June 14, 2016

FROM: Chris Jerdonek
TO: Elections Commission

SUBJECT: Open Source Voting Info for June 15 meeting

Attached are some background materials I wanted to provide for the Open Source Voting
agenda item of our meeting tomorrow.

The attachments are—

1. Open Source Voting System "Fact Sheet"
2. List of project supporters and various local media pieces and reports
3. Possible timeline for Open Source Voting System project
4. Pages from Mayor Lee's proposed budget mentioning the Open Source Voting System
    project (posted May 31, 2016; pp. 204-205, 447-448):
    http://www.sfmayor.org/index.aspx?page=846&recordid=1175

The first three documents are among the documents I used for education and advocacy
during the budget process.

Thank you.

SF Open Source Voting System Project
FACT SHEET

What is the project?

The SF Elections Commission and Department of Elections are asking the Mayor and Board of Supervisors to fund a project starting July 2016 to develop and certify an open source paper-ballot voting system, as described in the Commission's November 2015 resolution.[1]

What is a voting system?

A voting system is the hardware and software needed to cast and count ballots, like precinct and vote-by-mail ballot scanners, and accessible voting machines for people with disabilities.

What is an open source voting system?

An open source voting system is a voting system consisting of open source software running on commercial off-the-shelf (COTS, aka "commodity") hardware.

What is open source software?

Open source software is software that is free for anyone to inspect, use, and improve.[2] The software is public and non-proprietary. The Linux operating system and the Firefox and Chrome browsers are three well-known examples of open source software. Open source software is widely used by successful technology companies large and small.

What are some advantages of open source?

Open source is more affordable, more flexible, and 100% transparent. There are no licensing fees. San Francisco would be free to improve its system without needing vendor permission. We could choose to work with anyone to service the technology without restriction.

Who supports this idea?

In addition to open source and election integrity advocates, the Board of Supervisors and the San Francisco Elections Commission both unanimously passed resolutions supporting the development of an open source voting system. Supporters include the Electronic Frontier Foundation (EFF), California Common Cause, GitHub, and Code for America's SF chapter.

Why doesn't an open source voting system already exist?

The idea has been around for at least 10 years, but building one requires leadership and financial resources. Existing vendors have not chosen to create a public system.

Is Los Angeles County or Travis County, TX already building an open source system?

Both counties are working on building their own system, but LA has not committed to making their system open source. Travis County has substantially different requirements.

How much will it cost?

Estimates from advocates to develop and certify a new system average around $6 million spread over three years, plus money to deploy the system. San Francisco's current, proprietary voting system had a price of $13.78 million in 2007 dollars.

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1   See http://sfgov.org/electionscommission/motions-and-resolutions .
2   See https://opensource.org/osd .

When would the system be ready?
The plan is structured around full deployment starting with the June 2020 election, with partial or pilot deployment starting with the November 2019 election or earlier.

Who would develop the system?
The Elections Commission recommends hiring a project director. The Department of Elections could procure a project director using an RFP. The project director could issue RFP's for outside organizations or firms to develop and certify individual system components.

What public oversight would there be?
The Elections Commission oversees the Department of Elections. The Board of Supervisors can approve development contracts. In addition, the Elections Commission recommends the formation of a citizen advisory committee for added transparency and public input.

Has the California Secretary of State spoken publicly about open source voting?
Secretary of State Alex Padilla said publicly in November 2015 that he thought it "quite possible" and "very likely" that an open source voting system would be certified by his office during his current term. His staff have been informed of the developments in San Francisco.

How can San Francisco reduce project risk?
A voting system divides naturally into several smaller components. The Elections Commission recommends developing these components separately to reduce complexity and risk, as opposed to putting "all your eggs in one basket." In addition, benefits accrue with each component that is developed and certified, independent of the others getting finished.

How can San Francisco reduce project costs?
Once San Francisco starts the project, supportive organizations like foundations, companies, and other jurisdictions could contribute to the project.

What about our current voting system?
San Francisco's current system is coming to the end of its useful life. To support the development of an open source system, the Director of Elections is seeking to extend the City's current voting system contract beyond its December 2016 deadline.

What individuals and organizations might bid to build an open source system?
The Department of Elections issued an RFI in August 2015 expressing a preference for open source. The following individuals and organizations responded to the RFI with interest in open source: Mr. Brent Turner, California Association of Voting Officials (CAVO); Mr. Alan Dechert; Digital Foundry and IDEO; Dr. Joe Kiniry, Galois; Dr. Juan Gilbert, University of Florida; and Mr. Gregory Miller, Open Source Election Technology Foundation (OSET).

Where can I learn more?
The San Francisco Elections Commission's November 2015 resolution has more detail.

For more information, contact: Chris Jerdonek, chris.jerdonek@gmail.com, (415) 286-2238

SF Open Source Voting

SUPPORTERS, MEDIA, AND REPORTS

Supporters

Below is a partial list of supporters of San Francisco <u>starting and fully funding a project to develop and certify an open source paper-ballot voting system</u>, starting in FY 2016-17 and for use starting with the June 2020 election.

Many of these supporters have also sent letters to the Mayor and Board of Supervisors. For information on signing on in support, contact Chris Jerdonek at chris.jerdonek@gmail.com or 415-286-2238.

Organizations

1. **San Francisco Elections Commission** (http://sfgov.org/electionscommission)
   Unanimous (6-0) resolution in November 2015:
   http://sfgov.org/electionscommission/motions-and-resolutions
2. **San Francisco Democratic County Central Committee (DCCC)**
   Unanimous resolution on April 13, 2016. (http://www.sfdemocrats.org)
3. **San Francisco Technology Democrats (SF Tech Dems)**
   (http://www.sftechdems.org)
   David Cruise, President & CEO, SF Tech Dems
4. **Harvey Milk LGBT Democratic Club** (http://www.milkclub.org)
5. **Code for San Francisco** (http://codeforsanfrancisco.org)
   Jesse Biroscak, Captain, Code for San Francisco
6. **Electronic Frontier Foundation (EFF)** (https://www.eff.org)
7. **California Common Cause** (http://www.commoncause.org)
8. **GitHub** (http://github.com)
   Chris Wanstrath, CEO and Co–Founder, GitHub, Inc.
9. **FairVote** (http://www.fairvote.org)
   Rob Richie, Executive Director, FairVote
10. **Verified Voting Foundation** (http://verifiedvoting.org)
    Pamela Smith, President, Verified Voting Foundation
11. **Open Source Initiative (OSI)** (http://www.opensource.org)
12. **Voting Rights Task Force** (http://CountedAsCast.com/alameda/vrtf.php)
    Jim Soper, Co-chair, Voting Rights Task Force
13. **Open Source Election Technology Foundation** (OSET Foundation)
    (http://www.osetfoundation.org)
14. **National Election Defense Coalition** (http://www.electiondefense.org)

San Francisco Residents

1. Brian Behlendorf (http://brian.behlendorf.com/)
   Co-Founder, Apache Software Foundation
2. Steven Hill (http://steven-hill.com), Senior Fellow, New America Foundation

Updated: May 10, 2016

3. Alec Bash, Former President of SF DemocracyAction Democratic Club
4. Nadia Eghbal, open-source writer, researcher, and speaker
5. Caitlin Barta
6. Mathias Brandewinder
7. Matt Brictson
8. Hannah Burak
9. Tom Cho
10. Xavier Damman
11. Chandra Friese
12. Nitin Garg
13. Jenn Georgevich
14. Austin Gunter
15. David Hincapie
16. Zack Johns
17. Justin Jones
18. Ellee Koss, PhD
19. Robert Kroeger
20. Sameeran Kunche
21. Rob Lanphier
22. Asheesh Laroia
23. Martin MacKerel
24. Pamela Mardo
25. Philip Neustrom
26. Sara and Peter Ogilvie
27. John E. Palmer
28. Matthew Pancia
29. Geoffrey Pay
30. Val Polouchkine
31. Harsha Raju
32. Mikeal Rogers
33. Tony Santos
34. Maddie Schults
35. Karl Schultz
36. John-Michael Scott
37. Alan Shreve
38. Thomas Smyth
39. Debra Solomon
40. Noah Swartz
41. Jesse Szwedko
42. Paolo Villacarlos
43. Catherine Zhang
44. Noah Zoschke

Other Individuals

1. Philip B. Stark (http://www.stat.berkeley.edu/~stark)
   Associate Dean, Mathematical and Physical Sciences; Professor, Department of Statistics, University of California, Berkeley
2. Dale McGrew, Co-founder and Executive Director, We Vote

SF Board of Supervisors Resolution

In December 2014, the San Francisco Board of Supervisors <u>unanimously</u> passed a resolution <u>committing San Francisco to work towards creating an open source voting system</u>:

> 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**; ….

The resolution was authored by Supervisor Wiener and cosponsored by Supervisors Cohen, Kim, and Mar. For the full resolution text, see the following (click on "Leg Final"):

https://sfgov.legistar.com/LegislationDetail.aspx?ID=1946783&GUID=0725E575-B05E-4137-B771-E8BFD5B98237

Media and Reports

Below is a selection of local media pieces, San Francisco government reports, and other background documents related to the open source voting effort in San Francisco.

1. Op-ed in San Francisco Examiner, "A public, transparent voting system for San Francisco," Mar. 24, 2016:
   http://www.sfexaminer.com/public-transparent-voting-system-san-francisco
2. KQED news story, "S.F. Officials Push for Adoption of Pioneering Open-Source Voting System," Feb. 9, 2016:
   http://ww2.kqed.org/news/2016/02/09/s-f-officials-push-for-adoption-of-pioneering-open-source-voting-system
3. San Francisco Examiner (cover story of Thanksgiving edition), "San Francisco sets sights on open source voting by November 2019," Nov. 26, 2015:
   http://www.sfexaminer.com/san-francisco-sets-sights-on-open-source-voting-by-november-2019
4. LAFCo "Study on Open Source Voting Systems," Oct. 23, 2015 (39 pages):
   http://www.sfbos.org/index.aspx?page=4158
5. San Francisco Voting System RFI and Responses, Aug. 2015:
   http://sfgov.org/elections/request-information-rfi-new-voting-system
6. San Francisco Voting Systems Task Force (VSTF) Report, July 2011 (57 pages):
   http://sfgov.org/sfc/vstf

Possible Project Timeline

Year	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2016							Start Planning & Assessment Phase. Start hiring process for Project Director.		Hire Project Director. Start work on system architecture and RFPs.	Form citizen advisory body.		
2017			Start issuing RFP(s) for development of system components.	Finish Planning & Assessment Phase.	Start Development & Certification Phase. / Start development of first components from RFPs.							
2018	Start state and federal certification for some components.		Start integration testing. / Finish initial development of first components. Start integration development.								Nov 2018 election: start piloting some components in select precincts?	Finish initial development of all components.
2019							Finish Development & Certification Phase. / Finish integration development for all components. / Finish state and federal certification for all components.	Project Director continues to assist with pilot.			Nov 2019 election: pilot some or all components.	Project Director position ends, with option to continue to assist with full deployment.
2020						June 2020 election					Nov 2020 election	
2021												

BUDGET ISSUES AND DETAILS

The Fiscal Year (FY) 2016-17 proposed budget of $14.8 million for the Department of Elections is $4.1 million, or 21.7 percent, lower than the FY 2015-16 budget of $18.8 million. This reduction is due to one less election scheduled in FY 2016-17 than in FY 2015-16 and consequently lower operating costs.

The FY 2017-18 proposed budget of $14.6 million for the Department of Elections is $0.2 million, or 1.0 percent, lower than the proposed FY 2016-17 budget of $14.8 million. This reduction is due to lower one-time costs in FY 2017-18 as compared to FY 2016-17.

CONDITIONAL VOTER REGISTRATION

A recent state law change establishes conditional voter registration, giving Californians the right to register to vote through Election Day and to vote using a provisional ballot if the registration is deemed valid. The law takes effect on January 1 after the full implementation of VoteCal, the federally mandated statewide voter database. VoteCal will become operative in 2016; thus the June 2018 election will be the first scheduled election for which the Department will administer conditional registration and voting.

The proposed budget funds the impact to operations, which includes changes to accommodate registration and voting through Election Day.

TECHNOLOGY INVESTMENTS

The California Secretary of State (SOS) is in the process of deploying VoteCal, a new statewide voter registration system, in order to fully comply with requirements of the Federal Help America Vote Act of 2002. This new system will become the State's system of record after the June 2016 election, and the SOS and county elections officials will collectively use VoteCal to manage the voter information for all Californians. VoteCal will replace the current California voter registration database and provide a single, uniform, centralized voter registration database to improve voter registration processes and allow voters to register online.

The SOS and the Department of Motor Vehicles (DMV) are establishing the Motor Voter Program. Once regulations are implemented, the DMV will be required to send the SOS the electronic records of each person obtaining or renewing a driver's license or state identification card or providing an address change to DMV. In most cases, the DMV record will constitute a completed affidavit of registration and the person will be registered to vote. This program will likely expand voter rolls, leading to expansion of many Department programs serving new registrants.

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

NUMBER OF REGISTERED VOTERS AND VOTE-BY-MAIL VOTERS

While the number of registered voters has fluctuated since 1999, a growing share of registered voters has chosen to vote by mail since the passage of AB 1520 in 2001 which allowed any registered voter to vote by mail. Recently enacted AB 1461 provides for automatic voter registration through the Department of Motor Vehicles beginning 2017.
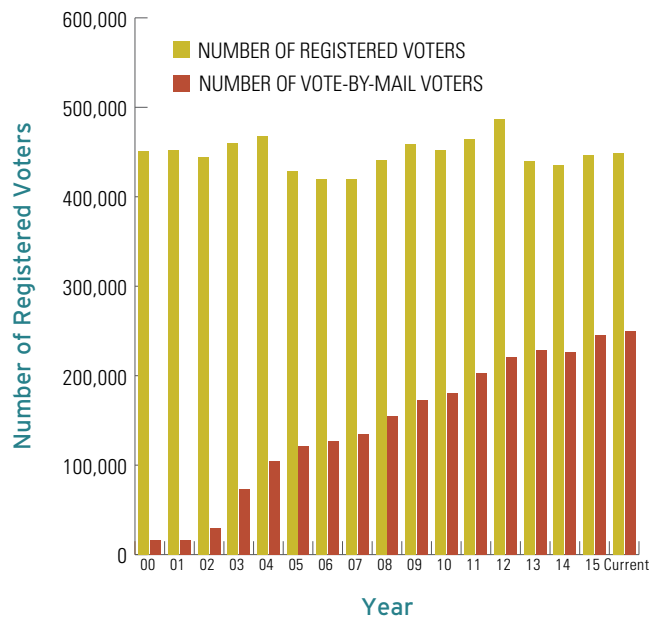
to do this. Development of an open source voting system would enable the City to own the voting system's software and to have a choice of publicly releasing it under open source license. Additionally, other jurisdictions as well as the general people could use, participate, and improve the software.

SAN FRANCISCO FELLOW: DATA VISUALIZATION

For the upcoming FY 2016-17 budget, the Department will participate in San Francisco Fellows. A San Francisco Fellow will assist the Department with data visualization through the presentation of data in a pictorial or graphical format. The Departments serves many different customers, and while some prefer to receive the information through reports and spreadsheets, others visualize large amounts of complex data

when the data is conveyed through charts or graphs.

WAREHOUSE RELOCATION

The Department warehouse is currently located at Pier 48 Shed B, and the Department will relocate its warehouse to Pier 31 in FY 2016-17. The relocation will require extensive planning, in collaboration with the Port, Department of Public Works, and Real Estate Division, in order to relocate over 2,000 voting machines, related equipment, and materials used at approximately 600 polling places. Additionally, the Department will refine warehouse process logistics to adapt to the new facility. Processes include conducting voting machine maintenance; staging equipment and materials for polling place delivery; and the post-election canvass.

ELECTIONS ORGANIZATIONAL STRUCTURE
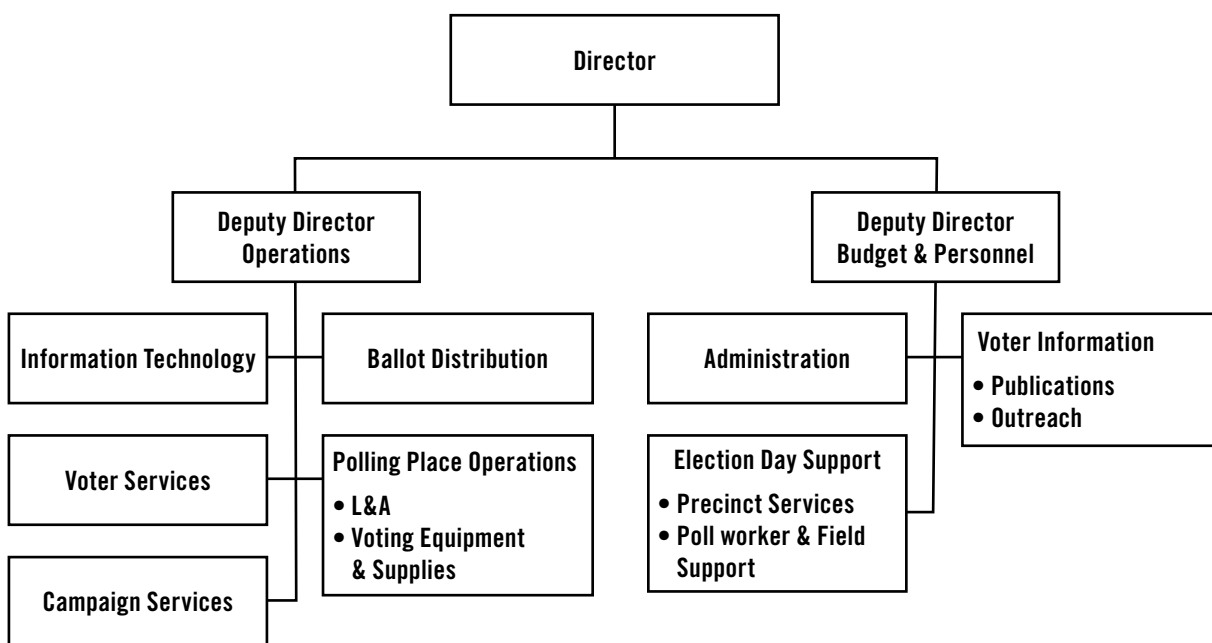
City to smooth and spread the cost over a longer period. This allows the City to get started on the next priority project, the Property Tax Assessment System Replacement Project.

PROPERTY TAX ASSESSMENT SYSTEM REPLACEMENT PROJECT

The Assessor-Recorder's property tax system, which tracks more than 200,000 parcels and provides assessments on properties that enables over $2 billion in General Fund revenue annually, is another identified legacy system in urgent need of replacement. The proposed budget includes funding to begin implementing the system replacement project, which is expected to be completed in FY 2021-22. The new system will improve workflow efficiencies, revenue projections, and resilience of this critical system.

VOICE OVER IP (VOIP)

Another critical system in need of substantial investment is the City's telephone system. Recognizing that there is an opportunity to improve telephony infrastructure by moving away from traditional telephony to a unified Voice over IP (VoIP) system, the proposed budget provides funding for the piloting of a hosted VOIP solution. This pilot program will ensure that the system is cost-effective, secure, and of high enough quality to potentially scale citywide.

ELECTRONIC HEALTH RECORDS

In addition to the Major IT Projects that are identified by COIT for funding, the Department of Public Health's Electronic Health Records project is identified as a Major IT Project that is supported through the General Fund outside of COIT funding.

The Department of Public Health will continue to support its mission to protect and promote the health of all San Franciscans through the implementation of a unified Electronic Health Records (EHR) system. This multi-year project will improve the way the Department tracks patients and service delivery outcomes throughout the public health system. The unified EHR will improve business processes and enhance communication and data sharing with regional partners.

ANNUAL PROJECTS

The FY 2016-17 and FY 2017-18 proposed budget fully funds the COIT Annual Projects Allocation in FY 2016-17, providing funding for prioritized projects that support smaller scale ICT infrastructure and services. 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.

DIGITAL SERVICES TEAM

As technology increasingly becomes a part of everyday life, government agencies are modernizing to more effectively use technology and design to bring government to the people. San Franciscans expect and deserve a high level of service and digital options from their government. In April 2016, COIT approved the City's first Digital Services Strategy, which reaffirms that the public should always come first when determining how the City delivers services. One of the core recommendations of the strategy is the creation of the Digital Services Team that will establish standards for service delivery. To support the implementation of the strategy, the proposed budget includes funding for this new program.

CYBERSECURITY

COIT has made significant investments to bolster the City's IT security, to ward off cybersecurity threats, improve dectection of potential dangers, and to reduce vulnerabilities. Funding has been allocated to the Office of the City Information Security Officer within the Department of Technology to provide a more secure citywide network, including enhanced Identity and Access Management (IAM), improved security log management, and a citywide Active Directory. The upgrades support efforts to identify, investigate, and respond to abnormal behavior and are critical to minimizing network impacts.

FIX THE NETWORK AND CONNECTIVITY

As a foundational ICT system, all City departments rely on the City's fiber network to support their critical systems and applications. The proposed budget includes funding to support the continued work of the Department of Technology to re-architect the network with the goal of making it more efficient and resilient. The proposed budget also includes funding for the Department of Technology to explore options for expanding the City's role in increasing broadband choices for homes.

CITYWIDE ELECTRONIC SIGNATURES

Most paper forms and contracts in the City, both internal and public facing, require signatures. These documents are often are physically passed between various departments and individuals. The proposed Electronic Signature project will transform departmental workflow processes in order to provide more efficient service to the community, vendors, personnel, and partner agencies. The proposed budget includes funding for all City departments to leverage an electronic signature solution to move the City closer to a more seamless, paperless system.

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.