

Secretary of State Joins Registrar of Voters and Orange County Cities to Launch “Roadshow to Vote Centers 2020”

Monthly meetings designed to provide an overview of changes to voting in Orange County for the 2020 Presidential Election Cycle.

SANTA ANA, CA – May 15, 2019 – The Registrar of Voters will be hosting a press conference on Friday, May 17, 2019 at 11:45am at the Irvine Civic Center to highlight the extensive planning and outreach efforts to transition to vote centers in Orange County in 2020. Also participating will be Secretary of State Alex Padilla, Molly McLaughlin, City Clerk, City of Irvine, Theresa Bass, City Clerk, City of Anaheim, and Adria Jimenez, City Clerk, City of Buena Park.

Orange County will be transitioning to the Voter’s Choice Act for the Presidential Primary on March 3, 2020. In addition to conducting public meetings required by law, the “Roadshow to Vote Centers 2020” monthly update meetings are designed to raise awareness about changes to the voting and elections process by partnering with government officials, political parties, nonprofit organizations, and community advocates.

Quote by Irvine City Clerk Molly McLaughlin

“The City of Irvine is proud to continue the collaborative relationship with the Registrar of Voters and the Secretary of State in ensuring voter rights, voter convenience, and certainly voter inclusivity,” said Molly McLaughlin, Irvine City Clerk. “I can personally attest to the convenience and professionalism of a Vote Center where voter concerns and problems can often be easily and promptly addressed – without the long lines.”

Quote by Anaheim City Clerk Theresa Bass

“This is a significant move for democracy and the City of Anaheim is excited to partner with the Orange County Registrar of Voters and the Secretary of State in their efforts to provide our voters with greater flexibility and convenience ensuring every voter has an opportunity to cast their vote,” said Theresa Bass, Anaheim City Clerk. “The new election model allows voters to choose when, where and how they will cast their vote on Election Day providing for an open and accessible experience for all voters.”

Quote by Buena Park City Clerk Adria Jimenez

“The City of Buena Park is excited to participate in the Registrar of Voter’s, “Roadshow to Vote Centers 2020.” Voting information and accessibility has always been a priority for Buena Park, and partnering with the Secretary of State and the Registrar of Voters to kick-off this program provides an opportunity to be at the forefront of our growing electoral process,” said Adria Jimenez, Buena Park City Clerk.

Following the press conference, Registrar of Voters Neal Kelley and Secretary of State Alex Padilla will provide an overview of the Voter’s Choice Act and vote centers, current local planning efforts, and an overview of what to expect leading up to the March 3, 2020 Presidential Primary Election. The meeting will be attended by Orange County city clerks and other government administrators who are involved with the election process, but the meeting is also open to the public. Additional meetings are being scheduled for language communities, disabled communities, political parties, and advocacy organizations.

More information and a calendar of upcoming meetings and events can be found at ocvote.com/votecenter.

When and where?

Friday, May 17, 2019
11:45 a.m. to 12:00 p.m.

Irvine Civic Center
1 Civic Center Plaza
Irvine, CA 92606

#

About the Registrar of Voters:

The Registrar of Voters is responsible for conducting elections in the County of Orange, the fifth largest voting jurisdiction in the United States with 1.6 million registered voters. We are a County agency, which receives funding from the County's General Fund and periodic reimbursement from the federal government, the State of California and local jurisdictions.

Media Contacts:

Neal Kelley
Registrar of Voters
714-567-5139
neal.kelley@rov.ocgov.com

For Background Information Only:

714-567-5197

Source:

Orange County Registrar of Voters

NOTE TO EDITORS: For additional information, visit the [About Us](#) page or call the Registrar of Voters media help line at 714-567-5197.

Attachments

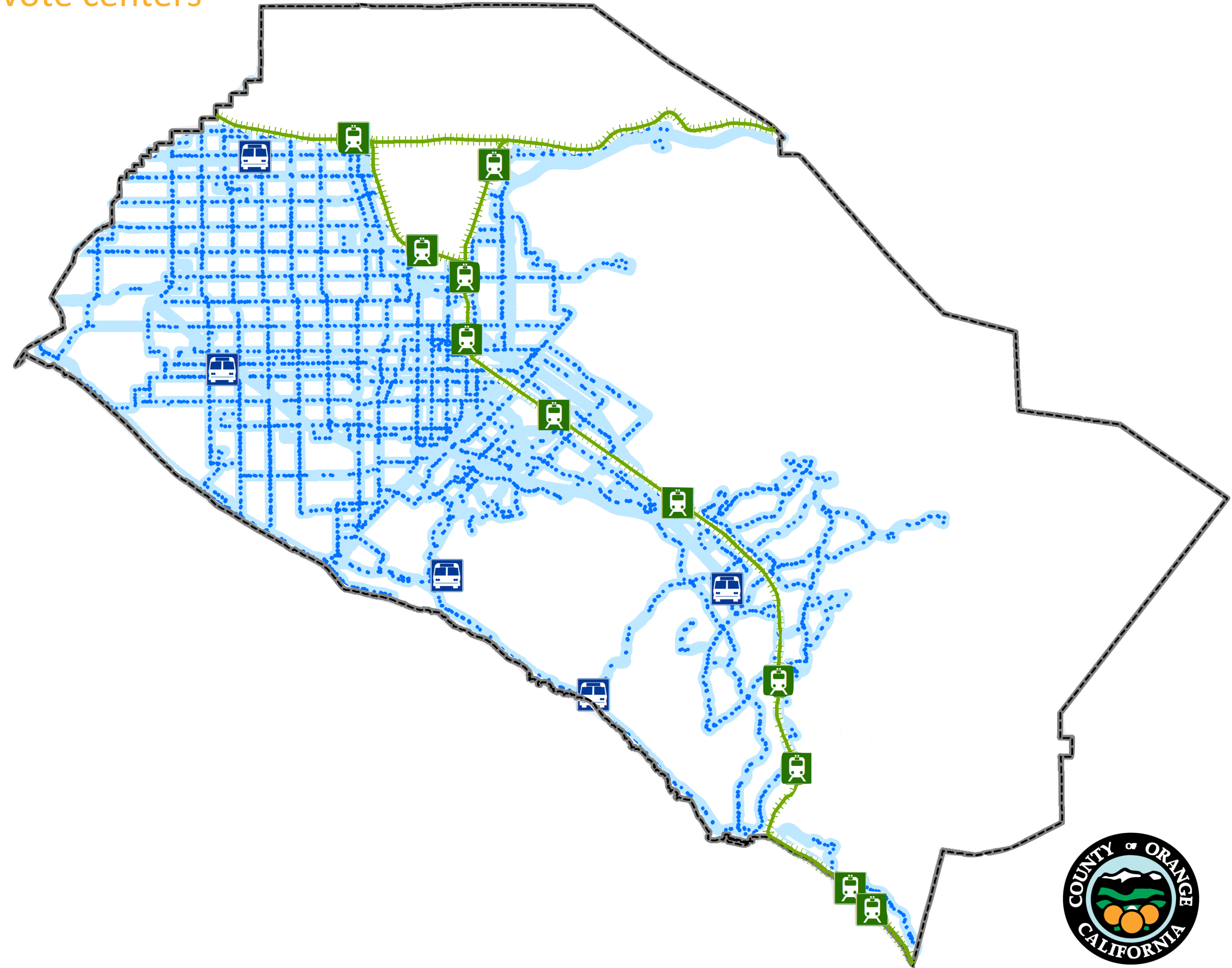
- [Vote Center Considerations and Sample Map](#)
- [Election Administration Plan Timeline](#)
- [2019 Vote Center Timeline](#)
- [Vote Center Briefing Document](#)
- [2018 Election Security Playbook](#)

Vote Center Considerations & Sample Map

Deep dive on data to analyze proper placement of vote centers

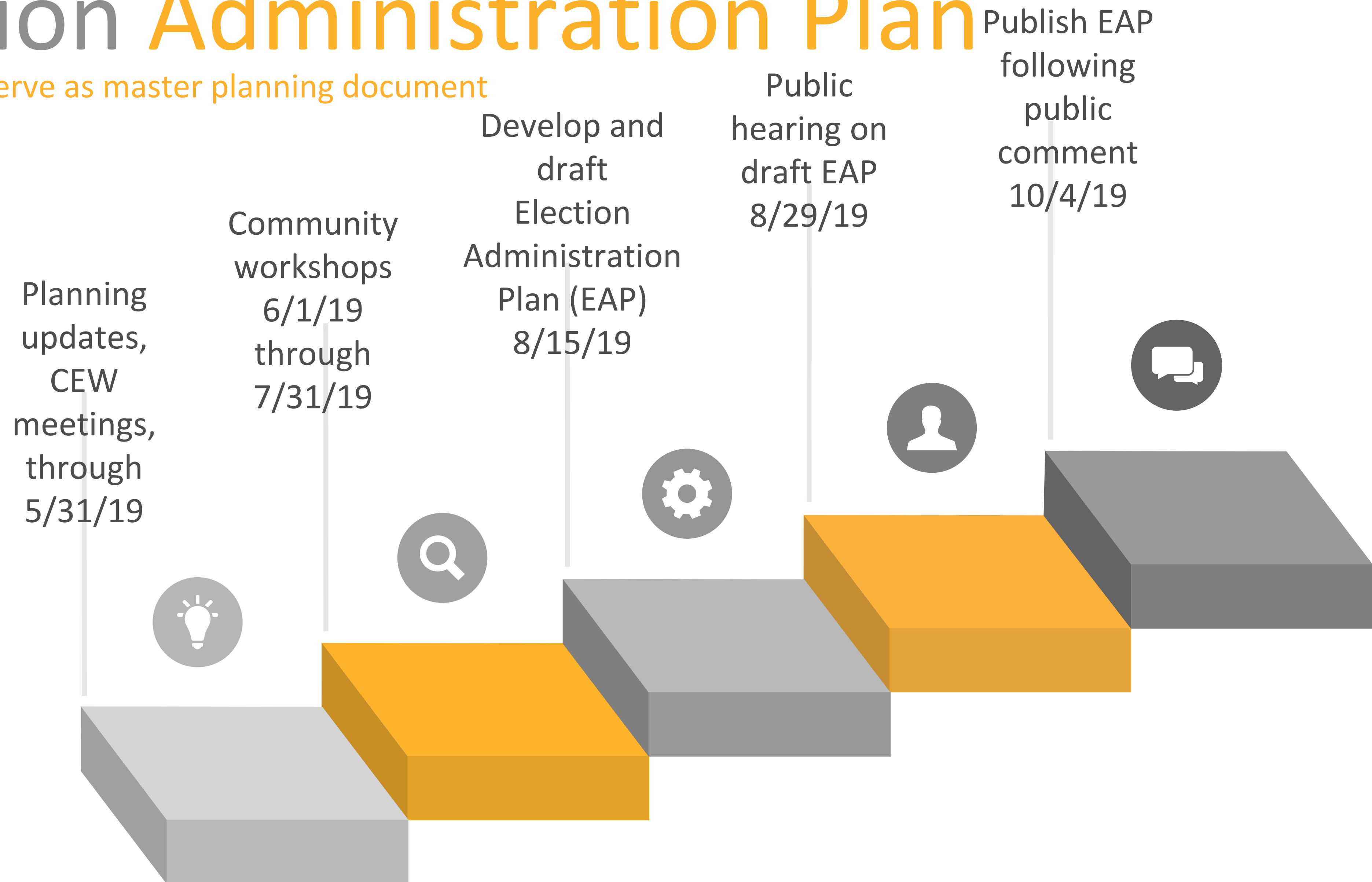
Considerations for vote center site selection will include proximity to:

- Public transportation routes
- Communities with historically low vote-by-mail usage
- Population centers
- Language minority communities
- Voters with disabilities
- Communities with low rates of household vehicle ownership
- Low-income communities
- Eligible voters that are not registered
- Geographically isolated populations
- Free and accessible parking
- Travel time by private or public transportation



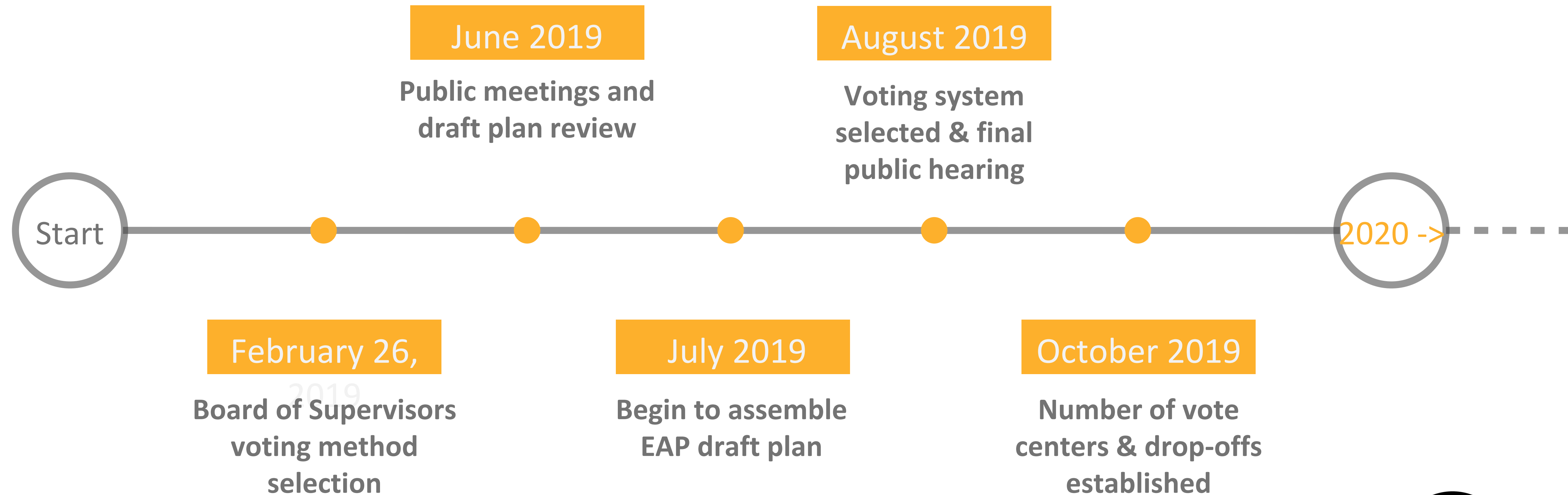
Election Administration Plan

EAP plan will serve as master planning document



2019 Vote Center Timeline

Through fourth quarter of 2019





Orange County Registrar of Voters 2019 Voter's Choice Act Versus Traditional Election Models



ORANGE COUNTY
REGISTRAR OF VOTERS

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EXECUTIVE SUMMARY

With the passage of the “California Voter’s Choice Act” (Senate Bill 450), counties are now permitted to conduct elections using Vote Centers instead of polling places. Since this change, the Registrar of Voters has been at the forefront of discovery in how Vote Centers work, the implications of implementing Vote Centers, and the advantages and disadvantages of moving to a Vote Center model.

With technology constantly advancing, the traditional polling place model has fallen behind the needs and expectations of Orange County voters. Multiple polling places in a single neighborhood cause confusion with local voters and leave them uncertain about where to vote, and eventually lead to more provisional ballots. In addition, the narrow time frame of Election Day is becoming increasingly difficult for voters to work around.

Due to the shortcomings in polling place elections, voters are gradually changing the way they vote to accommodate their own schedule and lifestyle:

- Of the 1.2 million ballots cast in the 2016 Presidential General Election, nearly 700,000 were vote-by-mail ballots.
- Currently 61% of all registered voters have signed up for permanent vote-by-mail status.
- The number of voters casting ballots at the polling place has dropped 20 percentage points since 2004.

At this rate, in just a few years, we will see 90% of voters in permanent vote-by-mail status while only 20% of ballots are cast at the polling place. More than 1,000 polling places would stand nearly empty on Election Day, expending County resources and taxpayer dollars to provide a service that 80% of constituents are not using.

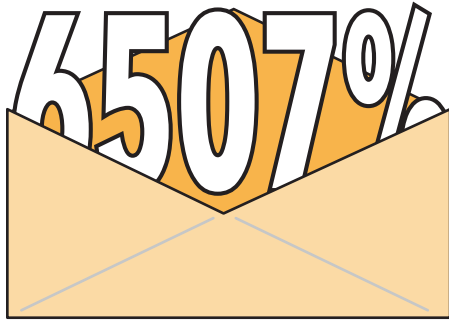
The Registrar of Voters is ready to respond to this trend and has already taken preliminary steps for preparation. Voter survey responses strongly support the Vote Center model. A Vote Center pilot program was implemented in 2016 which provided experience and insight into how to effectively execute this project. Finally, a budget analysis of capital expenditures and operational costs illustrates projected savings of \$10–20 million initially, then hundreds of thousands of dollars for each subsequent Statewide election.

The benefits of a Vote Center model are exemplified by the significant changes in voter behavior, matching the needs of today’s voters with modernization that will compliment their desire for choices in how they vote. With an outcome that includes an elevated voter experience, our recommendation is to move forward with implementation of the Voter’s Choice Act.



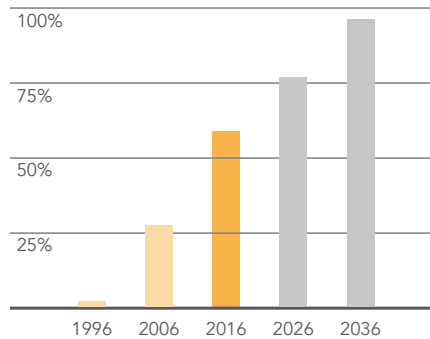
Neal Kelley
Registrar of Voters

ORANGE COUNTY'S VOTE CENTERS AT A GLANCE



Percentage increase in permanent vote-by-mail voters over past 20 years

Percentage of Permanent Vote-by-Mail Voters – Past, Present and Future



In twenty years, 93% of all Orange County voters will have signed up to automatically receive a vote-by-mail ballot for every election.

QUICK FACTS



Vote Centers are much more secure
(see page 11)



Electronic poll books provide real-time voter data
(see page 11, 40)



Voters can check registration status at any Vote Center
(see page 10)



Vote Centers are service centers, not just for voting
(see page 9, 10)

In-person Polling Place Voters Past 20 Years



In-person ballots cast at polling places dropped 37% percentage points since 1996.



1 in 5 vote-by-mail ballots were dropped off at the polls rather than mailed.

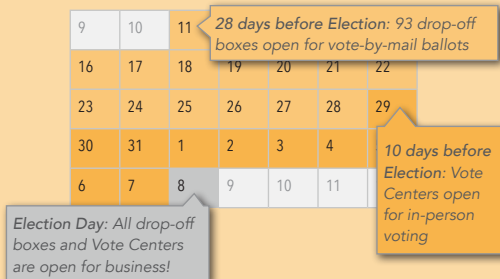
This has nearly tripled in the last twelve years, from 7% to 20%

CALIFORNIA VOTER'S CHOICE ACT BY THE NUMBERS

125 Vote Centers



29 Days of Voting



1.5 Million Mail Ballots



93 Vote-by-Mail Drop Boxes



ORANGE COUNTY VOTERS: TRENDS & RESPONSES

The passage of the California Voter’s Choice Act (Senate Bill 450, 2016) provides an opportunity for California counties to implement the most expansive change to the voting process in recent history. In the Voter’s Choice model, multiple polling places would be replaced by neighborhood *Vote Centers*—carefully-selected facilities that are highly accessible and open for four to ten days prior to the election. In addition, all voters would receive a vote-by-mail ballot automatically, and secure ballot drop-off boxes would be located throughout the County. It is a fundamental change to the way we view and experience voting in Orange County.

But why? The Voter’s Choice model, or “Vote Center” model, is a response to the gradual shift in voter behavior and perception from the traditional “one day, one polling place” concept to a system that works around voters’ schedules, expectations and lifestyles.

Voter Trends

Voter behavior in recent years has demonstrated an increase in the use of vote-by-mail voting, dropping off vote-by-mail ballots at the polling place, and voters going to the wrong polling place. These trends illustrate the larger movement taking place across the State—increasingly, Orange County voters expect to be able to vote on their own terms, at the time and place of their choosing.

Vote-by-Mail

The number of voters choosing to vote-by-mail has steadily increased. Currently, 943,409 voters in Orange County are registered as permanent vote-by-mail voters, meaning they have chosen to automatically receive a vote-by-mail ballot every election. This represents 61% of the total registered voters. In 2002, California law changed to permit registered voters to become “permanent vote-by-mail voters” without a medical reason or other justification, meaning the voter would be sent a vote-by-mail ballot automatically every election. Since that time, there has been a steady increase in the number of voters requesting permanent vote-by-mail status (Figure 1).

Percentage of Permanent Vote-by-Mail Voters Past 20 Years

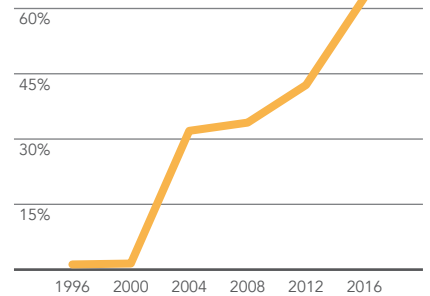


Figure 1. In 2002, California law changed to allow any voter to apply for permanent vote-by-mail status, regardless of status or need.

Percentage of In-Person Ballots Cast at the Polling Place – Past 20 Years

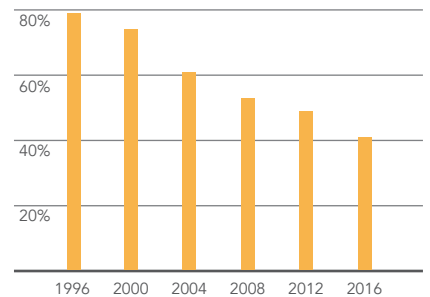


Figure 2. 2012 was the first year that more vote-by-mail ballots were cast than in-person polling place ballots. That trend has strengthened ever since.

Vote-by-Mail Ballot Drop Off

Voters can return their vote-by-mail ballot by mail, or they can drop off their ballot at any polling place on Election Day. The numbers of voters that have chosen to drop off their vote-by-mail ballots at a polling place, as opposed to returning them through the postal system, has also steadily increased since 2004.

Voting at the Wrong Polling Place

The number of voters who vote at the wrong polling place has consistently risen since 2004 (Figure 3). This may occur because the voter has recently moved out of their assigned precinct but not updated their registration, or just because the voter is in the area on Election Day. A voter at the wrong polling place either must vote provisionally or go back to their assigned polling place. Provisional ballots must be manually verified after the election before they can be counted, which holds up the certification process.

Vote Center Survey

During the 2016 Presidential General election, a Vote Center model was piloted to gain insight into the implementation process. Six sites were selected and operated according to the requirements of the California Voter’s Choice Act. For detailed information about the 2016 General Vote Center pilot program, please see “Case Study: Vote Centers in the 2016 General Election” on page 14.

The Registrar of Voters’ office also conducted voter surveys to obtain direct feedback from voters who cast a ballot in a Vote Center as well as all voters who dropped off their vote-by-mail ballot before Election Day. Between both Vote Center voters and vote-by-mail drop-off voters, 42,000 total surveys were sent out and 6,433 completed surveys were returned. This represents a high response rate at 15%. Responses provide insight into the voter population that opted to vote or drop off their ballot at a Vote Center instead of the polling place.

The majority of respondents are experienced voters (72% voting 10 years or more) and typically vote at the polling place (89%). More than half of respondents (53%) stated that their motivation to vote at a Vote Center was to “avoid Election Day rush.”

The vast majority of respondents (90%) stated that they are “Likely” or “Very Likely” to use a Vote Center over a polling place again in the future (Figure 4). When asked, “In comparison to other methods of

Number of Provisional Ballots Cast Due to Wrong Polling Place – Past 12 Years

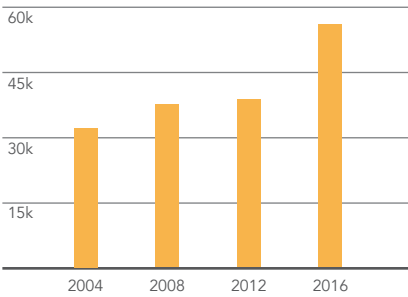


Figure 3. The number of provisional ballots increases the time it takes to certify an election. In the 2016 General, over 130,000 provisional ballots were cast.

“How likely are you to use a Vote Center over a polling place in the future?”

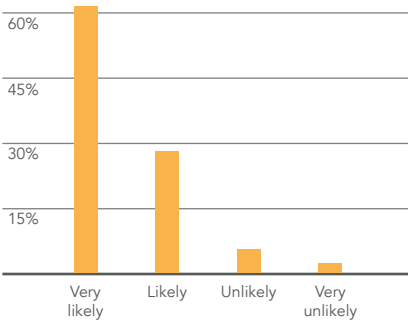


Figure 4. 6,433 voters responded to a survey about their experience with Vote Centers. The responses were overwhelmingly positive.

voting you may have used in the past, how satisfied were you with the overall experience at the Vote Center?" Nearly all respondents (96%) stated "Satisfied" or "Very Satisfied." These responses correspond with the voter trends discussed at the beginning of this section.

The surveys indicated some concerns, which are also addressed in this document. For more information on specific plans to address voter concerns, please see "Implications of Vote Centers" on page 28. For detailed survey results, please refer to "Appendix A: Vote Center Survey Results" on page 32.

Community Election Working Group Feedback

The Registrar of Voters' Community Election Working Group is an advisory committee with representation from major political parties, city clerks, the League of Women Voters, veterans, seniors, disability advocacy groups, language assistance advocacy groups, poll workers, youth and the public at-large. This group meets on a quarterly basis and advises the Registrar of Voters on issues of concern to the community. With the passage of the California Voter's Choice Act, the Registrar of Voters has reached out to the individual members of the Community Election Working Group to gather input about the concerns of the community. The overall response has been very positive toward the convenience and security of the Vote Center model, and the City Clerk offices that participated in the 2016 General Vote Center pilot program were pleased with how well the program worked.

The universal concern from these groups is getting the word out (Figure 5). Each community specifically stated that without sufficient outreach, members of their population could be marginalized. The Registrar of Voters is very sensitive to this concern and will ensure that the marketing program is robust and far-reaching. For more information on specific plans to address these concerns, please see "Implications of Vote Centers" on page 28. Detailed responses from the Community Election Working Group can be found in "Appendix B: Community Election Working Group Responses" on page 35.

"Wonderful option. Would always vote this way if offered."

– 2016 Vote Center survey respondent, 16+ years voting experience, typically votes an electronic ballot at the polling place

Community Election Working Group Feedback Main Themes

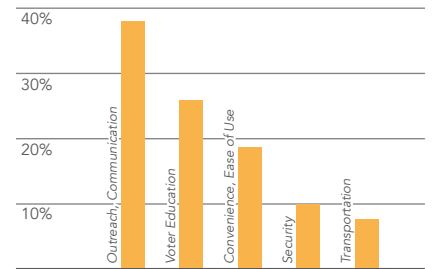


Figure 5. Community organizations expressed excitement and anticipation when asked about Vote Centers. All are concerned about getting the word out to voters.

VOTER'S CHOICE ACT: VOTE CENTER ELECTIONS



Senate Bill 450, entitled the California Voter's Choice Act, was signed into law on September 29, 2016. The bill authorizes specified counties (including County of Orange) on or after January 2, 2018, to conduct any election as an all-mailed ballot election as long as sufficient ballot drop-off locations and Vote Centers are provided according to the requirements in the bill. The passage of this bill marks a fundamental change in how elections can be conducted in California.

In the early eighteen hundreds, the United State adopted the Australian ballot, which espoused the concept of conducting elections on ballots controlled by the government instead of by the political parties. At the same time, community-based polling stations were established in population centers, which were defined by proximity to agricultural areas, commerce hubs and transportation routes. This "polling place" election system has remained in place since that era, although population centers have swelled hundreds of times over, the economies in these metropolitan areas have completely transitioned from agriculture to service sector, and technology has advanced at an unprecedented rate. The California Voter's Choice Act is a response to the polling place system under the current conditions found in the State of California.

In this section, Vote Centers and all-mail ballot elections are outlined briefly to give an overview of the California Voter's Choice Act. For

more detailed information, including a side-by-side comparison of polling places and Vote Centers, an in-depth look at operations and budget implications of Vote Centers, please refer to "Are Vote Centers Worth It: Cost-Benefit Analysis" on page 19.

Vote Centers

What does a Vote Center look like?

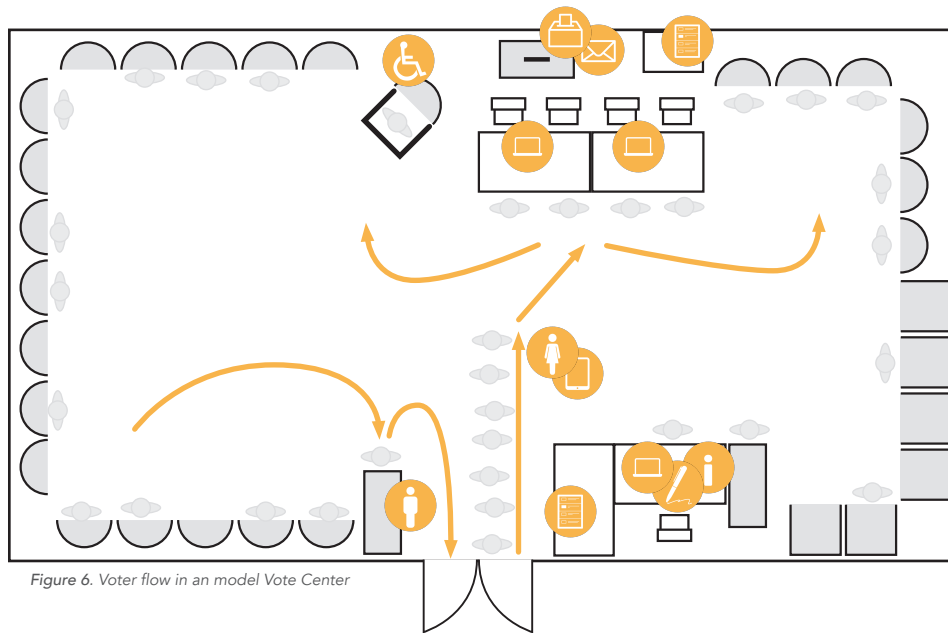


Figure 6. Voter flow in an model Vote Center

Vote Center Legend

- Ballot printing / replacement ballots
- Electronic poll book check in
- Greeter / ingress control
- Electronic voter list / line management
- Information table / troubleshooting / check in
- Check voter registration status
- Accessible voting
- Ballot box
- Vote-by-mail drop-off
- Greeter / egress control
- Traffic flow
- Electronic ballot voting booth
- Paper ballot voting booth

The voting experience at a Vote Center is somewhat similar to voting at a polling place. A voter enters the Vote Center and is greeted by an election worker who directs the voter to a check-in line. The check-in stations are equipped with electronic poll books which allow the election worker to verify the identity of the voter quickly and easily. The voter then signs on the poll book touchscreen and receives the appropriate ballot. Poll books also allow for multiple check-in stations with the ability to add more stations as needed, and can be removed from the table and utilized for enhanced line management.

Procedures for voting an electronic or paper ballot remain essentially the same as in the polling place model. Vote-by-mail voters who arrive to drop-off their ballot can bypass the line and proceed directly to the table, as they can in a polling place. They can also drop off their ballot at a drive-thru station at select Vote Centers, which would only be available in the Vote Center model.

What can I do at a Vote Center?

A Vote Center is more than a traditional polling station—it is structured as an official “satellite service center” for registered voters.

- **In-person polling place voting:** the primary function of a Vote Center is to provide a place for voters to cast their ballots. Any registered voter can vote at any Vote Center, regardless of where he or she is registered in Orange County.
- **Open multiple days and weekends:** Vote Centers are open four to ten days prior to Election Day, including weekends. They are also open during longer hours—7:00 a.m. to 8:00 p.m.—on the four days before Election Day to provide more opportunity for voters to cast their ballot or drop off their vote-by-mail ballot.
- **Vote-by-mail ballot drop-off options:** Vote-by-mail voters can drop off their ballot at any Vote Center, and select Vote Centers will have drive-thru drop-off stations. In addition, secure vote-by-mail ballot drop-off boxes will be located throughout the County to provide yet another option for vote-by-mail voters.
- **Vote-by-mail ballot status and replacement ballots:** Because Vote Center poll books are connected to the Countywide database of registered voters and their voting status, any vote-by-mail voter could stop by and check the status of their vote-by-mail ballot. If the voter needs a replacement ballot for any reason, the election worker can verify that the original ballot has not been cast, void it and print a replacement ballot for the voter, who then can fill it out and cast it there on the same visit.
- **Registration status:** Voters can check their registration status at any Vote Center. Same-day registration will be offered at the Registrar of Voter’s headquarters (per California law) so that if there is a problem with a voter’s registration, the voter has a way to correct it and cast a ballot.
- **General voter assistance:** Voters will be able to visit any Vote Center in the ten-day period to inquire about any election-related questions or concerns.

Where will my Vote Center be located?

Based on population, registered voter density, proximity to public transportation and several other requirements in the California Voter's Choice Act, Vote Centers will be located in visible, accessible facilities with adequate parking, path of travel and voting space. With over 125 Vote Centers and 93 vote-by-mail drop-off locations, each registered voter in Orange County will have an option to cast his or her ballot near home, work or school (Figure 7).

Possible locations for Vote Centers and/or drop-off location are:

- City halls
- Libraries
- Community Centers
- School District Offices
- Post Offices
- Courts
- Airport
- Retail locations
- Transportation hubs (Metro, Train, Bus, Park & Ride)

Security and Ballot Integrity

Vote Centers are inherently more secure than polling places. Fewer sites where an incident may occur, trained staff instead of volunteer poll workers and electronic check-in procedures instead of printed rosters are a few of the many ways that Vote Centers provide increased security to the voting process.

Fewer sites means better incident response

In the 2016 General election, there were nearly 1100 polling places in Orange County. With the California Voter's Choice Act, there would be an estimated 130 Vote Centers which will be in larger facilities, have trained staff and will be more accessible to main transportation routes. With Vote Centers, incidents of electioneering, voter intimidation and/or attempted voter fraud will decrease due to the decreased "exposure" of the voting process (i.e. less sites at which an incident can occur) as well as the increased ability of the Registrar of Voters to respond quickly to any incident (i.e. trained staff on site at all times, less sites to cover with the Rapid Response Team).

Trained election worker staff means more consistent procedures

The 2016 General Election was carried out by over 6000 volunteer

Sample Distribution of Vote Centers in Orange County

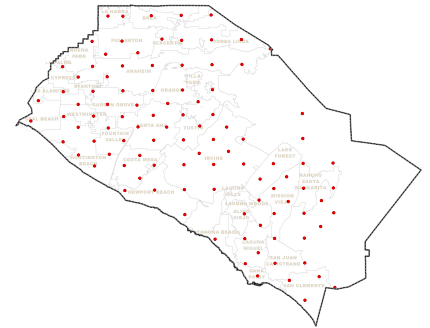


Figure 7. Based on population, voter density, transportation routes and many other factors, approximately 125 Vote Centers will be located throughout Orange County.

poll workers. Although many of these poll workers are committed and well-trained, a large proportion are brand new volunteers or have not volunteered for a long time. In addition, poll workers are only trained for three hours, and sometimes training takes place weeks before Election Day. Given the diverse background of our volunteers no matter their level of experience as a poll worker, it is no surprise that there are stark inconsistencies in performance from polling place to polling place on Election Day. With Vote Centers, election workers would be on-boarded as regular full-time extra help staff, with a week-long schedule of orientation, training and hands-on practice.

Electronic poll books mean enhanced security

The California Voter's Choice Act requires that Vote Centers are equipped with electronic poll books which are synced with the full voter list. These electronic poll books eliminate the ability to attempt voting multiple times. In place of voter lists that were printed weeks in advance, the electronic poll books are all synced together and updated with the most current registration information, including whether each voter had voted. For instance, if a malicious voter cast a ballot in one Vote Center, then drove down the street to attempt casting a second ballot, the electronic poll book would show that the voter has already voted. Electronic poll books also provide the election worker more information to verify the voter's identity.

In addition, a bill has been introduced to the California legislature to increase the penalty for a person who attempted or committed vote-by-mail fraud from \$1,000 to \$10,000 (AB 777, Harper). The Registrar of Voters anticipates more legislation dealing with aspects of the California Voter's Choice Act to increase security and integrity in the voting process.



Figure 8. Electronic poll books provide an efficient, convenient and secure method of verifying voter identity.

All mail-ballot elections



Figure 9. Vote-by-mail drop-off box prototype for Orange County.

To date, 61% of registered voters in Orange County have signed up as permanent vote-by-mail voters, meaning they receive their ballot automatically in the mail for every election. According to the California Voter's Choice Act, every registered voter would receive a mail ballot without any action or request on the part of the voter. In addition, vote-by-mail ballot drop-off boxes would be permanently placed at convenient locations around the County. Under the current polling place model, the Registrar of Voters already successfully processes hundreds of thousands of vote-by-mail ballots—accommodating all mail-ballot elections would just be a matter of scaling up the current operation. From the voters' perspective, an all mail-ballot election with Vote Centers would be much more convenient and beneficial since Vote Centers would be equipped to check vote-by-mail status and print replacement ballots during the ten days prior to Election Day, as opposed to only one site (headquarters) with these capabilities.

CASE STUDY: VOTE CENTERS IN THE 2016 GENERAL ELECTION

Location of Vote Centers in 2016 General Vote Center Pilot Program

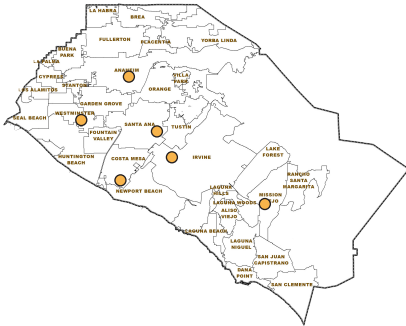


Figure 10. In the pilot program, Vote Centers were located in Anaheim, Irvine, Mission Viejo, Costa Mesa, Westminister and Santa Ana.

In response to the passage of the California Voter’s Choice Act in late September 2016, the Orange County Registrar of Voters’ office executed a pilot program that reflected the bill and provided a framework to implement the Vote Center model in the future.

The November 2016 pilot program model successfully fulfilled major components of the legislation; schedule, accessibility, availability, geographic coverage, and voting support and security. The program ran concurrently with the traditional polling place model, allowing for an observable comparison between the two methods. General conclusions point to higher voter accessibility and increased efficiency in cost and resource allocation.

Planning and Preparation

The November 2016 General Election was an ideal opportunity to apply the California Voter’s Choice Act. The anticipation of high voter participation provided the opportunity for a viable pilot in multiple aspects of the Vote Center model including vote-by-mail drop-off and drive-thru drop-off, multi-day availability and extended daily schedules. Preparations began with the formation of a Vote Center Planning group with meetings focused on reviewing the legislation’s requirements, identifying essential action items and creating a working Vote Center calendar.

Process Conception and Planning

The first and largest project task was reviewing historical early voting processes to help conceptualize the requirements of the Vote Center legislation and design a voting process that met the requirements. In past elections, the early voting period ended two weeks in advance of Election Day—under the Vote Center model, the voting time frame extends from ten days prior to Election Day all the way up to 8:00 p.m. the night before Election Day. This required a completely new procedure to ensure the printed voter roster was clean and accurate for Election Day. Under the true Vote Center model with electronic poll books, this would not be an issue because poll books would be used during the entire voting period.

Simultaneous to the creation of Vote Center processes, the planning group defined the logistical procedures for the operation as a whole. The planning group identified three general areas and relevant subcategories of action:

- **Staffing:** job posting, interviewing and hiring, onboarding, training and scheduling
- **Equipment:** materials required by Elections Code, printed materials, voting equipment and newly-created marketing resources
- **Scheduling:** maintenance of the Vote Center election calendar, task deadlines and goals, implementation the Vote Center event, equipment delivery and pick up, daily procedures at each site including ballot pick up, application of security procedures and post-election audit process.

In considering the comprehensive process, Vote Centers follow a similar preparation calendar to traditional polling places. In November, the planning group implemented a streamlined process and created applicable procedures for all aspects of Vote Center election planning and organization.

Facility Recruitment

General recruitment of facilities began with direct conversations between the Registrar and numerous city partners throughout the County. Overview of the California Voter's Choice Act was presented to multiple department and city leaders and the offer of collaborating in the first pilot of Vote Center voting in California was well received by a number of city clerk offices. In reviewing the criteria for selecting Vote Center sites, the main focus included commitment to the ten day schedule through Election Day (weekend open hours and extended hours for the final four days), overall capacity and Countywide accessibility. Five sites were selected, not including the Registrar of Voters office, with two sites supporting drive-thru ballot drop-off locations (Figure 10). Three sites were city clerk offices within civic center campuses, one city community center and one County library. All sites reflected the criteria used in recruiting Vote Centers.

The Registrar of Voters scheduled site visits with all five confirmed participants to verify minimum requirements in all applicable areas: voting room and facility, IT and suitability for drive-thru voting. Facility requirements accounted for substantial parking to accommodate large numbers of voters, lighting for extended hours both morning

"The Irvine Civic Center was well organized...a surprisingly pleasant voting experience for me."

– 2016 Vote Center survey respondent,
11–15 years voting experience,
typically votes by mail ballot

“My experience at the Mission Viejo City Hall Vote Center was quick, convenient, and an overall great experience.”

– 2016 Vote Center survey respondent,
3 years or less voting experience,
typically votes by mail ballot

and night, and accessibility for private and independent voting. In addition to the minimum requirement surveys, an accessibility survey was completed at each of the participating sites. Voting room criteria focused on space large enough for two voter check-in stations, general access to electricity at multiple points throughout the room, separate space for a ballot on demand printer and access to the internet, preferably via a dedicated line. Physical security was evaluated in terms of the type of access to the building, access to the proposed voting room, on-site security in the form of guards, and cameras or for surveillance.

Staff Recruitment and Hiring

Interviewing and hiring was a coordinated effort between Human Resources and management. Two field agents known as Vote Center Coordinators were hired to provide on-site support, provide supervision of service, maintain the schedules, organize and lead training, and to replenish the supplies throughout the Vote Center period.

Vote Center coordinators were identified weeks before the first day of scheduled training and were included in the Vote Center working group meetings. Immediate tasks focused on augmenting and developing the training rubric, creating training presentations, developing a delivery schedule for Vote Center sites, and crafting educational team-building exercises.

The Vote Center staff hiring focus was to assemble a team that would provide a high level of customer service, maintain schedule commitment throughout the Vote Center period and be adept in time and line management at each facility. Other applicable skills included experience in working with teams, positive attitude, project or process management and interpersonal communication skills. In accordance with State-mandated language support requirements, applicants who indicated a fluent skill level in Spanish, Korean, Vietnamese or Chinese were prioritized.

Due to the strenuous nature of the schedule and the electronic processes involved with voting, Vote Center staff are required to have high customer service skills and experience along with basic office administrative skills. By recruiting our staff to expect flexibility in placement and dedication to extended working hours, employees were well-prepared for the workload and time commitment of staffing the Vote Centers.

Supplies and Equipment

For this Vote Center pilot program, a preliminary inventory was identified in the planning group meetings. Much of the election-related material was taken from available stock in the warehouse and the remainder was ordered. A separate area in the warehouse provided staging for all equipment and materials being sent to Vote Center sites and a limited stock to be utilized throughout the voting period. High flexibility was necessary as there were multiple aspects of the procedure that changed as the event evolved and became more defined. In creating the process for voting and the procedures for implementation, new materials were created to support security, direction and tracking.

Voting Period

Vote Center voting was divided into distinct stages within the full voting period. Opening day was treated as a launch requiring full staffing regardless of demand, including on-site Vote Center staff, facility contact staff and Registrar of Voters staff. The subsequent days allowed for refining delivery and pick up schedules, responding to staffing needs, observing daily voter flow and practicing line and process management. Extended hours began four days before Election Day requiring an increase in supply replenishment and line management as well as response to space issues, parking concerns and increased voter traffic.

Lessons learned

In addition to the successful completion of the Vote Center pilot program, which enabled nearly 28,000 voters to cast their ballots early with only six Vote Center sites, the Registrar of Voters also developed a feel for the amount of time and staff required to operate Vote Centers.

Resources

At least three people are needed for the constant stream of supply drop off and ballot pick up for five sites. Thirty sites would need a minimum of ten people on each support team and a policy needs to be defined indicating when ballots are required to be picked up and delivered to the main office. Many times the window of time between two drop-offs or pick-ups did not suffice but this may be solved with a higher number of Vote Centers that are geographically closer together. Overall, supporting busy Vote Center sites required an intense, prolonged time period of constant work wherein coordinators

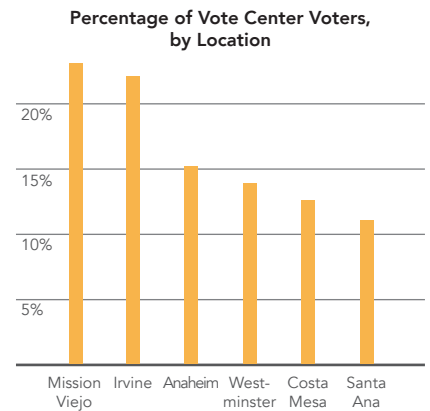


Figure 11. Vote Centers received light-to-moderate usage in the first week, then experienced high volumes of voter traffic on the weekend before Election Day.

“The line was long but it moved very fast. The personnel were very friendly, helpful, and efficient.”

– 2016 Vote Center survey respondent, 16+ years voting experience, typically votes an electronic ballot at the polling place

were required to be available two hours before Vote Centers opened and two hours after Vote Centers closed. The team was successful in implementing training procedures, set-up, line management and time management to the Vote Center sites to which they were assigned.

Launching Vote Centers required extra on-site support from Election Services and IT staff as well as requiring the full Vote Center team to be present in order to experience opening procedures, possible problems throughout the process and closing procedures. Team leads assisted in reviewing the opening procedures and security checks in place required to open polls on the first day, then continued these procedures on subsequent days.

Long lines

At peak traffic times, namely the Saturday, Sunday and Monday before Election Day, some Vote Centers did experience a surge in voters which resulted in long lines. The Registrar of Voters’ office responded quickly to these situations, and several plans for improvement are being pursued.

- More voting units: in the Vote Centers that have sufficient space, more voting units would have helped ease the long lines.
- Enhanced line management: additional resources are needed to communicate with voters in line. In a true Vote Center election, the mobile electronic poll books could be utilized for a “pre-check-in” process while the voters are waiting in line.
- Streamlined check-in process: since the pilot Vote Centers were still operating in the traditional polling place model, the check-in process had to meet requirements for both current election law and the requirements of the California Voter’s Choice Act. This two-step check-in process, which included a 30–60 second wait for a label to print for each voter, will be reduced down to one simple step of the voter signing on the electronic poll book’s touchscreen. This will allow voters to be processed faster than in the pilot program and further reduce lines.
- Communication with voters: additional outlets need to be explored to communicate with voters about where Vote Centers are located and the current estimated wait time so voters can redirect to a different location if their destination Vote Center is experiencing long lines.

ARE VOTE CENTERS WORTH IT: COST-BENEFIT ANALYSIS

Budget Comparison

The Vote Center model defined in the California Voter’s Choice Act will ultimately save millions of dollars on capital and operational expenditures. The main support of these savings comes from the reduction in polling places which will greatly reduce the number of voting equipment units needed to purchase and maintain. Additional savings will come from reduced operational expenses by lowering the needed support/staffing/equipment delivery to these locations.

Capital Expenditures

The current voting equipment used by the Registrar of Voters for the purposes of hosting elections throughout Orange County is outdated and in need of replacement. Replacement equipment options are outlined below.

Traditional Polling Place Voting

Projected Spending = \$23,400,000.00–\$40,000,000.00

Estimated costs for capital expenditures to support traditional election services are outlined in the following table. Identified within this table are the cost differences between traditional polling locations utilizing In-Person Electronic Capture Voting Systems and/or Ballot on Demand ballot creation options to be used at each polling location. These costs are estimated at \$40,000,000.00 and \$23,400,000.00 respectively.

Traditional Polling Place Election Estimated Costs			
Units	Equipment	Unit Cost	Proposed Costs
In-Person Electronic Capture Voting System			
9600	DRE's (Electronic Capture)	\$ 4,166.67	\$40,000,000.00
			\$40,000,000.00
Ballot on Demand Voting System			
1300	ADA	\$ 10,000.00	\$13,000,000.00
1300	On-Demand Printer	\$ 4,000.00	\$5,200,000.00
1300	On-Demand Scanner	\$ 4,000.00	\$5,200,000.00
			\$23,400,000.00

Table 1. Traditional Polling Place Election Estimated Costs. Derived from current inventory and estimated costs of equipment.

Vote Center Model

Projected Spending = \$8,537,550.00–\$14,177,550.00

Alternatively, the following table provides estimated costs for capital expenditures to support Vote Center elections as outlined in the California Voter’s Choice Act. These options include the use of In-Person Electronic Capture Voting Systems and/or Ballot on Demand ballot creation options to be used at each Vote Center location. These costs are estimated at \$14,177,550.00 and \$8,537,550.00 respectively.

Vote Center Model Estimated Costs			
Units	Equipment	Unit Cost	Proposed Costs
In-Person Electronic Capture Voting System			
3168	DRE's (Electronic Capture)	\$ 4,166.67	\$13,200,000.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
420	E-Polling Solutions	\$ 1,000.00	\$ 420,000.00
			\$14,177,550.00
Ballot on Demand Voting System			
420	ADA	\$ 10,000.00	\$4,200,000.00
420	On-Demand Printers	\$ 4,000.00	\$1,680,000.00
420	On-Demand Scanners	\$ 4,000.00	\$1,680,000.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
420	E-Polling Solutions	\$ 1,000.00	\$ 420,000.00
			\$8,537,550.00

Table 2. Vote Center Model Estimated Costs. Projections based on Voter’s Choice Act requirements for Vote Centers.

Voting Location Operational Cost Comparison

There are extremely large operational costs incurred when hosting an election. The following tables compare the costs to sustain traditional Election Day operations versus the projected costs of election days spread over the course of 11 and 4 days as mandated for Vote Center operations in the California Voter’s Choice Act.

Operational Cost Comparison - Polling Places	
Number of Polling Places	1093
Number of Days in Operation	1
Physical location	\$ 46,450.00
Volunteers	\$ 946,796.90
Equipment delivery	\$ 179,577.96
Supplies	\$ 652,725.27
Total	\$1,825,550.13

Table 3. Operational Cost Comparison – Polling Places.

Operational Cost Comparison - Vote Centers				
Number of Vote Centers		28	112	
Number of Days in Operation		11	4	
Cost Per Site	Average Daily	One Time		
Physical location	\$ 50.00		\$ 15,400.00	\$ 22,400.00
Extra Help Staff	\$ 1,943.77		\$ 598,680.59	\$ 870,808.13
Equipment Delivery		\$ 35,000.00	\$ 7,000.00	\$ 28,000.00
Supplies	\$ 162.04		\$ 49,907.41	\$ 72,592.59
			\$ 670,988.00	\$ 993,800.72
Total				\$1,664,788.72

Table 4. Operation Cost Comparison – Vote Centers.

As displayed in Table 3 and Table 4 above, there is opportunity for savings when comparing traditional polling place elections to those of Vote Center modeling. These monetary savings come from the ability to consolidate activities into larger, more centralized voting locations throughout the County. This process will allow for maximum efficiencies in recruitment of site locations, distribution of equipment, training of staff, field support personnel and need of general supplies.

Vote Centers vs. Polling Places Comparison

In Orange County and other populous counties of California, where the population has exploded in just the last several decades, the polling place model is an insufficient and inefficient system of conducting elections for millions of registered voters. The Vote Center model provides an improved method by increasing efficiencies and meeting voter expectations—allowing them to vote when, where and how they choose.

How do Vote Centers compare to polling places in terms of benefits to the voters?

Many of the benefits of the Vote Center model are listed in the comparison between Vote Centers and polling places in Table 5 below.

“I got in. I got out. No crowds. Plenty of parking. No hassle. Very convenient. I didn’t have to try to rush before or after work.”

– 2016 Vote Center survey respondent, 16+ years voting experience, County employee, typically votes an electronic ballot at the polling place

Comparison of Benefits - Polling Places vs Vote Centers		
	Polling Places	Vote Centers
Direct Record Electronic voting units	●	●
Disabled access voting units	●	●
Drop-off vote-by-mail ballot at any site	●	●
Secure electronic poll books with voter fraud controls		●
Live voter list, synced with master database		●
Large reduction in provisional ballots		●
Well-trained extra help staff		●
All sites fully accessible during voting period		●
Vote at any site in the County		●
Voting period is open for multiple days		●

Table 5. Comparison of Benefits. Vote Centers provide many benefits that are not available in polling places.

Can Vote Centers handle all the voters in Orange County?

The following table provides a breakdown of the differences between the capacity of Vote Centers and polling places, based on the number of in-person voters in the 2016 General Election and projections for future elections using Vote Centers. Over the last four presidential election cycles, the number of in-person polling place voters has steadily decreased at an average of 8%. The last two cycles have seen the number of polling places drop by an average of 2.5%. Projections for future elections reflect these trends.

Vote Center Capacity - Actual and Projected		
	Polling Places	Vote Centers
2016 Actuals		
Number of sites used	1,093	6
Total number of in-person voters	516,801	27,554
Average number of in-person voters processed per site	473	4,592
Projected for Future Vote Center Elections		
Number of sites to be used	1,066 (-2.5%)	130
Total number of in-person voters	475,457 (-8%)	
Number of in-person voters to process per site	446	3,657

Table 6. Vote Center Capacity – Actual and Projected. Historic reduction rates in polling place in-person voting (8%) and polling place sites (2.5%) are applied to future projections.

How will voters check-in at a Vote Center?

Vote Center check-in procedures are more secure and reliable than in the polling place. To illustrate this, a quick overview of the check-in process for both Vote Centers and polling places is provided below.

Traditional Polling Place

During the polling place check-in process, a voter waits in line to see the combined roster clerk – there is only one printed roster per precinct – who manually flips through the roster to locate the voter. Once the voter has been located the roster clerk will then instruct the voter to sign next to their name attesting to their identity. The voter then will see the address clerk to verify their address, after that they will see the ballot issue clerk to be assigned an access code and be able to vote.

If the voter is not located in the combined roster then the address clerk will verify the voter’s address and attempt to assist the voter in finding their correct polling place. Ideally the voter will then drive over to their assigned polling place and vote there. In the event that the voter insists in voting at the polling place where their name was not found in the roster, they will be processed provisionally.

This process can take upwards of 5-7 minutes per vote with only one voter being able to be assisted at one time. While one voter is being assisted other voters wait their turn in line, if this is during the first morning hours or after work, the line queue will grow rapidly increasing the wait times for all voters.

**"I was VERY IMPRESSED
by how quickly people
were able to vote."**

– 2016 Vote Center survey respondent,
16+ years voting experience, typically
votes an electronic ballot at the polling place

Vote Center Model

In the Vote Center model, the check-in process is expanded by having multiple electronic poll book check-in stations. The electronic poll books will be either directly connected to the Election Management System database or have a copy of the database loaded locally. As voters arrive at the voting place, they can choose one of multiple lines. Once they reach the electronic poll book clerk, the election worker will be able to type in the voter's information and immediately find a match in the database. Once the information is confirmed, the same electronic poll book clerk (no need for a street address clerk) will verify the information and ask for a signature to attest to the voter's identity. The signature is captured in the electronic poll book itself, after this then the voter can proceed to be issued either a paper or electronic ballot and vote.

The availability of check-in stations is only limited by the number of electronic poll books assigned to a specific Vote Center. The number of electronic poll books at any Vote Center location can be determined by looking at historical in-precinct voting turn out data for that area as well as other potential factors (i.e. foot traffic, visibility etc). This means that a Vote Center could begin operating with three electronic poll books and based on demand, deploy additional electronic poll books as necessary.

For more details on electronic poll books, please refer to Appendix C.

How will Vote Center sites be selected?

Based on the requirements of the California Voter's Choice Act, Orange County would need a minimum of 125 Vote Centers. Several factors will be taken into consideration when selecting these locations in addition to our polling place history and types of facilities historically used in the past. Our plan is to continue to leverage the relationships we have developed throughout the years in selecting the best available sites.

There are 34 City Clerks in the County that could potentially host a location as a Vote Center, along with 134 city and County libraries. These locations are not only sites used as polling places in the past, but are also familiar to voters in the community. In the 2016 General Vote Center pilot, these types of facilities were used and they proved to meet the needs required of a Vote Center as well as voter familiarity.

When selecting these locations, the size, parking and accessibility will

be major determining factors as they have been in the past. The best available locations will want to be selected so that voters can have a positive voting experience.

The California Voter's Choice Act gives very specific guidelines for selecting Vote Center locations. These factors include the following:

- Proximity to public transportation.
- Proximity to communities with historically low vote-by-mail usage.
- Proximity to population centers.
- Proximity to language minority communities.
- Proximity to voters with disabilities.
- Proximity to communities with low rates of household vehicle ownership.
- Proximity to low-income communities.
- Proximity to communities of eligible voters who are not registered to vote and may need access to same day voter registration.
- Proximity to geographically isolated populations, including Native American reservations.
- Access to accessible and free parking.
- The distance and time a voter must travel by car or public transportation.
- The need for alternate methods for voters with disabilities for whom vote-by-mail ballots are not accessible.
- Traffic patterns near Vote Centers.
- The need for mobile Vote Centers in addition to the number of established Vote Centers.

Are Vote Centers better than polling places?

Traditional polling places have been used in elections for over one hundred years and have become a symbol of the American citizen’s right to vote. However, the presumed permanence of polling places has obscured inherent flaws in the system. The Vote Center model was developed with these shortcomings in mind (see Table 7).

To illustrate some of the inherent problems with the polling place system, consider the following real-world scenario:

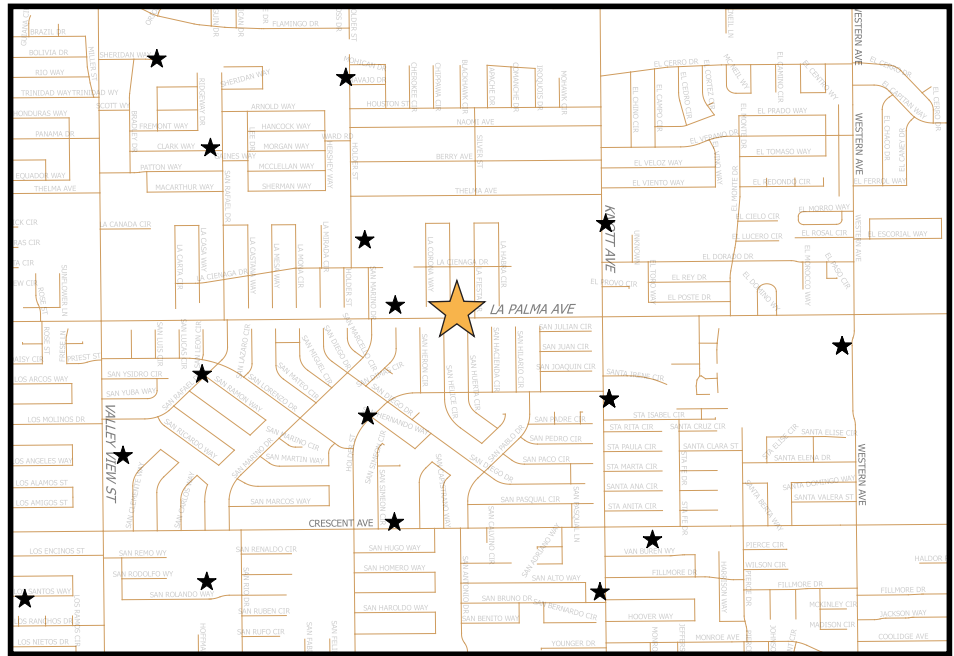


Figure 12. Small section of Buena Park with 16 polling places (black stars) in the 2016 General Election, with some across the street from each other. The orange star represents a potential Vote Center location that could serve this entire community.

This Buena Park area holds 24,583 residents and 12,905 active voters across three square miles of land. A driver taking main roads from one corner of this area to the other will travel 2.8 miles and will arrive within 14 minutes, if driving at 5:00 p.m. on a typical Friday evening. Any other time of the week will average 8 minutes.

According to current polling place requirements, this section of Buena Park needs 16 polling places: four elementary schools, three private residences, three churches, two community centers, a school district office building, a Boys and Girls club, a fire station and a Moose Lodge. Some are literally across the street from each other.

Under the California Voter’s Choice Act requirements, this small area could be serviced by one Vote Center, located centrally within 1.5 miles of any point on the map.

Vote Center Solutions to Polling Place Problems	
Shortcomings in Polling Place Model	Vote Center Solutions
<p>Polling places originally functioned as the way to control which ballot a voter received. Since voters are only allowed to vote on local contests and measures, the voter list at the polling place was the only way to ensure that each voter got the correct ballot.</p>	<p>Electronic poll books contain the whole voter list for the entire County, therefore allowing the election worker to lookup any registered voter and determine which ballot should be issued. This model has proven accurate many times during Early Voting in Orange County.</p>
<p>With the increase in population and complexity of district boundaries, precincts have become smaller over time which has moved polling places closer together. This results in thousands of voters living near one or more polling places which are not their assigned precinct. This leads to confusion and increased provisional ballots.</p>	<p>Vote Center locations are not determined by arbitrary boundaries, and are not assigned to specific precincts. This means Vote Centers are located where they are needed, and the voter has the choice to vote at the location closest to their home, work or school. The number of provisional ballots will decrease substantially.</p>
<p>Due to precinct boundary limitations, hundreds of polling places each election cycle are hosted out of someone's garage. Often times, the cramped space in a garage can barely accommodate the poll workers and equipment, let alone voters. These inefficient locations have persisted to today because of polling place requirements in the Elections Code.</p>	<p>Vote Center locations are not bound by the same requirements as polling places. If a large residential tract has no community center or other gathering space, a Vote Center can be selected across the street at a shopping district or other public facility.</p>
<p>The number of required polling places is not set until after candidate filing, based on the number of contests and measures on the ballot. This has resulted in last minute changes to the total number of polling places needed—in 2010, over 100 new polling places were added at the last minute.</p>	<p>Vote Centers can be established long before candidate filing is finished because locations are not determined by district boundaries. No matter what contests and measures are on the ballot, the Vote Center locations would stay the same.</p>
<p>Schools account for at least 45% of all polling places each election. This opens the campus to the general public for Election Day, but leaves the County liable for anything a voter or volunteer does while voting.</p>	<p>Due to the time requirements in the California Voter's Choice Act, school sites would no longer be considered for hosting Vote Centers. This relieves the County of the liability and concerns that nearly school site has raised with our office.</p>

Table 7. Vote Center Solutions to Polling Place Problems.

Implications of Vote Centers

A transition to the Vote Center model as defined in the California Voter's Choice Act will be the biggest change to elections in the history of Orange County. As with all change, there are concerns about replacing the traditional polling place concept with something that is different and unknown to the majority of Orange County voters. The Registrar of Voters' office is actively seeking this feedback and has already begun work on finding solutions for the affected parties.

Below are some of the most common questions that have been submitted to the Registrar of Voters.

How will you get the word out about this change?

Virtually all of the community organizations from the Community Election Working Group are concerned mainly about outreach efforts to spread the word about Vote Centers. Community outreach is one of the top priorities of the Registrar of Voters' office, which can be seen by our proven track record in previous election years. In 2016, for example, the Registrar of Voters conducted over one hundred community events, including street fairs, concerts, beach events, a 4th of July celebration, public service announcements, corporate sponsorship, and senior center events.

For complete list of outreach events, please refer to Appendix D.

Ideas from the Community Election Working Group include:

- Television, radio and print media advertisements
- Partnering with local sports teams to run PSA announcement during games
- Community events geared toward the military and veterans
- Homeowner association meetings
- City council and advisory committee meetings
- Press releases
- Electronic billboards
- Multimedia and social media platforms
- Partnerships with City Clerks' offices

The Registrar of Voters' office plans to implement all these ideas and more to inform the registered voters of Orange County about Vote Centers, with the objective of hitting each demographic multiple times with the same message. Outreach is taken very seriously at

the Registrar of Voters and our long history of extensive outreach experience will provide a sure foundation for getting the word out.

What will you do to educate voters about how this change will affect their lives?

In addition to simply announcing the change from polling places to Vote Centers, many representatives in the Community Election Working Group voiced concerns about educating voters about Vote Centers and how this change will affect the voting experience. Voter education is an additional layer on top of the general marketing plans listed above, and it includes face-to-face meetings with registered voters to answer their questions and address their concerns. This includes speaking engagements at a variety of venues and organizations across Orange County, voter education events at local colleges and universities, workshops with voting system demonstrations for voters with disabilities, and open houses with mainstream and ethnic media.

These types of events have been carried out by the Registrar of Voters in past election years and can readily be retooled for new voting equipment and the general message of Vote Centers.

What is being done to prepare for voters who may not have transportation to the Vote Center?

A select number of representatives on the Community Election Working Group, including disability rights advocates and language communities, voiced concern over transportation to Vote Centers. Inherent in the California Voter's Choice Act is the prioritized requirement to locate Vote Centers near public transportation hubs and along known commute routes. Vote Centers will also be located near shopping districts and community centers. In addition to this requirement, the Registrar of Voters' office is exploring the possibilities of partnering with transportation services such as OCTA, Uber and Lyft to further accommodate those who may not have direct transportation to a Vote Center.

What are you doing to reduce lines at the Vote Center?

The main concern emerging from both the City Clerk's offices and from the 2016 General Election Vote Center survey results is the length of the lines during peak voting times. One survey respondent stated the concern succinctly: "Normally it would take about 5 minutes at our polling [place]. It took 1½ hrs at Irvine City Hall." The Registrar of

Voters' office is keenly aware of these concerns and working tirelessly to minimize the impact of lines during the Vote Center voting period.

There are a number immediate points that can be made in regards to this concern, as well:

- As with a polling place, the line of voters is largely dependent on the time at which the voter arrives. During peak voting times, a polling place covering a large precinct may also end up with a one-to-two hour wait in line—this problem is inherent to voting in a populous county, not to Vote Centers.
- The Vote Center coordinators were monitoring lines throughout the voting period, and during the last four days of voting, did report times where the wait time to vote could reach two hours. This happened at Mission Viejo City Hall and Irvine City Hall. However, during the seven days prior to that, including a Saturday and Sunday, there was virtually no line and voters went through the entire process within minutes. The challenge is educating voters about this dynamic.
- During the Vote Center pilot program in the 2016 General Election, six Vote Centers served 27,000 in-person voters. This equates to an average of 4,592 voters per Vote Center. Projected numbers for 2018 estimate that 475,457 in-person voters will be served by 130 Vote Centers, reducing the average voters per site to 3,657 (see table of page ##). This 20% decrease illustrates that less voters will be going to each Vote Center on average than during the pilot program, which will result in shorter lines.

The Registrar of Voters' office is committed to minimizing lines as much as possible and continually exploring new ways to manage the voter line more efficiently. This commitment is evident in the last few elections where we have trained poll workers to use a provided copy of the voter list to "walk the voter line" and perform pre-check-in practices to reduce wait times and keep communication with voters open. In the 2016 General Election, we provided an Internet link for the poll workers to quickly lookup a voter's correct polling place in an effort to further improve line management practices.

The concept of voter line management is ever-present in the world of elections. The Registrar of Voters' office is dedicated to continue our tradition of tackling this issue directly and putting the voting experience first, just as we've done in the past.

CONCLUSION

Polling places once served Orange County as the primary method to cast one's ballot. However, current trends illustrate that voters are tending toward convenience rather than physical proximity—they want to vote when, where and how they choose, and not be tied down to one specific location on one specific day. Currently, more ballots are cast by mail than in the polling place, and 61% of registered voters have signed up for permanent vote-by-mail status, which is up 30 percentage points from just ten years ago. These are trends that cannot be ignored.

Support for the Vote Center model is very broad, encompassing the Orange County Grand Jury, city clerks, major political party representatives, veterans and seniors groups, and advocates for voters with disabilities and special language needs. But most importantly, the vast majority of voters who have firsthand experience casting their ballot at a Vote Center are satisfied with their experience and likely to return to a Vote Center in the future. Survey comments frequently request for Vote Centers to be implemented in future elections.

In light of this strong support of Vote Centers, and based on the cost-benefit comparison between Vote Centers and polling places as outlined in the previous sections, the Registrar of Voters is confident that the most efficient, economical and effective course of action at this time is to implement the California Voter's Choice Act in all elections going forward. This recommendation aligns with trends in voter behavior and preference, technology advances, fiscal prudence and goals, and community input.

“Voted at Costa Mesa Neighborhood Center: All volunteers were well trained and very helpful. The center was easy to get to with plenty of parking. Will definitely go there again in the future if it is an option.”

– 2016 Vote Center survey respondent,
16+ years voting experience, typically votes at the
polling place, read about Vote Centers in sample ballot

APPENDIX

Appendix A: Vote Center Survey Results

The Registrar of Voters’ office conducted voter surveys to obtain direct feedback from voters who cast a ballot in a Vote Center as well as all voters who dropped off their vote-by-mail ballot before Election Day. Between both Vote Center voters and vote-by-mail drop-off voters, 42,000 total surveys were sent out and 6,433 completed surveys were returned. This represents a high response rate at 15%.

Below are the responses for each question, separated by survey type, “VC” for Vote Center and “VBM” for vote-by-mail drop-off. The charts on the right show the percentage of each answer by survey type.

How long have you been voting in Orange County?				
Answer	VC	VBM	Total	Percent
First-time voter	388	267	655	10.2%
3 years or less	177	121	298	4.6%
4 to 10 years	512	338	850	13.2%
11 to 15 years	331	197	528	8.2%
16+ years	2364	1736	4100	63.8%
Total	3772	2659	6431	

How did you hear about Vote Centers?				
Answer	VC	VBM	Total	Percent
Sample ballot	1642	1297	2939	44.6%
Radio	145	70	215	3.3%
Social media	359	155	514	7.8%
Word of mouth	764	489	1253	19.0%
Other	981	690	1671	25.3%
Total	3891	2701	6592	

**What was your motivation to vote at a Vote Center?
(select all that apply)**

Answer	VC	VBM	Total	Percent
Avoid Election Day rush	2123	1364	3487	28.9%
Convenient hours	1225	833	2058	17.0%
Vote early	1936	1176	3112	25.8%
Convenient location	1279	1194	2473	20.5%
Other	452	494	946	7.8%
Total	7015	5061	12076	

What voting method do you typically use?

Answer	VC	VBM	Total	Percent
Electronic ballot at the polling place	3019		3019	79.6%
Paper ballot at the polling place	317		317	8.4%
Vote-by-mail	457		457	12.0%
Total	3793	0	3793	

In comparison to other methods of voting you may have used in the past, how satisfied were you with the overall experience at the Vote Center?

Answer	VC	VBM	Total	Percent
Very satisfied	2537	1974	4511	70.9%
Satisfied	1047	579	1626	25.5%
Dissatisfied	105	22	127	2.0%
Very dissatisfied	67	34	101	1.6%
Total	3756	2609	6365	

Given the option of a Vote Center, how likely are you to use a Vote Center over a polling place in the future?

Answer	VC	VBM	Total	Percent
Very likely	2157	1803	3960	62.1%
Likely	1176	627	1803	28.3%
Unlikely	289	132	421	6.6%
Very unlikely	124	65	189	3.0%
Total	3746	2627	6373	

How did you drop off your vote-by-mail ballot?

Answer	VC	VBM	Total	Percent
Walk-in (dropped off inside Vote Center)		1387	1387	53.3%
Drive-thru (dropped off in the ballot drop-off box located outside of the Vote Center)		1214	1214	46.7%
Total	0	2601	2601	

Comments

“People who worked at the center were organized and pleasant. The workers kept the room quiet and orderly and yet they smiled the entire time. It was an excellent choice to vote there.”

“Loved the new process. Please continue to use it!!”

“Very convenient. Please keep this as an option.”

“The staff at the Irvine location were excellent. Voted during a break in the work day, and it went as smoothly and efficiently as I could have hoped. The exact opposite of a trip to the DMV...”

“Early voting was a wonderful experience. Please offer it next election. Thanks!”

“Liked not being rushed, the whole experience was fantastic. I will probably vote this way from now on.”

Appendix B: Community Election Working Group

Responses

There were several reoccurring themes that came out of the various meetings with representatives from the Community Election Working Group (CEW).

Outreach & Communication

Outreach and communication were consistently discussed throughout every meeting with CEW members. Suzanne Narducy, a poll worker representative, believes the biggest challenge in implementing Vote Centers will be communicating the change to voters. Narducy recommends the ROV conduct various types of outreach to voters including television, radio and print media advertisements. Judy Barnes, who represents the senior community and has also served as a poll worker, suggested including the all mail ballot elections in the marketing and outreach plan, and communicating to voters that ballots will be picked up nightly from every drop box to ensure security.

Elizabeth Campbell, Systems Change Advocate, for the Dayle McIntosh Center (DMC) also believes that outreach is extremely important in communicating to voters with disabilities. Gabe Taylor and Paul Spencer, with Disability Rights California (DRC), discussed several options for outreach to voters including public service announcements, mailers with clear messages, and utilizing all forms of media outlets. DRC believes it is important to communicate to voters so they understand although they will receive a VBM ballot, they can also go to a Vote Center or request an accessible VBM ballot. DRC also suggested partnering with local sports teams (Anaheim Angels, Anaheim Ducks) for PSA announcements during the games.

Rosalind Gold and Ofelia Medina, both with NALEO, also discussed the need to increase outreach events in the Latino community, focusing on face-to-face interactions. Gold and Medina believe outreach efforts should focus not only on people who are already voting, but also to reach out to new and prospective voters. Tim Cheng, representing the Chinese community, also suggested community outreach to all communities. Lyle Brakob, a veterans' affairs representative, recommends publicizing in newspapers and attending several community outreach events, especially events geared to military and veterans.

Additional outreach and communication recommendations

from other CEW members include, presenting information at homeowners' associations (HOAs) meetings, city council and advisory committee meetings, and issuing several press releases. Many of the recommendations for communicating to voters include utilizing multimedia platforms such as print media, radio, TV ads, electronic billboards, social media, and community outreach events.

Voter Education

In addition to outreach and communication, many CEW members strongly recommended the ROV increase voter education efforts. The League of Women Voters (LWV) representatives said there needs to be huge outreach efforts to educate voters about Vote Centers. The LWV is interested in partnering with the ROV to disseminate information to the community about Vote Centers and SB450. The LWV also recommended expanding outreach and voter education events at local colleges and universities: University of California, Irvine (UCI), California State University, Fullerton (CSUF), Chapman University, etc. Dayle McIntosh Center (DMC) recommends holding voter education workshops that explain the voting process and the many options voters have. DMC also recommends having workshops with actual voting equipment demonstrations so voters with disabilities can practice voting and alleviate any fears they may have. NALEO recommends organizing community-based educational workshop events that teach people how to complete a VBM ballot and use voting equipment. NALEO also recommends partnering with local Latino community organizations to host meetings and events, to educate voters about the services that will be offered at Vote Centers. Charles Kim, Korean community representative, acknowledged the need to educate the older generation of voters who are used to voting at polling places. Kim suggested the ROV have several open house events with the media to continuously educate and familiarize everyone with the new voting process. In addition, he suggested the ROV host voter education workshops and a meet & greet with Neal Kelley.

Transportation

Many CEW group members discussed transportation concerns about voters getting to Vote Centers. For individuals with disabilities, transportation is a huge concern as there are many challenges with planning and coordinating transportation, per Campbell with the Dayle McIntosh Center. Campbell believes partnering with transportation services like Uber, Lyft and OCTA is a great idea, especially for DMC's consumers with disabilities that can easily get in and out of a car. Taylor

with DRC recommends providing as much information as possible for persons with disabilities, such as drive thru ballot drop off locations, closest Vote Center locations, drop off boxes, etc. He also said that voters with disabilities must plan and prepare their transportation in advance to get to locations, and it would be helpful to include what bus routes to use to get to Vote Centers. NALEO recommends identifying and eliminating geographical and transportation barriers, by considering traffic and commute patterns when selecting Vote Center locations. NALEO also suggested taking into consideration where voters live and where they work.

City Clerk Feedback

In conversing with the City Clerk offices that participated in the Vote Center Pilot Program, general feedback was focused on Vote Center employees and team communication, physical room layout and voter processing, and line management. City Clerks all were overwhelmingly positive about the experience and when speaking to the future Countywide implementation of the Vote Center model voiced main concerns about outreach and education along with facility recruitment.

Both Irvine and Mission Viejo City Clerk offices were positive about the implementation of a consistent Vote Center team. They expressed appreciation for the stability and communication maintaining the same team brought to the Vote Center and noted that it enhanced the customer service of the Center in regards to directions, information and general assistance. Though mainly positive, the Anaheim City Clerk's office did report a slow learning curve and indicated that in comparison to past early voting events, there was a difference in control of the process and crowds. Across the board, all participating offices preferred working with officially hired individuals and felt secure in the level of quality of Vote Center staff as they were County hired, trained and tested. Communication overall was clear, the Mission Viejo City Clerk stated that it was a pleasure having an identified on-site Coordinator a phone call away and if necessary, an open line to the Registrar of Voters Office as well.

Equipment and room layout was ultimately dependent on the room provided, the surrounding campus and the facility's building. All sites were visited in advance and a proposed layout was approved; ultimately, all layouts were slightly rearranged after the first day's experience. The Anaheim City Clerk noted that there should have been a greeting desk so that voters immediately entering the Vote Center room knew that they were in the right place. Mission Viejo

had a physical set up that was spaced out, but as reported back to our office, was not the ideal set up for a walk in Vote-By-Mail drop off voter. The Irvine City Clerk reported that the best thing our office provided was bright, distinct and concise directional signage. Even if the voter was not near the voting room, they knew that they were in the correct place. Both Irvine and Mission Viejo also supported drive thru ballot drop off locations. In mapping out the best area on campus, both offices reported that following the flow of traffic toward the building worked out, but that a very clear path was an absolute in the success of a drive thru set up. Within the voting room, the Anaheim City Clerk indicated that the voting process itself was the main source of concern and suggested a different check in process that would allow one way directional flow for any given voter.

The largest amount of feedback received from all participants was regarding line management. As this was a smaller implementation of the Vote Center model focused on geographic areas central to each County district, crowds of voters were larger than originally anticipated. This was a problem with a positive result, because it required our Vote Center project lead and on-site Coordinators to find solutions for these bottlenecks and implement line management procedures for the final four days. The Anaheim City Clerk's office voiced this was the biggest challenge and indicated that they were instrumental in creating multiple different iterations of a line. In reassessing the space, the room chosen was not the best room in the facility but was the closest to the City Clerk offices. In the future, other rooms should be considered or a more in depth review of line and space management should be applied. Both Mission Viejo and Irvine offices were the busiest Vote Center sites; they were able to respond to the increasing lines with ease due to the location of the rooms, wide open space throughout the facility and the option for the line to be outside. Ultimately, all City Clerk offices suggested increased signage where needed, contingency plans in place before the final four days for quick response to crowds and an advance layout plan of different line set up options amenable to the space provided.

In looking to the future of Vote Center model operations throughout all of Orange County, the City Clerks' offices of Fullerton, Anaheim, Mission Viejo and Irvine were focused on the outreach communication and voter education planned from within our office and in partnership with their offices. All City Clerks felt it important that we have an intense, focused message and that we share with our City partners in order to reiterate the same, consistent messaging throughout the

time leading up to the election. Everyone that we spoke to strongly supported utilizing every type of media available to us and committed to providing support. The Mission Viejo City Clerk supported the idea of reaching out on a large scale general marketing campaign, but also suggested that a grassroots approach would work well in many pockets throughout south Orange County because of the population demographics and space. They offered contacts with associations throughout the area and recommended that our office touch base with the associations. The Irvine City Clerk was highly active in the November 2016 marketing development and administration, and has suggested a City Clerk supported public service announcement. Irvine is dedicated to providing multiple platforms for advertisement and education and has indicated that a specific budget is set aside especially for this wide reaching, well supported marketing plan.

Recruiting facilities will be a procedure in which we work hand in hand with our City partners. Each specific area has population, transportation and language demographics that are distinctly different. The Fullerton City Clerk expressed the importance of Vote Center placement central to different communities. Border areas and outlier populations will need to be reviewed in order to have locations properly identified well in advance. Timing will be key to the success of Vote Center recruitment and as indicated by the Irvine City Clerk, city facilities should be requested a minimum of 9 months in advance of any election.

Appendix C: Electronic Poll Books

Introduction

Electronic Poll Books (e-poll books) have become the industry standard as voting jurisdictions continue to innovate and refine the voting process and experience. These e-poll books are now a proven technology with over 32 states currently either using or having plans to use them in the near term.

In 2015 California approved the use of Electronic Poll Books, but before any e-poll book can be used, it must be certified by the secretary of state (CA SB439, 2015). This certification process at the state level ensures that any electronic poll book used will meet and/or exceed California's standards for security, reliability and processing.

Traditionally, Orange County has used paper rosters which contain a list of eligible voters within the local precinct. In a Vote Center model, these traditional paper rosters would be impossible to manage as we would now be providing Orange County voters the convenience of voting anywhere within the County and not only at their local precincts. Eligible Orange County voters can now exercise their right to vote at a time and place that is most convenient to them. Electronic Poll Books provide the mechanism by which the Registrar of Voters can keep track of and service all Orange County eligible voters regardless of where they choose to vote.

What is an e-poll book and what does it do?

An e-poll book is typically either hardware, software or a combination of the two that allows election officials to review, process and/or maintain voter registration information for an election.

The software component of the e-poll book is proprietary to the vendor who sells and supports it. The hardware component of the e-poll book can be a mission-specific build where the hardware is built specific and customized to the software and additional peripherals it will run, or it can also be COTS - commercial off-the-shelf - hardware (i.e. Apple iPad, Microsoft Surface, other tablets) which run the proprietary software.

E-poll books directly replace paper rosters and provide a mechanism to ensure the efficient and secure processing of eligible voters at any Vote Center location throughout the County. They are able to accomplish this by having a secured and encrypted direct/real-time/near-real-time or a batched connection to the County Election

Management database to push and receive updates and changes to the voter rolls.

What does an e-poll book NOT do?

An e-poll book does not tally or count votes locally.

An e-poll does not connect to the voting system, it only connects to the election management system for voter processing and updating. The air gap between the voting system and election management system remains persistent and unbroken throughout the election.

Will e-poll books increase or decrease lines?

E-poll books will decrease lines. To help explain how they do so, below is a quick overview of voter processing in the traditional polling place model using paper rosters and voter processing using e-poll books in a Vote Center model.

Traditional Polling Place

The bottleneck in the traditional polling place model is the check-in process. During the check-in process a voter waits in line to see the combined roster clerk – there is only one roster per precinct – who manually flips through the paper roster to locate the voter. Once the voter has been located the roster clerk will then instruct the voter to sign next to their name attesting to their identity. The voter then will see the address clerk to verify their address, after that they will see the JBC clerk to be assigned an access code and be able to vote.

If the voter is not located in the combined roster then the address clerk will verify the voter's address and attempt to assist the voter in finding their correct polling place. Ideally the voter will then drive over to their assigned polling place and vote there. In the event that the voter insists in voting at the polling place where their name was not found in the roster, they will be processed provisionally.

This process can take upwards of 5-7 minute per vote with only one voter being able to be assisted at one time. While one voter is being assisted other voters wait their turn in line. If this is during the first morning hours or after work, the line queue will grow rapidly increasing the wait times for all voters.

Vote Center Model

In a Vote Center model, the check-in process is expanded by having multiple e-poll book check in stations. The e-poll books will be either

directly connected to the Election Management System database or have a copy of the database loaded locally. As voters arrive at the voting place, they can choose one of multiple lines. Once they reach the e-poll book clerk, they will be able to type in their information and immediately find a match in the database. Once the information is confirmed, the same e-poll book clerk (no need for a street address clerk) will verify the information and ask for a signature to attest to the voter's identity. The signature is captured in the e-poll book itself, after this then the voter can proceed to be issued either a paper or electronic ballot and vote.

The availability of check-in stations is only limited by the number of e-poll books assigned to a specific Vote Center. The number of e-poll books at any Vote Center location can be determined by looking at historical in-precinct voting turn out data for that area as well as other potential factors (i.e. foot traffic, visibility etc). This means that a Vote Center could begin operating with three e-poll books and based on demand, deploy additional e-poll books as necessary.

In addition to the multiple check-in stations, e-poll books allow the Vote Center workers to "rover" the line and begin engaging the voters even as they wait to be assisted. Because the e-poll books contain the entire voter database, this line roving concept will allow Vote Center workers to "dequeue" any voters who may need more specific assistance or answer any questions which may otherwise slow down the check-in process.

In addition to voter processing and line management, e-poll books could also be used to:

- Update and change voter information
- Accommodate same day voter registration
- Connect to the statewide voter database to ensure that voters are not able to cross County lines and attempt to vote multiple times
- Distribute real-time notifications and messages from the Registrar of Voters to all Vote Centers.

Is the data in the e-poll book secure?

Protecting voter data is extremely important to us. This applies not only to the data within our physical office, but also extends to any device that may contain or receive/transmit voter information in the

field.

Specifically to the e-poll books, there will be a series of technical security layers, protocols, procedures/checklists and physical protections in place to ensure that both the data contained within and the actual e-poll book hardware is safe.

- Certification: Only e-poll books that have passed the rigorous certification by the state of California will be used at Orange County Vote Centers.
- Technical security: Data transferred between the Election Management System and the e-poll books will be over a secured VPN connection and/or Https protocol.
- Protocols: Strict protocols will be developed which will detail e-poll book handling, storage, use and chain of custody.
- Procedures and checklists: To ensure the proper and efficient use of e-poll books the Registrar of Voters will develop procedures and checklist to detail, train and assist Vote Center workers in using the e-poll books.
- Physical protection: All e-poll books will require a strong password to gain access to the interface. Depending on California certification guidelines, it may be possible to require a two-factor authentication where the e-poll book can only be accessed by a combination of a password and the insertion of a physical USB device. Additionally, e-poll books must be stored in a secured location within the Vote Center and may not be left out in the open.
- Digital protection: Any locally-stored data will be encrypted.

Is there widespread (nationwide) support for e-poll books?

Electronic poll books have been in the election space for a number of years. Just like any other technology it has evolved over time and it is considered matured. The e-poll book technology has been tried and tested by many localities with very positive results.

Orange County has been in direct communication with the state of Colorado, the state of New Mexico and King County, Washington and they have been very open about the implementation and use of e-poll books at their sites. We've gained extensive knowledge and will follow their best practices as we continue to vet this technology.

On February 6, 2017, the Brennan Center for Justice at New York

University School of Law stated that: “Electronic poll-books are electronic versions of the voter rolls that can be used to process voters at the polls instead of a paper-based list. Many jurisdictions have found that using electronic poll-books enables easier, faster, and error-free sharing of voter data, while speeding up polling place administration for election officials

Jurisdictions in at least 31 states plus the District of Columbia have used some form of electronic poll-book to process voters at the polls. Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nevada, New Mexico, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and West Virginia have recently used electronic poll-books in at least one county within the state.”

Conclusion

Electronic Poll Books at Vote Centers will assist to provide a fast, reliable, secure and efficient voter processing and information sharing across all Vote Centers and the central Registrar of Voters office. They will also provide tools for better line management which will result in reduced wait times at the polling places. Additionally, they will allow the Registrar of Voters to process eligible voters and assist the general public at any Vote Center that is most convenient to them.

Appendix D: List of 2016 Community Outreach and Engagement Events

2016 Community Outreach and Engagement Events		
2016 Event Name	Date	Impressions
Taller San Jose Presentation 1	1/14/2016	20
Cesar Chavez MyBallot	1/21/2016	300
Saddleback Republican Assembly	2/18/2016	20
OCCORD Citizenship Fair	2/27/2016	300
Irvine High School Multi-Cultures Festival	3/4/2016	1000
ShamROCK n' RUN	3/6/2016	1000
Hope Builder Program - Taller San Jose Presentation 2	3/7/2016	25
Westminster Spring Festival	3/19/2016	700
Irvine Teen Forum	3/23/2016	300
Taste & Experience Korea Event	3/23/2016	500
Mission Viejo High School MyBallot	3/25/2016	30
Westminster Senior Center	3/30/2016	40
OC Leadership Forum on Aging	4/1/2016	200
Faces of Fullerton	4/9/2016	500
Diocese of Orange	4/9/2016	40
ABC Taller San Jose Presentation 3	4/14/2016	40
Elections 2016 Candidates Forum	4/14/2016	50
Cypress HS Voter Registration Drive	4/18/2016	1000
Laguna Woods Dem Club Registration Training	4/19/2016	30
Concorde College Resource Fair	4/21/2016	200
Korean-American Federation of the OC	4/22/2016	30
Friendly Center Health & Resource Fair	4/22/2016	150
Seegerstrom MyBallot	4/26/2016	2600
HS Voter Educ Week Santa Ana HS (Sec. Padilla)	4/27/2016	200
Celebrate Ladera	4/30/2016	300
El Modena HS Government Class Presentation	5/2/2016	120
Silver Academy at Youngnak P-Church	5/3/2016	35
OC Employee Wellness Info Fair	5/4/2016	100
Westminster Senior Center eSlate Demo	5/4/2016	60
CSUF Town Hall Meeting	5/6/2016	400
SOKA University International Festival	5/7/2016	1000

2016 Community Outreach and Engagement Events		
2016 Event Name	Date	Impressions
Irvine Spectrum, The Golden Chef Series	5/7/2016	400
Taste of Anaheim	5/12/2016	5000
Little Saigon Rock the Vote	5/12/2016	1000
Costa Mesa Senior Citizens Center	5/16/2016	10
Clinical Med Asst Prog-Taller San Jose Presentation 4	5/19/2016	40
OC Conservation Corps	5/19/2016	15
Doheny Blues Festival	5/21/2016	10000
Hispanic Chamber of Commerce	5/22/2016	60
OC Catholic Charities Citizenship Program	5/31/2016	70
OC School of Arts	6/3/2016	1000
Flag Day Celebration	6/14/2016	100
OC Conservation Corps & Charter Schools	6/16/2016	15
Voting Involvement Association Board Meeting	6/17/2016	15
Self-Advocacy Class-North OC Comm College Dist	6/20/2016	43
Citizenship Ceremonies City Nat'l Grove-Anaheim	6/21/2016	3000
Summer Series: Faithful Citizenship ENGLISH	6/28/2016	100
Summer Series: Faithful Citizenship SPANISH	6/28/2016	60
Huntington Beach 4th of July Celebration	7/2/2016	5000
OC Hispanic Chamber of Commerce	7/8/2016	70
Construction Training Prog-Taller San Jose Presentation 5	7/11/2016	9
OCCCO Voter Registration Drive Presentation	7/13/2016	30
San Clemente Ocean Festival	7/16, 7/17	6000
Westminster Safety Day	7/20/2016	700
AFL-CIO	7/21/2016	300
Downtown Anaheim CFM	7/21/2016	300
Candidate Academy for Members of the OCLF	7/21/2016	60
OC Fair (Mobile Voting Unit)	7/22/2016	1500
Costa Mesa Dem Club: Voter Registration Training	7/26/2016	9
Southwest Voter Registration Projects	7/26 & 7/28	25
City of La Palma Civic Expo	7/30/2016	400
Dana Point Summer Concert Series	7/31/2016	4000
CERT National Night Out	8/2/2016	500
Southwest Voter Registration Project	8/3 & 8/4	83
San Clemente Concerts	8/4/2016	2000
Southwest Voter Registration Projects	8/9/2016	15

2016 Community Outreach and Engagement Events		
2016 Event Name	Date	Impressions
OC Fair (Mobile Voting Unit)	8/12/2016	2500
Black Heritage Celebration	8/13/2016	300
Kiwanis Club	8/16/2016	15
San Juan Capistrano Summer Nites	8/17/2016	2000
Downtown Santa Ana 5K Ciclovía	8/20/2016	500
Latino Health Access	8/20/2016	20
Lake Forest Concert Series	8/21/2016	1000
Hope Builders - Taller San Jose Presentation 6	8/22/2016	30
Downtown Anaheim CFM	8/25/2016	300
Achieve Better Communication Meeting	8/26/2016	20
Rancho Mission Viejo Rodeo	8/27, 8/28	8000
The VIC 40th Skimboarding Competition	8/27, 8/28	500
Taller San Jose Presentation 7	9/1/2016	30
Orange Int'l Street Fair	9/2, 9/3, 9/4	250000
Heritage Pointe - Mission Viejo	9/7/2016	40
Tall Ships Festival	9/10/2016	1000
38th Annual Fiestas Patrias	9/10 & 11	5000
Día De La Familia (Family Day)	9/11/2016	300
Construction Program-Taller San Jose Pres 8	9/12/2016	20
Family Resource Center Presentation (SSA/CSF)	9/14/2016	30
Concorde College Constitution Day	9/16/2016	50
Surf The Vote at Aliso Beach (Mobile Voting Unit)	9/17/2016	500
Moon Festival	9/17/2016	120
San Juan Capistrano Summer Nites	9/21/2016	1500
Dayle McIntosh Center Speaking Engagement	9/23/2016	35
Irvine Global Village Festival	9/24/2016	8000
Komen Race for the Cure	9/25/2016	10000
CSUF Voter Reg. Day, OCROV Concert	9/27/2016	1000
Irvine HS MyBallot	9/27/2016	1530
South Coast Repertory Citizenship Night	9/29/2016	200
Senior Fitness Expo 2016	9/30/2016	200
Chapman Univ Homecoming, OCROV Concert	10/1/2016	4000
12th Annual Oktoberfest Exile Skimboard	10/1 & 10/2	1000
Self-Determination Conf. Speaking Engagement	10/1/2016	150
Irvine Lakeview Senior Center	10/4/2016	25

2016 Community Outreach and Engagement Events		
2016 Event Name	Date	Impressions
Los Alamitos HS	10/5/2016	800
Fullerton Artwalk Info Booth	10/7/2016	100
Taller San Jose Presentation 9	10/7/2016	25
San Clemente Village CFM	10/9/2016	500
Laguna Niguel Junior Civic Workshop	10/11/2016	100
OC Employee Nov-8 Volunteer Sign Up Day	10/12/2016	300
Sage Hill HS MyBallot	10/12/2016	300
Meet the Irvine Candidates Forum	10/15/2016	120
Orange Home Grown CFM	10/15/2016	1000
Spooktacular Fun Days	10/16/2016	6000
Friendly Center Health & Resource Fair	10/17/2016	100
HB Surf City Airshow (Mobile Voting Unit)	10/21, 22, 23	100000
#CSUFvotes Fair Info Table & Street Team	10/24/2016	300
Tustin Gardens Senior Citizen Voter Ed.	10/24/2016	25
Vietnamese Community of Southern Calif	10/26/2016	15
OC Catholic Charities Citizenship SPANISH	10/26/2016	60
Anaheim Fall Festival/Halloween Parade	10/29/2016	10000

Appendix E: 2018 Operational Plan for Traditional Polling Place Model

Executive Summary

Pursuant to the Orange County Board of Supervisors' June 13, 2017 directive, this document outlines the Registrar of Voters' blueprint for employing a traditional voting model utilizing existing voting equipment for the 2018 election cycle.

The plan to replace Orange County's current voting system began in 2013 due to the decline of usable systems and the lack of allowable modifications in a federally certified environment. While this does not affect the accuracy of the system, it can impact the voter experience.

Under a polling place model there is not enough time to implement a new system for 2018. Therefore, in order to defer acquisition of a new voting system beyond 2018, we must reduce the number of deployed voting booths while still meeting the expectations of Orange County voters. The immense growth in vote-by-mail voting has helped by reducing the demand on polling place usage.

To address this and other challenges in 2018, we've launched internal teams focused on ways to improve our in-person voting conditions in a streamlined voting booth environment, while at the same time improving our vote-by-mail systems to capitalize on innovation and expand capacity.

As outlined in this plan, our immediate tasks include:

- Strengthening our internal maintenance operations to properly prepare voting equipment for additional polling place elections
- Assess risk on equipment that is no longer reliable and remove from service as appropriate
- Utilize a consolidated precinct strategy to balance the shift in voter trends and efficiently allocate equipment and personnel by:
 - Carefully reducing the number of polling places through detailed analysis while mitigating impacts (using a manageable number - from approximately 1,100 sites to 900)
 - Reduce distribution of voting system equipment to accommodate the reduction of usable systems
 - Assign volunteers more effectively, with larger teams and more experience
- Continue with plans to replace and refresh our ballot mailing equipment in order to meet the needs of increasing numbers of vote-by-mail voters

Our team continues to focus on delivering quality election services in the present, while planning and preparing for the future.



Neal Kelley
Registrar of Voters
Orange County, CA

EXISTING VOTING SYSTEM EQUIPMENT: CHALLENGES AND MITIGATION

The Orange County Registrar of Voters initially purchased the existing voting system in 2003 with the expectation of a 10-year life span based on use for two major elections biennially. At the inception of the 2018 election year, the system will have been in use for five years over the recommended lifetime expectation of 10 years (the required lifespan of federally certified equipment) and will have been utilized as the mode of polling place voting for nearly 50 major elections and special elections.

In 2013 the office began extensive planning to replace the existing system, including detailed financial planning through the Strategic Financial Planning process. This effort clearly communicated that the system, and its major components, was targeted for replacement following the 2016 election cycle. This planning process started due to clear evidence that the system was declining (and was “locked” as a federally certified system). Preparation began long before SB450 (Voter’s Choice Act) was even an option in California.

A voting system analysis performed in 2014, provided insight to the longevity of the voting equipment and identified critical parts and supply chain issues that continue to increase. Issues included parts no longer being manufactured, operating systems that are outdated and no longer supported, and certification limitations that restrict the system within the current design.

The most critical part in the entire system is the back-lit screen display on voting units produced by only one manufacturer in the world. Mitsubishi reportedly manufactures this display for multiple military contracts; however, it is unknown how long the vendor will continue to manufacture this part. Should Mitsubishi discontinue the production of this part, there is presently no other manufacturer from whom the part can be procured.

In addition to the back-lit display, our voting system vendor has reported that there are approximately nine other parts required for the operation of the system classified as critical based on current inventory levels and discontinued manufacturing. In the event that

“Orange County’s voting system was certified to a federal standard that calls for a voting system to last ten years.”

- 2014 Orange County Voting System Assessment Report

production of any one of these parts further declines, or a catastrophic incident occurs, the vendor has estimated that only approximately 18% of existing inventory could be immediately replaced. However, the capacity to immediately replace damaged equipment could be reduced by events that have the potential of exhausting existing inventory levels in other jurisdictions utilizing the same system.

A portion of the system runs on Windows 2000, which Microsoft stopped supporting on July 13, 2010. No further system updates, security patches or support of any kind is currently available.

Prior to 2013, both state and federal voting system regulations required all electronic voting systems to have received federal certification. Many of these standards were often confusing and cumbersome, barring adaptations to the system and essentially forcing the use of the same equipment without updating it to utilize developing technology, or improved hardware.

The California Legislative Analyst’s Office released a report in March 2017 discussing the state’s role in elections. Concerns regarding aging equipment across California were highlighted. All but a few counties in the state use voting systems that are more than a decade old. In many cases components of the systems no longer are supported or produced by manufacturers. Serious concerns about the security of the voting system as well as the possibility of catastrophic failure of voting systems in counties¹ are significant.

Ultimately, the challenges of using antiquated equipment are more complicated than simply having a device that might not work on Election Day. There are three common concerns with continuing to use old equipment: (1) the failure of the system to work as intended, (2) an inability to connect voting machines to current computers because the software is unsupported and outdated (3) difficulty finding replacement parts for devices that are no longer manufactured² (Figure 1). While continuous effort and detail in maintenance of the system has sustained an extended lifespan; preserving high confidence and security of the equipment and system continues to be a challenge each election. With each election cycle, upkeep of hardware and materials are increasingly difficult to maintain due to lack of resources, scarcity of parts and inherent risk of operating aging equipment.

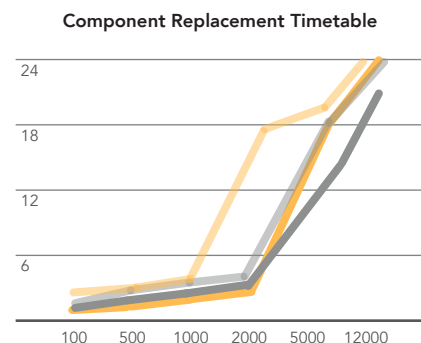


Figure 1. Component Replacement Timetable for critical voting system. Replacement time in months to number of components.

¹Taylor, M (2017) The 2017-18 Budget: Considering the State’s Role in Elections. Retrieved from Legislative Analyst’s Office, California website: <http://lao.ca.gov/reports/2017/3634/state-role-elections-033017.pdf>
²Norden, L., Famighetti, C. (2015) America’s Voting Machines At Risk. Retrieved from Brennan Center For Justice website: https://www.brennancenter.org/sites/default/files/publications/Americas_Voting_Machines_At_Risk.pdf

Equipment Challenges

Background and Numbers

Under a traditional polling place model, the Registrar of Voters maintains in excess of 20,000 pieces of voting equipment for elections in Orange County. This includes:

- 9,600 Electronic Voting Machines (eSlates)
- 1,600 Judge's Booth Controller units (JBCs; eSlate control unit)
- 9,600 Voter Verified Paper Audit Trail Printers (VVPAT printers to comply with Secretary of State legislative mandates).

Immediate concerns, as discussed previously in the overview, are focused on the growing disparity of inventory and manufactured components and the imminent discontinuation of support to outdated operating systems. Additionally, due to the age of the system, maintenance is less effective in alleviating end-of-life issues, consequently diminishing the equipment supply for each election. These circumstances result in increased time, staff and cost to maintain and service the existing inventory. This also creates a challenge of providing adequate equipment to the required number of polling places.

Staffing Challenges

Presently, service and maintenance of equipment requires a team of County employees focused on the effort for a three-month period. Due to the cyclical nature of elections, all staff must have comprehensive, updated training in multiple areas of service.

Maintenance training includes:

- Equipment set up
- Identifying hardware issues
- Component repairs
- Functionality testing
- Inventory tracking

Training procedures in maintenance, including general servicing skills and equipment repair, have required increased attention and enhancement over the past decade for staff to be able to identify, repair and test equipment that progressively require greater

maintenance.

Service and Maintenance

Maintenance for voting equipment begins up to six months in advance of an election. For the 2018 June Primary, this is scheduled to begin in September of 2017. At the conclusion of every election, maintenance is performed on all equipment to ensure full functionality in advance of the next election. The age of the voting equipment has increasingly affected the process of service and maintenance in two major aspects:

First, the number of elections the equipment has been used far exceeds the expected life. As a result, full functionality testing is conducted in addition to regular service and maintenance. This extra step adds additional time to the process; but is crucial and necessary to continuously identify equipment in need of repair or equipment that must be removed from production.

Second, the enhancement of visual inspection and increased criteria for power testing increases the time frame of preparation by extending the time spent on each individual piece of equipment to verify performance. This is particularly labor intensive when updating equipment between Primary and General Elections.

Repair and Inventory

The Registrar of Voters has been responsive to the demands of the voting system equipment, proactively updating and replacing connections, cables, system boards, and materials each year, as well as performing general service and maintenance. Throughout the life of the equipment, machines that cannot be serviced or that have broken parts that are no longer being manufactured are pulled from inventory. Recently, the incidents of repair have consistently increased between each election (Figure 2). In correspondence to the higher frequency of equipment degeneration, cost increases and inventory decreases have required creative solutions for the repair and distribution of equipment.

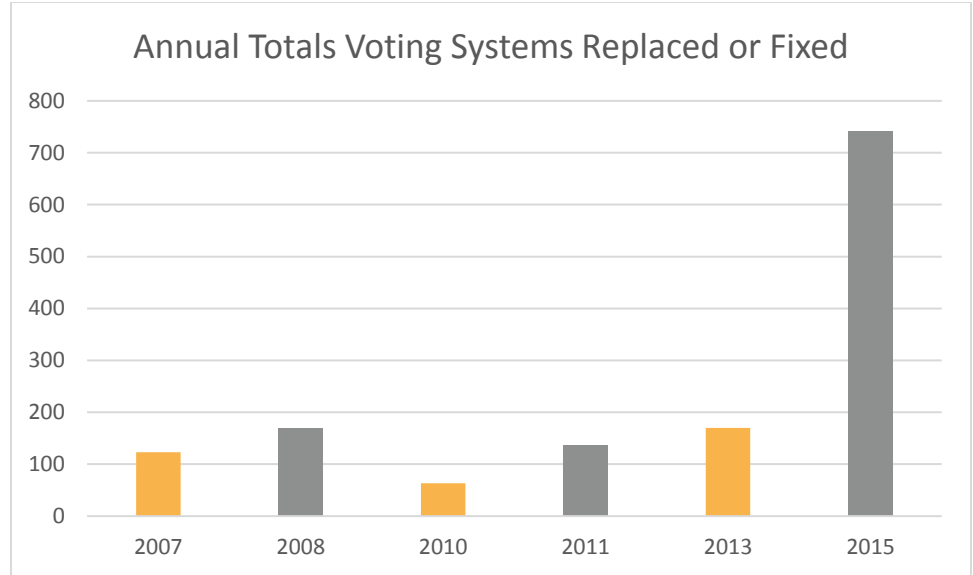


Figure 2. Combined totals of systems replaced or fixed in Orange County.

Equipment Risk Assessment

Although used replacement parts are tested by the voting machine manufacturer (and our office), the reality is, these parts are potentially up to 15 years old and have been operated thousands of times by voters. The life expectancy of these parts is unknown and utilizing a used replacement part has an inherent risk. This scenario is akin to an airline maintaining an aging fleet that is certified and cannot be reconfigured to adapt to newer replacement parts. While this is a short-term solution with risk, it is not feasible in the long-term.

VVPAT Printer

The VVPAT printers have two concerning potential points of failure:

First, the printer motor has an increasing rate of failure, meaning, it is the component that fails most in the VVPAT printer. These motors are an expensive item to replace and must be ordered directly from the manufacturer. Once received, they can be installed by Registrar of Voters staff.

Second, the printer circuit boards fail because of age. The Registrar of Voters is only able to get a limited number of replacements from the voting equipment manufacturer. The replacement board is from returned voting machines that have been used by other counties before those counties upgraded to new voting equipment. There are a limited number of boards because most counties that utilize the same equipment are in states that do not require the use of a paper back up printer.

Unfortunately, because these are used pieces, life expectancy is uncertain and ambiguity remains on how they will behave on Election Day.

eSlate

The eSlates have one concerning potential point of failure. It is the circuit board located inside the eSlate. The circuit board can be ordered and replaced by Registrar of Voters staff. The board itself will most likely come from previously used election equipment, which comes with uncertainty of how it will work on Election Day.

There is risk associated with utilizing the current system for the 2018 election cycle. Even though the equipment has been meticulously serviced, the age of the equipment increases the potential for malfunction during transport, set up or during use by voters (although it is important to point out that this has no effect on the accuracy of the system). Every endeavor will be made to reduce risk by maintaining a robust response system that will be utilized to troubleshoot and make repairs if needed on-site at polling places.

2018 Voting System Equipment Operational Plan

The comprehensive plan of action for the voting equipment in 2018 involves preparation of equipment to be serviced, and updated equipment maintenance training. Each step within the proposed process directly responds to the challenges of equipment age, decreasing inventory of parts and anticipated operating system difficulties. Once staff has received updated training, visual inspections are performed, equipment is set up and functionality testing is completed in order for staff to identify potential failures. Then, repair parts, if available, are ordered. Equipment is repaired or pulled from service when the device cannot be fixed.

While the implementation of internal policies and procedures has effectively maintained the voting system's integrity and ability to function accurately and reliably, the external factors of critical parts, supply chain issues and operation system sustainability have the potential to adversely impact system operations. A detailed summary of the planned maintenance is discussed below.

Service & Maintenance

The Registrar of Voters will continue to make every effort to ensure the voting equipment is structurally sound and technically prepared for Election Day. The detailed service and maintenance planning for the

2018 elections is already underway. An assessment of each component within the system as a possible point of failure requires the following maintenance to be performed on the voting equipment to ensure integrity and prolong lifespan.

eSlate

System Reset – The voting machine information is backed up; the device is then reset in order to remove all data from the previous election and prepare the component for storage for the next election.

JBC

System Reset - This includes a visual inspection, powering the device up, battery back-up tests, and checking and verifying security seal numbers. This checklist is performed on each unit in order to remove all data from the previous election and verify functionality.

VVPAT Printer

Paper replacement – Paper ballot receipts are removed and new thermal paper is installed into the printer (Figure 3). The paper record from the previous election is put into storage.

Power Check – The printer is powered up and tested to verify that printing occurs. This is done to ensure that the printer is functional. As mentioned in the risk assessment of equipment, the printer is one of the significant points of failure. There are added concerns in performing this testing and, while it is critical and necessary, the additional number of times the printer is used, the possibility of failure increases with age.

eSlate Connectivity – The printer is tested on a live eSlate to verify that it connects and will record votes. At this point, a serial number is added for tracking and inventory.

Once all the above equipment has been tested, a functionality test is performed. The functionality test duplicates everything a poll worker would do to prepare the election equipment and set up for operation on the day of the election. Testing includes the following:

- All cables are inspected and circuit boards are checked. After years of use, these cables come loose more often and connection pins get bent from cables being forced

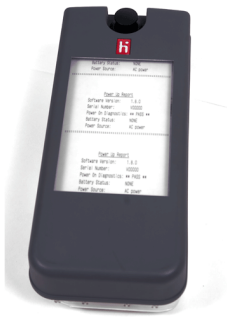


Figure 3. VVPAT Printer, which is utilized to record votes cast on back up paper.

into receptacles. Circuit boards fail because of age and are reviewed to ensure enough time to order replacements if available.

- eSlate is assembled to make sure the legs and privacy screens are in working condition. The machines suffer from wear and tear of multiple elections and aging components. The set up and take down of a machine determines small repairs as needed.
- eSlate, VVPAT printer and JBC are connected to make sure equipment is communicating with one another and booths are assigned to simulate setting up the election. As previously stated, this is done to identify any potential issues that a poll worker may encounter when setting up on Election Day. In this process, a malfunction in the screen, broken buttons or connectivity issues can be addressed and repaired.

Equipment Repair

Equipment that cannot be serviced, or that has defective parts, will be pulled and a parts list is created to repair the equipment. Based on the determined need, equipment is either sent to the vendor for repair, or a technician will perform on-site repairs. The length of time required to conduct repairs can vary depending on parts availability. Until the piece of equipment is completely functional it cannot be added back into the available inventory.

The plan for 2018 is well-defined and thorough in preparing the equipment, and maintains high levels of confidence for the security of the voting system. The Registrar of Voters' office is cautiously optimistic in the overall equipment plan. Nevertheless, it is critical to point out that this remains a temporary solution (with risk associated), see Risk Assessment chart on page 27, for 2018 and is not sustainable in the long-term.

VOLUNTEER AND FACILITY RECRUITMENT: CHALLENGES AND MITIGATIONS

Long-standing challenges in recruitment have existed every election cycle. Now, combined with the aging equipment issues, a perfect storm of challenges converges, creating new problems that need to be addressed. Recruitment and equipment are fundamentally dependent processes within election operations. The number of polling places required for an election directly affects the amount of equipment and distribution thereof throughout the County. As previously discussed, the inventory of reliable voting system equipment is reduced with each election cycle. Recruitment challenges in participation and retention of Election Day volunteers and polling place facilities have driven the need to explore options to properly recruit and staff polling places for the decreasing number of in-person voters in all elections.

The traditional voting model has not transitioned into the modern voting landscape. Requiring a high number of neighborhood polling places means more volunteers are needed to act as polling places and as poll workers. Maintaining the current structure of effort, time and cost for a method of voting that has been declining since 2008 is inefficient and not sustainable.

Facility Recruitment Challenges

Polling place recruitment includes public sites, city, county or government facilities including schools, community centers, libraries, colleges, and private facilities such as churches, clubhouses, businesses and meeting halls. Both private and public facilities are increasingly difficult to recruit for numerous reasons.

Fewer private organizations are interested in participating in elections consistently, or participating at all. Several facilities have declined to become involved because of past experiences (such as parking challenges, or difficult voters), political climate or the required time and space commitment. A growing number of schools are reluctant to participate citing safety and liability concerns. Geographic constraints are becoming increasingly complicated with the creation of new boundary lines for districts within existing jurisdictions; resulting in a higher number of different ballot types, which in turn affects the

required number of polling places and equipment distribution. As a result, polling places are now located across the street from each other or have changed – causing greater confusion to voters.

These challenges, combined with the issues of aging equipment, compel the Registrar of Voters to develop a new polling place recruitment strategy to successfully conduct an election in 2018 under the traditional model.

Availability

With each election requiring an average of over 1,100 polling places, available facilities within the designated voting area may not have open rooms. Facilities with available rooms may be too small or inaccessible, or the area has limited or no parking. The long hours of Election Day and historically low voter turnout at the polling place have impacted the retention of polling places. Facilities that observe a lack of voter participation feel ineffective and many organizations have discontinued participation due to the time and effort required to host a polling place (and the perceived lack of demand). In the past, inappropriate actions of poll worker volunteers may also affect the relationship with these sites.

Areas that are entirely residential are increasingly comprised of gated communities and Home Owner Associations (HOAs). Many planned communities are unable to host a polling place or allow residents to do so because of HOA policies. This is becoming increasingly difficult to contend with as areas throughout north central and south Orange County are exclusively HOA neighborhoods or gated communities. Additionally, residential areas typically host polling places in garages which do not meet minimum ADA standards. Mitigations, such as accessible equipment, must be maintained and delivered to these facilities.

Safety and Liability

The list of reasons for declining participation grows as organizations increasingly cite safety and liability issues as the motive for a lack of interest or inability to become involved.

Each major election requires over 450 public schools in Orange County. The California Elections Code and Education Code mandates schools to host a polling place as necessary; however, administrators have been increasingly concerned with open access to minors on campus by strangers and potential predators.

At all sites there is a potential for the polling place host to experience difficult voters. A team of trained staff is on stand-by to resolve these issues when they arise and situations are escalated to law enforcement as needed. Although there are rapid response teams in place to circumvent escalation to violence, the mere possibility of questions of safety discourage organizations from becoming involved.

The Registrar of Voters' office provides Certificates of Self Insurance when requested, but facilities are increasingly fearful of property damage and potential litigation. Past incidents include damage to wood or specially treated floors, marks on walls from posting signs, chips and indentations in walls from equipment, voters hitting other cars in the parking lot or voters falling in polling place.

Although these issues are properly handled by our office, it does affect people's willingness to volunteer a home or facility.

Changing Boundary Lines

Two of the greatest factors affecting polling place recruitment are boundary lines and geographic location. Boundary lines are increasingly being created or changed as city elections continue to consolidate with state or federal elections. Several jurisdictions have also changed from at-large voting to district only voting (school districts, water districts, and city councils) increasing the number of unique ballot types, which in turn requires more polling places and more equipment.

This past election year, many cities and school districts adopted district based voting. For example, the city of Buena Park had long standing polling places with no need for new facilities based on the geographic voting areas with unique ballot types. In 2016, district based voting resulted in 25 different ballot types within a total city area of only 10.6 square miles.

District based voting increased the number of polling places in Buena Park from 28 to 37 for 36,106 registered voters (Figure 4). With at least one polling place required for each ballot type, it was extremely difficult to meet the basic criteria within the California Elections Code and adequately allocate functioning equipment to the increased number of sites. Evaluation of existing polling places and available equipment was conducted to determine if equipment could be allocated with the added requirement of nine new polling places. These sites were located in residential and commercial areas with few

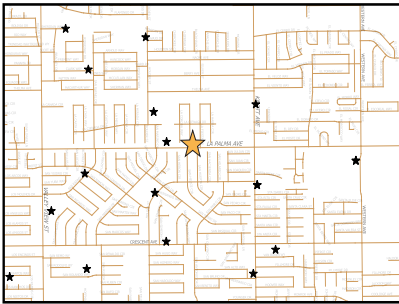


Figure 4. Small section of Buena Park with 16 polling places (black stars) in the 2016 General Election, with some across the street from each other. The orange star represents a potential linked precinct polling place location that could serve a large portion of this community.

options in voting room and no ample parking for voters or volunteers. Utilizing statutory provisions within the Elections Code, two schools, previously not participating, agreed to host a polling place. The additional effort to recruit these facilities fulfilled the need for the area - the final result being three schools within a half-mile radius and on the same street. Furthermore, there was greater confusion to voters as to their assigned polling place.

As more districts implement district based voting, the complexity of geographic constraints will continue to escalate and affect the ease and quality of voting facility recruitment. Equipment allocation in this case was redistributed in all 37 polling places ranging from 4 to 10 electronic eSlates. As illustrated by the example of Buena Park, these increasing boundary line changes have a negative effect on the efforts to maintain an aging voting system by requiring more polling places and therefore more machines to be allocated on Election Day. Under the traditional model of polling places, the risk in utilizing the current equipment increases with each election and is not tenable for long term future maintenance.

2018 Facility Recruitment Operational Plan

Recruitment of polling places for 2018 is currently in the development stage. In order to accommodate limited equipment and decreased participation of facilities, the Registrar of Voters is researching facility history of use, voter turnout, and registration numbers to construct a reduced polling place model plan. In an effort to mitigate the challenges hosting polling places at schools, communication with the school district offices will begin early in the school year and use of facility applications will be completed before the end of 2017 in order to identify and confirm rooms on campus with limited access to campus areas. In response to liability concerns, the Registrar of Voters will continue to provide insurance upon request.

Volunteer Recruitment Challenges

Over the past 10 years, volunteer participation rates have shown to decline, with retention declining overall as the population of poll workers age or remain one-time participants. Under the traditional polling place model, the same average total of volunteers is required each election resulting in extreme understaffing in Primary Elections. Combined with the lack of participation is the high cancellation rate of poll workers across all elections.

These challenges, combined with the issues of operating aging equipment, compel the Registrar of Voters to develop a new poll worker recruitment strategy to successfully conduct an election in 2018 under the traditional model.

Polling Place Volunteers

Each election, thousands of volunteers are recruited to staff polling places on Election Day. Poll workers have a crucial role - to process and assist voters and to provide bilingual language assistance. With an average of 1,100 polling places in a traditional polling place model, each polling place requires one Inspector and approximately four Clerks, including Student Clerks and bilingual poll workers. As the number of polling places increases, the requirement of volunteers increases, as well as the bilingual support needed for any newly created areas.

Bilingual Volunteers

Under Section 203(c) of the Voting Right Act (VRA), Orange County is mandated to offer language assistance in Spanish, Vietnamese, Korean, and Chinese. The Registrar of Voters recruits bilingual poll workers for these languages based on the number of registered voters that have requested election materials in a mandated language. In 2014, the California Secretary of State (SOS) added additional language support for Tagalog, Japanese, Hindi and Khmer in Orange County, pursuant to the California Voting Rights Act.

Within the traditional polling place model, there is a growing number of polling places that require bilingual poll workers based on the minimum requirement of 25 registered voters who have requested language assistance. Also, the increasing boundary changes result in additional polling places with the need for bilingual poll workers. Bilingual poll worker recruitment is further limited by the availability of volunteers who are proficient in English and the mandated

“Bilingual poll workers have an 18% average cancellation rate across all elections... it is difficult to meet state and federal requirements countywide.”

language. Although language requirements span throughout Orange County, potential bilingual volunteers are concentrated in specific regions, making it difficult to meet the state and federal requirements countywide.

Election Recruitment

Major elections occur every two years and there is an observable difference in overall volunteer interest and participation. In correlation to decreased media exposure and volunteer interest for statewide elections, the Registrar of Voters is unable to meet staffing needs at all polling places on Election Day. Every election, there are a number of Inspector, clerk and bilingual positions that are not filled due to Election Day no-shows or last minute cancellations that cannot be replaced.

June Primary Challenges

June Primary Elections are especially difficult to recruit poll workers. The election occurs about two years after the most recent previous election (November) and many experienced poll workers have had a significant change in circumstances; reporting health issues, recent relocations, new employment or other responsibilities resulting in them being unavailable. On average, the retention rate for previous poll workers returning to volunteer for June Primary Elections is just 49%. With less than half of experienced poll workers returning, the Registrar of Voters must recruit, train and staff thousands of new, inexperienced volunteers.

Student Poll Worker Program participation, which provides a significant portion of poll workers, is 50% less than that for November General Elections. Many schools have finals, graduation and activities during the week of June Primary Elections. As a result, students are either unavailable to volunteer or are often last minute cancellations. In June 2014 and 2016, 30% of Student Poll Workers cancelled after initially submitting applications to volunteer.

November General Challenges

November General Elections have higher interest amongst voters and volunteers but recruitment challenges remain. The retention rate of previous poll workers is slightly higher than June. Those who do not return cite reasons of:

- A short-staffed polling place
- A long, slow day
- Low voter turnout
- Voting equipment difficulties
- General disinterest in returning to volunteer

The low retention of experienced poll workers increases the recruitment of thousands of brand new volunteers. In conjunction with a higher number of polling places to staff, this dilutes experienced poll worker assignment throughout the county.

One of the recruitment advantages for November General Elections is the high participation rate of the Student Poll Worker Program, which fulfills approximately 25% of all required poll workers. In November 2016, over 2,800 Student Poll Worker applications were received, surpassing all previous elections since the program's inception. Often times hundreds of applications are received in densely populated areas, and volunteer saturation occurs in small pockets of the County. In difficult to recruit areas, such as the beach communities and south Orange County, students from north or central Orange County are requested to travel over twenty minutes away to the nearest polling place. This results in many students cancelling or not showing up on Election Day due to transportation issues.

Decreased Participation and Cancellations

Data shows a high ratio of cancellations among poll workers initially committed to volunteer. Many poll workers cancel after completing training or days before Election Day. Cancellations cause a shift of office staffing resources, requiring time, effort and cost in replacing cancelled volunteers.

The June 2016 Primary Election had a total of 1,262 volunteers cancelled, and 138 (11%) of these were cancellations on Election Day with no advanced warning.

In the November 2016 General Election, a total of 1,337 volunteers cancelled (Figure 5), and 227 (17%) of these were cancellations on Election Day with no advanced warning.

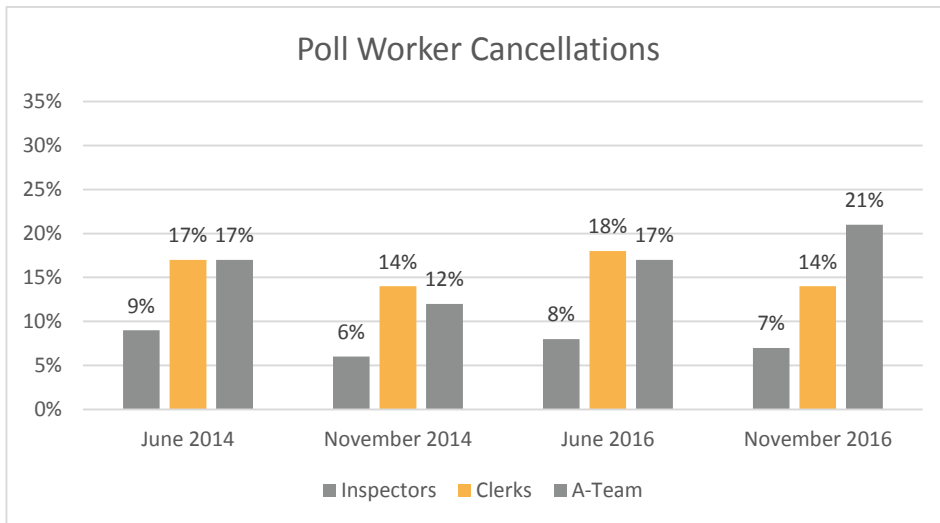


Figure 5. Total poll worker cancellations for elections from 2014 - 2016.

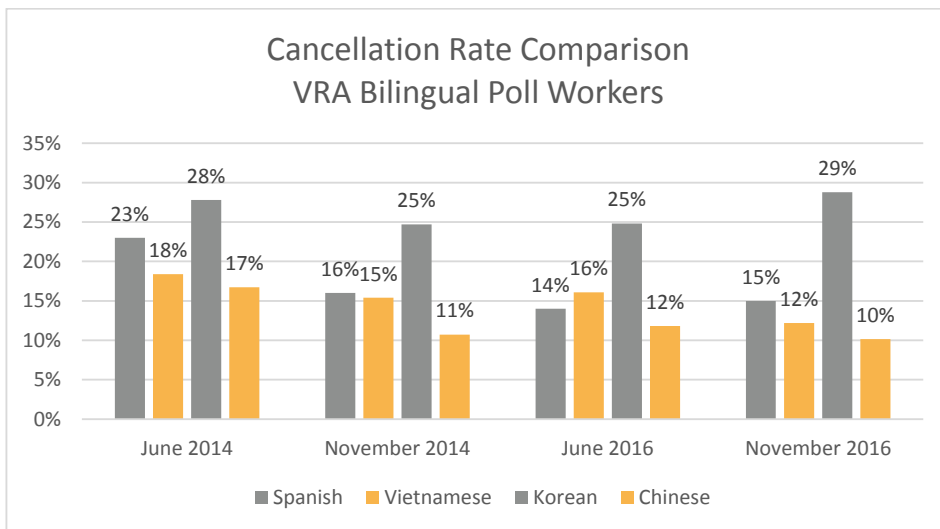


Figure 6. Bilingual poll worker cancellations for elections from 2014 - 2016.

Polling Place Inspectors are tremendously difficult to retain, with cancellations occurring the weekend before Election Day. Responsible for election supplies, a three-day window of distribution allows for an Inspector to pick up supplies the weekend before Election Day. Those who do not pick up are replaced by alternates to ensure each polling place has an Inspector with supplies on Election Day.

In June 2014, with all recruitment efforts exhausted, many polling places were without an Inspector and severely understaffed (just days prior to Election Day), 53 Registrar of Voters' employees were assigned to serve as County Poll Workers to fulfill Inspector positions. Reassigning integral staff to meet polling place needs directly impacts Election Day and Night operations, requiring the remaining on-site staff to absorb additional responsibilities. Other processes are hindered by the shift in human resources, for example, vote-by-mail ballots are not opened and processed on Election Day, causing delays in precinct reporting and election certification.

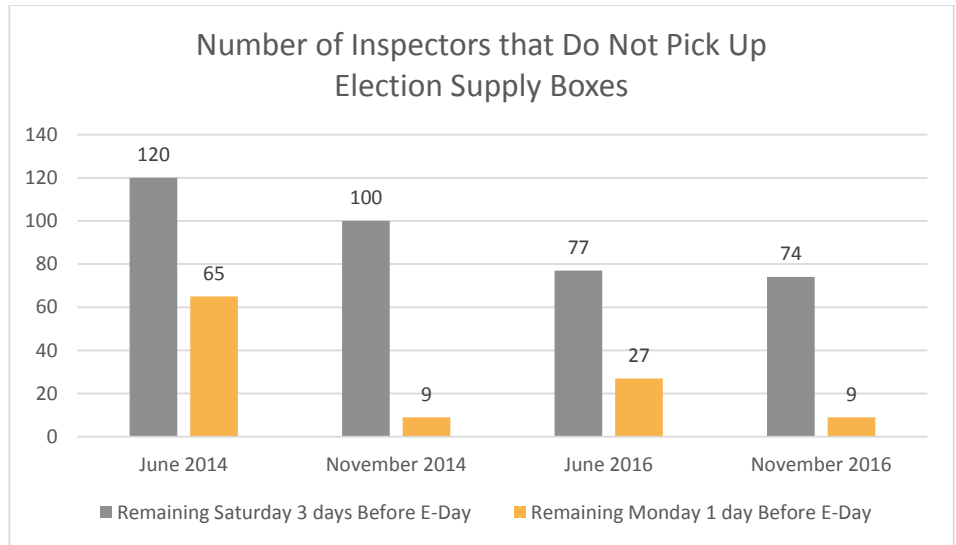


Figure 7. Election supply boxes not picked up the weekend before Election Day.

The County Poll Worker Program has assisted with recruitment allowing county employees to volunteer on Election Day, receiving a stipend in addition to normal wages. Since the inception of the program in 2002, the targeted goal of 10% of the county workforce to volunteer on Election Day has not been met (Figure 8). The program is currently under review and plans to propose amendments to increase volunteers from county employees are forthcoming.

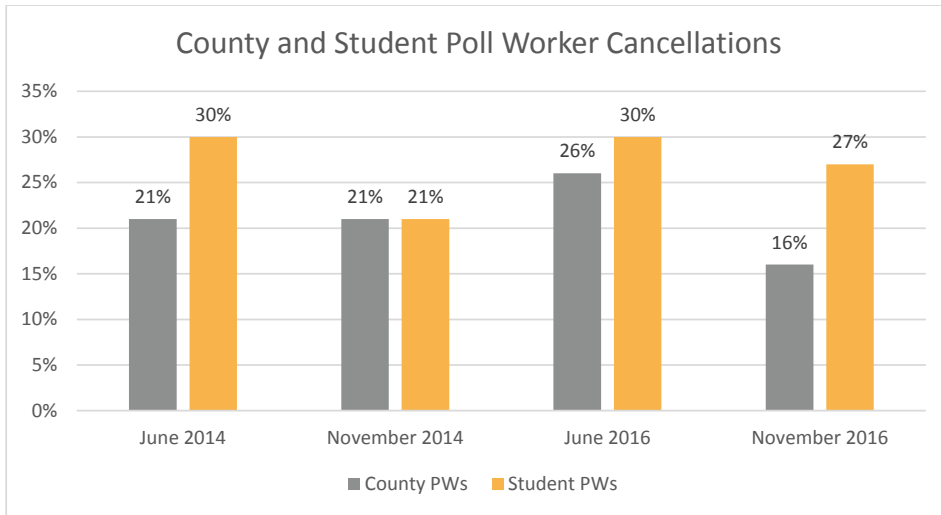


Figure 8. Cancellation rates of County and Student Poll Worker programs.

2018 Volunteer Recruitment Operational Plan

Under the traditional polling place model, the high number of polling places dilutes recruitment efforts. The goal of experienced poll workers and fully staffed polling places, including language support, is unattainable. To accommodate the challenge of operating aging equipment in combination with low volunteer participation, particularly in June elections, the Registrar of Voters is planning to implement a strategic community engagement plan, increase voter education outreach and continue to offer stipend and service hour incentives. In order to successfully navigate the current and projected recruitment challenges of availability and cancellations, county and student poll worker programs are being reassessed, and the poll worker training program is being developed to include new learning strategy tools to improve volunteer experience.

“District based voting (has) increased the number of polling places in Buena Park from 28 to 37.”

Additional Recruitment Mitigation for 2018 Elections

The increase in polling places and subsequent demand on voting equipment, along with the difficulties in recruiting facilities and volunteers under the traditional polling place model, requires a new recruitment solution. Each election involves the use of more than one thousand polling places across the County and each polling place is allocated between four and twenty-four voting machines. Not only does each polling place need to be equipped with the proper number of voting machines, each machine must also function properly. In addition, extra inventory must be set aside to respond to Election Day equipment issues. Along with the consideration of equipment needs, each polling place must be staffed with an Inspector, Clerks and the required language support Clerks. Currently, there is a tremendous burden on the voting equipment and the recruitment efforts under this traditional model. Finding a way to use a diminishing supply of voting equipment and human resources to support an increasing number of polling places is one of the biggest challenges the Registrar of Voters’ office faces.

Precinct Linking as Short Term Solution

Although there are no easy solutions, certain adaptations are available to mitigate these challenges. As discussed previously, there are limitations to the efforts used to maintain the current stock of voting equipment. Given the increasing 2018 recruitment challenges for both poll workers and polling places, in combination with equipment constraints, the Registrar of Voters must link a limited number of precincts in order to effectively operate a traditional polling place model.

Linking precincts refers to the process of taking several smaller voting precincts and linking them together in a single polling place. Factors that affect whether precincts can be linked include ballot types, voter registration numbers, proximity of the precincts to one another, and historical voter turnout for each precinct.

Precincts linked to one polling place will lessen the burden on the aging voting equipment by allowing for a decrease in the number of polling places, thereby reducing the required amount of voting equipment and volunteer staff during the next election. In contrast, attempting to operate the next election without linking precincts would require the same number of polling places, or possibly more in some areas, with substantially less voting equipment and a lower pool of potential volunteers. This is simply not feasible during the next election, nor

“With at least one polling place required for each ballot type, it was extremely difficult to meet the basic criteria within the California Elections Code and adequately allocate functioning equipment to the increased number of sites.”

would it be possible during a Presidential Election. Consequently, there must be a shift towards the reduced polling place model.

Precinct Linking Restrictions

The linking of precincts is anticipated to have the following consequences:

First, under a linked precinct model, some voters may experience slightly longer travel times to reach assigned polling places. Every effort will be made to identify and recruit facilities that are centrally located within linked precincts. The geography of each region, coupled with the unpredictability of recruiting facilities means that finding a centrally located polling place that can meet all of the requirements will be challenging. Ultimately, the best facility will be recruited within the area to maximize a positive voter experience.

Second, parking at some polling places will likely become more congested. More voters concentrated in fewer polling places will lead to anticipated traffic and congested parking lots, mainly during peak hours. Increased traffic and congestion may create longer wait times. To reduce this effect, linked precincts will be created with consideration and analysis of historical voter turnout data, including a detailed review of the vote-by-mail voter trends for each precinct. Additionally, parking lot size and traffic flow along with street parking availability will also be factored into the facility recruitment process.

The traditional polling place model has become a challenge given the current stock of aging voting equipment. While a transition to the reduction of polling places by linking precincts will lessen the strain on current voting equipment and decrease the quantity of volunteers needed to staff an election, allowing the Registrar of Voters' office to navigate the next election, it presents serious challenges and cannot be sustained as a long-term solution.

VOTE-BY-MAIL OPERATIONS

To accommodate a continual increase in vote-by-mail voters, maintain and improve service levels, reduce cost, and prepare for the future, the Registrar of Voters will continue with its plans to upgrade its current mailing system to a new, modern, state-of-the-art mailing operation in 2017.

The current mailing system is nearly 15 years old. Like the in-person voting system, replacement parts are extremely difficult to source because they are no longer manufactured. Currently, the office must rely on existing low inventory levels, or refurbished parts. Furthermore, knowledgeable support personnel are few, as they are not trained on this older equipment.

Finally, the manufacturer has indicated that this mailing system is at the end of its life cycle and they will be unable to continue support beyond the current contract (mid 2018). These factors are the reason our planning began in 2013 for the replacement of our current system.

Vote-By-Mail

Historical Narrative

As described in the Vote Center Briefing Document the Registrar of Voters presented on June 13, 2017, voters are gradually changing the way they vote to accommodate their own schedules and lifestyles:

- Of the 1.2 million ballots cast in the 2016 Presidential General Election, nearly 700,000 were vote-by-mail ballots.
- Currently 61% of all registered voters have signed up for permanent vote-by-mail status.
- The number of voters casting ballots at the polling place has dropped 20 percentage points since 2004.

Current Vote-by-Mail Participation and Projected Growth

The number of voters choosing to vote-by-mail has steadily increased. Currently, 943,409 voters in Orange County are registered as permanent vote-by-mail voters, meaning they have chosen to automatically receive a vote-by-mail ballot every election. This represents 61% of the total registered voters. In 2002, California law changed to permit registered voters to become “permanent vote-by-mail voters” without a medical reason or other justification. Since that time, there has been a steady increase in the number of voters

Percentage of Permanent Vote-by-Mail Voters Past 20 Years

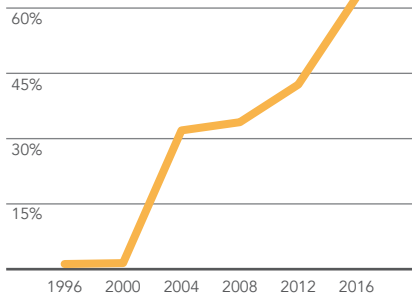


Figure 9. In 2002, California law changed to allow any voter to apply for permanent vote-by-mail status, regardless of status or need.

requesting permanent vote-by-mail status (Figure 9).

The Registrar of Voters expects this vote-by-mail growth trend to continue as voters seek voting options that are more flexible and adaptable to their lifestyles.

At this current growth rate, in just a few years, data forecasts 90%+ of voters in permanent vote-by-mail status (Figure 10):



Figure 10. Projected vote-by-mail growth.

Current Vote-by-Mail Equipment Assessment

The mailing system is composed of two different sections:

1. Inserters – The inserter is used for inserting (processing) vote-by-mail ballots. It inserts the ballot, instructions, return envelope and any other required materials into the vote-by-mail envelope.

The current inserter jams frequently due to worn parts and difficulty in accommodating both envelope size and the necessary number of inserts. The current aging inserter averages a completion rate of 4,000 per hour. This is well below the industry standard of over 22,000 completed pieces per hour for modern equipment. Due to the frequent jamming and other issues, there is a high rate of waste and spoilage, extensive labor hours, many of which are overtime hours. This creates a substantial increase in the cost of the mailing operations, places stress in supply inventory, and diminishes productivity.

2. Sorters – The sorter is used for sorting vote-by-mail ballots. As the ballots are returned to the Registrar of Voters, the ballots are sorted through the equipment to capture a digital image of the return envelope and the signature. This signature is then compared (by hand) to the voter signature on file to ensure a match. The ballots are then sorted down to the precinct level.

The volume and the throughput of the current system is not sufficient and creates a bottle neck in the processing of ballots. This can potentially affect our ability to report results timely on Election Night.

The date when vote-by-mail ballots must be mailed is mandated by law and cannot change. Due to age, both the inserter and sorter experience mechanical and system issues that slow down the process, cause material waste and require unplanned staff overtime to address and fix the issues.

As stated previously, the manufacturer has indicated that support for this equipment has officially ended; they are only supporting for the remainder of the existing contract (mid 2018).

To meet the increased demand of vote-by-mail voting and to replace current, outdated equipment, the Registrar of Voters will be purchasing new mailing equipment.

2018 Vote-by-Mail Operational Plan

In addition to the items detailed above, meeting existing production levels with our current equipment is extremely challenging, time-consuming and expensive. The current mechanical state of the equipment, difficulty in sourcing parts and lack of adequate technical support make it difficult to meet these required production levels and confidently plan for the expected future growth. With the expected increase in vote-by-mail growth, it will take much longer to get the ballots into the hands of the voters in a timely manner. The Registrar of Voters has begun the procurement process to purchase new mailing equipment in December of 2017.

New state-of-the-art equipment will allow us to continue the high level of service Orange County voters have come to expect from the County. This equipment will future-proof Orange County to meet increased demands as well as give us added flexibility and increased productivity to meet current and future needs

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2018 RISK ASSESSMENT SUMMARY

Identification of Risks

The continued use of the existing voting equipment in Orange County under the current polling place model presents potential risks due to factors such as the age and reliability of the equipment. The office has attempted to identify a spectrum of potential risks, classify their severity, and mitigate those risks as much as possible.

The chart on the following page was developed to help better understand the risks that are specifically associated with the use of the existing voting equipment under the current polling place model.

Field Descriptions

Risk: Description of the identified risk.

Cause of Risk: The reason the risk was identified.

Probability: The likelihood of the identified risk occurring.

Impact: If the risk occurs, what is the level of impact it will have on the election.

Overall Rating: The overall assignment of risk as high, medium or low based on the probability and impact.

Mitigation: The measures the Registrar of Voters plans to take to mitigate the identified risk.

APPENDIX E: 2018 OPERATIONAL PLAN FOR TRADITIONAL POLLING PLACE MODEL

RISK	CAUSE OF RISK	PROBABILITY	IMPACT	OVERALL RATING	MITIGATION
Equipment malfunction in polling place.	1. Aging equipment. 2. Increase in problems reported over the years (refer to 2014 report).	High	High	High	1. Reducing number of polling places, so less equipment is required. 2. Attempting to identify potentially failing equipment, and removing from circulation. 3. Using less polling place to have spares available.
Inability to service equipment.	1. Use of Windows 2000 on old hardware.	Low	High	Medium	1. Renewed service contract to be able to provide functioning hardware on Windows 2000.
Inability to repair currently malfunctioning equipment.	1. System made of parts that are difficult or impossible to obtain (refer to 2014 report). 2. Aging equipment.	Low	High	Medium	1. Renewed service contract. 2. Reducing number of polling places, so less equipment is required. 3. Availability of paper ballots.
Inability to respond to equipment failures in the polling places.	1. High probability of malfunctioning equipment results in response required by support teams.	High	High	High	1. Reducing number of polling places, so smaller number of incidents reported overall. 2. Increase support levels, such as number of personnel, in order to respond better.
Inability to properly read and tally votes recorded at polling place.	1. Due to outdated technology of memory cards.	High	Low	Medium	1. Be prepared to download votes from multiple locations. 2. Paper audit trail can be used if necessary.
Voters going to the wrong polling place.	1. Large changes in boundaries in recent years result in different polling places, voting on wrong contests.	High	Low	Medium	1. Prepare staffing levels for large amount of provisionals to process.
Poll Worker recruitment challenges in June.	1. Historically difficult to recruit for Gubernatorial, June Primary Elections. 2. Decreasing interest in volunteers (need to verify).	High	High	High	1. Reducing number of polling places.
Vote-by-Mail voters going to the polling place and having to vote provisionally.	1. Large number of voters who have requested vote-by-mail ballots. 2. Paper rosters requires them all to vote provisionally, whether they have returned a vote-by-mail or not.	High	Low	Medium	1. Prepare staffing levels for large amount of provisionals to process.
Inability to accommodate high turnout.	1. Reduced amount of voting equipment available. 2. Polling place limitations.	Low	High	Medium	1. Have paper ballots available.
Increased accessibility issues.	1. Equipment failure may affect accessible units. 2. Assigned polling places may not be as accessible.	Low	High	Medium	1. Make modifications to polling places for accessibility.

Details of Identified Risks

Equipment malfunction at the polling place

Risk

The current voting system was implemented in 2003 and has been used in every election since that time. As would be expected, and as is detailed in this report, the number of equipment malfunctions have been steadily increasing in recent years due to the age and repeated use of the equipment. Academic institutions studying these conditions have reached the same conclusion for several years (including MIT, Cal Tech, University of Oregon, Kennesaw State University, Auburn University, etc.).

Rating

Consequently, the likelihood of this occurring at a large number of polling places is high. Although equipment malfunctions do not prevent voters from voting, they can be disruptive, cause longer wait times, and strain our resources to troubleshoot. Therefore, the impact of equipment malfunctions is considered to be high.

Mitigation

In order to mitigate this risk, our office will attempt to reduce the number of polling places, thus decreasing the amount of voting equipment needed. Our office will also attempt to identify equipment that is at a higher risk of malfunctioning, and remove it from use for this election.

Inability to service equipment

Risk

Preparing the current voting equipment to be used at the polling places requires the use of the Windows 2000 operating system, running on legacy hardware that is not available for OEM purchase.

Rating

Although the likelihood of these systems failing is high, multiple systems are available, so the likelihood of all these systems failing is categorized as low. The impact of the failure is categorized as high, due to the fact that this can be a single point of failure for preparing the equipment for the election. The overall impact of this risk will likely rise in future years, as it becomes more difficult to support Windows 2000 on legacy equipment.

Mitigation

Despite the fact that the probability is low, a mitigation strategy is still necessary. The office has renewed the support contract for the voting system, to have the ability to replace the legacy equipment if necessary.

Inability to repair currently malfunctioning equipment

Risk

Due to the decreasing availability of replacement parts, the ability to repair equipment that fails the testing during maintenance between elections is at risk. Some parts are difficult to obtain, and some parts are no longer manufactured.

Rating

Although it is absolutely certain that there will be equipment failures that need to be fixed, it is not certain if the required parts will be available. Therefore, the probability of this is categorized as low. However, after each election, the probability of the irreplaceable parts malfunctioning will continue to increase. The impact of the failure of these parts is high because that will cause the voting equipment to become unusable. Additionally, when a component begins to fail, one can expect it to fail on a widespread basis.

Mitigation

The reduction of the number of polling places will help to mitigate this risk, due to the reduced amount of voting equipment that will be required. The renewal of the service contract with the voting system vendor has also been executed; however, this will not mitigate the risk of irreplaceable parts malfunctioning. Paper ballots will be available as a voting option, if necessary.

Inability to respond to equipment failures in the polling places

Risk

Due to the expected increase in the number of equipment failures at the polling places over the years, the ability to respond to these issues on Election Day has become more and more challenging.

Rating

The probability of a large number of equipment failures on Election Day is high, and consequently, the risk of the inability to respond to these incidents is high. The impact is also high, as it can create lines for voters as the poll workers wait for a response and resolution to the equipment issue.

Mitigation

The reduction of the number of polling places will help to mitigate this, as it will decrease the number of polling places that required to provide a troubleshooting resources. Additionally, available support personnel will be increased on Election Day.

Inability to properly read and tally votes recorded at polling place

Risk

The increased probability of malfunctioning equipment also increases the possibility that the office will not be able to immediately tally votes from the polling place on Election Night. Equipment malfunctions and hardware failures can cause the memory device on which the cast ballots are stored to be unreadable.

Rating

The probability of this occurring on some (not all) of the memory devices is high, because of the age of the equipment, the outdated technology of the memory cards, and the large number of memory devices in use. The impact is classified as low because votes are stored in multiple places on the voting system.

Mitigation

In order to mitigate this risk, our office will be prepared to download votes from other devices where the votes are recorded and use the paper audit trail if necessary.

Voters going to the wrong polling place

Risk

Recent district boundary changes combined with the necessity to reduce the number of polling places for the upcoming elections will result in different polling place locations for voters. Many voters will be assigned to new polling places. This will likely result in voters going to vote at polling places that are not assigned to them.

Rating

The number of voters going to the wrong polling place has been increasing in recent years. This combined with the necessity to lower the number of polling places, as outlined in this report, makes the probability of this risk occurring high. Voters will be required to vote provisionally and may be voting on the wrong contests. The impact is classified as low because voters should still be able to vote provisionally. If they vote on the wrong contests, those will be excluded from the final tally.

Mitigation

Our office will mitigate this risk, by preparing to process the high number of provisional ballots through increased staffing levels and extending the time to certify the election.

Poll Worker recruitment challenges

Risk

It is always a challenge to recruit poll workers for an election, and it is especially challenging to recruit poll workers for an election conducted in June. The upcoming election year and future election years present an additional challenge, which is detailed in this report.

Rating

Based on the data presented in this report, the likelihood of poll worker recruitment challenges, including shortages, is high. The impact is also considered high because an adequately staffed polling place is necessary to allow in-person voting to occur at that polling place.

Mitigation

The reduction of the number of polling places and changes in volunteer recruitment strategies will help to mitigate this risk. Reducing the number of polling places will allow more flexibility to handle poll worker cancellations, and it will reduce the total number of volunteers needed.

Vote-by-mail voters going to the polling place and having to vote provisionally

Risk

Under the polling place model, voters who have requested vote-by-mail ballots, which is now the majority of registered voters, must vote provisionally if they decide to vote at polling places, and do not have their ballots to surrender.

Rating

The number of voters who have been requesting vote-by-mail ballots has been increasing every election, and the number of provisional ballots cast due to vote-by-mail requests has also been increasing. The probability of this continuing to increase is high since there is no reason that this trend will not continue.

Mitigation

Our office will mitigate this risk, by preparing to process the high number of provisional ballots through increased staffing levels and extending the time to certify the election.

Inability to accommodate high turnout

Risk

Polling places that are required to be used under a polling place model, such as residential and schools, have always posed a challenge when accommodating large numbers of voters. This combined with the need to use less equipment for the upcoming elections creates an increased risk of accommodating high turnout.

Rating

The probability of high polling place turnout is categorized as low, due to the increased use of vote-by-mail ballots every election. The impact is high if voters are not properly accommodated due to an unexpectedly high turnout.

Mitigation

Paper ballots will be provided to the polling places, in order to accommodate large numbers of voters, if the electronic equipment is unable to handle the volume.

Increased accessibility issues

Risk

Ensuring polling places are accessible is a challenge, and this challenge increases when the number of polling place choices is limited in certain precincts. The inherent challenge of recruiting accessible polling places combined with the increased probability of equipment failure creates a risk of accessibility for voters.

Rating

There is a probability of an increase in accessibility issues, but this probability is low due to the proactive measures our office takes to prevent this. The impact of any risk to accessibility should be considered high.

Mitigation

In order to mitigate the possibility of accessibility issues, our office will make required modifications to polling places by providing the necessary equipment, such as ramps and accessible voting units.

CONCLUSION

Plans for 2018 election implementation begins with the purchase of new mailing equipment to respond to the steadily increasing number of vote-by-mail voters. Currently, more ballots are cast by mail than in the polling place, with 61% of registered voters signed up for permanent vote-by-mail status. This trend is projected to increase, obligating the Registrar of Voters to purchase and maintain newer, more technologically advanced equipment to fulfill the deadlines and volume of vote-by-mail operations.

Polling place voting has been steadily declining in contrast to vote-by-mail voting. By consolidating voting precinct areas, fewer polling places will be utilized with positive outcomes.

Decreasing the number of polling places results in a more effective allocation of aging equipment. The result lessens the burden of allocation and improves the ability of the Registrar of Voters to maintain the current inventory of machines at the highest standard of quality. Fewer polling places also translates into fewer volunteers with the product of recruitment efforts being more focused when fulfilling requirements of Inspector positions and language support. With fewer volunteers, resources of recruitment, training and communication are more efficiently and economically applied.

The current state of the voting system equipment, coupled with dwindling polling place and poll worker participation and steadily increasing vote-by-mail participation, support the transition to a precinct consolidated model for the 2018 election year. This operational plan is designed for the short-term and is not sustainable for the 2020 Presidential Election cycle.

Appendix F: Voter's Choice Act Operational Plan Proposal 2019 - 2020

EXECUTIVE SUMMARY

Following the Orange County Board of Supervisors' directive to employ a traditional voting model utilizing existing voting equipment for the 2018 Midterm Elections, the Registrar of Voters is returning to present an updated status of challenges faced under the current traditional polling place model with an updated proposal to implement the Voter's Choice Act in Orange County.

The effort to replace Orange County's current voting system began in 2013 due to the decreasing usable equipment and the lack of allowable modifications in a highly regulated environment. While this does not affect the accuracy of the system, it does have an impact on the voter experience.

Recent legislation and case studies in counties that have adopted the Vote Center model provide an opportunity to examine how the Vote Center model could operate in Orange County and modernize elections to meet the demands of today's voters.

This briefing document includes:

- **Voting Trends**
Analysis of the tremendous growth of voters choosing to vote-by-mail, provisional ballot processing, and election reforms illustrate dramatic changes to the system, voter behavior and preferences and provide insight in how to provide a positive voter experience.
- **Challenges**
Major elections require thousands of volunteers and facilities to be secured months ahead of the election while managing time, staff, and resource constraints. Under the California Elections Code, the Registrar of Voters is required to finish its canvass of election results within a 30-day window, which is challenging with the growing volume of post-election operations necessary for election certification.
- **Vote Center Model Overview and Options for Orange County**
The Vote Center model is a voting system intended to modernize elections from the traditional polling place standard, which was first introduced in the 1800s. Such modernizations include sending a vote-by-mail ballot to every voter, extended voting hours, allowing voters to vote at any Vote Center, etc. The model can be scaled up or down, depending on the desired level of service and financial impacts.
- **Vote Center Model Case Studies**
Madera County, Napa County, Nevada County, Sacramento County, and San Mateo County first adopted and implemented the Vote Center model in 2018. With a full election cycle experience under the Vote Center model, data from these counties serve to provide examples of how the Vote Center model could operate successfully in Orange County.

- Orange County Early Vote Center Case Study

In the 2018 General Election, the Orange County Registrar of Voters operated nine Early Vote Centers, including a mobile Early Vote Center, which resulted in the largest number of voters that utilized services available at Early Vote Centers such as in-person voting, on-demand ballot service at any location, vote-by-mail drop-off, etc.

Our team continues to focus on delivering quality election services in the present, while planning and preparing for the future.



Neal Kelley
Registrar of Voters
Orange County, CA

VOTING TRENDS

Voting behavior has shifted over the past decade and the Orange County Registrar of Voters has been dedicated to creating an operation that endeavors to support voter behavior while maintaining security and efficiency. Trends that the organization is focused on aligning with include:

- Voting-by-mail as an increasingly popular option compared to voting at traditional polling places.
- Provisional ballots serving as an effective voting method for voters who do not meet certain requirements on Election Day but impacting resources negatively by requiring additional time and research to verify.
- Turnout in presidential elections being significantly higher than non-presidential elections¹.

Vote-By-Mail

The number of voters choosing to vote-by-mail has continued to increase, including in 2018. Currently, 1,076,270 voters in Orange County are registered as permanent vote-by-mail voters, meaning they have chosen to automatically receive a vote-by-mail ballot every election. This represents 68% of the total registered voters. In 2002, California law changed to permit registered voters to become “permanent vote-by-mail voters” without a medical reason or other justification, meaning the voter would be sent a vote-by-mail ballot automatically every election. Since that time, there has been a steady increase in the number of voters requesting permanent vote-by-mail status (Figure 1).

Vote-By-Mail Drop Off

Voters can return their vote-by-mail ballot by mail or they can drop off their ballot at any polling place on Election Day. The numbers of voters that have chosen to drop off their vote-by-mail ballots at a polling place, as opposed to returning them through the postal system, has also steadily increased since 2004 (Figure 2). For the November 2018 Election, there were 178,107 ballots dropped off at polling places on Election Day, and an additional 21,420 ballots dropped off at Vote

¹ In the November 2018 Election, the historic turnout was unusually high for a midterm election at 71% with 62% of voters casting a vote-by-mail ballot.

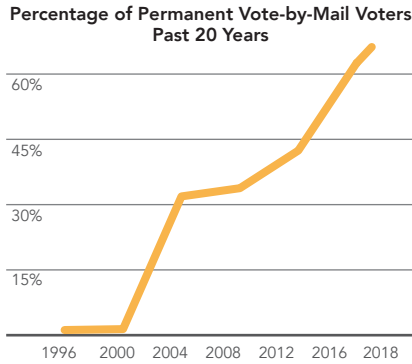


Figure 1. In 2002, California law changed to allow any voter to apply for permanent vote-by-mail status, regardless of status or need.

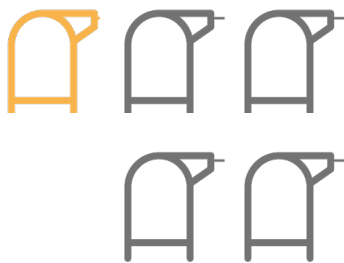


Figure 20. 1 in 5 vote-by-mail ballots were dropped off at the polls rather than mailed. This has nearly tripled in the last twelve years, from 7% to 20%

Centers before Election Day. This represents historic numbers not seen previously and, in some cases, overwhelming polling place resources.

Voting at the Wrong Polling Place

The number of voters who vote at the wrong polling place has consistently risen since 2004 (Figure 3). This may occur because the voter has recently moved out of their assigned precinct but not updated their registration, or just because the voter is in the area on Election Day. A voter at the wrong polling place must either vote provisionally or go back to their assigned polling place. Provisional ballots must be manually verified after the election before being counted, which delays the certification process.

Caltech Voter Survey

Partnership with Caltech

The Orange County Registrar of Voters has developed a partnership with the California Institute of Technology (Caltech) to improve elections in Orange County. As part of this partnership, Caltech has observed polling places, conducted surveys, and studied voter data. In one of their recent surveys sent to all Orange County voters, the 87% of the voters who responded expressed that they have confidence in the elections process in Orange County, which is higher than the national average². This exhibits a higher than average level of trust of the voters in how elections are conducted in Orange County.

Caltech's research in examining voter data and trends has resulted in tools that can help identify anomalies with voter data changes. This can help to address concerns and detect voter data tampering. Their research has also resulted in improved processes to find duplicate or re-registered voters throughout California.

Election Reforms

The Orange County Registrar of Voters is responsible for implementing and complying with state and federal election laws. The scope of election laws may include candidate filing, campaign finance, general operations, ballot processing, etc. New election laws are passed and become effective every year, and it is a critical priority for the Orange County Registrar of Voters to maintain awareness of such laws and

2 R. Michael Alvarez and Yimeng Li, "2018 Orange County Voter Experience Survey Preliminary Report," <https://monitoringtheelection.us/november-2018-general-election-dashboard/>, (December 12, 2018)

Number of Provisional Ballots Cast Due to Wrong Polling Place – Past 14 Years

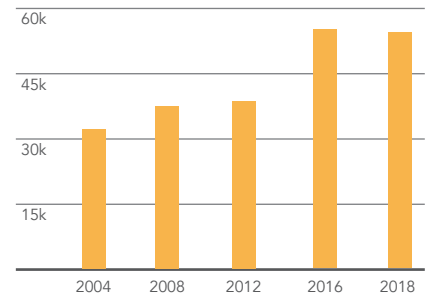


Figure 2. The number of provisional ballots increases the time it takes to certify an election. In the 2016 General, over 130,000 provisional ballots were cast.

make the necessary preparations to remain in compliance.

The listing below represents election laws that have been passed and/or have gone into effect since the 2016 Presidential Elections and had significant implications for the 2018 Midterm Elections, impacting future elections as well. Since 2016, the Orange County Registrar of Voters has tracked over 100 chaptered bills with significant impact on elections and it is expected that there will be even more election-related legislative proposals and laws in the coming years³.

After 2016 Elections

SB 450 (Allen): Authorizes specified counties (including Orange County) on or after January 2, 2018, to conduct any election as an all-mailed ballot election with the implementation of Vote Centers supported by a sufficient number of ballot drop-off locations. Both in-person and drop off locations are selected according to the requirements in the bill. If the Board adopts the Vote Center proposal, any special election in 2019 can be conducted under the Vote Center model.

AB 547 (Gonzalez)/AB 1504 (Alejo): Expanded previously authorized mailed ballot election pilot projects in San Diego County and San Mateo County and Yolo County to allow certain local elections held to be conducted as mailed ballot elections.

AB 1921 (Gonzalez): Removes restrictions to allow any person to return a vote-by-mail ballot so long as the voter authorizes said person to return the ballot and the person returning the ballot is not receiving any form of compensation.

AB 2071 (Harper): Clarified the definition of an authorized "delivery service" for the processing of vote-by-mail ballots received by the voter's elections official no later than 3 days and if the ballot is postmarked on or before election day.

SB 439 (Allen): Permits elections officials to offer conditional voter registration at satellite offices prior to election day and established processes and procedures for the review and approval of ballot on-demand systems and electronic poll books for use in California elections.

³ As a comparison, in Minnesota many of the same reforms are in place, but were passed over a 10-year period. California implemented these same reforms over an 18-month period, providing significant impacts in a condensed timeframe.

SB 759 (McGuire): Requires the elections official to follow specified procedures to notify the voter and allow the voter an opportunity to verify his or her signature before certification of the election.

Coming into Effect for 2019 and 2020 Elections

AB 216 (Gonzalez): Requires election officials to provide postage-paid return envelopes for vote-by-mail ballots.

AB 2450 (Mullin): Expands existing law that requires that state-owned buildings, parking lots, school buildings and other public facilities be made available free of charge for use as polling places to be extended to use as Vote Centers.

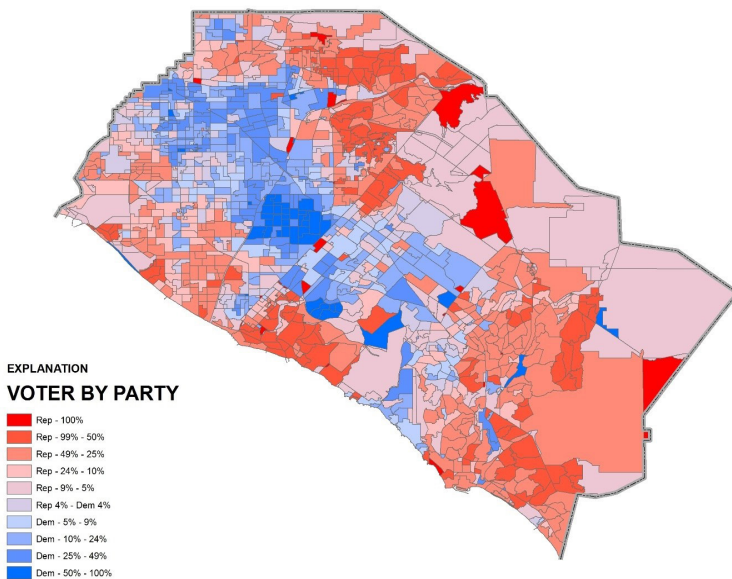
2018 Election Voter Trends Overview

The 2018 General Election was conducted using the traditional polling place model with nine early Vote Centers, including a mobile early Vote Center. Under this model, the following voter turnout data is listed below.

Party Turnout

The overall turnout for the November 2018 Election was one of the largest turnouts for a midterm election in Orange County history. The following demonstrate the turnout by party for Orange County.

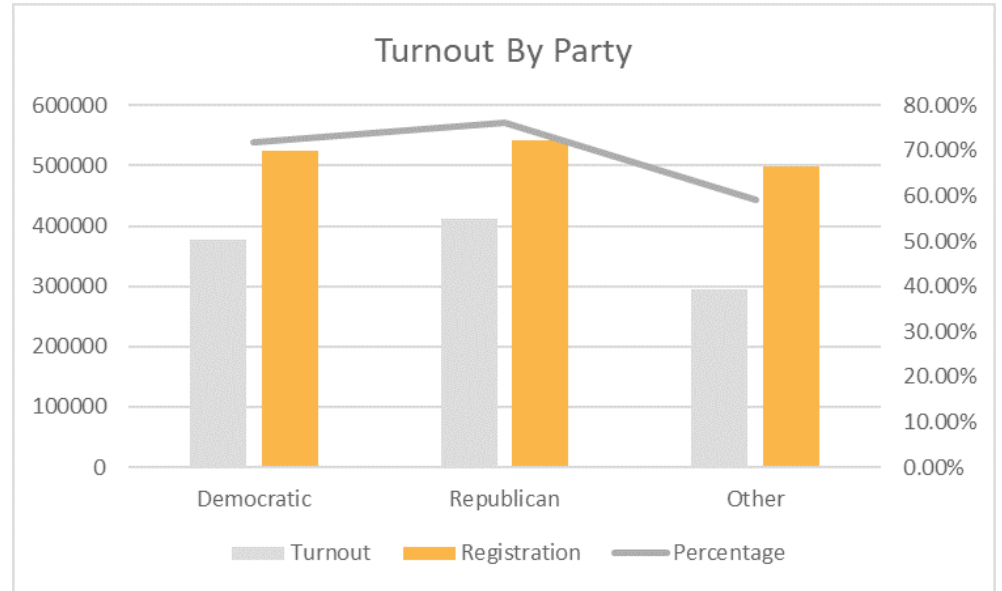
Figure 4 Map of the percentage of registered voters throughout Orange County by party.



The following charts are the totals for turnout and registration by party

in Orange County for the November 2018 Election.

Figure 5 Graphical representation of party registration, turnout by party and percentage of party turnout.



Party	Turnout	Registration	Percentage
Democratic	377,518	525,595	71.83%
Republican	412,964	542,792	76.08%
Other	294,385	498,678	59.03%

Table 8 Turnout by political party, total political party registration and percent of turnout.

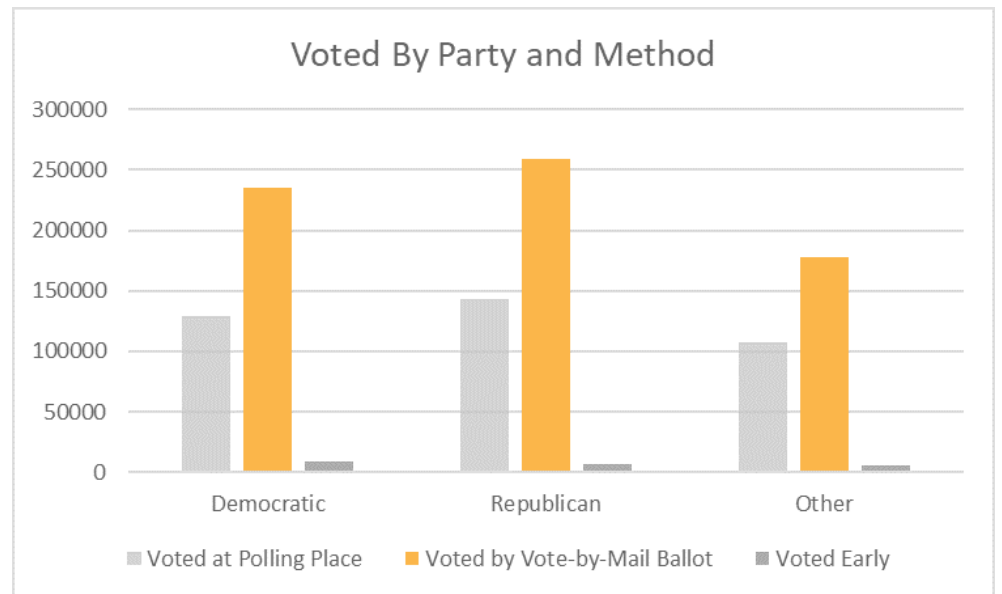


Figure 6 Graphical representation of party registration, turnout by party and percentage of party turnout.

Voter By Party and Method			
Method	Democratic	Republican	Other
Voted at Polling Place	129,180	143,179	107,398
Voted by Vote-By-Mail Ballot	235,111	259,389	178,040
Voted Early	8,948	6,209	5,762

Table 9 Voter by party and voting method.

Election Results

State Offices

Statewide, party turnout did not reflect actual votes cast for partisan contests in the election. All California State offices in Orange County had more votes for the Democratic candidates, with the exception of the Board of Equalization contest.

Voter-Nominated Offices

Provided is a listing of the results by party for voter-nominated offices in Orange County.

Voter-Nominated Offices		
Contest	Democratic	Republican
38th Congressional District	•	
39th Congressional District	•	
45th Congressional District	•	
46th Congressional District	•	
47th Congressional District	•	
48th Congressional District	•	
49th Congressional District	•	
State Senator, 32nd District	•	
State Senator, 34th District	•	
State Senator, 36th District		•
Member of the State Assembly, 55th District		•
Member of the State Assembly, 65th District	•	
Member of the State Assembly, 68th District		•
Member of the State Assembly, 69th District	•	
Member of the State Assembly, 72nd District		•
Member of the State Assembly, 73rd District		•
Member of the State Assembly, 74th District	•	

Table 10 Party dispersion of voter nominated offices in Orange County.

TRADITIONAL POLLING PLACE OPERATIONAL CHALLENGES

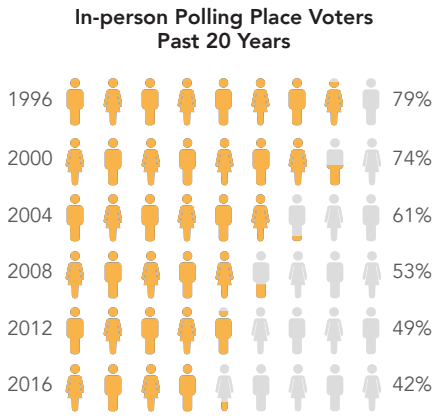


Figure 7 In-person ballots cast at polling places dropped 37% percentage points since 1996.

Recruitment, equipment and security are fundamentally dependent processes within election operations. The number of polling places required for an election continues to directly affect the amount of equipment and distribution throughout the County which is exacerbated by the deteriorating inventory of reliable voting system equipment with each election cycle. Volunteer and polling place recruitment challenges have been augmented by the decreasing number of in-person voters in all elections. Both physical security and cyber security needs have evolved in response to the changing availability of consistent polling place facilities and maintenance of a deteriorating voting system.

Voting Equipment

The current voting system has been used in every election since it was introduced in 2003. As of 2018, the system has been in use for six years over the recommended 10-year lifespan. The number of equipment malfunctions has been steadily increasing over recent years due to age and repetitive use of the equipment requiring constant repair and refurbishment.

Challenges of using aging equipment include supply chain issues that make it difficult to find replacement parts, costly and time-consuming maintenance, and an operating system that is outdated and no longer supported by the manufacturer.

The age of the voting system and the diminishing supply of manufactured parts results in increased time, staff and cost to maintain and service existing equipment. The ability to repair failing equipment has become increasingly difficult and ineffective and, in some cases, cannot be repaired to an operational standard that matches requirements in the Elections Code. During the 2018 Midterm Elections cycle, more than 1,000 in-person voting machines had to be removed permanently from service due to failing components. The decreasing equipment supply creates a challenge of providing functioning equipment to polling places on Election Day.

Although the Orange County Registrar of Voters makes every effort to ensure the voting equipment has been meticulously serviced,

there is still the potential for equipment malfunction due to use beyond its recommended lifespan. For example, the Voter Verified Paper Audit Trail (VVPAT) printers (Figure 7) have been an increasing point of failure. When VVPAT printers fail, only a limited number of replacement printers are available from the manufacturer. Inventory that becomes available are refurbished printers that have been used by other counties before the other counties upgraded to new voting systems and come with unknown risks. During the November 2018 Election, 43% of calls received through the Poll Worker Help Desk were due to equipment failures, with a majority of the issues focused on the VVPAT printers.

VVPAT Printer

Prior to the June 2018 Election, 558 printers were repaired by Orange County's voting equipment vendor. Most of the repairs were necessary because the motor that advances the paper was prone to malfunctioning. During the service and maintenance of printers for the November 2018 Election, 330 printers were tested and determined to be inoperable due to motor issues. In this case, these printers were not able to be repaired by the vendor and had to be taken out of our equipment supply; thus, these 330 printers were unable to be deployed on Election Day. Of the 9,600 printers left in inventory, every single VVPAT printer was in use for training, early voting, and assigned on Election Day; this eliminated any reserve VVPAT printers. Early voting printers had to have rolls replaced on Election Day to prepare for printers that were at risk of not working at polling places.

During the November 2018 Election, approximately 200 VVPAT printers were reported as malfunctioning in the field. This total is significantly more than the average of 125 reported VVPAT issues previous elections.

Power Supply Cords

In the June 2018 Election, the eSlate power supply cords were identified as a point of technical failure that created error messages and connection issues on voting machines. While performing the service and maintenance for the November 2018 Election, 449 power supply cords were identified as either not working or potentially at risk of not working because of a fraying cord. These power supply cords were produced specifically for the eSlate voting machines and are no longer made or stocked by the voting machine vendor. Through our proactive measures, the power supply cords were sent to an electrical



Figure 8 VVPAT printer.

repair contractor and the cords were repaired with heat shrink tubing and soldered as needed. Even with these preventative repairs, there were power supply cords that needed to be replaced on Election Day.

As more jurisdictions implement district-based voting, equipment allocation in response to these changes have a negative effect on the efforts to maintain an aging voting system by requiring more polling places and, therefore, more machines to be allocated on Election Day. Under the traditional model of polling places, the risk in utilizing the current equipment increases with each election and is not manageable for long-term use. Although equipment malfunctions do not prevent voters from voting, they can be disruptive, cause longer wait times, and strain resources.

Facility Recruitment

On average, over 1,000 facilities and a minimum of 8,500 volunteers are recruited every election. Facility and poll worker recruitment have been historically difficult and time consuming, and each have their own set of challenges.

Polling place recruitment involves public and private facilities. Public facilities are comprised of city, county and government-owned buildings including schools, community centers, libraries and colleges. Private facilities include churches, clubhouses, meeting halls and private residences. Both private and public facilities are increasingly harder to recruit for numerous reasons.

Over the years, fewer private organizations are interested in participating in elections consistently or at all. Several facilities have declined to become involved because of the political climate, or the required time and space commitment.

One challenge affecting polling place recruitment are boundary line changes. Geographic constraints are becoming increasingly complicated with the creation of new districts within existing jurisdictions; this results in a higher number of different ballot types, which in turn affects the number of polling places and equipment distribution. As more jurisdictions implement district-based voting, the complexity of geographic constraints will continue to escalate and affect the ease and quality of facility recruitment.

Another challenge that has a large impact on polling place recruitment is the geographical make-up of a voting area. Available facilities within

a designated area may not be the same each election. Facilities with available rooms may be too small, inaccessible, or the area has limited or no parking. Additionally, there are areas throughout the County that are made up entirely of homes where only garages are available to be used as polling places. These types of polling places do not meet the minimum American with Disabilities Act (ADA) standards. Mitigations in the form of accessible equipment must be maintained and delivered to these facilities, which are also in limited supply.

Physical Security

In recent years, an increasing number of facilities are declining to participate, citing safety issues. Due to the large number of polling places in every election, there is always a chance for a polling place to experience difficult voters. Although there are rapid response teams in place, including our law enforcement partners, to circumvent escalation to violence, the mere possibility of unknown threats discourage many facilities from participating as a polling place.

School facilities account for at least 45% of all active polling places. A growing number of school districts and parent organizations have raised serious concerns regarding safety and liability issues. The California Elections Code and Education Code mandates schools to serve as polling places and Vote Centers; however, school administrators have increased concerns with allowing public access to campuses in session with students present while serving as a polling place or Vote Center.

Under the Vote Center model, the use of school facilities would be reduced significantly. While it cannot guarantee that campuses would be eliminated completely, the reduction would be substantial and would address the growing concerns over campus safety.

Volunteer Recruitment

Each election, thousands of volunteers are recruited to staff polling places on Election Day. Poll workers process and assist voters, provide bilingual language assistance and serve in support roles for multiple polling places. Each polling place requires one Polling Place Inspector and approximately four Polling Place Clerks, including Student Clerks and bilingual poll workers. As the number of polling places increase, the requirement of volunteers and bilingual support increases in tandem, which creates more recruitment challenges.

Under the federal Voting Rights Act, Orange County is mandated to offer language assistance in Spanish, Vietnamese, Korean, and Chinese, while under the California Elections Code requires language assistance in Tagalog and Farsi (Persian) at select polling places. The recruitment of bilingual poll workers is based on the number of registered voters that have requested election materials in the supported languages. Although language requirements vary throughout the County, potential volunteers are concentrated in specific regions, making it difficult to meet the state and federal requirements that are spread out through the County. Additionally, the bilingual volunteer pool is further limited due to the requirement of having to be proficient (speaking, reading and writing) in both English and the supported language.

There is a notable difference in volunteer interest for midterm election cycles and presidential election cycles. Although it is always a challenge to recruit poll workers for any election, it is especially challenging to recruit poll workers for a primary election and midterm election cycles. Due to the extended elapsed time after the most recent election, which is approximately 18 months between a presidential general election and midterm primary election, many experienced poll workers may have a significant change in circumstances, resulting in them being unavailable to volunteer. On average, the retention rate for returning volunteers for a primary election is 49%, with less than half of experienced poll workers returning to volunteer. The Orange County Registrar of Voters must recruit, train and staff thousands of new volunteers to serve at polling places on Election Day. With such a substantial portion of volunteers serving for the first time, it creates issues due to their inexperience.

Particularly problematic for recruitment is the high ratio of cancellations among poll workers initially committed to volunteer. Many volunteers cancel after having completed training, or within a few days before Election Day. In the November 2018 Election, a total of 1,299 volunteers cancelled, and 284 (22%) of these were cancellations on Election Day with no advance warning. As the volunteer lead for a polling place, Polling Place Inspector cancellations are the most difficult to handle, especially since many of them occur during the weekend before Election Day. Polling Place Inspectors must pick up polling place supplies before Election Day and coordinate the supporting Polling Place Clerks. When a Polling Place Inspector cancels at the last minute, staff must act quickly to find a replacement.

It is important to highlight the fact that these poll workers are volunteers under the traditional polling place model. There are no consequences for volunteer cancellation, which exacerbates the problems associated with trying to maintain a reliable volunteer base.

Cybersecurity

Security has always been at the forefront of everything we do at the Orange County Registrar of Voters. We have comprehensive plans in place to ensure physical and cybersecurity measures. Since 2016, we have greatly expanded our mitigation plans and have confirmed that appropriate response actions are always in place.

The Orange County Registrar of Voters developed the 2018 Election Security Playbook, a comprehensive set of physical and cybersecurity guidelines for safeguarding election systems, ballot integrity, and overall election security⁴. This Playbook details the approach, principles, and controls that have been put in place to anticipate, mitigate, and respond to physical and cybersecurity election threats in Orange County. The principles outlined in the Playbook are applicable to the Vote Center model as well as to the current polling place model in Orange County.

Voting System Security

In addition to the requirement that voting systems must be certified by the State of California, internal strict extensive security requirements have been developed and will be included in any Request for Proposal for the procurement of a voting system. The internal requirements cover technical aspects of the voting system as well as organizational requirements for responsive vendors. Encrypted data, the ability to detect tampering, and the ability to meet developed security standards are examples of the requirements that will be included in the Request for Proposal for any new voting system.

Electronic Poll Books

A significant addition under the Vote Center model is the use of electronic poll books. Instead of using paper rosters at polling places, electronic poll books would be utilized countywide at every Vote Center. The electronic poll books provide significant advantages because they allow near real-time application of voter history, and they allow additional data for employees to properly verify a voter's eligibility, and they reduce provisional ballots. With the advent of this

⁴ The 2018 Election Security Playbook can be accessed at ocvote.com/election-library

additional technology at every Vote Center, it is important to ensure that electronic poll books are secure. Listed below are examples of some of the security features of the electronic poll book system that has been in use in limited early Vote Center operations in Orange County since the June 2018 Election:

- All data is encrypted, including while in transit and while at rest.
- Personal Identifiable Information (PII) is not contained on the electronic poll books.
- Mobile Device Management allows the device's data to be remotely removed if the device is lost or stolen.

Cybersecurity Collaboration

An important aspect of our continuing security efforts is collaboration. Election systems have been identified as critical infrastructure, and, therefore, the federal government has provided additional resources to help secure elections⁵. Currently, Registrar of Voters Neal Kelley is on the Department of Homeland Security's Election Security Task Force (Government Coordinating Council). Additionally, the Orange County Registrar of Voters collaborates with the FBI, the Orange County Intelligence Assessment Center (OCIAAC), as well as other entities supporting efforts to provide secure elections.

The Effect of Polling Place Voting on Election

Certification

Voter behavior in recent years has demonstrated an increase in the use of vote-by-mail voting, dropping off vote-by-mail ballots at polling places, and voters going to the wrong polling place. The large number of ballots being dropped off at polling places on Election Day results in votes that need to be tabulated post-election. Voters going to the wrong polling place results in a large quantity of provisional ballots that need to be individually verified after Election Day before they are tabulated. These processes extend the amount of time required to count all eligible ballots and ultimately determine the final election results.

As an example, at the end of Election Night during the November 2018 Election, there were 178,107 ballots to count that were dropped off at the polling places, 92,932 ballots to count that were received

⁵ U.S. Election Assistance Commission, "Starting Point: U.S. Election Systems as Critical Infrastructure," <https://www.eac.gov/election-officials/elections-critical-infrastructure/>, (2017)

by mail on Election Day, and 117,219 provisional ballots that were returned from polling places. This is the first election where the number of ballots remaining to count after Election Day exceeded the total amount of vote-by-mail ballots cast in the 30 days prior to Election Day. Election Day no longer exists in Orange County; it has become "Election Month." This is a direct result of the voting reforms that went into effect, which has greatly expanded the opportunities for voters to return ballots later, cure signature issues, and allow third parties to return ballots.

The majority of the 271,039 vote-by-mail ballots that were left to count at the end of election night were tallied by November 16, 2018, which is 10 days after Election Day. On the other hand, the 117,219 provisional ballots that were left to count were not fully included in the tally until November 30, 2018, which is 24 days after Election Day. Verifying provisional ballots delays the tabulation of ballots much longer than vote-by-mail ballots because each individual provisional ballot must be verified to determine eligibility, while ensuring that the voter has not already voted anywhere else in California. Even with over 70 operators assigned to this task, verifying 117,219 provisional ballots was a lengthy process that was required to be completed after Election Day. Verifying the eligibility of provisional ballots is the single largest factor in increasing the period of time require to count all eligible votes and certify the election.

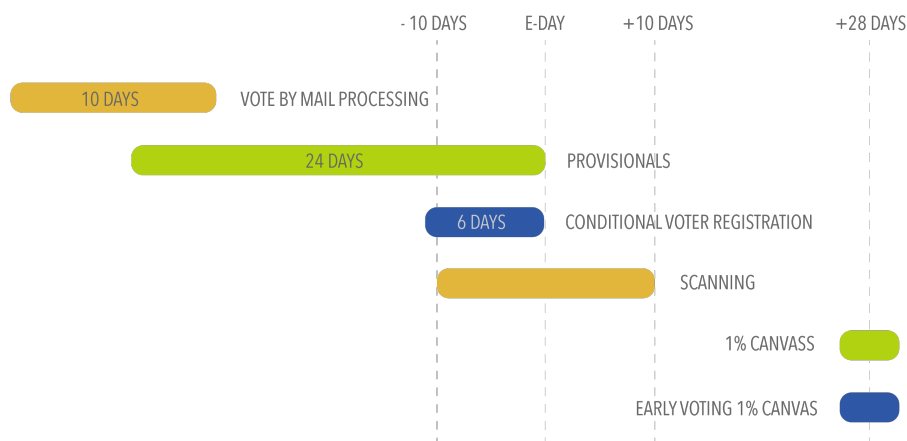


Figure 9 Illustrated timeline of post election processes affected by increasing volume of Election Day vote-by-mail drop offs and provisional voters.

The Vote Center model eliminates the need for nearly every provisional ballot. A voter can vote at any Vote Center location, so there are no provisional ballots needed for voters who go to the wrong polling place. When a voter checks in at a Vote Center, it will show if a

voter has already voted in near real-time; thus eliminating the need to issue a provisional ballot for any voter who was issued a vote-by-mail ballot. The only need for a provisional ballot at a Vote Center would be for a voter who is potentially not registered, or a voter who did not update their address before the election. For the November 2018 Election, only 24,000 of the 117,219 provisional ballots would have been considered as provisional ballots under the Vote Center model. If the November 2018 Election was operated under the Vote Center model, more ballots would have been included in the tally on election night, resulting in a much shorter period necessary for certification.

OVERVIEW OF THE VOTE CENTER MODEL

Senate Bill 450, entitled the California Voter's Choice Act, was signed into law on September 29, 2016. The bill authorizes specified counties (including Orange County) on or after January 2, 2018, to conduct any election as an all-mailed ballot election with the implementation of Vote Centers supported by a sufficient number of ballot drop-off locations. Both in-person and drop-off locations are selected according to the requirements in the bill.

Vote Centers

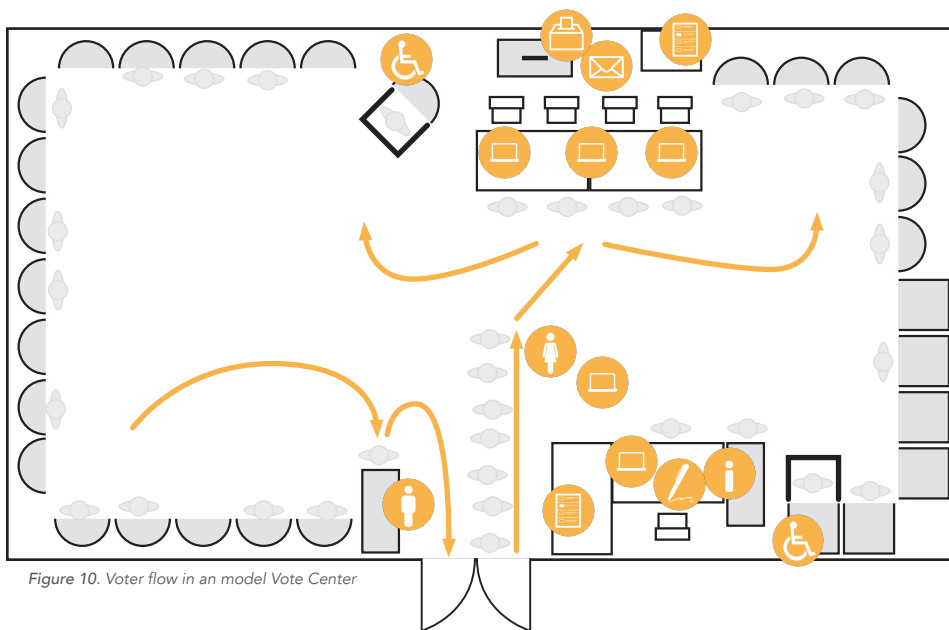


Figure 10. Voter flow in an model Vote Center

Vote Center Legend

- Ballot printing / replacement ballots
- Electronic poll book check in (mobile)
- Greeter / ingress control
- Electronic voter list / line management
- Information table / troubleshooting / check in
- Check voter registration status
- Accessible voting
- Ballot box
- Vote-by-mail drop-off
- Greeter / egress control
- Traffic flow
- Electronic ballot voting booth
- Paper ballot voting booth

Vote Center Experience

The voting experience at a Vote Center is comparable to voting at a polling place, but with a vastly improved experience. A voter enters the Vote Center and is greeted by a County trained employee who directs the voter to a check-in line. The check-in stations are equipped with multiple electronic poll books which allow the election worker to verify the identity of the voter quickly and easily (including accessing critical voter data not available to volunteer poll workers under the polling place model). The voter then checks in with a touchscreen device and receives their assigned ballot.

Procedures for voting an electronic or paper ballot remain essentially the same as in the polling place model. Vote-by-mail voters who arrive to drop-off their ballot can bypass the line and proceed directly to the official table, as they can in a polling place. They can also drop off their ballot at a drive-thru station at select Vote Centers, which would only be available in the Vote Center model.

Electronic poll books allow for multiple check-in stations with ease of scalability and can be removed from the table and utilized for enhanced line management and mobile check-in.

A Vote Center is more than a traditional Election Day polling place—it is structured as an official “satellite service center” for voters and provides enhanced services and logistics support.

- In-person polling place voting: the primary function of a Vote Center is to provide a place for voters to cast their ballots. Any registered voter can vote at any Vote Center, regardless of where he or she is registered in Orange County (eliminating the need for provisional ballots due to the absence of a “home precinct” requirement).
- Open multiple days and weekends: Vote Centers are open four to ten days prior to Election Day, including weekends. They are also open longer hours—7:00 a.m. to 8:00 p.m.—during the four days before Election Day to provide more opportunity for voters to cast their ballot in person or drop off their vote-by-mail ballot.
- Vote-by-mail ballot drop-off options: Vote-by-mail voters can drop off their ballot at any Vote Center, and select Vote Centers will have drive-thru drop-off stations. In addition, secure vote-by-mail ballot drop-off boxes will be located throughout the County to provide yet another option for vote-by-mail voters.
- Vote-by-mail ballot status and replacement ballots: As Vote Center electronic poll books are connected to the countywide database of registered voters and shows their voting status, any vote-by-mail voter could enter a Vote Center and check the status of their vote-by-mail ballot. If the voter needs a replacement ballot for any reason, the election worker can verify that the original ballot has not been cast, void it and print a replacement ballot for the voter, who can then fill it out and cast the ballot during the same visit or can take it home to complete.

“Wonderful experience and very helpful staff at the Vote Center... would definitely use the center in the future.”

*– 2018 Vote Center survey respondent,
First Time voting experience,
typically votes by mail ballot*

- Same-day registration and voting: Voters can register and vote at any Vote Center. Same-day voter registration will also continue to be offered at the Orange County Registrar of Voters' headquarters (per California law), so that, if there is a problem with a voter's registration, the voter has a way to correct it and cast a ballot. This is a critical component in that the distribution of those wishing to register on Election Day would be proportionately dispersed throughout the County, reducing the volume of voters at our central location in Santa Ana on Election Day.
- General voter assistance: Voters will be able to visit any Vote Center during the ten-day period to inquire about any election-related questions or concerns.

All Mail Ballot and Drop Box

Over 61% of registered voters in Orange County have signed up as permanent vote-by-mail voters, meaning they receive their ballot automatically in the mail for every election. According to the Voter's Choice Act, every registered voter would receive a mail ballot without any action or request on the part of the voter. It is important to note that based on current trends it is very likely that 9 out of every 10 Orange County voters will choose to receive their ballots via mail by 2022 or 2024, even if the Voter's Choice Act were not implemented.

In addition, vote-by-mail ballot drop-off boxes would be permanently placed at strategic locations throughout the County to support the increasing trend of voters dropping off vote-by-mail ballots. Under the current polling place model, the Orange County Registrar of Voters successfully processes hundreds of thousands of vote-by-mail ballots—accommodating all mail-ballot elections would be only a matter of scaling up the current operation, which has shown consistent growth over the last decade. The current vote-by-mail ballot processing automation has been installed with the capacity to handle all voters within the County as all mail-ballot.

From the voters' perspective, an all mail-ballot election with Vote Centers would be much more convenient and beneficial since Vote Centers would be equipped to check vote-by-mail status and print replacement ballots during the ten days prior to Election Day, as opposed to only one site (headquarters) with these capabilities.

VOTING OPTIONS FOR ORANGE COUNTY 2020

As Orange County's voting population continues to grow and fluctuate, the current voting process is untenable and overall inefficient when considering voting trends. A Vote Center model supports the growing proportion of voters choosing to vote by mail as well as balancing requirements of modern voting legislation with services and availability at in-person voting centers, allowing voters convenience and accessibility in casting a ballot.

Research for a scalable and responsive voting model for the future of Orange County considers the following factors: population, voting trends, state and federal election-related legislation, equipment investment and projected cost analyses. The following provides options for Vote Center model implementation countywide.

Vote Center Proposals

Vote Center Operational Option 1:

Low operational risk & cost per voter; High voter to Vote Center ratio

Advantages

This low-scaling Vote Center model provides the lowest operational risk and cost per voter by providing the minimum number of required Vote Centers in the last four days leading up to Election Day. This option will lessen some of the inherent challenges that come from recruiting facilities and staffing. For example, having less Vote Centers will require less voting equipment and fewer staff.

By design, Vote Centers are subject to less liability and safety risks than the traditional polling places. The lower the number of Vote Centers, the lower the likelihood of physical security and ballot integrity issues. As a result, this option will increase the ability of the Orange County Registrar of Voters to respond quickly to any incident.

Disadvantages

The low impact on operational risk alleviates some critical issues with the recruitment of facilities. However, by drastically reducing the number of Vote Centers, the Orange County Registrar of Voters will not utilize long-standing polling places; these locations are familiar to

Vote Centers Sample Distribution in Orange County - Option 1

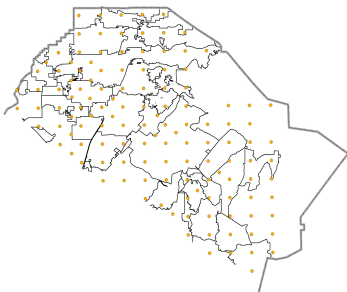


Figure 11. Based on population, voter density, transportation routes and many other factors, approximately 188 Vote Center locations throughout Orange County would be available.

voters but their facilities may no longer meet the criteria to serve as Vote Centers.

Alternatively, this option also introduces new recruitment and staffing challenges. Specifically, it requires the careful and methodical selection of Vote Centers in geographic areas. It will require extra research to avoid perceived marginalization in certain communities. Additionally, the minimum number of Vote Centers concentrates bilingual support.

While this option does provide the lowest impact on operation risk and cost, it does have the highest impact on the voter experience. For voters, it is the most drastic change from the traditional polling place model and it would require wide-ranging voter education and outreach. Although the Orange County Registrar of Voters has a long history of extensive outreach efforts and voter education programs, an intensive and comprehensive voter awareness campaign will be necessary to acclimate voters to the new voting model.

As with any polling place, the time that a voter waits is largely dependent on the time at which the voter arrives. However, due to the minimum number of Vote Centers, this option may lead to longer lines in certain high voter density areas. This would require deployment of more voting equipment and extra staff during the last four days leading up to Election Day.

Cost

Overall costs vary by the number of Vote Centers and is reflected in the total cost analyses.

Vote Center Option 1 Estimated Capital Expenditure Costs			
Units	Equipment	Unit Cost	Proposed Costs
4254	Electronic Tablet Voting Booth	\$ 4,166.67	\$17,725,014.18
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
564	E-Polling Solutions	\$ 1,000.00	\$ 564,000.00
			\$18,846,564.18
564	ADA	\$ 10,000.00	\$5,640,000.00
564	On-Demand Printers	\$ 4,000.00	\$2,256,000.00
564	On-Demand Scanners	\$ 4,000.00	\$2,256,000.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
564	E-Polling Solutions	\$ 1,000.00	\$ 564,000.00
			\$11,273,550.00*

Table 11. Vote Center Model Estimated Capital Expenditures. *Likely scenario given current equipment certification status with the State of California.

Operational Cost Comparison Option 1					
Low Operational Risk/Cost per Voter; High Voter to Vote Center Ratio					
					Total Number of Vote Center Locations
Number of Days in Operation		11	4		
Number of Vote Centers		38	150		188
Cost Per Site	Average Daily	One Time			
Physical location	\$50.00		\$20,900.00	\$30,000.00	\$50,900.00
Extra Help Staff	\$1,943.77		\$812,495.09	\$1,166,260.89	\$1,978,755.97
Equipment Delivery		\$46,900.00	\$9,479.79	\$37,420.21	\$46,900.00
Supplies	\$162.04		\$67,731.48	\$97,222.22	\$164,953.70
			\$910,606.35	\$1,330,903.32	
					\$2,241,509.68

Table 12. Operation Cost Comparison – Vote Centers.

Vote Center Operational Option 2: Moderate operational risk & cost per voter; Moderate voter to Vote Center ratio

Advantages

Under the moderate scaling model, an intermediate number of Vote Centers are distributed across the County. By increasing the number of Vote Centers, voters have greater flexibility and choices to cast a ballot. This option provides a gradual transition from the traditional polling place model to the Vote Center model.

Compared to the low and high scaling models, this option can be viewed as taking a measured approach. Ultimately, this option aims to mitigate the operational risk and cost per voter, but also strives to maximize the most efficient voter to Vote Center ratio.

Although this option calls for additional investment in research during the site selection phase, it ensures that a voter's proximity to a Vote Center remains manageable while avoiding the Vote Center saturation that is evident in the high scaling model.

Additionally, this research allows for Vote Centers to be placed at locations that are familiar to voters and that are likely to receive the highest usage. In doing so, the moderate scale model makes the best use of operational resources (equipment, staff, etc.) by concentrating these resources at Vote Centers that are likely to service a greater number of voters.

Disadvantages

One drawback to this model is that it does require extensive research to secure the best available facilities within targeted areas. Unlike the high scaling model where the distance between established Vote Centers is kept to a minimum, the moderate scaling model slightly increases that distance.

In this option, site selection research must be more strategic. The need for precision in selecting each site leaves little room for error because each Vote Center is responsible for serving a greater number of voters. As unexpected situations arise, the ability to quickly shift operational resources from one Vote Center to another could be impacted.

Cost

Overall costs vary by the number of Vote Centers and is reflected in the total cost analyses.

**Vote Centers Sample Distribution
in Orange County - Option 2**

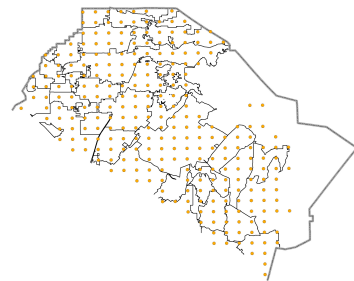


Figure 12. Based on population, voter density, transportation routes and many other factors, approximately 313 Vote Center locations throughout Orange County would be available.

Vote Center Option 2 Estimated Capital Expenditure Costs			
Units	Equipment	Unit Cost	Proposed Costs
7083	Electronic Tablet Voting Booth	\$ 4,166.67	\$29,512,523.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
939	E-Polling Solutions	\$ 1,000.00	\$ 939,000.00
			\$31,009,073.61
939	ADA	\$ 10,000.00	\$9,390,000.00
939	On-Demand Printers	\$ 4,000.00	\$3,756,000.00
939	On-Demand Scanners	\$ 4,000.00	\$3,756,000.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
939	E-Polling Solutions	\$ 1,000.00	\$ 939,000.00
			\$18,398,550.00*

Table 13. Vote Center Model Estimated Capital Expenditures. *Likely scenario given current equipment certification status with the State of California.

Operational Cost Comparison Option 2					
Moderate Operational Risk/Cost per Voter;					
Moderate Voter to Vote Center Ratio					
					Total Number of Vote Center Locations
Number of Days in Operation		11	4		
Number of Vote Centers		63	250	313	
Cost Per Site	Average Daily	One Time			
Physical location	\$50.00		\$34,650.00	\$50,000.00	\$84,650.00
Extra Help Staff	\$1,943.77		\$1,347,031.33	\$1,943,768.15	\$3,290,799.47
Equipment Delivery		\$104,587.00	\$21,051.06	\$83,535.94	\$104,587.00
Supplies	\$162.04		\$112,291.67	\$162,037.04	\$274,328.70
			\$1,515,024.05	\$2,239,341.13	
					\$3,754,365.18

Table 14. Operation Cost Comparison – Vote Centers.

***Vote Center Operational Option 3:
High operational risk & cost per voter; Low voter to Vote
Center ratio***

Advantages

This high scaling Vote Center model offers some advantages to voters. It provides the least amount of change, as it most closely resembles the traditional polling place model (although highly inefficient as noted under "Disadvantages"). This option also offers the shortest travel distance to Vote Centers.

Additionally, this option provides more flexibility in the way Vote Centers are supported. For example, the higher number of Vote Centers more widely distributes language support.

Disadvantages

Although there are some advantages to having a low voter to Vote Center ratio, there are also disadvantages. Some of these include recruitment challenges, significantly higher equipment costs, and perceived security issues due to the higher number of Vote Centers.

While facilities provide a location for a small stipend for one day under the polling place model, facilities may be less willing to serve as a Vote Center for a span of four or ten days. Sites may decline to serve as a Vote Center because doing so would drain their resources and interfere with their day-to-day operations for a longer period of time.

This option results in Vote Center saturation that can be perceived as inefficient. Although this option does provide more Vote Centers, resources are not equally distributed. Additionally, costs can escalate quickly due to extra equipment that need to be purchased.

In this option, the number of staff needed could be over 5,000 for numerous days rather than one day. This results in an increase in staff management and coordination, including an increased focus on bilingual recruitment, which is already a challenge under the current polling place model.

Other potential disadvantages resulting from the high number of Vote Centers include increased security concerns created by a larger number of Vote Centers for daily ballot collection, which has inherent risks. Also, there is the increased possibility of longer response times when assistance is required to be dispatched from headquarters.

Cost

**Vote Centers Sample Distribution
in Orange County - Option 3**

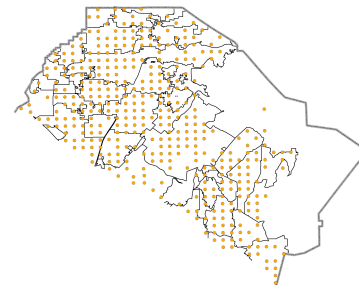


Figure 13. Based on population, voter density, transportation routes and many other factors, approximately 500 Vote Center locations throughout Orange County would be available.

Overall costs vary by the number of Vote Centers and is reflected in the total cost analyses.

Vote Center Option 3 Estimated Capital Expenditure Costs			
Units	Equipment	Unit Cost	Proposed Costs
11314	Electronic Tablet Voting Booth	\$ 4,166.67	\$47,141,704.38
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
1500	E-Polling Solutions	\$ 1,000.00	\$1,500,000.00
			\$49,199,254.38
1500	ADA	\$ 10,000.00	\$15,000,000.00
1500	On-Demand Printers	\$ 4,000.00	\$6,000,000.00
1500	On-Demand Scanners	\$ 4,000.00	\$6,000,000.00
90	Drop Boxes	\$ 6,195.00	\$ 557,550.00
1500	E-Polling Solutions	\$ 1,000.00	\$1,500,000.00
			\$29,057,550.00*

Table 15. Vote Center Model Estimated Capital Expenditures. *Likely scenario given current equipment certification status with the State of California.

Operational Cost Comparison Option 3					
High Operational Risk/Cost per Voter;					
Low Voter to Vote Center Ratio					
					Total Number of Vote Center Locations
Number of Days in Operation		11	4		
Number of Vote Centers		100	400	500	
Cost Per Site	Average Daily	One Time			
Physical location	\$50.00		\$55,000.00	\$80,000.00	\$135,000.00
Extra Help Staff	\$1,943.77		\$2,138,144.96	\$3,110,029.04	\$5,248,174.00
Equipment Delivery		\$373,375.59	\$74,675.12	\$298,700.47	\$373,375.59
Supplies	\$162.04		\$178,240.74	\$259,259.26	\$437,500.00
			\$2,446,060.82	\$3,747,988.77	
					\$6,194,049.18

Table 16. Operation Cost Comparison – Vote Centers.

Capital Expenditure Projections

In comparison to the Vote Center scalable options, estimated costs for capital expenditures to support traditional election services are outlined in the following table. Identified within this table are the cost differences between traditional polling locations utilizing In-Person Electronic Capture Voting Systems and/or Ballot on Demand ballot creation options to be used at each polling location. These costs are estimated at \$40,000,000.00 and \$23,400,000.00 respectively.

Traditional Polling Place Election Estimated Costs			
Units	Equipment	Unit Cost	Proposed Costs
9600	Electronic Tablet Voting Booth	\$ 4,166.67	\$40,000,000.00
			\$40,000,000.00
1300	ADA	\$ 10,000.00	\$13,000,000.00
1300	On-Demand Printer	\$ 4,000.00	\$5,200,000.00
1300	On-Demand Scanner	\$ 4,000.00	\$5,200,000.00
			\$23,400,000.00

Table 17. Traditional Polling Place Election Estimated Costs. Derived from current inventory and estimated costs of equipment.

Funding Update

New State Funding Sources for System Replacement

The Governor's Fiscal Year 2018 – 2019 budget provides \$134 million for the replacement of voting systems throughout California. This cost includes a one-time purchase of a portion of the necessary hardware, software, peripherals and one year's worth of software licenses.

Utilizing this funding will require that Orange County match funds for eligible expenditures on a dollar-for-dollar basis. Additionally, the Orange County Registrar of Voters may seek reimbursement for payments made to a purchase agreement, lease agreement, or other contract made after April 29, 2015 and through June 30, 2021. The amount allocated to Orange County was based on a number of factors, including the size of our County, the number of voting precincts, and voting equipment needs; as a result, Orange County has been allocated \$9,823,000.00 of the \$134 million.

New Federal Funding Sources for System Replacement

Recently, the Consolidated Appropriations Act of 2018 was chaptered into law, which appropriated \$380 million dollars in 2018 Help America

Vote Act (HAVA) Election Security Fund grants for election security. Registrar of Voters Neal Kelley has been at the table as a member of the Department of Homeland Security (DHS) Election Security Task Force (Government Coordinating Council) discussing how these funds will be funneled to the states.

California was awarded \$34,558,874.00 of these allocated funds. The Secretary of State is the designee on deciding how the funds will be used in California. His office has submitted its plan to the U.S. Election Assistance Commission (EAC) and has broken down the funding for the current and future fiscal years as follows:

- \$1.5 million for county support for cybersecurity related to the statewide voter database.
- \$1.5 million for county support for polling place accessibility and improvements.
- \$20 million for county support for Vote Center implementation.
- Remaining \$10 million for additional cybersecurity, election auditing, training and associated personnel costs in fiscal years 2019 – 2020 and 2020 – 2021.

Based on the current \$3 million allocated for cybersecurity and polling place accessibility, Orange County has been allocated \$110,000, or 3.7% of the total funds. Allocations have not been made for the \$20 million in Vote Center support; however, if the same formula applies, Orange County would receive approximately \$740,000.00; our estimates indicate that this is unlikely, and Orange County would receive a larger figure as equipment costs are much higher. The Orange County Registrar of Voters continues to dialogue with the Secretary of State on how the \$20 million will be allocated and what types of restrictions will be placed on the funding.

CASE STUDY: FIVE VOTER'S CHOICE ACT COUNTIES

With technology constantly advancing, the traditional polling place model has fallen behind the needs and expectations of Orange County voters. Multiple polling places in a single neighborhood cause confusion with local voters and leave them uncertain about where to vote, and eventually lead to more provisional ballots. In addition, the narrow timeframe of Election Day is becoming increasingly difficult for voters to work around.

At this rate, in just a few years, we will see 90% of voters in permanent vote-by-mail status while only 20% of ballots are cast at the polling place. More than 1,000 polling places would be nearly empty on Election Day, expending County resources and taxpayer dollars to provide a service that 80% of constituents are not using.

The passage of the Voter's Choice Act (VCA) has provided a new option for counties to conduct elections under a new model that provides greater flexibility and convenience for voters. In VCA counties, voters can choose how, when, and where to cast their ballot. Every voter receives a vote-by-mail ballot, in-person early voting is expanded, and voters can cast a ballot at any Vote Center within the County.

Five of the fourteen eligible counties adopted the VCA model in 2018: Madera, Napa, Nevada, Sacramento, and San Mateo. As the largest of the five counties, Sacramento County serves as a case study for other large urban counties that are considering the transition to the VCA model.

In evaluating results from the June 2018 Election, there is not substantial evidence that turnout of any particular political party was significantly impacted by the transition to VCA. In addition, no candidates of a political party were more likely to receive a plurality or majority of votes due to the transition to VCA in Sacramento County.

VCA County Case Study					
Elected to Office Party and Turnout					
County	Party Elected to Office		Voter Turnout by Party		Total Turnout
	Democratic	Republican	Democratic	Republican	
Madera	0	5	67%	77%	68%
Napa	2	0	77%	78%	73%
San Mateo	5	0	75%	76%	72%
Sacramento	7	5	71%	73%	68%
Nevada	3	0	77%	74%	80%
Orange	9	8	71%	76%	71%

Table 18 Voter's Choice Act Counties Case Study, party elected to office, party turnout and total voter turnout.

CASE STUDY: VOTE CENTERS IN THE 2018 ELECTION YEAR

The November 2016 Orange County Vote Center model pilot program successfully fulfilled major VCA requirements such as schedule, accessibility, availability, geographic coverage, voting support and security. In continuing to innovate and apply the Vote Center model. During the June and November 2018 Elections, the program was implemented once more in concurrence with the traditional polling place model. General observations were consistent with conclusions drawn from the November 2016 pilot and point to higher voter accessibility, increased efficiency of processing voters with electronic poll books and improved efficiency in cost and resource allocation.

Planning and Preparation

The successful framework for Vote Center model early voting was already in place before the 2018 Midterm Elections cycle. When preparations began for the 2018 Midterm Elections cycle, there were three major concepts new to the model in Orange County:

- Implementing electronic poll books.
- Innovating an updated mobile option within the Early Voting schedule.
- Implementing the use of storefront facilities as Early Vote Centers.

Facility Recruitment

General recruitment of facilities began with direct conversations between the Orange County Registrar of Voters and numerous city partners throughout the County. Data from the pilot was reviewed as well as the general criteria for selecting Vote Center sites. Site selection requirements included a commitment to the ten-day schedule through Election Day (including weekend operational hours and extended hours for the final four days), overall capacity and countywide accessibility.

Storefront Vote Centers

In order to provide increased variety and accessibility of early voting facilities, the Orange County Registrar of Voters partnered with Orange County CEO Real Estate to identify available storefronts in high traffic

"It was wonderful and a great option at a local shopping center!"

– 2018 Vote Center survey respondent,
16+ years voting experience,
typically votes by mail ballot

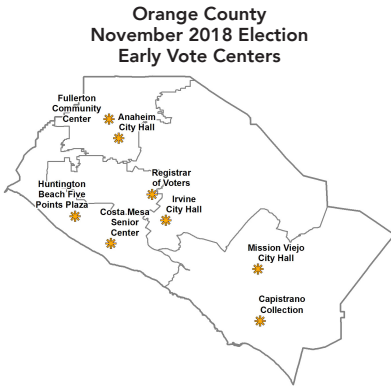


Figure 14. Based on Vote Center selection criteria 8 Vote Center locations were provided throughout Orange County for the November 2018 Election.

centers open to short-term occupancy. Factors such as geography, budget, registration population and historic data of voter turnout were considered when choosing these sites.

Of the nine early voting facilities in November 2018 Election, two were retail storefront Early Vote Centers. The first site in Huntington Beach (Huntington Beach Five Points Plaza, 18597 Main Street, Huntington Beach) was chosen to help support a large geographic area where most public facilities are concentrated in one area. A second site in San Juan Capistrano (The Capistrano Collection, 27184 Ortega Highway, San Juan Capistrano) was selected to support voters in a geographic area near a major travel thoroughfare that was farther south than most large public facilities were located. Both sites fulfilled coverage and accessibility needs, as well as provided a more even distribution of early voting accessibility across Orange County, allowing efficient resource allocation and staff support.

Overall, the introduction of facilities in areas where voters traveled and shopped yielded positive results and responses from voters who both lived and worked in the surrounding areas. Both facilities accounted for over 9,000 voters that included in-person and vote-by-mail ballot drop offs.

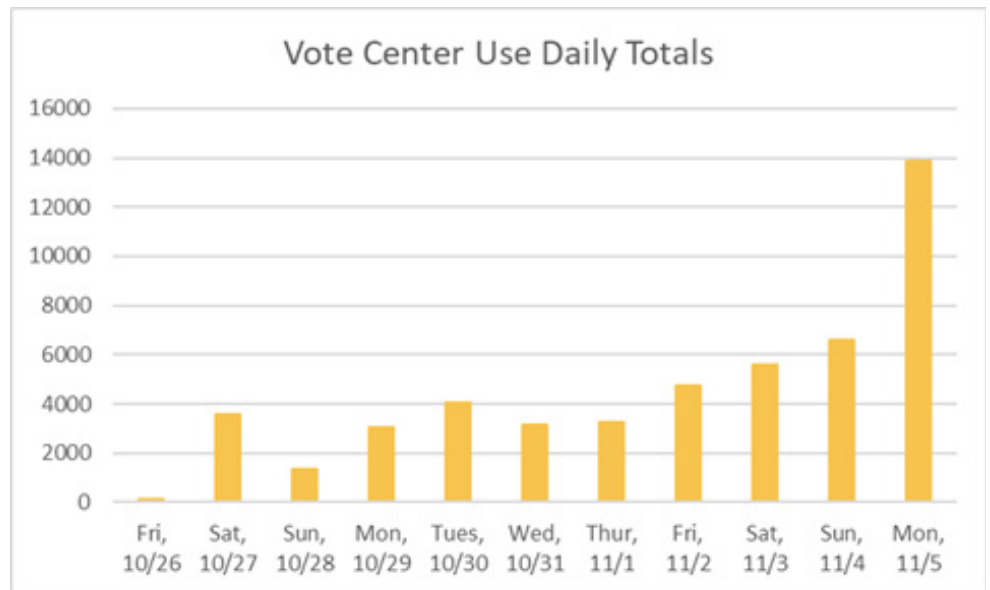


Figure 15 Daily Vote Center turnout throughout early voting period.

Mobile Pop-Up Voting

The Orange County Registrar of Voters continues to develop innovative solutions to voter trends and, in the case of pop-up voting, inspiration was taken from pop-up stores and restaurants that often

draw positive public attention in areas with high pedestrian traffic.

This newly innovated facet of the early voting program includes the acquisition of an updated mobile voting center. The new pop-up voting center has glass walls from which a passerby can observe with the potential to pique the interest of someone walking by the pop-up location. Ultimately, the goal is to garner the interest of the public by using proven strategies, such as simple design principles and signage that can change to any election.

The pop-up voting center has a custom wrap to match the new marketing and branding plan that the Orange County Registrar of Voters has undertaken across the entire agency. The mobility of this platform promotes voter engagement and participation and allows our organization to reach underrepresented populations and high and low voter turnout areas to provide advance voting opportunities and improve the voter experience.

At the pop-up voting center, voters are able to receive all of the same services as a brick-and-mortar facility including check-in utilizing electronic poll books, electronic and on-demand paper ballot voting, registration look-up, and same-day voter registration and voting.

The pop-up voting center debuted at the beginning of the early voting time frame in the June 2018 Election at the Civic Center in Santa Ana. From there, the pop-up voting center rotated daily throughout Orange County during the 10-day early voting period and was prepared to serve as a polling place if needed on Election Day.

In the November 2018 Election, the pop-up voting center was requested and scheduled at numerous sites including neighborhood farmer's markets, college and university campuses and shopping centers. The Registrar of Voters partnered with on-site contacts for marketing and outreach, heavily utilizing social media and community outreach platforms to advertise the daily schedule. On its most popular day, with voting hours of 7am to 8pm, the pop-up voting center was able to process over 700 in-person voters and accept over 400 vote-by-mail ballot drop-offs.

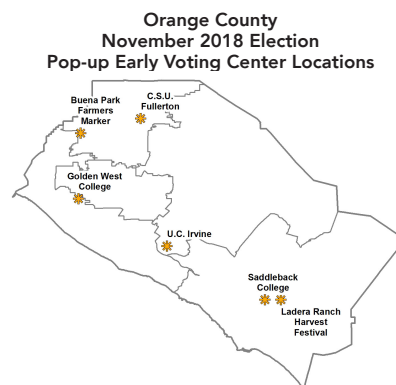


Figure 16. Based on Vote Center selection criteria daily pop-up early Vote Center locations were provided throughout Orange County for the November 2018 Election.

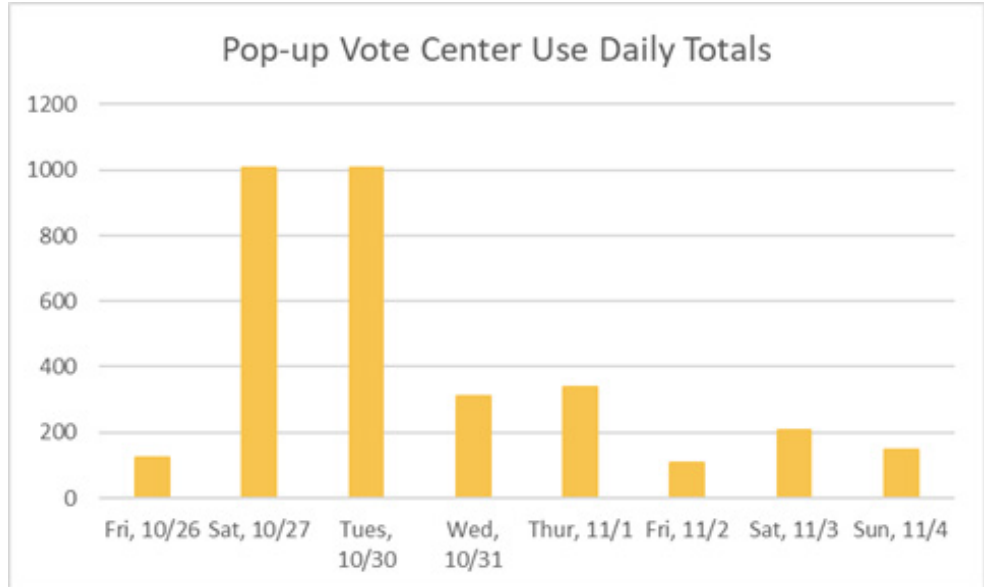


Figure 17 Daily Pop-up Vote Center turnout throughout early voting period.

Electronic Poll Books

As introduced, noted and projected in the original “Orange County Registrar of Voters – Voter’s Choice Act Versus Traditional Election Models” report as well as Appendix C of said report, electronic poll books (ePollbooks) have established a record of proven success in Orange County elections after being used during early voting for both the June 2018 and the November 2018 Elections.

After a comprehensive vetting process that included no less than three distinct, best-in-class vendors, the Orange County Registrar of Voters acquired an initial set of 30 ePollbooks from Tenex Software Solutions (Tenex), a U.S. owned company based out of Florida. Tenex is the nation’s leading electronic pollbook provider with over 20,000 units deployed and over 23 million voters served in over 14 states⁶. It is important to note that Tenex was also the first electronic poll book solution to receive official certification in California after the adoption of the California Code of Regulations for Electronic Poll Books in early 2018. This certification process at the State level ensures that any electronic poll book used will meet and/or exceed California’s standards for security, reliability and processing (Title 2. Administration – Division 7. Secretary of State – Chapter 3.6 Electronic Poll Books)⁷.

⁶ <http://www.tenexsolutions.com/precinct-central.html>

⁷ <https://www.sos.ca.gov/administration/regulations/current-regulations/poll-books/>

The ePollbook solution within Orange County Context

Traditionally, Orange County has used paper rosters which contain a list of eligible voters within the local precinct. In a Vote Center model, these traditional paper rosters would be impossible to manage as we would now be providing Orange County voters the convenience of voting anywhere within the County and not just at their local precincts. In addition, voters would be able to verify their voting status in real time.

Within the Vote Center model, eligible Orange County voters can now exercise their right to vote at a time and place that is most convenient to them. Electronic poll books provide the mechanism by which the Orange County Registrar of Voters can service all eligible voters regardless of where they choose to vote.

ePollbooks

An ePollbook is typically either hardware, software or a combination of the two that allows election officials to review, process and/or maintain voter registration information for an election.

The ePollbook solution chosen by the Orange County Registrar of Voters is a combination of the latest Apple iPad hardware platform with associated operating software. The voter information that is stored and used by the ePollbook is always password protected and encrypted whether the data is at rest or in transit. In addition, the communication between ePollbooks and the Orange County Registrar of Voters' ePollbook data server primarily transits over AT&T's FirstNet, which is a secured high speed wireless nationwide broadband network built specifically for and dedicated to public safety⁸.

Line Management

The use of ePollbooks decreases lines during election operations. In a Vote Center model, ePollbooks have a local copy of the voter database and a persistent connection to the middle-tier server that provides updates to them. As voters arrive at the Vote Center, they can choose one of several entry points, or lines. Once they reach the employee operating the ePollbook, the employee will be able to type the voter's information and immediately find a match, if one exists, in the database. Once the information is confirmed, the same employee will verify the information and ask for a signature to attest to the voter's identity. The signature is captured in the ePollbook itself, after which

⁸ <https://www.firstnet.gov/mediakit>

the voter would be issued either a paper or electronic ballot to vote.

The availability of check-in stations is only limited by the number of ePollbooks assigned to a specific Vote Center. The number of ePollbooks at any Vote Center location can be determined by looking at historical voting turnout data for the area as well as other potential factors (i.e. foot traffic, visibility, etc.). This means that a Vote Center could begin operating with any number of ePollbooks and based on demand, deploy additional ePollbooks as necessary.

In addition to the multiple check-in stations, ePollbooks allow the Vote Center employees to actively manage the line and begin engaging voters even as they wait in line. Since ePollbooks contain the entire voter database, this line control mobility allows Vote Center employees to redirect any voters who may need more specific assistance or answer any questions which may otherwise slow down the check-in process.

Proof of Concept at Vote Centers

The use of ePollbooks was proven for standard midterm election voter turnout in the June 2018 Election and supported a voter turnout comparable to a presidential general election in the November 2018 Election. At the one day pop-up voting event on the University of California, Irvine campus, a Vote Center employee was able to utilize the ePollbook to go through a line of voters and identify multiple vote-by-mail voters who only needed to drop off a ballot and numerous out-of-county voters eligible for same-day voter registration. This allowed for expedited service by diverting voters based on their status. The final day of early voting saw high turnout across all locations throughout the County. Each Vote Center was able to successfully apply best practices for line management.

During the November 2018 Election, the Orange County Registrar of Voters' office processed record numbers of on-site voters with lines extending to the hundreds on Election Day; compounded by the new same-day voter registration law. After starting the day with four main ePollbook check-in stations, which worked well in the early morning and afternoon hours, there was a rush of voters towards the latter part of the day⁹. To accommodate this influx, the Orange County Registrar of Voters rapidly expanded the number of check-in stations from the original four to ten check-in stations, including two mobile ePollbooks

⁹ Reported by CBS 2 news <https://losangeles.cbslocal.com/video/3967992-long-lines-at-the-oc-registrar-of-voters-office>

for enhanced line management. This rapid expansion allowed us to process voters in a more efficient manner and reduce wait times.

Vote Center Turnout

Vote Center use increased 96% from the November 2016 pilot program to its implementation in November 2018. The number of voters that utilized Vote Centers to vote in-person or to drop off a vote-by-mail ballot nearly doubled from 27,000 to 53,000 total voters.

The data indicates both awareness and use of Vote Centers increased over three elections lending support to public acceptance of Vote Centers as the standard method of voting for an average voter were it to be implemented countywide.

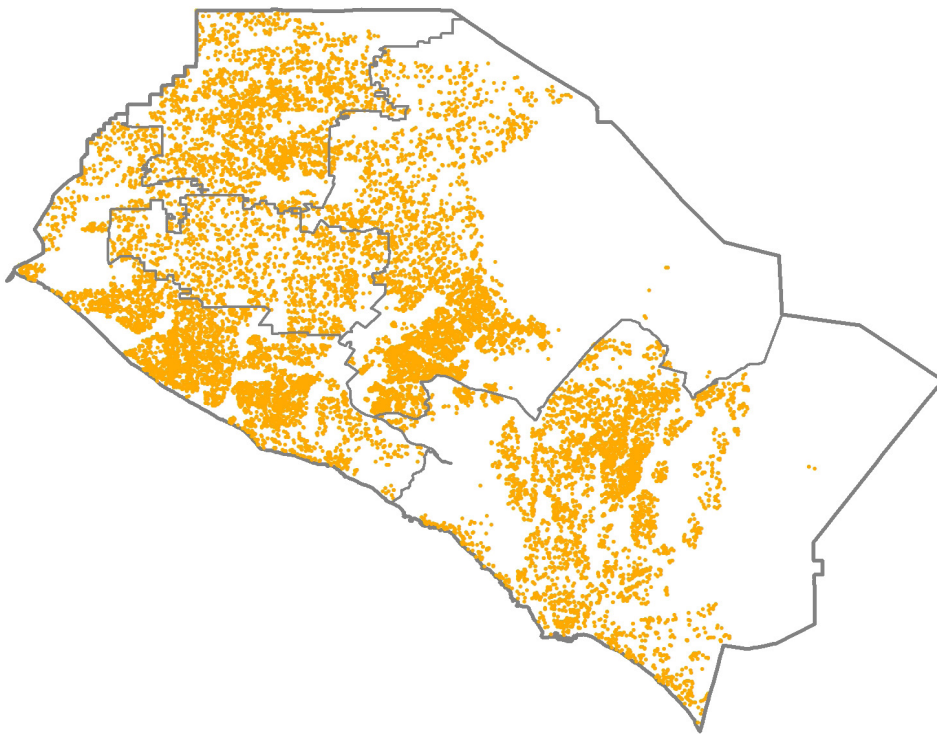


Figure 18 Vote Center use countywide.

Voters can either vote in person or drop off a ballot at a Vote Center. The number of voters who chose to vote in person or to drop off their ballot was almost identical. The following shows the breakdown of voters utilizing Vote Centers to vote in person or drop off their ballot by major political party.

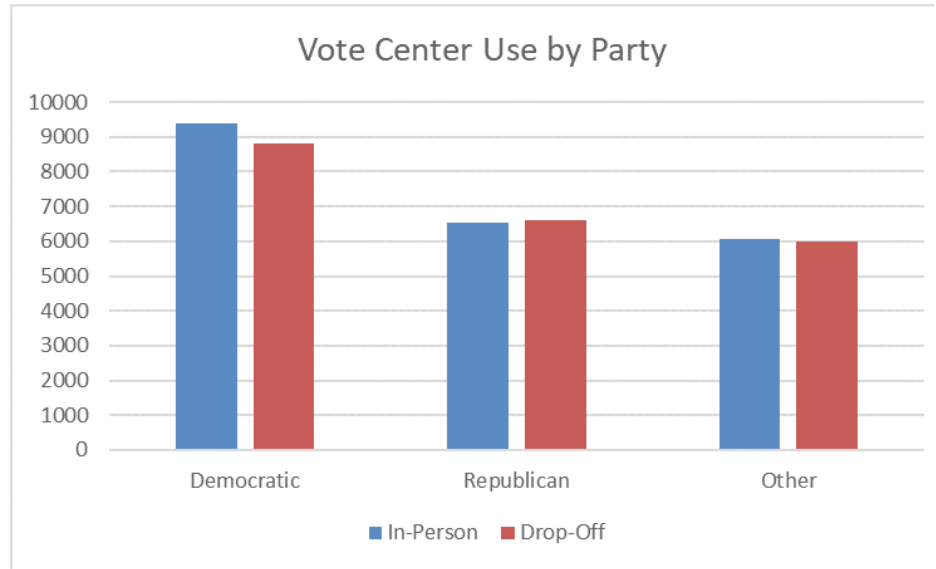


Figure 19 Party registration of Vote Center voters.

Vote Center Survey Results

The Orange County Registrar of Voters' office conducted voter surveys to solicit direct feedback from voters who cast a ballot in a Vote Center as well as all voters who dropped off their vote-by-mail ballot at a Vote Center before Election Day. Utilizing voter registration data, voters with valid email addresses between both Vote Center voters and vote-by-mail drop-off voters were sent surveys (totaling 16,630 surveys). Of the total 398 responses, there were 240 completed surveys which included a variety of feedback in the comments. The difference in response rate is correlated to the method of survey delivery. Typically, email communication has a lower response rate than other types of outreach.

The following are the responses for each question, separated by survey type, "VC" for Vote Center and "VBM" for vote-by-mail drop-off. The charts on the right show the percentage of each answer by survey type.

How long have you been voting in Orange County?

Answer	VC	VBM	Total	Percent
First-time voter	16	15	31	12.9%
3 years or less	15	22	37	15.4%
4 to 10 years	26	22	48	20.0%
11 to 15 years	11	8	19	7.9%
16+ years	56	49	105	43.7%
Total	124	116	240	

How did you hear about Vote Centers?

Answer	VC	VBM	Total	Percent
Sample ballot	42	66	108	45.0%
Radio	3	4	7	2.8%
Social media	12	10	22	9.2%
Word of mouth	32	16	48	20.0%
Other	35	20	55	22.0%
Total	124	116	240	

**What was your motivation to vote at a Vote Center?
(select all that apply)**

Answer	VC	VBM	Total	Percent
Avoid Election Day rush	67	67	134	27.3%
Convenient hours	47	48	95	19.4%
Vote early	63	67	130	26.5%
Convenient location	37	56	93	19.0%
Other	28	10	38	7.8%
Total	242	248	490	

What voting method do you typically use?

Answer	VC	VBM	Total	Percent
Electronic ballot at the polling place	85		85	68.5%
Paper ballot at the polling place	13		13	10.5%
Vote-by-mail	26		26	21.0%
Total	124		124	

In comparison to other methods of voting you may have used in the past, how satisfied were you with the overall experience at the Vote Center?

Answer	VC	VBM	Total	Percent
Very satisfied	95	101	196	81.7%
Satisfied	26	13	39	16.3%
Dissatisfied	2	2	4	1.6%
Very dissatisfied	1	0	1	0.4%
Total	124	116	240	

Given the option of a Vote Center, how likely are you to use a Vote Center over a polling place in the future?

Answer	VC	VBM	Total	Percent
Very likely	78	91	169	70.4%
Likely	43	20	63	26.2%
Unlikely	2	5	7	3.0%
Very unlikely	1	0	1	0.4%
Total	124	116	240	

How did you drop off your vote-by-mail ballot?

Answer	VC	VBM	Total	Percent
Walk-in (dropped off inside Vote Center)		60	60	51.7%
Drive-thru (dropped off in the ballot drop-off box located outside of the Vote Center)		56	56	48.3%
Total		116	116	

Comments

“I loved having the chance to vote at a center on the weekend as I work all day and night on Tuesdays and would have been unable to vote in person otherwise.”

“My husband and I loved how convenient this was for us!”

“Wonderful experience and very helpful staff at the voting center. Very easy and free parking. I also used the center to drop off a vote-by-mail

ballot for my son and would definitely use the center for that purpose in the future.”

“The San Juan Capistrano Vote Center was excellent, friendly, instructive, and I was confident my ballot was secure.”

“Very much appreciate the expansion of the early voting centers.”

“This is an excellent option. Please continue and even expand this. We should be encouraging as many voters to vote as possible and early voting centers are effective way to do it.”

“It was wonderful & a great option at a local shopping center!”

“Drive thru makes this the most convenient and efficient way to vote while maintaining confidence that our ballots will be counted and not lost in the mail.”

CONCLUSION

Polling places once served as the primary method to cast one's ballot in Orange County. However, current trends illustrate that voters gravitate towards options that provide more convenience rather than physical proximity—they want to vote when, where and how they choose, and not be tied down to one specific location on one specific day. Currently, more ballots are cast by mail than in the polling place, and over 60% of registered voters have signed up for permanent vote-by-mail status, which is up over 30 percentage points from just ten years ago. These are trends that cannot be ignored.

Voter behavior, community response, compliance with legislation and efficient use of tax payer dollars all suggest Vote Centers are the best option for Orange County. Most importantly, a clear majority of voters who have firsthand experience casting their ballot at a Vote Center are satisfied with their experience and likely to return to a Vote Center in the future. Survey comments frequently request for Vote Centers to be implemented and expanded in future elections.

Many new election reforms went into effect during the 2018 Midterm Elections, reflecting a general trend in legislation towards how elections would be conducted under the Vote Center model. Officially transitioning to the Vote Center model would cause Orange County to automatically comply with several of these reforms.

Considering the strong support of Vote Centers and based on the cost-benefit comparison between Vote Centers and polling places as outlined in the previous sections, the Vote Center model has proven its proof of concept in Orange County and shows promise as an efficient, economical and more effective way of conducting elections. In addition, the Vote Center model allows for scalability and can be customized for Orange County as it relates to level of service, financial considerations and geographic coverage.

Supporting Reasons to Transition to Vote Centers

Vote-by-mail Trends

Currently, over 60% of voters have permanent vote-by-mail status. The Registrar of Voters expects this vote-by-mail growth trend to continue as voters seek voting options that are more flexible and accessible. At this current growth rate, in just a few years, data forecasts 90%+ of

voters in permanent vote-by-mail status (Figure 10). The Voter's Choice Act supports the shift in voter trends by providing all voters a vote-by-mail ballot and the ability to visit any Vote Center for an in-person voting experience.

Eliminating the Provisional Ballot Epidemic

Voters going to the wrong polling place results in a large quantity of provisional ballots that need to be individually verified after Election Day before they are counted. These processes extend the amount of time required to count all eligible ballots and ultimately determine the final election results. Vote Centers eliminate virtually every type of provisional ballot due to the ability to verify voting status in real time using ePollbooks. Decreasing the number of provisional ballots directly reduces the amount of time needed for certification.

Balancing Effect of Election Reforms

New election laws are passed and become effective every year, and it is a critical priority for the Orange County Registrar of Voters to make the necessary preparations to remain in compliance. A significant number of election laws passed during the last two legislative sessions focus on modernizing elections, incrementally transitioning elections operations to adopt new technologies and make it easy to vote. New legislation often includes extra requirements for counties that have not implemented a Vote Center model.

Improving In-Person Election Operations

Due to the strenuous nature of the schedule and the electronic processes involved with voting in a Vote Center model, Vote Center staff are required to have high customer service skills along with basic administrative skills. By hiring staff to expect flexibility in placement and extended working hours and comprehensive formal training, employees bring a higher level of customer service and professionalism. In contrast, current election operations rely on volunteers who receive condensed training and are not subject to the standards and qualifications as County employees.

Reductions in Capital Costs

Projections to continue under the traditional polling place model are upwards of \$63 million, whereas the options for scaling the Vote Center model range from approximately \$29 million to \$80 million. The range of options in implementing the Vote Center model allows flexibility in designing to fit Orange County's voters and budget.

Overcoming Recruitment Challenges

Volunteer and polling place recruitment challenges have been augmented by the decreasing number of in-person voters in all elections. On average, over 1,000 facilities and a minimum of 8,500 volunteers are recruited every election. Facility and poll worker recruitment have been historically difficult and time consuming, and each have their own set of challenges. Vote Centers alleviate both volunteer and facility recruitment challenges with fewer sites strategically placed in locations that can serve all types of voters.

Increased Security and Ballot Integrity

Vote Centers are inherently more secure than polling places. There are fewer sites where an incident may occur, allowing the increased ability to respond quickly to incidents. Trained employees instead of volunteer poll workers supporting more consistent procedures and using electronic check-in procedures instead of printed rosters to check voting status are a few of the many ways that Vote Centers provide increased security to the voting process.

Use of EPollbooks for Electronic Check-In

Vote Centers use ePollbooks to electronically process voters instead of using paper rosters. The ePollbooks provide significant advantages such as near real-time application of voter history, additional data for employees to better verify a voter's eligibility, and implement best practices for line management. Additionally, ePollbooks allow voters the convenience of voting their correct ballot at any Vote Center in Orange County.

Reduced Ballot Counting Timelines

Voter behavior in recent years has demonstrated an increase in the use of vote-by-mail voting, dropping off vote-by-mail ballots at polling places, and voters going to the wrong polling place. Combined, these processes impact the amount of time required to count all of the eligible ballots. Under the Voter's Choice Act, voters have more options to return their ballots at Vote Centers or dropboxes which are in operation for a longer period time before and on Election Day. The Orange County Registrar of Voters can begin processing these ballots sooner, which will result in fewer remaining ballots to count after Election Day.

Lack of Evidence of Any Partisan Benefit

In evaluating results from the 2018 Midterm Elections, there is not

substantial evidence that turnout of any particular political party was significantly impacted by the transition to Voter's Choice Act. In addition, no candidates of a political party were more likely to benefit under the new voting model. Voting behavior was consistent with historical voting patterns in counties that transitioned to Vote Centers.

Improved Voter Experience

The voting experience at a Vote Center is comparable to voting at a polling place, but with a vastly improved experience where voters can now exercise their right to vote at a time and place that is most convenient to them. A Vote Center model supports the growing proportion of voters choosing to vote by mail as well as balancing availability of in-person voting centers, allowing voters convenience and accessibility in casting a ballot.

Regardless of the option selected, the Orange County Registrar of Voters' voting equipment is nearing the end of its lifecycle. To ensure the security and integrity of elections, it is necessary to release a Request for Proposals to replace the aging voting equipment in 2019.



REGISTRAR OF VOTERS
1300 South Grand Avenue, Bldg. C
Santa Ana, CA 92705
714-567-7600
ocvote.com

2018 ELECTION SECURITY PLAYBOOK

ORANGE COUNTY, CA ELECTIONS



Your vote. Our responsibility.
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**ORANGE COUNTY
REGISTRAR OF VOTERS**

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Executive Summary

A paradigm shift occurred in election security in 2016 when widely reported attempts were made to disrupt elections in the United States. In addition, there has been a great deal of attention on issues related to ballot integrity, voter registration systems, and ensuring the eligibility of voters.

As a result, Orange County has been aggressively pursuing security measures to protect the integrity of our elections. We believe a proactive “ring of security” is critical to safeguard the millions of ballots that are cast in Orange County during each election cycle.

The purpose of this physical and cybersecurity election playbook is to provide a guide to anticipate, mitigate and respond to physical and cybersecurity threats. As threats continue to increase and evolve, having a playbook is one of many pieces that will help to improve our security profile. Although threats are constantly changing, and incidents are unique, this playbook provides a guide and a set of best practices to be better prepared for threats and incidents. This playbook also provides a set of standards to reference as we continue to improve our current systems and implement new ones.

We have implemented physical and cybersecurity controls as outlined throughout this playbook, while incorporating extensive physical and cybersecurity training for our employees. There are also classified security measures in place to ensure that these mitigation efforts are not compromised.

Our office has already implemented many of the items addressed in this playbook, including the following:

- Physical security surveys were executed.
- Physical security improvements were put into action.
- Partnerships were established with federal agencies, local agencies, and information sharing centers.
- Administrative, technical and physical controls have been enhanced.
- An internal playbook and Incident Response Plan has been developed.

- Plans are in place to conduct risk limiting ballot-polling audits based on a random sample of ballots.
- Proactive list maintenance above and beyond statutory requirements continues.

Orange County will continue to focus our resources on the protection of our election systems, ballot integrity and overall election security. We remain diligent and proud of our involvement at the forefront of election security planning.



Neal Kelley
Registrar of Voters
Orange County, CA

Neal Kelley is an appointee of the U.S. Department of Homeland Security, Election Infrastructure, Government Coordinating Council (GCC) and serves as a member of the U.S. Election Assistance Commission (EAC) Board of Advisors and Voting Systems Standards Board and is a member of the National Academies of Sciences, Engineering, and Medicine's Committee on the Future of Voting.

Introduction

The Orange County Registrar of Voters (OCROV) is responsible for the management of elections for its over 1.5 million registered voters; in fact, there are more registered voters in Orange County than in 21 individual states. The OCROV security systems and controls are in place to enable secure, yet efficient execution of this mission. This public physical and cybersecurity plan was developed to ensure that the information provided by our systems and information remains confidential, available, and accurate. The OCROV is dedicated to protecting the integrity and authenticity of our data as well as the integrity of all votes cast.

The cybersecurity playbook provides clear, actionable tasks using tactical approaches to counter the growing number of cyber as well as physical threats. It is important that we take a strong, proactive approach to our security campaign efforts. This approach is a combination of strategies, best practices, along with cybersecurity policies and procedures to reduce our risks and to minimize and prevent threats.

The importance of a cybersecurity playbook is illustrated by the following quote from the Harvard Kennedy School:

“The consequences of a cyber breach can be substantial and devastating. For the foreseeable future, cyber threats will remain a real part of our Election process. As democracy’s front line, we must recognize the risk of an attack, develop a strategy to reduce that risk as much as possible, and implement response strategies for that moment when the worst happens. While no campaign can achieve perfect security, taking a few simple steps can make it much harder for malicious actors to do harm. Ironically, the most sophisticated state actors often choose the least sophisticated methods of attack, preying on people and organizations who neglect basic security protocols. That is our primary reason for creating this Cybersecurity Campaign Playbook.”¹

¹ Harvard Kennedy School (2017) Defending Digital Democracy / Version 1.3: Retrieved from <https://www.belfercenter.org/sites/default/files/files/publication/Playbook%201.3.pdf>

Elections as Critical Infrastructure

On January 6, 2017, the Secretary of the Department of Homeland Security (DHS), Jeh Johnson, designated the Election Infrastructure in the United States as a subsector of the existing Government Facilities Critical Infrastructure sector. This designation by DHS means that the Election Infrastructure has become a priority for cybersecurity assistance and protections that DHS provides to a range of private and public-sector entities. Election Infrastructure has been defined as storage facilities, polling places and centralized vote tabulation locations used to support the election process. It is also defined as information and communications technology to include voter registration databases, voting machines, and other systems to manage the election process and to report and display results on behalf of state and local governments. Critical Infrastructure is a major concern for cybersecurity threats and vulnerabilities.

Core Information Security Principles

The OCROV has adopted guiding principles that describe our security objectives, which we refer to as our core information security principles. The core information security principles are an integral part of our information security architecture. The principles are the basis for many of our efforts outlined throughout this document. Our office uses a principle referred to as CIA, which is defined as²:

Confidentiality – Confidentiality refers to protecting sensitive information, such as Personally Identifiable Information (PII). Any two of the following data points together – a name with address, Social Security number, driver’s license, etc. – are considered PII and must be protected as data assets. The principle of “least privilege” is the idea that only authorized individuals or systems should have access to information on a need-to-know basis. This principle is intended to prevent unauthorized disclosure of voter information, PII or other sensitive voter data.

Integrity – Integrity refers to the prevention of unauthorized or improper modification of systems and information. Integrity includes the principle that information should be protected from intentional, unauthorized, or accidental changes. Controls are put in place to ensure that information is only modified

² Tipton, Harold F. Official (ISC)2 guide to the CISSP CBK. Boca Raton, FL: CRC Press, 2010. Print.

through accepted practices. This is to ensure that data has not been altered.

Availability – Availability refers to the idea of minimizing downtime. We have controls in place to ensure that our data is highly available, redundant and replicated securely offsite. In case of a disaster, it is important to have plans in place to ensure business continuity while minimizing downtime and impact to voters, which is critical. Future planning will continue to include designing and building everything with redundancy in mind. In addition, disaster recovery policies are in place to overcome disasters such as power failures, fires, and other unplanned disasters. Secure back up of data is also important to make sure access to our data is not disrupted in the event of a disaster.

Top Threats and Vulnerabilities

In order to properly develop a security plan, the potential threats and exploits must first be identified. In the following section, we give examples of potentials and threats that we have identified.

The National Institute of Standards and Technology (NIST), in Special Publication SP 800-30 defines³ threats as “the potential for a particular threat-source to successfully exercise a particular vulnerability.”

NIST Special Publication 800-30 Rev. A defines vulnerability as “a flaw or weakness in system security procedures, design, implementation, or internal controls that could be exercised accidentally, triggered or intentionally exploited and result in a security breach.”

Threat of Foreign States

Foreign States are a significant threat because they have access to resources and technologies that make their cyberweapons more dangerous and difficult to defend against. A large amount of cyber threat intelligence data focuses on preventing a breach or a leak from happening; however, even with companies and governments spending more on network defense, breaches from Foreign States are still occurring. A proper defense strategy must be proactive and engaged. We need to combine technology and techniques to combat Foreign States that try to intervene in our elections and

³ NIST Special Publication 800-30 Revision 1 Retrieved from nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-30r1.pdf

disrupt our democracy. We must take strong actions to prevent interference including misinformation, phishing expeditions, and any other forms of meddling, mischief, and disruptions from Foreign States. Throughout this cybersecurity playbook, the threat from Foreign States is incorporated into the planning process.

Examples of Threats

We have identified examples of potential threats and exploits specific to elections, and later in this report, we will describe some mitigation strategies. Listed below are examples of identified threats:

- Computer virus
- Malware
- Breach of confidential information
- Denial of access
- Bomb threats and physical threats
- Phishing attack
- Hacking
- Social engineering
- Tampering of voting equipment
- Power outage
- Disgruntled poll worker or employee
- Fake information, including from social media
- Physical access to voting machines
- Lost access to voter database
- Voter registration tampering
- Vendor related threats

- Supply chain threats

Potential Impacts to an Election

The above threats must be addressed, because they can potentially impact an election by causing failures to meet election deadlines, causing failures to process results on-time, and causing overall failures of the voting system.

Preventative Measures and Mitigations

In order to address the threats and vulnerabilities listed above, our office implements preventative measures through security mitigations and controls.

Security Mitigations and Controls Categorizations of Security Controls

Security requires a comprehensive strategy, consisting of multiple facets. Security mitigations can be classified by the types of controls necessary for a secure organization. The types of controls are⁴:

Administrative controls - Administrative controls are procedures implemented to define the roles, responsibilities, policies, and administrative functions needed to manage the environment. The employee hiring and separation procedures listed below are examples of the administrative controls we have in place.

Technical controls – Technical controls are electronic hardware and software solutions implemented to control access to information and information networks. The intrusion detection systems listed below are examples of the technical controls we have in place.

Physical controls - Physical controls protect the organization's people and physical environment, such as locks, fire management, gates and guards. The security cameras and badge access controls listed below are examples of the physical controls we have in place.

In our process of identifying preventative measures and mitigations for our systems, we

⁴ Tipton, Harold F. Official (ISC)2 guide to the CISSP CBK. Boca Raton, FL: CRC Press, 2010. Print.

attempt to address each of these categories of controls. This helps to ensure we are approaching physical and cybersecurity from a comprehensive perspective.

Examples of Specific Security Controls

Listed below are examples of specific security controls in place, which include examples of administrative, technical and physical controls.

Voting System

- “Air gap” mitigation – An “air gap” refers to the idea that the voting system is not connected to any other network at any other time, including local networks and the internet. Our office uses an “air gap” with our voting system, which is one of the most effective ways of mitigating security risks.
- Ballot creation security – The ballot creation team is located in a room with limited security access, multi-factor badge access, surveillance systems, and no network connections. The printed ballot contains a tint and watermark.
- Chain of custody – Strict chain of custody controls are in place for ballots and voting components.
- Ballot printing - Ballot printing is conducted in-house, mitigating the risk of relying on a vendor for ballot production.

Network Security

- Security Information and Event Management (SIEM) system – SIEM includes intrusion detection, vulnerability assessment, asset discovery and inventory, behavioral monitoring, and log management.
- Physical Security – Strict badge access control and alarm monitoring are important components of our physical security.
- Firewalls – Firewalls are used to protect our networks.
- Intrusion Detection/Prevention Systems – Intrusion detection and prevention systems help to detect attempts of unauthorized access.
- User login security controls – Requiring password complexity, and using least privileged access are important user security controls.

- Critical and security updates, and patch management – Applying security patches is a basic security measure.
- Legacy workstations – Minimizing the use of outdated Operating Systems and software, as well as replacing legacy systems.
- User account management – Immediately disabling unused accounts is a standard security practice.
- Center for Internet Security (CIS) benchmarks – We review their recommendations and utilize them when possible to harden our systems.
- Enforce strong passphrase policy – We enforce password complexity for user accounts.

Website Security

- Encrypted web communication – The website is viewed over a secure connection. Forms submitted by users are encrypted using SHA-xxx Cryptographic Hash Algorithm and utilizes SSL Web Security Certificates (Cryptographic Hash Management Latest Security Certificates).
- SQL injection – Web applications are periodically checked for SQL injection vulnerabilities.

Training and Personnel

- Employee hiring and separation procedures – Background checks are performed on new employees, and all are required to receive security training. Separated employees' accounts are promptly disabled, and badges are deactivated.
- Phishing campaign simulation – Phishing campaign with OCROV staff are periodically simulated in order to test the efficacy of our training.
- Cybersecurity training program – All employees must complete a professionally created cybersecurity training program. Supplemental training is also provided, and security updates are routinely given in staff meetings.
- Physical security accountability – Personnel are held accountable for enforcing physical security practices.

Administrative

- Business continuity plan – A business continuity plan is updated periodically.
- Policies and procedures – Policies and procedures are developed with cybersecurity in mind.
- Incident response plan – An incident response plan is developed in the event of a cybersecurity incident.
- RFP security review – When requesting bids or proposals from vendors, we are including strict security requirements from the vendors.

Physical

- Physical security improvements – Since 2016 (and through 2018) we have made numerous improvements as a result of recommendations from independent assessments.
- Enhanced physical security around election cycles – Security is provided by the Orange County Sheriff's Department on and around the election.
- Surveillance systems – Physical security is enforced with security cameras and other monitoring devices throughout our facilities.

Collaboration

- Collaboration at the federal level – We have developed a direct relationship with DHS, FBI, and the Election Assistance Commission (EAC).
- Collaboration at the local level – We have developed a relationship with our Orange County's Chief Information Security office, and the Orange County Intelligence Assessment Center (OCIAC).
- Increased collaboration around election cycles – Before and after the election, we enhance our security awareness and communication, including regular meetings with the County's security office, DHS, and the FBI.
- Cyber resilience self-assessment criteria report – We will be performing the cyber resilience self-assessment as provided by DHS.

User Level Security

- Improved malware detection - We are currently using endpoint protection that is pattern and behavior based.
- Email encryption - We currently have the ability to send encrypted emails when necessary.
- Email spam\virus filter - Systems are in place that prevent potentially malicious emails from being sent to the users.
- Email links - All links received by users in emails are checked for safety before a user can open the link.
- Data loss prevention - The County is in the process of enabling data loss prevention, which helps to prevent users from sending sensitive information that should not be sent.

Mobile

- Mobile encryption – Any mobile devices and laptops that contain sensitive data will be encrypted before deploying them outside the office.
- Mobile Device Management (MDM) – Mobile devices used, including electronic poll books, will have the ability to be managed remotely, including the ability to remotely wipe the data.

Public Information

- Comprehensive election information – We will continue to provide accurate information to voters through multiple channels, which can be used to counteract false information.

Overall Security

- Third party security audit – We are using a third party to conduct a cybersecurity audit, which can help to discover additional vulnerabilities.

Voting System Security Controls

The voting system currently used in Orange County is a Direct Record Electronic (DRE) voting system, with a Voter Verifiable Paper Audit Trail (VVPAT). In order for a voter to access a ballot at a polling place, a four-digit random access code is used for activation. The electronic voting booth and poll worker control system possess

only minimal functionality as compared to a fully operational personal computer, thus minimizing the risk of unauthorized system access and code modification. Furthermore, the voting system is a standalone system without connectivity to any external network or the internet, which makes unauthorized access from a network virtually impossible. Additional technical controls are in place and required in order for the voting system to be certified for use in the State of California.

Information Integrity and Accuracy

Important administrative controls are the extensive logic and accuracy audits that are conducted before the election to make sure the voting system is properly recording the cast vote records. After the election, random audits are performed manually to ensure the paper record matches the final tally. Paper audit trails allow us to compare totals and check the results against the votes verified by the voters.

Risk Limiting Audits

California does not currently require Risk Limiting Audits (RLA). However, as a component of our security plan for 2018, we will be conducting pilot RLAs to ensure that the integrity of the votes cast are true and correct. Computerized systems may produce incorrect results due to programming errors or deliberate subversion. Even hand counts may be erroneous. RLA audits systematically check the election outcomes reported by vote-counting systems.

Specifically, a risk limiting audit checks some voted ballots or voter-verifiable records in search of strong evidence that the reported election outcome was correct – if it was. Specifically, if the reported outcome (usually the set of winner(s)) is incorrect, then a risk-limiting audit has a large, pre-specified minimum chance of leading to a full hand count that reveals the correct outcome. A risk-limiting audit can stop as soon as it finds strong evidence that the reported outcome was correct. (Closer elections generally entail checking more ballots.)⁵

In addition to the required 1% manual tally (which is a hand-count of 1% of all ballots cast), in 2018 our office will be conducting RLAs in the form of ballot-polling audits based on a random sample of ballots. This will be reviewed by academics from Princeton University, Tufts University and the Massachusetts Institute of Technology (MIT).

5 California Risk Limiting Audits Working Group, Version 1.1, October 2012

Voter List Maintenance

Maintaining an accurate voter list is an important part of the cybersecurity playbook because it prevents widespread voter fraud, and ensures access for eligible Orange County voters. Our office has made a concerted effort in previous years to improve the accuracy of the voter database, but we also our continually looking for additional methods to improve our process of maintaining the voter list.

In 2018, we will be conducting the following list maintenance activities:

- **Alternate Residency Confirmation** – We send a postcard to all voters who have had no voting or registration activity for four years. If these voters do not respond, they remain in an inactive status, which means they do not receive any election materials in the mail.
- **National Change of Address** – We use change of address data provided by the Post Office (USPS) to update addresses of registered voters. This also helps us to identify and contact voters who may have moved out of Orange County, or the State.
- **Third Party Data Provider** – This is an activity that is not required by law, but we will conduct as an additional process to update our voter registration list. We utilize a credit reporting agency to find updated address information for voters who have not provided updated information through all other methods.
- **DMV Address Change** – We continually process change of address data provided by the Department of Motor Vehicles (DMV).
- **National Deceased Voter Data** – This is another activity that is not required by law, but we will conduct as an additional process to determine deceased voters. In addition to the deceased voter data provided by the State and the County, we use a service which matches voter information to national deceased records. This provides an additional step to locate voters who have deceased records throughout the entire country.
- **First Time Federal Voters** – Our office is updating its process to validate first time federal voters. This will improve efforts to ensure voters have provided proof of residence in Orange County.
- **Statewide Voter Database** – The Statewide Voter Database became the official

system of record for voter registrations in California in 2016. Orange County has taken a proactive role in utilizing this new system to improve the identification of voters that move within the State. As an example, we helped to implement a statewide policy that makes registration dates consistent, in an effort to better determine the most current registrations of the voters.

Early Voting Center Security

Securing access at remote early voting centers is critical. We ensure that Request for Proposals (RFPs) include stringent security requirements of the proposed system, as well as the vendor themselves. From a technical perspective, we include a multi-layered approach to ensure the data remains encrypted and secured at all times. We will be utilizing devices that have Federal Information Processing Standard (FIPS) certified components and data will remain encrypted from point-to-point at all times.

Physical security is also consideration when choosing a location to host early voting. Only facilities that provide adequate physical security are chosen to be early voting sites.

Electronic Poll Book Security

Electronic poll books used in early voting centers must have a high level of security applied. Listed below are examples of our security requirements for electronic poll books:

- Must be certified by the Secretary of State's office.
- Must have encrypted communication between all devices.
- Must use SSL encryption when appropriate.
- The database and other data must be encrypted at all times.
- Must be able to continue to operate in the event of loss of a connection.
- All devices must be shut down and physically secured when not in use.
- Devices will not store personal identifiable information.

Mobile Device Management

Mobile device management allows total control of securing and enforcing policies to tablets, smartphones, and other devices. Mobile device management allows us to

remotely wipe a device, use password enforcement, enable application whitelisting or blacklisting, use data encryption enforcement, control application distribution and software updates, and more.

Chain of Custody Procedure

Chain of custody procedures are used by the OCROV as an administrative control as part of its overall strategy to secure our voting system. The chain of custody procedures include the following:

- Voting booth controllers are secured within a locked caged area, under video surveillance until they are deployed for the election.
- A minimum of two people are present when the voting booth controllers are returned on Election Night.
- Chain of custody documents are used for an additional layer of auditing.
- Voting booth controllers are placed in a numerically sealed transportation box.
- Memory cards are numerically sealed in the voting booth controller.
- All voting equipment is tracked when deployed and returned to the OCROV.
- Election personnel sign chain of custody documents for voting equipment at distribution locations.
- Election personnel and polling place workers are required to check the security seals periodically and report any broken seals or suspicious activity to the OCROV.
- An OCROV driver is accompanied by a Deputy with the Orange County Sheriff's Department that returns voting booth controllers to the OCROV.
- An OCROV representative signs for equipment upon its return.
- Voting equipment is inventoried and placed in a secured, video monitored location.
- Voted memory cards are tallied in a room that allows for open observation.

Partnerships and Information Intelligence Sharing

Information sharing is critical in taking a proactive security approach and is an important part of our preventative measures and mitigations. Tactics, Techniques and Procedures (TTP) is an approach that is used within a cyber threat intelligence solution. TTPs can help with predictive or emergent risk, such as sharing of a zero-day exploit on the Dark Web. A zero-day attack is an attack vector that takes advantage of a security weakness before the vulnerability becomes generally known. There is no time or opportunity for detection because the attacker exploits the vulnerability before the threat is known. TTP is an effective method in helping to prevent zero-day attacks. The TTP method can help identify possible targets, provide threat analysis data, and help with mitigation process. This data or research is provided to us by multi-state sharing cybersecurity threat analysis partners. This section focuses on some of the ways our office employs the approach of intelligence sharing as one of the mitigation strategies of our security plan.

Partnership With Orange County Agencies

The OCROV has been proactive in communicating with the County security team, and they have expressed a commitment to assist the OCROV when needed.

Orange County's Chief Information Security Officer (CISO) and a cybersecurity joint task force meet monthly to review and discuss security topics that focus on information security countywide. We are working to update and refresh policies, standards, and guidelines, which are key components of an effective information security plan. To address the CIA principles of the technology, the County security team routinely conducts a series of assessments and penetration tests on County network infrastructure, systems, and data. The County security team has also expressed a commitment to establishing an in-depth defense methodology for its infrastructure, systems, and data.

Partner with Regional and Local Law Enforcement

We interface on a regular basis with regional (California Secretary of State, Criminal Investigations) and local (Orange County District Attorney's Office) law enforcement. We routinely, when appropriate, continue to refer cases to these agencies for investigations.

In addition to these resources, our office interfaces directly with OCIAC to obtain additional threat information, and to have OCIAC help recover from an incident, if necessary.

Partnership With Federal Agencies

At the Federal level, election systems are designated as critical infrastructure by the Department of Homeland Security (DHS). This designation ensures election systems receive top priority cybersecurity assistance from DHS. Additionally, our office is in direct communication with the FBI, DHS, and EAC. As an example, the Department of Homeland Security National Cybersecurity and Communications Integration Center provides OCROV weekly cyber hygiene assessment reports. This report is intended to provide our office information regarding our office's internet accessible networks and hosts. This report includes vulnerability scan results, new vulnerabilities detected and mitigated vulnerabilities on internet facing hosts. These federal partnerships also help with the defense of risks presented by Foreign States.

Collaborative Intrusion Detection and Prevention System

The Multi-State Information Sharing and Analysis Center (MS-ISAC) provides a security network monitoring service, which includes a near real-time automated system that identifies and alerts on traditional and advanced threats on a network, facilitating the rapid identification of threats and attacks.

Partners of the OCROV Ring of Election Security



Cybersecurity Training & Awareness Program

The OCROV has adopted the County policy of a mandated IT security and awareness training program, which is required to be completed by all employees on an annual basis. This provides employees with basic knowledge and tools that are instrumental in helping the County as a whole to combat cyber threats, including threats that have a social engineering component. The topics covered under the training program include:

- Ransomware
- Password Guidelines
- Safe Election Security and Protection Against Nation State Intrusions
- Social Engineering
- Phishing
- Physical Security
- Privacy
- Mobile Device Usage
- Malware
- Social media

Human Firewall

In any organization, cybersecurity is everyone's responsibility. Human error or targeted spear phishing has consistently been the root cause of publicized cyber attacks, and it is up to the OCROV leadership teams to weave security awareness into the culture of the organization. The term "Human Firewall" means employees, through education and cybersecurity training, are trained to detect, recognize, and report threats. The "Human Firewall" is the human shield of defense against possible social engineering attacks. Our approach is structured to change human behavior by thoroughly training our employees, including volunteer poll workers, to be cautious, and to be trained to recognize and report cybersecurity incidents. The decisions humans make are just as important as the software they use; therefore, the best approach consists of a clear employee cybersecurity program that includes awareness and focuses on continuous

training and education. Additionally, this cybersecurity training and awareness program needs to be more than just a routine requirement; instead, the concepts should be reinforced in order to change employee behavior. For example, email continues to be a significant vector of choice for malware; therefore, it is important that our employees are trained annually, in addition to being reminded in monthly meetings, to be mindful of the many forms of phishing attacks that come through professional and personal emails. Other aspects of the “Human Firewall” include background checks and setting standards for following good security protocols.

Security isn’t just a technology issue; it’s a personnel issue. Errant clicks, user error, and social engineering attacks such as phishing are some of the biggest threats. Educating and empowering our users to make safer choices is vital to creating a more sustainable and successful long-term defense.

Application of the NIST Cybersecurity Framework

The NIST Cybersecurity Framework is a widely adopted framework that provides an additional perspective to our approach to cybersecurity and was created by the public and private sectors working collaboratively. This framework is composed of the following five major functions:

1. IDENTIFY assets you need to protect.
2. PROTECT assets and limit the impact.
3. DETECT security problems.
4. RESPOND to an incident or be ready to respond with a plan.
5. RECOVER from an incident.

Identify

Our agency, with guidance from Orange County Information Technology (OCIT) enterprise security, has developed the skills to manage the cybersecurity risk to systems, assets, data, and capabilities. This covers areas such as risk assessment, asset management, and governance.

Protect

We have developed and implemented the appropriate safeguards to ensure delivery of services. These security mitigations and controls are outlined throughout this document.

Detect

We have implemented the appropriate systems to identify the occurrence of a cybersecurity event as soon as possible. The security mitigations and controls include items outlined in this document such as intrusion detection systems, and collaboration with other agencies are a part of this strategy.

Respond

OCROV, along with a cybersecurity joint task force, has developed a cybersecurity incident response plan. The plan addresses the appropriate actions in the event of a cybersecurity event. These actions include response planning, communications, analysis, mitigation, and future improvements learned from the incident. This plan is an internal secure document not designed for public distribution.

Recover

We have developed appropriate activities to restore any capabilities or services that are impaired due to a cybersecurity event or physical intrusion. A business continuity plan is also a component of this aspect of the framework. The focus is also to maintain resilience for the network and protect it from further attacks.

Defense in Depth

Defense in depth is an information assurance concept in which multiple layers of security controls or defenses are placed throughout network infrastructure to detect anomalies and unusual network traffic. Preparing for a breach is very important. Multiple layers of network security minimize gaps in protection. Examples of currently used protections at the OCROV are a robust firewall, intrusion prevention, and antivirus protection.

Countermeasures that are used to help defend the network are:

- Identify, minimize and secure all network connections.
- Harden systems by disabling unnecessary services, ports, and protocols.
- Enable available security features of systems used.
- Implement robust configuration management practices.
- Continually monitor and assess the security of the systems, networks, and interconnections.

- Building a “Human Firewall” by providing cybersecurity training, providing awareness and holding individuals accountable.
- Configure our firewall and other security settings to be more restrictive.

These countermeasures are items we will be continually reviewed in order to effectively protect systems and networks from cyber-based attacks. Although defense in depth measures do not (and cannot) protect all vulnerabilities and weaknesses in an environment, they are part of the larger, overall strategy.

Incident Response Plan

Cyber Incident Management in Orange County utilizes a lifecycle approach. The Cyber Incident Management Lifecycle is composed of serial phases: preparation, identification, containment, eradication, recovery, and follow-up. It is also composed of ongoing parallel activities: analysis, communication, and documentation. This lifecycle is derived from many standardized cyber incident response processes such as those published by NIST, as well as other authorities.

The following are descriptions of those actions that comprise OCROV’s Cyber Incident Management Lifecycle:

- Preparation - Maintaining and improving cyber incident response capabilities.
- Identification - Confirming, categorizing, scoping, and prioritizing suspected cyber incidents.
- Containment - Minimizing loss, theft of information, or service disruption.
- Eradication - Eliminating the threat.
- Recovery - Restoring computing services quickly and securely.
- Follow-Up - Assessing response to better handle future incidents through utilization of reports, “lessons learned” and after-action activities, in addition to mitigation of exploited weaknesses to prevent similar incidents from occurring in the future.

The following are elements present throughout the Cyber Incident Management Lifecycle:

- Communication - Notifying appropriate internal and external parties and maintaining situational awareness.
- Analysis - Examining available data to support decision-making throughout the Cyber Incident Management Lifecycle.
- Documentation - Recording and time-stamping all evidence discovered, information, and actions taken from Identification through follow-up.

Direct contacts and methods of escalation are imperative to be defined as we prepare for any given election. In the event of an actual attack or incident, we ensure this information and the cybersecurity incident response plan are accessible. It is critical as we prepare and increase our cybersecurity presence, that all involved parties remain in frequent communication, coordination, and are well acquainted with our cybersecurity playbook plans.

Threat Intelligence Services

Threat Intelligence helps organizations understand the risks of the most common and severe external threats. Earlier in this report, we have described how we use partnerships and collaboration to help prevent and mitigate cybersecurity threats. We also utilize those partnerships to respond to incidents.

As an example, we have established a partnership with OCIAC. Not only do they help to identify threats before they occur, they also provide support to respond to an incident, and share the intelligence with other potentially affected entities.

Data Backup and Recovery

An important component of an incident response plan is to have a robust recovery plan, including the ability to restore and recover data after a major disaster. We monitor our backups closely, and we follow best practices in backing up and performing test restores of data. By simply following best practices, our backup and recovery strategy can be an effective defense against encryption and extortion attacks such as ransomware or other data loss.

Rehearsing Responses to Incidents

We will be periodically rehearsing our responses to physical and cybersecurity incidents. This will help employees understand their responsibilities, as well as to refine the response plan based on findings from the rehearsals.

Crew Resource Management

Crew Resource Management (CRM) is a training program which encompasses a wide range of knowledge, skills, and attitudes including communications, situational awareness, problem-solving, decision making, and teamwork; together with each of the sub-disciplines that each of these areas entail. CRM training is conducted at the OCROV, and its concepts are reinforced by the Registrar of Voters. CRM empowers employees to respond, make decisions, and communicate effectively during an incident.

Current and Future State

Controls in Place

Our office has implemented physical and cybersecurity controls as outlined throughout this playbook. We have also established partnerships with federal and local agencies to assist with our efforts and to share information. We have incorporated extensive physical and cybersecurity training for our employees. We have also developed an incident response plan in order to be prepared to respond to an incident. There are additional security measures in place that are not shared with the public to ensure that these additional mitigation efforts are not compromised.

Plans for 2018

2018 is an election year, which means we will be required to execute on many of the planning efforts described in this playbook. Many of the controls that have been put in place will be acted upon as we approach the election. Additionally, we will utilize the partnerships we have established by increasing our frequency of communication and establishing checkpoints to evaluate our readiness before the elections.

Future Plans

Threats are constantly evolving, vulnerabilities are continually being discovered, and new systems are periodically implemented; therefore, the playbook must be used as a foundation and guide for the future. As we implement new systems and processes,

we must review this guide to ensure that we are continuing to adhere to our core information security principles, and applying security controls from all facets including technical, administrative and physical perspectives. As we will be updating our voting system in the near future, we will apply this playbook through the entire process beginning with procurement, continuing through implementation, and applying through future elections.



REGISTRAR OF VOTERS
1300 South Grand Avenue, Bldg. C
Santa Ana, CA 92705
714-567-7600
ocvote.com