



**ALEX PADILLA** | SECRETARY OF STATE | STATE OF CALIFORNIA  
OFFICE OF VOTING SYSTEMS TECHNOLOGY ASSESSMENT  
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January 24, 2020

Dean C. Logan  
Registrar-Recorder/County Clerk  
Los Angeles County  
12400 Imperial Highway  
Norwalk, CA 90650

Dear Mr. Logan:

Election modernization has been a top priority for me since even before my first election as Secretary of State in 2014.

As Secretary of State, I'm proud to have sponsored legislation that brought automatic voter registration to California, a new model for administering elections known as the Voter's Choice Act, and advocated for and securing federal and state funding to support voting system upgrades and replacements.

As a State Senator, I authored SB 360, which took effect January 1, 2014 and put California out front in pursuing expanded options for modernizing voting systems while preserving and codifying some of the highest standards for security, testing, and certification in the country.

One of the landmark elements of SB 360 was the creation of a statutory pathway for county election officials to develop, own and operate public voting systems subject, of course, to the testing and certification by the Secretary of State. This measure is what has empowered Los Angeles County to bring its Voting System for All People (VSAP) project to reality and to modernize the way Los Angeles County voters cast their ballots.

The 2020 presidential election will welcome many changes in the election process for the state of California and for Los Angeles County in particular. These changes include:

- **VOTER'S CHOICE ACT:** Los Angeles County and 14 other California counties — together representing over half of the state's registered voters — will administer the 2020 election according to the Voter's Choice Act. Under the Voter's Choice Act, every registered voter will automatically receive their ballot by mail (with the exception of Los Angeles County where only permanent vote-by-mail voters and voters who have requested a vote-by-mail ballot for this election will receive their ballot in the mail). Voters then have several options for how to return their ballot: by mail, to any ballot drop box in the county, or at any vote center in the county



convenient to them. Voters who prefer to vote in person have the option of voting at any vote center in their county that is convenient to them for the 10 days leading up to Election Day plus Election Day itself.

- **ALTERNATE BALLOT ORDER:** SB 25 (Portantino) took effect January 1, 2019 and requires Los Angeles County to conduct elections using a specified alternate ballot order that differs from the traditional order of President and Vice President followed by federal, state and local measures. The new ballot order requires local offices, initiatives and ballot measures to appear first on the ballot. Los Angeles' ballot order is therefore reorganized to be in the following descending order: (1) city and local offices and ballot measures; (2) district offices and ballot measures; (3) county offices and ballot measures; (4) statewide offices and ballot measures; (5) state judicial offices; and lastly, (6) federal offices.

## **SECRETARY OF STATE CERTIFICATION PROCESS**

As part of the testing and review of any voting system by the Secretary of State, all voting systems undergo rigorous testing and review which includes functional, usability, accessibility, privacy, source code, security and volume testing. California's voting system certification process is among the most rigorous in the country and California Voting System Standards (CVSS) exceed the federal Elections Assistance Commission's Voluntary Voting System Guidelines (VVSG). The testing and certification process is transparent and thorough in its review, which includes posting consultant test reports detailing the system tests. Any findings or issues identified as a result of the testing process are set forth in these reports and posted online. Findings or issues can be mitigated through modifications, processes, and procedures. A public hearing is held to receive public comment about voting systems under review. Written public comment is also received and reviewed.

A determination on whether to approve a voting system for use in California is based on consultant reports, staff reports and recommendations, mitigations, processes and procedures, and public comment.

## **CALIFORNIA STATE VOTING SYSTEM CERTIFICATION REQUIREMENTS**

State law and regulations establish comprehensive requirements for certification of voting systems. (See generally, California Elections Code sections 19000 et al, and California Code of Regulations Title 2, Division 7, Chapter 6.1).

California law requires paper ballots and a voter verified paper audit trail. California law prohibits voting systems from being connected to the internet at any time. Additionally, California voting systems are not permitted to have any "network" hardware that might otherwise permit remote access.



In addition, the Secretary of State requires that:

- All voting systems be deployed with dual-installation architecture (“air gapping”). This process physically separates two installations and all associated devices, establishing an air gap.
- Voting system vendors, security consultants and county officials to follow strict chain of custody requirements for voting system software and hardware.
- The “trusted build” for any certified system to be distributed by Secretary of State staff to the recipient county officials.
- Performance of logic and accuracy testing on voting systems prior to each election.
- No part of a voting system can electronically receive or transmit election data through an exterior communication network of any type.
- A post-election audit comprised of either a manual tally of one percent of the precincts or a risk limiting audit.

For background, in September 2017, Los Angeles County submitted the VSAP Tally 1.0 solution for scanning and tabulating vote-by-mail ballots to the Secretary of State for review and testing. Testing was conducted May 2018 – July 2018. A public hearing on VSAP Tally 1.0 was held on July 30, 2018, and VSAP Tally 1.0 was certified on August 18, 2018. Los Angeles County used the VSAP Tally 1.0 in the November 2018 election.

In November 2018, Los Angeles County brought the VSAP Tally 2.0 solution for review and testing. VSAP Tally 2.0 is an end-to-end voting system, which builds on the VSAP Tally 1.0. Over the course of the last year, the Secretary of State has conducted the required review and testing of the system, culminating in the consultants’ reports, staff reports, and a public hearing on January 10, 2020.

Los Angeles County seeks to transition from using 1960’s era technology to a modern, secure, publicly-owned system. The county, along with hundreds of experts, and thousands of public volunteers have created the first in the nation publicly-owned voting system.

The testing and review by the Secretary of State’s consultants and staff identified a number of issues, as is typical with other voting systems that have been tested and certified for use in the state of California. Encouragingly, the issues identified are not insurmountable with the proper remediation that has already occurred or that will be required as a condition to the approved — and secure — use of VSAP in the upcoming election. I further recognize that this is the first generation of the VSAP system and I’m confident that Los Angeles County will work diligently to further enhance and refine the system as Los Angeles County voters use the system and gain experience and familiarity with it.

#### **CONDITIONS FOR USE OF VSAP**

To that end, I am requiring, among other things, the following conditions:



**BALLOT JAMS/MISFEEDS:**

- Improve the ballot marking device paper handling and remediate the current jamming and misfeed rate of the ballot marking device of 0.0096% to an acceptable rate of no more than 0.002% as prescribed in the California Voting System Standards.
- Written notice to voters, in all required languages, in advance of the voting period and at all vote centers in a manner that complies with California law on how to properly feed ballots.
- Training to all poll workers on proper insertion of ballots into the ballot marking device for ballot marking and casting and how to properly clear and log ballot jams and paper misfeeds.

**BALLOT BOX SECURITY:**

- In addition to the serialized ties used to seal the ballot box on the ballot marking devices, Los Angeles County shall use the Secretary of State approved tamper evident adhesive seals on the seam where the ballot box meets the printer cover on the ballot marking devices.
- Verification of the seals is subject to the same chain of custody documentation process and procedure requirements for all other tamper evident materials.

**USB AND ROOT ACCESS FOR WORKSTATIONS:**

- Los Angeles County shall immediately use physical USB port covers covered by a Secretary of State prescribed tamper evident seal.
- Within five months from the date of this conditional approval, Los Angeles County shall make programming changes within the system to restrict USB access.

**“MORE” BUTTON:**

- Within five months from this conditional approval, Los Angeles County shall provide a plan to the Secretary of State for reviewing the functionality and usability of the system as it pertains to the current use of the "More" button on the ballot marking device including engagement with stakeholders, disability rights advocates and recognized election material design and usability experts.

Based on all of the above, I hereby approve VSAP 2.0 for use in the March 3, 2020 election subject to all of the conditions set forth in the attached conditional certification document.

Sincerely,



ALEX PADILLA  
Secretary of State



# State of California



## SECRETARY OF STATE

### CONDITIONAL APPROVAL OF LOS ANGELES COUNTY'S Voting Solutions for All People (VSAP) 2.0 VOTING SYSTEM

*Whereas*, pursuant to Elections Code section 19202, no voting system, in whole or in part, may be used unless it has received the approval of the Secretary of State; and

*Whereas*, Los Angeles County submitted an application for the VSAP 2.0 voting system, which is comprised of Tally 2.1.2.27, Ballot Marking Device (BMD) A0.2, FormatOS Version 0.19.0, BMD BASI Version 0.19.0, BMD BES1 Version 0.19.0, BMD Manager (BMG) Version 0.19.0, VSAP Ballot Layout (VBL) 1.0-8ddf61d, Enterprise Signing Authority (ESA) and the IBML ImageTrac 6400 High Speed Scanner, submitted on or about November 6, 2018; and

*Whereas*, a series of tests of the voting system were conducted by the Secretary of State's office and the state approved testing consultant, against the California Voting System Standards, and California law; and

*Whereas*, the voting system executed all test cases, scenarios, and scripts developed by the Secretary of State's office; and

*Whereas*, the request for approval of the voting system as described above was considered at a public hearing held January 10, 2020, in Sacramento, California; and

*Whereas*, written public comment was taken through January 20, 2020; and

*Whereas*, upon implementation of the conditions set forth below, the voting system satisfies the accuracy, accessibility, usability, and security standards set forth in the California Voting System Standards and California law.



**Therefore, I, Alex Padilla, Secretary of State for the State of California, find and determine, pursuant to Division 19 of the Elections Code, as follows:**

For the reasons set forth above, Los Angeles County's VSAP 2.0 voting system is hereby conditionally approved.

Use of Los Angeles County's VSAP 2.0 voting system must comply with all California Election Code and California Code of Regulation requirements and is also subject to the following terms and conditions:

1. Los Angeles County shall make available in each vote center a sufficient number of blank write-in paper ballots for any voter that requests to cast a hand-marked paper ballot. The paper write-in ballots shall, at a minimum, contain all elements consistent with the Federal Voting Assistance Program's federal write-in absentee ballot and comply with state law. Any write-in ballot cast at a vote center shall be secured in a ballot secrecy envelope identifying the ballot style or precinct, placed in a secure ballot box and shall be processed as a regular ballot during the canvass period.
2. Los Angeles County is prohibited from installing any software applications or utilities on any component of the voting system that have not been identified and approved by the Secretary of State.
3. Within five business days of this conditional approval, Los Angeles County shall provide to the Secretary of State the final version of its Use Procedures, entitled "Voting Solutions for All People Use Procedures." Within five business days of receipt, the Secretary of State shall review and either approve or return the Use Procedures to Los Angeles County for further revision and resubmittal within two business days. Compliance with the Use Procedures by Los Angeles County is a condition of the approval of this voting system. Compliance with all requirements set forth in the final Use Procedures is mandatory, whether or not a particular requirement is identified in this approval document.
4. The system shall be utilized in a configuration of parallel central election management systems separated by an "air-gap" where a permanent central system established to be running unaltered, certified software and firmware is used solely to define elections and program voting equipment. The system shall be formatted and reinstalled from the certified software after every election.
5. No substitution or modification of the voting system shall be made with respect to any component of the voting system, including the Use Procedures, until the Secretary of State has been notified in writing and has determined that the proposed change or modification does not impair the accuracy or efficiency of the voting system sufficient to require a re-examination and approval.
6. Los Angeles County shall deposit an exact copy of the trusted build files to a State of California approved escrow facility within 10 business days of this certification. These build files along with



the source code and all associated software and firmware shall be escrowed in a California approved source code escrow facility, pursuant to California Elections Code section 19212. Pursuant to California Code of Regulations section 20641, within five business days, Los Angeles County shall certify to the Secretary of State that it has placed the software in escrow.

7. Immediately after any repair or modification of any voting system component that requires opening the housing, the integrity of the firmware and/or software for that component must be verified using an automated mechanism, or all software must be reinstalled by the jurisdiction using the approved firmware and/or software version supplied directly by the Secretary of State before the equipment can be put back into service.
8. The voting system contains no external connections of any type, this includes but is not limited to wireless and modem transmissions, to any device utilized for communication by or with any component of the voting system. No component of the voting system or any device with network connectivity to the voting system, may be connected to the Internet, directly or indirectly, at any time.
9. Upon request, members of the public must be permitted to observe and inspect, without physical contact, the integrity of all externally visible security seals used to secure voting equipment in a time and manner that does not interfere with the conduct of the election or the privacy of any voter.
10. Los Angeles County shall preserve the audit logs of each ballot marking device used in an election, for 22 months after the election.
11. Election workers in a vote center shall not participate in any post-election manual count auditing of results from the vote center in which they were an election worker, except for permanent Los Angeles County employees.
12. Los Angeles County shall develop appropriate security procedures for use when representatives of qualified political parties and bona fide associations of citizens and media associations, pursuant to their rights under Elections Code section 15004, check and review the preparation and operation of vote tabulating devices and attend any or all phases of the election. The security procedures must permit representatives to observe at a legible distance the contents of the display on the vote tabulating computer or device. This requirement may be satisfied by positioning an additional display monitor or monitors in a manner that allows the representatives to read the contents.
13. With respect to any part or component of the above described voting system for which the chain of custody has been compromised, the security or information has been breached or attempted to be breached, or experiences a fatal error from which it cannot recover gracefully (i.e., the error is not handled through the device's internal error handling procedures with or without user input, such that the device must be rebooted or the device reboots itself to restore operation), the following actions shall be taken:



- a. The Los Angeles County Registrar of Voters shall be notified immediately of any suspected or documented occurrence;
  - b. The Secretary of State shall be notified immediately upon validation of such an occurrence by the Registrar of Voters;
  - c. If the occurrence is validated, the equipment shall immediately be removed from service and replaced if possible;
  - d. If the device is a ballot marking device:
    - i. Any voted ballots contained within the device, at the time of occurrence, shall be removed and secured.
      1. A record of the number of voted ballots removed and secured shall be created and maintained as part of the official canvass; and
      2. A report of a 100% manual count of those ballots removed and secured shall be maintained as part of the official canvass.
  - e. If the device is a scanner or tabulator, the results from ballots scanned or tabulated on the device shall be cleared from any accumulated results and the ballots rescanned on a different device. In addition, the ballot counts from the device shall be saved as part of the election record and retained for the full election retention period.
  - f. An image of all device software and firmware shall be stored on write-once media and retained securely for the full election retention period; and
  - g. All device software and firmware shall be reinstalled from a read-only version of the approved firmware and software supplied directly by the Secretary of State before the equipment is placed back into service.
14. The Secretary of State reserves the right, with reasonable notice to Los Angeles County, to modify the Use Procedures used with the voting system and to impose additional requirements with respect to the use of the system if the Secretary of State determines that such modifications or additions are necessary to enhance the accuracy, reliability or security of any of the voting system. Such modifications or additions shall be deemed to be incorporated herein as if set forth in full.
15. The Secretary of State reserves the right to monitor activities before, during and after the election at any vote center, warehouse, satellite location, central tabulation location, or the registrar of voters' office, and may, at his or her discretion, test the voting equipment.
16. Voting systems certified for use in California shall comply with all applicable state and federal requirements, including, but not limited to, those voting system requirements as set forth in the California Elections Code and the Help America Vote Act of 2002 and those requirements incorporated by reference in the Help America Vote Act of 2002. Further, voting systems shall also comply with all state and federal voting system guidelines, standards, regulations and requirements that derive authority from or are promulgated pursuant to and in furtherance of the



California Elections Code, the Voting Rights Act, and the Help America Vote Act of 2002 or other applicable state or federal law when appropriate.

17. Voting system manufacturers or their agents shall assume full responsibility for any representation they make that a voting system complies with all applicable state and federal requirements, including, but not limited to, those voting system requirements as set forth in the California Elections Code, the Voting Rights Act, and the Help America Vote Act of 2002. In the event such representation is determined to be false or misleading, voting system manufacturers or their agents shall be responsible for the cost of any upgrade, retrofit or replacement of any voting system or its component parts found to be necessary for certification or otherwise not in compliance.
18. The VSAP 2.0 voting system is for the exclusive use of Los Angeles County at this time.
19. Prior to the disposal or sale of this voting system or portion thereof, all equipment shall be cleared with a minimum of a two-pass wipe so that no software, firmware or data remains on the equipment. At the time of disposal or sale, the equipment shall be returned solely to a non-functioning piece of hardware and the following documented for each:
  - a. Whether the equipment is void of all software, firmware and data;
  - b. The hardware model name;
  - c. The hardware model number;
  - d. The hardware serial number; and
  - e. The persons and entity, if any, that voided the equipment of the software, firmware, and data.
20. Voting systems certified for use that utilize a barcode or QR code for tabulation shall be subject to the following:
  - a. Jurisdictions shall develop procedures and conduct training for poll workers, prior to every election, regarding voter verification of barcodes or QR codes used for tabulation.
  - b. In conducting pre-election testing pursuant to Elections Code section 15000, the jurisdiction shall validate the logic and accuracy of the barcodes or QR codes used for tabulation.
  - c. In conducting a one percent manual tally pursuant to Elections Code section 15360 or a risk limiting audit pursuant to Elections Code section 15367, the jurisdiction shall perform a further review of any ballot examined pursuant to those sections that contains a barcode or QR code used for tabulation. The further review shall verify that the information contained in the QR code or barcode matches the voter verified, human readable text.
21. Los Angeles County shall submit in writing prior to each election, an attestation and verified HASH, identical to the Secretary of State's trusted build SHA-2 512-bit HASH.



22. Any VSAP 2.0 ballot marking device deployed by Los Angeles County shall carry a maintenance schedule under the printer cover.
23. In addition to the serialized ties used to seal the ballot box on the ballot marking devices, Los Angeles County shall use the Secretary of State approved tamper evident adhesive seals on the seam where the ballot box meets the printer cover on the ballot marking devices. Verification of the seals is subject to the same chain of custody documentation process and procedure requirements for all other tamper evident materials.
24. Los Angeles County shall use the Secretary of State approved serialized tamper evident, adhesive seals on the ballot transfer container closing seam. The serialized, adhesive seals shall be used in conjunction with the seal transfer log. Verification of the seals is subject to the same chain of custody documentation process and procedure requirements as all other tamper evident materials.
25. In addition to Los Angeles County's established password policy and security protocols for the workstations and servers, Los Angeles County shall:
  - a. Limit access to passwords used in the VSAP 2.0 environment to employees based on documented job necessity;
  - b. Use the Secretary of State approved serialized tamper evident, adhesive seals over the cover seam of the workstations and servers;
  - c. Add locks to the lock tabs on workstations and servers; and
  - d. Use physical USB port covers covered by a Secretary of State approved serialized tamper evident, adhesive seal.
26. Within five months from the date of this conditional approval, Los Angeles County shall make and submit programming changes to the Secretary of State for testing and review in order to be in place for the November 3, 2020 General Election that:
  - a. Improve the ballot marking device paper handling and remediate the current jamming and misfeed rate of the ballot marking device of 0.0096% to an acceptable rate of no more than 0.002% as prescribed in the California Voting System Standards;
  - b. Remediate the items determined not to impact the integrity, accuracy, or efficiency of the system, that are classified as low severity in the Secretary of State's Consultant Source Code Report;
  - c. Clearly align the voting system audit log descriptions with the on-screen event descriptions; and
  - d. Restrict USB access on the workstations and servers.
27. The "System Audio Sounds" functionality shall not be enabled.



28. For the March 3, 2020 Presidential Primary Election, Los Angeles County shall submit a report to the Secretary of State within 30 days from the close of canvass which identifies any occurrence of a white screen event and shall include a copy of all logs, including chain of custody documentation for the subject device(s).
29. Los Angeles County shall submit an attestation to the Secretary of State prior to each election confirming that the VBL ballot files were successfully validated against ECBMS (election preparation) data prior to ballot printing and ballot marking device loading.
30. By June 30, 2021, Los Angeles County shall provide documentation to the Secretary of State that demonstrates that Los Angeles County is either:
  - a. Using only validated FIPS 140-2 cryptographic modules in VSAP 2.0;
  - b. All cryptographic modules that are used in VSAP 2.0 are FIPS 140-2 validated; or
  - c. The VSAP 2.0 cryptographic modules meet or exceed standards consistent with FIPS 140-2.
31. Within six months from the date of this conditional approval, Los Angeles County shall submit to the Secretary of State a detailed plan to encrypt the VSAP 2.0 components including but not limited to all server and workstation hardware. If Los Angeles County cannot successfully implement full disk encryption without documented impact to the system's accuracy, efficiency, or performance, the Secretary of State reserves the right to require Los Angeles County to undergo an external independent security audit at Los Angeles County's expense, but procured by the Secretary of State.
32. Los Angeles County shall proof all audio and language files during logic and accuracy testing and submit an attestation to the Secretary of State upon completion of logic accuracy testing and prior to any election that all required languages are valid, complete and present in the ballot marking devices.
33. Within five months from the date of this conditional approval, Los Angeles County shall provide a plan to the Secretary of State for reviewing the functionality and usability of the system as it pertains to the current use of the "More" button on the ballot marking device including engagement with stakeholders, disability rights advocates and recognized election material design and usability experts.
34. For the March 3, 2020 Presidential Primary Election and any election held prior to modifications or updates required by this conditional approval, Los Angeles County shall provide:
  - a. Written notice to voters, in all applicable California Elections Code Section 14201 languages, in advance of the voting period and at all vote centers in a manner that complies with California law on:



- i. How to properly feed ballots into the ballot marking devices;
    - ii. Use of the “More” button to review all actions before making selections when using the ballot marking devices; and
    - iii. Verifying selections on the ballot marking device, after printing the ballot and before casting their ballot.
  - b. Training to all poll workers on:
    - i. Proper insertion of ballots into the ballot marking device for ballot marking and casting;
    - ii. How to properly clear and log ballot jams and paper misfeeds;
    - iii. Orienting voters on the use of the “More” button to review all options before making selections when using the ballot marking devices; and
    - iv. Informing voters about verifying selections on the ballot marking device, after printing the ballot and before casting their ballot.
  - c. A sufficient quantity of back-up ballot marking devices and mobile support technicians to support vote center activity.

35. For the March 3, 2020 Presidential Primary, Los Angeles County shall provide a report to the Secretary of State within 30 days from the close of canvass, which identifies:

- a. A copy of the content of training and the number of poll workers trained;
- b. A copy of any notice provided to voters as described in condition 34 above;
- c. A summary of the total number of ballots cast using ballot marking devices;
- d. A summary of the total of all errors, ballot jams and misfeeds;
- e. An inventory of devices that experienced errors, ballot jams or misfeeds including the serial number and whether the device was taken out of service; and
- f. A copy of all logs, including chain of custody logs documenting any and all errors, ballot jams and misfeeds.



IN WITNESS WHEREOF, I hereunto set my hand and affix the Great Seal of the State of California, this 24th day of January 2020.

A handwritten signature in blue ink that reads "Alex Padilla". The signature is fluid and cursive, with a large, stylized initial "A".

ALEX PADILLA  
Secretary of State