

August 27, 2017

From: Chris Jerdonek

RE: Proposed Starting Text — OSVTAC Recommendations Document

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The following pages contain draft starting text for an OSVTAC “Recommendations” document. This is for agenda items 7, 8, 9, and 10 of this Wednesday’s August 30 meeting. The pages are divided into sections for each of these four agenda items.

The suggested language in these pages is intended only as a starting point and not as perfected text (which is why most of the sections are incomplete or marked TODO). The idea is for our Committee to use an incremental approach and add to this text and/or change it in future meetings. By adopting some initial text now, the Committee will have something concrete to work from going forward. Similarly, members of the public will have something concrete on which to start providing useful feedback (e.g. via pull requests on GitHub).

The other idea is for this document to exist as a stand-alone repository on GitHub (possibly spread across more than one file). The raw format would be Markdown.

This approach will provide an additional way for members of the community to provide and discuss feedback. This approach also sets an example for the open source voting project itself. It provides a model for how the voting system can be developed, namely in public and open to feedback and suggestions.

Thank you,

Chris Jerdonek

## FOR AGENDA ITEM #7: DOCUMENT TEMPLATE

Below is a proposed starting template / structure for the Committee's Recommendations document. It includes (1) introductory text, including links or instructions for providing feedback, (2) a Background section, and (3) the basic structure / outline for the remainder of the document. Many of the section headers are drawn directly from the TAC Bylaws.

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*File: README.md*

*(This is what will be displayed when viewing the project page on GitHub.)*

### **Open Source Voting System Project Recommendations**

This repository contains the recommendations of San Francisco's [Open Source Voting System Technical Advisory Committee](#) (OSVTAC, or TAC) for the City and County of San Francisco's open source voting system project.

You can view the latest version of the recommendations [here](#) [link to rendered version], and you can see a history of changes [here](#) [link to commit history].

To provide comments to the committee, you can open an issue on the repository's [issue tracker](#) [link to issue tracker]. To suggest specific wording for some portion of the document, you can open a pull request [here](#) [link to pull request page]. Alternatively, you can email your feedback to the committee. Contact information for the committee can be found on the Committee's [About page](#).

The committee may discuss and/or vote on your suggestions at a future meeting. Note that because of San Francisco's [Sunshine Ordinance](#) and other open government laws, the committee is limited in how it can collaborate outside of meetings on committee matters. Committee members are able to see and read your comments and suggestions, but they cannot necessarily respond publicly as individuals.

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*File: index.md*

### **Open Source Voting System Project Recommendations**

Date: August 30, 2017

This document contains the recommendations as of August 2017 of San Francisco's [Open Source Voting System Technical Advisory Committee](#) (OSVTAC, or TAC) for the City and County of San Francisco's open source voting system project.

Substantive updates to this document occur by a vote of the committee at a committee meeting. Meetings occur approximately once a month. To learn more about the committee and how to suggest changes to this document, visit the committee's website: <https://osvtac.github.io>.

## Background

To provide context to the recommendations in this document, this section describes some of the history of the open source voting topic in San Francisco government.

In May 2007, the [San Francisco Elections Commission](#) passed a resolution that, among other things, established a policy that the Department of Elections give priority to voting systems that “provide the maximum level of security and transparency possible consistent with the principles of public disclosure.” However, like today, no certified open source voting systems were available at that time. In December 2007, the Department signed a contract for a new voting system that was proprietary. The Department still uses this system today. The contract for this system ends at the end of 2018.

In November 2008, the Board of Supervisors passed an ordinance [add link] creating a [Voting Systems Task Force](#) (VSTF) to provide the City with recommendations on voting systems and related matters, including “models for [the] development of a voting system including proprietary, disclosed and open source software and hardware approaches.”

In June 2011, the VSTF issued its final report, “Recommendations on Voting Systems for the City and County of San Francisco” (57 pages). Here are two excerpts from the recommendation text that mention open source (from page 52):

### **2.5.4.3 Transparency, Source Code Disclosure, Licensing, and Contingency Planning**

6. The DOE should give strong preference to a voting system licensing structure that gives San Francisco all of the rights provided by an OSI-approved license, even if the system is maintained by an external party.

...

8. San Francisco should be an active participant in the movement toward more open and transparent voting systems. We acknowledge the complexity of moving from the existing marketplace toward more innovative voting systems and urge San Francisco to move steadily toward the goal of transparency—even if it must do so in incremental steps.

In December 2014, the San Francisco Board of Supervisors unanimously passed a resolution [add link] supporting the creation of open source voting systems and requesting that the [San Francisco Local Agency Formation Commission](#) (LAFCo) conduct a feasibility study. In October 2015, LAFCo issued its final report, “Study on Open Source Voting Systems” (37 pages).

In November 2015, the Elections Commission unanimously passed a resolution [add link] requesting that the Mayor and Board of Supervisors initiate and fund a project to develop and certify an open source voting system.

In August 2016, San Francisco Mayor Ed Lee signed the City and County of San Francisco’s two-year budget for the 2016-2017 and 2017-2018 fiscal years. The budget allocated \$300,000 towards the planning phase of an open source voting system project. Below are two excerpts from the proposed budget document that reference the open source voting project.

The section for the Department of Elections references the project on pages 204-205:

As the City's current voting system nears end-of-life, the proposed budget includes \$300,000 towards planning and development of a new voting system based on open source software. If completed, San Francisco would be the first City to do this. Development of an open source voting system would enable the City to own the voting system's software and to have a choice of publicly releasing it under open source license. Additionally, other jurisdictions as well as the general people could use, participate, and improve the software.

The section for the [Committee on Information Technology](#) (COIT) includes the project as one of five highlighted projects out of twenty-four, alongside initiatives like the City's new Digital Services Team, cybersecurity, and improving the City's network (pages 447-448):

#### ANNUAL PROJECTS

...

Over the two-year period, the proposed budget recommends \$15.7 million of General Fund COIT allocation to support 24 projects. Below are a few highlighted projects.

...

#### OPEN SOURCE VOTING SYSTEM

As the City’s current voting system is aging, the Department of Elections is exploring an opportunity to develop a new voting system based on open source software. If completed, San Francisco would be the first city to do this. Development of an open source voting system would enable the City to own the voting system’s software and have a choice of publicly releasing it under an open source license. Additionally, other jurisdictions as well as the general public could use and improve the software. The proposed budget supports initial project planning and scoping of this project.

In April 2017, the Board of Supervisors approved the City’s fourth Five-Year Information & Communication Technology (ICT) Plan for Fiscal Years 2018-22. The plan included the open

source voting system project among four major IT projects under consideration for the future, alongside projects like Universal Broadband and Voice over Internet Protocol (VoIP). For example, on page 11:

However, several future projects are currently being scoped out as potentially the City's next Major IT Project, including:

...

**Voting System Replacement:** The Department of Elections is currently investigating alternative voting systems, including the possibility of building an open-source system.

And on page 53:

### **Future Major IT Projects**

In addition, the City has begun investigating what may become the next major technology project. Before beginning any new technology venture, the City recommends extensive planning and scoping to better understand the true cost of any new technology. The City has begun evaluating various different projects that may be considered as major investments, which include:

...

**Voting System Replacement:** The City's current voting system license is set to expire in 2018. Without a long-term contract in place, the City has an opportunity to pursue alternative voting systems that could promote transparency and more security. The City is currently investigating alternative options, including the possibility of building an open-source system.

In April 2017, the Elections Commission voted to create an Open Source Voting System Technical Advisory Committee to "provide technical guidance, ideas, and support to the Elections Commission ("Commission") on ways to improve and help ensure the success of the City and County of San Francisco's open source voting system project." The Commission voted on the Committee's initial membership at its May meeting. The Committee was fully constituted on June 2, 2017, when the appointment of the fifth member was made final.

In May 2017, the Department of Elections [issued an RFP](#) for a contractor to "prepare a business case for developing an accessible, open source voting system." The RFP would use a portion of the \$300,000 budgeted in August 2016. The contractor's deliverable will be due in January 2018, and it will inform the City's next budget process, which will begin around that time.

The Department of Elections' contract for its current voting system expires at the end of December 2018. The Director of Elections is aiming to lease an interim system from that point forward that can be used while an open source voting system is developed and certified. The RFP for the interim system may be issued as early as the fall of 2017.

## **Goals**

This section discusses the goals, scope, and priorities of this document.

### **Scope**

[TODO]

### **Priorities**

[TODO]

### **Non-goals**

[TODO]

### **Assumptions**

This section lists certain assumptions the committee has made while drafting this document.

[TODO]

### **Resources**

This section contains links to other resources and documents that may be useful for the project.

[TODO]

### **Recommendations**

#### **Interim Voting System**

[TODO]

#### **Requirements-gathering**

This section contains recommendations about gathering requirements. For recommendations in relation to specific requirements, see the Requirements section below.

[TODO]

#### **Requirements**

[TODO]

## **Project Management**

[TODO]

## **Open Source**

[TODO]

## **Procurement**

[TODO]

## **Software architecture and design**

[TODO]

## **Software development**

[TODO]

## **Hardware design**

[TODO]

## **Documentation**

[TODO]

## **Security**

[TODO]

## **Testing**

[TODO]

## **Certification**

[TODO]

## **Hardware manufacturing or assembly**

[TODO]

## **Deployment**

[TODO]

## **Software maintenance**

[TODO]

## **Hardware maintenance**

[TODO]



## FOR AGENDA ITEM #8: COMMITTEE GOALS

Below is proposed starting text for the “Goals” section. This is meant to fit into the document template proposed in the section of this document corresponding to agenda item #7.

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### Goals

This section discusses the goals, scope, and priorities of this document and the Committee.

The TAC’s Bylaws say that the TAC’s purpose is to “provide technical guidance, ideas, and support to the Elections Commission on ways to improve and help ensure the success of the City and County of San Francisco's open source voting system project.”

### Scope

- This document will limit itself to current laws that San Francisco must satisfy, or to changes in law that San Francisco anticipates (e.g. possibly transitioning to the “vote center” model allowed by [SB 450](#) of 2015-2016). In particular, the document will restrict itself to considering paper-ballot systems.
- For the purposes of this document, “voting system” includes anything that is currently the responsibility of the voting system in use today. Responsibilities of a voting system include allowing voters to mark ballots (if not using pen and paper), counting ballots, and reporting election results. In addition, it may include ballot design and layout, as well as the functionality of a “remote accessible vote by mail system” as described in [AB 2252](#) (2015-2016). It should also facilitate auditing the results of an election. The responsibilities of a voting system do not include the responsibilities of a voter registration system (e.g. the Department’s election management system, or EMS). However, the voting system should be able to interoperate with the EMS. If the ballots are pre-printed, the voting system need not be capable of printing ballots.

### Priorities

- This document should prioritize high-level recommendations over low-level recommendations.
- This document should prioritize recommendations that are needed sooner rather than later.

### Non-goals

- The Committee will not be designing or developing a voting system.
- The Committee will not be drafting specs that the voting system should satisfy.
- The Committee will not be drafting an exhaustive list of requirements.

- The Committee will not make explicit attempts to accommodate internet voting in any form, nor voting methods not used in San Francisco. This does not preclude the Committee from recommending software designs or practices that could make such things easier to accommodate as a side effect.
- The Committee is not providing recommendations for a voting system that can be used anywhere in the United States, or even anywhere in California. Rather, the needs of San Francisco will be prioritized. The needs of other jurisdictions will be considered insofar as it could help to develop and certify a system for use in San Francisco sooner (for example, if San Francisco were to collaborate with another jurisdiction and share costs). However, as stated in the previous point, this does not preclude recommending designs and practices that could make it easier to accommodate other jurisdictions.

## **Assumptions**

This section lists certain assumptions the committee has made while drafting this document.

- The Department of Elections does not have the expertise to conduct the day-to-day management of the development and certification of an open source voting system.

## FOR AGENDA ITEM #9: Open Source Voting Project Resources

Below is proposed starting text for the “Resources” section. This is meant to fit into the document template proposed in the section of this document corresponding to agenda item #7.

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### Resources

This section contains links to other resources and documents that may be useful for the project:

1. The San Francisco Department of Elections' RFP for the planning phase:  
[REG RFP #2017-01](#) ("Preparing a Business Case for Developing an Accessible, Open Source Voting System"). In particular, see the list of links in Section I.A. starting on page 5 of [RFP - Contractor - Business Case - FINAL.pdf](#).
2. Procurement
  - a. U.S. Digital Services' [TechFAR Handbook](#)
  - b. 18F's [Modular Contracting](#) page
3. Related Projects for US Government Elections
  - a. [ColoradoRLA](#), Free & Fair
  - b. [Voting Systems Assessment Project](#) (VSAP), Los Angeles County
  - c. [Prime III](#), Dr. Juan E. Gilbert
  - d. [STAR-Vote](#), Travis County, TX

## FOR AGENDA ITEM #10: COMMITTEE RECOMMENDATIONS

Below is proposed starting text for the “Recommendations” section. This is meant to fit into the document template proposed in the section of this document corresponding to agenda item #7.

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### Recommendations

#### Interim Voting System

- The contract for the interim system (i.e. the system to be used after 2018) should permit all possible combinations of phasing in an open-source system alongside it. Examples of possible combinations include:
  - using open-source components to scan vote-by-mail ballots and the interim system to scan precinct ballots, or vice versa;
  - using an open-source accessible voting device in conjunction with the interim system’s precinct-based scanner, or vice versa;
  - scanning the ballots of the interim system using an open-source scanner;
  - tabulating ballots scanned by an open-source scanner using the interim system’s tabulation software;
  - using an open-source reporting and/or tabulation system with the output from the interim system’s scanners;
  - using open-source components alongside the interim system in some subset of precincts (e.g. for a pilot rollout); or
  - using open-source components alongside the interim system in all precincts (e.g. for an incremental roll-out of the open source system).
- The requirements for the interim system should include interoperability with other systems, and the interoperability formats should be documented so they don’t need to be reverse-engineered.

#### Project Management

- Prior to issuing the RFP for the interim system, the Department should develop and publicize a rough project plan and timeline for the development and certification of an open source system, for the case that the project is funded. It is okay for this plan to be tentative. It can be refined over time as more information becomes available. Articulating even a tentative plan should help in crafting the RFP.
- [TODO: think about the division of responsibilities between the City and vendor. For example, who should be responsible for project management—the City or a vendor?]
- [TODO: brainstorm and document various incremental / phased roll-out possibilities, and possibly recommend preferred options.]
- [TODO: provide specific recommendations around agile.]

## Requirements

This section relates to specific requirements rather than the process of gathering or articulating requirements.

1. California [SB 450](#) ("Elections: vote by mail voting and mail ballot elections") authorizes counties to conduct elections using vote centers. The Department of Elections should develop a sense as soon as possible of the likelihood of using vote centers because that could affect the requirements and design of the system. Making this decision earlier could decrease costs since the design and development wouldn't have to cover multiple scenarios.
2. [TODO: think about ballot-marking device vs. manually marked ballots, and ballot on-demand vs. pre-printed ballots.]
3. [TODO: should end-to-end verifiability be a requirement?]

## Open Source

This section covers topics related to open source.

1. The development of the software should be done in public from the first day of development.
2. The software should be licensed under an open-source license from the first day of development.
3. In addition to the software being open source, project documentation should be openly licensed. This includes things like design documents, installation and setup documents, user manuals, and testing documents. [TODO: recommend particular licenses for documentation?]
4. [TODO: provide recommendations related to managing community feedback and contributions during project development. Also think about whether CLA's are necessary.]