



Agenda Date: 9/7/2016  
Agenda Placement: 8C

## Napa Sanitation District Board Agenda Letter

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**TO:** Honorable Board of Directors  
**FROM:** Timothy Healy - General Manager  
NS-Technical Services/Engineer  
**REPORT BY:** Andrew Damron, Technical Services Director - 707-258-6000  
**SUBJECT:** Homewood/Westwood - Inflow/Infiltration Project Funding

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### **RECOMMENDATION**

Receive presentation from staff and provide direction on the use of public funds for reduction of inflow/infiltration from private property within the Homewood/Westwood neighborhood.

### **EXECUTIVE SUMMARY**

The Homewood and Westwood neighborhoods consisting of approximately 600 single-family homes are located south of Browns Valley Road, east and north of Laurel Street, and west of the Napa Factory Stores Shopping Center. The homes in these neighborhoods were constructed in the 1940s and 1950s with sewer mains located in backyards. In the late 1970s and early 1980s, the District completed projects that constructed new sewer mains in the streets and rerouted laterals from the homes to the new mains. This area of Napa is subject to poor stormwater drainage and high groundwater conditions most of the year and especially during the rainy season. The homes in these neighborhoods are constructed on raised-floor foundations with crawl spaces. Runoff and groundwater can accumulate within these crawl spaces and many homes have sump pump systems that discharge water from crawl spaces. District research has discovered that some of these sump pumps are connected to the sanitary sewer system leading to high levels of wet-weather flow in the sanitary sewer system. The District would benefit from disconnection of these sump pumps and reconnection to the curb or storm drain system.

The District's collection system flow monitoring study based on wet-weather data from Winter 2009/2010 indicated a wet-weather peaking factor of 6.6 (ratio of wet-weather flow during a 10-year 24-hour storm event to peak dry-weather flow) from these neighborhoods. Additionally the peak wet-weather flow was 4.5 million gallons per day which is a high volume of flow in comparison to other sub-basins of similar size. Sewer flow from the Homewood and Westwood neighborhoods drain to West Napa Pump Station that is over capacity in wet-weather events.

The District collected detailed CCTV data of the sewer mains in Homewood and Westwood during late winter in 2012 and 2014. Review of this CCTV data indicated that the sewer mains are in excellent condition with very low infiltration. The lower laterals will be inspected and repaired (as needed) by District crews and it is expected that only a few lower laterals are in poor condition. Due to the excellent condition of the public sewer system in these neighborhoods, it is likely that most of the wet-weather flow from these neighborhoods is coming from private laterals and crawl space sump pumps.

District Code Section 4.04.110.G.1. prohibits the discharge of "rainwater, storm water, groundwater,... street or yard drainage, subsurface drainage, water from rainwater leaders or downspouts, yard fountains, ponds or lawn sprays, or any other uncontaminated water into the sanitary sewer system." The discharge of crawl space drainage to the sanitary sewer system is prohibited by District Code.

Participation in a program or project to disconnect sump pumps from the sewer system would increase with the use of public funds to construct the improvements needed to connect the crawl space drainage to the curb. Staff research has indicated that the strategy of using public funds at other wastewater agencies has led to high levels of participation and successful reductions in inflow/infiltration. Additionally, a District-managed project would ensure that the work would result in a permanent solution that could not be easily reconnected to the sanitary sewer system at a later date. Staff's recommendation is to fund the design and construction of PVC pipes that connect onsite storm drainage to the curb and gutter at the public street. It is anticipated that the cost to construct these improvements would be about \$2,500 per property.

The alternative to a District funded project, is an enforcement effort that would require property owners to fund design, obtain permits, and construct projects to disconnect illicit drainage from the sanitary sewer system at their sole expense. It is possible that enforcement efforts including outreach, inspections, and legal fees could exceed the cost of District funded design and construction.

The City of Napa Public Works Department plans to conduct a curb and sidewalk project in Summer 2017 followed by a paving project in Summer 2018 in these neighborhoods. Successful completion of a sump pump disconnection project prior to the City's curb and sidewalk project would avoid impacts to the City's new improvements.

Project outreach would include written correspondence (in English and Spanish) delivered by mail and in person to property owners to explain the project details, benefits, schedule, and funding. Correspondence will include a form for property owners to sign permitting the District to perform inspection and construction work within private property. If project funds do not allow the District to complete work on all parcels, work will be prioritized on a first-come, first-served basis. Property owner (if any) who do not respond or chose to participate in the District-funded project may be required to disconnect in the future at their own cost.

On-site inspection of participating parcels will consist of CCTV review of private laterals, presence of a sump pump, sump pump discharge location, and other site conditions and constraints. After completion of inspection, repairs will be designed and construction work will be completed prior to the City of Napa's curb and sidewalk project. Design and construction of improvements would be completed at no cost to the residential property owners.

The proposed project would be limited to the Homewood/Westwood neighborhood (shown on Slide 2 of the attached presentation; outlined in red) due to the unique site conditions include groundwater levels, soil type, private sewer lateral configurations (reversal project), and structure foundation type. Additionally the neighborhood's location is upstream of the District's West Napa Pump Station. Reduction in peak wet-weather flow from basins upstream of West Napa Pump Station will offset future capacity capital projects.

Preliminary calculations indicate that the reduction in peak wet-weather flow per dollar spent disconnecting sump pumps in Homewood and Westwood would be greater than or at least equal to the reduction in flow per dollar spent rehabilitating public mains and laterals.

If the Board approves project funding, District staff will start communications and outreach with the community, conduct inspections, and design a project for future Board consideration before bid advertisement.

### **FISCAL IMPACT**

Is there a Fiscal Impact?	Yes
Is it currently budgeted?	No
What is the revenue source?	If approved, \$200,000 would be dedicated to a new capital project from savings from other projects in the FY 16/17 approved budget.
Is it Mandatory or Discretionary?	Discretionary
Discretionary Justification:	It is at the Board's discretion to approve project funding.
Is the general fund affected?	Yes
Future fiscal impact:	None.
Consequences if not approved:	The District would proceed with a program to disconnect sump pump systems in which all costs would be paid by property owners. It is expected that participation in a private-funded program would be lower, thus limiting the wet-weather inflow/infiltration reduction and would result in a permanent solution for sump pump drainage. It is possible that the cost of enforcement could be greater than the cost of design and construction of improvements.

Additional Information:

### **ENVIRONMENTAL IMPACT**

ENVIRONMENTAL DETERMINATION: The proposed action is not a project as defined by 14 California Code of Regulations 15378 (State CEQA Guidelines) and therefore CEQA is not applicable.

### **BACKGROUND AND DISCUSSION**

On December 21, 2011, the District Board adopted Resolution 11-025 which established a policy allowing developers of projects to contribute funds to a District inflow/infiltration project when the planned development intensity exceeds levels projected in the District's Collection System Master Plan (2007) based on the City of Napa General Plan and the Napa County General Plan in effect at that time. Since 2011, the District has collected approximately \$340,000 in mitigation fees from development projects. A project, like this project in Homewood/Westwood, would reduce peak wet-weather flow upstream of development projects that have contributed funds per Resolution 11-025.

**SUPPORTING DOCUMENTS**

A . Presentation Slides

Napa Sanitation District: Approve

Reviewed By: Timothy Healy