

# PRE-ELECTION TESTING QUESTIONNAIRE



THANK YOU for observing pre-election testing in your area! Pre-election testing, including so-called Logic and Accuracy (L&A) testing, differs widely among election jurisdictions. In some jurisdictions, observers are permitted or even encouraged to ask questions and make comments. In others, only silent observation is permitted.

The questions below are offered as a guide you can adapt to the circumstances of the tests you observe. You should ask your election official the first set of questions – “Pre-Test Questions” in advance of testing day. Use the second set of questions on the day you observe the testing.<sup>1</sup>

Please answer as thoroughly as you can – use extra paper to take notes if necessary. If you cannot answer all the questions, just do the best you can – any information is useful. There will be an online form for you to fill in with your responses; contact [observer@verifiedvoting.org](mailto:observer@verifiedvoting.org) for the web-form. Or you can email or fax us your completed questionnaire instead. *If you can take photos and/or video of the process, it would be most helpful.*<sup>2</sup>

---

## I. Pre-Test Questions - Please call or meet with your local election official before pre-election testing date in order to get answers to the questions in this “Pre-Test” section.

When and where will pre-election testing take place and what are the requirements for attending?

Building Name and Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_ Duration? \_\_\_\_\_

Y  N  ? Are there any requirements for attending? (describe) \_\_\_\_\_

Y  N  ? Advance notice of test posted (location, time, requirements)? How far in advance? \_\_\_\_\_ Where posted? \_\_\_\_\_

What voting equipment will be tested? (If you cannot get this information in advance by phone, you can note it on the day of the test. Please provide as much detail as possible.)

Manufacturer \_\_\_\_\_ Model \_\_\_\_\_

Release or version number \_\_\_\_\_ Operating system \_\_\_\_\_

Other technical version information \_\_\_\_\_

Auxiliary equipment to be tested (printers, communication devices, etc.) \_\_\_\_\_

Is adequate space and an accessible and functional viewing area provided for observers of pre-election testing without compromising the security of the testing or overall election process?

Y  N  ? Adequate space for observing? Describe: \_\_\_\_\_

Y  N  ? Is observing space disabled-accessible? Describe: \_\_\_\_\_

Y  N  ? Does the line of sight in the observing area allow you to read the screens/outputs?

Comments about environment / setup: \_\_\_\_\_

Y  N  ? Will pre-election testers or staff be available for questions before, during, and/or after the testing?

---

<sup>1</sup> Acknowledgement: Thanks are due to Professor Doug Jones, whose work on pre-election testing informed much of the content of this questionnaire. For more on Dr. Jones’ work, see <http://www.cs.uiowa.edu/~jones/voting/>

<sup>2</sup> An example with photos can be seen at <http://chicory.stanford.edu/dill/CS75NWWW/>

## PRE-ELECTION TESTING QUESTIONNAIRE

Y  N  ? Is an overview of the pre-election testing process available for review prior to the test(s) (Some counties provide a checklist or outline to observers)?

Y  N  ? Does the state and/or local jurisdiction have certified or recommended procedures for the testing and use of each type of election equipment? (May be different than the specific test steps executed by the testers.) Where is this documentation available? \_\_\_\_\_

*Please send electronic copy (preferred) or hard copy of testing plan(s) and/or procedure(s) if obtained - email [observer@verifiedvoting.org](mailto:observer@verifiedvoting.org)*

Y  N  ? Does the voting technology vendor provide a copy of testing plans and procedures performed on the voting technology?

Y  N  ? If yes, is that information public? Where is it available? \_\_\_\_\_

Y  N  ? Is all voting equipment tested after upgrades and/or repairs? If not, what criteria define when re-testing is needed? Describe: \_\_\_\_\_

Y  N  ? Is all voting equipment re-tested after upgrades or repairs? If not, what criteria define when re-testing is needed/done? Describe: \_\_\_\_\_

Other comments: \_\_\_\_\_

Y  N  ? Are the results of this pre-election testing you are observing made public? Where can results be obtained: \_\_\_\_\_

Y  N  ? Are the results of re-testing after upgrades made public? Comment: \_\_\_\_\_

Y  N  ? Do results include identification of machines by serial number? Comment: \_\_\_\_\_

Other comments: \_\_\_\_\_

---

**II. Test Questions** - Please answer the questions in this section based on your observation of the pre-election testing procedures.

### General Questions

1. Who carries out the testing?

Y  N  ? Were voting machine/equipment vendor staff present? Describe number, roles: \_\_\_\_\_

Y  N  ? Were vendor staff introduced or identified (e.g. badge)? \_\_\_\_\_

\_\_\_\_\_ How many election officials/staff were there? Describe: \_\_\_\_\_

2. Do testers or officials provide a copy of the testing instructions they are using to the people observing the pre-election testing, so the observers can follow along with the testing process?

Y  N  ? Were the test instructions being used provided to you?

## PRE-ELECTION TESTING QUESTIONNAIRE

Y N ? If so, were you able to follow along with the test steps? *Comment:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

3. Is the voting technology or system placed in a "test mode" for pre-election testing? If so, how does this test mode differ from how the voting system will function on Election Day?

Y N ? Was test mode used? Describe: \_\_\_\_\_

Y N ? Does the screen indicate when test mode is in use? Describe: \_\_\_\_\_

Y N ? Does the test mode use real people to put in choices manually? Describe: \_\_\_\_\_

How does test mode differ from operation/voting day mode? You may have to ask for this information. Describe: \_\_\_\_\_

*Other comments:* \_\_\_\_\_

4. Do testers use the voting technology or system in the same way that voters would on Election Day? If not, how does their use of the technology or system differ?

Y N ? Did testers use system as voters would on Election Day? *Describe:* \_\_\_\_\_

Y N ? Did testers use automated scripts and data? *Describe:* \_\_\_\_\_

Y N ? Was the automated script put in from outside the machine, such as with a card?

*Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

5. Does pre-election testing include testing of the "power up" process of every voting system (for voting technology that uses power)?

Y N ? Was "power up" process tested? *Describe:* \_\_\_\_\_

Y N ? Was "power up" tested on each machine? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

6. Does pre-election testing include testing of each ballot position, that is, each possible choice for each race appearing on the ballot?

Y N ? Was each choice for each race tested?

Y N ? Was each choice tested for each race in each language?

*Comments:* \_\_\_\_\_

7. If it's possible to vote for multiple candidates or choices on a ballot question, how are combinations of votes for the question tested?

Y N ? Did the ballot have any multiple candidate options?

Y N ? *If yes*, were various options of multiple candidates tested in those races?

*Describe:* \_\_\_\_\_

8. How are ballots in languages other than English tested?

Y N ? Were languages other than English tested? *If yes*, please indicate which languages: \_\_\_\_\_

Y N ? Were all test procedures repeated for each language? *If no*, please describe what portion of testing was conducted?

*Comments:* \_\_\_\_\_

## PRE-ELECTION TESTING QUESTIONNAIRE

9. If there are audio ballots, how are they tested, including foreign language audio ballots?

Y N ? Were audio ballots tested? Y N ? Were all ballot options audio tested?

Y N ? Were you allowed to hear any of the audio feed? *Describe:* \_\_\_\_\_

Y N ? Were languages other than English tested with the audio feed? *If so, which languages:* \_\_\_\_\_

Y N ? Were all test procedures repeated for each language? *If no, please describe what portion was tested?* \_\_\_\_\_

Y N ? Were testers competent in the languages they were testing?

*Comments:* \_\_\_\_\_

10. How are devices for disability access (e.g., keypads, mouth sticks, sip/puff devices for mobility-impaired) tested?

Y N ? Were keypads tested? Y N ? Were mouth sticks tested?

Y N ? Were sip/puff devices tested? Y N ? Any other access devices tested?

*Describe device test(s):* \_\_\_\_\_

*Comments:* \_\_\_\_\_

11. Some tests use predictable patterns, i.e. one vote for the first candidate, two for the second, three for the third, etc. Testing likely voting orders is preferable.

Y N ? Did testing include a simulation of likely voting orders, patterns, and ranges?

*Comments:* \_\_\_\_\_

11A. Some pre-election tests allow testers to create their own set of ballot choices and navigate through the screens without a script, more closely simulating election day voter actions.

Y N ? Were testers allowed to test "on the spot" without following a script? (*includes manual testing*) *Describe:* \_\_\_\_\_

Y N ? Were their test results recorded?

Y N ? Were any problems found during this testing?

*Comments:* \_\_\_\_\_

12. Does pre-election testing include stress testing with large numbers of votes?

Y N ? Was stress testing done? *Describe:* \_\_\_\_\_

*If yes, please identify the range of votes tested on a single run:*

100 to 1,000     Over 1,000     Other: \_\_\_\_\_

Y N ? Was a central tabulation machine included in the testing?

Y N ? Was the tabulation function of the individual voting machine tested?

*Comments:* \_\_\_\_\_

13. Does pre-election testing include vote tally checking?

Y N ? Are expected tallies provided to observers before the testing begins?

Y N ? Are votes tallied and checked against expected results as part of the test?

Y N ? Did you observe any anomalous results? *If yes, please describe what occurred, and how it was explained or resolved.*

## PRE-ELECTION TESTING QUESTIONNAIRE

Other comments: \_\_\_\_\_

14. Does pre-election testing include correct date and time information testing?  
\_\_Y \_\_N \_\_? Was date/time of machine clock tested as part of regular procedures? Describe  
\_\_Y \_\_N \_\_? If so, was the date and time accurate for the date and time of the test?  
\_\_Y \_\_N \_\_? Was the machine clock changed in any way as part of the test?

Other comments: \_\_\_\_\_

15. Does pre-election testing include date set to Election Day run-throughs?  
\_\_Y \_\_N \_\_? Was date/time set to Election Day? Describe  
\_\_Y \_\_N \_\_? If so, was it set back at the end of the test?

Other comments: \_\_\_\_\_

16. Deliberate erroneous user inputs may be included in testing to evaluate system response to mistakes or mischief.  
\_\_Y \_\_N \_\_? Was erroneous user input tested? Describe: \_\_\_\_\_  
\_\_Y \_\_N \_\_? Was pulling out the plug (turning off power source) tested?

Comments: \_\_\_\_\_

17. Does pre-election testing include reboot/restart functionality testing?  
\_\_Y \_\_N \_\_? Reboot/restart tested? Describe: \_\_\_\_\_  
\_\_Y \_\_N \_\_? Were the number of votes for each candidate compared before and after reboot?

Other comments: \_\_\_\_\_

18. Please record any firmware/BIOS information that appears on the screen (or is printed) during boot-up of voting systems. \_\_\_\_\_

19. Does pre-election testing include testing for unexplained touch screen flashing or otherwise inconsistent or potentially suspicious behavior? \_\_Y \_\_N \_\_? Describe: \_\_\_\_\_

\_\_\_\_\_

20. In addition to the specific pre-election testing questions listed on this questionnaire, what other tests are performed during the pre-election stage? *[If using hard-copy, please use a separate sheet as needed.]*

21. Is the final step of the pre-election test to clear the voting machinery, setting all vote totals to zero, and emptying the physical or electronic ballot boxes, and then sealing the systems prior to their official use for the election? \_\_Y \_\_N \_\_?

\_\_Y \_\_N \_\_? If the machine is sealed at the end of the test, are the seals numbered?

\_\_Y \_\_N \_\_? Are the numbers recorded when the machine is sealed?

\_\_Y \_\_N \_\_? Is final step of testing to clear machinery? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Were all physical ballot boxes emptied?

\_\_Y \_\_N \_\_? Were the physical boxes sealed after emptying? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Were all electronic votes deleted, hard drives and memory cards cleared?

\_\_Y \_\_N \_\_? Were all electronic machines sealed after deletion? Describe: \_\_\_\_\_

## **PRE-ELECTION TESTING QUESTIONNAIRE**

Y N ? Were the seals numbered? *Describe:* \_\_\_\_\_

Y N ? Were the seal numbers recorded when the machines are sealed?

*Other comments:* \_\_\_\_\_

### **Optical Scan (Mark-Sense) Voting Technology** [*respond to this section only if optical scanners are used in your jurisdiction*]

1. Is pre-election testing for optical scan (mark-sense) voting systems performed using actual ballots as printed for use in the election? Y N ?

*Other comments:* \_\_\_\_\_

2. Even where markers are provided, some voters will use pencils, particularly if a marker goes dry in a voting booth, or when ballots are voted by mail. Are all scanning units tested for sensor calibration? If so, what is involved in the sensor calibration testing?

Y N ? Are scanning units tested for sensor calibration? *If yes, describe type of calibration:* \_\_\_\_\_

*Describe accepted vote detection threshold (Example: the vote detection threshold is roughly halfway between a blank spot on the ballot and a dark pencil mark):*

\_\_\_\_\_

3. Are optical scanners for precinct use tested to see if over-votes are automatically rejected?

Y N ? Is over-vote notification used (*ballot rejects from scanner if over-voted*)?

Y N ? Was notification tested? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

4. Some jurisdictions require notification of under-votes. Was this feature tested?

Y N ? Is under-vote notification used? Y N ? Was notification tested?

*Describe:* \_\_\_\_\_

5. In jurisdictions where changing of position or order of candidates is practiced (ballot rotation), are multiple ballot-positions tested to ensure the scanner is correctly reading/tabulating ballot choices regardless of order?

Y N ? Is ballot rotation used in this jurisdiction?

Y N ? Were multiple ballot positions tested? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

### **Electronic Voting Technology** [*respond to this section only if direct recording electronic (DRE) voting machines are used in your jurisdiction*]

1. Does pre-election testing include checking for complete list of candidate names, party affiliations, and ballot initiative or proposition options? In all languages?

Y N ? Was complete list of candidates tested?

Y N ? Did the test include party affiliation test?

Y N ? Was complete list of ballot initiatives/propositions tested?

Y N ? Is the ballot for election day in one language only? *If more than one, list languages:* \_\_\_\_\_

## PRE-ELECTION TESTING QUESTIONNAIRE

Y N ? Were all tests repeated in all languages? *Describe:* \_\_\_\_\_  
*Comments:* \_\_\_\_\_

2. Pre-election testing may include the use of an independent log noting each vote cast, to compare the system count and the selections made by the voter.

Y N ? Was an independent log of the test votes cast available?

Y N ? Was this log used to compare system (electronic) count and the selections originally made by the voter?

*Comments/Description:* \_\_\_\_\_

3. If using electronic voting machines that produce voter-verified paper records, does pre-election testing include the use of an independent log to compare the paper records produced with the system count and the selections made by the voter?

Y N ? Was an independent log of the test votes cast available? *Describe:* \_\_\_\_\_

Y N ? Was this log used to compare the voter-verified paper record with the log of votes cast? *Describe:* \_\_\_\_\_

Y N ? Was this log used to compare the electronic (system) votes with the log of votes cast? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

4. Does pre-election testing include display calibration for the entire screen of each machine?

Y N ? *Describe:* \_\_\_\_\_

5. Does pre-election testing include testing audio ballot functionality, including the full volume range of the audio device? Y N ? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

6. Does pre-election testing include testing of layout and legibility of any multiple display magnifications (large-font modes) supported by the voting technology, with at least one test ballot voted for each ballot style using each level of magnification?

Y N ? Large-font mode tested? *Describe:* \_\_\_\_\_

Y N ? Was more than one magnification option available on the machines?

Y N ? Was at least one ballot voted for each level of magnification?

Y N ? Was at least one ballot voted for each ballot style at each level of magnification?

*Other comments:* \_\_\_\_\_

### Summary Questions

1. Did the election officials conclude at the end that the testing was a success? Y N ?

*Other comments:* \_\_\_\_\_

2. Did you conclude at the end that the testing was a success? (*according to the test procedures and instructions*) Y N ? *Other comments:* \_\_\_\_\_

3. Do you think the required testing process was followed adequately? Y N ?

*Other comments:* \_\_\_\_\_

## PRE-ELECTION TESTING QUESTIONNAIRE

4. Do you think the testing procedures and instructions were adequate to test the voting systems?  
\_\_Y \_\_N \_\_? Other comments: \_\_\_\_\_

5. Please note which tests are performed on which voting machines or devices, including if testing applied to only a sample or to all voting systems used in your county.  
\_\_Y \_\_N \_\_? Are these tests run on all machines in the county? *If only on a sample, please note the percentage* \_\_\_\_ % . Comments: \_\_\_\_\_

6. *Your description of the event: please provide a narrative or step-by-step description of anything else that occurred during the testing, which was not covered by any of the questions asked in this survey. If you are using a hard copy of this questionnaire during the observation, please use a separate blank sheet to record your description.*

### Post-Test Questions

*If the opportunity arises, you can ask the questions in this section at the end of pre-election testing or sometime shortly afterwards by contacting the appropriate election official.*

1. How is election equipment secured after pre-election testing or other final testing until after final election counts? *(Please note whether tamper-proof seals are used, what gets sealed, whether logs are kept of all seals, etc. Take photographs of all the seals if possible.)*

\_\_Y \_\_N \_\_? Seals used? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Do seals have any plastic or metal? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Are seals of tape with no plastic or metal? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Other type of seal? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Are the seals individually labeled with unique serial numbers?

\_\_Y \_\_N \_\_? Is a log kept of all seal numbers? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? Do you have photographs of the seals?

\_\_Y \_\_N \_\_? Does a seal specifically seal the memory card drive opening?

\_\_Y \_\_N \_\_? Does a seal specifically cover one or more screws or other attachment devices used to secure the two halves of the machine's casing together?

Other comments: \_\_\_\_\_

2. Some voting machines can connect to a network (i.e. telephone line, the Internet, a local area network, wireless connection, etc.). If true, for what purpose/s, and does pre-election testing include tests of this functionality? If not, how are connectivity ports or devices secured/turned off? *(E.g.: Infra-red ports covered over with a seal? Internal modems removed/disabled?)*

\_\_Y \_\_N \_\_? Is system ever connected to phone line? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? If yes, was phone connect tested?

\_\_Y \_\_N \_\_? Connected to the Internet? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? *If yes, was Internet connection?*

\_\_Y \_\_N \_\_? Connected to local area network? Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? *If yes, was local area network connection tested?*

\_\_Y \_\_N \_\_? Connected to virtual private network? (connected to other sites but not by public Internet) Describe: \_\_\_\_\_

\_\_Y \_\_N \_\_? *If yes, was virtual private network connection tested?*

## ***PRE-ELECTION TESTING QUESTIONNAIRE***

Y N ? Connected by wireless (*infra-red, other*)? *Describe:* \_\_\_\_\_

Y N ? If yes, was wireless connection tested?

Y N ? Was any connectivity available but not used? \_\_\_\_\_

Y N ? Is any connectivity used, but not part of the test? *Describe:* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

3. If possible, obtain election day performance records (specific errors and malfunctions) from the election office, and forward them to us so that we may further help you follow up.

Y N ? Are election day performance records kept by the election officials?

*Describe:* \_\_\_\_\_

Y N ? Are these election day performance records available to the public? *Describe:*

*Describe:* \_\_\_\_\_

Y N ? Will they be available within two weeks of the election? *When:* \_\_\_\_\_

Y N ? Must the person requesting records be a local registered voter?

4. Some jurisdictions conduct post-testing of voting systems after voting is done, often using the same test-decks that were used in pre-election testing.

Y N ? Is post-election testing of voting equipment done in your jurisdiction? *Describe:*

Y N ? Are the same test decks (test ballots or scripts) used for this post-election testing?

*Describe:* \_\_\_\_\_

Y N ? Is the public permitted to observe this testing? *When?* \_\_\_\_\_

*Other comments:* \_\_\_\_\_

*The Verified Voting Foundation thanks you for your participation in this Pre-Election Testing Observation project, part of the Election Transparency Project.*