Ranked Choice Voting
RESOURCE CENTER

Voting Systems Analysis & Fiscal Impact: Virginia RCV Local Option (HB 553)

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The following analysis considers the capability of Virginia voting equipment/systems to be used for administering ranked choice voting (RCV) elections and potential costs needed for any equipment or system upgrades should a locality opt to adopt ranked choice voting. Additional cost considerations have been included but may need to be amended based upon election administration procedures and laws for Virginia. This analysis reflects a substitute to House Bill 553 to amend the bill to permit Virginia localities to optionally administer ranked choice voting with a sunset provision.

Key Points/Summary

- **Current voting equipment can be used to administer RCV – 120 Virginia cities and counties have voting systems requiring limited or no modification to be RCV capable.**
    - All have files that can be exported for RCV tabulation, which makes these units RCV capable.
    - Two systems have built-in RCV tabulation; one has an additional RCV module; one allows for RCV design and exportable files, but currently does not have built-in tabulation.
    - Contracts between jurisdictions and vendors will determine if there is no charge or any upgrade or activation fees.
    - Additional tabulation options if a jurisdiction does not have built-in tabulation or does not opt for the activation/upgrade:
        - *Free software:* Universal Tabulator is being developed by the Ranked Choice Voting Resource Center and will be federally tested in 2018.
        - *In-house development:* An in-house tabulation system could be developed as done in Minneapolis, MN, and North Carolina.
        - *Third-party vendor:* Previously contracted for localities such as Cambridge, MA. Rates vary.
- **Legacy voting equipment may not be RCV capable or recommended for use – Only 206 out of 6,324 voting units are not compatiable with administering RCV. Effects only 13 of 133 localities.**
    - Units are from the previous generation of voting systems and are 10 or more years old.
    - Replacement of these units benefits elections overall, not just RCV elections.
    - These units are in 13 of the 133 cities and counties in the Commonwealth.
        - Bath County, Colonial Heights City, and Hanover County need 1 unit replaced in each of these jurisdictions to be RCV capable.
        - Chesapeake City has the most units needing to be replaced – 73 units – to be RCV capable.

- Voting equipment units cost approximately $6,500/unit, though this cost varies by vendor and type of equipment. Cost estimate for these 13 jurisdictions: $6,500 to $474,500.

- **Voter education can complement existing efforts.**
  - Most important: instructions, ballot design, results presentation.
    - Center for Civic Design, in partnership with RCVRC and FairVote, has developed these components.

Full Voting Systems Analysis & Fiscal Impact

Voting Systems

Currently, elections in Virginia are conducted with multiple voting systems. Voting systems consist of hardware, firmware, and software. Hardware is the voting equipment used to cast a ballot. This could be an optical scanner, in which a paper ballot is inserted, or direct recording electronic (DRE) units, which capture voter selections made on a touchscreen and record a ballot. Firmware is installed in the voting equipment to make the machines compatible with the software, while software is used to design and tabulate ballots. On the front end, software is used to program and code election files for the system. The coding files are then burned to media, such as a thumb drive or flash drive, and secured in the voting equipment. Data from these devices is then read back into the software once voting ends, then the software is used to aggregate the data from the voting machines and tabulate results.

Detailed review of Virginia voting systems based upon the "Voting Equipment Usage Chart" from the Virginia Division of Elections finds only 13 of the 133 cities and counties in the Commonwealth have voting equipment not compatible with administering ranked choice voting elections.

There are 120 cities and counties in Virginia that have RCV capable voting equipment or units requiring limited modification to be RCV capable. Counties with OpenElect systems and Verity Systems have built-in RCV capability. Confirmation is needed to determine if a fee or additional steps are required to activate the RCV components of these systems.

Cities and counties with DS200 or ExpressVote equipment only require limited modification to be RCV capable, provided that these units are coded using EVS 5.2 (or higher) software. This system configuration can design RCV ballots and export ballot data for third-party tabulation. The export and tabulation might not incur an additional charge depending on the tabulation system used.

For those with Imagecast equipment (28 jurisdictions) an additional module or firmware upgrade will make these units RCV capable. The cost of this modification needs to be negotiated with the vendor.

The 13 counties and independent cities identified in the table below have 206 voting units, collectively, that are categorized as legacy voting equipment not recommended for RCV elections or equipment that cannot be modified to conduct RCV elections.

- **Terms Defined**
  - Legacy voting equipment: Voting units of the previous generation of voting systems produced by the manufacturers and are more than 10 years old are considered legacy voting equipment.
  - Legacy voting equipment; not recommended for RCV elections: Units with this classification are legacy machines that generate the files which may be used for RCV tabulation with third-party software, but

converting these files for tabulation is considered onerous. Because of the conversion difficulty, these machines are not recommended for RCV elections unless necessary.

- Legacy equipment; not RCV capable: Classified as "Not RCV Capable," these legacy units cannot be used to conduct RCV elections because they do not have built-in RCV capability, cannot be modified through firmware or software modifications, and cannot produce files for tabulation with third-party software. Unless the voting systems in the cities or counties are replaced, manual counting would be the only option for RCV elections, which is not recommended.

CITY/COUNTY	Precinct Voting Equipment	RCV Capability	# of Units	Absentee Ballot Voting Equipment	RCV Capability	# of Units	COMBINED TOTAL
BATH COUNTY				m100	Legacy equipment; not RCV capable	1	1
CHESAPEAKE CITY	eScan	Legacy equipment; not recommended	73				73
COLONIAL HEIGHTS CITY				AccuVote	Legacy equipment; not recommended	1	1
GLOUCESTER COUNTY	Optech III-PE	Legacy equipment; not recommended	13				13
HANOVER COUNTY				m100	Legacy equipment; not RCV capable	1	1
JAMES CITY COUNTY	AccuVote	Legacy equipment; not recommended	22	AccuVote	Legacy equipment; not recommended	3	25
MARTINSVILLE CITY	AccuVote	Legacy equipment; not recommended	9	AccuVote	Legacy equipment; not recommended	1	10
NEW KENT COUNTY	m100	Legacy equipment; not RCV capable	11	m100	Legacy equipment; not RCV capable	2	13
PETERSBURG CITY	m100	Legacy equipment; not RCV capable	15	m100	Legacy equipment; not RCV capable	1	16
POQUOSON CITY	AccuVote	Legacy equipment; not recommended	6	AccuVote	Legacy equipment; not recommended	2	8
PORTSMOUTH CITY	AccuVote	Legacy equipment; not recommended	32	AccuVote	Legacy equipment; not recommended	2	34
RAPPAHANNOCK COUNTY	AccuVote	Legacy equipment; not recommended	7				7
WILLIAMSBURG CITY	AccuVote	Legacy equipment; not recommended	3	AccuVote	Legacy equipment; not recommended	1	4
							206

Estimated costs associated with voting systems:

- **Upgrade current voting system/equipment to include or activate RCV module if a locality opts to adopt ranked choice voting: $0 to $40,000**[1]
- **Replacement of legacy voting equipment (those from the previous generation of voting systems and are 10 or more years old) if one of the 13 non-RCV capable localities opts to adopt ranked choice voting: approximately $6,500 to $474,500** *NOTE: The replacement of these units will benefit elections overall, not just RCV elections.*

[1] Based upon the estimated cost of $40,000 per jurisdiction to modify for RCV capability of Imagecast systems. This estimated cost was derived from Dominion's proposal to a U.S. city to add RCV tabulation to the city's voting system. Actual modification costs would need to be negotiated with the vendor based upon existing contracts or maintenance agreements and possible discounts for multiple installations.

Voter Education

A customized plan for voter education should be developed for a locality chosing to adopt RCV, as the cost of voter education varies by jurisdiction. Until a customized plan is developed, voter education costs can be estimated based upon the expenditures of other RCV jurisdictions:

- **North Carolina (statewide plan)**: In 2010, North Carolina conducted the first statewide RCV election in the United States since the 1930s. A vacancy for one of the Court of Appeals Judge seats prompted an RCV contest and gave election officials just 86 days to prepare for the election. No additional funds were allocated at the state or county level; each worked within the budgets allocated for the General Election. The voter education campaign was provided through a three-to-one matching grant by the NC Broadcasters Association to issue PSAs, a value of $75,000. The State Board of Elections paid the match of $25,000 from another grant, because there was no specific budget for RCV. The State Board also purchased, for $200, a page in the Appellate Judicial Guide that was mailed to every household.
- **Maine (statewide plan)**: Following approval of citizens' initiative for ranked choice voting in Maine, a fiscal note was issued that estimated $50,000 for voter outreach costs.
- **Minneapolis, MN (metropolitain city plan)**: A voter guide was created that included information about RCV and was mailed to every household. The cost of this guide and mailing in 2013 was $97,536.

Education and outreach are key components of a successful ranked choice voting election. These efforts do not have to be costly, even during initial implementation of RCV. Ideally, RCV education and outreach will complement existing efforts for voters, candidates, and election officials. There are many proven, cost-effective methods to employ – civic club presentations, flyers that can be distributed or inserted into water bills, public service announcements, social media and websites, just to name a few. A small number of education and information materials can be developed and used across numerous outlets. Providing RCV sample ballots and delivering helpful presentations or public service messages is optimal, but these often only reach the most civically engaged. The majority of voters can best be helped with oral and written instructions when they present themselves to vote at an early voting site or Election Day polling place. Education and outreach efforts can also be shared with other government entities, political parties, civic organizations, and the media to help ensure the broadest reach to the electorate.

Estimated cost for voter education: $0 to $325,000 (statewide plan) [2]

[2] Estimate derived by calculating 6.5 times the cost of Maine, since Virginia is a more populous state. An alternative estimate would be to calculate the inflation rate for the $100,200 value of North Carolina's statewide voter education campaign, which would be $102,195.17 based upon the current inflation rate of 1.99%.