presents the results of multiplying the projected population figures (Column 1) by the daily per capita water usage amount of 89.8 (Column 2).

Table 6

Total 2020 project pop. in service area under various growth scenarios	Daily per capita water usage	Average water demand for residential uses in 2020
15,036 (B)(F)	89.8 gpd	**1.35 mgd**
16,434 (A)(F)	89.8 gpd	1.48 mgd
15,851 (B)(C,D,E)	89.8 gpd	1.42 mgd
17,259 (A)(C,D,E)	89.8 gpd	**1.55 mgd**

As shown in Table 6 above, projected year 2020 average daily residential water use in the pipeline service area ranges from 1.35 millions of gallons per day to 1.55 millions of gallons per day depending on the different growth assumptions discussed above (the extreme ends of the range are in bold).

Nonresidential Use

CCWD serves a variety of nonresidential uses including floriculture, beaches and parks, recreation, marine related, restaurants, commercial, hotels and motels, schools, and irrigation. CCWD provided actual nonresidential water usage from the pipeline service area for the months of June, July, August, and September from the year 2002. Total water usage for these four months totaled 43.83 the millions of gallons, which is approximately an average 359,262 gallons per day.

Total Projected Water Demand in 2020

Taking the sum of the range of projected average water demand in 2020 for (1) residential uses and (2) nonresidential uses, produces a total average projected water demand for the pipeline service area. Table 7 below presents the range of total projected water demand in 2020. Column 1 lists the range of projected water demand for residential uses found in Table 6. In parentheses, adjacent to each of the projected water demands are the letters that correspond to the various growth scenarios used to derive each total. Column 2 contains the projected water demand for nonresidential uses. The last column provides the projected average water demand in 2020 for all uses within the service area. These totals are the sum of projected residential and non-residential demand, which produces a range from 1.71 millions of gallons per day to 1.91 millions of gallons per day.

Table 7

Projected average water demand for residential uses in 2020	Projected average water demand for nonresidential uses in 2020	Total projected average water demand in pipeline service area in 2020
1.35 mgd (B)(F)	0.36 mgd	**1.71 mgd**
1.42 mgd (B)(C,D,E)	0.36 mgd	1.78 mgd
1.48 mgd (A)(F)	0.36 mgd	1.84 mgd
1.55 mgd (A)(C,D,E)	0.36 mgd	**1.91 mgd**

Peak Demand

Peak daily demand is the term used to describe the system water requirements during hot weather days when water usage is the highest for the year. More precisely, peak demand is the maximum water volume drawn from the system over a 24-hour period. CCWD uses three separate peak day multipliers in calculating peak day demand. The 1997 Engineering Master Plan Report uses a multiplier of 150% to determine current peak day demand, and a multiplier of 180% to determine future peak day demand. The February 2002 Future Scenarios Report uses a maximum day to average day ratio of 190%, based on historical usage figures. For the 20 years from 1980 to 2000 for which maximum and average day ratios are available, CCWD states that maximum day ratios ranged from 147% to 199% of average day demand and that 17% of the maximum day demand values exceeded 190% of average day demand. CCWD's methodology in determining appropriate maximum day ratio given the wide, historical range in maximum day

ratios is unclear. Sizing the pipeline to meet a maximum day demand that is 190%, or almost two times that of average day demand means that the pipeline will be able to meet demand on 83% of maximum demand days, assuming a similar, future distribution of maximum day ratios to that experienced between 1980 and 2000, and that the shortfall at most will be less than 5% of demand on the remaining 17% of maximum demand days (9/1990). A peak day multiplier of 180% to 190% of average day demand therefore ensures that all water demands will be met on all but a small percentage of days, and that on those days the shortfall will be minimal. The historical, maximum day ratios would appear to justify peak day multipliers of 180% to 190% of average day demand. Given the historical peak day demand, it is appropriate to use a peak daily multiplier of 180% to 190%; however, to provide a full range of peak day multipliers, it is also appropriate to also use a multiplier of 150% as shown in Table 8 below. In the table, the first column lists the range of water demand projected in the pipeline service area for 2020 from greatest to least under the various growth scenarios. Column 2 represents the peak day multiplier and Column 3 is the total peaked demand, which results from multiplying the first and second columns.

Table 8

Total projected average water demand in pipeline service area in 2020	Peak day multiplier	Total peak demand
1.84 mgd (A)(F)	1.5	2.75 mgd
1.71 mgd (B)(F)	1.5	**2.56 mgd**
1.91 mgd (A)(C,D,E)	1.5	2.86 mgd
1.70 mgd (B)(C,D,E)	1.5	2.67 mgd
1.84 mgd (A)(F)	1.8	3.30 mgd
1.71 mgd (B)(F)	1.8	3.08 mgd
1.91 mgd (A)(C,D,E)	1.8	3.44 mgd
1.70 mgd (B)(C,D,E)	1.8	2.67 mgd
1.84 mgd (A)(F)	1.9	3.49 mgd
1.71 mgd (B)(F)	1.9	3.25 mgd
1.91 mgd (A)(C,D,E)	1.9	**3.63 mgd**
1.70 mgd (B)(C,D,E)	1.9	3.39 mgd

Table 8 above shows a range of 2.56 millions of gallons per day to 3.63 millions of gallons per day when using peak day multipliers of 150%, 180%, and 190% (high and low end of range are bold). Table 9 below gives the range of projected average and peak daily demands in 2020 in millions of gallons per day taken from the sections above.

Table 9

	Low end of range	High end of range
Average Daily Demand	1.71 mgd	1.91 mgd
Peak Daily Demand	2.56 mgd	3.63 mgd

Unmetered Water

The 1997 Engineering Master Plan does not explicitly account for water lost to leakage or other

unaccounted-for water. In the Future Scenarios report, CCWD assumes a figure for unaccounted-for water of 7 % of production in calculating future system demand.[16] "Unmetered water," the difference between water produced and water sold, which includes water lost to leakage, water used for firefighting and training, and water used for pipeline flushing, has historically varied widely, but has been declining since 1975, both in absolute terms and as a percentage of total water sales.[17] Since 1990, unmetered water was less than 10 percent of sales. A replacement pipeline would presumably reduce water lost to leakage significantly. To account for unmetered water, projected future demand in the 1997 Engineering Master Plan should probably be increased by the 7 % figure used by the Future Scenarios report to describe water loss system-wide.

Table 10

	Low end of range	High end of range
Average Daily Demand	1.71 mgd	1.91 mgd
7% of Average Daily Demand	.12 mgd	.13 mgd
Total	1.83 mgd	2.04 mgd
Peak Daily Demands	2.56 mgd	3.63 mgd
7% of Peak Daily Demand	.18 mgd	.25 mgd
Total	2.74 mgd	3.88 mgd

Table 10 above calculates the total water demand increased by 7% to account for unmetered water. Table 10 shows a range of between 1.83 and 2.04 millions of gallons per day of average water demand in 2020 and a peak water demand of 2.74 to 3.88 millions of gallons per day. These totals account for projected future water demand in 2020 including residential, nonresidential uses and unmetered water.

4.2.4 Pipeline Capacity

CCWD has not presented a clear statement of the capacity of the proposed 16-inch pipeline in terms of a maximum volume of water that the proposed pipeline would be capable of delivering. Instead, to ascertain "the optimal size and capacity for the El Granada Pipeline replacement," CCWD applied its water demand projections at buildout of 2.03-2.58 mgd average and 3.67-4.66 mgd peak to the District Engineer's "four primary engineering criteria":

1. Service Area and Service Capability. The replacement pipeline, when complete, should have sufficient capacity to serve the entire northern service area under the "Denniston Project Not Operable" mode. The minimum requirement should be to meet average (not peak) day needs at a development level not greater than LCP buildout.

2. Operational Energy. It is acceptable to use the booster pump station to meet future estimated peak day demands. Pumping should not be required to meet average day demands, so as to reduce energy costs and have adequate gravity flows to maintain adequate service if the pump station is inoperable.

[16] Future Scenarios, at B-3.
[17] Year 2001 Water Supply Evaluation, App. D., Table 4.

3. Minimum pressure requirements for maximum day and peak hour demand: 35 psi; minimum pressure for fire flow with concident demand: 20 psi. Fire flow for single family residential 1,000 gpm. (Future Scenarios, p. 9)
4. Transmission Pipeline Redundancy. Sound engineering practice favors the construction of parallel pipelines. The El Granada replacement pipeline should not be so large that a future parallel pipeline would increase capacity beyond what is allowed by the LCPs.
5. Construction Cost. Project costs can be substantially reduced if the pipeline is sized below peak day demands. If future demands occur which exceed the capacity of the replacement pipeline, they could be met with parallel pipelines in future developments or by increased booster pump capacity.

After listing these criteria, the CCWD "Narrative" concludes that 16 inches is the optimal pipe size under these criteria for the El Granada Transmission Pipeline. The "Casa del Mar Pipeline Replacement Project, Narrative in Support of a Coastal Development Application, CCWD July 24, 1998" states:

> *When completed, the 16-inch El Granada Transmission Pipeline replacement will have the ability to meet future average day requirements (2.03-2.58 mgd) at buildout of the City and County LCPs. It will supply 55% of the peak day demands (3.67-4.66 mgd) at buildout, well below the allowable LCP maximums*

This statement is reiterated in the Master Plan. Following is a discussion of the first four of these engineering criteria (construction cost, while an important consideration for the applicant, is not a significant factor in reviewing the project for LCP consistency), plus a sixth criterion not addresses in CCWD's analysis.

Denniston Non-Operable Assumption

CCWD employs as an engineering criterion that the replacement pipeline, when complete, should have sufficient capacity to serve the entire northern service area under the "Denniston Project Not Operable" mode. The Denniston Project refers to water supplied by CCWD facilities in the northern part of its service area (wells, treatment facility, storage tank depicted in **Exhibit 4**), in El Granada. The El Granada Pipeline, which is the sole transmission pipeline between Half Moon Bay and El Granada, is operated bi-directionally depending on the source of supply. Denniston source water is transmitted southward and water from the Nunes treatment plant (Crystal Springs) is transmitted northward. During the majority of the year, the water supply available from the Denniston Project is sufficient to meet the requirements of the northern portion of the CCWD service area. Under normal operation, flow in the northern portion of the El Granada Transmission Pipeline is from north to south (conveying Denniston water to the southern El Granada area) and the flow in the southern portion of the pipeline is from south to north (conveying water from the Carter Hill storage tanks in Half Moon Bay to the northern Half Moon Bay area and Miramar).

In designing the replacement pipeline to have sufficient capacity to serve the entire northern service area under the "Denniston Project Not Operable" mode, CCWD has planned a system with enough capacity for San Francisco Water Department source water, delivered from the south end of the system, to provide water service to the entire northern service area. When the

Denniston Project is operable, as is the normal situation, the volume of water that could be transmitted northbound through the proposed 16-inch line would be much greater than that needed to serve the area.

CCWD's Engineering Master Plan utilizes the "Denniston Not Operable" scenario in its capacity calculations, taking into account the potential for water quality problems, power loss, treatment plant equipment malfunctions, and water supply disruption. CCWD in particular takes into account that the water sources for the Denniston treatment plant, namely, wells and surface diversion from Denniston Creek and reservoir, have limitations, which make them unreliable.

To evaluate the appropriateness of the Denniston Not Operable assumption, it is necessary to evaluate the assumption against past experience and ask how likely the contingency is that the Denniston plant be out of service. Historically, while there has been a wide variation in water production from the Denniston plant water sources based on rain conditions, the Denniston plant has never been entirely non-operational, either due to power loss and treatment plant equipment malfunction or to water supply disruption.

Historical data for CCWD production (from CCWD 2001 Water Supply Evaluation) shows that since 1994, the year in which the Crystal Springs pipeline was completed, water from Denniston has accounted for fully 32 percent of total production from all sources. Since 1980, water from Denniston has accounted for 35 percent of production from all sources. Over the past 22 years, annual water production at Denniston has ranged from 143.1 mg (in 1991) to 317.7 mg (in 1980) and a mean of 230.42 mg (a standard deviation of 40 mg). Average production over this period has been 239.16 mg.

CCWD's Calendar Year 2001 Water Supply Evaluation states that CCWD's determination of the "safe yield" annual production of the Denniston treatment plant is 144 mg (101 mg from surface water and 43 mg from the Denniston well field), representing 19 percent of the total annual safe yield of 760 mg from all sources. "Normal yield" from Denniston is 231 mg, or 21 percent of total annual "normal yield" of 1,086 mg.[18] Over the short term, the peak production of the Denniston plant is 700 gpm (compared to peak production of the Nunes plant of 3,800 gpm), or 0.50 mgd, 16 percent of the total peak plant production of 4,500 gpm. Average August production from Denniston is 436 gpm, or 0.31 mgd, 18 percent of the average total day supply rate of 2,370 gpm.

According to CCWD's planning estimates under drought conditions, during the peak summer months when water supplies are lowest, the lowest projected <u>daily</u> supply from the Denniston plant is 258 gpm, or 0.371 mgd, compared with flow under average precipitation conditions of 569 gpm, or 0.819 mgd.[19] Under these drought conditions, Denniston production is still about 11% of total daily production.

Given the actual historical production of the Denniston treatment plant and CCWD's projections for Denniston production even under drought conditions, it is important to understand how the capacity of the proposed pipeline would be impacted if the Denniston Plant is operating. Under

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[18] 2001 Water Supply Evaluation, at II-5. CCWD's Urban Water Management Plan, 2000-2005, states a total yield in years of normal precipitation of 1,071 mg, and assumes a total normal yield of 219 mg available from Denniston. The Urban Water Management Plan gives the same figures for "safe yield" as the 2001 Water Supply Evaluation.
[19] 2001Water Supply Evaluation, at II-6.

the Denniston operating scenario, the pipeline capacity still falls within the range of projected demand in 2020; however, the capacity is more appropriately sized to serve peak day demand in 2020 under the highest growth scenario and using a peak day multiplier of 190%.

Gravity Flow System

CCWD employs as a second design criterion the requirement that the pipeline should be able to meet average day demands by gravity flow, without any additional pumping required. A gravity flow system would reduce operating costs and energy use, which would reduce costs for CCWD customers. A gravity flow pipeline is also desirable because it is not dependent on pumping and provides a failsafe system which would continue to provide water during power outages and emergency conditions where pumping was not possible. Gravity flow through the pipeline is controlled by the water level in storage tanks in four locations: Carter Hill tanks, Miramar tank, El Granada Tank No. 1, and Denniston tank. In discussing design criteria, CCWD also considers as an alternative to a gravity flow system a 12-inch pipeline that would require pumping to meet future peak day demands.

In finding substantial issue, the Commission found that a gravity flow pipeline could have the capacity, when pumps are utilized, to deliver more water on an "average day" than is needed for buildout and thus that a substantial issue was raised as to whether the proposed public works facility will be limited to a capacity that does not exceed that needed to serve buildout consistent with LUP Policy 10-3. While utilizing pumps could increase the capacity of a pipeline to deliver more water than it otherwise could, additional pumps are not part of the project description, and CCWD would need a separate permit or permit amendment to add such pumps.

Fire Protection

CCWD's Future Scenarios report evaluates pipeline replacement alternatives against fire flow pressure requirements. The report concludes that, on this criterion, "there is little difference in the results for the possible new pipelines."[20] The report shows that for the new 12-inch line with the Frenchman's Creek Pump Station alternative, required fire flows as specified by the HMB Fire Protection District would be met at all of a list of certain, critical locations, except the Beach House Hotel. At the Beach House hotel, a 12-inch line would provide flows of 2,900 gpm, with required flows of 3,000 gpm, a difference of only 100 gpm. According to the hydraulic model, the percentage of pressure nodes in the system with less than the minimum required pressure of 1,000 gpm does not differ significantly between the 16-inch and 12-inch with pump station alternatives, although either alternative would be an improvement over the existing 10-inch line.

The ability of a new system to meet fire safety needs is an important criterion for evaluation of replacement alternatives. CCWD's Future Scenarios study makes clear that the 16-inch line is not the only replacement alternative that would satisfy this criterion. As the issue is addressed in the Future Scenarios report, a water system's provision for fire safety is a function most importantly of system pressure and available per minute flow throughout the system, less than overall increase in water demand. CCWD figures for unmetered water, discussed above, includes water utilized for firefighting, and no additional adjustment to CCWD's future demand projections is required to account for this component of demand beyond the adjustment for

[20] Future Scenarios, at 13.

unmetered water. As long as minimum pressure and per minute flow requirements are met, this requirement for this component of water usage is satisfied.

Transmission Pipeline Redundancy

CCWD that sound engineering practice favors the construction of parallel pipelines. Thus, the El Granada replacement pipeline should not be so large that a future parallel pipeline would increase capacity beyond what is allowed by the LCPs. Assuming that under the LCPs CCWD's water system should be designed to meet, but not exceed, peak day demand, and the future construction of a second parallel El Granada pipeline, the proposed pipeline should be sized to provide no more than half of the peak day demand at buildout.

Montara Sanitary District Possible Additional Future Demand

The Montara Sanitary District (MSD) presently provides sanitary sewer services for Montara and Moss Beach, the area adjacent to and immediately north of CCWD's service area. MSD is recently acquired a water system formerly belonging to a privately-owned utility company, Cal-Am (previously Citizen's Utility Company), that delivers water within a portion of MSD's service area. A moratorium on new connections has existed in the MSD service area since 1981. CPUC requires a total production capacity of 550 gpm, or 0.792 mgd, before the moratorium may be lifted. To lift the moratorium would therefore require an additional 148 gpm, or 0.213 mgd, of production capacity. MSD states that the total, current production capacity of its water production sources is 0.579 mgd, or 402 gpm, with reliable capacity of 0.452 mgd, or 314 gpm, and that future demand at LCP buildout within MSD's service area will be between 0.864 and 1.168 mgd. Thus, according to MSD, between 0.285 and 0.589 mgd of additional water will be required to serve projected demand at buildout within its service area. MSD is considering alternatives to increase its supply, including purchasing water from the San Francisco Water Department's Crystal Spring Reservoir and transferring this water through the El Granada pipeline.

MSD contends that provisions of the California Water Code would give it the right, under certain conditions, to use "excess capacity" to transfer water through the El Granada pipeline. However, MSD's proposal to transport San Francisco Water Department water through the El Granada pipeline is contingent on a number of factors, before any water could be transferred through the CCWD system. First, the proposal would require an additional, physical pipeline connection from El Granada to Montara, which presently does not exist. Second, MSD would have to enter into a purchase contract with the San Francisco Water Department or other seller, which also does not presently exist. Third, MSD and CCWD would have to agree on and work out arrangements for the use of CCWD's transmission facilities, including the El Granada pipeline, which would involve a number of issues, including the amount of available capacity for such a purpose.

Accounting for additional demand of between 0.213 and 0.589 mgd in the MSD service area would significantly affect the El Granada pipeline sizing calculations relative to demand at LCP buildout, and serve to justify a larger diameter pipeline. However, in its sizing justifications for the El Granada pipeline, CCWD did not take account of additional, future demand from MSD and MSD has not joined CCWD as a co-applicant on this project. Given the number of contingencies that would have to be met before MSD could wheel water through the El Granada

pipeline, the MSD proposal remains speculative and it would be premature for the Commission to take into account possible future MSD water demand in evaluating CCWD's pipeline proposal. Given the technical complexities inherent to the MSD proposal, which are beyond the expertise of Commission staff to address and are better left to the local water districts to resolve, MSD should work together with CCWD on a joint proposal, if CCWD and MSD wish to account for possible, future MSD demand in the sizing of the El Granada transmission pipeline.

Conclusion – Pipeline Capacity

In order for the Commission to evaluate whether or not the capacity of the proposed pipeline would exceed the projected demand for water at buildout, it is necessary to determine the capacity of the proposed pipeline. However, while it is clear that a 16-inch pipeline has far more capacity than the current 10-inch pipeline, the information provided by the applicant does not clearly state how the proposed project would affect the actual operating capacity of CCWD's complex water supply and distribution system.

According to the Commission's Staff Engineer, an idealized 16-inch pipeline could accommodate roughly 3.4 times the flow of an idealized 10-inch pipeline. These "idealized pipelines" do not include any water losses, friction losses, head losses due to bends or valves, or any flow increases due to booster pumps. The idealized pipeline from Miramar to El Granada could have a capacity of approximately 6 million gallons per day, at a velocity of almost 5.4 feet per second. The maximum capacity of actual pipeline will be limited by the friction and head losses, as well as limitations imposed by the existing water system. With peak velocities of 5.4 fps, flows at this idealized maximum capacity would greatly exceed the pressures that can be accommodated at the end user locations. In addition, flows are this rate would cause draw down at the Miramar water tank and thus jeopardize the emergency water supplies available for fire suppression. Finally, it is damaging to the infrastructure to operate it routinely at its extreme, maximum capacity.

As discussed above, CCWD has not presented a clear statement of the capacity of the proposed 16-inch pipeline in terms of the maximum volume of water that the proposed pipeline would be capable of delivering. CCWD's District Engineer states:

> *In summary, it is important to understand that the E.G. pipeline does not have a maximum flow capacity which can be calculated because the pipeline does not simply convey water from one storage tank to another. Instead, the E.G. pipeline functions as part of an overall water transmission and distribution system, and the flow through the E.G. pipeline is dependent on the size and flow rate through the pipeline upstream of it as well as the flow through the distribution system pipelines connected to it.*

Since the applicant has been unable to provide a capacity estimate for purposes of LCP analysis, the Commission has derived a theoretical pipeline capacity of 2.56 mgd from data contained in CCWD's Master Plan. The Master Plan states that the 16-inch pipeline would be capable of meeting 55% of a peak daily demand at buildout of 4.66 mgd. Fifty-five percent of the 4.66 mgd maximum daily peak demand at buildout is 2.56 mgd. Thus, the Master Plan appears to provide that the maximum operating capacity of the proposed 16-inch pipeline would be 2.56 mgd.

However, this extrapolation is based on questionable design criteria, in particular, the Denniston non-operable assumption. A larger pipeline would be required to supply the entire service area

from the Nunes treatment plant at the south end of the system than would be necessary with supply both at the north and south ends of the pipeline. However, as discussed above, under normal operating conditions, the Denniston treatment plant accounts for a substantial portion of the water transported by the El Granada pipeline, and at least 8% during drought conditions. Thus it would appear that the Denniston non-operational assumption may inappropriately support a larger diameter pipeline than is actually needed.

In addition, the discussion above illustrates how it is difficult to ascertain the maximum capacity of the proposed 16-inch El Granada pipeline. Since CCWD did not identify the maximum capacity of the pipeline, and it appears that the pipeline capacity could be increased when water production is increased and added to the system (e.g. Denniston operating scenario), it is unclear whether the pipeline is actually appropriately sized because it might be able to accommodate additional water, which it could serve to additional demand. These concerns notwithstanding, it appears that based on the information provided by the applicant that the maximum operating capacity of the proposed 16-inch pipeline would be 2.56 mgd.

4.2.5 Conclusion – Matching Demand to Capacity

According to the 1997 Master Plan, CCWD sized the propose pipeline to serve a peak demand at buildout of the LCPs of 4.66 mgd. However, as discussed above, the Commission finds that the demand projection used by CCWD is greater than is reasonably justified. Therefore, the Commission has re-evaluated probable future water service demand within the service area of the proposed pipeline, taking into account anticipated LCP updates and a 20-year planning horizon to forecast growth, and CCWD meter records to establish use levels by both residential and non-residential uses.

Through this analysis, the Commission has derived a range of possible demand projections. In addition to the ranges projected by the Commission, the City of Half Moon Bay planning staff has provided a figure of 145 units maximum potential growth for the city areas served by the pipeline (**Exhibit 6**). Thus, in addition to the possible future demand scenarios above, the Commission has carried out the same calculations using the City's projected maximum potential growth within the pipeline service area. Table 11 below summarizes the projected average and peak demand for 2020 based on a range of growth assumptions as well as using the City's growth projection. Scenarios 1 and 2 of Table 11 are based on the City's growth assumption of 145 units by 2020.

Table 11: Projected 2020 Service Area Demand

Scenarios	Average water demand in pipeline service area in 2020	Peak demand at 150% of average	Peak demand at 180% of average	Peak demand at 190% of average
Scenario 1 [(G)(F)]	1.75 mgd	**2.62 mgd**	3.14mgd	3.32 mgd
Scenario 2 [(G)(C,D,E)]	1.83 mgd	2.74 mgd	3.29 mgd	3.47 mgd
Scenario 3 [(B)(F)]	1.83 mgd	2.74 mgd	**3.29 mgd**	3.47 mgd
Scenario 4 [(B)(C,D,E)]	1.91 mgd	2.86 mgd	3.43 mgd	3.62 mgd
Scenario 5 [(A)(F)]	1.96 mgd	2.95 mgd	3.53 mgd	3.73 mgd
Scenario 6 [(A)(C,D,E)]	2.04 mgd	3.06 mgd	3.68 mgd	**3.88 mgd**

These demand projections vary depending on the growth scenario used, with the lowest demand of 2.62 mgd based on the City's reduced growth projection of a total of 145 new units

constructed in the pipeline service area by 2020 and using a 150% peak use multiplier (Scenario 1 at 150%). The highest projected demand of 3.88 mgd is based on the maximum allowable growth under the current LCPs and a peak use multiplier of 190% (Scenario 6 at 190%). Of these demand scenarios, the Commission finds that a peak day demand of 3.29 mgd (Scenario 3 at 180%) represents the most reasonable 2020 demand projection for the pipeline service area. All of these demand projections are substantially lower than the peak day demand at LCP buildout of 4.66 mgd assumed by CCWD.

Because CCWD has not provided the actual maximum operating capacity of the proposed pipeline, the Commission has extrapolated a maximum operating capacity of 2.56 mgd based on data provided in CCWD's Engineering Master Plan.

The extrapolated maximum operating capacity of 2.56 mgd would supply approximately 97% of 2020 projected peak day demand under the lowest demand projection of 2.62 mgd (Scenario 1 at 150%), 75% of the projected peak day demand of 3.29 mgd (Scenario 3 at 180%), and 65% of the 3.88 peak day demand projected under Scenario 6 at 190%. Thus, assuming that the extrapolated maximum operating capacity of 2.56 mgd is reasonably accurate, the capacity of the proposed 16-inch pipeline would not exceed the demand for water within the project service area in 2020.

The Commission recognizes that a substantial margin of error exists in this analysis. Nevertheless, the Commission finds that based on the information available and the foregoing analysis, the capacity of the proposed 16-inch pipeline would not exceed the peak day demand at buildout. Therefore, the Commission finds that the proposed project is consistent with Half Moon Bay LUP Policies 10-3, 10-6, 10-9, and 10-10 and San Mateo County LUP Policies 2.6, 2.7, 2.9, 2.11, 2.12, 2.13, 2.25, 2.26, 2.27, 2.28, 2.29, and 2.35.

4.3 Phased Development of Public Works Facilities

The HMB and SMC LCPs require public works projects involving an increase in capacity to be coordinated with the phasing of other services, by taking into consideration the availability of related public works. New or expanded public works capacity that would exceed the existing and probable future capacity of other public works facilities is prohibited under these policies. Thus, the capacity of the proposed water supply pipeline may not overburden the "existing and probably future capacity" of other infrastructure elements including highways, sewage treatment, and schools.

City of Half Moon Bay LUP Policies

Policy 10-3

> The City shall limit development or expansion of public works facilities to a capacity which does not exceed that needed to serve build-out of the Land Use Plan, and require the phased development of public works facilities in accordance with phased development policies in Section 9 and the probable capacity of other public works facilities.

Policy 10-4

> The City shall reserve public works capacity for land uses given priority by the Plan, in order to assure that all available public works capacity is not consumed

by other development and control the rate of new development permitted in the City to avoid overloading of public works and services.

Policy 10-10

The City will support the phased development of water supply facilities (chiefly pumping stations and water treatment facilities) so as to minimize the financial burden on existing residents and avoid growth-inducing impacts, so long as adequate capacity is provided to meet the City needs in accordance with the phased development policies (including expected development to the year 2000) and allocations for floriculture.

Policy 10-25

The City will support the use of Level of Service C as the desired level of service on Highways 1 and 92, except during the peak two-hour commuting period and ten-day average peak recreational hour when Level of Service E will be acceptable.

San Mateo County LUP Policies

2.12 Timing and Capacity of Later Phases

a. Use the results of Phase I monitoring to determine the timing and capacity of later phase(s).

b. Guide timing by allowing later phase(s) to begin when Phase I capacity has been or will be consumed within the time period required to construct additional capacity.

c. Establish the capacity by: (1) estimating the capacity needed to serve the land use plan at buildout, (2) considering the availability of related public works to establish whether capacity increases would overburden the existing and probable future capacity of other public works and (3) considering the availability of funds.

d. Require every phase to go through the development review process.

[Emphasis added.]

2.27 Timing and Capacity of Later Phases

a. Use the results of Phase I monitoring to determine the timing and capacity of later phase(s).

b. Guide timing by allowing later phase(s) to begin when Phase I capacity has been or will be consumed within the time period required to construct additional capacity.

c. Establish the capacity by: (1) estimating the capacity needed to serve the land use plan at buildout, (2) considering the availability of related public works to establish whether capacity increases would overburden the existing and probable future capacity of other public works and (3) considering the availability of funds.

d. Require every phase to go through the development review process.

[Emphasis added.]

4.3.1 Highway Capacity

Road access to the Mid-Coast region of San Mateo County including the City of Half Moon Bay and the portion of the California coast within this region is limited to Highways 1 and 92. The current volume of traffic on these highways exceeds their capacity and the regional transportation studies conclude that even with substantial investment in transit and highway

improvements, congestion will only get worse in the future.[21] As a result, the level of service on the highways at numerous bottleneck sections is currently and will in the future continue to be rated as LOS F.[22] LOS F conditions are currently experienced at certain intersections and at bottleneck sections of both highways during both the weekday PM peak-hour commuter period and during the weekend mid-day peak. Because there are no alternative access routes to and along the coastline in this area of the coast, the extreme traffic congestion on Highways 1 and 92 significantly interferes with the public's ability to access the area's substantial public beaches and other visitor-serving coastal resources.

The most recent Countywide Transportation Plan predicts far greater congestion on these two corridors by 2010, stating "in 2010 the most congested corridor [in San Mateo County] will be Western 92."[23] This report projects increases in the traffic volumes of 197 and 218 percent on Highways 1 and 92, respectively, in the Mid-Coast region, and attributes these increases to "the anticipated levels of new development on the Coastside and the continued pattern of Coastsiders out-commuting to jobs in San Francisco and on the Bayside." This latest report serves to corroborate and underscore the findings of all of the previous traffic studies conducted in the region over the past three decades that Highways 1 and 92 in the Mid-Coast Region are not adequate to serve either the current or the expected future demands of development.

As discussed above, the proposed development would provide an increase in the CCWD's water system capacity needed to support substantial future growth in the Mid-Coast region. However, as documented in the Countywide Transportation Plan, the present and probable future capacity of the highway network serving this region is not sufficient to serve this level of growth. As such, the capacity of the proposed pipeline would not be phased in accordance with the probable capacity of the area's transportation infrastructure and would support a level of growth that cannot be reasonably accommodated by the area's highways.

In light of the above findings, the Commission might find that the subject permit applications are inconsistent with HMB LUP Policies 10-3, 10-4, 10-and 25, and SMC LUP Policies 2.12 and 2.27. However, this would require the Commission to further determine that development in Half Moon Bay and the San Mateo County Mid-Coast must be limited to the level for which the current and probable future capacity of the area's highways are adequate to serve, i.e., that highway capacity is the limiting factor to growth in the region.

---

[21] San Mateo County Countywide Transportation Plan Alternatives Report, City/County Association of Governments, San Mateo County (C/CAG 1997.)
San Mateo County Congestion Management Plan, City/County Association of Governments, San Mateo County (C/CAG 1998.)
San Mateo County Congestion Management Plan, City/County Association of Governments, San Mateo County (C/CAG 2000.)

[22] Traffic analysis is commonly undertaken using the level of service rating method. The level of service rating is a qualitative description of the operational conditions along roadways and within intersections. Level of service is reported using an A through F letter system to describe travel delay and congestion. Level of service (LOS) A indicates free-flowing conditions. LOS E indicates the maximum capacity condition with significant congestion and delays. A LOS F rating indicates traffic that exceeds operational capacity with unacceptable delays and congestion. LUP Policy 10-25 makes Level of Service E the lowest acceptable level of service during commuting hours and the ten-day average peak recreational hour.

[23] (C/CAG 2000)

While limiting development to the level that can be reasonably served by the area's highways is supported by the above-cited LCP policies, this approach is not carried through in the growth management policies contained in either the currently certified LCPs or the more restrictive growth management policies expected to be implemented in the future. Although these LCP growth measures control the rates of growth in the City and County Mid-Coast, the plans nevertheless provide for continued new development to a level far in excess of the existing or reasonably foreseeable future capacity of the highways, including new residential subdivisions, residential development of agricultural lands, and buildout of small substandard lots in both "paper subdivisions" and existing neighborhoods platted between 1900 and 1920. Unless more restrictive land use and zoning policies, including transportation demand management schemes, are implemented to reduce the overall level of development allowable under these plans, growth will continue under the LCPs in excess of highway capacity.

4.3.2 Wastewater Treatment Capacity

In 1994 The Sewer Authority Mid-Coastside (SAM) applied to the County to expand their wastewater capacity to 4.0 mgd in order to deliver sewer connections until buildout levels are reached. This expansion, from 2 mgd in Phase I to 4.0 mgd at buildout, was not in phase with other infrastructure, and in fact exceeded estimated buildout demand by approximately 1 mdg. The Final Environmental Impact Report conducted for the SAM expansion noted:

> *If future wastewater generation remains close to historical levels, the 4.0 mgd plant would be able to serve LCP build-out and have capacity remaining (January 16, 1989).*

In granting the coastal development permit for the plant expansion, the Commission found that the existing plant was undersized to accommodate peak flow, and had been in violation of the San Francisco Bay Regional Water Quality Control Board on several occasions for releasing untreated wastewater. As the Monterey Bay National Marine Sanctuary is the receiving waters for this discharge, the Commission found a larger plant to be most protective of coastal resources, while not exceeding build-out levels. Consequently, wastewater treatment capacity within the CCWD service area is not a limiting factor to future development. Therefore the proposed pipeline replacement will not induce growth in excess of wastewater treatment capacity in conformity with HMB LUP Policy 10-3 and SMC LUP Policies 2.12 and 2.17.

4.3.3 Schools

Coastside County Water District service area falls within the Cabrillo Unified School District (CUSD), a district representing seven primary, secondary and continuing education schools that serve Mid-Coast San Mateo County and Half Moon Bay. With a grant from the State in the year 2000, the district was able to modernize several of its facilities, including the high school, upgraded technology and the purchase of four new busses. CUSD experienced a $1.5 budget shortfall in 2002-03 fiscal year. In order to retain low student/teacher ratios and other vital programs, the District chose to eliminate bus service in the fall of 2002.

Increases in school infrastructure capacity is not limited to the same degree as highways, water treatment, etc. It is limited, however, by financial constraints such as the current fiscal deficit. CUSD has several funding options: state grants, local voter-approved bond acts, federal grants, and private funds. A proposed bond act was narrowly rejected by district voters in March 2002.

Consequently, CUSD has been approaching private donors and looking for funds to make up the difference.

CUSD determines capacity through a formulation that's designed to calculate the amount of new students who must be accommodated. District Superintendent John Bayless reports that any growth induced by the sale of any new connections could potentially be absorbed by CUSD's schools, although the district is operating at full capacity. CUSD is required to maintain small class sizes in order to keep a federal grant that provides significant for the district. CUSD has budgeted for a new middle school.

Although fiscal constraints will likely affect the rate that new and expanded school facilities are developed, unlike highway capacity, no physical or regulatory barriers exist that would ultimately prevent future expansion of Mid-Coast school facilities to meet the demand generated by growth in the region. As such, the proposed pipeline replacement will not induce growth in excess of the capacity of Mid-Coast schools in conformity with HMB LUP Policy 10-3 and SMC LUP Policies 2.12 and 2.17.

4.3.4 Conclusion – Public Works Facility Phasing

The proposed expansion of CCWD water service capacity would be in phase with Mid-Coast region's existing wastewater treatment capacity as well as with the probable future capacity of Mid-Coast school facilities, but is arguably not in phase with either the existing or probable future capacity of the region's highways.

The Commission recognizes that the development levels provided for in the certified LCPs are not entitlements and represent the maximum potential development allowable after application of all relevant policies and standards of the certified local coastal program. The certified development levels do not represent the actual development level allowable after application of all relevant policies and standards of the certified LCP, including the LCP policies relating to traffic and public access to the coast. Nevertheless, because the land use plans and zoning currently in effect provide for potential continued growth at a level that could generate additional demand for water service and because the application of certified LCP policies and standards, rather than the size of the pipe, will ultimately determine the level of development allowable given the existing and probable future capacity of the region's highways, the Commission finds that the proposed development is consistent with HMB LUP Policy 10-3 and SMC LUP Policies 2.12 and 2.17.

4.4 Archeology

Both the HMB and SMC LCPs requires the protection of archaeological and paleontological resources pursuant to the LUP policies cited below:

Half Moon Bay LUP Policies

Policy 6-4

> As part of any project to construct new roads, trails, sewer or water lines, or other public projects involving substantial excavation which could destroy archaeological resources within the areas designated on the Map of Potential Archaeological resources, provision shall be made for an archaeological survey

and the opportunity to sample and salvage the site by a qualified archaeologist as a part of the construction project.

San Mateo County LUP Policies

1.24 Protection of Archaeological/Paleontological Resources

Based on County archaeology/Paleontology Sensitivity Maps, determine whether or not site proposed for new development are located within areas containing potential archaeological/paleontological resources. Prior to approval of development proposed in sensitive areas, require that a mitigation plan, adequate to protect the resource and prepared by a qualified archaeologist/paleontologist be submitted for review and approval and implemented as part of the project.

The City of Half Moon Bay ordinances also address specific requirements for Archeological resource identification, protection , and mitigation (e.g. 18.38.040).

According to the CCWD's environmental analysis for the project, "there is a high possibility of identifying Native American cultural resources in the project area, generally, and mitigation is recommended" (IS-25). In particular, section 2 of the project which is the Half Moon Bay section, has been identified as having previously recorded archaeological site approximately 100 feet upstream of Frenchman's Creek east of Highway 1. Although no direct impacts are anticipated from the project, the pipeline replacement project involves extensive ground disturbance, and there is a general need to assure that there are no adverse impacts to archeological or other cultural resources. The environmental document recommends consulting a qualified archaeologist in the event that resources are discovered during excavation. To assure full conformance with the LCPs, as well as protection of sensitive resources, Special Condition 2 is necessary. This condition requires that prior to issuance of the permit, that a mitigation and monitoring plan be submitted to the Executive Director for approval. In addition, during all ground disturbing activities, CCWD shall retain a qualified archaeologist and qualified local Native Americans for monitoring. In the event that archaeological resources are discovered, all construction shall cease in the vicinity of the resource, and a new plan shall be submitted that avoids such resources to the maximum extent practicable. The Commission finds that as conditioned the proposed development is consistent with HMB LUP Policy 6-4 and Zoning Code Section 18.38.040 and SMC LUP Policy 1.24.

4.5 Water Quality

The City of Half Moon Bay LCP contains a variety of LUP policies to protect sensitive marine and coastal water resources, including riparian areas a marine habitats (Chapter 3). In addition, the LCP incorporates the water quality protection policies of the Coastal Act (e.g. 30230, 30231). LUP policy 4.9 specifically requires that new development address potential adverse impacts from runoff and drainage. The ordinances of the LCP also address protection of coastal water habitats with specific corresponding ordinances to protect riparian areas from adverse runoff (18.38.010 et seq.). The San Mateo County LCP likewise contains policies to protect coastal water habitats, including marine, riparian, and wetland resources (see LUP Chapter 7).

As proposed the project will span over a mile in the both the City and the County. Although there will be minimal to no direct impacts to sensitive habitats, the project involves extensive excavation for installation of the replacement pipeline. Therefore, it is necessary to protect

against potential adverse runoff to the surrounding environment, including the numerous riparian areas in the project vicinity. Condition 1 requires that the CCWD implement construction best management practices to address this project impact.

5.0 CEQA

Section 13096 of the Commission's administrative regulations requires Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant impacts that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding significant adverse environmental effects of the project that were received prior to Commission action. The proposed development has been conditioned in order to be found consistent with the policies of the certified LCPs, and the public access and recreation policies of the Coastal Act. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, that would substantially lessen any significant adverse impact that the development may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the certified LCP and Coastal Act and to conform to CEQA.

APPENDIX A -- REFERENCES

Brian Kangas Foulk, 1999. Review of Calculations Supporting the El Granada Pipeline Project, October 4, 1999.

CCAG 1997. "San Mateo County Countywide Transportation Plan Alternatives Report," City/County Association of Governments, San Mateo County (C/CAG), June 1997.

CCAG 1998. "San Mateo County Congestion Management Plan," City/County Association of Governments, San Mateo County (C/CAG), January 1998.

CCAG 2000. Draft "San Mateo County Countywide Transportation Plan 2010," City/County Association of Governments, San Mateo County (C/CAG), December 2000.

CCWD, 1997. Engineering Master Plan: El Granada Transmission Pipeline Replacement Project, June 1997.

CCWD, 2000. Urban Water Management Plan, 2000-2005.

CCWD, 2002a. Analysis of El Granada Transmission Pipeline Project's Consistency with Half Moon Bay and San Mateo County Local Coastal Program Policies, June 10, 2002.

CCWD, 2002b. Evaluation of Future Scenarios for the Water Distribution System, February 2002.

CCWD, 2002c. Water Supply Evaluation, Calendar Year 2001 Report, March 2002.

Citizen's Utilities Company of California, 2000. Montara District Water System Master Plan Update, October 2000.

Department of Water Resources, 1999. Montara Water Supply Study for Montara Sanitary District, June 1999.

Half Moon Bay Permit PDP-44-98.

Muller, 2002. Letter from John Muller and Ed Schmidt, CCWD, to Peter Imhof, August 2, 2002.

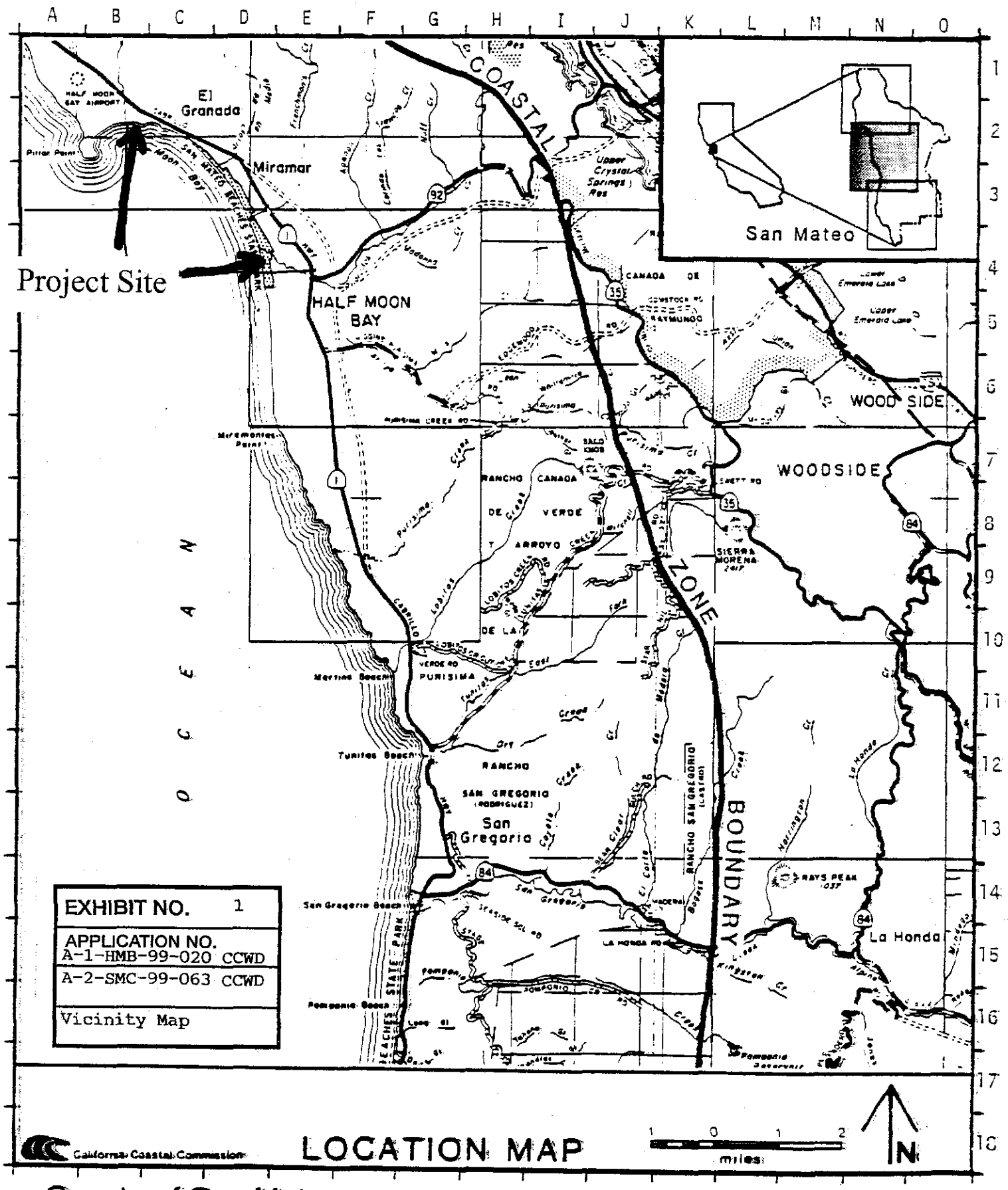
Slater-Carter, 2002. Letter from Kathryn Slater-Carter, President, Montara Sanitary District, May 8, 2002.

Teeter, 2002a. Memorandum from James Teeter, CCWD District Engineer, to Ed Schmidt, General Manager, re: Cost Comparison of Project Alternatives, dated February 12, 2002.

Teeter, 2002b. Memorandum from James Teeter, CCWD District Engineer, "Report on Compliance with Coastal Program Policies Requiring that the Capacity of the Replacement Pipeline Not Exceed the Capacity to Serve Buildout of the Land Use Plans," February 26, 2002, revised July 18, 2002.

Teeter, 2002c. Memorandum from James Teeter, CCWD District Engineer, to Lesley Ewing, Commission Engineer, July 18, 2002.

Exhibits



County of San Mateo

Sheet 2 of 3

EXHIBIT NO. 2
APPLICATION NO. A-1-HMB-99-020 CCWD
A-2-SMC-99-063 CCWD
Regional Map

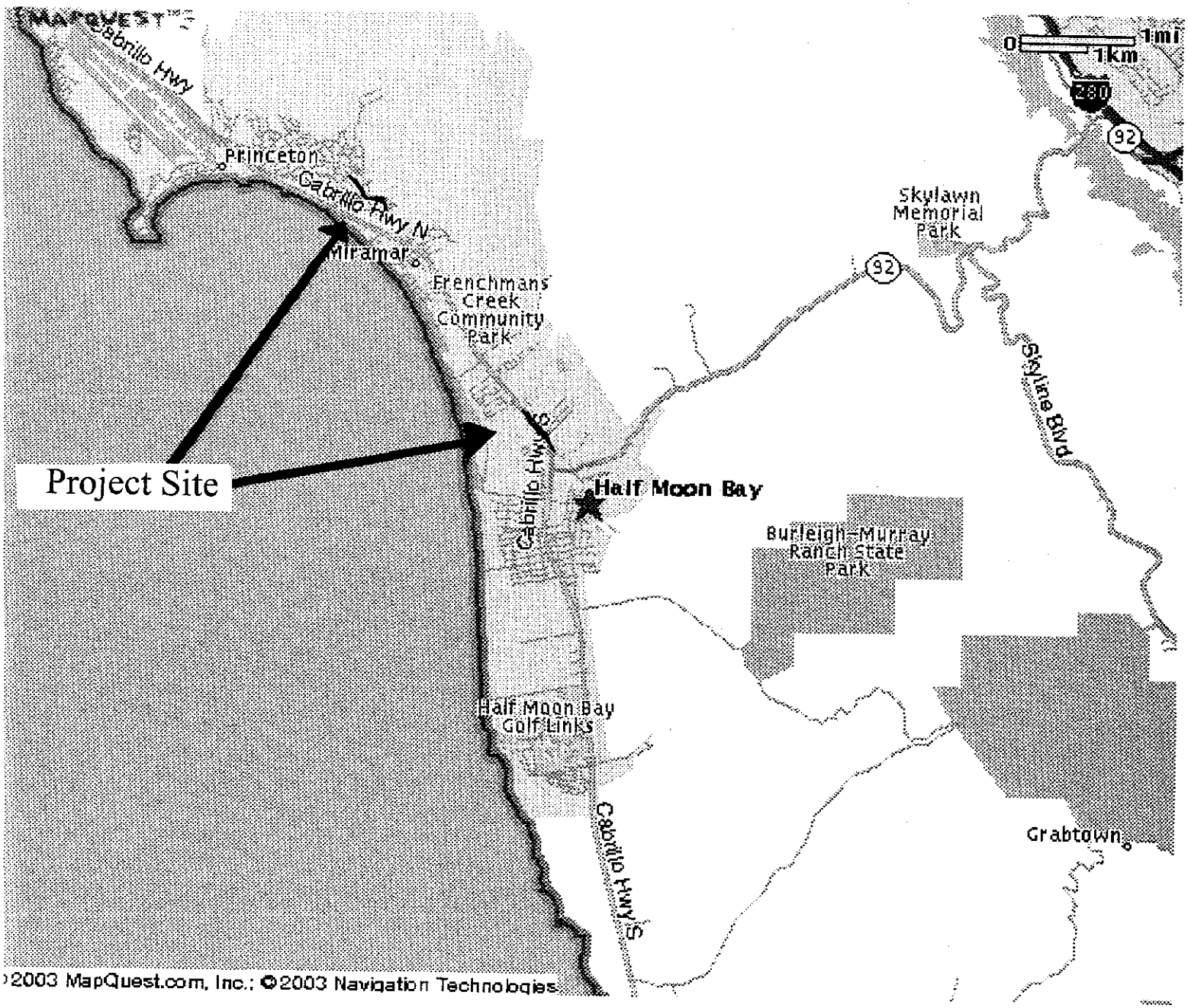


FIGURE 1

Coastside County Water District

Water Supply and Transmission System

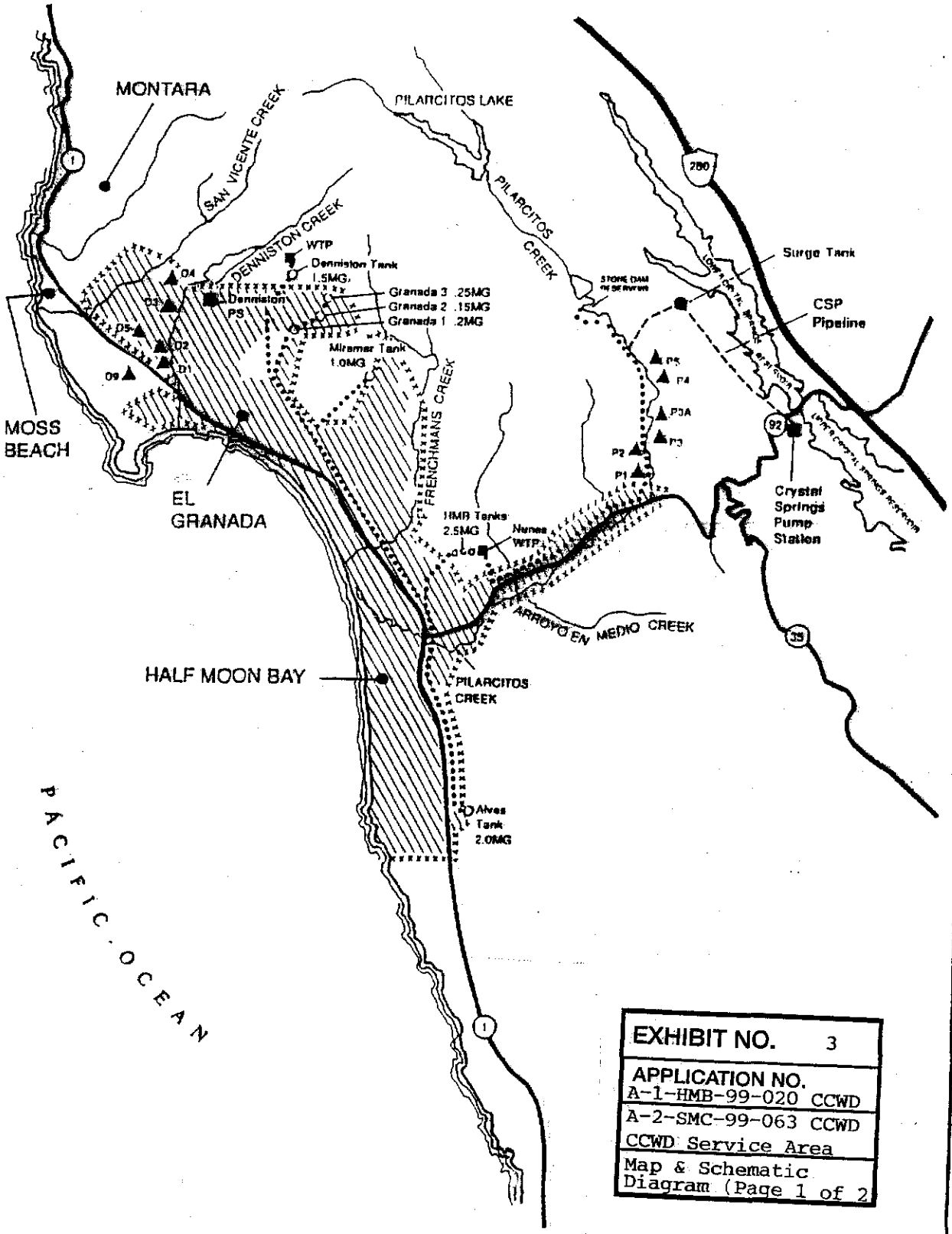


EXHIBIT NO. 3
APPLICATION NO. A-1-HMB-99-020 CCWD
A-2-SMC-99-063 CCWD
CCWD Service Area
Map & Schematic Diagram (Page 1 of 2)

N

Not To Scale

DISTRICT INFORMATION

Treated Water Storage	7.60 MG
Water Treatment Plants	
Nunes	4.5 mgd
Denniston	1.0 mgd
Transmission Pipeline	17 miles
Distribution Pipeline	83 miles

LEGEND

- District Boundary
- Existing Transmission Lines
- CSP Transmission Pipeline
- Wells

January 15, 1997

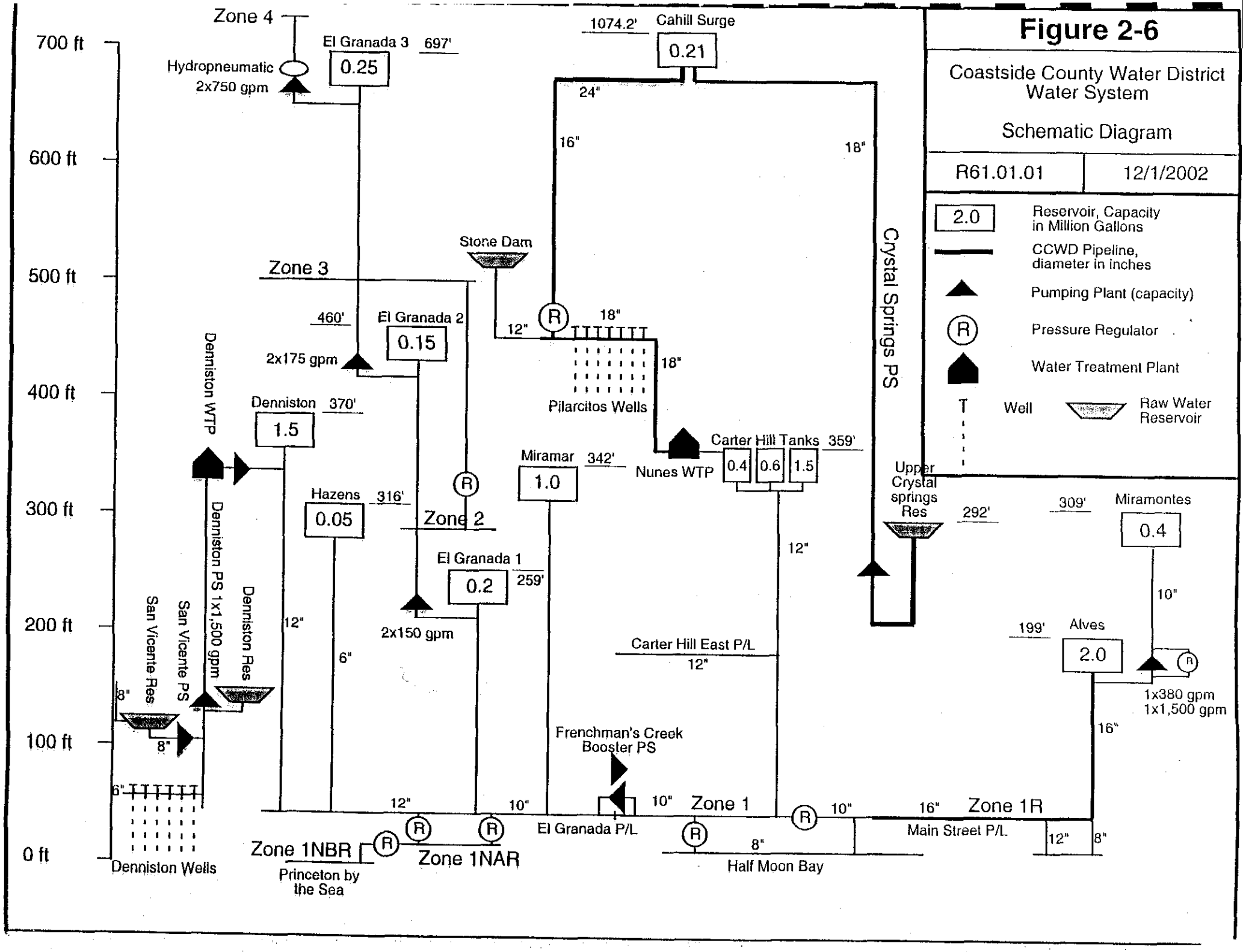
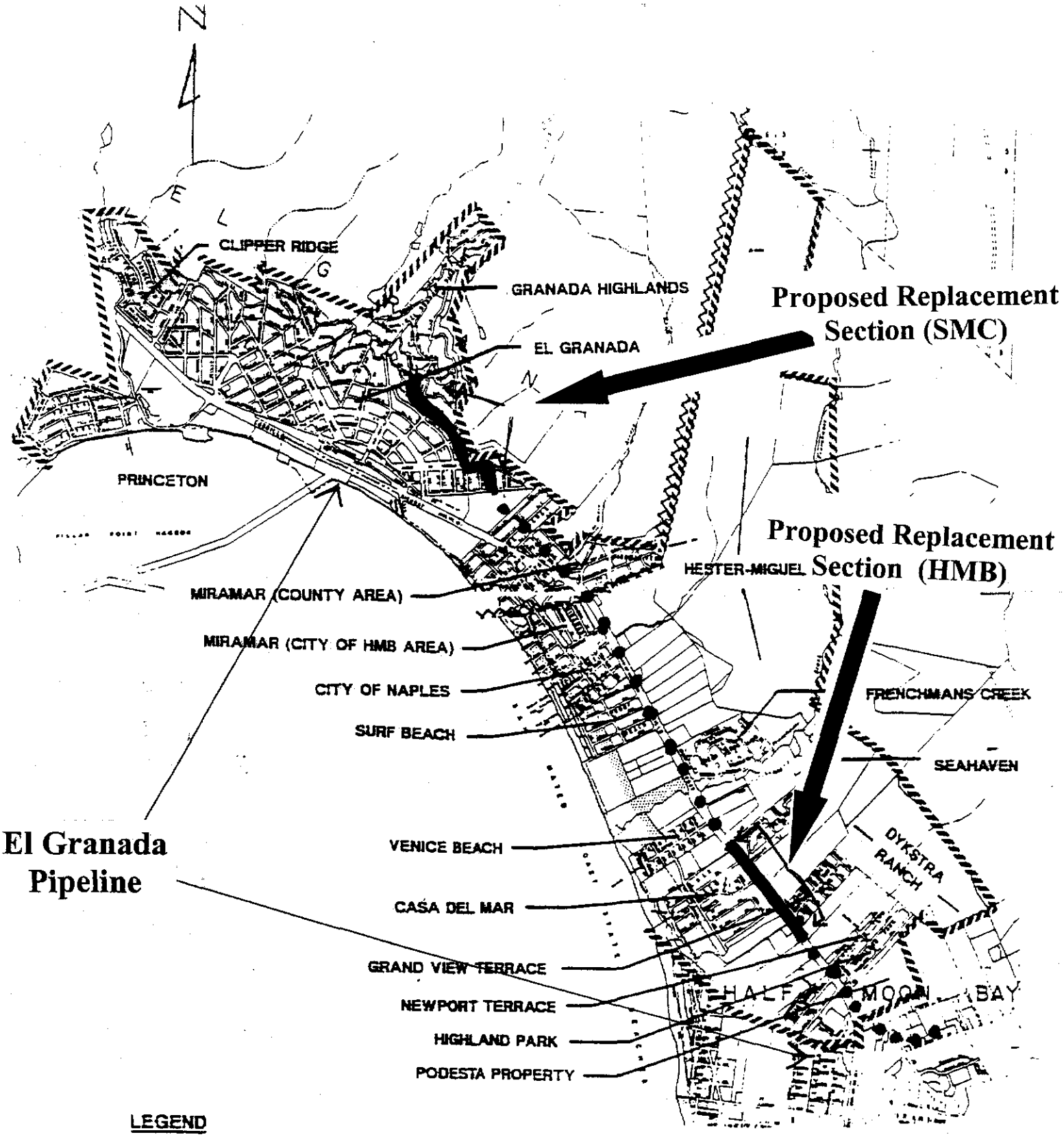


Figure 2-6
Coastside County Water District Water System
Schematic Diagram
R61.01.01
12/1/2002
2.0 Reservoir, Capacity in Million Gallons
CCWD Pipeline, diameter in inches
Pumping Plant (capacity)
Pressure Regulator
Water Treatment Plant
Well
Raw Water Reservoir
700 ft
600 ft
500 ft
400 ft
300 ft
200 ft
100 ft
0 ft
Zone 4
Hydropneumatic 2x750 gpm
El Granada 3 697'
0.25
1074.2' Cahill Surge
0.21
24"
16"
18"
Crystal Springs PS
Stone Dam
Zone 3
460'
El Granada 2
0.15
2x175 gpm
12"
18"
Pilarcitos Wells
Denniston WTP
Denniston 370'
1.5
Carter Hill Tanks 359'
0.4
0.6
1.5
Nunes WTP
Miramar 342'
1.0
Upper Crystal springs Res 292'
309'
Miramontes
0.4
Hazens 316'
0.05
Zone 2
El Granada 1
0.2
259'
2x150 gpm
Denniston PS 1x1,500 gpm
Denniston Res
San Vicente PS
San Vicente Res
8"
6"
Carter Hill East P/L
199'
Alves
2.0
1x380 gpm
1x1,500 gpm
Frenchman's Creek Booster PS
Zone 1
Zone 1R
El Granada P/L
Main Street P/L
Zone 1NBR
Zone 1NAR
Princeton by the Sea
Half Moon Bay
Denniston Wells



LEGEND

BOUNDARY OF WATER SERVICE AREA OF PROPOSED PROJECT PIPELINE

BOUNDARY BETWEEN CITY OF HALF MOON BAY AND COUNTY OF SAN MATEO

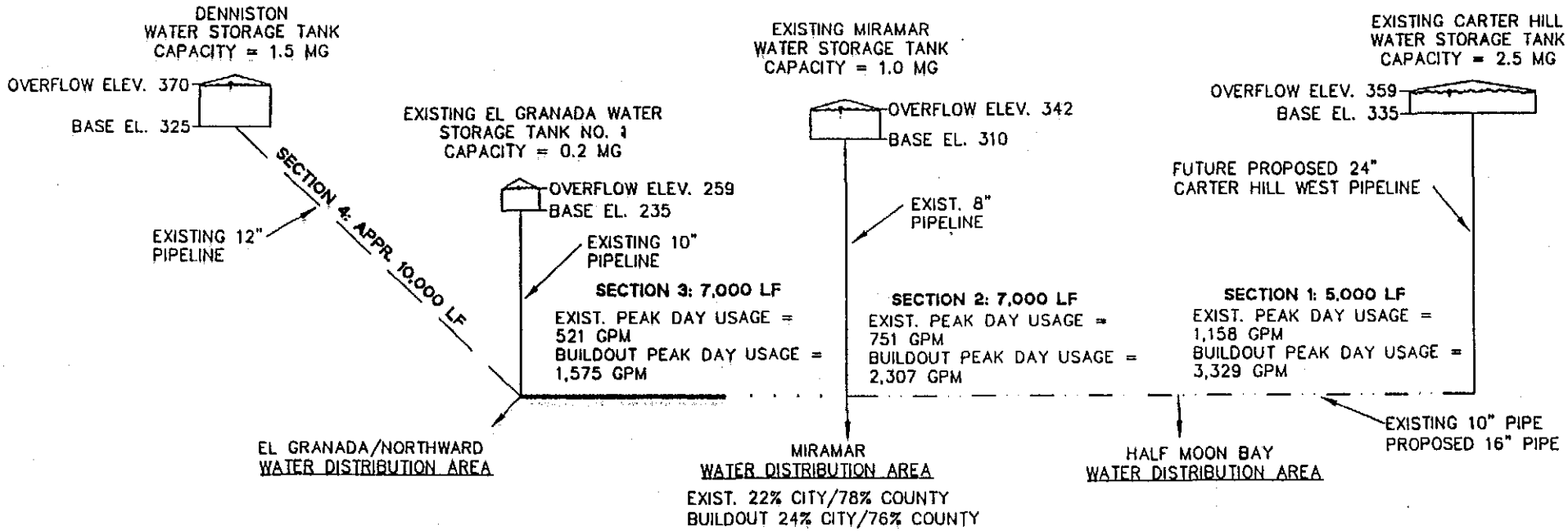
Currently Proposed Pipeline

Balance of El Granada Pipeline Project

PROJECT AREA MAP

SCALE: 1" = APPROX. 1400 FT.

EXHIBIT NO. 4
APPLICATION NO. A-1-HMB-99-020 CCWD A-2-SMC-99-063 CCWD El Granada Pipeline
Service Area Map, Project Area Map
& Schematic Diagram
(Page 1 of 5)



LEGEND

- CURRENT COASTAL DEVELOPMENT PERMIT
- SANTIAGO AVE. FUTURE COUNTY COASTAL DEVELOPMENT PERMIT
- HALF MOON BAY COASTEL DEVELOPMENT PERMIT
- NO PROPOSED DEVELOPMENT

HYDRAULIC PROFILE

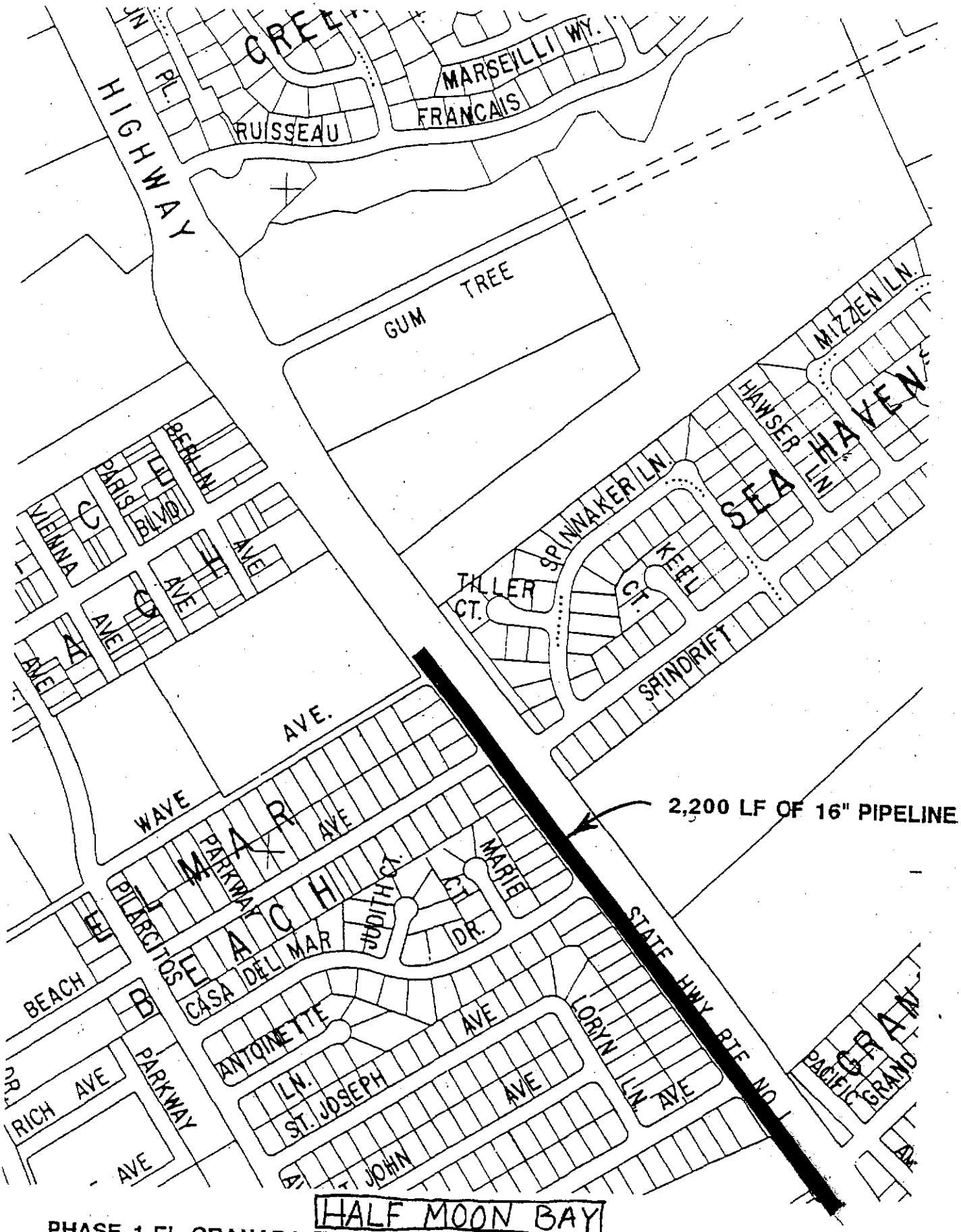
SCHEMATIC DIAGRAM OF PROPOSED EL GRANADA REPLACEMENT TRANSMISSION PIPELINE

NO SCALE

FIGURE ES-1

Brian Kangas Foulk

Engineers • Surveyors • Planners



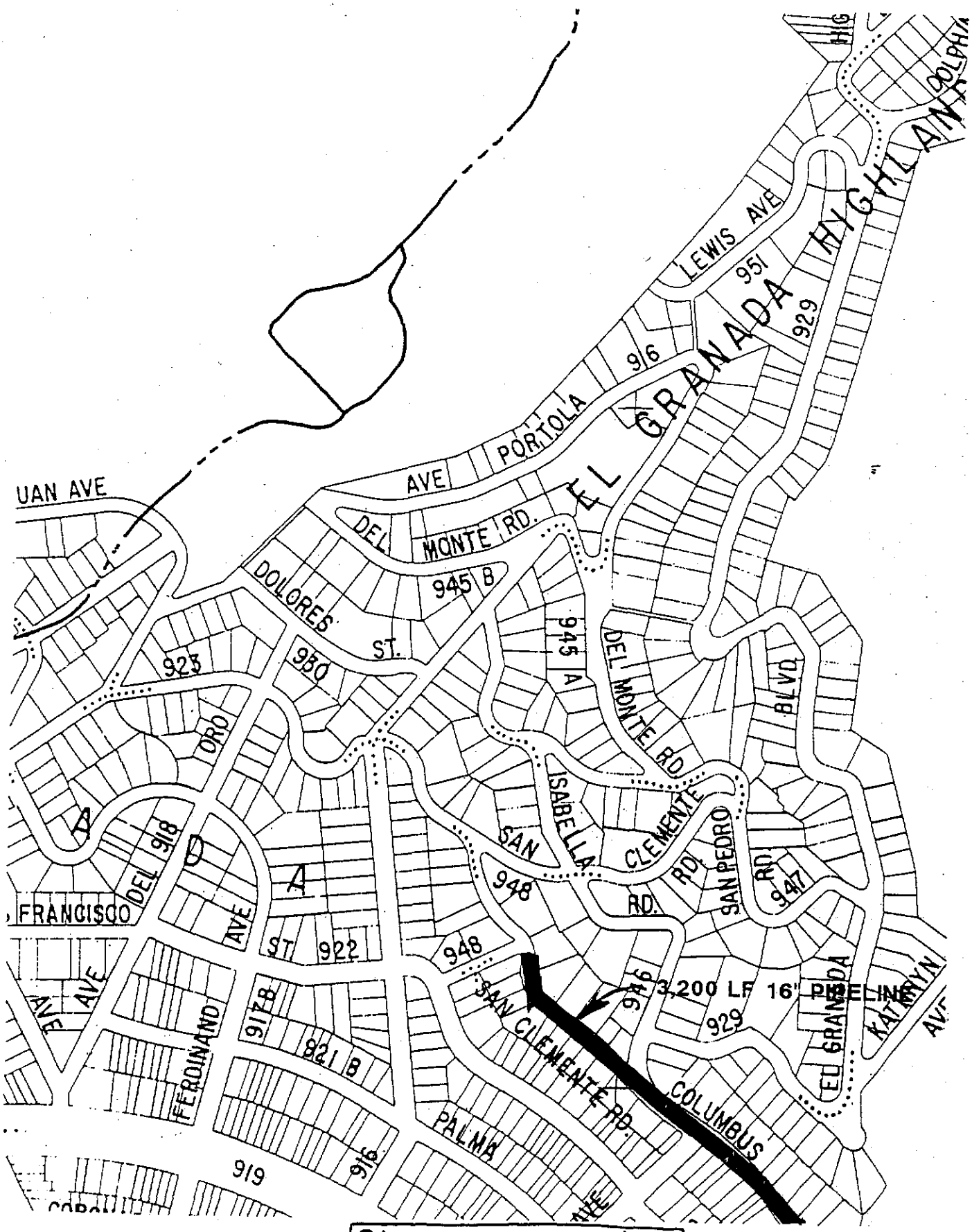
HALF MOON BAY

PHASE 1 EL GRANADA TRANSMISSION PIPELINE REPLACEMENT PROJECT

(CASA DEL MAR PIPELINE REPLACEMENT PROJECT)

SCALE: 1" = 400'

SHEET 1 OF 1

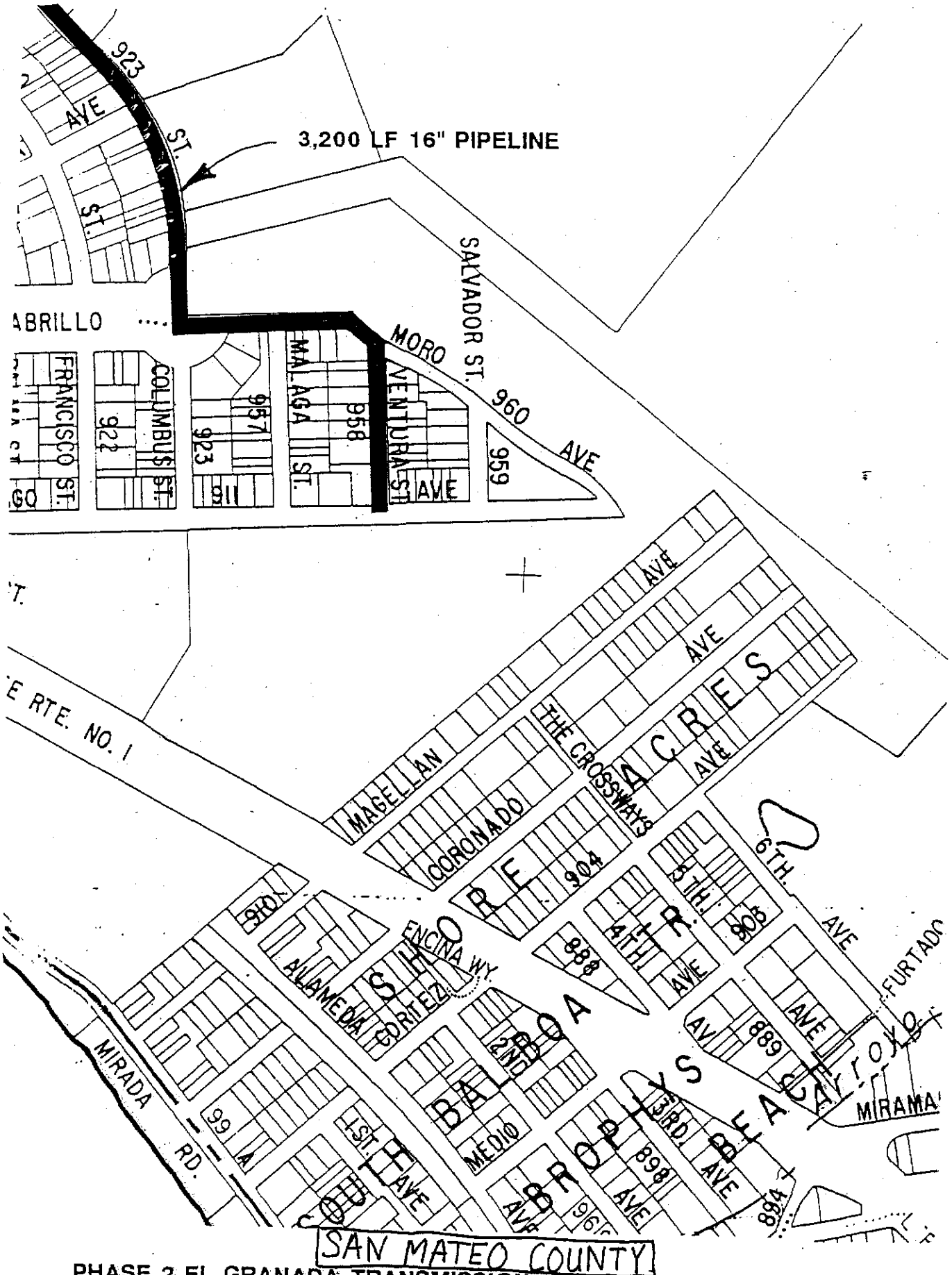


SAN MATEO COUNTY

PHASE 2 EL GRANADA TRANSMISSION PIPELINE REPLACEMENT PROJECT

SCALE: 1" = 400'

SHEET 1 OF 2



PHASE 2 EL GRANADA TRANSMISSION PIPELINE REPLACEMENT PROJECT

SCALE: 1" = 400'

SHEET 2 OF 2

EXHIBIT NO. 5
APPLICATION NO. A-1-HMB-99-020 CCWD
A-2-SMC-99-063 CCWD Table 9.1 from City
of Half Moon Bay LUP (Page 1 of 5)

TABLE 9.1

CATEGORIES OF UNDEVELOPED LANDS IN HALF MOON BAY

CATEGORY 1: Existing Neighborhoods

		Existing Units	Maximum Potential New Units Under Exist. Zoning	Maximum Potential New Units Under LUP
• 1.	Miramar	117	75	75(5)
• 2.	City of Naples	51	68	71(5)
• 3.	Grandview Terrace	84	31	66
• 4.	Newport Terrace	52	20	25
• 5.	Casa del Mar	241	45	40
6.	Ocean Shore Terrace	95	32	76
7.	Pilarcitos Park	275	235	213
8.	Community Core/Spanish-town (Arleta Park East)	318	300	272
9.	Arleta Park(& Miramontes Terrace South of Kelly)	597	482	349-414
10.	Ocean Colony	189	861	861
11.	Canada Cove Mobile Home Park	288	69	71
• 12.	Frenchman's Creek	177	5	5(5)
• 13.	Sea Haven	166	0	0
Category 1 Subtotal:		2,650	2,223(1)	2,124-2,189

CATEGORY 2:

Undeveloped "Paper" Subdivisions

• 1.	Surf Beach	2	91	100(5)
• 2.	Venice Beach	6	85	60
3.	Miramontes Terrace (North of Kelly)	6	66	0-15
• 4.	Highland Park	0	66	95
5.	Wavecrest	0	*(2)	*(2)
6.	Redondo View	0	*(2)	*(2)
7.	Redondo	0	*(2)	*(2)
8.	Bernardo Station	19	121	70(2)
9.	Ola Vista	1	*(2)	*(2)
10.	Manhattan	1	*(2)	*(2)
11.	Lipton-by-the-Sea	0	*(2)	*(2)
Category 2 Subtotal:		35	429	325-340

Legend

• Regions within pipeline service area

] Numbers of existing units & Maximum potential new units under LUP in the service area

TABLE 9.1

CATEGORY 3: **Unsubdivided Lands, Either Contiguous with Existing Development or Generally Surrounded by Development, Without Significant Resource Value**

	Existing Units	Maximum Potential New Units Under Exist.Zoning	Maximum Potential New Units Under LUP
1. Lands between Casa del Mar and Venice Beach	0	65	15
2. Lands between Grandview Terrace and Newport Terrace	0	175	150
3. Land zoned R-3 near High School	1	80	20
4. Guerrero Avenue site between Miramar and City of Naples (including lots on Alameda)	0	46	46(5)
5. Land east of Frenchman's Creek Subdivision	0	14	50(5)
6. Dykstra Ranch	0	227	228
7. Carter Hill	2	47	50
8. Land north of greenhouses with driving range Nurseryman's Exchange (lower Hester-Miguel)	0	100-300	80(5)
Category 3 Subtotal:	3	754-954	639

CATEGORY 4: **Unsubdivided Lands Not Contiguous With Existing Development and Having Agricultural, Coastal Recreation, or Habitat Value**

1. Unsubdivided other lands between Seymour and south City Limits	2	1,597-1,697	1,000
Category 4 Subtotal:	2	1,597-1,697	1,000

TABLE 9.1

CATEGORY 5: Unsubdivided Lands Contiguous With Existing Development and Having Agricultural, Coastal Recreation, or Habitat Value

	Existing Units	Maximum Potential New Units Under Exist. Zoning	Maximum Potential New Units Under LUP
1. Land between Frenchman's Creek and Young Avenue	0	100-120	50(5)
2. Land between Frenchmans Creek and Venice Beach	5	40-50	60
3. Land between Casa del Mar and Pilarcitos Creek	5	310-390	0
4. Land between Kelly and Pilarcitos Creek	15	600-900	42
5 Andreotti Property on Main Street	1	225-270	130
6 Podesta property west of high school	0	360(3)	110
7. Strip along Main Street and Hwy 1 south of Colonel Way South Main Street/Cassinelli	0	200(3)	35
8. Lands surrounding Sea Haven	4	360(3)	650
Category 5 Subtotal:	30	2,195-2,650	1,077

TABLE 9.1

CATEGORY 6: **Unsubdivided Lands Not Contiguous With Existing Development and Having Agricultural, Coastal Recreation, Habitat, and Scenic Value**

	Existing Units	Maximum Potential New Units Under Exist. Zoning	Maximum Potential New Units Under LUP
1. Hester-Miguel lands	0	600-700	50(5)
2. Cabral Property	0	85	*(2)
3. Southeastern annexation across from Canada Cove	0	0	0
4. Land east of Arroyo Leon	6	100(3)	50
Category 6 Subtotal:	6	785-885	100
TOTAL, ALL CATEGORIES:	2,726(4)	7,983-8,838	5,265-5,345

TABLE 9.1
FOOTNOTES

1. Count assumes that consolidations occur so as to maximize buildable sites. Actual total could be 200-400 units lower.

2. Collectively accumulated in Category 4.

3. Units permitted under former General Plan where existing zoning is agricultural.

4. 1980 Federal Census.

5. Denotes units in El Granada Sewer District. (Total 532 units.)

TABLE 9.2

COMPARISON OF DEVELOPMENT POTENTIAL UNDER EXISTING ZONING AND UNDER THE LAND USE PLAN BY LAND GROUPS

	Maximum Potential New Housing Units Under Exist. Zoning	Maximum Potential New Housing Units Under LUP
CATEGORY 1	2,223	2,124-2,189
CATEGORY 2	429	325-340
CATEGORY 3	754-954	639
CATEGORY 4	1,597-1,697	1,000
CATEGORY 5	2,195-2,650	1,077
CATEGORY 6	785-885	100
TOTAL	7,983-8,838	5,265-5,345

- Total existing units in El Granada Pipeline Service Area = 910
- Maximum potential new housing units under LUP in El Granada Pipeline Service Area = 2026
- Total units (existing & potential) in El Granada Pipeline Service Area = 2936

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

RECEIVED
JUL 24 2003
CALIFORNIA
COASTAL COMMISSION

July 24, 2003

EXHIBIT NO. 6
APPLICATION NO. A-1-HMB-99-020 CCWD A-2-SMC-99-063 CCWD Correspondence from Jack Liebster, Planning Director, City of Half Moon Bay, 7/24/2003
(Page 1 of 8)

Sarah Borchelt
North Central Coast District
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Dear Sarah,

As you requested I am providing my best estimate of potential residential development in the City of Half Moon Bay for the next twenty years likely to occur within, and outside, the present County Coastside Water District (CCWD) El Granada Pipeline expansion project service area.

Any such estimate is fraught with difficulty, caveats and debatable assumptions, so it is extremely important to make absolutely clear that this estimate does not imply any commitment to, or indicate any approval of, such potential future development, particularly the considerable new subdivision included in the estimate. Rather it is simply based upon the certified LCP's provisions, including the best available information on coastal resource constraints, growth rate and current and anticipated City procedures regulating and allocating growth. It is consistent with the City's letter to the Commission sent to Mr. Doherty on June 27, 2003, estimating 1000 new residential units over the next twenty years.

Please also note the estimate is generally consistent with the "Allocation Plan for Services" required by the LCP Implementation Plan. The allocation plan in the attached Resolutions and Map is to guide the distribution of water connections for Phase I of the CCWD's Crystal Springs Water Supply Project permitted under CDP 84-68.

Based upon these adopted policies, as further detailed below, I estimate 1000 new residential units would be distributed over the next twenty years as follows:

Additional Units Served by CCWD	**Units In Remainder of Half Moon Bay**	
El Granada Pipeline Expansion Project	**Market Rate**	**Affordable**
145	**655**	**200**

These estimates further anticipate that: (1) Measure D and its implementing measures would be certified by the Commission and withstand legal challenges; (2), based upon a "windshield survey," the total number of vacant infill lots in the entire City is about 180 (please note this does not account for perhaps more than 40 lots that appeared vacant but actually have approved CDPs on them); (3) pending litigation on certain proposed subdivisions results in approximately the number of units advocated by the applicant, not the City; and that (4) where hydraulic considerations so dictate, certain development will be served directly from the CCWD treatment plant and storage facility.

Finally, please note that these estimates are for twenty years (i.e. year 2023). Since you have established your target date as the year 2020, there would be approximately 150 fewer units in 2020.

I hope this information is helpful to you and the Commission.

Sincerely,

Jack Liebster

Jack Liebster
Planning Director

CC: Dan Pincetich, City Manager

RESOLUTION NO. 42-87

RESOLUTION OF THE CITY COUNCIL OF HALF MOON BAY ADOPTING "PHASE I BUILDOUT MAP"

WHEREAS, the Coastal Implementation Program requires that the City prepare an Allocation Plan for Services prior to transfer to City of permit authority from the California Coastal Commission; and

WHEREAS, the purpose of the Allocation Policy is to ensure that services are designed and utilized in a manner that will accommodate buildout at an acceptable rate of growth in accordance with the City's adopted Land Use Plan; and

WHEREAS, identification of the Phase I area (to include priority uses as identified in the Land Use Plan, and areas of existing infrastructure) before June 30, 1987 is necessary in order to facilitate cooperation between the City and the Coastside County Water District as a basis for that agency's issuance of water connection permits for residential hookups; and

WHEREAS, the Planning Commission is currently actively proceeding with preparation of an Allocation Plan which would phase development according to the availability of the various utility and other services, as set forth in the adopted Land Use Plan; and

WHEREAS, the Planning Commission has submitted a proposed Phase I Buildout Map to the City Council for its consideration; and

WHEREAS, the City Council has reviewed said Map:

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Half Moon Bay that the Phase I Buildout Map, marked Exhibit A of Resolution 42-87, attached hereto and incorporated herein by reference, is approved and adopted.

BE IT FURTHER RESOLVED that said Phase I Buildout Map shall be forwarded to the Coastside County Water District for their use as a basis for issuing water connections for residential hookups within the City of Half Moon Bay, as authorized by the District's Resolution No. 705, dated May 12, 1987.

Brian Beer

Brian Beer, Mayor

****

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution duly adopted by the City Council of the City of Half Moon Bay at a regular meeting thereof held the 16th day of June, 1987, by the following vote of the members thereof:

AYES, Councilmembers: Bedesem, Beer, Eriksen, Mello
NOES, Councilmembers: None
ABSENT, Councilmembers: Patridge
ABSTAIN, Councilmembers: None

Raimona R. Guerra, City Clerk

RESOLUTION NO. 46-87

RESOLUTION OF THE CITY COUNCIL OF HALF MOON BAY AMENDING RESOLUTION 42-87 - REVISION OF "PHASE I BUILDOUT MAP"

WHEREAS, the City Council of Half Moon Bay previously adopted its Resolution No. 42-87 on June 16, 1987, adopting a Phase I Buildout Map in connection with its Allocation Plan for Services as required by the Local Coastal Program Implementation; and

WHEREAS, it has subsequently been determined that certain alterations in said Buildout Map are necessary and desirable; and

WHEREAS, a Revised Phase I Buildout Map dated June 29, 1987 has been submitted by the Director of Community Development; and

WHEREAS, the City Council has reviewed said Revised Buildout Map:

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Half Moon Bay that Resolution No. 42-87 is hereby amended, and the Revised Phase I Buildout Map dated June 29, 1987, is hereby approved.

BE IT FURTHER RESOLVED that the City Clerk be, and she is hereby, directed to transmit a copy of this Resolution, together with said Revised Phase I Buildout Map, to the Coastside County Water District for their use as a basis for issuing water connections for residential hook-ups within the City of Half Moon Bay, as authorized by the District's Resolution No. 705, dated May 12, 1987.

Brian Beer

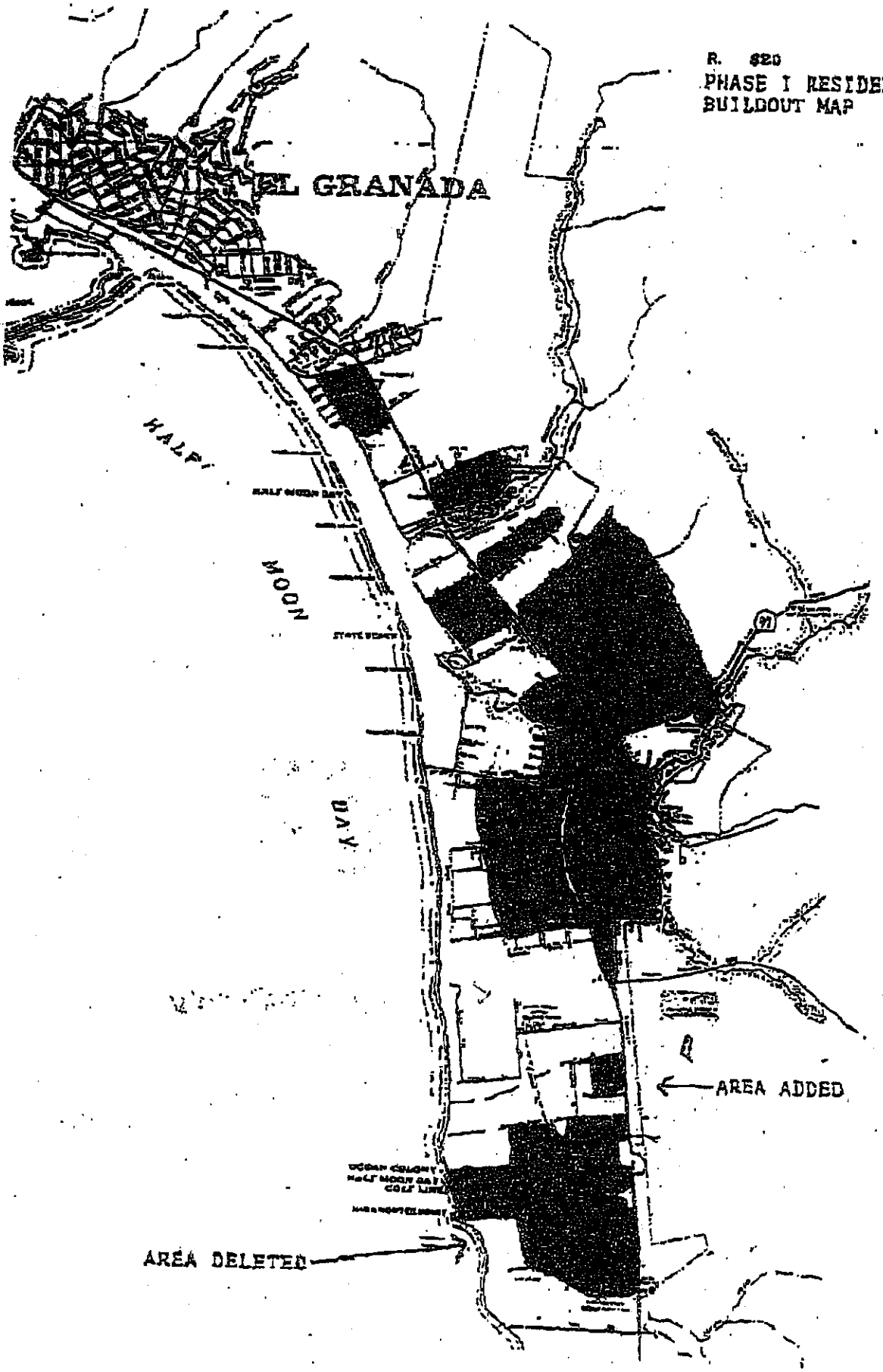
Brian Beer, Mayor

****

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution duly adopted by the City Council of the City of Half Moon Bay at a regular meeting thereof held the 7th day of July, 1987, by the following vote of the members thereof:

AYES, Councilmembers: Bedesem, Beer, Eriksen, Patridge
NOES, Councilmembers: None
ABSENT, Councilmembers: Hello
ABSTAIN, Councilmembers: None

Ralphena R. Guest, City Clerk


R. 820
PHASE I RESIDENTIAL
BUILDOUT MAP
EL GRANADA
HALF MOON BAY
AREA ADDED
AREA DELETED

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

June 27, 2003

Mr. Abe Doherty
California Coastal Commission
45 Fremont St, Suite 2000
San Francisco, CA 94150-2219

Reference: El Granada Transmission Pipeline Project
Appeal Nos. A-2-SMC-99-65 and A-1-HMB-99-20

Dear Mr. Doherty:

This letter follows up our recent meetings on this matter and as Half Moon Bay's new City Manager, I have focused on and researched the issues of the city's growth rate and incremental buildout in order to respond to questions that arose at our meetings. This memo summarizes Half Moon Bay's responses to the Coastal Commission staff questions raised during our May 6, 2003, meeting with CCWD, County and City representatives.

With regard to Coastal Commission staff's question on the incremental buildout target for a realistic planning horizon, the City agrees that his horizon should not extend beyond twenty (20) years. We base this position on the relative inabilities of local LCPs to accurately forecast the development impacts that have resulted in current traffic condition and the declining of coastal resources.

With the recently voter approved Measure D in our community, there is a 1% growth rate limit imposed by this measure. In taking this limit and applying it to future projections, there are both theoretical and practical limits to take into consideration. Assuming the compounded growth under Measure D with an existing amount of about 4,000 residential units along with incentives for affordable housing an downtown growth, the theoretical 20 year building target would be about 5,000 residential units. This estimated increase of 1,000 units is a gross figure that includes 800 market units and the remainder are non-market units. Additional practical limits relate to the number of infill lots possibly available and the previously unaccounted for presence of protected coastal resources on currently vacant subdivisions.

Please let me know if you have additional questions or need more information.

Sincerely,

Dan Pincetich
City Manager

cc: Mayor and City Council

Exhibit A
HALF MOON BAY DOWNTOWN AREA
As defined for 2003 Measure A
1/29/03

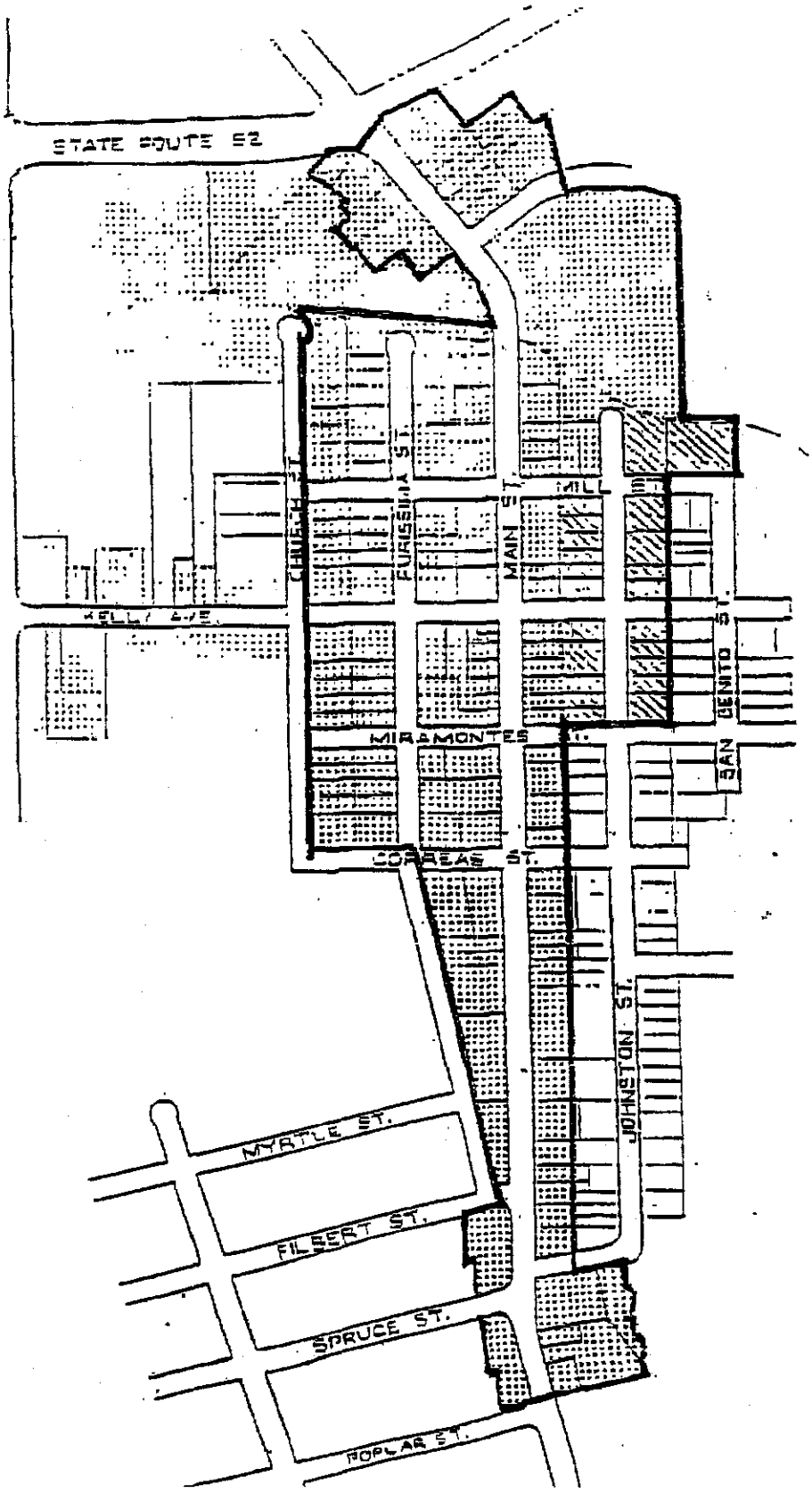


EXHIBIT A

The Half Moon Bay Downtown Plan Map is described by San Mateo County Assessors Parcel Number as follows:

Starting with Assessors Parcel Number (APN) 056-250-200 at the southeast corner of State Route 92 and Main Street (Shell Station), continuing south to include APN's: 056-250-030, 180, 260, 240, 250, 050, 060, 070.

Continuing south, crossing Stone Pine Road to include APN's: 056-391-010, and 040.

Continuing south, crossing Pillarcitos Creek to include all APN's contained within map block page 056-161, 162, 163, 164, 165, and 166. Also, to include APN's: 056-167-010, 020 and 056-168-050, 070, 080,090, 100.

Continuing south, crossing Kelly Avenue to include all APN's contained within map block page 056-171, 172, 173, 174, and 175. Also, to include APN's: 056 176-020, 080, 090, 100.

Continuing south, crossing Correa Street to include all APN's contained within map block page 056-191. Also to include APN's: 056-192-070, 150, 160, 180, 190, 200, 210, 220, 230, 240, 250, 300, and 320.

Continuing south on Main Street to include 056-210-010, 020, 130, 140, 150 on the east side and APN's: 064-141-370, 380, 400, 410, 420, 430, 440 and 064-271-260 and 270 on the west side.

Resolution Number:
Date:

Sarah Borchelt

From: Jasteter@aol.com

Sent: Tuesday, July 15, 2003 12:36 PM

To: sborchelt@coastal.ca.gov

Cc: ckern@coastal.ca.gov; eschmidt@coastsidewater.org

Subject: Re: question regarding average daily per capita water usage

Your question regarding the flow capacity in mgd of the various project alternatives cannot be answered because (1) the pipeline does not just deliver water from one end of it to the other, and (2) the maximum flow through the E.G. pipeline is dependent not only on the size of the upstream Carter Hill West Pipeline but also on the flow through the C.H.W. pipeline. The Carter Hill West pipeline conveys water from the Carter Hill tanks to the beginning point of (1) the E.G. pipeline which conveys water northward and (2) the Main Street Pipeline which conveys water southward. All along the 3.5 miles of the El Granada transmission pipeline there are connected to it distribution system pipelines which convey water from the E.G. transmission pipeline to the CCWD customers. The future flow capacity of the E.G. pipeline is dependent on the size of the proposed Carter Hill West Pipeline which conveys water from the Carter Hill storage tanks (adjacent to the Nunes WTP) to the E.G. pipeline. The hydraulic model report assumes that the Carter Hill West pipeline will be replaced with a 20" pipeline (see Chapter 3, page 13, second to last sentence). The Master Plan for the E.G. pipeline that I prepared assumed a 24" Carter Hill West Replacement Pipeline. In summary, the flow potential of the E.G. pipeline is very dependent on the diameter and flow rate through the replacement Carter Hill West pipeline and outflows from the E.G. pipeline throughout its length.

Engineers size pipelines by estimating the demand on the entire system using the methodology contained in yesterday's e-mails, and then determine the recommended pipeline size based on selected sizing criteria. The criteria used for the replacement pipelines in the hydraulic model is contained on page 1 of Chapter 2. The evaluation of the E.G. pipeline project alternatives is contained in Table 7 on page 14 of Chapter 2. Table 7 indicates that (1) the existing 10 inch pipeline even with an enlarged Frenchmans Creek pump station does not meet the fire flow criteria, and (2) a new 12 inch pipeline with an enlarged Frenchmans Creek pump station does meet the criteria as does a new 16 inch gravity flow pipeline (with no pump station).

In summary, it is important to understand that the E.G. pipeline does not have a maximum flow capacity which can be calculated because the pipeline does not simply convey water from one storage tank to another. Instead, the E.G. pipeline functions as part of an overall water transmission and distribution system, and the flow through the E.G. pipeline is dependent on the size and flow rate through the pipeline upstream of it as well as the flow through the distribution system pipelines connected to it.

I hope this helps at least somewhat,

Jim Teter

EXHIBIT NO. 7
APPLICATION NO. A-1-HMB-99-020 CCWD A-2-SMC-99-063 CCWD
Email correspondence from CCWD District Engr.J.Teter,7/15/03

Correspondence

Note: Staff has received a substantial volume of correspondence concerning the proposed project, dating back several years. In effort to reduce reproduction and mailing costs, staff has selected correspondence representative of each of the major positions and issues concerning the project to attach to this report. The Commission's complete correspondence file for this matter is available for review in the North Central Coast District Office in San Francisco.

Water Resource Associates
Consulting Engineers

RECEIVED
JUL 17 2003
COASTSIDE COUNTY WATER DISTRICT

July 16, 2003

Mr. Ed Schmidt, General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

38-11-0/1

Subject: Report on Evaluation of Future Scenarios for the Water Distribution System

Dear Mr. Schmidt:

As a part of our analyses that are summarized in the report "Evaluation of Future Scenarios for the Water Distribution System," dated February 2003, we evaluated fire flow scenarios at "zero municipal demand"—that is, with no customer demand. This letter provides clarification to those analyses.

The result for the existing water system is shown in Table 5 on page 12 of the report. The percentage of nodes with less than a 1,000-gpm fire flow is 11.6 percent. That is, even with no water usage by customers, the water system cannot deliver the single-family residential fire flow of 1,000-gpm to 11.6 percent of the nodes.

The water system with replacement pipelines was also evaluated. The results for the future system with alternative El Granada pipelines are shown in Table 7 on page 14 of the report. With "zero municipal demand" the percentage of nodes with less than 1,000-gpm fire flow varies from 11.2 percent to 10.0 percent. As shown, these percentages are similar to those with future maximum day demand. Thus, the magnitude of the customer demand has little to no effect on the need for increased pipeline capacity.

Very truly yours,

WATER RESOURCE ASSOCIATES

Rudolph C. Metzner

Rudolph C. Metzner, P.E.

RCM:me

533 McBride Drive
Lafayette, CA 94549
925/283-0860
FAX 925/283-0561

JAMES S. TETER

CONSULTING ENGINEER
15 BAYVIEW DRIVE, SAN RAFAEL, CAL 94901
TEL (415)453-0754 FAX (415)453-0882

MEMORANDUM

TO: Leslie Ewing, California Coastal Commission, Staff Engineer

FROM: Jim Teter, Coastside County Water District, District Engineer

DATE: July 18, 2002

SUBJECT: Coastside County Water District
El Granada Transmission Pipeline Project

This memorandum is a follow-up to our telephone conversation on July 16th regarding the El Granada Transmission Pipeline Replacement Project. During that telephone conversation it soon became apparent that you had not been provided with the CCWD's submittal document to the CCC dated June 10, 2002 entitled "Analysis of El Granada Transmission Pipeline Project's Consistency with Half Moon Bay and San Mateo County Local Coastal Program Policies". In order to expedite your review of the proposed project hydraulic capacity issues, I agreed to prepare this memorandum containing (1) references within the CCWD's June 10 submittal document, and (2) supplemental engineering information on the project engineering master plan and hydraulic model report.

Compliance with Local Coastal Program Policies

The CCWD's June 10 submittal document contains a detailed analysis demonstrating that the proposed project conforms to all public works LCP policies. Listed below are references to the locations where the primary issues related to hydraulic capacity are analyzed:

A. City of Half Moon Bay LCP Policies:
   1. Policies 10-3 and 10-9. Pages 4 through 10 contain the analysis of the flow capacity of the proposed 16 inch pipeline as related to the flow capacity required to meet Buildout water usage demands.

B. County of San Mateo LCP Policies:
   1. Policy 2.6. Pages 20 through 22 contain the analysis of the flow capacity of the proposed 16 inch pipeline as related to the flow capacity required to meet Buildout water usage demands.

Supplemental Information Regarding Engineering-Related Issues

Attached is a document I prepared in February 2002 entitled "Report on Compliance with Coastal Programs Policies Requiring that the Capacity of the Replacement Pipeline Not Exceed the Capacity Needed to Serve Buildout of the Land Use Plans". The information contained in this document was used by the CCWD staff in preparing the June 10 submittal document. The background document contains explanatory language regarding both the project engineering

master plan report (including the derivation of the 55% of Buildout flow capacity factor) and the future scenarios hydraulic model report.

Discussion of Primary Engineering Issues

1. Flow Capacity Comparison Between Existing 10 Inch Pipeline and Proposed 16 Inch Pipeline. Project opponents point out that a 16 inch pipeline has approximately 3 times the flow capability of a 10 inch pipeline. That statement is theoretically, simplistically correct. However, the existing El Granada Transmission Pipeline consists of a 10 inch pipeline and 2 booster pump stations. In approximately 1971, the gravity flow capacity of the 10 inch pipeline was unable to meet customer demands and the Miramar storage tank basically went dry. At that time the Frenchmans Creek Booster Pump Station was constructed. Several years ago, when the appeals were filed for the El Granada Pipeline Replacement Project's CDP's and it became apparent that construction of the first 2 pipeline phases would be delayed, the capability of the existing pipeline and Frenchmans Creek Pump Station to meet system demands during summer peak demand periods became a concern. A larger portable booster pump was purchased, and during the last two summers it has been necessary to operate this larger booster pump for considerable periods of time. Clearly the 10 inch pipeline including the additional flow capability provided by the Frenchmans Creek Pump Station is inadequate to meet even current water usage requirements.
2. Comparison of Proposed 16 Inch Pipeline and Required Pipeline Size to Meet Buildout Requirements. The project engineering master plan contains detailed calculations demonstrating that the proposed pipeline has only sufficient flow capability to meet 55% of the estimated peak day demand at Buildout, and explains that the reason for this less-than-Buildout flow capability is to allow construction of a future parallel pipeline for redundancy. No calculations have ever been prepared by the CCWD for the size of pipeline required to meet Buildout usage demands because of the belief that a future parallel pipeline to provide redundancy should be constructed.
3. Minimum Pipeline Size Required to Meet the Water Supply Requirements of Current Customers and Sold But Not Yet Installed Water Service Connections. The criteria for the hydraulic model future scenarios study is "6,150 connections installed as of November 6, 2001 and 1,416 connections sold but not yet installed" (Chapter 2, first page, 2nd paragraph). Table 7 on page 13 (Chapter 3) indicates that neither the existing 10 inch pipeline or a new 12 inch pipeline conform to the modeling criteria (1) neither totally meet the fire flow criteria, and (2) each have a maximum flow velocity exceeding the criteria. The two alternatives in Table 7 which meet all of the hydraulic model criteria are (1) 16 inch gravity flow pipeline, and (2) combination 16 inch and 12 inch pipeline with a pump station.
4. Evaluation of 16 Inch Gravity Flow Pipeline Vs. Combination 16 and 12 Inch Pipeline With Pump Station. It is obvious that the gravity flow alternative is the best from a reliability and energy conservation standpoint. It is also more economical to construct and maintain. A cost comparison of these project alternatives is contained in the June 10 submittal as Exhibit 7.

Prepared by Teter 2/26/02
Revised 7/18/02

Coastside County Water District

EL GRANADA TRANSMISSION PIPELINE REPLACEMENT PROJECT

REPORT ON COMPLIANCE WITH COASTAL PROGRAMS POLICIES REQUIRING THAT THE CAPACITY OF THE REPLACEMENT PIPELINE NOT EXCEED THE CAPACITY NEEDED TO SERVE BUILDOUT OF THE LAND USE PLANS

Purpose

The purpose of this document is to explain how the capacity of the proposed 16 inch diameter gravity flow pipeline does not exceed that needed to serve buildout of the land use plans:

A. The pipeline was initially sized at 16 inch diameter by the CCWD District Engineer using manual calculations. His calculations were included in the environmental initial study document as Appendix C. An explanation of how these calculations demonstrate that the capacity of the proposed 16 inch pipeline is 55% of the capacity required to serve peak day demands at buildout of the LUP's (Land Use Plans) is included below.

B. Subsequently, the CCWD retained a consulting engineering firm to prepare a hydraulic model of the water distribution system and prepare a report on recommended sizing of replacement pipelines for existing transmission pipelines to meet the requirements of existing and sold-but-not-yet-installed future water service connections. The consultant's report stated that a replacement gravity flow El Granada transmission pipeline should be 16 inch diameter. An explanation of how the criteria used for the hydraulic model pipeline sizing conforms to the LCP's (Local Coastal Programs) is included below:

Explanation of District Engineer's Calculations as Related to the LCP Issues

The CCWD District Engineer's calculations for sizing of the replacement El Granada transmission pipeline are included in the project Revised Environmental Initial Study as Appendix C. The basic methodology utilized was to calculate the average day and peak day water requirements at buildout, and then compare these water requirements to the capacity of a 16 inch diameter gravity flow pipeline. An explanation of the calculations as shown in Appendix C is as follows:

Step 1 (page 1):

As stated, in order to simplify the calculations, all of the water usage flowing out of the pipeline was assigned to 3 primary distribution points rather using each of the existing distribution pipelines through which water flows out of the El Granada pipeline and proposed future distribution pipelines. This simplification was necessary for performing manual calculations. If should be noted that the subsequent calculations performed by the computer hydraulic model utilized all of the existing distribution system pipelines, and therefore produced a more refined hydraulic analysis of system flows.

Step 2 (page 1):
Step 2 assigns existing average day water use (for the project area during mid-1996) to the nearest primary distribution point. Existing average day usage was actual usage obtained from the customer water meter books as described on page 4 of the Water Master Plan document (Appendix A). Peak day usage is calculated as 150% of average day usage (during mid-1996). Footnote 2 in Table 2.11 of the San Mateo County LCP uses a peak-to-average day factor of 180%. Therefore the District Engineer's methodology for calculating peak day usage from average day usage is in conformance with LCP criteria.

Step 3 (page 2):
Step 3 assigns the proposed future dwelling units for the City of Half Moon Bay planning area to the nearest primary distribution point. As described on page 5 of the Engineering Master Plan, the information was obtained from Table 9.1 of the document entitled *City of Half Moon Bay, Local Coastal Program, Land use Plan, amended 1993,* which is included in the project Revised Environmental Initial Study as Appendix B. Since the Step 3 work utilized data from the City's LCP, the work was performed in conformance with LCP criteria.

Step 4 (page 3):
Step 3 calculates for the City planning area the water usage requirements for the number of future residential units shown for each of the primary distribution points shown in Step 3. The criteria used for these calculations is as follows:

1. Number of Residential Units. The number of future residential units are those shown in Table 9.1 of the City LCP.
2. Number of Persons Per Residence. The number of persons per residence used for the calculations was 2.61 persons per residence, which is the number used in the City LCP.
3. Average Daily Water Use Per Residence. The City LCP does not contain a average daily water usage per residence figure. Therefore, the calculations used the water generation factor of 93-134 gallons per capita per day contained in Table 2.10 of the San Mateo County LCP.
4. Factor for Calculation of Peak Day Water Use. The City LCP does not contain a factor for calculating peak day water use from average day water use. Therefore the calculations use the 180% peak day to average day factor contained in Table 2.11 of the San Mateo County LCP.

Since the Step 4 calculations utilized data and criteria from the City LCP when available, and criteria from the San Mateo County LCP for those calculations for which City LCP criteria was unavailable, the work in Step 4 was performed in conformance with best-available LCP criteria.

Step 5 (page 3):
Step 5 calculates for each of the two primary distribution points the water usage at buildout for the City planning area of the proposed El Granada pipeline replacement project. This is accomplished by adding (1) the existing water usage from Step 2 to (2) the future water requirements from Step 4. Since both Steps 2 and 4 were performed in conformance with best-available LCP criteria, the work in Step 5 is in conformance with LCP criteria.

Step 6 (page 4):
Steps 3, 4 & 5 have involved calculating El Granada transmission pipeline water requirements for the City planning area of the pipeline (the southern portion of the pipeline). Steps 6 calculates for each of the two primary water distribution points the water usage at buildout for the San Mateo County planning area of the El Granada pipeline water requirements for the San Mateo County planning area of the proposed pipeline replacement project (the northern portion of the pipeline). This is accomplished by using the total amount of water usage at buildout shown in Table 2.10 of the County LCP, and proportioning in between the two primary distribution points using the same percentage as current usage between those 2 distribution points. Since this work was performed using data from the San Mateo County LCP, the work in Step 6 is in conformance with LCP criteria.

Step 7 (page 5):
Step 7 summarizes the average day usage and peak day usage (for the City planning area and the County planning area) for each of the 3 water distribution points. Since the summarization involves data Steps 1 through 6 which was calculated in conformance with LCP criteria, the work in Step 7 is therefore in conformance with LCP criteria.

Step 8 (facing page 4):
Step 8 is the preparation of a hydraulic profile schematic diagram of the proposed pipeline which indicates (1) existing water storage tanks and their elevations, (2) primary water distribution points and water usage data for each from Step 7, and (3) pipeline lengths. The diagram includes the information required for performing the hydraulic calculations for pipeline sizing.

Step 9 (page 5):
Step 9 lists the engineering criteria to be used for the subsequent hydraulic calculations. These criteria are separate from the planning criteria for water usage which were previously summarized in Step 7.

Step 10 (page 6):
Step 10 contains the hydraulic calculations for pipeline sizing. The calculations are for a 16 inch diameter pipeline for the following conditions (A) pipeline at existing average day water usage, (B) pipeline at existing peak day water usage, (C) pipeline at buildout average day water usage, and (D) pipeline at buildout peak day usage. The conclusions with these calculations are summarized in C and D as stating that the capacity of a 16 inch gravity flow pipeline is marginally adequate to meet buildout average day water usage requirements and is insufficient to meet buildout peak day usage requirements.

Conclusion
Since the 16 inch pipeline is marginally capable of providing the average day usage requirement, this full flow capability can be assigned the value of 100% flow capability. Peak day usage requirements are 180% of average day usage requirements. The pipeline's capacity to meet peak buildout water requirements is calculated by dividing its flow capacity, 100%, by its flow requirement, 180% to obtain the result that the pipeline is capable of meeting 55% of the buildout water requirements (100% divided by 180% = 55%).

Subsequent Review of Hydraulic Calculations

During the CDP permit process for the portion of the proposed construction within the San Mateo County planning area, a consulting engineering firm was retained by the Planning and Building Division of the County of San Mateo to perform an independent engineering analysis of the El Granada pipeline project. The results of that independent engineering review are contained in a document entitled *Review of Calculations Supporting the El Granada Pipeline Project,* October 4, 1999, Brian Kangas Foulk. That report concludes: "Based on the information presented, the proposed project is prudent engineering practice and is sized for development levels significantly below the buildout levels provided in the County's and the Half Moon Bay's Local Coastal Plans."

Explanation of Computer Hydraulic Model Calculations as Related to the LCP Issues

The results of the computer hydraulic model study of the water distribution system are contained in a report entitled *Evaluation of Future Scenarios for the Water Distribution System,* February 2002, Water Resource Associates. With regard to the proposed El Granada pipeline replacement project, the report concludes there are 2 alternatives which meet the listed criteria:

1) Alternative Without Frenchmans Creek Pump Station. On page 17, the report states that the components of this alternative are:
   - 20-inch Carter Hill West pipeline
   - 16-inch Main Street pipeline
   - 16-inch El Granada pipeline
2) Alternative With Frenchmans Creek Pump Station. On page 15, the report states that the components of this alternative are:
   - 20-inch Carter Hill West pipeline
   - 16-inch Main Street pipeline
   - 12-inch El Granada pipeline (with 1,900 feet of 16-inch water main)
   - Enlarged Frenchmans Creek pump station

The CCWD has selected the alternative without the Frenchmans Creek pump station, a 16 inch gravity flow pipeline, primarily because of the lower construction, operation and maintenance costs of this alternative.

The criteria used for the computer hydraulic model study are contained in the report, and those related to LCP issues are discussed below:

1. Water Requirements of Existing Customers. See Appendix B: Modeling Criteria, pages B-2 & B-3. The model studies utilized actual water sales data for the period July 1999 through June 2000. Per capita single family residential usage for that period was approximately 108 gpcpd, which is within the LCP range of 93-134 gpcpd.
2. Water Requirements of Future Customers. See Chapter 2, page 5, paragraphs 1 & 2. The model report was based on 1,416 additional service connections (the number of sold but not yet installed connections) and the water usage per day was based on an average usage of residential and commercial connections, 395 gpcpd, as stated in paragraph 2 (Note: average usage per day for existing single family residential customer used in the model was 313 gpd). These 1,416 additional service connections consist of 102 priority connections and 1,314 non-priority connections which are installed throughout the entire CCWD service area. Of these total 1,416 connections, 1,052 will be installed within the service area of the El Granada transmission pipeline and they consist of (a) within the County planning area: 457.4 non-priority connections and 52 priority connections , and (b) within the City planning area 536.5 non-priority connections and 6 priority connections . A comparison of the

number of additional water service connections utilized in the hydraulic model study and the potential number at buildout of the LUP's follows:

a. San Mateo County Planning Area. As shown above, the hydraulic model study for the service area of the El Granada pipeline was performed using all existing installed service connections plus an additional sold but not yet installed 457.5 non-priority connections (and an additional 52 priority connections). All of these 457 non-priority connections are County LCP Phase 1 connections. The CCWD has not sold or committed to any water service connections beyond the County LCP Phase 1 level because the CDP for the Crystal Springs Project limited the capacity of the Nunes water treatment plant to the LCP Phase 1 population level. The computer hydraulic model report stated that the minimum pipeline diameter which met the modeling criteria was 16 inch diameter. Because the report was based on LCP Phase 1 water requirements, the capacity of the 16 inch pipeline size does not exceed the capacity required to serve buildout of the LUP because it was based only on Phase 1 population levels which are significantly less than buildout levels (Note: The initial version of the County LCP Table 2.10 upon which the Crystal Springs Project was based indicated Phase 1 population projections as 59-78% of buildout).

b. City of Half Moon Bay Planning Area. As shown above, the hydraulic model study for the service area of the El Granada pipeline was performed using all existing installed service connections plus an additional sold but not yet installed 536.5 non-priority connections (and 6 priority connections). Table 9.1 of the City LCP lists the proposed location and number of additional dwelling units at LUP buildout. Of the total 5,265-5,345 potential new units (Note: subsequent changes in the LUP reduced the number of potential new units somewhat), the engineering master plan prepared by the CCWD District engineer for the El Granada pipeline states that 1,836 of these new dwelling units are located within the service area of the El Granada pipeline (Reference: Appendix C, page 2 of *El Granada Transmission Pipeline Replacement Project, Revised Environmental Initial Study,* May 29, 1998, Donaldson Associates). Of those 1,838 dwelling units, a maximum of 20 have subsequently been constructed, resulting in 1,818 potential new units at LCP buildout. Because the hydraulic model report was prepared using only 536.5 non-priority service connections and the report states that the minimum pipeline diameter which met the modeling criteria was 16 inch diameter, the capacity of the 16 inch pipeline does not exceed that needed to serve buildout of the LUP's..

3. Peak to Average Day Factor. As shown in Chapter 2, page 5, Table 1, the model report was based on a peak to average day factor of 190%. Table 2.11 of the San Mateo County LCP uses a factor of 180%; the City LCP does not contain a methodology for calculating peak day water requirements. The use of the 190% factor results in water demands that are approximately 5% higher than if the 180% factor had been used.

4. Water Losses from the Water Distribution System. As shown in Appendix B, page B-3, the model report was based on water system losses (termed unaccounted-for water) of 7%. Table 2.10 of the County LCP uses a factor of 15%; the City LCP does not contain a factor for water system losses.

Conclusion:

The capacity of the proposed 16 inch diameter gravity flow El Granada transmission pipeline does not exceed that needed to service buildout of the land use plans because the number of additional water service connections used for the model study were significantly less than are shown for buildout of the land use plans:

- In the County planning area, the hydraulic model study was prepared using LCP Phase 1 population levels, which was defined in the initial County LCP as 59-78% of buildout population levels.
- In the City planning area, the hydraulic model study was prepared using 536.5 additional non-priority connections while the City LCP states that there are a potential 1,818 additional potential dwelling units at LCP buildout.

While the hydraulic model study was prepared using a peak day to average day water usage factor of 190% which results in a water supply requirement approximately 5% higher than if the 180% factor shown in the San Mateo County LCP had been utilized, the model study also utilized only a 7% factor for water system losses as compared to the 15% factor shown in the County LCP.

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

RECEIVED

JUL 2 2 2002

CALIFORNIA
COASTAL COMMISSION

July 8, 2002

Peter Imhoff
California Coastal Commission Staff
North Coast Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Subject: City of Half Moon Bay Input on CDP Appeals for Two CCWD Pipeline Expansion Segments; Namely, A-1-HMB-99-20 and A-2-SMC-99-63

Dear Mr. Imhoff:

Please find the attached position paper, which the City submits for the record on this matter. It is based on the facts indicated therein and basic analysis of the City's responsibility as a Coastal Zone land use planning agency. In addition to the fact that this major infrastructure expansion project in Half Moon Bay was never approved by the City Council, we urge that our input be seriously considered for the following reasons:

(1) City users represent most of the demand for CCWD services. We know that with Measure D and other proposals for growth rate reduction by the County, the Coastside water demand will not be nearly as great as assumed 20 years ago in the LCPs, both of which have reached the end of their planning horizon and are under serious revision. There is no good reason to now lock the Coastside into infrastructure based on obsolete assumptions of carrying capacity that the Commission itself no longer applies to other projects, such as Pacific Ridge and Beachwood;

(2) Most of the remaining CCWD service area coincides with the City's LAFCO-designated Sphere of Influence. Therefore, the City is not without standing with regard to ensuring that infrastructure expansion in the unincorporated area is not overdone. Otherwise, given the Coastside's transportation and other natural limits, the City's ability to implement its own LCP is likely to be compromised by the impacts of inconsistent development occurring in the County.

(3) An overly expanded pipeline (the current CCWD proposal having 2.6 times the flow area of the existing pipeline) has the capacity to deliver far more water than the current or anticipated LCP planning periods require or can realistically envision. If, as CCWD claims, the expanded pipe can service the average day of what is now optimistically

defined as 'buildout', that corresponds to about 60 years of growth. Such large capacity surely goes beyond the reasonable LCP planning horizon of 20 or 30 years and is therefore a violation of the LCP infrastructure limits and an invitation for developers to sue the LCP so that surplus capacity can be used earlier rather than later. Based on acceptance tests, the newly expanded sewage treatment plant already exceeds by thousands of houses, the capacity required to service even the inflated 1980 definition of buildout. If too much water infrastructure is added to that situation, both Coastside LCPs will likely come under legal siege. Both the City and the Commission already know how aggressive local developers are in attempting to circumvent or ignore the LCP.

(4) In addition to being based on obsolete information about the Coastside carrying capacity from 20-year-old LCPs, the technical justification for pipeline expansion is based on results of a hydraulic model whose accuracy has not been characterized under the peak demand conditions which are of most interest if safety is really the concern and for which measurements already exist. Instead, the model appears to have been 'tuned' to predict that exactly 1453 connections can be added to the system with no problems, while at the same time predicting that there is some kind of water emergency which warrants a major expansion. Both assertions cannot be true.

The City recommends denial of a CDP for a 16-inch pipeline and either approval of an expansion to 12 inches, or remand back to the City for meaningful consideration by the City Council.

Thank you for considering this input.

Toni Taylor
Mayor

cc: City Council
Planning Commission
City Mgr
City Atty
Planning Dir

HALF MOON BAY CITY COUNCIL POSITION ON PROPOSED CCWD TRANSMISSION PIPELINE EXPANSION

EXISTING SUBSTANTIAL ISSUES

The elected City Council did not approve a CDP for this major infrastructure project, and it is only an unintended loophole in the Municipal Code that kept alive the split vote CDP from the appointed Planning Commission. Based on the last time the subject pipeline expansion was considered by the Commission, the City understands that at least 4 substantial issues were found, 3 related to sizing and 1 related to phasing. As discussed below, the City concurs that these and other unresolved issues exist.

Our bottom line position with regard to substantial and other unresolved issues is that a new pipeline is needed, and its diameter should be larger than the present 10 inches, but 16 inches is too big, primarily because its large capacity would serve development far beyond the present or anticipated LCP planning periods of 20 or 30 years.

The good news is that, because the proposed expanded pipeline has 2.6 times the flow area of the existing pipeline, there is plenty of room to downsize the expansion, while still increasing system capacity and saving pump energy, compared to present requirements. Allowing a reduced scope of expansion would allay the obvious and unresolved growth inducement issues, while still providing for increased water service, fire flow, and 20 to 30 years of growth within the current and anticipated LCP limits. If the proposed pipeline diameter is not reduced, local water system capacity is likely to drive future LCP implementation instead of the preferable other way around.

The above conclusion is reached because both the City and the Commission should know by now that the legal resources arrayed against the Coastside LCPs are formidable, while the legal resources of a small city like Half Moon Bay to defend the LCP are modest. Nor has San Mateo County defended its LCP for the unincorporated area directly adjacent to the City. Installing infrastructure for 60, rather than 20 or 30 years of growth under the LCP poses unnecessary legal risk to our ability to implement an LCP, because it is likely to stimulate continuous legal challenges to allow earlier use of the overexpanded infrastructure.

Sizing Issues

As to sizing, CCWD assumed higher per capita demand than representative of the local population. Based on CCWD's Annual Water Supply Report, the average Coastside residential unit uses about 250 gallons of water per day. Even if one assumes 2.7 people per house (a figure that current census data indicate is low by at least 10%), this translates into per capita demand of 92 gallons per day, not the 130 gallons per day assumed by CCWD in sizing the proposed pipeline. Multiplying such discrepancies times the number of CCWD residential users (~20,000) can obviously lead to oversized infrastructure and thus more development pressure, growth expectations and law suits against the LCP.

Secondly, the 'reserve capacity' claimed to be needed by CCWD was not quantified, justified or characterized relative to the LCP-imposed limit that infrastructure not exceed that required to service the current or reasonably anticipated phases of LCP buildout. We interpret our responsibility for LCP infrastructure management as requiring that all contributions to infrastructure capacity be specifically characterized and reviewed for LCP compliance. Because the Coastal Zone here is naturally arid (less than 20 inches of rain per year), the uncharacterized cumulative capacity of the proposed water system warrants denial of the requested expansion on that ground alone.

Thirdly, the pipeline is claimed to be capable of serving only 55% of the peak 'buildout' demand, the implication being that the pipeline therefore cannot be oversized relative to what the LCP requires. But the definition of buildout is under revision, and even buildout under the current definition would not occur for ~60 years under Measure D. Moreover, peak days are rare, temporary in effect (and thus amenable to more efficient and reliable storage solutions), and not the controlling factor for growth inducement. What is controlling is that, according to CCWD, the same pipeline that can meet 55% of the peak buildout demand can also meet 100% of the average day buildout demand. We agree with the Commission analysis that activating any pumps on a system like that would immediately violate even the current LCP infrastructure limits, which are themselves based on highly optimistic, 1980 assumptions of the Coastside carrying capacity that have been proven wrong.

At the Council meeting where the City failed to grant a CDP to this project, our concerns about pipe sizing were not alleviated by CCWD's claim from the podium that, "Just because we're building a bigger pipe, doesn't mean we're going to put more water in it." Nor did we find relevant the real rationale for the pipeline expansion, which was later expressed by the former CCWD attorney in CCWD's written answer to the present appeal; namely, that CCWD needs a bigger pipeline to fully utilize the Coastside's expanded sewage treatment plant. Since we know from the results of plant acceptance tests reported to the City Council in 1999, that its capacity exceeds by thousands of houses, that required by even the 1980 LCPs, we have even more reason to be concerned about the pipe sizing rationale.

Phasing Issue

With regard to the Commission's substantial issue of phasing, we agree that the expansion of one infrastructure element cannot be allowed to stimulate more demand than the other elements can reasonably handle, including highways, waste treatment and schools. For the current substantial issue of highways, it is a fact is that, if current users of the 10 inch pipeline produce currently unacceptable levels of highway service, there is no way that more users of an expanded pipeline could result in acceptable future service.

CCWD again points to obsolete information from the City's 1985 LCP, specifically that the existing Coastside highways can handle a population of 51,000. Twenty years after

that information was published by a different regime, we cannot imagine any resident constituency that would agree with it, nor could it possibly be correct based on subsequent experience and modern studies. Uninformed and outdated projections of Coastside traffic capacity cannot be a valid basis for critical CDP decisions with regard to expanding water infrastructure, especially the water infrastructure of a naturally arid coastal area under development pressure from both San Francisco and Silicon Valley.

The claim that existing Coastside roads can handle essentially doubling our current population is totally inconsistent with current experience and the results of traffic modeling capabilities unavailable in the early 1980s. For example, the Commission itself has already used results of CCAG's 1997 and later traffic studies to review and downsize both Pacific Ridge and Beachwood subdivision projects in Half Moon Bay. Thus, the Commission has already arrived at different conclusions than would be justified by the traffic carrying capacity assumptions in the City's 1985 LCP. We hope you will do the same here.

For example, with a current Coastside population of about 25,000, both SRs 1 and 92 operate twice each day at Caltrans Level of Service "F" during the peak commute hours of operation, and have done so since 1990, according to the baseline CCAG results of June 1997. These results reflected an objective and scientific $2M state-of-the-art study, not something a developer obtained to support a permit application.

Moreover, any anticipated highway improvements that pipeline proponents claim will relieve congestion, are not for that purpose, nor are they predicted to have that effect. This statement is based on environmental documentation for all projects now scheduled through 2015 on Coastside SRs 1 and 92, each of which has been characterized and certified in its environmental documentation as a safety improvement with no effect on highway capacity, and thus not requiring an EIR. This assumption made to avoid EIRs for highway expansion cannot now mean that highways will be adequate for the thousands of additional houses that the expanded pipeline would serve. In addition, most if not all of the SR 1 and 92 projects have been delayed until beyond 2010 due to growth control and funding issues.

Substantial Issue Conclusion

In summary, the City Council did not approve a CDP for this project, and we are very concerned that the average day buildout demand applied by CCWD is not representative of current or future conditions, but rather is based on the obsolete carrying capacity assumptions in City (1985) and County (1980) LCPs. Extensive experience, traffic modeling and other environmental and economic studies have proven that the old assumptions over estimate the Coastside carrying capacity. Both City and County LCPs and underlying assumptions are even now in the process of being substantially revised at significant public expense. There is little if any justification to lock in obsolete amounts of infrastructure during significant transition periods for both of the LCPs which cover CCWD's service area.

To lock the Coastside into the wrong infrastructure assumptions with regard to water, while other infrastructure elements such as highways and schools have in effect hit the wall for the current and anticipated LCP planning periods, will guarantee the emergence of future LCP inconsistencies and disputes. Therefore, the 16-inch diameter expansion should be denied, and an expansion to a 12-inch diameter approved. The latter option replaces an old pipe with one having 40% more cross sectional flow area, is consistent with expected development under existing and anticipated LCP growth control over the next 20 or 30 years, saves pump energy relative to current conditions, and will not attract future law suits to overturn growth control and LCP infrastructure limits or phasing.

RELATED ISSUES

Since the Commission is hearing this matter de novo, the City submits the following discussion of related issues of land use planning responsibility and the far-reaching consequences of unwarranted infrastructure expansion.

LCP Responsibility

The City is responsible for matching its infrastructure with the LCP planning horizon. We also have an interest in the zoning, development standards, and overall sustainability of the unincorporated Midcoast adjacent to us, because it is our Lafco-designated sphere of influence. Certified LCP policies dealing with proper phasing of infrastructure expansion, prohibit any element of infrastructure from getting ahead of any other element. Such policies were in fact relied upon for one of the Commission's significant issue findings relative to the El Granada Transmission Pipeline Expansion. The City Council, which did not grant a CDP for this project, was similarly unconvinced as to whether the LCP requirements were met.

We are guided by some basic notions to the effect that (1) infrastructure should not be capable of exceeding whatever the current phase of LCP implementation requires; (2) expansion of infrastructure should be phased and balanced so the relative capacity of any one element does not significantly exceed the relative capacity of other elements; and (3) infrastructure and associated services should be affordable and reliable.

None of the above elements has been demonstrated by the applicant. In fact, CCWD's original claim that this project is part of the Crystal Springs Project (which has a CDP and thus has already been reviewed under an LCP) is belied by the fact that CCWD is applying for this CDP, could not clearly show the 16 inch pipe as being among the improvements to be constructed with the Crystal Springs assessment bond, and had previously declared the Crystal Springs Project to be complete. The pipeline expansion therefore stands alone and warrants independent review without ascribing to it any previous CDP approvals.

External Factors

For areas like the Coastal Zone with both local and state land use regulation, and given the transportation, water supply, geography, environmental, financial capacity and other constraints of the San Mateo County Coastside, the LCP planning horizon is realistically not 100, 80, or 60 years, but more like 20 years. The accuracy of past land use predictions (e.g. the main Coastside employment center will be San Francisco, not Silicon Valley; there will be a 4-lane freeway connecting the Coastside to San Francisco) does not seem to warrant much confidence in the extrapolation of assumptions beyond 20 years.

A contributing factor to the short-lived nature of past visions is that this area is not self sufficient, either economically or resource wise. It lies between San Francisco and Silicon Valley, has limited infrastructure and sensitive coastal resources, and is strongly impacted by external factors like surrounding urbanization, commuter and visitor travel patterns, and the ebb and flow of the Bay Area economy and associated development pressures. That Coastside land use assumptions have limited shelf life may be the only assumption with some justification.

Thus, our LCP and its implementation are not carved in stone, nor do they exist independently of resource availability and other social and economic changes. Even though buildout assumptions in an LCP may remain static for long periods of time (in our case, since 1985) due to financial, legal or political constraints, discretionary application of the policies, maps and zoning provisions are proper means by which to factor in experience, new information, and voter input.

We urge the Commission to use their discretion and focus on the purpose of an LCP to preserve and protect coastal resources, and not be distracted by CCWD's reference to a few obsolete LCP tables and assumptions from 20 years ago, or more recent claims that children will burn in their beds for lack of a 16 inch pipeline.

The attempted distraction is understandable. The same CCWD that claims a water expansion emergency and that a 16-inch pipeline is needed to save burning children:

(1) has routinely increased the number of connections by a cumulative total of about 10% (~600 connections) over the past few years;
(2) put 305 'newly discovered' connections on sale for residential use rather than for safety margin;
(3) previously promoted (and is poised to reinstitute) the transfer of water from the LCP priority (coastal-related) reserve (where unused connections also contribute to the safety margin) into immediate use for houses;
(4) developed, tuned and documented the results of a hydraulic model which says that 1453 water connections (coincidentally, the approximate number needed to complete CCWD's Phase 1 water system) could be added to the present water system with no problem;
(5) has not documented accuracy of the hydraulic model for the peak demand days supposedly of most interest and for which key measurements already exist, as reported in the special DOHS audit of 2000;
(6) most recently attempted to suppress the speech of individual board members by

forbidding communication with the Commission or anyone else on personal board member letterhead;

In regard to item 5, a City Council member has prior NRC experience with documentation of hydraulic models for power plants, and provided detailed comments and recommendations to CCWD as to the need to characterize accuracy of the model before depending on it to make decisions about reality. Relevant peak demand measurements exist in this regard, as shown in **Attachment 1** to these comments. There was no response to these comments and recommendations, which are themselves provided in **Attachment 2**. Nor was an independent consultant requested by the public and 2 board members allowed to review the set up, tuning, accuracy or use of the model.

The large surplus capacity reported for the present system (1453 connections can be added with no problem; see item 4 above) indicates that some of the proposed expansions have already been represented in the model, as though CDPs have already been obtained and the expansions constructed. Such a large capacity directly contradicts the claim that some kind of water emergency exists. Both claims cannot be true at the same time, and little independent basis can be shown for either.

Something is clearly inconsistent in this picture, and that is no basis for awarding CDPs for major infrastructure expansion. We urge the Commission to either get to the bottom of it or remand this application back to the City for proper review. The alternative is for infrastructure providers like CCWD and Caltrans to have free reign in determining how much fuel is in the tank of billions of dollars of potential Coastside development. Under that scenario, the ability of the local land use planning agency and the Commission itself to implement effective LCP development controls will almost certainly be diminished.

Obsolete Assumptions

The City is now updating the basic maps and policies of its 1985 LCP. The County is similarly updating its 1980 LCP, and is proposing a 30-year buildout period. The draft maps indicate the presence of more coastal resources than previously documented. It is also clear from congestion, economic and environmental data, unavailable during the early 1980s, that in order for the City or County to meet its land use planning responsibility, previous assumptions about the Coastside carrying capacity could not have waited until 2040 or 2045 to be revisited, because those assumptions were clearly wrong by 1995. For example, the Devil's Slide closure of 1995 showed that fewer than 1000 cars added to the present peak commute hour on SR92 could bring the Coastside economy and family life to its knees.

Another reason to use current data and assumptions is that any new LCPs are almost certain to reflect lower growth rates than those assumed to apply (none) when the buildout projection for the City's current LCP was made in 1985. The City has had a 3% growth control limit (120 houses per year) since 1993 and the voters more recently adopted a 1% limit (40 houses per year). The County annual growth limit has been about

3.4% (125 houses per year), but the proposed LCP Update Alternatives Report recommends lowering that to 2.1% (73 houses per year). Therefore, to allow infrastructure expansion based on 1980 or 1985 assumptions puts both County and City LCPs on a footing of obsolete information in an area (water) that is central to orderly implementation of the LCPs, especially for a naturally arid area like the Coastside.

Reliance

The City's residential, visitor service, agricultural, general business and public users represent most of CCWD's total customer base. Therefore, the City has both an economic and land use planning interest in the right-sizing of any potential change in water service capacity. We want to ensure that current and future capacities stay within that required to service whatever phase of buildout the current or new LCP defines. We want to ensure that dedication or prioritization of water allocation facilitates a healthy and diverse coastal economy rather than just another Bay Area bedroom community, visions of which were the basis of the 1980 LCPs and associated water requirement assumptions.

Right-Sizing

In terms of right-sizing, the City shares similar concerns which led the Commission to find a substantial issue in terms of the proposed pipe diameter being increased from 10 to 16 inches. CCWD's desire to save some pump energy does not create an exception to the LCP requirement that infrastructure not exceed that needed to implement the current or anticipated LCP buildout phase.

Target: LCP

If the current LCP, which defined the total buildout target assumed in 1985, is any yardstick, a 16-inch pipeline is likely to increase legal challenges to Coastside growth control measures. This is said because, according to CCWD's environmental document (a Mitigated Negative Declaration), the expanded pipeline can service the average day at 'buildout', as currently defined in the City and County LCPs. That would be more than 60 years of growth under Measure D (the City's 1% growth limit). That much capacity beyond what the 20 or 30 year LCPs require is bound to attract law suits to use that capacity faster. Such an expansion will also make more likely the violation of any new LCP infrastructure limits based on a 20 or 30 year planning horizon with growth control assumed to apply. This is the definition of what infrastructure expansion in the Coastal Zone is supposed to avoid.

ATTACHMENT 1:

CCWD PRESSURE TRACES FROM EXISTING SYSTEM ON PEAK DEMAND DAYS

MEMORANDUM

To: **Carol Cupp**

From: **David L. Mier, Interim General Manager**

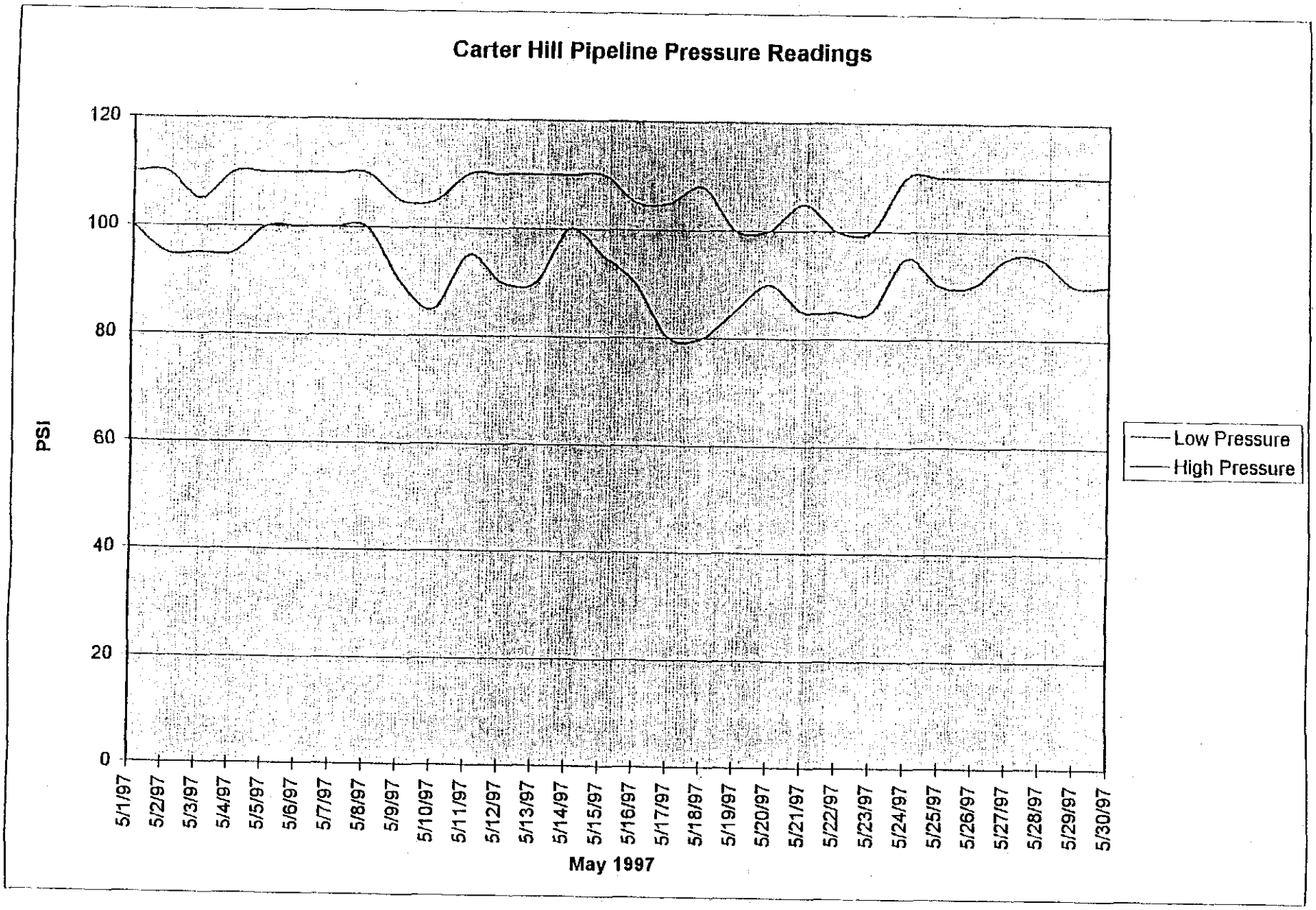
Date: February 13, 2001

Subject: Pressure Readings

Enclosed are the graphs of the pressure readings on the Carter Hill Pipeline for May 1997, July 1997, August 1997 and August 1999. The data for these charts is from 4" circular chart record that the District used until September 2000. In September a solid state device was installed on the line which gives more accurate results.

As stated above the raw data on the enclosed data sheet is from the earlier recording device. Staff has determined that the chart recorder accuracy was questionably and was probably 8 to 12 PSI low. The graphs have not been changed to reflect the lower readings, therefore, you should add approximately 10 PSI to the pressure shown on the data sheet.

If you have any questions please give me a call.


Carter Hill Pipeline Pressure Readings
PSI
120
100
80
60
40
20
0
5/1/97
5/2/97
5/3/97
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5/5/97
5/6/97
5/7/97
5/8/97
5/9/97
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5/21/97
5/22/97
5/23/97
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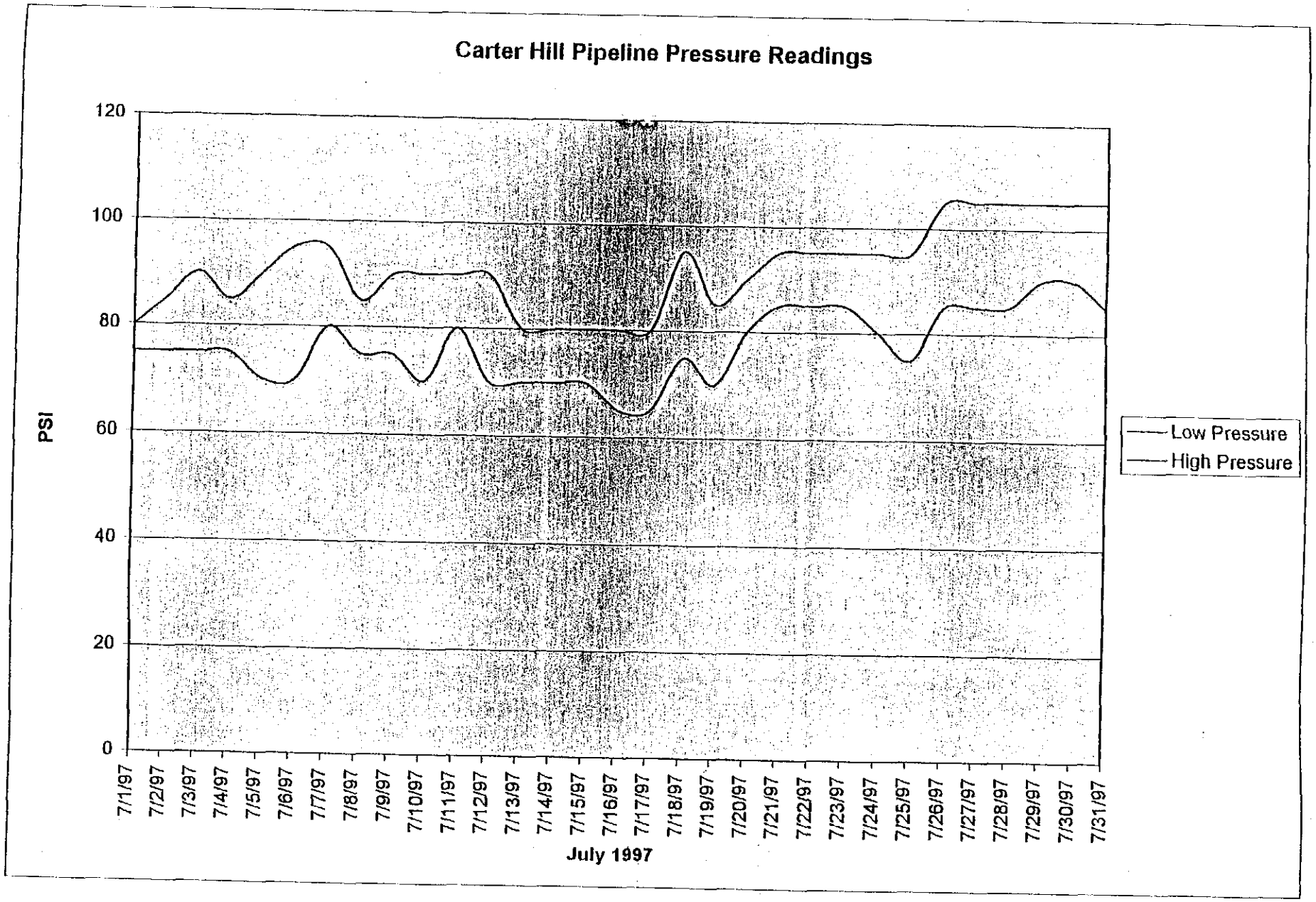
5/30/97
May 1997
Low Pressure
High Pressure


Carter Hill Pipeline Pressure Readings
PSI
120
100
80
60
40
20
0
7/1/97
7/2/97
7/3/97
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7/5/97
7/6/97
7/7/97
7/8/97
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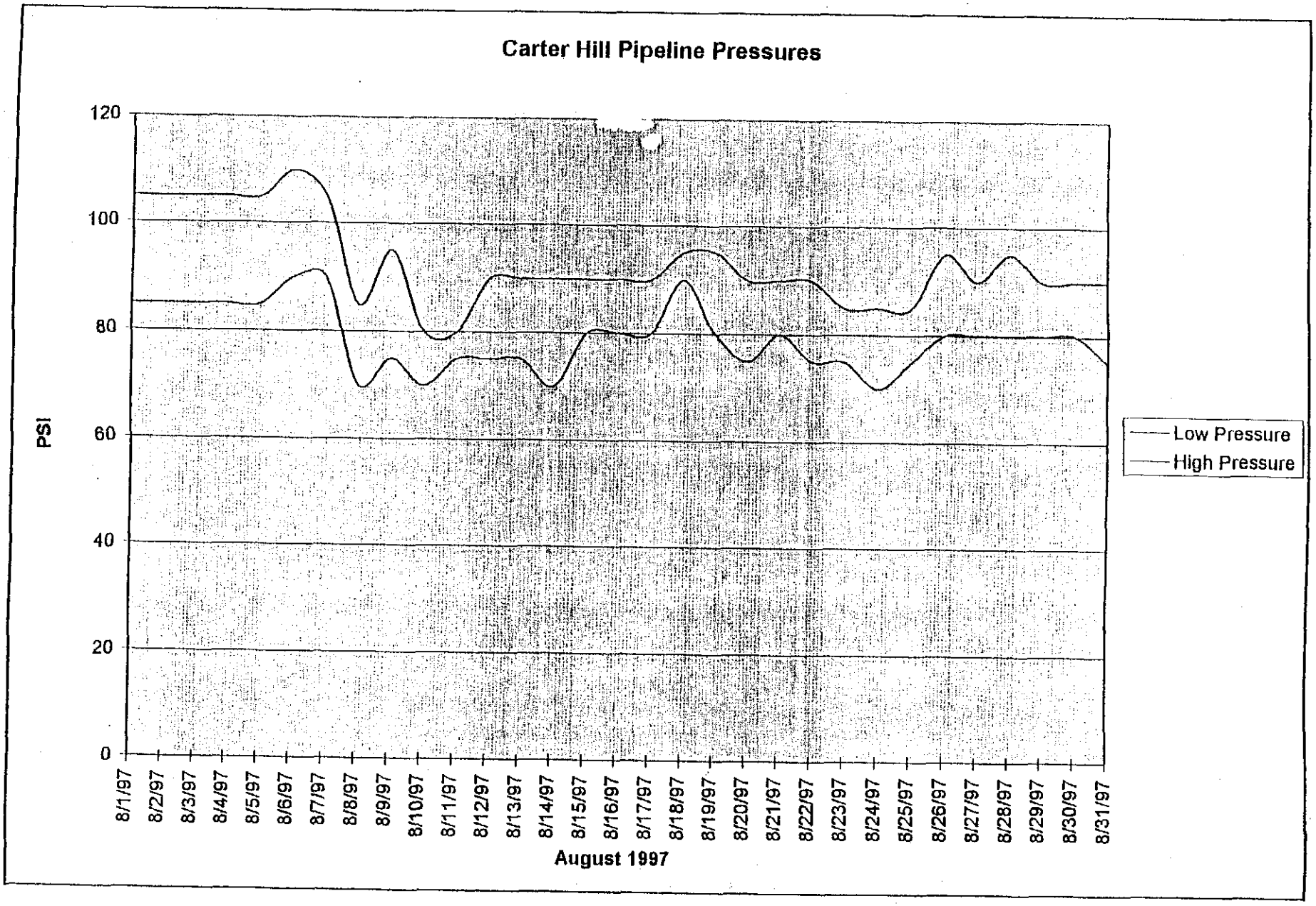
July 1997
Low Pressure
High Pressure


Carter Hill Pipeline Pressures
PSI
120
100
80
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40
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8/1/97
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8/3/97
8/4/97
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8/6/97
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8/9/97
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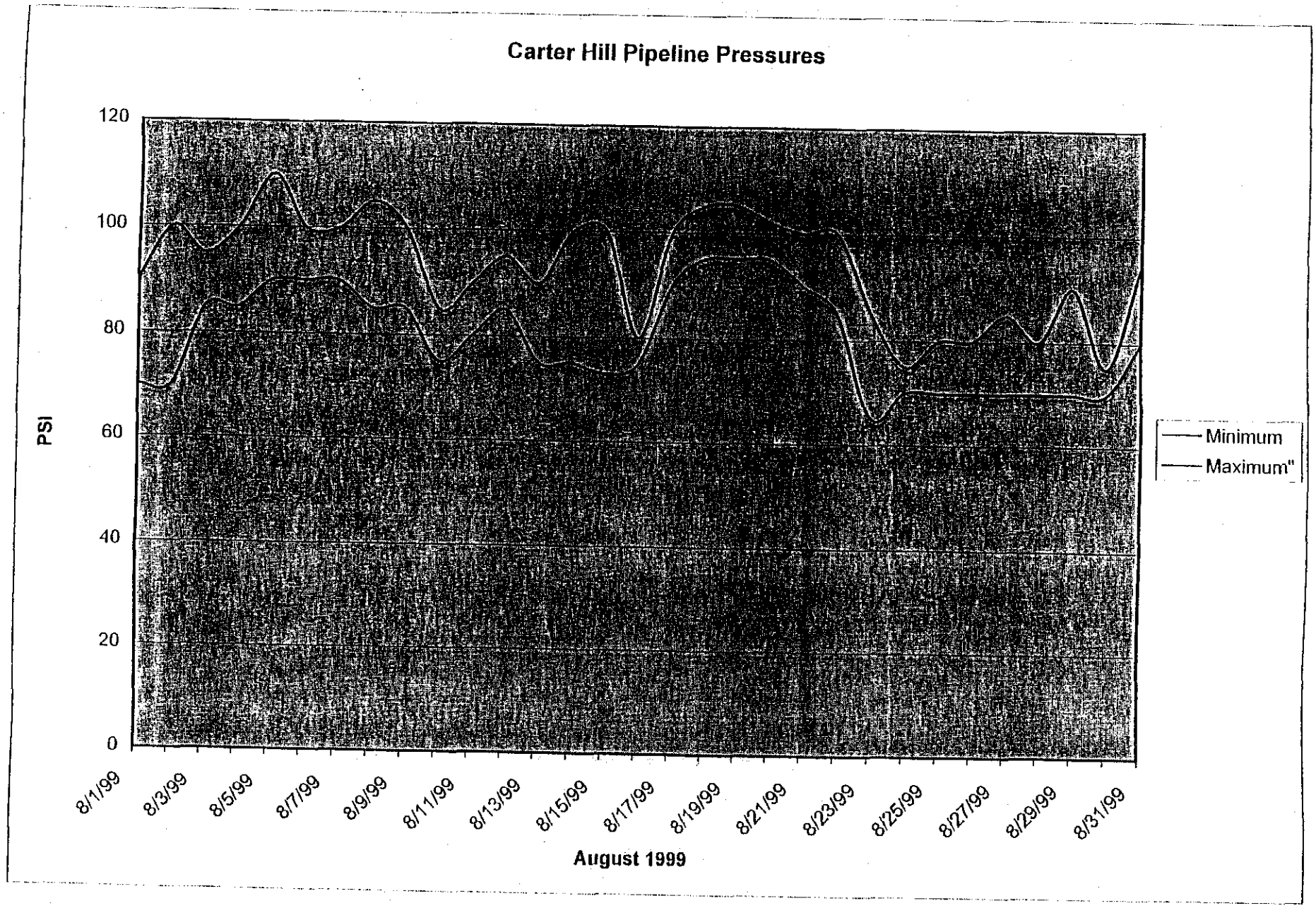
8/31/97
August 1997
Low Pressure
High Pressure


Carter Hill Pipeline Pressures
PSI
120
100
80
60
40
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8/1/99
8/3/99
8/5/99
8/7/99
8/9/99
8/11/99
8/13/99
8/15/99
8/17/99
8/19/99
8/21/99
8/23/99
8/25/99
8/27/99
8/29/99
8/31/99
August 1999
Minimum
Maximum"

	Low	High
5/1/97	100	110
5/2/97	95	110
5/3/97	95	105
5/4/97	95	110
5/5/97	100	110
5/6/97	100	110
5/7/97	100	110
5/8/97	100	110
5/9/97	90	105
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5/23/97	85	100
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5/25/97	90	110
5/26/97	90	110
5/27/97	95	110
5/28/97	95	110
5/29/97	90	110
5/30/97	90	110

	Low	High
7/1/97	75	80
7/2/97	75	85
7/3/97	75	90
7/4/97	75	85
7/5/97	70	90
7/6/97	70	95
7/7/97	80	95
7/8/97	75	85
7/9/97	75	90
7/10/97	70	90
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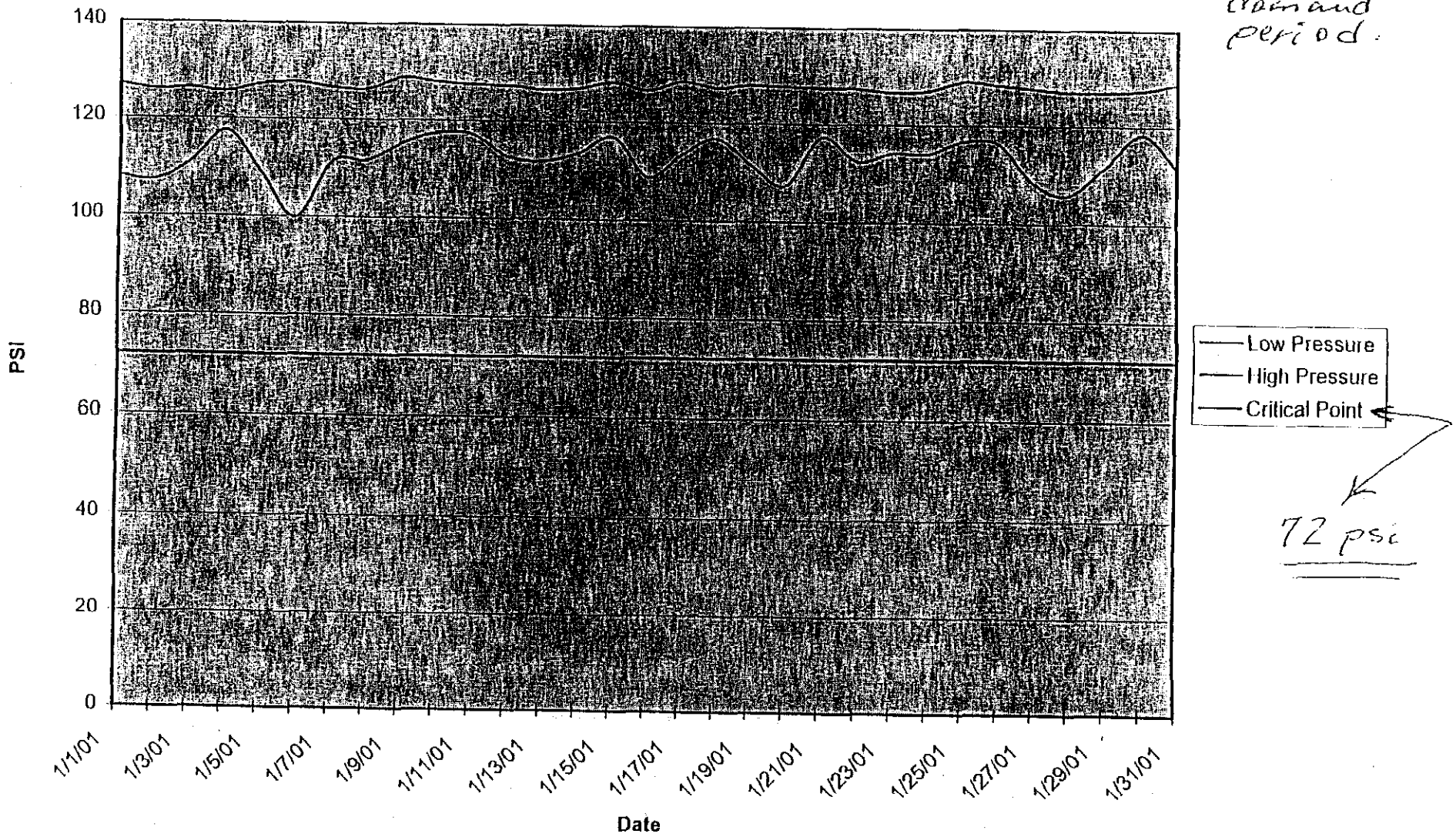
7/13/97	70	80
7/14/97	70	80
7/15/97	70	80
7/16/97	65	80
7/17/97	65	80
7/18/97	75	95
7/19/97	70	85
7/20/97	80	90
7/21/97	85	95
7/22/97	85	95
7/23/97	85	95
7/24/97	80	95
7/25/97	75	95
7/26/97	85	105
7/27/97	85	105
7/28/97	85	105
7/29/97	90	105
7/30/97	90	105
7/31/97	85	105

	Low	High
8/1/97	85	105
8/2/97	85	105
8/3/97	85	105
8/4/97	85	105
8/5/97	85	105
8/6/97	90	110
8/7/97	90	105
8/8/97	70	85
8/9/97	75	95
8/10/97	70	80
8/11/97	75	80
8/12/97	75	90
8/13/97	75	90
8/14/97	70	90
8/15/97	80	90
8/16/97	80	90
8/17/97	80	90
8/18/97	90	95
8/19/97	80	95
8/20/97	75	90
8/21/97	80	90
8/22/97	75	90
8/23/97	75	85
8/24/97	70	85
8/25/97	75	85
8/26/97	80	95
8/27/97	80	90
8/28/97	80	95
8/29/97	80	90
8/30/97	80	90
8/31/97	75	90

- This is a typ. monthly trace from a low demand period.

Carter Hill West Pipeline Pressure



72 psi

ATTACHMENT 2:

LETTER TO CCWD ABOUT CHARACTERIZING HYDRAULIC MODEL ACCURACY

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

Dennis Coleman
Councilmember

May 16, 2001

Chairperson Carol Cupp
Coastside County Water District Board
766 Main Street
Half Moon Bay, CA 94019

Subject: Comments on Draft Evaluation of Existing Water Distribution System

Introduction

Thanks for the opportunity to review the subject report. As you know, I have 20 years of Department of Energy and industry experience with benchmarking and verification of engineering software used to simulate electric utility power plants and associated piping and emergency systems. I have authored about 30 technical journal publications and conference papers in the field of engineering model verification. That means determining how much confidence to put in what such models predict. Let the record show that I have a reasonably good chance of knowing what I'm talking about in this area.

Since the subject report gives no information on how the water system was characterized and modeled, what assumptions were made, what input was provided, and how accurate the model is, the following comments necessarily focus on the effect that such unknowns have on creating uncertainty in what the model results mean. The model may be perfectly accurate or inaccurate, but no clues or references are given in either regard. In the meantime, it is certain that there are plenty of ways for the model to differ from reality because it is not reality, but a representation of it.

Modeling Approach

The report provides no indication of how well the modeling approach itself represents the current, as-built physical configuration, components, properties and characteristics of the water system. For example, is the model conservative (tends to predict that conditions are closer to design limits than what they really are), best estimate (tends to predict reality), or non-conservative (tends to predict that conditions are farther from design limits than what they really are)? Does that tendency change under low and high demand conditions? Have all the components been represented or have some been lumped together for efficiency? Does that representation as opposed to another make any difference in the model results? Does the model incorporate fudge factors or assumptions about pipe roughness and corrosion, pump operating characteristics, or anything else that affects the calculated fluid energy along the pipe and thus its flow and pressure at various calculational nodes?

In short, what is the basis on which the most influential modeling decisions and assumptions were made? Influential means those decisions and assumptions to which the model results are sensitive. If the influence of modeling approach on the model's result is not known, that is an unresolved issue all by itself which complicates interpretation of how much confidence to put in the output from the model. There's nothing wrong with uncertainty in modeling physical systems, as long as those using the model results to draw conclusions or make decisions know what the uncertainty is and somehow take it into account when interpreting the model.

In addition to the physical representation and empirical modeling approaches, if model results are sensitive to changes in nodalization, that could mean that the nodalization has not been optimized for the system design and operating conditions to which the model is being applied.

All of the above factors can affect the model accuracy, i.e. the probability that the model matches reality. Unless the effect of the modeling approach on accuracy of the model results has been characterized, there

is little basis to give significance to those results.

Model Benchmarking

Uncertainty in model accuracy is why engineers, before using a model for decision making, go to the trouble of comparing model results with real life measurements. Otherwise, what is generated by the model is merely a mathematical demonstration of what kinds of parameters can be calculated.

CCWD has real measurements over time of pipeline pressure for at least one location, as well as water levels for at least some storage tanks. Flow measurements may also exist at CCWD or the fire district because pumper trucks doing hydrant tests have at least some pressure and flow instrumentation that can measure what is coming from the hydrant. If such hydrant data existed for a peak or high demand day, it could be highly illustrative of the model's ability to calculate a safety related parameter. If no data exists, it seems worth it to seek the fire district's assistance to do at least some hydrant flow and pressure tests at the most limiting locations, when CCWD sees a peak day shaping up on the demand side.

If demanding conditions are of interest, CCWD has already reported pressure traces for several high demand days that have occurred since 1/95. It would provide at least a warm feeling (if not confidence in the model for the other 7 pressure zones) for the model to be able to track the measured behavior at that location. Since significant pressure drops occurred on those days, storage tank level measurements for the same time periods may exhibit the type of emptying and refill behavior that seems important for the model to be able to accurately do. If the tank level histories are not saved, perhaps they should be in order to capture what could be important model benchmark data during the next high demand day.

Model Input & Assumptions

The same concern about unknown effects on model accuracy applies to the input and underlying assumptions used to produce the reported results. For example, the concluding page of the report states that the peak production rate from both treatment plants was reported by staff to be 4500 gpm. This is a key input in the reported analysis because based on that number, an average day demand of 2250 gpm was used to calculate that 1453 new residential connections could be added to the system and still stay within the production capacity. The 4500 gpm production capacity may not be an appropriate number on which to base average day demand of 2250 gpm because, according to several years worth of Water Supply Evaluation Reports, the system is constrained by a maximum distribution capacity of about 3600 gpm. Either larger pipelines than what we really have been modeled, or the 4500 gpm needs further justification, or the Water Supply Reports have mischaracterized the local distribution system capacity.

Another issue where input and assumptions are likely to have a significant effect on the model results, relates to the normal rainfall assumption that is applied. The significant effect that periodic droughts can have on local water supply is consistently documented in numerous Water Supply Evaluation Reports. To assume that the current analysis is indicative of the real limits on the system to add new connections, is to effectively assume that drought would not affect the SFWD supply. This cannot be so easily ruled out because SFWD retains authority under its water agreements to curtail drought purchases by Bay Area water districts. This presents a limiting condition that is both realistic and relevant to the purpose of the subject report; namely, "to summarize the evaluation of the District's water system to provide for the requirements of the existing customers and evaluate the ability to serve additional single-family residential customers."

Model Output & Interpretation

Not knowing how accurate the model is, there is little basis to assume what the model means. Given the average day assumption of 2250 gpm, two things are assumed by the subject report, however:

(1) adding 1453 residential connections will reach the production capacity of the system (Table 7) and
(2) at this so-called production capacity of the system, between 5 and 25% of nodes fail to meet pressure criteria for the "fire flow" and "peak hour" case (Figure 3).

With respect to item (1), the 1453 additional connection capability of the system clearly reflects the 2250 gpm assumption of what is an average day; namely 50% of the peak day capacity. If the average day was defined by 50% of the distribution system capacity to service that demand, it would be characterized as 1800 gpm, not 2250 gpm. The output may represent an average day in terms of the treatment plant capacity, but not for the distribution system capacity, which the District has repeatedly identified as the

most limiting factor to adding new connections. Why then evaluate the capacity to add new connections on an optimistic as opposed to limiting assumption? This sort of implied interpretation of a model output is risky for safety-related parameters, especially when calculated by a model whose accuracy is unknown. The 1453 answer also assumes that all connections are residential, where a significant proportion of CCWD users today are non-residential with different demands and use patterns. Finally, the 1453 answer neglects the fact that some 500 of the approximately 1400 uninstalled Phase 1 connections are reserved for priority land uses, which don't include market rate residential development.

With respect to item (2), it is noted that pressure criteria were not met at a significant number of nodes. Whether that is acceptable or not depends on the "acceptance criterion" applied. If the acceptance criterion was that no more than 1% of nodes should fail to meet pressure standards, 1453 is too many connections to add to the present system. If CCWD has not established some basic acceptance criteria for parameters related to safety and adequacy of service, it should think about doing so. In any event, there is no apparent basis by which to evaluate 5 to 25% of nodes failing to meet pressure standards as being a good or a bad thing and what to do about it whichever it is. That looks like failure to properly interpret the model. Those seeing the results are lulled into thinking that the percentage of nodes that do not meet the pressure criterion for fire flow being "significant", presents no further issue to resolve relative to how to use the model results.

The Right Question

To an outside observer, it looks as if the consultant was instructed to come up with a production capacity of 1453 additional residential connections, which is about equal to the number of connections required to complete Phase 1 water service. In addition to being too pat of an answer to accept from an uncharacterized model, the answer is unresponsive to the recent DOHS recommendations, which were to analyze the effect of new connections on the adequacy and safety of service to existing users in the various pressure zones.

Once the model accuracy was at least somewhat demonstrated, a relevant question would be, "How many new connections can be added to the present system under peak demand, drought conditions without violating an unacceptable level of service or safety standards". Whatever that number is, the current fraction of non-residential connections should be subtracted and the balance tells you how many residential connections you can add without more than X% of the system violating adequacy of service and safety standards. This is called a parametric study. Connections could be added at intervals of 200 or 300 until you found the number that complied with whatever acceptance criterion you established.

Conclusion

I hope this input is useful in getting a model you can believe in and using it to resolve issues in a more meaningful way than presented in the subject report.

RECEIVED
AUG 0 5 2002
CALIFORNIA
COASTAL COMMISSION

August 2, 2002

Mr. Peter Imhoff
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Re: Consolidated El Granada Transmission Pipeline Projects

Application Nos.: A-2-SMC-99-63; A-1-HMB-99-20

Dear Mr. Imhoff:

The Coastside County Water District has received and reviewed the position paper recently sent to the Coastal Commission concerning the above-referenced projects and presents this letter in response. As set forth in greater detail below, the arguments and analysis adopted by the Half Moon Bay City council in opposition to the District's proposed projects are seriously flawed. To summarize, the City's analysis suffers from numerous defects, among them: (1) The City's analysis of "Sizing Issues", by which the City purports to challenge the recommendations of the three licensed engineers who have studied this project (all of whom concurred that a 16" gravity flow system was required), appears to be based upon the lay opinion of a sitting City Councilmember whose qualifications and credentials to evaluate water transmission systems are unsubstantiated. (2) The statement that 12" is the "appropriate" size for the pipeline is unsupported by any meaningful data or supporting engineering analysis. (3) The City's opposition is based upon its notion that the data and assumptions contained in the existing certified LCP's of the County of San Mateo and City of Half Moon Bay, upon which this project is based, should be discarded, and that the projects should instead be measured against extraneous information and speculative notions about new LCPs that have yet to be adopted. (4) The City's flawed analysis is based on its failure to recognize peak day demand as the most important factor in designing water transmission systems. And (5) the City ignores the Coastal Commission's limited jurisdiction, as set forth in Public Resources Code section 30604, to determine if the proposed projects are "in conformity with the certified local coastal program." The City repeatedly urges the Commission to ignore its limited jurisdiction, and to focus instead upon unspecified criteria that may be contained in some future LCP.

A detailed rejoinder to the specific points raised in the City's position paper and the transmittal letter signed by the Mayor is as follows:

1. Half Moon Bay did not approve a Coastal Development Permit for the El Granada Pipeline.

The City's statement that the proposed project "was never approved by the City Council" is incorrect. As the record indicates, the City Council approved the proposed project by operation of law when the Council vote to approve the project split 2-2. In this regard, a copy of the City Attorney's memorandum explaining the legal significance of the tie vote is attached hereto.

2. The Commission should ignore the existing certified LCPs and analyze the project under criteria that has yet to be implemented in some future LCP.

It is particularly disturbing that the City, the agency charged with implementation of its LCP, so willingly urges the Coastal Commission to ignore the certified plan when a project, such as this, does not comport with the City's current political objectives. Ironically, the City rationalizes this apparent contradiction based upon its asserted fear of litigation brought by "local developers ... attempting to circumvent or ignore the LCP." And yet, over and over the City Council, the body charged with the legal obligation to amend and update its LCP as circumstances and assumptions become out of date and obsolete, complains in its analysis that this project should be denied because it is based on "obsolete information", i.e., the assumptions and data contained in the certified LCP.

The City states that "City users represent most of the demand for CCWD services" and that "most of the remaining CCWD service area coincides with the City's LAFCO designated Sphere of Influence." These statements accompany the City's assertion that the proposed project should not be approved because the existing LCPs "are under serious revision". In its analysis the City argues, over and over, that the Commission should ignore "obsolete" information contained in the "1985" LCP. The City refers derisively to its own certified LCP as though it bears no responsibility for the documents purported obsolescence. The City prefers that the Commission base its decision on the City's notions of "current experience" and apply amorphous standards not yet included in an "updated LCP" the City has not yet adopted. However, as stated above the Commission's jurisdiction is limited to determining whether the proposed projects conform to the existing certified LCP. That the City may, at some uncertain point in the future, revise its LCP does not justify deviating from this clear legal mandate.

3. A 16-inch pipe is too large and would enable new and unchecked development on the Coast.

The City's assertion that the proposed pipeline "has the capacity to deliver far more water than the current or anticipated LCP planning periods require or can realistically envision" is inaccurate and misleading, and is based upon a superficial analysis of the existing system and the criteria employed in designing an appropriate system to accommodate existing and future needs anticipated by the LCPs.

First and foremost, the City ignores the fact that the proposed project is only capable of transmitting water sufficient to meet 55% of the peak day demand at buildout, which is roughly equivalent to the number of water connections that the District has sold, but remain uninstalled, as a result of the Crystal Springs Project approved by the Coastal Commission over 15 years ago. No additional water connections are contemplated as a result of the proposed project. Issuing additional water connections would require additional production capacity and another coastal development permit.

The data that the City uses to support its claim that the project is over-sized is that a 16-inch pipe is 2.56 times larger in cross-section area than a 10-inch pipe. The ratio is correct but the conclusion that this would be growth inducing is a distortion of the facts and a simplistic analysis of the real requirements and physics of our water system. The City's analysis ignores the fact that the 16" El Granada Transmission Pipeline, once completed, will be a fail-safe gravity flow system. The existing 10" system, on the other hand, is supported by a permanent pumping station and, during peak summer months, a portable booster pump. Secondly, the City's simplified analysis has been refuted by 3 separate professional engineering analyses of the pipeline replacement project.

The three engineers who studied the El Granada renewal project and made public recommendations to the CCWD Board are James Teter, PE a long time consultant to the district; Edward Boscacci, Jr., PE, an employee of Brian, Kangas & Foulk the civil engineering firm that was hired by the San Mateo County Board of Supervisors to examine the El Granada pipeline design in response to the second appeal of the project, and Rudolph Metzner, PE, the engineer hired by CCWD to perform a computer simulation of the district infrastructure to evaluate and recommend for a third time an appropriate design for the El Granada pipeline. All of these Professional Engineers, all with many years of experience in designing and constructing water systems, agreed that Mr. Teter's original design was appropriate and that a 16-inch gravity flow system was required. Carol Cupp, the Appellant, was part of the Coastside County Water District Board majority that hired Mr. Metzner, P.E.

All of these engineering analyses and reports are available at the CCWD office and they have been widely distributed and discussed within the community. On the other hand, the City's analysis disregards or ignores these serious engineering analyses and the facts. And the assertion that a City Councilmember is an expert on the topic of the computer modeling of water systems is made without providing any evidence of his background, training or experience in this regard. Without objective evidence, the City's comments concerning the "right-sizing" of the pipeline cannot be taken seriously, especially in light of the City's disagreement with three licensed Professional Engineers, each of whom have many years of experience in designing, constructing and evaluating water systems. Mr. Metzner's resume documents over ten years of experience in the computer modeling of water systems, one of his specialties. The assertion that an experienced bonded Professional Engineers would have intentionally or otherwise used incorrect data or assumptions to make their recommendations, as the City repeatedly asserts, simply is not credible.

The City's core argument against the proposed design is that a 16-inch pipe is larger than needed to service CCWD. The El Granada pipeline was installed in 1947/48. At the time of installation, 54 years ago, the pipeline was more than adequate to service the community's water distribution needs. There has been more than 50 years of development within the district during this period. The question of merit is when, what year to be specific, was the capacity of the El Granada pipeline to service the community's water needs exceeded? This can be visualized as a graph with the year on the x-axis and the number of services on the y-axis. This graph is shown in Fig. 1.

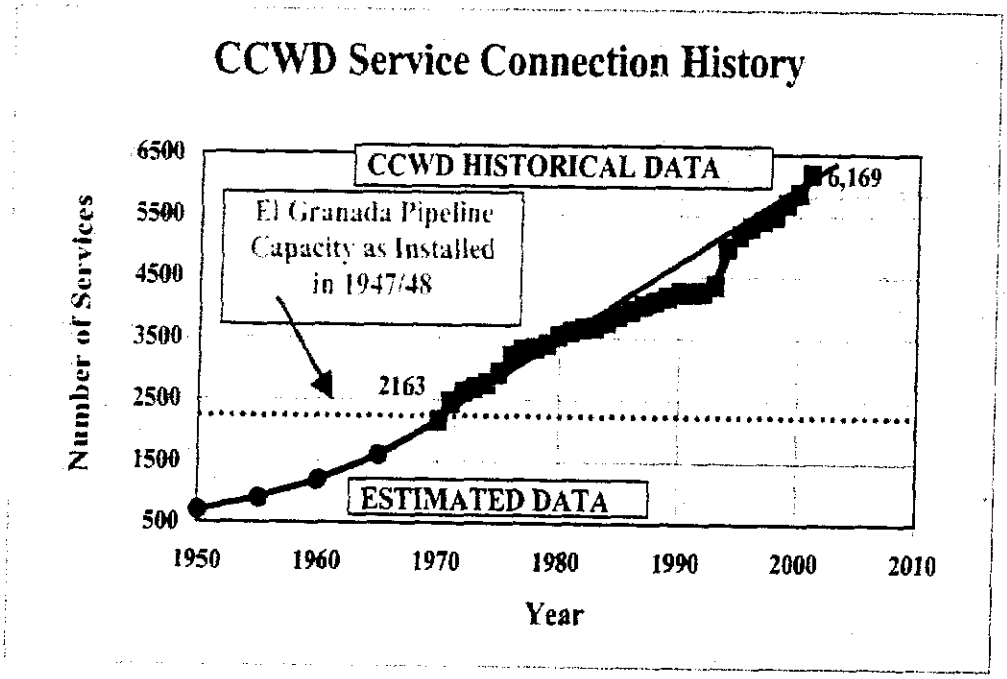


Fig. 1. The squares are historical data on the number of connections to the CCWD system on a yearly basis starting in 1970, the first year with reliable records. The circles are estimated number of connections on a yearly basis from 1950 to 1970. There are no reliable records for this data, and the data shown are estimates based on extrapolations back to the first years of the CCWD public utility. The dotted line is the service capacity of the El Granada pipeline as it was installed in 1947/48. 1970 was the last year this pipeline could be run as a solely gravity flow transmission line. The data shown in the figure are from the annual water quality report available at http://www.coastsidewater.org.

In 1970 the El Granada pipeline reached it service capacity as a gravity flow system and a pumping station had to be added in 1971 for the El Granada pipeline to meet the service need.

Gravity flow transmission systems are the most desirable engineering solution for a water system since they are failsafe during power outages caused by natural disasters such as earthquakes and fires. The El Granada pipeline had to be operated as a pumped system starting in 1971, so 1971 was the year that the pipeline's ability to deliver water powered by gravity was exceeded. It has been too small since 1971.

The number of services has increased over the past 31 years from 2163 services in 1970 to 6169 today. Additionally, there are approximately another 1900 services, about 1400 of which have already been purchased, that will bring the total number of services to about 8000 over the next 15 to 20 years. This rate of service connection increase is consistent with even the slowest estimates of growth, i.e., 1% in Half Moon Bay & the 80 units per year proposed in the county's revised LCP. That represents a 370% increase in customers served from 1970 to 2022, the date at which all 8000 connections are likely to be in service. This growth will occur within the service life of a new replacement El Granada pipeline.

The cost of replacing the 54-year old El Granada pipeline is approximately 4.5 million dollars if we replace it soon. Inflation will make it more expensive to replace this pipeline in the future. It has already been delayed more than 3 years.

The money to replace the pipeline is in the bank. The funds came from a combination of depreciation funds collected from current users as part of their normal water bill and from funds acquired through the purchase of Crystal Spring services. The City erroneously claims that the El Granada pipeline replacement is independent of the Crystal Springs project. This is not correct. Funds collected by selling new services were used to pay for the Crystal Spring Project and to partially fund the El Granada pipeline renewal.

The Crystal Springs project connected the CCWD to Hetch Hetchy and the California statewide water system. This has reduced forever our risk of loss of service due to future droughts. Droughts will certainly impact our ability to meet future demand and will likely require water conservation strategies here as elsewhere within the state. But we are now part of a larger system, which assures a supply of water to our customers.

If we undersize the El Granada replacement and must replace it again in 20 years as the City recommends this will cost the ratepayers another 5 million dollars within a 20 year period. These funds would have to be acquired by substantially raising every ratepayer's water bill. This is a needless cost that can be avoided by simply following good engineering practice and installing the recommended 16-inch gravity flow system now.

To go beyond 8000 connections, the district would have to expand its water infrastructure. The additional costs to expand service beyond 8000 connections would be born by those future customers of the CCWD system and not by today's ratepayers. Such a future expansion will also have to be consistent with the two LCPs that limit our community's growth and ultimate size. To go beyond 8000 services will require new sources of water, and new

Coastal Develop Permits and the CEQA process that must be followed to obtain CDPs. This is not the rapid and uncontrolled growth predicted by the City. It is a long, slow, open and legal process that will be driven by real future needs rather than overblown and speculative scenarios of rapid growth.

4. Per capita demand.

The City challenges the per capita demand data used to develop the El Granada pipeline design. The City's claim that CCWD assumed a higher per capita demand than representative of the local population is incorrect. As explained in CCWD's LCP Analysis, the Hydraulic Model Report was based upon historical demand data from district records. It is actual data and not an estimate. As the report explains, the Hydraulic Model relied upon the District's single-family residential water sales for the twelve-month period from July, 1999 through June, 2000, which were 493.404 million gallons, or approximately 108 gallons per day, per capita, not the 130 gallons per day claimed by the City. And the project's engineering master plan report assumed an *average* daily water usage of from 93 to 134 gallons per day per capita based upon the *County* LCP, since the City's LCP did not contain any water usage assumptions. In arguing that a figure of 92 gallons per day per capita should be used, the City ignores both the actual usage data and the LCP assumptions concerning anticipated per capita usage.

5. The pipeline should be sized to only meet average day demand, not peak demand.

At the core of the City's argument that the proposed 16" pipeline's capacity is excessive is the misplaced notion that average demand alone dictates the appropriate size of water transmission infrastructure. The City refers to average usage and ignores the critical difference between average volume and peak volume. The average volume is based on every minute for an entire year. The typical residential hookup uses water only during a small fraction of that time. If you are not at home or if you are sleeping, you are probably not using water. Many Coastside residences are unoccupied for large periods of time every day. Average demand does not reflect the demand during periods when people are likely to be using water. The latter number is much larger and is a critical component of any water system design.

The water system must be capable of providing an adequate flow of water when demand is high, for example in the morning hours and in the evening dinner hours. Sizing a system solely on average daily flow per minute would be absurd. The system must also be sized to handle emergencies, for example, fire flows. Fires are more likely to occur during periods of peak demand than during periods of low demand because peak demand occurs in the same hot and dry seasons where fire risk is high.

The City repeatedly uses the average yearly volumes to claim excessive capacity. The City's comments on the sewer plant are a good example of the vacuous nature of this logic. The City simply cites average volumes of waste divided into capacity to conclude erroneously that

we have too much sewage treatment capacity on the coast today. Sewer plants, however, must be sized to handle the flow volume during the rainy season. If a plant does not have sufficient storage and treatment capacity when it rains, raw untreated sewage will be dumped into the ocean. During the rainy seasons rain water runoff mixes with sewage and can overwhelm the storage capacity of the system. The posting of dangerous levels of sewage contaminants off the coast of Half Moon Bay during the rainy season is ample evidence that the Coastside's sewage treatment capacity is not excessive. A true environmentalist's agenda would be to remedy this problem by increasing the capacity of the sewage treatment plant to accommodate peak wet weather flows.

The City's misleading characterization of the sewage treatment plant is cited as part of its argument to under-size the water system. Under-sizing the water system puts our community at risk. The City's arguments in support of under-sizing the water distribution system, if they succeed, will result in a needless and avoidable loss of property in the future. We have already increased the risk to our community by putting off the replacement of an aging inadequate pipeline. This project cannot be delayed any further.

6. All public infrastructure should be expanded at exactly the same rate.

The City argues that the LCP "prohibit[s] any element of infrastructure from getting ahead of any other element." This is a Catch-22 argument that, taken to its logical conclusion, would prohibit virtually any infrastructure improvement. According to the City, we should not improve our water infrastructure because that would put the water infrastructure ahead of the road or sewer or school infrastructure. The City's argument is contradicted by Table 10.1 of the City LCP, which clearly establishes that the development of an adequate water supply on the coast lags behind other infrastructure such as sewer and highways.

Moreover, the City's analysis requiring each type of infrastructure to be gradually expanded in lock step is inconsistent with LCP policies, which recognize the technical and fiscal realities of providing water and other infrastructure improvements. As the LCP notes at page 195:

> The provision of inadequate capacity to accommodate expected needs within a reasonable time horizon related to the useful life of the facilities can result in overburdened facilities and "stop" and "start" development practices resulting from unexpected service moratoria which are detrimental to orderly growth...
>
> The appropriate amount of capacity to be provided depends on the relative costs and financial impacts associated with construction of varying levels of capacity in relation to future potential demand. In the case of water supply improvements, major projects required to increase overall available supply cannot be undertaken in small increments, either technically or cost-effectively.

As the LCP notes, "the necessary response [to the problem of timing public works improvements] is coordination of facility expansions *and management of new development on an incremental basis*." By its analysis, the City appears reluctant to face up to its obligations to manage growth. It favors instead the "'stop' and 'start' development practices resulting from unexpected service moratoria"--exactly what the LCP seeks to avoid.

7. More storage and a 12" pipe will suffice.

The water district has approximately 8.5 million gallons of water storage capacity today in its existing water tank facilities. This exceeds the average volume for stored water for a community of our size. Adding to this capacity would add little or nothing to the margin of fire safety. The real problem is moving the water between storage tanks.

The El Granada pipeline is part of the backbone distribution system within the district. Its size limits the ability to move water from storage in the central or southern regions of the system to the northern region or visa versa. It is the impedance to a rapid recharge of storage levels from storage throughout the system, generated by an inadequately sized transmission pipeline that was one of the primary considerations in sizing the El Granada pipeline.

The pipe size impedance problem will not go away by adding more storage capacity. It will only be solved by reducing the barriers to the flow of water between storage tanks. This requires a bigger diameter pipe. A 16-inch gravity flow system will reduce the impedance between the storage tanks. They will refill more rapidly during periods of high demand if we install a 16-inch pipeline as recommended by the Professional Engineers.

An excellent example of a high demand period is Superbowl Sunday. Imagine the consequences to our customers if we did not anticipate and design for these infrequent, peak demand events. This pipeline replacement is not about growth; it is to address the need for a better balance or equilibrium in our system.

The Hydraulic Model found that a mixed 12/16-inch system with a new pumping station would also satisfy the flow requirements. This is a mixed system and not the 12-inch system that the City claims is adequate. The system would have to have a substantial 16-inch run and it would require an expensive pump.

A pumped system does not remedy as many low pressure and fire flow nodes discovered by the Metzner modeling study of the district's system. A mixed-pipe-size-pumped-system, the only alternative with smaller sections of pipe found to be viable in the Metzner modeling analysis, would have more substandard nodes remaining after its installation than a 16-inch gravity system. A pumped system costs more to install, almost one million dollars more.

These added costs would impact the capital improvement budget possibly requiring a bond measure to pay for these additional expenses. A pumped system costs more to maintain and

operate. More importantly, a pumped system is more prone to failure and will not work when there is a loss of power.

A pumped system would increase the risks within the community and reduce our ability to cope with natural disaster such as earthquakes and fires. Yet this more expensive, less adequate, fail-broken system is what the City would favor.

8. The "Reserve Capacity" was not quantified.

The City suggests that the project should be denied because of the "uncharacterized cumulative capacity of the proposed water system." It complains that the "reserve capacity" was not "quantified, justified or characterized." The meaning of the terms "uncharacterized cumulative capacity" and "reserve capacity" in the context of the proposed project is unclear. Perhaps the City is referring to some quantity of excess capacity in the proposed transmission pipelines. But as the three engineering reports prepared for this project have shown, the proposed 16" pipeline does not have "excess capacity". Rather, as the master engineering study demonstrates, the project once completed will furnish approximately 55% of peak day demand at buildout. And using a different approach the Hydraulic Model Report concluded that 16" was the smallest nominal size that was needed to serve the existing sold but uninstalled connections that were approved by the Coastal Commission in connection with the Crystal Springs Project. In short, the City's argument that the project suffers from a failure to characterize the project's "reserve capacity" is factually inaccurate and devoid of any meaningful analysis.

9. The proposed project will expose the City to litigation.

The City's fears that approval of this project will expose it to litigation in the future are purely speculative and conjectural. On the other hand, the District has committed for over fifteen years to build the necessary infrastructure to furnish water to those who purchased Crystal Springs Project connections. The City is apparently unconcerned about the potential for lawsuits that may arise if the District cannot follow through on its commitment to complete the infrastructure improvements contemplated by the CSP. The City goes so far as to deny that this project was contemplated by the CSP. However, the facilities plan approved by the District in connection with the formation of the Crystal Springs Assessment District, attached hereto, clearly shows the 16" El Granada Transmission Pipeline and other infrastructure improvements to be funded by the Assessment District.

10. The capacity of the project should not exceed "whatever the current phase of LCP implementation requires."

The City, in its analysis, purports to take guidance from a few basic notions, among them, "that infrastructure should not be capable of exceeding whatever the current phase of LCP

implementation requires." What the City does not and cannot explain is how this project is inconsistent with the phasing concepts contained in the LCP. As explained in detail in the District's June 10, 2002 analysis, the concept of "phased development" was largely abandoned with the 1993 passage of Measure A which substituted an annual growth rate of 3% for the two-phase concept contained in the old LCP. And the current LCP recognizes that "it is neither desirable nor feasible to phase or limit all early capacity expansions in line with a specific target period of growth, such as 10 years or 20 years."

The notion that this project is somehow inconsistent with the concepts of phasing contained in the LCP lacks any meaningful analysis, in large part because there are no specific criteria in the LCP that restrict infrastructure improvements to a certain "phase" of development. On the other hand, by furnishing sufficient transmission capacity to supply only a portion of buildout demand, the District's project satisfies the phasing criteria in the County LCP, and strikes a reasonable balance between the need to transport a sufficient quantity of water to meet actual anticipated demand, and the policies contained in the LCP concerning "excessive" infrastructure.

11. The "large surplus capacity" of the existing system.

In its analysis, the City erroneously refers to the "large surplus capacity for the present system (1453 connections can be added with no problem)." The City apparently confuses the Hydraulic Model's analysis of the proposed 16" pipeline with the existing system. There is no "large surplus capacity." As previously stated, the existing 10" pipeline is too small to meet existing demand. The Frenchmans Creek Pump Station was added to increase the transmission capacity in 1971 and a portable pump must now be used during peak demand periods to bolster the Frenchmans Creek Pump Station.

12. Cost is unimportant.

The City argues that "CCWD's desire to save some pump energy does not create an exception to the LCP requirement that infrastructure not exceed that needed to implement the current or anticipated LCP buildout phase." In fact, the LCP specifically requires the financial impacts of infrastructure improvements to be balanced against the other policies in the LCP. It states that the "appropriate amount of capacity to be provided depends on the relative costs and financial impacts associated with construction of varying levels of capacity in relation to future *potential demand*." As stated above, undersizing this project as the City urges will force the District's customers to bear the substantial additional cost, contrary to the policies contained in the LCP.

13. The City's presentation of "external factors" and "obsolete assumptions" is in reality an attempt to divert the Coastal Commission's attention from its statutory obligation to analyze the project for compliance with the certified LCPs.

In its analysis, the City is critical of the "short-lived nature of past visions" and "land use assumptions [of] limited shelf life." It urges the Coastal Commission to "use their discretion and focus on the purpose of an LCP to preserve and protect coastal resources, and not be distracted by" the specific criteria contained in the certified LCPs. It urges the Commission to discard the opinions of three licensed professional engineers and instead follow the recommendations of an unlicensed layperson who has "prior NRC experience." It asks the Commission to base its decision on the "draft maps" used by the City in its continuing yet incomplete effort to move forward with a new LCP. It implores the Commission to base its decision on the "lower growth rates" that are "almost certain" to be contained in a new LCP. The District urges the Commission not to deviate from its statutory obligation to limit its review to whether this project conforms to the certified LCPs.

One of the City of Half Moon Bay's **attachments in the "position paper"** is a memo from Coastside County Water District Superintendent of Operations, David Mier, to Coastside County Water District President, Carol Cupp, dated February 13, 2001, titled **"Pressure Readings"**. This information is irrelevant to the sizing of the El Granada Pipeline. The pressure information on the Carter Hill Pipeline is collected by the District for the internal use of District staff. None of the pressure information was utilized in the development of the pipeline sizing for the El Granada Pipeline.

Another attachment in the City of Half Moon Bay's "**position paper"** is a three (3) page letter from Half Moon Bay City Councilman, Dennis Coleman to Coastside County Water District Board President, Carol Cupp, dated May 16, 2001, titled **"Comments on Draft Evaluation of Existing Water Distribution System"**. Below is the district's response, which has been prepared by Rudolph C. Metzner, P.E., from Water Resource Associates.

Water Resource Associates
Consulting Engineers

July 31, 2002

Mr. Ed Schmidt, General Manager
Coastside County Water District
766 Main Street
Half Moon Bay, CA 94019

38-6-0/1

Subject: Comments on Letter to CCWD from Mr. Dennis Coleman

Dear Mr. Schmidt:

At your request, I have reviewed a three-page letter dated May 16, 2001 from Mr. Dennis Coleman to Chairperson Carol Cupp, Coastside County Water District Board. The subject of the letter is "Comments on Draft Evaluation of Existing Water Distribution System."

The draft report referred to was prepared by Water Resource Associates and is dated April 2001. Based on the thoughtful comments of Mr. Coleman and on additional comments by the Board, another draft report was prepared dated June 2001. The final report is dated July 2001. It is noteworthy that the April 2001 draft report contained nine pages and the July 2001 final report contained 53 pages, including four appendices, in large measure to address the comments of Mr. Coleman.

My brief biography is as follows: I have provided consulting engineering services to 45 water agencies in 15 states over a period of nearly 40 years. Many of these engagements have involved the modeling of municipal water distribution systems. I have authored a number of journal and conference papers. I am a life member of the American Water Works Association and a Diplomate of the American Academy of Environmental Engineers.

The following comments are grouped according to the headings used by Mr. Coleman in his letter.

Modeling Approach

Appendix A, Model Development and Calibration, describes the data collection, model configuration and model calibration. Appendix B, Modeling Criteria, documents the assumptions used with the model and cites the sources of the assumptions. Appendix D is the report of the consultant who conducted the hydrant flow tests and the friction coefficient test which data were used to calibrate the model. All of this information was available at the time that the April draft report was prepared, but it was not included in the draft report.

It should be noted that modeling the water flow in an electric utility power plant is not the same as modeling the water flow in a municipal water distribution system. In a power plant the flow of water is a function of the power production and the two can often be related with an equation. In a municipal water distribution system the flow of water depends on the moment-by-moment decisions of all the customers—from the smallest residential to the largest irrigator—and the production rates set at the two water treatment plants. The system hydraulics determine whether water flows into or out of each of the water storage tanks.

Model Benchmarking

This term is not used in the modeling of municipal water systems, but it seems to refer to model calibration.

The results of the hydraulic model calibration are presented in Appendix A. The report states, "the average error in the calibration is within the same range as the possible error of some of the model [input] data" (specifically the elevations).

Model Input and Assumptions

As described on page 15 of the final report, "District staff reports that the peak production rate from the Nunes Water Treatment Plant is about 3,800 gpm. The peak production rate from the Denniston Water Treatment Plant is about 700 gpm, although this rate is not always available during the summer. The total plant production rate is thus 4,500 gpm. The corresponding average day supply rate (using a maximum day ratio of 190 percent) is 2,370 gpm."

The issue of drought conditions is addressed in Table 5 (page 15) of the final report. The drought rationing, in percent, is shown for various average day production conditions and the corresponding number of single-family residential customers. Demand conditions for the period July 1999 to June 2000 would have required 27 percent rationing during a severe drought, while demand conditions with the maximum additional single-family residential customers would require 41 percent rationing during a severe drought.

Model Output and Interpretation

The calculation of the additional single-family residential customers that may be served has been revised and is shown in Table 5 of the final report. Based on metered water sales from July 1999 to June 2000, it is assumed that single-family residential customers will use 66 percent of additional demand. The additional number of single-family customers is 496 using the normal yield and 1,314 using the peak production capacity.

Figure 7 shows that the pressure criteria were not met between four and eight percent of the time. The percentage failure for fire flow is less than in the April report because it was determined that only 34 percent of the nodes that failed to meet the pressure criterion actually had hydrants at the sites.

At the time that the final report was prepared, the District had not selected "acceptance criteria" for the percentage of nodes, which failed the pressure criteria. At the bottom of page 16 of the final report the following caution appears:

> "Two factors that the District must consider to determine the acceptable number of additional single-family customers are:
>
> - The tolerance for drought rationing
> - The acceptable level for the percentage of nodes that fail the pressure criteria
>
> Aversion to these will decrease the acceptable number of additional single-family customers."

The Right Question

The District did not "instruct" the consultant "to come up with a production capacity of 1,453 additional residential connections" as suggested by Mr. Coleman. The calculation of the additional single-family residential customers is addressed in the previous paragraphs.

Very truly yours,

WATER RESOURCE ASSOCIATES

Rudolph C. Metzner

Rudolph C. Metzner, P.E.

Conclusion

It would be a tragic lack of responsible planning by our community and the elected Board of Directors of the Coastside County Water District, if these appeals are not successfully challenged. If we are forced to under-size the system, the potentially tragic consequences of these acts should be laid directly at the feet of the Half Moon Bay City Council, and those who would seek to prevent a rational community response to a documented community need. We urge the Commission to set this matter for hearing and approve these projects at the earliest available opportunity. Thank you for your consideration.

Sincerely,

John Muller

John Muller
Board President

Ed Schmidt

Ed Schmidt
General Manager

June 11, 2002

Mr. Peter Imhoff
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Subject: Impact of a new 16" Diameter Water Line on Fire Hydrant Flow

Dear Peter,

There is probably no injury that is more painful or horrendous than a severe burn. I am speaking from direct observation. I was a Personnel Officer in the Medical Service Corps U.S. Army 1970 – 1972. For my entire two (2) year obligation, I was assigned to Brooke Army Medical Center in San Antonio, Texas. A famous burn treatment facility called the "Brooke Army Burn Center" was housed there. While teaching classes during the day, or being the "on-duty officer" in the hospital at night, I observed the incredible emotional turmoil and physical pain caused by serious burns.

There is an incredibly long and painful recovery process for burn victims. Then they carry their scars with them for the rest of their life. There is no escaping what has happened to them. You and I have no idea of the emotional and physical pain they experience for the rest of their life.

Thousands of homes here in the mid-coast area rely upon a 10" diameter steel pipeline for fire hydrant flow, as well as a potable water supply. While I recognize the fact that the California Coastal Commission is not responsible for analyzing fire hydrant flows or fire hydrant pressure, there is no escaping the fact that a new pipeline, especially a 16" diameter, increases the water flow to the fire hydrant, resulting in increased flows and higher water pressure.

The geography and foliage of much of the El Granada areas (served by the pipeline) is a forest of trees. Between the live trees and the "dead fall" on the ground, there is an incredibly high fuel load ready to feed a fire. Additionally, there are many homes, built close together on steep hillsides, with narrow streets, which adds to the potential speed of a fire. The ability to fight a fire would undoubtedly be hampered by the Fire Department's ability to negotiate the steep, narrow streets. Further adding to the problem are regular afternoon winds that could spread a fire uphill, or downhill very quickly.

The ideal replacement system, a 16" diameter gravity flow replacement line that does not require a pumping station, has always been the concept of the District's Licensed, Professional Engineer, Mr. James Teter.

On April 24, 1999, the Coastside County Water District (CCWD) hired Rudi Metzner of Water Resource Associates, to develop a hydraulic model for the purpose of evaluating the Water Distribution System and to establish an appropriately sized pipeline to replace the aging, leaking, 10" diameter pipe. I forwarded a copy of the hydraulic model report to you on April 1, 2002.

This computer simulation of the decaying transmission pipeline has uncovered the marginal performance of the existing system to meet today's minimal standards for fire hydrant flow (1,000 gallons per minute). These standards are minimal for a single fire, let alone multiple fires. Given the dense forested urban area served by this 50 (fifty) year old pipeline, I believe the hydraulic model demonstrates the need to improve this fire flow situation with the California Coastal Commission's approval of a 16" diameter line, without a pump station, as soon as possible.

An alternative of a 12" diameter line with a pump station was modeled. It would take a new pump station, at a capital cost of about $875,000. to get **less** fire flow upgrade as from the 16" diameter line **without** a pump station. (Reference page 20 of the Hydraulic Model Report – Water Resource Associates, dated February 2002):

> "The primary difference between the results of the two alternatives is in the percentage of nodes with less than 1,000-gpm fire flow. The alternative with the pump station has two more nodes (at the easterly end of Spindrift Way and the northerly end of Brig Court) that do not yield 1,000 g.p.m. These nodes are located south of the pump station. During operation, the pump station tends to reduce pressures south of it while increasing pressures north of it. The reasons that these and other nodes do not deliver the required fire flow are tabulated in Appendix C".

In other words, if the concept of a 16" gravity flow line was replaced with a 12" line with the required pump station, the CCWD customers would have to pay approximately $875,000 in additional capital costs or $146.00 per connection ($875,000 divided by 6,000 connections), plus approximately another $8.33 per year in additional operations and maintenance costs for the pump station ($50,000 per year Operations and Maintenance costs divided by 6,000 connections). **This just doesn't make economic or environmental sense.** Pump stations take resources for construction, more resources (like energy) for operation, and all the while adding to the air pollution load while running.

Additionally, given that the District does not own land in the right location for a new pump station, we would be delayed in acquiring a pump station site and would be back before you and other approving authorities trying to get permission to build a pump station. This would delay construction further. The original idea for a 16" gravity line replacement was conceived in 1987. We could easily be delayed three more years, trying to get a pump station located, designed, approved and constructed. Each additional day that we have to wait means the project costs go up (inflation) and our existing fire flows are not improved.

Thank you for your prompt consideration of this keenly important project.

Sincerely,

Ed Schmidt

Ed Schmidt, General Manager

cc: California Coastal Commissioners
Coastside County Water District Board of Directors
Anthony Condotti, Atchison, Barisone & Condotti
James Teter, District Engineer

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July 23, 2000

Mr. Chris Kern - Supervisor of Regulation and Planning
North Central Coast District
California Coastal Commission
45 Fremont St.
San Francisco, CA 94105-2219

Mr. Ken Curtis
Planning Director
City of Half Moon Bay
501 Main Street
Half Moon Bay, CA 94019

Mr. Terry Burnes
Planning Administrator
San Mateo County
455 County Center
Redwood City, CA 94063
County of San Mateo

Dear Sirs:

I write as one of the members of the Coastside County Water District (CCWD) Board to ask you to please resolve a conflict between the City and County Local Coastal Programs. As you are all no doubt aware, utilities in the Coastal Zone are required to coordinate their planning with the Local Coastal Program, or in our case programs. In order to responsibly plan for all the water needs of Coastal residents, businesses and visitors CCWD needs to work with accurate buildout projections. The difficulty I write to you about is that the LCP buildout projections for the Coastside differ dramatically in the City and County LCP's. In addition the timetable for buildout has altered since the LCP's were certified dues to several ballot initiatives. My understanding is that water districts are prohibited by law from building infrastructure planned to accommodate needs more than 20 years in advance. The question is: What is the plan for the next 20 years?

The buildout numbers in the two LCP's vary in crucial ways. On page 7, Table 1 of the San Mateo County LCP the total number of dwellings and population

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projected for the entire Coastside broken down into three areas. Table 1.2 on p.14 of Chapter 1 of the Half Moon Bay LCP gives the analogous numbers but excludes the South Coast. There are two problems. The first is that the total numbers given for each LCP for the same area differ slightly with respect to dwellings but dramatically with respect to population. And the second problem is that the two LCPs distribute these dwellings dramatically differently between the Mid-Coast and the City of Half Moon Bay. (In these matrices I have ignored the difficulty of adding ranges.)

BUILDOUT NUMBERS - Dwellings

AREA	San Mateo LCP	Half Moon Bay LCP	Discrepancy
Mid Coast	6.728	4,400	2,328
Half Moon Bay	5,500-6,500	8,153-8,299	2,563-1,799
South Coast	1,424	NA	NA
Total (w/o South Coast)	12,228-13.228	12,553-12,699	(-325 - +529) 4,891-4,127

BUILDOUT NUMBERS - Population

	San Mateo LCP	Half Moon Bay LCP	Discrepancy
Mid Coast	16,485	12,100	4,385
Half Moon Bay City	13,500-15,000	21,772-22,161	7,222-7,161
South Coast	5,000	NA	
TOTAL (excluding South Coast)	29,985-31,485	33,872-34261	(3,887-2,736) 11,607-11546

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The lowest right cell in each of these matrices should be zero, indicating that the two sets of numbers are in agreement. That they are substantially in disagreement is my problem.

It is extremely hard to plan to size a "just right" sized water system, as we are required to do by both LCP's when the basic planning numbers do not add up. (HMB LCP Policy 10-9 and Coastal Act 30254, sorry can't find the SMC LCP policy at the moment...) If we simply add enough capacity to serve the "grand total" we will have built too much capacity and thus become "growth inducing." But if we do not go with the highest possible figure, then we have no way to know what the right numbers are.

In the interests of an effective and lawful planning policy could you all please reach some resolution on this matter.

Sincerely,

Eleanor Wittrup
Vice President
Board of Directors

cc: Virginia Esperanza - North Central Coast Planner CCC
Jane Steven - Planner CCC
California Coastal Commission
George Bergman - Senior Planner SMC
Board of Supervisors of San Mateo County
Half Moon Bay City Council
Mid-Coast Community Council
Granada Sanitary District Board of Directors
Robert Rathborne - General Manager CCWD
Coastside County Water District Board of Directors

TABLE 1

ESTIMATE OF DWELLING UNITS AND POPULATION PERMITTED BY THE LAND USE PLAN

	EXISTING		PHASE I		BUILDOUT	
	Dwelling Units	Population	Dwelling Units	Population	Dwelling Units	Population
MID-COAST	2,775	7,675	4,100-4,700	11,500-12,700	6,728	16,485
Urban	(2,550)	(7,000)	(4,100-4,700)	(11,500-12,700)	(6,200)	(14,900)
Rural	(225)	(675)	----------	----------	(528)	(1,585)
HALF MOON BAY	2,240	6,900	5,000	12,000-13,000	5,500-6,500	13,500-15,000
SOUTH COAST	620	2,000	-----	----------	1,424	5,000
Pescadero	(143)	-----	-----	----------	(200)	-----
San Gregorio	-----	-----	-----	----------	(40)	-----
Rural	(477)	-----	-----	----------	(1,184)	-----
TOTAL	5,635	16,575	-----	----------	13,650-14,650	35,000-36,500

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Policy 10-6

The City shall limit the size of each permitted public works facility to that size and capacity required for the extent and amount of development existing and proposed within the first two phases of development as shown on Table 9.3.

Policy 10-7

The City shall request all agencies providing major (water, sewer, roads) utilities to monitor their services. Based upon actual use (reported annually to the City) of services, the City shall determine the need and timing for additional services. The City will coordinate all involved agencies to establish the ability of individual service system capacities to expand further and identify prospective funding sources for such expansion.

10.5.2 Water Supply Policies

Policy 10-8

The City shall request the Coastside County Water District to annually inform the City of current system capacity, surplus available to new users, and scheduling for a Crystal Springs pipeline or other capacity increases.

Policy 10-9

The City will support an increase in the water supply to capacity which will provide for, but not exceed, the amount needed to support build-out of the Land Use Plan of the City and County within the Coastside County Water District.

Policy 10-10

The City will support phased development of water supply facilities (chiefly pumping stations and water treatment facilities) so as to minimize the financial burden on existing residents and avoid growth-inducing impacts, so long as adequate capacity is provided to meet City needs in accordance with the phased development policies (including expected development to the year 2000) and allocations for floriculture uses.

Policy 10-11

The City will support expansion of water supplies by those sources and methods which produce the highest quality water available to the area in order to assure the highest possible quality of water to horticulture. All such supplies shall, at minimum, meet potable

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TABLE 1.2
(Page 3 of 3)

HALF MOON BAY
MAXIMUM PROJECTED HOUSING AND POPULATION
MID-COASTSIDE URBAN AREAS*

	TOTAL (Year 2000) Housing	TOTAL (Year 2000) Population
I. CITY OF HALF MOON BAY (Housing and Population)		
A. North of Frenchman's Creek (Granada Sanitary District)		
(1) Housing Units	911	
(2) Population		2,432
B. South of Frenchman's Creek (Half Moon Bay Sanitary District)		
(1) Housing Units	7,242-7,388	
(2) Population		19,340-19,729
TOTAL HOUSING UNITS	8,153-8,299	
TOTAL POPULATION - CITY		21,772-22,161**
II SAN MATEO COUNTY MID-COASTSIDE URBAN AREA (North of Half Moon Bay)*		
(1) Housing Units	4,400	
(2) Population		12,100***
III TOTAL MID-COASTSIDE URBAN AREA HOUSING AND POPULATION	12,553-12,699	33,872-34,261

*Data for County projection taken from San Mateo Coastal Plan certified November 5, 1980.

**2.67 persons per household (1980 Census)

***2.75 persons per household

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CENTRAL COAST AREA

May 12, 2003

Charles Lester, Deputy Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Dear Charles:

SUBJECT: Pending appeal of Coastside County Water District's El Granada Pipeline Project

Thank you for convening last Tuesday's meeting on this project. Supervisor Gordon and I thought the discussion was constructive and helped to clarify the concerns of various parties and how they might be addressed. This letter is to summarize the input we provided on behalf of the County of San Mateo.

1. The County has approved this project and is aware of no information that would cause us to reconsider that position. The County believes this to be an infrastructure replacement project that does not result in additional water supplies and is not growth inducing. The sizing of the pipe is well below what would be required for planned buildout when fire flows and the district's need to meet peak demands and have sufficient redundancy in its system are taken into account.

2. To the degree that this project would supply water to new development, it would be development planned for and authorized by our certified Local Coastal Plan. That plan, from its inception, was designed to limit residential development to those subdivision lots already in existence in 1980, when the plan was adopted. The plan does not encourage or accommodate any significant creation of new residential building sites, except on three designated affordable housing sites. We do not anticipate any change in that basic planning premise as part of the Midcoast LCP update currently underway.

3. We are in the process of recalculating buildout as part of the LCP update, to eliminate controversy over the nature and methods of those calculations. That work is being reviewed by a committee of concerned residents. Those calculations will then be transmitted to the Planning Commission this summer. In summary, and taking into account a proposed lot merger program, the projected Midcoast residential units and population at buildout under existing land use policy will most likely change from 6,200 du/14,900 residents to about 6,733 du/18,718 residents (the former calculations used a family size of 2.40, the latter 2.78, based on the 2000 census). We do not believe that these recalculated

ENVIRONMENTAL SERVICES AGENCY

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455 County Center, 2nd Floor • Redwood City, CA 94063 • Phone (650) 363-4161 • FAX (650) 363-4849

numbers would have any effect on the justification for the pipeline project. For more information about these calculations, and related calculations of water demand and supply, please contact George Bergman of our staff at 650-363-1851.

4. The County currently has an annual growth limit for the Midcoast of 125 dwelling units. This limit is being evaluated and may be lowered as part of the LCP update project to something closer to our actual rate of growth (about 50 units per year over the past 10 years) or lower.

5. The El Granada pipeline is part of the Crystal Springs pipeline project, the major components of which were approved by the County in 1985. While the Crystal Springs project includes transmission capacity sufficient to accommodate Phase 2 water supplies, approval of that project was conditioned so as to limit it to conveyance of Phase 1 supplies only. A separate Coastal Development Permit is required if and when the District develops or obtains Phase 2 supplies, whether or not that involves actual construction of physical facilities.

6. Since the El Granada pipeline project does not involve additional water supplies and the District's exiting supplies are fully committed, with the exception of remaining connections for priority land uses, the project cannot serve development beyond the approximately 1400 sold but unused connections that currently exist, plus the remaining approximately 500 priority connections. These are Phase 1 connections and most would be installed outside the area served by the project. I believe the District indicated that it has mapped the distribution of the sold connections. In the unincorporated area served by this project the County's available share of priority connections would be used primarily in Princeton and Miramar or at designated affordable housing sites.

To the degree that there is concern in the community that the pipeline could be growth inducing, we believe that concern could be addressed by a clear presentation of the information above and related background on this project and its relationship to existing development and future growth.

Again, thank you for convening last week's meeting.

Sincerely,

Terry Burnes
Planning Administrator

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cc: Rich Gordon, Supervisor, Third District
John Maltbie, County Manager
Tom Casey, County Counsel
Marcia Raines, Director of Environmental Services
Mike Schaller, Project Planner
Ed Schmidt, General Manager, CCWD
Dan Pincetich, City Manager, City of Half Moon Bay

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

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Toni Taylor
Mayor

November 5, 2002

Peter Imhoff
California Coastal Commission Staff
North Coast Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Subject: Supplemental Comment on CDP Appeals for Two CCWD Pipeline Expansion Segments (A-1-HMB-99-20 and A-2-SMC-99-63)

Dear Mr. Imhoff:

Our unanimous written comments of 7/8/02 provided detailed input on the subject CDPs. We support expansion of the El Granada Transmission Pipeline from a diameter of 10 inches to one of 12 inches. We do not support the 16 inch diameter expansion proposed by CCWD. In the alternative, we ask that the issue be remanded back to the City because the Council never approved or denied a CDP for the portion of the project within our jurisdiction, It almost goes without saying that only strained legal logic could have found the loopholes in our Municipal Code, which resulted in the City's CDP being in front of the Commission without the City Council having acted on that CDP

Relative to the current 10 inch diameter, an expanded 12 inch pipe would save pump energy, increase fire flow, and support 20 to 30 years of development at current, actual growth rates. We feel that such an incremental approach to the Coastside buildout infrastructure is more conducive to orderly implementation of both City and County LCPs. A larger expansion would lock-in 1980 buildout expectations, foster litigation to accelerate use of that infrastructure, and support 40 to 60 years of growth, which is beyond both current and revised LCP planning horizons.

We also understand that the Commission may be forced to decide this issue based on buildout targets assumed to be viable in the current, 1980-vintage LCPs. If the Commission is obliged to allow infrastructure expansion to support the end state, rather than the next increment of buildout, we have another recommendation for the record, which we believe would help insure that the LCP objectives and policies are least compromised by the end state approach.

We recommend that conditions of CDP approval be attached to limit how much of the expanded water infrastructure can be used before another environmental study and CDP is required. In this regard, a logical limit would be completion of CCWD's currently in progress Phase I system development, including physical connection of those users. Only then would the real impact of Phase I on local coastal resources and visitor access be known, and we can proceed to any subsequent phase accordingly.

We understand that with about 6000 equivalent 5/8 inch connections installed, some 1500 connections remain to be installed to complete Phase I. These include about 500 priority connections, 700 subscribed but as yet uninstalled non-priority (residential) connections, and 300 "recently discovered" connections (now in litigation as to their allocation). Based on the actual growth of new connections during the last 5 years (~150/yr), Phase I therefore has at least 10 years to go. This is the least amount of time Phase I could take to complete because both City and County LCP revisions call for lower growth rates than now in force.

In summary, we recommend that, if the Commission is compelled to allow development of the buildout infrastructure based on 1980 LCP assumptions, a future CDP be required to fully utilize that infrastructure beyond what is needed to complete CCWD's Phase I system development. Assuming that an equivalent user corresponds to a 5/8th inch connection, we interpret the completion of Phase I to correspond with the physical addition of about 1500 equivalent connections beyond CCWD's current base of about 6000 equivalent connections. Otherwise, the tail of water will likely wag the dog of development because water availability will likely exceed what future LCPs require.

Your consideration of our supplemental input is appreciated.

Toni Taylor, Mayor

cc: City Council, Manager, Attorney

CITY OF HALF MOON BAY

City Hall, 501 Main Street
Half Moon Bay, CA 94019

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CALIFORNIA
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Dennis Coleman
Vice Mayor

September 15, 2002

Peter Imhoff
California Coastal Commission Staff
North Coast Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Subject: Comment on CDP Appeals for Two CCWD Pipeline Expansion Segments; Namely, A-1-HMB-99-20 and A-2-SMC-99-63

Dear Mr. Imhoff:

My Council's unanimous input on the subject project was previously documented in the City's letter of 7/8/02. I was on board then and remain so. I am hereby providing supplemental input for the record in 3 areas as an individual Council member.

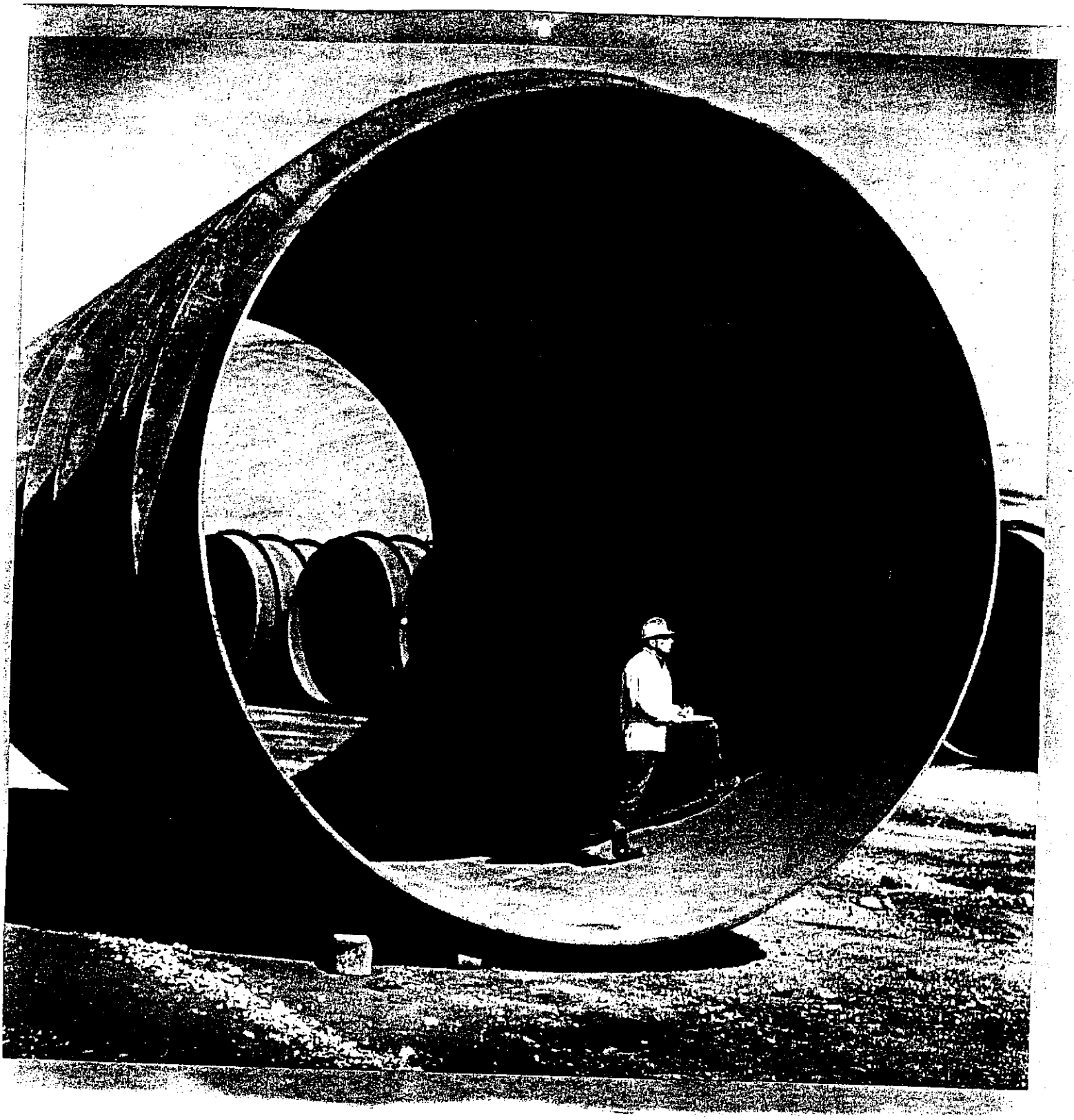
First, I've noticed that CCWD continues to justify the pipeline expansion mainly on engineering grounds, as if the purpose of an LCP is met mainly on engineering grounds. In short, the CCWD position is that a CDP for pipeline expansion is warranted because 3 consultants 'verified' that the proposed pipeline would meet some engineering performance standard to service average demand at LCP 'buildout'. If the impact of greatly-increased water system transmission capacity on development of an arid area between San Francisco and Silicon Valley with $4B of vacant land and at least 9000 surplus sewer connections was that simple, I would be the first to say that bigger is better. But whether the purpose of an LCP is met by granting a CDP depends on far more than engineering parameters in the potentially explosive development situation that exists in CCWD's service area. I urge the Commission to not limit its consideration to engineering factors, but on what kind of phasing will make the affected LCPs more viable and feasible to implement.

Secondly, incremental or phased 20 or 30 year expansions, though perhaps more expensive construction-wise than a single 40 or 60 year expansion, may actually cost less in public resources because of the LCP legal challenges avoided when too much surplus capacity is avoided. In addition, the effect of 1% growth control is such that the 40 or 60 year expansion is likely to need replacement before its capacity is fully realized, anyway. I urge the Commission to balance the relatively small incremental cost of phasing against the economic and environmental impact of front loading all the fuel for $4B of development at one time.

Finally, in the time-honored tradition of American political satire, I submit the attached photo from the archives of the State Water Project. A new caption summarizes the essence of my input on the proposed pipeline; namely, it's too big. The attached drawing shows the relative scale of proposed expansion. Given the fog of collateral engineering data (but no EIR) that CCWD has generated for this application, I hope this simple image sticks in the minds of the Commissioners. It is meant to give them pause about locking in a potentially major capacity increase based on 20 year old assumptions in LCPs that are themselves at the end of their planning horizons and under serious revision.

Thanks for considering these comments.

cc: City Council, Manager, Attorney



Proposed El Granada Pipeline Expansion Segments Await Installation in Project Staging Area

MidCoast Community Council

An elected Municipal Advisory Council to the San Mateo County Board of Supervisors
Serving 12,000 coastal residents
Post Office Box 64, Moss Beach, CA 94038-0064
Office Fax: (650) 728-2129

June 20, 2003

Via Email & Fax: 2 Pages

To:
Charles Lester, Deputy Director
Chris Kern, District Supervisor
California Coastal Commission
North Central Coast District Office
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

Fax: (415) 904-5400

Cc: SM Co Board of Supervisors
Half Moon Bay City Council
CCWD
Terry Burnes

Re: MidCoast Community Council Comments on CCWD Crystal Springs Pipeline Project

Dear Charles Lester and Chris Kern:

The Midcoast Community Council (MCC) has historically supported a 12-inch replacement pipeline. The reasons for this have been:

- With the original proposal an inadequate study was performed to analyze the growth-inducing implications of a pipeline with four times the carrying capacity of the current pipeline.
- The project has been piecemealed, and only by action of the California Coastal Commission are we now able to review the two significant portions of the pipeline as a single project.
- There was no connection limit to the proposed pipeline. And, the capacity was based on a planning horizon of 50 years or more.

Based on information gathered from recent discussions held with the Half Moon Bay City Council, the San Mateo County Board of Supervisors, the Coastside County Water District (CCWD), and the California Coastal Commission (CCC), we wish to expand the options we feel we can support.

First, we feel that agencies can not plan well beyond a 20 year horizon, and we feel it is important to evaluate Coastal Development Permits (CDP's) based on that planning horizon. We would therefore accept a pipeline of a size specified by California Coastal Commission engineers that has the capacity to handle connections projected for this 20-year planning horizon.

MidCoast projections for connection needs are as follows:

- Half Moon Bay with its 1% growth limit that was recently passed by the electorate is scheduled to permit 40 houses per year.
- The MCC has proposed a similar 1% growth rate limit for the MidCoast. Since approximately 53% of the homes and population of the MidCoast are served by CCWD, this would represent a need for approximately 20 connections per year out of the 38 new units based on our current population. Our draft growth rate proposal from our current LCP review is attached to this letter.

- The MCC has discussed an absolute ceiling cap of 52 units per year under any planning scenario. This would allow a cap of 28 units per year in the CCWD region.
- The total number of non-priority connections allowed under these proposed growth scenarios would therefore be 800 for Half Moon Bay and 400 for the MidCoast under a 20-year planning horizon. The maximum that would be allowed under any planning scenario would be 800 plus 560 or 1360 for this 20-year period.

We understand that various reports list purchased-but-not-used Phase 1 water connections to be in the range of 1400 depending on the source of the data. We also understand that there are approximately 495 priority connections available.

We therefore recommend that the CCC:

- Require a detailed accounting of the remaining non-priority connections,
- Approve an appropriately sized pipeline with an allowed number of connections to meet Phase 1 connection requirements, but not to exceed 1200-1320 non-priority connections,
- Require a new CDP for any proposed additions of pumps or new infrastructure, such as additional wells, to the system, and
- Require a new CDP for any connections beyond the Phase 1 numbers mentioned above.

Additional Considerations:

We have a major concern about the drilling of individual wells in the unincorporated MidCoast. Private wells and municipal water both add to the load on the same geographical area and therefore need to be considered as a package. Since for the Crystal Springs pipeline project, wells are not considered in the number of connections, we are concerned about the unlimited growth potential of dwellings built on wells. However, if the combined growth in dwellings on the entire coast is held to 40 in Half Moon Bay and 20 in the CCWD area of the unincorporated County, then there would not be an issue.

New studies are being performed for the CCWD that look at recycled water and additional municipal wells. We wish to ensure that these new sources of water are not used to create additional connections to the water system. The CCWD directors are also allowing the selling of fractional connections that are summed and resold as additional connections.

In summary, we feel that the CDP's under evaluation should be limited in connections to the numbers described above, using the constraints we recommend. Under these conditions, we would accept a pipeline of the size deemed appropriate by the CCC engineers.

If it is not possible for the CCC to limit connections to the proposed pipeline, then the MCC holds by its original recommendation of a 12-inch pipeline.

Respectfully,

Sandy Emerson

Sandy Emerson
Chair, MidCoast Community Council

Draft (June 20, 2003)

MCC Recommendations on LCP Update Task 4:

Reevaluate whether the annual residential growth rate limit (125 dwelling units/year) should be lowered, and develop alternatives as necessary. Clarify that the limit applies to number of dwelling units, rather than number of building permits.

Preface:

In Paragraph 4 of its initial description of this Task, County staff describes why communities want to control growth. A referenced study states that "communities were chiefly concerned with alleviating development pressure on public facilities, including sewer, water, transportation, and school facilities. Communities were also concerned with increasing population and land use density, changing the community character."

County staff describes the types of growth control methods in Paragraph 5. The method supported by the Midcoast Community Council is the fourth one or **carrying capacity** method. This method "restricts the amount of development equivalent to the level of available water supply, wastewater treatment and transportation capacity or environmental compatibility. In other words, growth is regulated in order not to overburden service levels or environmental quality."

Paragraph 3 of the staff report describes the dangers of rapid, non-distributed development as residents note that "the level of recent construction activity has accelerated the rate of storm water runoff and erosion and increased flooding and sedimentation of natural drainage courses". Residents also refer to heightened traffic congestion and property damage in these rapidly developing areas.

Recent discussions between the California Coastal Commission, the City of Half Moon Bay, the San Matco Board of Supervisors, and the Coastside/County Water District have been on the subject of limiting the planning horizon of this LCP to 20 years. Discussions on growth rate are therefore more critical than the final buildout number, which will occur beyond this planning horizon.

Background:

- The City of Half Moon Bay has voted to limit its annual growth rate to 1%.
- Half Moon Bay and the Unincorporated Coastside share all components of infrastructure including, Roads, Sewer, Water, Schools, and Parks.
- It is imperative that a uniform growth plan be applied to our entire coastal region or our local infrastructure will not be able to support it.

The Midcoast Community Council recommends that:

1. The 1% growth rate should be applied to the Unincorporated Region, which is consistent with Half Moon Bay's approved growth rate.
2. Under any planning scenario, the annual growth in number of units on the MidCoast should never be allowed to exceed the historical rate of 52 housing units per year.
3. The number of new units should be *distributed* across the sub-communities according to their growth potential in terms of remaining undeveloped lots (as in Task 4, recommendation 5c, but for a 20-year planning horizon).
4. All units should be counted in this number, including second units and caretaker units. There is a concern that a new California law requires that second units are NOT to be counted in the growth rate. We recommend that they need to be included; each second unit would replace one new unit in our growth calculation.
5. As stated, the limit applies to new dwelling units, not building permits.

Half Moon Bay
Coastside Foundation

Coastside Fire Safe & CRMP Councils
aka Coastside Watershed Posse (CWP)

"Change is inevitable... Survival is not."

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JUN 2 7 2003
CALIFORNIA COASTAL COMMISSION

May 15, 2003
Mr. Abe Doherty
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 9450-2219

Reference: El Granada Transmission Pipeline Project
Appeal Nos. A-2-SMC-99-65 and A-1-HMB-99-020

Dear Mr. Doherty,

This letter is intended to summarize the Coastside Fire Safe & CRMP Councils support for the approved Coastside County Water District's El Granada Pipeline Project. We ask the Commission to DENY both Appeal Nos. A-2-SMC-99-65 and A-1-HMB-99-20 and approve the El Granada Pipeline Project.

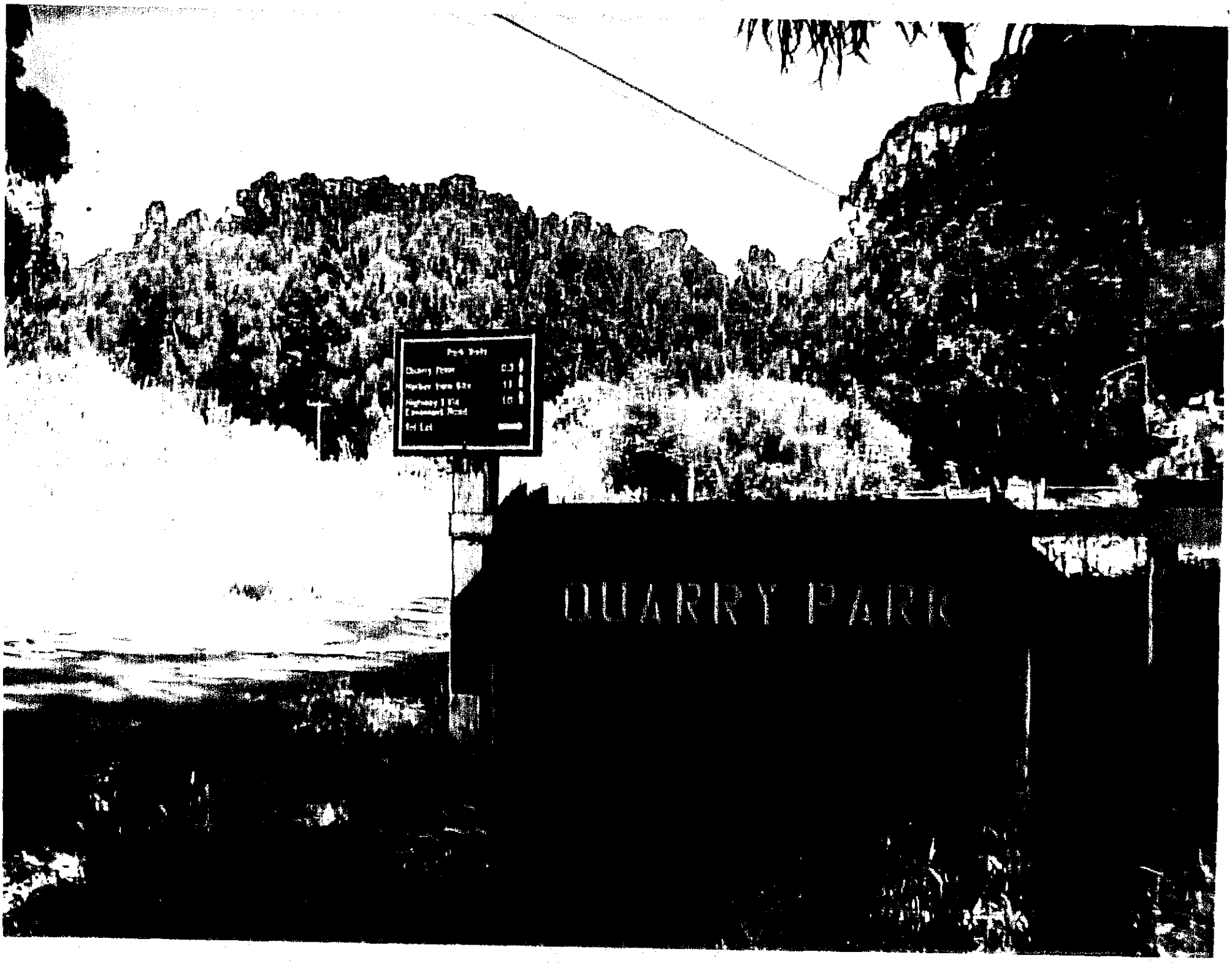
- **The County of San Mateo has approved this project** and has declared they are **not aware of any information that would cause the County to reconsider that position.**
- The County of San Mateo has determined that **the El Granada Pipeline Project is a infrastructure replacement project** that does not result in additional water supplies and **is not growth inducing.**
- The County of San Mateo has found that the **"current" size of the pipe is well below what would be required for planned buildout when fire flows and the district's need to meet peak demands** and have sufficient redundancy in its system are taken into account.
- **The Half Moon Bay Fire Protection District's "Living With Fire"** public education literature says it all. **"Can A Firestorm Happen Here?** On October 20, 1991, the Oakland firestorm destroyed 3,354 homes, 456 apartments and killed 25 people. Since then, we have been asked on many occasions if the same thing can happen here in **Half Moon Bay or El Granada.** Unfortunately the answer is yes! No one can predict what a fire will do in our area but we can certainly look at the elements which contribute to a fire of such serious consequences. Your Fire Department is well aware of the conditions that cause such disastrous fires. High temperatures, warm winds, steep hills, **wildland vegetation, drought affected plants, narrow roads and densely populated neighborhoods all contribute to firestorms."**
- In the interest of **public safety, the Coastside Fire Safe Council recommends that the Commission approve the gravity fed system, as this system clearly will be the most reliable.**

The Mission of Coastside Fire Safe & CRMP Councils is to maintain the quality of life and property for the citizens living in the wildland-urban intermix (WUI) zones of San Mateo County. The key elements of the Mission are to reduce hazardous vegetation, the creation of defensible space around structures, and the education of citizens regarding fire hazards and fire behavior though the guidance of local agencies. Working together, we can achieve effective fire protection. Our Council asks the Commission to approve the Coastside County Water District's El Granada Pipeline Project in order to maintain our quality of life.

Sincerely,

Oscar Braun, Executive Director

SAVEOURBAY.ORG 1589 HIGGINS CANYON RD. HALF MOON BAY, CA 94019 PH 650-599-1954 FAX 650-726-2799


QUARRY PARK

HMB FPD
HALF MOON BAY
FIRE PROTECTION DISTRICT

1191 MAIN STREET ■ HALF MOON BAY, CA 94019

TELEPHONE (650) 726-5213
FAX (650) 726-0132

April 25, 2003

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CALIFORNIA
COASTAL COMMISSION

MANAGEMENT TEAM
James Asche, Fire Chief
Clayton Jolley, Division Chief
Paul Cole, Division Chief
Gareth Harris, Division Chief
Lilyane Moulton, Admin. Secretary
Janice Cochran, Admin. Secretary
Yvette Contier, Admin. Asst.

California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94150-2219

Dear Commissioners,

The Board of Directors of the Half Moon Bay Fire Protection District would like to be shown on record as supporting Coastside County Water District's El Granada pipeline project. We understand that water district staff will be appearing at two hearings before the Commission regarding appeals to the project (No. A-2-SMC-9965 and A-1-HMB-99-20) in July of 2003. It is without question that the current pipeline running between Half Moon Bay and El Granada is in need of immediate replacement. We know this first hand as the fire district has assisted the water district on numerous occasions by supplying fire hoses for them to bridge leaks in that line while it was undergoing emergency repairs.

The fire district sees the replacement of the El Granada pipeline with one that will handle an increased supply of water as a positive step in upgrading the water system to meet current fire flow requirements as specified in the California Fire Code. While the upgrading of this particular pipeline will not correct all the system deficiencies in this regard, it is our hope that continued upgrades through capital improvement projects and routine pipeline replacements will eventually bring the entire system to current standards. The hydraulic modeling program currently being used by water district staff appears to be an excellent tool in identifying those areas having deficient fire flows and thus allowing plans to be formulated for future system improvements.

The water district staff and their engineering consultant have shared information with the fire district regarding the various design options for the El Granada pipeline and the resulting anticipated flow rates. Both options, gravity and pumped, appear to supply very close to the same amount of water which is a significant improvement over the current pipeline. However, in the interest of public safety, the Fire District recommends that you approve the gravity fed system, as this system will be most reliable.

The National Fire Protection Association's standard for water systems requiring pumps states that such systems must maintain both dedicated secondary pumps and an alternative power source to run those pumps. It is our position that any system dependent upon mechanical devices is subject to breakdown and is therefore less reliable than a system utilizing gravity. This is noteworthy considering the frequent severe storms experienced on the San Mateo County coast that cause power supply disruption.

The Half Moon Bay Fire Protection District Board of Directors thanks you in advance for your consideration of our position. Again, we are pleased to know that water system improvements are soon to be undertaken and hope , that in the interest of public safety, the Commission selects the system with the highest degree of reliability.

Sincerely,

Francis J Navin

Francis Navin
Board President

cc: Coastside County Water District

James Marsh

jmarsh@montara.com

Mr. Chris Kern
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

April 15,2003

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CALIFORNIA
COASTAL COMMISSION

Re: CCWD El Granada Pipeline
Appeals # A-1-99-20 and A-2-99-63

Dear Mr. Kern:

As a former elected member of the CCWD I hereby express my concerns to you directly about the position(s) of the District concerning the project under review by the California Coastal Commission. I feel I must express my concerns to you directly, as the District has not satisfactorily answered my questions.

Specifically, my concerns focus on both the big picture- the District's vision of the project, and with various technical issues regarding the hydraulic model.

Included are four discussion points/ questions: 1- Land Use Planning, arguably an arena outside direct District control - including "Buildout, what do we do then?"; 2 - Hydraulic Model, recently issued by designer and accepted by the District Board; 3 - Valve changing criteria - sys ops; and 4 -Fire demand scenario- considerations for maximum load conditions for design.

The Board has specifically and repeatedly refused to address these points. Whether or not the California Coastal Commission can pursue them, I don't know, but I hope that a bit of sunshine, clarity & Community can focus on the big picture. This pipeline expansion is a topic that can very quickly become obfuscated by focusing exclusively on "the numbers" and "the facts". Hopefully the District will begin to rectify this by seeking resolution to the broader issues; commence a dialogue jointly with the City, the County, and with the Community.

To date, except for one period while Coleman, Cupp and Wittrup (CCW) served together on the Board, the District has done little more than the minimum to satisfy questions, or to outreach to the Community. Perhaps these other former Boards just didn't understand the magnitude of the situation. But then even after the seriousness of the situation was clear, the Board - including the time of my tenure- continually declined to do more.

The District has wasted two years since my election in fall 2001, and has moved forward only incrementally. I believe that the BIG picture land use planning issues must be resolved first; thus positioning the District to facilitate and to badger the City and the County to get their act(s) together - to produce the population numbers and geographic distribution. But no, the District has alienated the City, and (hopefully not permanently) damaged the public's trust in the District.

Incidentally, I note that the District recently (April 3) forwarded to you some documentation (answers to questions) that spoke of some pending "future

parallel pipeline for redundancy"' pipe routed through some hodge-podge path North on the eastern (or was it "western" ?) side of hwy One. The 1997 Master Plan admits that this redundancy will occur in short segments, paid for by the developers, as housing developments are constructed, thus incrementally completing the system. Please note that almost the entire length of this "redundancy" is located within Half Moon Bay, which is currently struggling with any number of these outdated developments - some along hwy one.

With all the grief this 16" replacement pipeline has created, another battle about an unspecified, not-discussed, costly pipeline would open all these discussions again, and would be well nigh impossible. And yet this "second pipe" scheme continues to be the District's "policy" to supply sufficient water northward for Buildout.

This pipeline replacement issue has been frustrating to us all, those who want the pipeline, and those of us who expect our governmental agencies to act responsibly and within the law.

As was aptly stated by Mark Twain:

> gold is worth fightin' for, water is worth dyin' for

His statement is just as true now as during the California gold rush; and possibly (probably) more so in the future. I understand the United Nations has just recently decided that access to potable water is a human right.

Thank your time and consideration on my behalf.

Sincerely yours,

James Marsh

cc CCWD

CCC f415-904-5400, ph904-5200

James Marsh jmarsh@montara.com

1 Land Use Planning

The District processed this project in early/ mid 1999 with a Negative Declaration, knowing full well that in our Community there was a smoldering level of mistrust about the District's motives. Therefore, it could have been no surprise that some members of the Community would appeal the project. In fact, in July 1999 after the City's March 1999 2-2 vote, the Mayor sent the District a letter indicating that she felt that a proper EIR was appropriate (this tie = pass through provision of City law has been revoked/ changed because of this incident). The MidCoast Community Council, the Board of Supervisors' elected advisory body weighed in with a denial letter as follows: "CCWD's analysis makes no mention of the cumulative effects that this project would have on noted CEQA environmental factors".

Clearly, a proper EIR & CEQA analysis would have required more time for study, community input, and evaluation - resulting in some six to nine months delay. The District demurred and pushed ahead with the project as you have it because they wanted to expedite the process.

Now four years has passed and not one stick of pipe is in the ground.

Since the project was appealed, progress is effectively on hold, the District has done nothing proactive/ forward looking, and has done little but forward answers to Commission questions. All the while, Board members have publicly chastised and denounced the process and the issue(s) and Community members. The Board continues to spend money and resources to refine the hydraulic model, but has done nothing to address the underlying issues inherent in the growth inducing, land use aspects of the project. Like it or not, the District is in the Land Use process.

Personally, I cannot believe that that District created all this turmoil on purpose. But I do believe they saw the MidCoast ONLY in terms of their very limited service of water purveyor. All that Board wanted to do was fix "a lil' ole' stick a' leaky pipe"; they tried to do their limited project, to do it in the "old same way". Our Coastside Community has long argued that the MidCoast's balkanized "system" of permit(s) allocation, overlapping jurisdictions, and the culture of laissez-faire, "good-old-boy" development has collectively created the situation we find today.

The Crystal Springs Project is broken into several segments: Carter Hill, Main Street, El Granada Pipeline One and El Granada Pipeline Two. Interestingly, I have found no record of Board's deliberations or decision process which prioritized the segments of this system upgrade: no comparison of leak rates/ repairs/ down time/ lack of service, costs of repairs, etc.

And to make this pipe sizing matter all the more inexplicable; the 16" gravity flow pipe size is NOT sized to handle the MidCoast buildout numbers. That theoretical number produced by the combination of the City and the County area (El Granada, and most of Princeton). As it stands now, the Board is consciously planning to put into place a pipe that is too small, that will not serve the greater good - final buildout. This 16" gravity pipe will need to be pumped.

Let's be clear: every MidCoaster understands the need to replace this section of undersized, 10" pipe. In fact, the longevity, relative usefulness of the pipe is testimony to the inherent strength of the material, construction techniques, maintenance and ultimately it speaks well for the system intoto.

The Community well understands that the pipe materials have a design life of at least 50 years. The Buildout numbers project forward for some 20+ years and will determine the "final" population of the MidCoast. It seems unconscionable to me for the District to knowingly install a facility that will quickly become outdated, undersized, and reworked.

Buildout - When the Last House is built

The Community needs to publicly discuss the "final" "buildout".

?What happens, what do we do when the "Last House is built"? Surely, building will continue, real estate will continue to be transferred, people will buy things, commuters will commute and complain, life will go on. Life will be more crowded, more noisy, less peaceful, less "like the way it used to be", here for those of us who live here. So this really is a question of Quality. ?How do we quantify Quality, the Quality of MidCoast Life?

The Community needs to fully discuss the finality of what the buildout number(s) mean - admittedly, this will not be an easy task as many, many interests (sometimes competing) will come into play. But, then and only then, when the numbers are right, should we, the Community, move forward to provide the services necessary for that size/ mix of population/ uses. In this era of limited resources (and I'm sorry to say lowered expectations - perhaps we can eventually wrap our minds/ demands around "sustainability" = smart growth), the community must maximize the bang for the buck in what studies/ processes we pursue. We have wasted four years and significant energy, resources and dollars.

2 The hydraulic model

The hydraulic model does not represent the system as installed in the ground.

The existing system is comprised of two smaller networks which deadend into each other at a valve located at either Santiago (EG) or at Frenchman's Creek (FC). The southern system being pushed from Carter Hill and deadending at either Frenchman's creek or at Santiago and including (or not) the Miramontes tank. The Northern system is pushed south from Dennison southward and dead ending at Santiago or Frenchman's creek and not including Miramontes Tank (or including).

This bifurcation creates a complication to system maintenance and requires sophisticated interpretation of field data. The valving is changed from North to South (or vise versa) only a few times each year - the closed valve is located at Frenchman's Creek (FC) about 80% of the time. The model was originally designed without knowledge of this valving arrangement.

These valves shut off the flow North (or South as the case may be). It is my understanding that one of these valves is closed at any particular time depending upon the height (capacity) of the Miramontes Tank in Miramar - this

tank is located between these two valves. The intent of the operator is that depending upon the flow at any given time one valve or another is opened to push water into the Miramontes tank. The criteria of flow which necessitates a change in valving is unknown to me, as the tank level "drops" due to demand (domestic, fire, breakage, whatever).

The hydraulic model as configured to support the 16" sizing for the supply line has some assumptions inherent in the analysis and true enough, by changing various of these parameters, the model could correctly predict the installed system. The designer included the following assumptions about the District system that are phases which post-date the El Granada pipeline: the line from the Carter Hill tank northward is assumed to be larger - 20" upgraded from 12", and the Main Street portion increased from 10" to 16". (Parenthetically, one might ask if these increased line sizes would be of sufficient size for Buildout?...)

The District has recently hired a person who should be able to make the mathematical model sing: which should greatly improve any attempt to forecast any proposed change - in-house model manipulation will be quicker and more cost effective.

Therefore, even today a true field calibration/ comparison of the system to the model cannot be done because of the following assumptions/ changes/ omissions made by the designer. The District has spent considerable funds and time and resources in studies even though this critical information was available, just not widely diseminated.

This added complication(s) sounds messier than it is mathematically. Suffice it to say, I believe the model should have been re-run with these conditions included. At the very least, a constraint on the system to require equal pressure on either side of such valves should have been added to rationalize the flow (hmm, would this have helped?).

This information was disclosed to the designer and the hydraulic committee at the January meeting - apparently for the first time, as those "recognition" - light bulbs went on over our heads. Disturbingly, the District decided not to have the designer include this information and rerun the model - in part due to the cost - several thousand dollars. In fact, the designer was specifically directed to not include this information.

3 Valve changing criteria

As far as I know, and I asked specifically at the February 2003 Board meeting, the District has no protocols for the conditions monitored that indicate a when such a change to the main line valve shutoff location is affected.

In fact, at that meeting I was told that during fire conditions, the valving is adjusted "in real time" to assist in fire flow - again without clear criteria. Undoubtedly these conditions are known to certain individuals, but apparently not clearly defined. This is a sophisticated system and the changes require knowledge, skill, science, art, and perhaps a sprinkle of magic.

4 Fire Scenario in Wooded El Granada

Everyone is affected by the specter of runaway fire in the Community, particularly the EG area where the County has allowed so many houses to be built, in some cases completely surrounded by the extensive eucalyptus forest.

As far back as the 2001 election the HMBFPD Chief Jim Asche stated clearly that there was no fire condition that was beyond basic insurance requirements, the law, nor the capabilities of his able crews. And as I understand the Chief's comments from the last Hydraulic Comm meeting in January, fires in residential areas typically burn a couple houses and are then contained by the street layout and/or fire fighters.

At the behest of the District he said he would go beyond the normal standards for Community fire safety and would, at some future time, prepare a doomsday scenario (I would expect a dry summer day, high offshore winds, hot sun, full demand by the Community, drought year after years of drought - a stressed system). In fact, a HMBFPD memorandum was prepared in a draft form (dated 02-07-03) and discussed by the CCWD Board during its March meeting.

The District Engineer has repeatedly stated that the system design limits on the ability to put large quantity of water on an EG fire may well be (should be); 1)- the small size of distribution pipes and 2)- the fill level of the storage tank(s). Incidentally, the District Engineer has postulated that the maximum risk for fire suppression (or other extremely high usage) would likely be the time during tank cleaning/ maintenance - planned for this year.

The District has just hired a new Engineer/ Superintendent who will be able to allocate time and resources to work with the Fire District and the local municipal governments.

Attached is my March 24, 2003 email to the HMBFPD relative to the Chief's original report, to date I have received no written response - we have played phone tag just the last couple days.

James Marsh

jmarsh@montara.com

Half Moon Bay Fire Protection District
1191 Main Street
Half Moon Bay, CA 94019

March 24, 2003

Re Memorandum, dated Feb 7, 2003, titled El Granada Fire Scenario

Dear Chief Asche:

In the context of the MidCoast and HMBFPD I ask for some clarification to your letter to CCWD. I understand this Memorandum is but a draft, a just for discussion piece, and the context for this exercise as I attended CCWD's January 2003 Hydraulic Committee meeting with you. Remember that this idea, this postulate entered the conversation as a hypothetical/ rhetorical construct: "worst case scenario" solely within the context to put an upper mathematical limit on water demand based upon some "extreme (fire) event".

Thank you for taking the time & committing your resources to bring some facts and expertise to this exercise for CCWD. I applaud you for your eagerness to become involved in a broader Community discussion - once the numbers are right and emergency contingencies anticipated, we can move forward.

Specific to your Memorandum, my concerns are grouped into two broader headings: specific issue(s) and process considerations. Please give these concerns some consideration, I ask that you respond in writing.

Sincerely yours,

James Marsh

James Marsh

jmarsh@montara.com

A Specific/ Issues

1 should the dry grass beneath the offending power lines be cut by the owner, - similar to the perimeter protection needed for a home, an out structure ?

2 the hydrants are close to the tanks, but still below - so gravity fed
hydrant pumping will rapidly draw down the tanks - in how long a time? – minutes? hours?
- total load

1400 gpm	0-45	=	63g
3000	45-110	=	75g
9400	110-130	=	188g
14400	130-215	=	648g
total			974,000 gallons

(note: more than half is used during the last 45 minutes as the last trucks arrive)

3 "Urban/ wildland type fire" - are there other types/ other scenarios ? - say typical suburban/ AP - or would this be considered a wildlife due to the amount of fuel?

4 if all the houses in this area had implemented bmp's how would this outcome be different?
weeds, roof, f/s, metal exterior siding, native landscaping, general tidyup, etc

5 what is/ are the financial limitations/ risks in the event of such a fire, and fault is determined to be negligence - is the fire district in anyway liable?

6 800 feet by 3800 feet is almost 70 acres, so divided in half (diagonal cut) – on a map this appears to be contained within the upper reaches of El Granada Blvd, reaching downhill.

7 What is the liklyhood for such a fire? - for an ordinary fire? - for any fire?

B Policy/ Process questions

1 ISO requirements or other surety regulations - currently do all areas in your District meet all their "general" or "regular" standards?

2 comparably, how is our insurance rating relative to state, county, cities, countryside?

3 since I don't live in such an extreme area, can I get a discount on my insurance policy? - do these folks in the hazard areas pay extra?

4 do you have other worst case scenarios- what other areas are as potentially dangerous?

5 seawater? - only 1/2 mile of hose 2500 ft and the cost of a pump (salvage value - as a loss).

6 CCWD's Engineer says the big fire related problems are (1) tank size & (2) lousy/ small distribution network. – any thoughts?

7 but this fire is above the bulk of EG network and fed by line(s) feeding down from the tanks

8 do you have a fire protection scenario for the period of time during the upcoming tank cleaning? - CCWD's Engineer says this is hugely problematic and needs study/ alternatives/ plans ?

9 do you have scenarios for City/ suburban fires/ industrial/ - apparently these (like Arleta Park or 12th street Montara) burn only one or two houses before control

10 as this scenario is very unsettling, and yet "within the realm of possibility", are you advocating a building moratorium until CCWD improves their service ability?

11 CCWD rec'd your letter and made it public, is it also available on your website/ office/ meeting agenda?

12 are you concerned about the timing of this exercise as the pipeline is at the Coastal Commission and as seen in the run-up to a CCWD election? – any comments regarding possible public perception?

13 would this scenario be some sort of required notification / document for any house sale/ transaction/ refi/ insurance ? - any real estate effects? - disclosure?

14

James Marsh

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letter to Editor
HMBReview

The Coastal Commission is poised to decide whether or not to approve CCWD's proposed pipeline size increase along Hwy 1.

Many of us on the Coastside believe this "plan" - this segment of a larger distribution system upgrade - to be shortsighted, costly, hopelessly delayed, and misunderstood by the Community.

This "new & improved" 16" pipeline segment was sold to the public (& board) as a cure-all, gravity fed, fire protection solution, that would provide adequate water - without inducing growth. Truly, the existing 50 years old 10" pipeline is too small for the current population and has been super-subscribed by the level of building allowed by the planning agencies - currently the gravity flow is boosted by electrical pumps.

So is this a planning issue or a water supply issue? I believe this is a VISION issue:
the 16" line is NOT large enough to supply gravity fed water because the permit departments have already allowed too much building;
a second parallel line was to be installed to carry the demand of buildout - but the line was to be installed by developers as housing progressed North through HMB - hello - this is a "pipe dream". More unbelievably, the developments are not contiguous, but hopscotch up and across hwy 1 from hwy 92 North;
this project is only a part of the improvements needed to make this segment "work" - the distribution pipes within HMB must be enlarged;
the District has repeatedly refused to see the big picture, to do any planning - just last month the Coastal Commission forced a get-together of the City, County and District.

The District tried to do a "lil ol' job" under the radar, all the while saying that since planning and issuance of building permits is not their charge, they should get away with this. Hogwash.

The District, like it or not, is an integral part of the Community planning process and must provide the service as required by the demand allowed by the planning agencies. Plan, discuss, review, then implement.

The Coastal Commission has the vantage point to see the whole MidCoast: the planning process(es); the housing buildout; and fire requirements; and is, in fact, the last line of defense, - "the final say".

But the current rumor mill has the Coastal Commission allowing this project to proceed while requiring "some sort" of "limitation on connections". Clearly, this is NOT a solution, it will only lead to continued confusion and frustration - as the developers manipulate the process building more monster houses, more densities, more, more, more.

And the public gets what? - complications, innuendoes, public agencies that can hide behind the response: "its not my fault ...".

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James Marsh

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The Coastal Commission has this scheduled for early July in Petaluma. I believe the District must begin and complete a comprehensive, collaborative planning process, including an EIR and CEQA analysis, with leaders from the City and County.

The project as submitted would install a line that THEY KNOW IS TOO SMALL, and then, in just a few years, dig up this "too small" pipeline, or install large electric pumps. Imagine the Community's shock and awe. And at what cost?

Please act now: the Coastal Commission must uphold the Appeals, and force the District to plan. Contact Mr. Chris Kern -Coastal Commission staff, 415-904-5200 regarding Appeals # A-1-99-20 and A-2-99-63. The Coastal Commission must use their vantage point, their vision, to see the BIG picture. As said in the trades: Measure twice, cut once.

Sincerely yours

James Marsh
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Mr Marsh served as an elected member of both the CCWD and the MidCoast Community Council, is currently a Director of MidCoast Parklands and Chair of the New Library Now Committee.

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