CACEO Business Process Committee (BPC)
Discussion paper on Vote Center Connectivity – 03/20/2017

Introduction

In 2016, the California Legislature passed SB450 known as the Voter's Choice Act. The legislation allows 14 counties to conduct elections in a new method giving voters additional choices starting in 2018. This list is expanded to all counties starting in 2020. Under the new legislation, all voters will receive a Vote by Mail ballot packet, and the county will utilize voting centers for at least 10 days up to and including election day. Voters will no longer be assigned to vote at specific polling places.

Section 4005 of the California Elections Code spells out specific abilities and requirements of service at the vote center. Section E specifically requires having "immediate access" to Voter Registration information/updates and ballot disposition within the county. Due to the complexities of registering voters, and maintaining a secure list of who has voted, the BPC has been asked to develop discussion points for counties to begin the discussion on how technology could be deployed to achieve this requirement at all vote centers. This brief paper attempts to address a variety of options and discuss some concerns and benefits of each.

Statewide Database design background and limitations

California has a statewide database (VoteCal) which is the official record of voters. This database was developed as a "bottom-up" system meaning that counties are still able to use their local EMS for processing voter registrations and maintain a local copy of voter files. This design has specific limitations for county connections, and currently does not have all the data components necessary for counties to successfully conduct an election. VoteCal does not have any election information related to: ballot styles, offices, candidates, measures etc., and does not have functionality relating to the issuance or adjudication of ballots. Most importantly, for new registrations or conditional voter registrations, VoteCal alone does not have the necessary information to properly precinct voters.

Due to these limitations, a county connection directly to VoteCal (bypassing the local EMS system) is not a viable vote center option.

Other Non-Viable Vote Center Options.

In addition to a direct connection to VoteCal, the BPC has also discussed the following ideas and determined that these also do not meet the requirements of maintaining immediate access to voter registration and/or ballot disposition.

Paper Rosters – due to the inherent nature of paper, this option does not provide a method to immediately determine ballot disposition, nor does it allow for updating voter registration information as prescribed. To achieve immediate updates to either of these categories, a county must make some form of connectivity to the main office which eliminates the use of paper rosters.

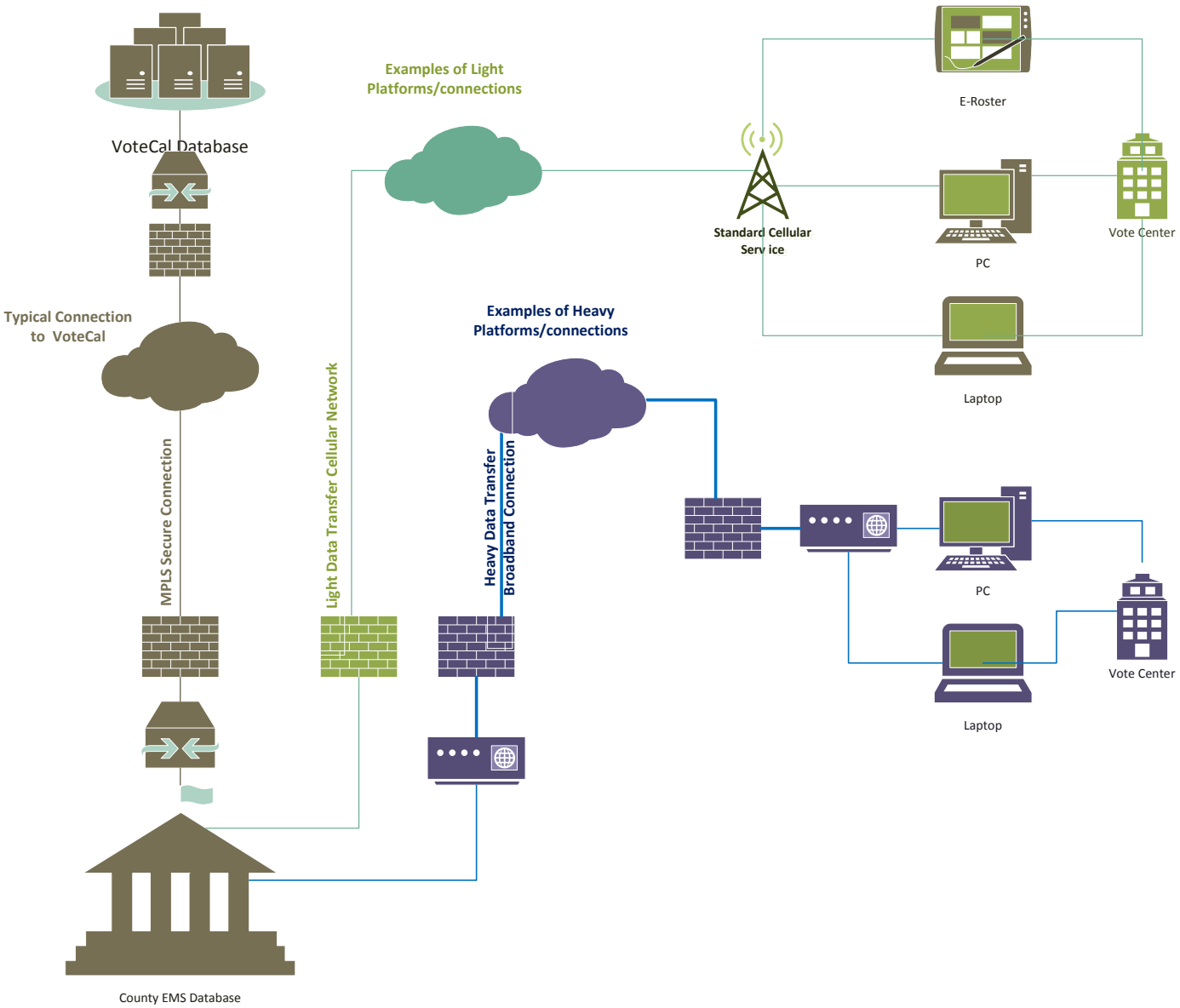
Batch Processing Electronic pollbooks - electronic pollbooks may appear to be a valid solution if they are all connected to each other throughout the county. Many vendors provide a solution that will accomplish this utilizing cellular or wi-fi connectivity. The pollbooks will maintain information regarding ballot disposition throughout the e-pollbook network but will not immediately communicate with the main office's voter registration system. A once daily batch update is not sufficient to achieve the "immediate" response required by Election Code.

Optimum Vote Center Connectivity Options

Throughout discussions, it is apparent that the need to maintain connectivity for as close to real-time updates is necessary. California Counties do not have the luxury that Colorado Counties have for a statewide web-based vote center solution. Counties should discuss with EMS Vendors for the solutions that are available. Both DFM and DIMS have a variety of solutions available to meet county's needs. These solutions may tie into third-party e-roster solutions as well. It is the position of the BPC that it is critical to maintain up-to-date voter lists and voting participation information in as close to real-time as possible.

Overview of Options

The graphic below illustrates the main differences for connectivity options. Please note that this is merely for opening the discussion and counties should work with their IT Department and find a solution that works for each county's unique situation.



Counties will choose the platform that suits their needs. Platforms can be "light" (small data transfers) – such as tablets, ipads, and some laptop applications, or "heavy" (large data transfers) – such as PC Applications, workstations that have

VPN access, or "thick" clients (software loaded on workstation accessing a remote database). It's possible that a county would choose a hybrid approach with a mix of light and heavy applications.

Additional factors to consider for bandwidth is the frequency and size of transfers, multiplied by the number of connections (or check-in points) at a given location. County staff should also consider the encryption overhead of the data transfer. A standard encryption of 256-bit AES will add 15-20% overhead (size) to data transfers. Higher encryption levels equate to larger data transfer sizes. These factors will impact the bandwidth needs of data transfers to ensure successful operation.

Based on the platform decision, counties will know how much bandwidth is needed for data transfers. Counties can choose between a range of providers including standard cellular service (typically less than 5 Mbps) up to fixed speed broadband data service (50Mbps or greater).

Counties must take extra precautions to ensure connectivity is stable at all locations and that the throughput is sufficient to ensure successful operations. Below is a brief discussion on two options for achieving this connection with advantages and disadvantages of each.

Option 1 – Remote Connection to Local EMS

This refers to connecting directly to your local EMS, using a VPN, or other type of remote connection. This is meant to mimic the same thing as working on the EMS in the office.

Advantages

- All the logic for issuing ballots is already in place.
- All updates are real time since you are using your EMS, just like in the office.
- All updates from VoteCal are seen in near real time.
- Conditional voter registration updates will be included in Phase III of the CR.
- Easy deployment.

Disadvantages

- Some queue management features of ePollBooks on the market may not be included.
- More training for staff may be required to implement.
- May have a larger data transfer payload.
- If you lose network connection, you will need to have a backup ready.
    - EMS vendors may come up with a solution for this.

Considerations

- You will need to work with your IT department to provide secure remote connection.
- May require longer lead time with IT department.

Option 2 – ePollBook With Real Time Connection to Local EMS

This option uses a third party ePollBook, and transferring updates in real time with the local EMS. All ePollbooks would be connected directly to EMS system, and can send and receive updates in near-real time. Examples of data transfers would be transferring data using a web service, or message server.

Advantages

- Can use features of ePollBooks on the market.
    - Redundancy while losing network connection.
    - Line management tools.

- Electronic signature.

Disadvantages

- Need to ensure logic of issuing ballots, CVR, etc. are correct on the ePollBook.
- Need to integrate with local EMS, EMS may push for county to use native solution.

Considerations

- You will still need to work with your IT department to make sure secure network communication is functioning.
  - Need to ensure data transfers are possible for both push/pull to every ePollbook.
- May require longer lead time with IT department.

Counties may consider the possibility of using a combination of option 1 and option 2 together.

Finally, the discussion comes up as to what a county may utilize for a backup solution in the event of either hardware or connectivity failure. Again, the use of paper is not an ideal avenue to provide information sharing between vote centers regarding voter history.

Backup Option 3 – ePollBook With Batch Updates to/from Local EMS

This backup option uses a third party ePollBook, and updates the EMS and ePollBooks using a batch process (until connectivity is restored). A county would create text dumps from the ePollBooks and upload them to the EMS manually. This process would be conducted in reverse to add voters and potential ballot dispositions to the ePollbooks. In this scenario, ePollbooks would maintain connectivity to all other pollbooks, but lose connectivity with the EMS database.

Advantages

- Can continue operations when connectivity to EMS Fails.
- Can use features of ePollBooks on the market.
  - Redundancy while losing network connection.
  - Line management tools.
  - Electronic signature.
- Not necessary to open network connectivity between local EMS and ePollBook

Disadvantages

- Not receiving/transmitting real time updates.
- Have to schedule transfer activities when connectivity is available.
  - Must gather updates from epollbooks.
  - May have gaps in time between data transfers due to connectivity.
  - May have additional transfers after hours.
  - May have difficulty balancing a vote center.

Considerations

- Network connections still needed to be maintained between all eRosters.
- Use as a fall-back position only.