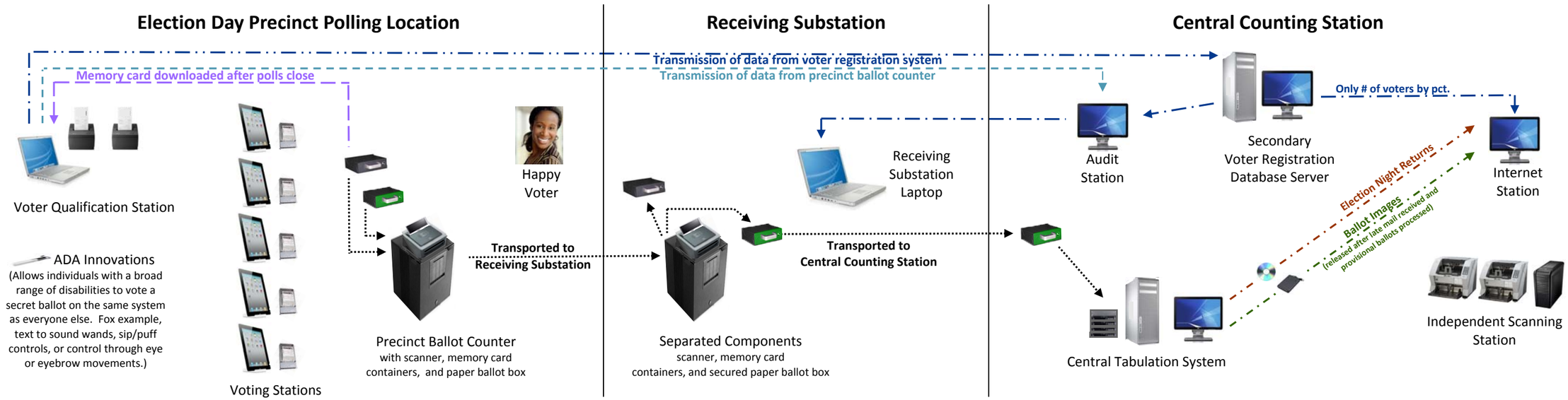
Very First Draft!

Future Voting System for Travis County, Texas



Brief Overview of Process and Explanation of Requirements

The voter begins at the Voter Qualification Station. The Judge locates the voter on the computerized voter registration list and records that a ballot is being cast. This information is transmitted in real time to the central office. Numbers are monitored by election staff throughout the day, and updates regarding lines/wait times are regularly reported on the website, along with periodic reports of precinct turnout.

One label and one receipt are printed for the voter. The voter signs the label that then becomes part of the poll list. The receipt, containing a number or bar code, is given to the voter to take to the voting booth. The code only contains information regarding the ballot format.

The voter moves to a Voting Station, enters the code on an electronic tablet, and the correct ballot format appears. The graphics on the screen are well-designed for maximum readability. The voter navigates through the ballot and easily zooms in or out. A bar on the right continuously shows the full list of choices as they are made. A full-screen summary appears at the end, and the voter casts her ballot.

A list of the voter's choices prints next to her. This list only includes the race headings, the voter's choices, and a number associated with each choice. The ballot is easy for the voter to read. It does not resemble a traditional ballot and minimizes the use of paper. Audio validation of the ballot choices is also available for the voter.

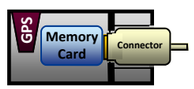
This part of the system does not record any votes and stands alone with no connections to the voter registration database or the Precinct Ballot Counter. These are off-the-shelf tablets and printers that are easily upgradeable or replaceable, durable, and competitively priced. At least one tablet and printer is easily made mobile so that it can be carried to a car for curbside voting. The printers are reasonably priced and inexpensive to maintain, designed for high-volume use, and have easy-to-change paper. The printers accept paper that is high enough quality for use as an official ballot and that can handle multiple passes through a scanner. The print is clear, bright, easy to read, and stable enough to maintain high quality for 22 months.

The voter takes the ballot to the Precinct Ballot Counter. This piece of equipment contains a scanner, a tabulating unit, two memory card containers, and a ballot box to hold the paper ballots. The voter feeds the ballot into the scanner which then takes an image of the ballot, records the vote, and drops the paper ballot into the secured paper ballot box. The voter sees a message on a small screen stating that the vote was received, and leaves with a smile on her face. Her thoughts are not about voting security, but about how happy she is that she took a few moments out of her day to participate in her country's democratic process.

The scanner is geared for high volume and is not prone to calibration issues, even after a rough ride in a delivery vehicle. It is lightweight, sturdy, tamperproof, and easily transported. It is easily replaceable using off-the-shelf equipment.

The Precinct Ballot Counter stores the vote count and ballot images on an internal drive and on two memory cards. Two connector cords are attached to the tabulator system, and are enclosed within the unit so that they cannot be detached in the field without detection. The opposite ends of the connector cords connect to the memory cards. Each memory card is stored in a sturdy plastic container designed to prevent tampering. During initial central office election preparation , a secure connection with the memory card and the system connector can be made. After the box is locked down, however, a break in the connection causes the memory card to fall down into the box making it inaccessible until the sealed container is opened (see diagram). Each container is secured with a seal and a special lock containing a time stamp chip. When this lock is opened, the time is recorded. Containers also house GPS chips. While the polls are open, the containers

Idea for Memory Card Container



Cord has a head designed to fit only the end of the connector through a slot. Once disconnected, the memory card falls into the box and is not accessible until sealed container is opened.

fit inside the Precinct Ballot Counter and out of the reach of voters or potential troublemakers. The memory cards are set for read-only after the polls are closed. After one use, they are either discarded or recycled for nonelection use.

When the polls close, the Judge uses a seal and time stamp lock to secure the top of the paper ballot box (that also contains a GPS chip). The Judge then opens one of the memory card containers. The memory card is removed and connected to the computer at the Voter Qualification Station, and the election returns are sent to the central office. When the central office receives this information, an election worker compares the number of voters who were processed at the qualification station to the number of voters who cast a ballot on the tabulation system. That information is then transmitted to the Receiving Substations so election workers can ensure that the Judge has adequate documentation to support any differences. The Judge replaces the card into the container, locks it, seals it, and returns it back into the Precinct Ballot Counter. The Judge secures the remaining equipment that is lightweight enough for a 70-year old person to disassemble and maneuver. The Judge rolls the secured Precinct Ballot Counter to the car and transports it to the Receiving Substation.

An election worker at the substation checks the items in, counts the number of signatures on the paper poll list, and makes certain documentation regarding any differences in numbers is turned in before the Judge leaves. The second memory card container is removed from the Precinct Ballot Counter and given to a law enforcement officer for delivery to the central office. The paper ballot box and the container with the memory card used by the Judge are safely stored at the substation. These items are delivered to the Central Counting Station after all precincts have reported in.

The central office knows the location of each precinct's memory card container and paper ballot box because they have been "Lo-Jacked" with an inexpensive GPS system. The whereabouts of these important items can be tracked from the time they are initially picked up by the Judge to the time they reach the Central Counting Station. If a Sheriff is sent out because of potential problems on Election Night, exact locations can be given.

The cards are tabulated at the Central Counting Station and the returns are compared to those received at the polling place. When they match, the returns are downloaded onto a read-only CD, transferred to another computer not connected to any system, and published to the Internet.

After Election Day and before the canvass, a sample number of precincts are run on an independent auditing system. This system is not connected to the voting tabulation system and scans and tallies the paper ballots using numbers, not names. This system allows for a more secure counting program since it does not have to be reset for every election.

After late mail ballots are received and final official returns are prepared, the images of the ballots are made viewable on the Internet. No hired third party auditors are needed; anyone can view and recount the ballots.

The software used through the components of this system is easy for administrators to use without vendor involvement. The software is well-designed, flexible, able to handle a multitude of voting scenarios, able to recognize and separate provisional ballots, and places great emphasis on security and redundancy. The source code must be open or at least reviewable by independent experts not directly associated with the vendor or the certification process.

Note: This diagram does not include the entire voting system, for example, a ballot-by-mail system requires additional design. The graphics used here are representational and do not imply a recommendation of brand or specific design. If you have suggestions as to how to improve this plan, please contact us at 512-854-4996 or email us at Elections@co.travis.tx.us.