TO: BOARD OF DIRECTORS

FROM: BRUCE BUEL BSB

DATE: MAY 22, 2008

AGENDA ITEM
E-1
MAY 28, 2008

DISCUSS POLICY REGARDING SERVICE TO NEW DEVELOPMENT OUTSIDE OF APPROVED WATER DIVISION

ITEM

Discuss policy regarding service to new development outside of approved water division [PROVIDE POLICY GUIDANCE].

BACKGROUND

At the April 30, 2008 Board meeting during the public comment period, Greg Nester, developer of a project at the corner of Pomeroy and Willow, stated he is in the process of building a market and the fire department is requiring the installation of a fire hydrant to serve the project. The project is within the Blacklake Division water system. He asked for consideration of connecting the fire hydrant to the Town Division water system instead of the Blacklake Division water system.

Staff previously advised Mr. Nester that all water for this project will be provided by the Blacklake Division water system since the project is located within the Blacklake Division. Based on the limited Board comments on April 30, 2008, staff advised the developer that the District could consider the requested hydrant location as part of the District's routine plan approval process once the District finalized the merger of the Town and Blacklake Water systems or the developer could apply for a variance to have the project served by the Town water system instead of the Blacklake water system before the merger was finalized.

Town Division water system customers are provided fire protection as a benefit of connecting to the Town Division water system. Water system components that provide fire protection are part of the facilities used to determine water capacity charges collected from developers when a project is connected to the Town Division Water System. The Town Division water system is currently supporting the Blacklake Division water system through two emergency connections due to the failure of the Blacklake booster station while the Board considers a formal merger of the two systems. The merger as currently proposed includes a buy-in charge for all Blacklake water customers in recognition of the benefit of connecting to the Town Division water system.

There are two options for providing a hydrant at the location requested by the developer. The first option is a private fire service connected to the Blacklake Water System in Sunday Drive that would require the developer to pay the current supplemental water capacity charges applicable to private fire service lines. The Blacklake Division water system as currently configured has adequate capacity to provide the required fireflow.

The second option is for the developer to apply for an Intent-to-Serve letter to have the project served by the Town Division water system and pay the appropriate Town Division water system capacity charges and supplemental water capacity charges in accordance with District code. In this case, the fire hydrant would be installed within the existing public right-of-way of Willow Road.

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RECOMMENDATION

Staff respectfully requests that your Honorable Board provide guidance on whether or not the District should provide water service directly from the Town Division water system to serve a development project that is located within the Blacklake Division water system service area.

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TO: BOARD OF DIRECTORS

FROM: BRUCE BUEL

DATE: MAY 22, 2008

AGENDA ITEM
E-2
MAY 28, 2008

DISCUSS NEW STATE WATERWORKS STANDARDS AND IMPACTS ON NCSD OPERATIONS

ITEM

Discuss new State of California Department of Public Health Waterworks Standards and Impacts on NCSD operations [PROVIDE POLICY GUIDANCE].

BACKGROUND

The State of California Department of Public Health has adopted new Waterworks Standards that apply to all public drinking water systems in the state. The new standards include requirements on the following topics:

- Permits
- Source capacity
- New well siting and construction
- Installation and construction material requirements for water mains and related facilities
- Disinfection requirements for reservoirs, wells, and new or repaired mains
- Design and construction criteria for distribution reservoirs
- Distribution system operation requirements
- ANSI/NSF certification for chemicals and all other materials that may come into contact with drinking water
- Third party standards incorporated by reference

Staff is currently analyzing the new standards and reviewing current District water system operations protocols and standards to ensure that the District complies with the new requirements. The new waterworks standards will impact future District water system projects and will need to be considered when new projects are planned and implemented.

RECOMMENDATION

Staff recommends that your Honorable Board discuss the new State of California Waterworks Standards and provide policy guidance.

ATTACHMENTS

- State of California Department of Public Health Memorandum Dated March 31, 2008
- Chapter 16, California Water Works Standards, Title 22 California Code of Regulations

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California Department of Public Health

MEMORANDUM

DATE: March 31, 2008

TO: All Public Water Systems

FROM: Division of Drinking Water and Environmental Management
1616 Capitol Avenue
Sacramento, CA 95899-7377

SUBJECT: **STATE ADOPTION OF REVISED WATERWORKS STANDARDS**

The California Department of Public Health (Department) has been in the process of adopting revised Waterworks Standards. The process is now complete. As a result, after serving us well for many years, the old Waterworks Standards have finally been put to rest. **On March 9, 2008, a set of *revised* Waterworks Standards became effective.** The new regulations have been incorporated into our on-line regulation book at http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Lawbook.aspx, under Chapter 16 of Title 22.

This memorandum serves to announce the adoption of the new regulations and provide a general overview of the requirements. It is not intended to be a substitute for the actual regulations. If you have any questions regarding the content of this memo, please contact your local Department District Office.

WHAT YOU SHOULD KNOW ABOUT THE NEW WATERWORKS STANDARDS!

• *Although some similarities may remain for particular requirements,* ***the old Waterworks Standards have been repealed and are no longer applicable.***

Old Waterworks Standards

• ***The new standards include requirements on the following topics:***

- Permits, including initial permits and permit amendments.
- Source capacity, including new methods for determining source capacities
- New well siting and construction
- Installation and construction material requirements for water mains and other distribution system appurtenances
- Disinfection requirements for reservoirs, wells, and new or repaired mains
- Design and construction criteria for distribution reservoirs
- Distribution system operation requirements
- ANSI/NSF certification for chemicals, products, equipment, and materials added to drinking water, as well as those that come in contact with drinking water or come in contact with a product to be added to drinking water

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- ***You will need to apply for a permit amendment if you plan on…***
  - adding a treated water tank or reservoir ≥ 100,000 gallons
  - adding a new source
  - changing the status of a source (e.g. active, standby)
  - changing a source in a manner that affects the quantity or quality of the supply
  - changing or adding a treatment process
  - expanding your service area by 20% or more
  - consolidating with another water system
  - obtaining a Secondary Maximum Contaminant Level waiver
  - modifying recreational activities at a reservoir

  Refer to Section 64556 for the complete list. Please note that a permit amendment may be required for other situations, pursuant to Section 64556(b) and Section 116550 of the Health and Safety Code.

- ***If you have no existing domestic public water supply permit and need to obtain an <u>initial</u> permit, you will need to apply pursuant to Section 64552.***
  - In addition to the requirements in Section 64552, a community water system using only groundwater must be capable of meeting maximum day demand with its highest source off line. *[see Section 64554(c)]*

- ***Do you have enough source and storage capacity?***
  - Empirical calculations replace the charts in the old Waterworks Standards *[see (a), (b), and (d) of Section 64554]*
  - Requirements must be met in each individual pressure zone, as well as for the system as a whole *[see Section 64554(a)(3)]*
  - Prescriptive well capacity test (i.e. pump test) language replaces the old language *[see Section 64554(e)-(l)]*
  - If your existing system or a planned expansion has or may lead to source capacity problems, you may be required to complete a Source Capacity Planning Study *[see Section 64558]*
  - Sources must be metered such that the quantity of water can be determined and recorded at least monthly *[see Section 64561]*

- ***Are you planning on putting in a new well?*** *[see Section 64560]*
  - First, contact the Department's local District Office
  - Include the following in your permit application:
    - A source water assessment for the well site
    - Demonstrate a 50-foot radius control zone around the well
    - Design plans and specifications for the well
    - California Environmental Quality Act (CEQA) documentation
  - After the application has been approved, submit the following:
    - A copy of the well construction permit (if required by local agencies)
    - The Department of Water Resources well completion report
    - Pump test results and information per Section 64554

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- Water quality data
- As-built plans

◦ Make sure well is constructed such that:
- The well meets California Department of Water Resources Bulletins 74-81 and 74-90
- The well meets AWWA Standard A100-06
- The well has the ability to pump to waste, with the waste discharge line protected against backflow
- The equipment is accessible
- The well is protected against flooding
- The wellhead terminates at least 18 inches above the finished grade
- The wellhead and electrical controls are **not** in a vault
- The well is equipped to enable chlorination facilities to be readily installed
- A non-threaded sampling tap is located between the wellhead and check-valve (no screens or aerators if used for bacteriological sampling)
- A meter exists to determine the quantity of water *[see Section 64561]*

• ***Are you planning on destroying a well?*** *[see Sections 64560.5]*

◦ The destruction of the well must be performed in accordance with the California Department of Water Resources Bulletins 74-81 and 74-90.

• ***Are you planning on installing a water main?*** *[see Sections 64570 and 64572]*

◦ The installation and materials must meet applicable AWWA standards
◦ The main must be protected against freezing and loads that may crush the main
◦ The main or supply line must be 10 feet from and 1 foot above pipes containing:
- Untreated sewage
- Primary or secondary treated sewage
- Disinfected secondary 2.2 or 23 recycled water
- Hazardous fluids such as fuels, industrial waste, wastewater sludge, etc.

◦ The main or supply line must be 4 feet from and 1 foot above:
- Storm drains
- Disinfected tertiary recycled pipes

◦ The main must be more than 100 feet from a sanitary landfill, wastewater disposal pond, or hazardous waste site
◦ The main must be more than 25 feet from cesspools, septic tanks, sewage leach fields, seepage pits, underground hazardous material storage tanks, or groundwater recharge project sites
◦ If you're a Community Water System, the main must have a diameter of at least 4 inches *[see Section 64573]*
◦ If it's a dead-end, it'll need a flushing valve *[see Section 64575]*
◦ Install a valve between main and each fire hydrant *[see Section 64577]*
◦ If it's a 12-inch diameter main (or less), install an isolation valve no farther than every 1320 feet and at tees or crossings *[see Section 64577]*

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- Make sure buried valve stems have a valve box and, if 5 feet below grade, it should either have a valve stem riser (to allow use of a normal key) or a notation in records indicating a long key is needed *[see Section 64578]*

Note: The Department understands that meeting the separation criteria may not always be feasible. If you demonstrate that you are unable to meet the separation criteria and will take other measures to ensure an equivalent level public health protection, you may be approved to use an alternative pursuant to Section 64572 or Section 64551.100.

- ***Are you planning on flushing a water main?*** *[see Sections 64575]*
  - Don't discharge to a sewer without a proper air gap
  - The flushing velocity should be at least 2.5 ft/sec

- ***Are you replacing or putting in a new air-release, air-vacuum, or combination valve?*** *[see Sections 64575]*
  - Install it to meet AWWA C512-04 and AWWA Manual M51-2001
  - Make sure it's readily accessible for inspection, maintenance, and replacement
  - Make sure the vent opening is downward facing and screened (or domed) and is above:
    - finished grade,
    - the 100-year flood level, and
    - the highest recorded water level
  - Make sure it's constructed to prevent vandalism and exposure to rain, insects, and varmints

- ***Do you need to disinfect a reservoir, new main, repaired main, or well?***
  - Make sure you meet the applicable requirements in Sections 64580, 64582, 64583, and the applicable AWWA standards.

- ***Are you designing a new treated water reservoir?***
  - If you're planning to install a new reservoir:
    - You need to apply for a permit amendment if it's ≥ 100,000 gallons *[see Section 64556]*
    - It needs to be designed to meet the requirements listed in 64585(a) and (b)
    - You need to submit plans and specifications to the Department for review prior to constructing the reservoir

Note: If it's an existing reservoir, it needs to meet the requirements in Section 64585(a)

- ***Are you adding a chemical or a product to the drinking water?*** *[see Section 64590, Direct Additives]*
  - As required in the old Waterworks Standards, the product or chemical will need to be NSF/ANSI 60 certified...this includes chemicals used to clean your water treatment facilities *[see Subsection 64591(c)]*. However, the *new* Waterworks Standards require the certifying organization to include product testing, facility inspections, QA/QC review, manufacturing practice reviews, and chemical stock inspections; all on an annual basis.

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Most certifying organizations perform these tasks annually. Check with your supplier to make sure.

- ***Do the materials and products that come in contact with your drinking water meet the new indirect additive requirements?*** *[see Section 64591, Indirect Additives]*
  - Beginning March 9, 2008, essentially all products and materials that come in contact with your drinking water (or in contact with an additive you'll be applying to your drinking water) must be NSF/ANSI 61 certified. However, if you're under a contract signed before March 9, 2008, you're exempt until March 9, 2009.

  Note: Some uncertified direct or indirect additives may be used if specific criteria are met. See Section 64593 for details.

- ***Is your water system being properly operated and maintained?***
  - Your water system must be operated in a manner that ensures 20 psi at every service connection, at all times. If you expand your distribution system service connections by more than 20% (or the expansion adversely affects the distribution system), the new distribution system will need to be designed to provide 40 psi (excluding fire flow). *[see Section 64602]*
  - If the Department has identified deficiencies in the operation or maintenance of your water system, you may be required to prepare and implement an operations and maintenance plan to address the deficiencies. *[see Section 64600]*

- ***Do your recordkeeping practices meet the new requirements?*** *[see Section 64604]*
  - All public water systems must prepare, maintain, and update the following:
    - As built plans, maps, and drawings of all new water system facilities, as well as nearby existing facilities. The location, size, construction material, and year of installation must be included for each new water main or facility.
    - A schematic map that includes the location of each water source, treatment facility, pumping plant, reservoir, water main, and isolation valve.
    - Results of laboratory analyses must be maintained for at least 3 years.
    - Flushing records must be maintained for at least 3 years.
    - Reservoir cleaning and inspection records must be maintained for at least 3 years.

- ***Do you have a unique situation making the Waterworks Standards unworkable or an innovative technique for meeting the intent of a requirement?***
  - If you demonstrate to the Department that your alternative ensures an equivalent level public health protection as that of the Waterworks Standards requirement, you may be approved to use an alternative pursuant to Section 64551.100.

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- ***Many third-party standards have been incorporated by reference, making them enforceable standards. They include...***

California Department of Water Resources:
- Bulletins 74-81 and 74-90...California Well Standards

American National Standard Institute/NSF International (ANSI/NSF):
- ANSI/NSF Standard 60-2005...Direct Additives
- ANSI/NSF 61-2005/Addendum 1.0-2005...Indirect Additives

The incorporated AWWA standards include:
- A100-06...Water Wells
- C150/A21.50-02...Ductile iron pipe thickness
- C151/A21.51-02...Ductile iron pipe, centrifugally cast
- C200-97...Steel pipe, six inches and larger
- C300-04...Reinforced concrete cylinder pipe
- C301-99...Prestressed Concrete Pressure Pipe, Steel-Cylinder
- C302-04...Reinforced Concrete Pressure Pipe, Noncylinder
- C303-02...Concrete Pressure Pipe, Bar-Wrapped, Steel-Cylinder Type
- C304-99...Design of Prestressed Concrete Cylinder Pipe
- C512-04...Air Release, Air/Vacuum, and Combination Air Valves for Waterworks Service
- C600-05...Ductile-iron water mains and their appurtenances
- C605-05...Installation and hydrostatic testing procedures for polyvinyl chloride (PVC)
- C651-05...Disinfecting Water Mains
- C652-02...Disinfection of water storage facilities
- C654-03...Disinfection of wells
- C800-05...Underground Service Line Valves and Fittings
- C900-97...Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings
- C905-97...Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings
- C906-99...Polyethylene (PE) Pressure Pipe and Fittings
- C909-02...Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe
- C950-01...Fiberglass Pressure Pipe
- D100-05...Welded carbon steel tanks
- D102-03...Coating Steel Water-Storage Tanks
- D103-97...Factory-coated bolted steel tanks
- D110-04...Wire- and Strand-Wound, Circular, Prestressed Concrete Water Tanks
- D120-02...Thermosetting Fiberglass-Reinforced Plastic Tanks
- D130-02...Flexible-Membrane Materials for Potable Water Applications
- Manual M9 (1995)...Concrete Pressure Pipe
- Manual M11 (2004)...Steel Water Pipe: A Guide for Design and Installation
- M25 (2000)...Flexible-Membrane Storage
- M51 (2001)...Air-Release, Air/Vacuum, and Combination Air Valves
- Cal/Nevada Section (April 1999)...Reservoir Floating Cover Guidelines

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NOTE: This publication is meant to be an aid to the staff of the CDPH Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes—in this case, 22 CCR—whenever specific citations are required.

CHAPTER 16. CALIFORNIA WATERWORKS STANDARDS

Article 1. Definitions

§64551.10. Distribution Reservoir.

"Distribution reservoir" means any tank or other structure located within or connected to the distribution system and used to store treated/finished drinking water.

§64551.20. Distribution System.

"Distribution system" means all physical parts of the water system, including, but not limited to: Pipes, valves, pumping stations, storage tanks or reservoirs, and user service lines, that are located between the water treatment plant, or the source if there is no treatment, and the consumer's service connection.

§64551.30. Maximum Day Demand (MDD).

"Maximum day demand (MDD)" means the amount of water utilized by consumers during the highest day of use (midnight to midnight), excluding fire flow, as determined pursuant to Section 64554.

§64551.35. Peak Hour Demand (PHD).

"Peak hour demand (PHD)" means the amount of water utilized by consumers during the highest hour of use during the maximum day, excluding fire flow, as determined pursuant to Section 64554.

§64551.40. Source Capacity.

"Source capacity" means the total amount of water supply available, expressed as a flow, from all active sources permitted for use by the water system, including approved surface water, groundwater, and purchased water.

§64551.60. User Service Line.

"User service line" means the pipe, tubing, and fittings connecting a water main to an individual water meter or service connection.

§64551.70. Water Main.

"Water main" means any pipeline, except for user service lines, within the distribution system.

Article 1.5. Waivers and Alternatives

§64551.100. Waivers and Alternatives.

(a) A water system that proposes to use an alternative to a requirement in this chapter shall:

(1) Demonstrate to the Department that the proposed alternative would provide at least the same level of protection to public health; and

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(2) Obtain written approval from the Department prior to implementation of the alternative.

Article 2. Permit Requirements

§64552. Initial Permit for Public Water System.

(a) Each public water system applying for an initial domestic public water system permit shall submit an application that includes:

(1) A map and description of the entire existing and proposed service area, showing:

(A) The location of each water source, as well as wells that are abandoned, out-of-service, destroyed, standby, or inactive (not physically connected to the water system), together with:

1. Any valid water rights owned by the system for surface water sources, including information on any limitations or restrictions of those rights;

2. For a groundwater aquifer, the groundwater levels and drawdown patterns;

3. Permits or approvals for groundwater extraction if pumping from an adjudicated groundwater basin;

4. Existing and planned source pumping capability and distribution storage capacity for the system as a whole and for each pressure zone;

5. The calculated sustained well yields of existing wells if groundwater sources are used;

6. Permits for any waters proposed for use to offset potable water demand; and

(B) Treatment facilities and pumping plants;

(C) Distribution system piping, pressure zones, hydropneumatic tanks, and reservoirs;

(D) Valves, sample taps, and other system appurtenances;

(E) Recycled water and sewage systems;

(F) Conveyance facilities;

(G) Any flood plains in the projected service area; and

(H) The 100 year flood or highest recorded flood level, whichever is higher.

(2) The population, and number and type of residential, commercial, agricultural, and industrial service connections, in the system's projected service area;

(3) Design drawings of proposed facilities drawn to scale, showing location, size, and construction material;

(4) As-built drawings of existing facilities, drawn to scale, showing location, size, construction materials, and year of installation of any water main or other facility that has already been constructed;

(5) The estimated MDD and PHD with the methods, assumptions, and calculations used for the estimations;

(6) A source water assessment and description of each source of water proposed for use to meet the estimated MDD and information demonstrating that the sources are

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adequate to do so, such as, but not limited to, well pump tests, the capacities of all pumping facilities, and the hydraulic capacity of surface water treatment facilities,

(A) If the system plans to use surface water, the system shall demonstrate that it holds a valid water right to that amount of water including any allowable reductions or limitations on its availability, as stated in the water rights contract;

(B) If groundwater is to be used, the system shall demonstrate that the groundwater aquifer is sufficient, or in the case of adjudicated groundwater basins, that approval has been obtained to allow that amount of sustained withdrawal including any allowable reductions or limitations on its availability, as stated in the water rights contract;

(C) If purchased water is to be used, the system shall provide contracted amount and the hydraulic capacity at each turnout and any allowable reductions or limitations on its availability, as stated in the purchased water contract; and

(7) Information that demonstrates how the system proposes to reliably meet four hours of PHD using, but not limited to, available source capacity and distribution reservoirs.

(b) The information in subsection (a) shall be prepared by a professional civil engineer registered in the State of California with experience in water supply engineering.

§64554. New and Existing Source Capacity.

(a) At all times, a public water system's water source(s) shall have the capacity to meet the system's maximum day demand (MDD). MDD shall be determined pursuant to subsection (b).

(1) For systems with 1,000 or more service connections, the system shall be able to meet four hours of peak hourly demand (PHD) with source capacity, storage capacity, and/or emergency source connections.

(2) For systems with less than 1,000 service connections, the system shall have storage capacity equal to or greater than MDD, unless the system can demonstrate that it has an additional source of supply or has an emergency source connection that can meet the MDD requirement.

(3) Both the MDD and PHD requirements shall be met in the system as a whole and in each individual pressure zone.

(b) A system shall estimate MDD and PHD for the water system as a whole (total source capacity and number of service connections) and for each pressure zone within the system (total water supply available from the water sources and interzonal transfers directly supplying the zone and number of service connections within the zone), as follows:

(1) If daily water usage data are available, identify the day with the highest usage during the past ten years to obtain MDD; determine the average hourly flow during MDD and multiply by a peaking factor of at least 1.5 to obtain the PHD.

(2) If no daily water usage data are available and monthly water usage data are available:

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(A) Identify the month with the highest water usage (maximum month) during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its period of operation;

(B) To calculate average daily usage during maximum month, divide the total water usage during the maximum month by the number of days in that month; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor that is a minimum of 1.5; and

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(3) If only annual water usage data are available:

(A) Identify the year with the highest water usage during at least the most recent ten years of operation or, if the system has been operating for less than ten years, during its years of operation;

(B) To calculate the average daily use, divide the total annual water usage for the year with the highest use by 365 days; and

(C) To calculate the MDD, multiply the average daily usage by a peaking factor of 2.25.

(D) To calculate the PHD, determine the average hourly flow during MDD and multiply by a peaking factor that is a minimum of 1.5.

(4) If no water usage data are available, utilize records from a system that is similar in size, elevation, climate, demography, residential property size, and metering to determine the average water usage per service connection. From the average water usage per service connection, calculate the average daily demand and follow the steps in paragraph (3) to calculate the MDD and PHD.

(c) Community water systems using only groundwater shall have a minimum of two approved sources before being granted an initial permit. The system shall be capable of meeting MDD with the highest-capacity source off line.

(d) A public water system shall determine the total capacity of its groundwater sources by summing the capacity of its individual active sources. If a source is influenced by concurrent operation of another source, the total capacity shall be reduced to account for such influence. Where the capacity of a source varies seasonally, it shall be determined at the time of MDD.

(e) The capacity of a well shall be determined from pumping data existing prior to March 9, 2008, or in accordance with subsection (f) or (g). Prior to conducting a well capacity test pursuant to subsection (g), a system shall submit the information listed below to the Department for review and approval. For well capacity tests conducted pursuant to subsection (f), the information shall be submitted to the Department if requested by the Department.

(1) The name and qualifications of the person who will be conducting the test;

(2) The proposed test's pump discharge rate, based on the design rate determined during well development and/or a step-drawdown test.

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(3) A copy of a United States Geological Survey 7 ½-minute topographic map of the site at a scale of 1:24,000 or larger (1 inch equals 2,000 feet or 1 inch equals less than 2,000 feet) or, if necessary, a site sketch at a scale providing more detail, that clearly indicates;

(A) The well discharge location(s) during the test, and

(B) The location of surface waters, water staff gauges, and other production wells within a radius of 1000 feet;

(4) A well construction drawing, geologic log, and electric log, if available;

(5) Dates of well completion and well development, if known;

(6) Specifications for the pump that will be used for the test and the depth at which it will draw water from the well;

(7) A description of the methods and equipment that will be used to measure and maintain a constant pumping rate;

(8) A description of the water level measurement method and measurement schedule;

(9) For wells located in or having an influence on the aquifer from which the new well will draw water, a description of the wells' operating schedules and the estimated amount of groundwater to be extracted, while the new well is tested and during normal operations prior to and after the new well is in operation;

(10) A description of the surface waters, water staff gauges, and production wells shown in (3)(B);

(11) A description of how the well discharge will be managed to ensure the discharge doesn't interfere with the test;

(12) A description of how the initial volume of water in the well's casing, or bore hole if there is no casing at the time, will be addressed to ensure it has no impact on the test results; and

(13) A written description of the aquifer's annual recharge.

(f) To determine the capacity of a well drilled in alluvial soils when there is no existing data to determine the capacity, a water system shall complete a constant discharge (pumping rate) well capacity test and determine the capacity as follows:

(1) Take an initial water level measurement (static water level) and then pump the well continuously for a minimum of eight hours, maintaining the pump discharge rate proposed in subsection (e)(2);

(2) While pumping the well, take measurements of the water level drawdown and pump discharge rates for a minimum of eight hours at a frequency no less than every hour;

(3) Plot the drawdown data versus the time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithm axis and the drawdown data on the vertical axis;

(4) Steady-state is indicated if the last four hours of drawdown measurements and the elapsed time yield a straight line in the plot developed pursuant to subsection (3). If steady-state is not achieved, the pump discharge rate shall be continued for a longer period of time or adjusted, with paragraphs (2) and (3) above repeated, until steady-state is achieved.

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(5) Discontinue pumping and take measurements of the water level drawdown no less frequently than every 15 minutes for the first two hours and every hour thereafter for at least six hours or until the test is complete; and

(6) To complete the test, the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

(7) The capacity of the well shall be the pump discharge rate determined by a completed test.

(g) The capacity of a well whose primary production is from a bedrock formation, such that the water produced is yielded by secondary permeability features (e.g. fractures or cracks), shall be determined pursuant to either paragraph (1) or (2) below.

(1) The public water system shall submit a report, for Department review and approval, proposing a well capacity based on well tests and the evaluation and management of the aquifer from which the well draws water. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist. Acceptance of the proposed well capacity by the Department shall, at a minimum, be based on the Department's review and approval of the following information presented in the report in support of the proposed well capacity:

(A) The rationale for the selected well test method and the results;

(B) The geological environment of the well;

(C) The historical use of the aquifer;

(D) Data from monitoring of other local wells;

(E) A description of the health risks of contaminants identified in a Source Water Assessment, as defined in section 63000.84 of Title 22, and the likelihood of such contaminants being present in the well's discharge;

(F) Impacts on the quantity and quality of the groundwater;

(G) How adjustments were made to the estimated capacity based on drawdown, length of the well test, results of the wells test, discharge options, and seasonal variations and expected use of the well; and

(H) The well test(s) results and capacity analysis.

(2) During the months of August, September, or October, conduct either a 72-hour well capacity test or a 10-day well capacity test, and determine the well capacity using the following procedures:

(A) Procedures for a 72 hour well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;

2. Measure and record the static water level and then pump the well continuously for a minimum of 72 hours starting at the pump discharge rate proposed in (e)(2);

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3. Measure and record water drawdown levels and pump discharge rate:

a. Every thirty minutes during the first four hours of pumping,

b. Every hour for the next four hours, and

c. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;

4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(B) Procedures for a 10 day well capacity test:

1. For the purpose of obtaining an accurate static water level value, at least twelve hours before initiating step 2., pump the well at the pump discharge rate proposed in subsection (e)(2) for no more than two hours, then discontinue pumping;

2. Measure and record the static water level and then pump the well continuously for a minimum of 10 days starting at the pump discharge rate proposed in (e)(2);

3. Measure and record water drawdown levels and pumping rate:

a. Every thirty minutes during the first four hours of pumping,

b. Every hour for the next four hours,

c. Every eight hours for the remainder of the first four days,

d. Every 24 hours for the next five days, and

e. Every four hours thereafter until the water drawdown level is constant for at least the last four remaining measurements, and;

4. Plot the drawdown and pump discharge rate data versus time data on semi-logarithmic graph paper, with the time intervals on the horizontal logarithmic axis and the drawdown and pump discharge rate data on the vertical axis.

(C) To complete either the 72-hour or 10-day well capacity test the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level has recovered to within two feet of the static water level measured at the beginning of the well capacity test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent. If the well recovery does not meet these criteria, the well capacity cannot be determined pursuant to subsection (g)(2) using the proposed pump rate. To demonstrate meeting the recovery criteria, the following water level data in the well shall be measured, recorded, and compared with the criteria:

1. Every 30 minutes during the first four hours after pumping stops,

2. Hourly for the next eight hours, and

3. Every 12 hours until either the water level in the well recovers to within two feet of the static water level measured at the beginning of the well capacity test or to a at least ninety-five percent of the total drawdown measured during the test, which ever occurs first.

(D) Following completion of a 72-hour or 10-day well capacity test, the well shall be assigned a capacity no more than:

1. For a 72-hour test, 25 percent of the pumping rate at the end of a completed test's pumping.

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2. For a 10-day test, 50 percent of the pumping rate at the end a completed test's pumping.

(h) The public water system shall submit a report to the Department that includes all data and observations associated with a well capacity test conducted pursuant to subsection (f) or (g), as well as the estimated capacity determination methods and calculations. The data collected during pumping and recovery phases of the well capacity tests shall be submitted in an electronic spreadsheet format in both tabular and graphic files.

(i) An assigned well capacity may be revised by the Department if pumping data collected during normal operations indicates that the assigned well capacity was not representative of the actual well capacity.

(j) If directed by the Department to do so, based on adverse conditions that may lead or may have led to a regional aquifer's inability to meet a water system's demand on such an aquifer, the water system shall submit a report to the Department that includes regional aquifer recharge estimates and a water balance analysis. The report shall be prepared and signed by a California registered geologist with at least three years of experience with groundwater hydrology, a California licensed engineer with at least five years of experience with groundwater hydrology, or a California certified hydrogeologist.

(k) The source capacity of a surface water supply or a spring shall be the lowest anticipated daily yield based on adequately supported and documented data.

(l) The source capacity of a purchased water connection between two public water systems shall be included in the total source capacity of the purchaser if the purchaser has sufficient storage or standby source capacity to meet user requirements during reasonable foreseeable shutdowns by the supplier.

§64556. Permit Amendments.

(a) An application for an amended domestic water supply permit shall be submitted to the Department prior to any of the following:

(1) Addition of a new distribution reservoir (100,000 gallon capacity or greater) to the distribution system;

(2) Modification or extension of an existing distribution system using an alternative to the requirements in this chapter;

(3) Modification of the water supply by:

A. Adding a new source;

B. Changing the status of an existing source (e.g., active to standby); or

C. Changing or altering a source, such that the quantity or quality of supply could be affected;

(4) Any addition or change in treatment, including:

A. Design capacity; or

B. Process;

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(5) Expansion of the existing service area (by 20% or more of the number of service connections specified in the most recent permit or permit amendment);

(6) Consolidation with one or more other water systems;

(7) Change in regulatory jurisdiction;

(8) Change in type of public water system;

(9) Obtaining a water quality standard exemption from the Department;

(10) Obtaining a secondary standard waiver from the Department;

(11) Proposal for modifications of existing recreational uses on a water supply reservoir;

(12) Request for a hand washing exclusion by a transient noncommunity water system, pursuant to section 116282 of the Health and Safety Code; or

(13) Proposal for offsetting domestic water needs with an unapproved water supply.

(b) A water system shall submit an application to the Department if it has been notified by the Department that changes to the water system require an amended permit based on the Department's review of system operations, source type and capacity, geographical location, system size, and distribution system complexity.

(c) Except as set forth in subsections (a) and (b) any modifications or extensions to an existing distribution system may be made without applying for and receiving an amended domestic water supply permit provided the modifications comply with all of the requirements of this chapter.

§64558. Source Capacity Planning Study.

(a) If directed by the Department to do so based on its determination that there is an existing or potential problem with the system's source capacity or a proposed expansion pursuant to section 64556(a)(5), a water system shall submit a Source Capacity Planning Study (Study) containing the following information:

(1) The anticipated growth of the water system over a projected period of at least ten years in terms of the population and number and type of residential, commercial, and industrial service connections to be served by the water system.

(2) Estimates of the amount of water needed to meet the total annual demand and the MDD over the projected ten-year growth period (projected system demand). Methods, assumptions, and calculations used to estimate the projected system demand shall be included.

(3) A map and description of the entire existing and proposed service area, showing:

(A) The location of each water source, including wells that are abandoned, out-of-service, destroyed, standby, or inactive;

1. Any valid water rights owned by the system for surface water sources, including information on any limitations or restrictions of those rights;

2. For a groundwater aquifer, the groundwater levels and drawdown patterns;

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3. Permits or approvals for groundwater extraction if pumping from an adjudicated groundwater basin;

4. Existing and planned source pumping capability and distribution storage capacity for the system as a whole and for each pressure zone;

5. The calculated sustained well yields of existing wells if groundwater sources are used;

6. Permits, if required, for any waters proposed for use to offset potable water demand; and

7. A Source Water Assessment for each potable water source.

(B) Distribution system piping, pressure zones, hydropneumatic tanks, and reservoirs;

(C) Valves, sample taps, flow meters, unmetered service connections, and other system appurtenances;

(D) Conveyance facilities;

(E) Any flood plains in the projected service area; and

(F) The 100 year flood or highest recorded flood level, whichever is higher.

(b) If directed by the Department to do so based on its determination that a study is out of date, a water system shall update and submit the Study to the Department.

(c) Water systems that have submitted an Urban Water Management Plan to the Department of Water Resources pursuant to Water Code Part 2.6 commencing with section 10610, may submit a copy of that report in lieu of some or all of the requirements of subsection (a) to the extent such information is included in the plan.

Article3. Water Sources

§64560. New Well Siting, Construction, and Permit Application.

(a) To receive a new or amended domestic water supply permit for a proposed well, the water system shall provide the following information to the Department in the technical report as part of its permit application:

(1) A source water assessment as defined in Section 63000.84 for the proposed site;

(2) Documentation demonstrating that a well site control zone with a 50-foot radius around the site can be established for protecting the source from vandalism, tampering, or other threats at the site by water system ownership, easement, zoning, lease, or an alternative approach approved by the Department based on its potential effectiveness in providing protection of the source from contamination;

(3) Design plans and specifications for the well; and

(4) Documentation required for compliance with the California Environmental Quality Act (CEQA).

(b) After the Department has provided written or oral approval of the initial permit amendment application and the water system has constructed the well, the water system shall submit the following additional materials for its permit application:

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(1) A copy of the well construction permit if required by the county or local agency;

(2) Department of Water Resources well completion report;

(3) A copy of any pump tests required by the Department;

(4) Results of all required water quality analyses; and

(5) As-built plans.

(c) Each new public water supply well shall:

(1) As a minimum, be constructed in accordance with the community water system well requirements in California Department of Water Resources Bulletins 74-81 and 74-90, which are hereby incorporated by reference;

(2) Be constructed in accordance with American Water Works Association (AWWA) Standard A100-06 (Water Wells), which is hereby incorporated by reference;

(3) Be installed such that:

(A) All equipment is accessible for operation, maintenance, and removal;

(B) Protection is provided against flooding;

(C) The wellhead terminates a minimum of 18 inches above the finished grade;

(D) Wellhead and electrical controls are not installed in vaults;

(E) The well is equipped with:

1. Fittings and electrical connections to enable chlorination facilities to be readily installed;

2. A non-threaded down-turned sampling tap located on the discharge line between the wellhead and the check valve. Sampling taps used for obtaining samples for bacteriological analysis shall not have a screen, aerator, or other such appurtenance;

(F) Provisions are made to allow the well to be pumped to waste with a waste discharge line that is protected against backflow.

§64560.5. Well Destruction.

Destruction of a public drinking water supply well shall be in accordance with the California Department of Water Resources Bulletins 74-81 and 74-90.

§64561. Source Flow Meters.

Each water system shall:

(a) Except for inactive sources, install a flow meter at a location between each water source and the entry point to the distribution system;

(b) Meter the quantity of water flow from each source, and record the total monthly production each month.

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Article 4. Materials and Installation of Water Mains and Appurtenances

§64570. Materials and Installation.

(a) All newly installed water mains shall comply with the materials and installation standards of the American Water Works Association pursuant to tables 64570-A and 64570-B. The standards are hereby incorporated by reference.

Table 64570-A
Materials Standards for Water Mains

Type of Material	*Diameter of Main*	*Applicable Standard*
PVC	4 in. through 12 in.	C900-97
PVC	14 in. through 48 in.	C905-97
Polyethylene (HDPE)	4 in. through 63 in.	C906-99
Fiberglass	All sizes	C950-01
Ductile Iron	All sizes	C150/A21.50-02
Ductile Iron, Centrifugally cast	All sizes	C151/A21.51-02
Steel	6 inches and larger	C200-97
Copper	All sizes	C800-05
Concrete		
Reinforced steel-cylinder	All sizes	C300-04
Prestressed steel-cylinder	All sizes	C301-99, C304-99
Reinforced noncylinder	All sizes	C302-04
Bar wrapped/steel cylinder	All sizes	C303-02
PVC, Molecularly oriented polyvinyl chloride – All sizes		C909-02

Table 64570-B
Installation Standards for Water Mains

Type of Installation	*Applicable Standard*
Steel Pipe-Design and Installation	M-11 (2004)
Ductile-Iron Water Mains and Their Appurtenances	C600-05
Underground Installation of PVC Pressure Pipe and Fittings	C605-05
Concrete Pressure Pipe	M9(1995)

(b) Water mains shall:

(1) Be installed below the frost line or be otherwise protected to prevent freezing; and

(2) Be protected against crushing under loads that could pass above the installation.

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§64572. Water Main Separation.

(a) New water mains and new supply lines shall not be installed in the same trench as, and shall be at least 10 feet horizontally from and one foot vertically above, any parallel pipeline conveying:

(1) Untreated sewage,
(2) Primary or secondary treated sewage,
(3) Disinfected secondary-2.2 recycled water (defined in section 60301.220),
(4) Disinfected secondary-23 recycled water (defined in section 60301.225), and
(5) Hazardous fluids such as fuels, industrial wastes, and wastewater sludge.

(b) New water mains and new supply lines shall be installed at least 4 feet horizontally from, and one foot vertically above, any parallel pipeline conveying:

(1) Disinfected tertiary recycled water (defined in section 60301.230), and
(2) Storm drainage.

(c) New supply lines conveying raw water to be treated for drinking purposes shall be installed at least 4 feet horizontally from, and one foot vertically below, any water main.

(d) If crossing a pipeline conveying a fluid listed in subsection (a) or (b), a new water main shall be constructed no less than 45-degrees to and at least one foot above that pipeline. No connection joints shall be made in the water main within eight horizontal feet of the fluid pipeline.

(e) The vertical separation specified in subsections (a), (b), and (c) is required only when the horizontal distance between a water main and pipeline is less than ten feet.

(f) New water mains shall not be installed within 100 horizontal feet of the nearest edge of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project site.

(g) The minimum separation distances set forth in this section shall be measured from the nearest outside edge of each pipe barrel.

(h) With Department approval, newly installed water mains may be exempt from the separation distances in this section, except subsection (f), if the newly installed main is:

(1) less than 1320 linear feet,
(2) replacing an existing main, installed in the same location, and has a diameter no greater than six inches more than the diameter of the main it is replacing, and
(3) installed in a manner that minimizes the potential for contamination, including, but not limited to:
    (A) sleeving the newly installed main, or

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(B) utilizing upgraded piping material.

§64573. Minimum Water Main Size for Community Water Systems.
Newly installed water mains in a community water system shall have a nominal diameter of at least four inches.

§64575. Flushing.

(a) A flushing valve or blowoff shall be provided at the end of each +ly installed dead-end water main. Fire hydrants meeting the criteria of this section may be considered flushing valves.

(b) Flushing valves and blowoffs shall not discharge to a sanitary sewer without an air gap separation between the sewer and the valve or blowoff.

(c) The flushing velocity in the main shall not be less than 2.5 ft/s unless it is determined that conditions do not permit the required flow to be discharged to waste.

(d) Newly installed flushing valves and blowoffs shall be designed to maintain the minimum continuous flushing flows as indicated below to produce a minimum velocity of 2.5ft/s in commonly used sizes of pipe.

Table 64575-A. Minimum Flushing Flows for Different Size Water Mains.

Nominal Main Size Diameter (inches)	*Minimum Flushing Flow (gallons per minute)*
2	25
3	50
4	100
6	225
8	400
10	600
12	900
14	1200
16	1600

§64576. Air-Release, Air Vacuum, and Combination Valves.
Each new air-release, air vacuum, or combination valve, and any such valve installed to replace an existing valve shall be:

(a) Installed such that its vent opening is above grade, above the calculated 100-year flood water level, and, if recorded data are available, above the highest recorded water level;

(b) Readily accessible for inspection, maintenance and replacement;

(c) Constructed and designed to prevent exposure to rainwater or runoff, vandalism, and birds, insects, rodents, or other animals;

(d) Fitted with a downward-facing screened vent or a domed and screened cap; and

(e) Installed pursuant to American Water Works Association Standard C512-04 and Manual M51 (2001), which are hereby incorporated by reference.

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§64577. Isolation Valves.
As a minimum, isolation valves shall be installed on all new water mains within the distribution system as follows:

(a) No farther than 1,320 linear feet apart on all mains having a diameter of 12 inches or less.

(b) At each tee or crossing connection between mains that have a diameter of 12 inches or less, within 100 feet of the tee or crossing connection with the primary main.

(c) Between the water main and each fire hydrant served by the main.

§64578. Water Main Valve Construction.
Newly installed valves constructed on water mains shall comply with the following:

(a) A valve box shall be installed over each buried valve stem to aid in locating and operating the valve.

(b) For valves buried in trenches greater than five feet below the finished grade, either a valve stem riser to permit the use of a normal key or a notation on valve records indicating that a long key will be required shall be provided.

Article 5. Disinfection Requirements

§64580. Disinfection of New or Repaired Mains.
Prior to use, newly installed water mains, or water mains that have been taken out of service for maintenance or repair, shall be disinfected and sampled for bacteriological quality in accordance with American Water Works Association Standard C651-05, which is hereby incorporated by reference. Samples from new mains shall be negative for coliform bacteria prior to the new main(s) being placed into service.

§64582. Disinfection of Reservoirs.
A newly-installed distribution reservoir or distribution reservoir that has been taken out of service for repair or inspection shall be disinfected and sampled for bacteriological quality in accordance with the American Water Works Association Standard C652-02, which is hereby incorporated by reference. If the results of the bacteriological sampling are positive for coliform bacteria, the reservoir shall be resampled for bacteriological quality and the test results shall be submitted to the Department for review and approval before the reservoir is placed into service.

§64583. Disinfection of Wells.
A new or repaired well, or a well that has not been in operation for more than three months shall be sampled for bacteriological quality prior to use. If the results of the bacteriological sampling are positive for coliform bacteria, the well shall be disinfected in accordance with the American Water Works Association C654-03, which is hereby incorporated by reference, and resampled for bacteriological quality and the test results shall be submitted to the Department for review and approval before the well is placed into service.

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NOTE: This publication is meant to be an aid to the staff of the CDPH Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes—in this case, 22 CCR—whenever specific citations are required.

Article 6. Distribution Reservoirs

§64585. Design and Construction.

(a) Each distribution reservoir shall meet the following:

(1) Any reservoir coatings or linings shall be installed in accordance with manufacturer's instructions;

(2) Vents and other openings shall be constructed and designed to prevent the entry of rainwater or runoff, and birds, insects, rodents, or other animals;

(3) At least one sampling tap shall be available to enable representative sampling of the water in the reservoir that will be entering the distribution system; the tap shall be protected against freezing, if necessary; and

(4) A reservoir shall not be designed, constructed, or used for any activity that creates a contamination hazard.

(b) The water supplier shall submit to the Department for review the design drawings and specifications for each proposed distribution reservoir prior to its construction. Each new distribution reservoir shall be:

(1) If it is a tank, constructed in accordance with American Water Works Association (AWWA) standards, which are hereby incorporated by reference, as follows: AWWA D100-05 (Welded Carbon Steel Tanks for Water Storage), D102-03 (Coating Steel Water-Storage Tanks), D103-97 (Factory-Coated Bolted Steel Tanks for Water Storage), D110-04 (Wire-and Strand-Wound, Circular, Prestressed Concrete Water Tanks), and D120-02 (Thermosetting Fiberglass-Reinforced Plastic Tanks);

(2) Constructed of an impervious material that prevents the movement of water into or out of the reservoir;

(3) Covered with

(A) A rigid structural roof made of impervious material that prevents the movement of water or other liquids into or out of the reservoir; or

(B) A floating cover designed, constructed, and maintained in conformance with the AWWA California-Nevada Section's "Reservoir Floating Cover Guidelines" (April 1999), AWWA Manual M25 (2000), and AWWA D130-02 (Flexible-Membrane Materials for Potable Water Applications), which are hereby incorporated by reference.

(4) Equipped with at least one separate inlet and outlet (internal or external), and designed to minimize short-circuiting and stagnation of the water flow through the reservoir;

(5) Equipped with drainage facilities that allow the tank to be drained and all residual sediment removed, and an overflow device. The reservoir drainage facilities and overflow device shall not be connected directly to a sewer or storm drain and shall be free of cross-connections;

(6) Equipped with controls to maintain and monitor reservoir water levels;

(7) Equipped to prevent access by unauthorized persons;

(8) Designed to allow authorized access and adequate lighting of reservoir interior for inspections, cleaning or repair;

(9) Equipped with isolation valves, and designed and operated to allow continued distribution of water when the reservoir is removed from service. The isolation

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valves shall be located within 100 feet of the reservoir. For a reservoir used to meet the disinfectant contact time requirements of chapter 17 (Surface Water Treatment), bypass lines shall be blind-flanged closed during normal operations;

(10) Designed and constructed to prevent the entry of surface runoff, subsurface flow, or drainage into the reservoir;

(11) Designed to prevent corrosion of the interior walls of the reservoir;

(12) For a subsurface reservoir,

(A) Protected against flooding (both reservoir and vents);

(B) Equipped with underdrain facilities to divert any water in proximity to the reservoir away from the reservoir;

(C) Sited a minimum of 50 feet horizontally from a sanitary sewer and 100 feet horizontally from any other waste facilities and any force main;

(D) Constructed so as to have the reservoir bottom located above the highest anticipated groundwater level, based on a site investigation that includes actual measurements of the groundwater level during peak rainfall periods; extraction wells shall not be used to influence the highest anticipated groundwater level;

(E) Provided with a minimum of two groundwater level monitoring wells drilled to a depth at least 20 feet below the reservoir bottom and sited within 100 feet and on opposite sides (upgradient and downgradient) of the reservoir; and

(F) If the roof is to be buried and have a function (e.g., recreation, landscape, parking) in addition to covering the reservoir:

1. Designed and constructed pursuant to AWWA D110-04 (Wire-Strand-Wound, Circular, Prestressed Concrete Water Tanks), which is hereby incorporated by reference;

2. Equipped with an impervious connection, such as a pvc waterstop, between the wall and buried roof; and

3. Watertight, sloped for drainage and coated with a damp proofing material.

Article 7. Additives

§64590. Direct Additives.

No chemical or product shall be added to drinking water by a water supplier unless the chemical or product is certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) 60-2005 (Drinking Water Treatment Chemicals—Health Effects), which is hereby incorporated by reference. Certification shall be from an ANSI accredited product certification organization whose certification system includes, as a minimum, the following criteria for ensuring the chemical or product meets NSF/ANSI Standard 60.

(a) Annual product testing,
(b) Annual facility inspections,
(c) Annual quality assurance and quality control review,
(d) Annual manufacturing practice reviews, and
(e) Annual chemical stock inspections.

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§64591. Indirect Additives.

(a) Except as provided in Section 64593 or where a more stringent statutory requirement exists, after March 9, 2008, a water system shall not use any chemical, material, lubricant, or product in the production, treatment or distribution of drinking water that will result in its contact with the drinking water including process media (carbon, sand), protective materials (coatings, linings, liners), joining and sealing materials (solvent cements, welding materials, gaskets, lubricating oils), pipes and related products (pipes, tanks, fittings), and mechanical devices used in treatment/transmission/distribution systems (valves, chlorinators, separation membranes) that has not been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) 61-2005 / Addendum 1.0-2005 (Drinking Water System Components—Health Effects), which is hereby incorporated by reference. This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by the American National Standards Institute.

(b) If a treatment chemical is generated on site,

(1) No equipment used in the generation process shall be in contact with a drinking water, or a chemical to be applied to drinking water, after March 9, 2008, unless the equipment has been tested and certified as meeting the specifications of NSF International/American National Standard Institute (NSF/ANSI) Standard 61-2005/Addendum 1.0-2005 (Drinking Water System Components—Health Effects). This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by the American National Standards Institute; and

(2) No input chemical used in the generation process shall be in contact with a drinking water after March 9, 2008, unless the chemical meets the requirements of section 64590.

(c) Any chemical used to clean on-line or off-line drinking water treatment facilities that may subsequently come into contact with drinking water to be distributed to the public shall meet the requirements of section 64590.

(d) Any contract for the purchase of chemicals, materials, or products that was signed by a public water system and effective prior to March 9, 2008, shall be exempt from the provisions of subsections (a) and (b) until March 9, 2009.

§64593. Use of Uncertified Chemicals, Materials or Products.

(a) A water supplier may use a chemical, material or product that has not been certified pursuant to sections 64590 or 64591 if the chemical, material or product is in the process of being tested and certified and there are no certified alternatives.

(b) Prior to use of an uncertified chemical, material or product, the water supplier shall provide the Department with an explanation of the need for the chemical, material or product; the date that the chemical, material or product was submitted for testing; the

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name of the accredited product certification organization conducting the testing; and a statement that certified alternatives are not available.

(c) Unless directed otherwise by the Department to ensure a pure and wholesome drinking water supply, a water supplier may use the following chemicals, materials, or products that have not been and are not in the process of being certified pursuant to section 64590 or 64591:

(1) a material or product previously approved by the Department for use or installation on or before March 9, 2008.

(2) a material or product constructed of components meeting the requirements of sections 64590 and 64591;

(3) chemical by-products necessary for meeting drinking water standards, such as sodium hypochlorite for disinfection, generated by chemicals certified pursuant to section 64590 or 64591; and

(4) atmospheric air and small parts, such as probes, sensors, wires, nuts, bolts, and tubing for which there are no certified alternatives.

Article 8. Distribution System Operation

§64600. Water System Operations and Maintenance Plan.

(a) If directed by the Department to do so based on an identified deficiency in the system's operations, a water system shall develop and submit a Water System Operations and Maintenance Plan (Plan); the water system shall include those elements in the following list that are deemed by the Department to be relevant to the deficiency:

(1) The operations and maintenance schedule for each unit process for each treatment plant that treats an approved surface water;

(2) The operations and maintenance schedule for each groundwater source and unit process;

(3) The schedule and procedure for flushing dead end mains, and the procedures for disposal of the flushed water including dechlorination;

(4) The schedule for routine inspection of reservoirs, and the procedures for cleaning reservoirs;

(5) The schedule and procedures for inspecting, repairing, and replacing water mains;

(6) The plan and procedures for responding to water supply emergencies;

(7) The plan and procedures for responding to consumer complaints;

(8) The schedule and procedures for testing backflow prevention assemblies;

(9) The schedule and procedures for routine exercising of water main valves;

(10) The schedule and program for maintenance and calibration of source flow meters and other online instruments used to determine the quality or quantity of water;

(11) The qualifications and training of operating personnel;

(12) The program for control of biological organisms on the interior walls of water mains; and

(13) For an underground reservoir with a buried roof designed for a function in addition to covering the reservoir, a comprehensive routine inspection and monitoring

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plan to ensure that there is no contamination of the reservoir as a result of that additional function.

(b) Each water system that has prepared a Plan pursuant to subsection (a) shall operate in accordance with its Department-approved Plan.

(c) Each water system that has prepared a Plan pursuant to subsection (a) shall update the Plan at least once every five years and, in addition, following any change in the method of treatment or any other modification to the system requiring a change in the systems operations and maintenance.

§64602. Minimum Pressure.

(a) Each distribution system shall be operated in a manner to assure that the minimum operating pressure in the water main at the user service line connection throughout the distribution system is not less than 20 pounds per square inch at all times.

(b) Each new distribution system that expands the existing system service connections by more than 20 percent or that may otherwise adversely affect the distribution system pressure shall be designed to provide a minimum operating pressure throughout the new distribution system of not less than 40 pounds per square inch at all times excluding fire flow.

§64604. Preparation and Maintenance of Records.

(a) Each public water system subject to this chapter shall prepare:

(1) "As built" plans, maps, and drawings of all new water system facilities including updated information for all existing facilities in the same location or connected to the new facilities. The plans, maps, and drawings shall be clear and legible and shall include the location, size, construction material, and year of installation of each new water main or other facility.

(2) A schematic drawing or map showing the location of each water source, treatment facility, pumping plant, reservoir, water main and isolation valve.

(b) The plans, drawings, and maps prepared pursuant to subsection (a) shall be updated as changes occur, and maintained until replaced or superseded by updated plans or drawings. The most current plans, drawings, and maps shall be available for Department review.

(c) Results of laboratory analyses of samples taken pursuant to sections 64580, 64582, and 64583, records of flushing of mains; and records of reservoir inspections and cleaning shall be maintained for at least three years.

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TO: BOARD OF DIRECTORS

FROM: BRUCE BUEL

DATE: MAY 23, 2008

AGENDA ITEM
E-3
MAY 28, 2008

BLACKLAKE PROPOSITION 218 PROTEST PROCEEDING

ITEM

Discuss mechanics of Proposition 218 protest proceeding re Blacklake and Town Water Fund merger [NO ACTION REQUESTED].

BACKGROUND

Your Honorable Board placed this item on this agenda for discussion.

RECOMMENDATION

Staff recommends that your Honorable Board discuss the mechanics of the Proposition 218 Protest Proceeding.

ATTACHMENTS

- None

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TO: BOARD OF DIRECTORS

FROM: BRUCE BUEL BB

DATE: MAY 23, 2008

AGENDA ITEM
E-4
MAY 28, 2008

EDIT SPRING NEWSLETTER

ITEM

Edit Spring Newsletter [AUTHORIZE PUBLICATION AS EDITED].

BACKGROUND

Attached is a draft of the Spring 2008 Newsletter prepared by staff. Director Harrison has objected to the language in the first paragraph of the first page and to several of the Board adopted objectives set forth on Page 2.

RECOMMENDATION

Staff recommends that your Honorable Board review the text, order edits as appropriate and authorize publication of the newsletter as edited.

ATTACHMENTS

- Draft Spring 2008 Newsletter

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Nipomo Community Services District
DISTRICT NEWS

Supplemental Water: Are We There Yet?

NIPOMO has historically had access to inexpensive groundwater as our source of water supply. However, our current demand exceeds the natural recharge and consequently the volume of groundwater above sea level is decreasing. If nothing is done to reverse this trend, the inevitable result will be saltwater intrusion. To address this issue, the NCSD Board has committed to development of a supplemental water project to bring in an alternate source of supply.

On April 30, 2008, the NCSD Board agreed to proceed with design and construction of a new waterline connecting the Nipomo Mesa to the City of Santa Maria, called the Waterline Intertie Project.

This new waterline would initially deliver 2,000 acre-feet per year (AFY); however, it could ultimately supply as much as 6,200 AFY. By phasing the project, the Board was able to reduce the expected cost from $26 million down to $17 million. The first phase is expected to take approximately 3 years to complete and, assuming that permits can be secured by the end of 2009, the new water should be available in 2011.

The proposed project involves construction of about five miles of new pipeline starting at the corner of Blosser and Taylor in Santa Maria, where NCSD would connect to the City of Santa Maria water distribution system. From this point, an 18" main would be constructed in Blosser north to the levy, and a 24" main would be constructed under the levy and the Santa Maria River using a technique called horizontal directional drilling. At the top of the bluff on the north side of the Santa Maria River, a pump station and a 500,000 gallon storage reservoir would be built. The new water would then be connected with NCSD's existing water system at the corner of Orchard Road and Joshua. In addition, the District would construct a new 12" water main in Southland Street from Orchard Road to South Frontage, construct a new 12" main in South Frontage from Southland to Tefft, and install approximately 200 pressure reducing valves in the service lines of NCSD's water customers living in the area bounded by Story Road, Orchard Road, Southland Street and South Frontage.

The new water will be softer than the groundwater that the District currently serves, thus reducing the need for in-home water softeners. The new water will also use chloramine as its disinfectant as opposed to the sodium hypochlorite that the District has historically used. Chloramine is a safe and proven disinfectant used by most of the water purveyors on the Central Coast. A benefit of chloramine is less chlorine taste in tapwater.

Readers interested in more details can access the "Nipomo Waterline Intertie Project – Preliminary Engineering Memorandum" at NCSD's website — www.ncsd.ca.gov (click on NEWS & INFO, then SUPPLEMENTAL WATER) — or contact the NCSD Office at 929-1133.

Board Action on Supplemental Water

The NCSD Board of Directors, on April 30, 2008, initiated environmental review of the proposed project and authorized NCSD staff to secure proposals for project design.

WHAT's INSIDE

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Board Action on Supplemental Water

(Continued from page 1)

Regarding environmental review of the project, the Board hired Doug Wood of Douglas Wood and Associates to prepare a Draft and Final Environmental Impact Report (EIR). Mr. Wood will first circulate a Notice of Preparation in mid-June to ensure interested parties can comment on the contents of the Draft EIR through mid-July. Based on these comments, Mr. Wood will then publish a Draft EIR in Mid-October, which will trigger a 45-day comment period closing at the end of November. Responses to comments received will be prepared, and a Final EIR should be ready for consideration in winter 2009. Parties wishing to comment on the Notice of Preparation or the Draft EIR are encouraged to contact District General Manager, Bruce Buel, at the NCSD office so notices can be provided.

The Board directed staff to solicit proposals for design of the project from consulting engineers. In May, Staff mailed out Requests for Proposal to ten firms with strong experience in designing projects utilizing horizontal directional drill technology. The deadline for submitting proposals is June 10, 2008. At the June 25, 2008 Board Meeting, Staff will review the proposals submitted and recommend retention of one design team.

Objectives:
"...1. Slow the depletion of the above-sea-level groundwater in storage beneath the Nipomo Mesa Groundwater Management Area (NMMA) of the Santa Maria Groundwater Basin to reduce the potential for seawater

Waterline Intertie Project: The Objectives

The NCSD Board of Directors, on April 30, 2008, adopted the objectives for the Waterline Intertie Project.

The basic objective of the proposed Nipomo Community Services District Waterline Intertie Project is to construct a pipeline connection from the City of Santa Maria water distribution system across the Santa Maria River to the existing water distribution system within the Nipomo Community Services District. The proposed Project will also achieve the following objectives:

1. Slow the depletion of the above-sea-level groundwater in storage beneath the Nipomo Mesa Groundwater Management Area (NMMA) of the Santa Maria Groundwater Basin to reduce the potential for seawater intrusion by using supplemental water, consistent with the settlement agreement and the judgment related to the groundwater adjudication. The shortest-term project completion is essential because projections have shown seawater intrusion could occur in 12 to 14 years with no new development, and in less than 8 years in a "dry-years" scenario. The conservative goal of this project is to provide at least 2,000 AFY of supplemental water to the NMMA by 2011.

2. Comply with the 2005 groundwater adjudication settlement stipulation and judgment dictating the need for active management of the NMMA.

3. Assist in stabilizing the groundwater levels in the NMMA by reducing pumping in the NMMA.

4. Augment current water supplies available to the NCSD by a phased delivery of supplemental water. Phase I will supply approximately 2,000 acre-feet/year (AFY) by pipeline from Santa Maria following Phase I construction completion. Phase II will supply up to an additional 1,000 AFY by pipeline from Santa Maria (a cumulative total of 3,000 AFY). A third phase (Phase III), if implemented, would supply up to an additional 3,200 AFY (a cumulative total of 6,200 AFY) by pipeline from Santa Maria.

5. Augment current water supplies available to the Woodlands and other water purveyors on the Mesa (Golden State and Rural Water) by 1,000 AFY.

6. Increase the reliability of the District water supply by providing a diversity of water sources. Avoid the potential use of supplemental water return flows from the District, the Woodlands and the other purveyors, being used to support the water requirements of new development.

7. Comply with Local Agency Formation Commission (LAFCo) conditions for securing supplemental water prior to annexation of lands now within the District's Sphere of Influence. This supplemental water for annexations shall be in addition to the 3,000 AFY developed by Phases I and II.

8. Avoid multiple waterline crossings of the Santa Maria River and associated environmental impacts by constructing a single pipeline capable of transporting sufficient water for potential NMMA growth consistent with the South County Area Plan (Inland) of San Luis Obispo County's General Plan. The pipeline diameter crossing the Santa Maria River would accommodate a 6,200 AFY capacity.

9. Slow the depletion of the above-sea-level groundwater in storage beneath the NMMA by:

a. Providing supplemental water for new development within the current service area of the District and the

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Waterline Intertie Project Objectives

(Continued from page 2)

Mesa's other water purveyors (Golden State and Rural Water) consistent with the South County Area Plan (Inland);

b. Facilitating supplemental water delivery for new development within the District's Sphere of Influence consistent with the South County Area Plan (Inland) and the conditions in LAFCo's 2004 Sphere of Influence Update.

c. Providing the basis for the assessment of impact fees upon development outside the District's Sphere of Influence and the service areas of the Mesa's other water purveyors (Golden State and Rural Water).

NCSD Completes New Operations Center

On March 19, 2008, the NCSD Board of Directors cut the ceremonial ribbon to acknowledge completion of the new District Operations Center at the Southland Wastewater Treatment Facility. The Operations Center houses NCSD's field crew and is the nerve center for management of the District's water and sewer systems, including coordination of response to emergency situations.

The Operations Center is located at 509 Southland Street at the corner of South Frontage Road. It is a 3,600 square-foot office that provides the District's employees with improved working conditions.

Interested parties can tour the facility or get more information by contacting NCSD Superintendent Tina Grietens at 929-1133.

Salts Management to Protect the Groundwater

Nipomo groundwater by nature is hard; that is, it has high levels of calcium. Hard water can cause problems for residents with scaling in appliances and as a result some residents choose to install water softeners.

There are two principal varieties of water softeners – canister systems and self-regenerative systems.

The canister systems are replenished at a central processing facility and do not discharge salt into the District's wastewater systems. The self-regenerative systems increase the salt discharge into NCSD's sewers from served areas, and directly into the groundwater for homes on septic systems. In both cases, the added salt makes the groundwater harder and for wastewater treatment facilities, it can result in violations of the state's treatment requirements.

The NCSD Board is preparing a Salts Management Plan to address these issues. One component of the plan is to import softer water so that softeners are not needed. Another component is to prohibit the installation of new self-regenerative water softeners. Finally, NCSD is looking at ways to encourage residents with self-regenerative water softeners to either eliminate that softener or to convert to the canister system offered by various private vendors. The NCSD Board is expected to review these options this summer.

"NCSD is looking at ways to encourage residents with self-regenerative water softeners to either eliminate that softener or to convert to the canister system offered by various private vendors."

Southland Wastewater Treatment Facility Upgrade Project

NCSD provides sewer service to a majority of its water customers with one treatment facility on Southland Street serving the "Town" division customers who do not have septic systems. The wastewate treatment system is approaching its hydraulic (flow) capacity and it has periodic problems achieving the quality of treatment required by the State of California. To resolve these problems, the NCSD Board of Directors has researched the upgrade options and has selected a retrofit treatment technology that will increase the facility's hydraulic capacity and its treatment quality.

Before the retrofit can proceed, however, the Board also needs to determine how to dispose of the treated wastewater. Unfortunately, the existing percolation ponds to the south of the facility are not working as designed and NCSD needs to find a substitute disposal site. Although the treated wastewater does percolate into the soil at the existing site, the Santa Maria Valley Fault running down Orchard Road acts as a barrier to the migration of groundwater to the west. As a result, a mound of groundwater is building underneath the site.

On April 30, 2008, the Board retained the firm of Fugro West to investigate the feasibility of disposing the treated wastewater to the west of the Santa Maria

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Southland WWTF Upgrade Project

(Continued from page 3)

Valley Fault. Fugro's report on this option should be available in July 2008 at which time the Board can compare this option with the option of providing the treated wastewater to golf courses, parks and agricultural interests for surface irrigation.

For More Information

Water-Efficient Home and Landscape

Be Water Wise: www.bewaterwise.com
Santa Barbara Water Page: www.sbwater.org
Water House: www.h2ouse.org
Water Family Game: www.thewaterfamily.co.uk

Water-Efficient Irrigation Systems:

www.sbwater.org/WeatherTechnology.htm
Irrigation tutorials: www.irrigationtutorials.com
Drip Irrigation: www.dripirrigation.ca

Info on the NCSD Website

(http://www.ncsd.ca.gov/cm/Resources/Conservation.html)

- "Reading Your Water Meter"
- "Detecting Leaks"
- "Drip Irrigation"
- "Septic Tank Maintenance"
- "Even You Can Fix a Leaky Faucet"
- "Why Use California Native Plants?"
- "Selected Drought-Tolerant Plants for the Nipomo Area"
- "Frequently Asked Questions about Water Conservation"
- "Tired of Paying a High Price for Your Landscape?"
- "Timing is Everything! You and Your Irrigation Controller"
- "Pharmaceuticals in the Water Supply"
- "Recycling and ReUse Guide"
- "Household Hazardous Waste: Where Do I Put It?"

Printed copies of these documents (and more!) are available in the lobby at the NCSD Office.

NCSD Staff

- Bruce S. Buel, General Manager.
- Lisa S. Bognuda, Assistant General Manager
- Peter Sevcik, District Engineer
- Tina Grietens, Utilities Superintendent
- Celeste Whitlow, Water Conservation Coordinator

Up-Coming Meetings

6/11/2008, 9:00 AM, Board Meeting
- Spring Groundwater Storage Level Review
- Intent-to-Serve Letters suspension

6/25/2008, 9:00 AM
- Water Conservaton Program Review
- Select SM Intertie Project Design Team

Board Meetings, unless otherwise indicated, are held in the Board Room at the NCSD office at 148 S. Wilson St., Nipomo .

Board packets can be downloaded from the NCSD website (www.ncsd.ca.gov)

Water Conservation Update: Conserve Now

Throughout the State of California concerns are mounting over the anticipated water shortage this year. Water rationing and raising water rates to apply pocketbook incentive to water customers are measures being considered by some water suppliers.

The District awaits the information obtained from the Spring groundwater studies, which will be presented at the Board Meeting on 6/11/2008. Further measures to encourage water conservation by District customers may be considered at that time.

Conserving water now will help stretch our supplies until supplemental water arrives at the District: approximately 3 years.

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