32605 Temecula Parkway, Suite 100
Temecula, CA 92592
Toll free: 800.676.7516 (P) 951.296.1997
(F) 951.296.1998

nbsgov.com

# TECHNICAL MEMORANDUM

**TO:** **STEPHANIE HILL, DIRECTOR OF FINANCE & BUSINESS SERVICES**
**SAN LORENZO VALLEY WATER DISTRICT**

**FROM:** **GREG CLUMPNER, DIRECTOR, NBS**

**RE:** **ANALYSIS OF FIRE SURCHARGES**

**DATE:** **MAY 14, 2021**

## BACKGROUND AND PURPOSE

The San Lorenzo Valley Water District (District) was recently impacted by the CZU Lightning Complex Wildfires (Wildfire). The entire District was under mandatory evacuation orders during the Wildfire. The District's water system sustained approximately $20 million in damage, most significantly to raw water supply lines and storage tanks. The damage was extensive and also impacted water treatment systems, pumps, water quality monitoring equipment, and long-distance water transmission pipeline.

The District anticipates receiving partial financial assistance through the Federal Emergency Management Agency (FEMA) to help cover the cost of emergency response, recovery, and permanent repairs, as well as insurance proceeds from its risk management provider. The net out-of-pocket (non-reimbursable) cost to the District is estimated to be about $5 million.

This $5 million is an unplanned cost for which the District's Board of Directors (Board) is considering adopting a fire recovery surcharge that would be added to water customers' monthly bill for water service, with the intention of recovering the estimated $5 million cost over a period of approximately five years. Without a surcharge, Wildfire expenses will deplete the District's reserves and pull funds away from other critical infrastructure projects needed throughout the District, thereby creating long-term financial challenges related to providing reliable, safe, and high-quality water to all its customers.

The purpose of this Technical Memorandum is to explain the methodology used by NBS to calculate the amount of this surcharge attributable to each parcel that receives water service from the District, and to outline the process necessary to adopt the surcharge in compliance with Articles XIII C and XIII D of the California Constitution (Propositions 26 and 218). Because the proposed surcharge would increase customers' monthly water bills, it is subject to the noticed hearing process specified in Section 6 of Article XIII D (Proposition 218).[1]

[1] Legal aspects of compliance with and the noticed hearing process were reviewed by the District's legal counsel.

## METHODOLOGY

Following the Wildfire, the District conducted a thorough damage assessment and submitted a Preliminary Wildfire Damage Assessment Report to FEMA, with assistance from SANDIS engineering consultants. The District's Public Assistance (PA) funding request to FEMA includes a proposed project list and corresponding project descriptions. The District estimates that the total cost to complete its project list will be around $20 million, which could be more or less than the actual final cost of Wildfire recovery and repairs. FEMA's reimbursement rate for approved PA projects is at least 75 percent of the eligible cost.[2] Additional reimbursements above the 75 percent rate are possible, but whether this will occur is unknown at this time. Therefore, the District estimates that its total net out-of-pocket (non-reimbursable) cost will be approximately $5 million.[3]

The damage caused by the Wildfire directly impacts the District's ability to continue to meet the water needs of all its customers. Because the damage already occurred, the estimated cost is driven by critical infrastructure repairs that are unrelated to water consumption. The damage limits the District's water system capacity and therefore the costs should be recovered from customers based on their system capacity demand or potential demand as opposed to their consumption.

The proportional share of system demand is directly related to the size of the customer's water meter. Thus, parcels with meters that are larger than a "typical" or "equivalent" meter based on their maximum potential demand are assigned an appropriate multiple of a typical meter. Because nearly all 5/8- and 3/4-inch meters are used by similarly situated, single-family residential customers, they are both considered to be a "typical" meter, and interchangeable under District policy,[4] with a maximum potential flow rate of 30 gallons per minute (gpm). Whether or not an individual customer with a typical meter has an actual demand of 30-gpm, the system stands ready to meet that potential demand.

Additionally, although the peak demands of individual customers can be quite different from one customer to another and may change from year-to-year (for example, when a different customer occupies a dwelling) or during emergency conditions such as wildfire, the potential demand of the various meter sizes do not change. Meter sizes provide a consistent basis for determining each customer's maximum potential demand on the system and thus each parcel's corresponding proportional share of the District's repair costs.

### *Calculating Fire Surcharges*

The three primary elements used in the calculation of fire surcharges are: (1) the net costs to be recovered (i.e., $5 million), (2) the number of parcels served by the District (and their system demands, or potential demands based on meter sizes), and (3) the hydraulic capacity factors of various meters sizes, which are standards established by American Water Works Association (AWWA).[5]

The District has a mixture of customers, such as undeveloped parcels, un-verified commercial types, and meters that may be used for more than one purpose and, therefore, may in some cases be assigned a different meter size for billing purposes. Within each customer class, billing meter sizes and the associated hydraulic capacity factors are used to determine each parcel's proportional share of the District's costs for Wildfire response, recovery, and repair. Under this approach, a typical residential meter serves as the base fire surcharge and surcharges for larger meters are proportionally higher according to their hydraulic capacity factor compared to the hydraulic capacity factor of a typical meter.

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[2] *FEMA Public Assistance Applicant Handbook*, FEMA P-323, March 2010.

[3] The $5 million estimate does not include all the District's Wildfire expenses that could be recovered through the proposed surcharge. For example, debt service costs arising from the need to cover the District's estimated share of projects and to pay all project costs up front (before any reimbursement is received by the District) has not been factored into the estimate.

[4] With the exceptions of undeveloped parcels, un-verified commercial types, and meters that may be used for more than one purpose as noted below, both 3/4-inch meters and 5/8-inch meters are considered "equivalent" in terms of their system demand or potential demand, as established in the District's last water rate study.

[5] The *AWWA Manual M1, Principles of Water Rates, Fees, and Charges*, 7th Edition, 2017, is the generally accepted industry standard for setting water rates.

Table 1 summarizes the number of meters by class and meter size, along with their AWWA hydraulic capacity factors. This table also shows the total estimated District net costs of $5 million spread over five years, or $1 million per year. Table 2 summarizes the proposed fire surcharges that would apply to all water customers based on their meter size. Table 3 summarizes the AWWA hydraulic capacity factors and the number of equivalent meters for each meter size from the District's most recent water rate study.

### Table 1 – Calculation of Fixed Monthly Fire-Surcharges by Meter Size

| Number of Meters by Class and Size[1] | District Records (BILLING METER SIZES) as of February 2021 | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | 5/8 inch | 3/4 inch | 1 inch | 1.5 inch | 2 inch | 3 inch | 4 inch | |
| Single Family Residential | 6,655 | 251 | 124 | - | - | - | - | 7,030 |
| Multi-Family Residential | 2 | - | 479 | 14 | 11 | 4 | - | 510 |
| Commercial | 147 | 2 | 37 | 10 | 8 | - | - | 204 |
| Private Mutuals | - | - | 1 | 3 | 2 | - | - | 6 |
| Institutional/Governmental | 23 | - | 9 | 8 | 11 | 2 | 2 | 55 |
| Landscape | 8 | - | 3 | 2 | 1 | - | - | 14 |
| Vacant | 44 | 4 | - | - | - | - | - | 48 |
| **Total Meters/Accounts** | **6,879** | **257** | **653** | **37** | **33** | **6** | **2** | **7,867** |
| *Hydraulic Capacity Factor*[2] | *1.00* | *1.00* | *1.67* | *3.33* | *5.33* | *10.67* | *16.67* | |
| **Total Equivalent Meters** | **6,879** | **257** | **1,088** | **123** | **176** | **64** | **33** | **8,621** |
| **Monthly Fixed Service Charges** | | | | | | | | |
| Capacity Costs ($/Acct/month)[3] | $9.67 | $9.67 | $16.11 | $32.22 | $51.55 | $103.11 | $161.11 | |
| **Total Monthly Meter Charge** | **$9.67** | **$9.67** | **$16.11** | **$32.22** | **$51.55** | **$103.11** | **$161.11** | |
| **Annual Fixed Costs Allocated to Monthly Meter Charges** | | | | | | | | **$1,000,000** |

1. Meter by Class and Size are based on February 2021 customer billing data.
2. Source: *AWWA Manual M1, "Principles of Water Rates, Fees, and Charges", Table B-2.*
3. Capacity costs are allocated by meter size and the hydraulic capacity of the meter.

### Table 2 – Summary of Fixed Monthly Fire-Surcharges by Meter Size

| Water Meter Sizes | Monthly Fire Surcharge *($/mo./acct.)* |
|---|---|
| 5/8 inch | $9.67 |
| 3/4 inch[1] | $9.67 |
| 1 inch | $16.11 |
| 1.5 inch | $32.22 |
| 2 inch | $51.55 |
| 3 inch | $103.11 |
| 4 inch | $161.11 |

1. Both 5/8- and 3/4-inch meters are considered one EDU.

### Table 3 – Summary of Hydraulic Capacity Factors and Equivalent Meters

| Meter Size | Standard Meters | | Fire Meters | |
|---|---|---|---|---|
| | Meter Capacity (gpm) (1) | Equivalency to 5/8- 3/4-inch Meter | Meter Capacity (gpm) (2) | Equivalency to 5/8- 3/4-inch Meter |
| | *Displacement Meters* | | *Displacement Meters* | |
| 5/8 inch | 20 | 1.00 | 20 | 1.00 |
| 3/4 inch | 30 | 1.00 | 30 | 1.00 |
| 1 inch | 50 | 1.67 | 50 | 1.67 |
| 1.5 inch | 100 | 3.33 | 100 | 3.33 |
| 2 inch | 160 | 5.33 | 160 | 5.33 |
| | *Compound Class I Meters* | | *Fire Service Type I & II Meters* | |
| 3 inch | 320 | 10.67 | 350 | 11.67 |
| 4 inch | 500 | 16.67 | 700 | 23.33 |
| 6 inch | 1,000 | 33.33 | 1,600 | 53.33 |
| 8 inch | 1,600 | 53.33 | 2,800 | 93.33 |
| | *Turbine Class II Meters* | | | |
| 10 inch | 4,200 | 140.00 | 4,400 | 146.67 |
| 12 inch | 5,300 | 176.67 | *N/A* | -- |

1. Per *AWWA M-1, Table B-1.*
2. Per *AWWA M-6, Table 5-3.*

## RECOMMENDATIONS AND NEXT STEPS

### *Consultant Recommendations*

NBS recommends the District take the following actions:

- **Schedule a Board Meeting to Review and Act on Proposed Fire Surcharges:** The District has completed an internal staff review as well as a legal review of this Technical Memorandum and its results and the District Board should schedule a meeting to review this Technical Memorandum and the proposed fire surcharges. As a result of this review, the Board should either direct staff to move forward with their adoption of these surcharges or make modifications as appropriate.
- **Accept and Approve this Technical Memorandum:** NBS recommends that the District formally accept and approve this Technical Memorandum prior to adopting the proposed fire surcharges shown in Table 2. This Technical Memorandum provides the necessary documentation to support this action.
- **Mailing Proposition 218 Notices** – Proceed with mailing Proposition 218 Notices to customers.
- **Schedule a Public Hearing to Discuss the Proposed Fire Surcharges:** No sooner than 45 days after mailing out the Proposition 218 Notices, the District should hold a public hearing to review the results of the protest balloting process and, assuming there is not a successful protest, consider adopting the fire surcharges.

### *Next Steps*

- **Periodically Review Fire Surcharges:** The District should monitor the revenues generated by the fire surcharges and receive periodic reports; once the intended $5 million is collected, ensure that collection of the surcharges terminates.

## NBS' PRINCIPAL ASSUMPTIONS AND CONSIDERATIONS

In preparing this technical memorandum and the opinions and recommendations included herein, NBS has relied on several principal assumptions and considerations regarding financial matters, including estimates of the fire-related costs to be recovered through the surcharges, and the estimated number of water customers and meters. This information from the District was provided by sources we believe to be reliable, although NBS has not independently verified this data. We have also relied on the legal review of the District's legal counsel regarding these surcharges and related Proposition 218 matters. NBS' analysis and this technical memorandum do not in any manner represent legal opinions; NBS are not attorneys.

While we believe NBS' use of such information and assumptions is reasonable for the purpose of this technical memorandum and its recommendations, some assumptions will invariably not materialize as stated herein and may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by us or provided to us by others.