

To: Elections Commission
Director Arntz
From: Commissioner Jerdonek
Date: October 19, 2021

Open Source Voting Pilot / VotingWorks Q & A

This document provides answers to some common questions about [VotingWorks](#) and their pilot proposal, including questions that came up during the September 22, 2021 Elections Commission meeting.

It also includes additional information and background that may be helpful for understanding the pilot. Some of the information in this document overlaps with the contents of the more detailed VotingWorks proposal plans included in the [agenda packet for the October 20, 2021](#) Commission meeting.

IN-PERSON DEMO

At the September 2021 Commission meeting, Matt Roe from VotingWorks invited Commissioners, Director Arntz, and Department staff to attend individual in-person demos of the VotingWorks voting system at a time convenient for them. The demos would be held at VotingWorks' warehouse in the Dogpatch district.

I had a chance to attend such a demo on Tuesday, October 12. During that time, I also helped them make a short 10-minute video for people that aren't able to attend a demo in person. The video can be seen here: <https://voting.works/sfdemo>

If you are interested in seeing an in-person demo, you can either contact me, and I will put you in touch with Matt, or you can contact Matt directly at roe@voting.works.

QUESTIONS

Here is the list of the questions answered below.

1. What is the purpose and goal of doing an SB 360 pilot?
2. Why do we have to do a pilot? Why can't we do a demo instead?
3. How can we do a pilot if the Secretary of State hasn't published regulations yet?
4. Why are we choosing VotingWorks for the pilot?
5. Why should we trust VotingWorks?
6. VotingWorks' equipment isn't certified. How can we use uncertified voting equipment in a real election?

7. How can we use untested software from VotingWorks together with the certified Dominion voting system?
8. What monetary implications does VotingWorks' system have for San Francisco's original plan to develop an open-source voting system?
9. When does San Francisco's current contract with Dominion end?
10. When might VotingWorks be certified in California, and how does this compare to when San Francisco's current contract will end?
11. What past statements have been made in San Francisco about conducting pilots and/or collaborating with other organizations?
12. How much work would need to be done before the pilot plan submission date of February 8, 2022?
13. How much time or resources would the pilot require of the Department?

1. What is the purpose and goal of doing an SB 360 pilot?

The October 15 version of VotingWorks' proposed pilot plan has a more concise statement of goals than what is written here. What is included here is expanded, in part to include a more complete history of the relevant past legislation and policy.

There are a few possible purposes and goals:

- **Open-source voting policy:** To follow open-source voting related City policy, which has been established in Board of Supervisors resolutions going back as far as fourteen years:
 - June 2007 ([File #070865](#) / [Res. 330-07](#), passed unanimously): "Support for an Open Voting System."
 - November 2008 ([File #081227](#) / [Res. 268-08](#)): "Voting Systems Task Force" (which recommended open-source voting in its final report).
 - December 2014 ([File #141105](#) / [Res. #460-14](#), passed unanimously): "Supporting the Creation of Open Source Voting Systems."
 - March 2019 ([File #190192](#) / [Res. #127-19](#), passed unanimously): Dominion contract (with the resolution stating the City's desire to complete an open-source voting system by the time the contract ends)

City bodies other than the Board of Supervisors have also called for pilots in the past, like the Voting Systems Task Force and the Elections Commission.
- **Accessibility:** To usability test ballot-marking devices developed to accessibility standards (2021's VVSG 2.0) that exceed the standards (2005's VVSG 1.0) to which San Francisco's current ballot marking devices are certified.
- **Competition and cost:** To help ensure that San Francisco will have the option of adopting an open-source voting system when San Francisco's contract with Dominion ends, and in particular to help ensure that San Francisco will have more than one option to choose from, which can help to lower costs.

On the policy-related goal, the purpose of doing an SB 360 pilot can be taken more specifically from the following two statements from the Board of Supervisors' [December 2014 resolution](#) (“Supporting the Creation of Open Source Voting Systems”):

- to help “[support] the movement toward more open and transparent voting systems and the creation of new voting systems using open source software and inexpensive commodity components,”
- “to work with other jurisdictions and organizations to create new voting systems using open source software.”

California’s [SB 360 \(2013-2014, Padilla\)](#) provides a legislative framework for testing open source voting systems prior to certification. Doing an SB 360 pilot will help support the movement toward open source voting because this will be the first time SB 360 is used as the Legislature intended, which is to pilot an open source voting system. The pilot process will engage local officials, state officials, and voters. To the second bullet point above, it will involve working with another organization, the local nonprofit VotingWorks, that is focused on creating an open source voting system.

In addition, the March 2019 [Board resolution](#) accompanying San Francisco’s [current voting system contract](#) with Dominion says that San Francisco “aspires to complete the development of [an open source voting] system by the time [the contract ends].” An SB 360 pilot will help realize that aspiration even though San Francisco wasn’t able to start development on its own system. Instead, San Francisco can contribute to the development of an independently created open source voting system by helping to test it.

Regarding accessibility, the major voting system vendors have all [stated publicly](#) that they won’t start seeking certification of voting systems to the newest VVSG 2.0 standards, which includes accessibility standards, until after the November 2024 election. That means other vendors won’t be certified in California to VVSG 2.0 until 2025 or later. In contrast, VotingWorks has publicly committed to seeking certification to VVSG 2.0 starting in 2022 and plans to be the only 2.0 system available for California in the 2024 cycle. The VVSG 2.0 standards exceed the standards that San Francisco’s current Dominion voting equipment is certified to, which are the VVSG 1.0 standards adopted sixteen years ago in 2005. The pilot project would let San Francisco voters test and use a ballot marking device developed to these newest 2.0 standards.

Regarding competition and cost, supporting the development of an open source voting system can help foster needed competition among voting system vendors and thus bring down future voting system costs in San Francisco. San Francisco’s last voting system RFP had only one bidder and now costs San Francisco \$2.11 million per year. Moreover, VotingWorks says their costs for other jurisdictions have been 50% less than what proprietary vendors charge.

2. Why do we have to do a pilot? Why can’t we do a demo instead?

VotingWorks has offered to incorporate a public demo and usability testing in advance of the election as part of the pilot, so a demo would already be included. VotingWorks has also offered to do individual in-person demos now for individual Elections Commission members, the Director, and Department staff.

The reason to do a pilot in addition to a demo is that open-source voting demos have already been done in the past and don't prove nearly as much. For example, [one demo was done over ten years ago](#), in 2008 at LinuxWorld in the Moscone Center.

An SB 360 pilot, on the other hand, would do a lot more to give San Francisco confidence in the system. It uses real-life conditions, like real ballots and a real polling place, and it goes through a Secretary of State regulatory process that requires advance documentation, approval, and follow-up review. The Secretary of State would also likely send observers, like they did with Los Angeles County's pilot.

VotingWorks' system is the kind of system that SB 360 was designed for, and this would be the first time SB 360 was used as intended. (Los Angeles County's system wasn't a disclosed source system as required by California law.) Unlike a demo, an SB 360 pilot would also help establish a dialogue with the Secretary of State around open source voting and get state officials more comfortable with the concept of open source voting. This in turn will help promote the adoption of open-source voting in California.

3. How can we do a pilot if the Secretary of State hasn't published regulations yet?

San Francisco Board President Shamann Walton is currently working with the California Secretary of State's Office to request that regulations be published in time for San Francisco to conduct a pilot. In the meantime, San Francisco can submit a pilot plan to the Secretary of State similar to how Los Angeles County submitted and conducted a pilot plan in 2019. In 2019, after Los Angeles County submitted their plan to the Secretary of State, the Secretary of State's Office worked with the Los Angeles County Registrar over a period of months to fine-tune the plan so it would be acceptable to both parties. San Francisco can follow a similar process.

4. Why are we choosing VotingWorks for the pilot?

VotingWorks is the only organization in the United States that has succeeded in developing and maintaining a complete open-source paper-ballot voting system. Their system has also been proven in real elections in the United States. There isn't another organization to work with that has an open-source voting system in use in United States elections. The fact that VotingWorks is a local nonprofit and based in San Francisco is an added benefit. Note that Los Angeles County's VSAP system, while publicly owned, isn't an open source system, nor even disclosed source.

5. Why should we trust VotingWorks?

One reason to trust VotingWorks is that California already trusts VotingWorks in elections-related work. The California Secretary of State chose VotingWorks' open-source software tool as the only tool allowed for risk-limiting election audits in California. The Secretary of State's website also [directs counties to VotingWorks](#) for hosting and support services. In California, VotingWorks has run election audits in Orange County (the fifth largest voting jurisdiction in the United States), El Dorado County, Shasta County, and Inyo County.

VotingWorks has also conducted risk-limiting audits in eight other states, in partnership with the Secretary of State office in those states. At the federal level, the Department of Homeland Security's (DHS) Cybersecurity and Infrastructure Security Agency (CISA) partnered with VotingWorks on its election auditing tool.

VotingWorks cofounder and Executive Director Ben Adida has a PhD in computer science from MIT. One of his advisers was [Ron Rivest](#), the inventor of RSA cryptography. Mr. Adida also built and maintains [Helios](#), the most widely used [open source online voting system](#) (a system which is suitable for organizational but not governmental use).

VotingWorks is also a 501(c)(3) with many aspects of its organization public, including its code, documentation, funders (see the October 15 version of the proposed plan), and spending / finances—by virtue of their nonprofit status.

6. VotingWorks' equipment isn't certified. How can we use uncertified voting equipment in a real election?

California law specifically allows this. In 2013, the State Legislature passed [SB 360 \(2013-2014, Padilla\)](#). It was passed to let counties pilot uncertified voting equipment in a limited number of polling places, provided the equipment is “disclosed source.” (Disclosed source means the source code is viewable to the public, which is true for open-source voting systems like VotingWorks'.) The Legislature passed SB 360 to promote the use of nonproprietary voting systems. The provisions for open-source pilots are currently covered by [Section 19209 of the California Elections Code](#).

7. How can we use untested software from VotingWorks together with the certified Dominion voting system?

The VotingWorks software doesn't need to touch or interact—even indirectly—with the Dominion voting system. For example, the relatively small number of VotingWorks ballots that will be cast can be manually remade onto Dominion ballots and then scanned by the Dominion system. This is the approach that Director Arntz expressed a preference for.

8. What monetary implications does VotingWorks' system have for San Francisco's original plan to develop an open-source voting system?

VotingWorks's progress in developing an open-source voting system may have saved San Francisco between \$12 million and \$28 million in its own goal of developing an open-source voting system. In 2017, San Francisco hired the consulting firm Slalom to estimate the cost for San Francisco to develop an open-source voting system. On page 14 of their final [January 2018 report](#), Slalom estimated it would cost San Francisco between \$11.5 million and \$27.8 million.

The [resolution](#) accompanying [San Francisco's contract with Dominion](#) expresses San Francisco's desire to complete development of an open source voting system before the end of the contract with Dominion:

WHEREAS, The City and County of San Francisco, through its Department of Technology and with the assistance of the Department of Elections, is currently moving towards the development of an open source voting system, and aspires to complete the development of that system by the time this Agreement has concluded; and

In part because of the pandemic, San Francisco never started developing its system. However, VotingWorks has developed an open source system during this time. Thus, if VotingWorks' system meets San Francisco's needs, VotingWorks may have saved San Francisco between \$11.5 million and \$27.8 million in development costs.

Even if VotingWorks' system doesn't meet San Francisco's needs fully, because the system is open source, San Francisco would be free to improve and build on VotingWorks' system and save starting development costs that way. VotingWorks could add the functionality that San Francisco needs as it has offered to do, or San Francisco could add the functionality itself by procuring the services of an outside firm or doing the development work itself.

9. When does San Francisco's contract with Dominion end?

San Francisco's [contract with Dominion](#) is a four-year term from January 1, 2019 to March 31, 2023, with two one-year options to extend. Thus, if extended one year, the contract would end March 31, 2024. If extended again an additional year after that, it would end March 31, 2025. Each year of the contract costs San Francisco \$2.11 million.

10. When might VotingWorks be certified in California, and how does this compare to when San Francisco's current contract will end?

In [their letter to San Francisco](#), VotingWorks wrote, "In 2022, we plan to receive federal certification from the Election Assistance Commission as we are developing our product to the most recent Voluntary Voting System Guidelines Version 2.0."

If VotingWorks pursues California certification after federal certification and gets certified in California in 2023, that would mean their California certification would happen either

at the end of San Francisco’s initial four-year term with Dominion or during the first one-year extension, if San Francisco’s contract is extended one year.

11. What past statements have been made in San Francisco about conducting pilots and/or collaborating with other organizations?

Remarkably, all the way back in 2007, the Board of Supervisors [unanimously passed a resolution](#) very similar in spirit to the SB 360 pilot proposal being considered today. Specifically, in June 2007, the Board of Supervisors passed a resolution that endorsed San Francisco applying for grant funds to participate in a “trial” of open source voting (rather than a “pilot”). SB 360 passed only later in 2013, so pilots weren’t permissible in 2007. In its entirety, the 2007 resolution reads as follows:

Resolution supporting an investigation into the feasibility of an Open Source voting system in the City of San Francisco which could be funded wholly or in part by grant funds with the support of the Department of Elections staff, and declaring that the City is open to participating in grant applications.

WHEREAS, The City of San Francisco is interested in the transparency and open function of voting systems; and

WHEREAS, No current voting system using Open Source software is approved by the California Secretary of State for voting purposes; and,

WHEREAS, It is in the interest of the City of San Francisco to foster the development of an Open Source voting system; and,

WHEREAS, San Francisco has received a proposal to participate in a grant application to conduct such a trial of an Open Source voting system and in the trial itself; now, therefore,

RESOLVED, That the City of San Francisco will endorse an application for funding to support a trial of Open Source.

The 2007 resolution led to the Board’s [2008 resolution](#) to create San Francisco’s Voting Systems Task Force. In June 2011, the Voting Systems Task Force’s [“Recommendations on Voting Systems for the City and County of San Francisco”](#) made the following recommendation specifically about conducting pilots:

2.5.4.4 Innovation

9. It should be the policy of San Francisco to conduct pilot projects of alternative election technologies and procedures in municipal elections. This could initially involve a small number of precincts. These pilot projects would provide opportunities to learn how well alternative approaches work, such as using open source systems and hand counting paper ballots at the polling places. All results of a pilot project should be confirmed using hand-counting.

On December 9, 2014, the San Francisco Board of Supervisors [unanimously passed a resolution](#) “Supporting the Creation of Open Source Voting Systems — Studying New Models of Voting System Development” that began as follows:

Resolution committing the City and County of San Francisco to work with other jurisdictions and organizations to create new voting systems using open source software; ...

It also included the following more general statement—

RESOLVED, That the City and County of San Francisco supports the movement toward more open and transparent voting systems and the creation of new voting systems using open source software and inexpensive commodity components; and, be it

On November 18, 2015, the San Francisco Elections Commission built on the Board’s resolution by unanimously passing its [Open Source Voting Systems Resolution](#), which said, in part:

FURTHER RESOLVED, That the Elections Commission expresses its appreciation to the Board of Supervisors for its past resolution in support of open source voting systems running on inexpensive commodity components, and encourages the Mayor and Board of Supervisors to initiate and fund a project, starting in the fiscal year beginning July 1, 2016, with the goal of ensuring that an open voting system be available for use by the Department of Elections for the June 2020 Presidential Primary Election, and for partial or pilot use by the November 2019 Municipal Election or earlier; and, be it

FURTHER RESOLVED, That the Elections Commission encourages the Mayor and Board of Supervisors to consider incorporating the following characteristics into such a project:

...

- (i) Certify and use components of the voting system in real elections prior to the completion of the full system, for example by facilitating pilot projects of the form permitted by SB 360 and/or the use of a blended system during a transition period that incorporates components from both a proprietary system and the open system being developed;
- (j) Work with the California Secretary of State's Office before the completion of each component to maximize the likelihood of state certification;
- (k) Recruit other organizations, including other jurisdictions, universities, open source software organizations, and commercial entities with an interest in open source, to cosponsor, fund, and help manage the development, certification, and maintenance of the voting system;

(l) Explore the possibility of innovative partnerships with public and private entities that could let San Francisco further reduce, and even recover, project costs;

(m) Seek grants from foundations, other government agencies, and nonprofit organizations with a similar interest in election openness to help fund and support the project; and, be it

FINALLY RESOLVED, That it be the policy of the Department of Elections to support and work towards the adoption of a fully open voting system, including supporting the development, testing, and certification of such a system.

12. How much work would need to be done before the pilot plan submission date of February 8, 2022?

The Director of Elections would need to submit a plan to the Secretary of State by February 8, 2022, and the Board of Supervisors would need to authorize the Director to do so through Board legislation (e.g. resolution or ordinance). VotingWorks has offered to draft the plan for Director Arntz, so if the plan is well-written, Director Arntz may only need to proofread and edit the document. Commissioner Jerdonek is also assisting VotingWorks in drafting the initial plan and communicating Director Arntz's preferences.

Using the past example of Los Angeles County's November 2019 pilot, the plan doesn't need to provide much detail. For example, when Los Angeles County's Registrar submitted their plan (pages 6 to 17 of [this PDF](#)) to the Secretary of State in February 2019, the document was only 12 pages long, and the "plan" portion was just 2 pages. The rest of the pages were things like a cover sheet, table of contents, a copy of a letter previously sent by LA County's registrar, and an appendix containing copies of sections from the California Elections Code and pictures of the voting system. Already, VotingWorks' proposed plan contains much more detail than LA County's submitted plan.

Los Angeles County also didn't have to specify the scope of the pilot in their plan to get their plan to be approved by the Secretary of State. LA County even included the following sentence to let them modify their plan later: "The County may submit amendments to this plan, as necessary, prior to the election." Finally, submitting a plan by the deadline wouldn't necessarily commit the Department of Elections to conducting a pilot. San Francisco would always reserve the right to back out later if it really needed to.

13. How much time or resources would the pilot require of the Department?

VotingWorks has offered its time and resources to make the pilot go as smoothly and as easily for the Department as possible. VotingWorks has offered to provide voting machines and in-person support for free, so the costs should be relatively small.

Also, there are many variations in how the pilot can be done, and many things can be done to make the pilot smaller and less work. For example, it can be as small as one

precinct and not even include vote-by-mail ballots. Director Arntz has already expressed a number of preferences, including that the pilot—

- only take place in the City Hall Voting Center. In particular, no precinct polling places will be needed, and precinct scanners won't be necessary;
- not involve vote-by-mail ballots (so only ballots cast in person); and
- be limited to VotingWorks ballot-marking devices (so no VotingWorks hand-marked paper ballots).

Nevertheless, if the Department needs some amount of additional funding, it should potentially be well worth it to save San Francisco from having to spend millions of dollars developing its own open-source voting system and for the possible savings of more than \$1 million a year to use it once it's proven and certified.