May 22, 2019

The Honorable Miguel Santiago
California State Assembly
State Capitol, Room 6027
Sacramento, CA 95814

Re: **AB 1784 (Santiago) Elections: open-source paper ballot voting systems – SUPPORT**

Dear Assemblymember Santiago, *MIGUEL*

On behalf of the City and County of San Francisco, I write in support of your AB 1784, which would authorize the Secretary of State to award up to $16,000,000 in matching funds to counties for the development of open-source paper ballot voting systems.

Existing law prohibits the use of a voting system unless it has been certified or conditionally approved by the Secretary of State or approved by the Secretary of State as part of a pilot program, prior to the election at which it is to be used.

The cost of replacing California's obsolete voting machines with new proprietary voting systems is astronomical. Last year's state budget included $134.3 million in General Funds to help counties replace aging voting systems, but in 2017, AB 668 (Gonzalez) contemplated the need for at least $600 million in total spending for new voting systems overall. Proprietary voting systems lack transparency and have proven vulnerable to security threats. At the 2017 DEF CON security conference, every piece of equipment was breached in some manner. Their report concluded it was a "national security threat".[1]

In contrast to the secret proprietary software created and controlled by private vendors, open-source paper ballot voting systems would be openly licensed and therefore transparent and open to public inspection.

The Department of Defense Open-Source Software FAQ states why it uses open-source for security:

> "Making source code available to the public significantly aids defenders and not just attackers. Continuous and broad peer-review, enabled by publicly available source code, improves software reliability and security through the identification and elimination of defects that might otherwise go unrecognized by the core development team. Conversely, where source code is hidden from the public, attackers can attack the software anyway."[2]

An open-source paper ballot system would be freely available to any county to use and modify. Experts estimate it would cut the overall cost of new voting systems in half.[3] This would save the state and counties hundreds of millions of dollars, make elections more secure, and increase confidence in their reliability and transparency.

Any county that receives matching funds must license the voting system's software under an OSI approved open-source license to ensure other counties can use and modify it for free. All votes must be recorded and tabulated using voter verified permanent paper ballots.

After a county has allocated their own funds, they immediately receive the matching funds, up to a maximum of $8 million. The county must return to the state any funds that have not been expended by the end of 2026. All funds to the county must be returned if no open-source system for tabulating vote-by-mail ballots has been certified by the end of 2026.

Counties receive matching funds on a 1-1 basis, but a county may receive matching funds on a 2-1 or 3-1 basis if it meets additional requirements, including that any portion of the software developed using county or state funds is licensed exclusively under the GNU General Public License 3.0 (or later) to keep it permanently open-source to the public.

This modest investment will save California and its counties tens of millions of dollars after systems have been certified because every county will be able to use and build on them free. Open-source paper ballot voting systems will increase transparency of vote counting, earn voters' trust, and help California lead the nation to more secure elections.

For these reasons, the City and County of San Francisco is pleased to support AB 1784 and would like to thank you for your authorship of this measure.

Sincerely,

Paul J. Yoder
Legislative Advocate

CC: Assemblymember David Chiu
        Assemblymember Lorena Gonzalez
        Assemblymember Phil Ting
        Senator Scott Wiener
        Edward McCaffrey, Office of Mayor London Breed

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[1] "DEFCON 25 Voting Machine Hacking Village: Report on Cyber Vulnerabilities in U.S. Election Equipment, Databases, and Infrastructure", 9/2017

[2] DoD Open-Source Software (OSS) FAQ, http://dodcio.defense.gov/Open-Source-Software-FAQ

[3]"Publicly-owned voting systems could reduce costs by 50%", California Association of Voting Officials, 1/2015.