The Board of Elections in the City of New York
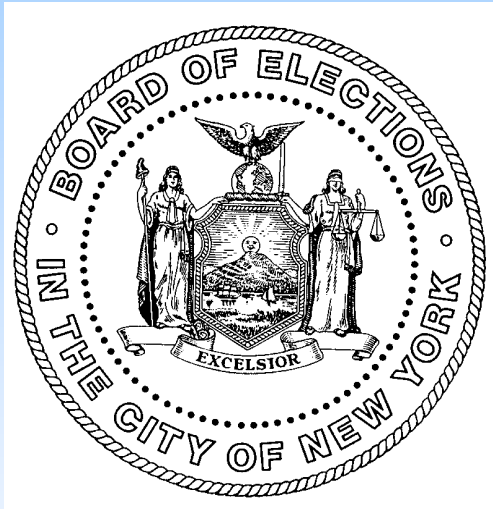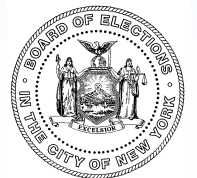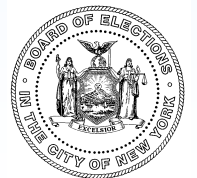

Test Deck Overview

Presentation Overview

- Scanner/Poll Site Setup

- General Election and Amended Test Deck Procedures

- Further Test Deck Reductions

- Q&A

Assumed scanner setup for a poll site allocates 1 scanner to 1 Election District (ED)…

- This reduces the overall number of unique ballot styles and comprehensive test decks needed for Pre-Qualification Testing

- Only 1 ballot style needs to be tested on each scanner

- Lines can form at the poll site because voters can only use 1 scanner for each ED and/or if a scanner breaks down there is no back-up until a replacement arrives

| ED 1 | ED 2 | ED 3 | ED 4 |
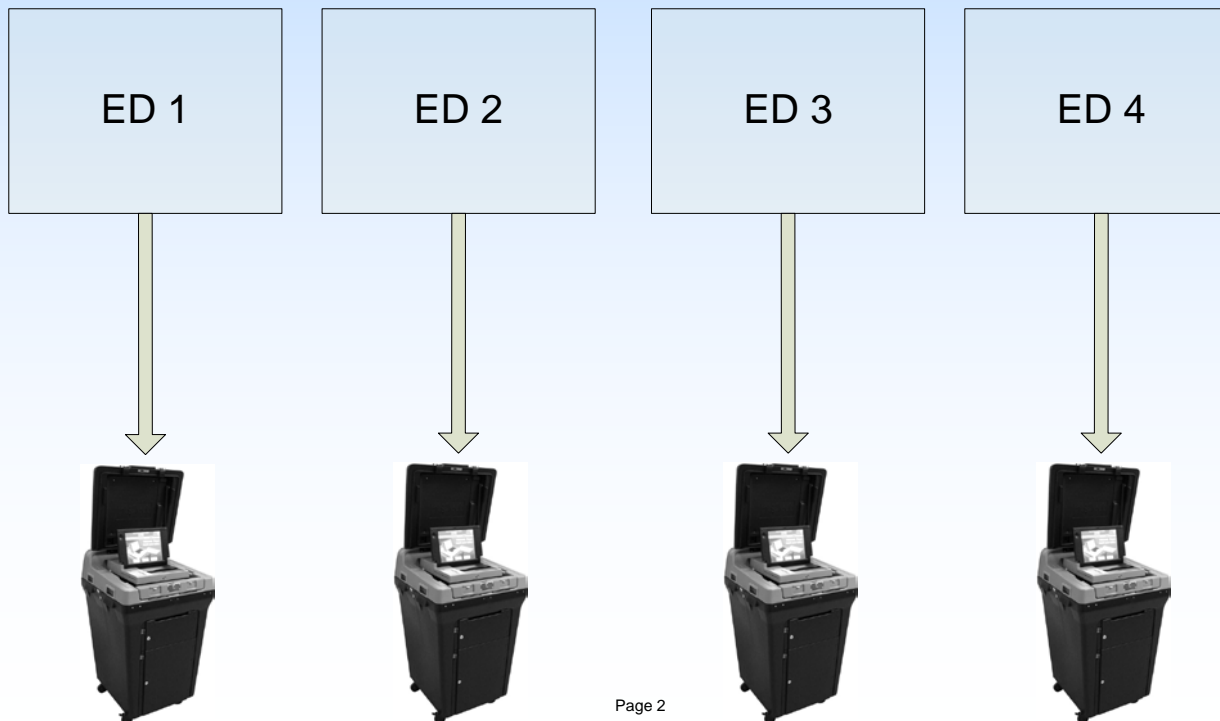
In New York City, scanners are setup so voters can cast their ballot on any scanner in a poll site…

- This helps to improve the voter experience by reducing lines in the poll site and reducing the effect of a broken-down scanner

- Pre-Qualification testing workload is increased because each ED in a poll site requires a unique ballot, increasing the number of ballot styles to be tested on each scanner

| ED 1 | ED 2 | ED 3 | ED 4 |
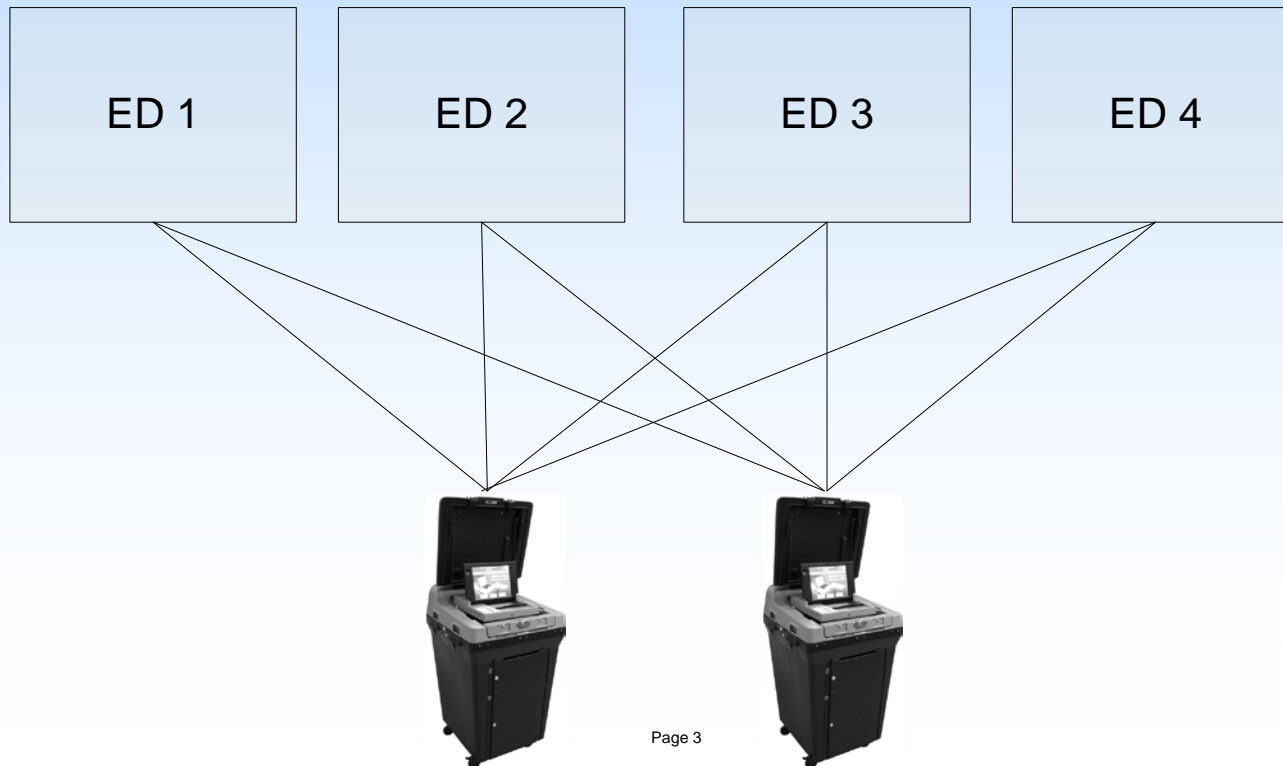
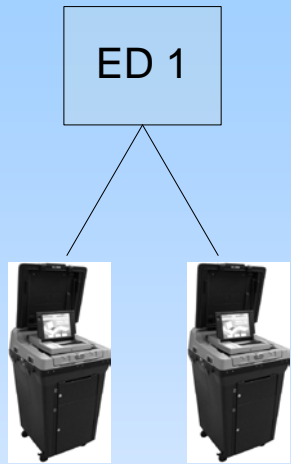# NYC Poll Site and Scanner Setup Examples

ED 1

Figure 1

- Every poll site contains at least 2 scanners, regardless of the number of Election Districts or registered voters

- An additional scanner is added for every additional 1,400 registered voters in a poll site

- **Figure 1:** Poll site containing 1 ED and 2 scanners
  - ☐ 2 scanners are tested with 1 ballot style (2 test deck runs)

- **Figure 2:** Poll Site Containing 10 EDs and 5 Scanners
  - ☐ 5 scanners are tested with 10 ballot styles (50 test deck runs)

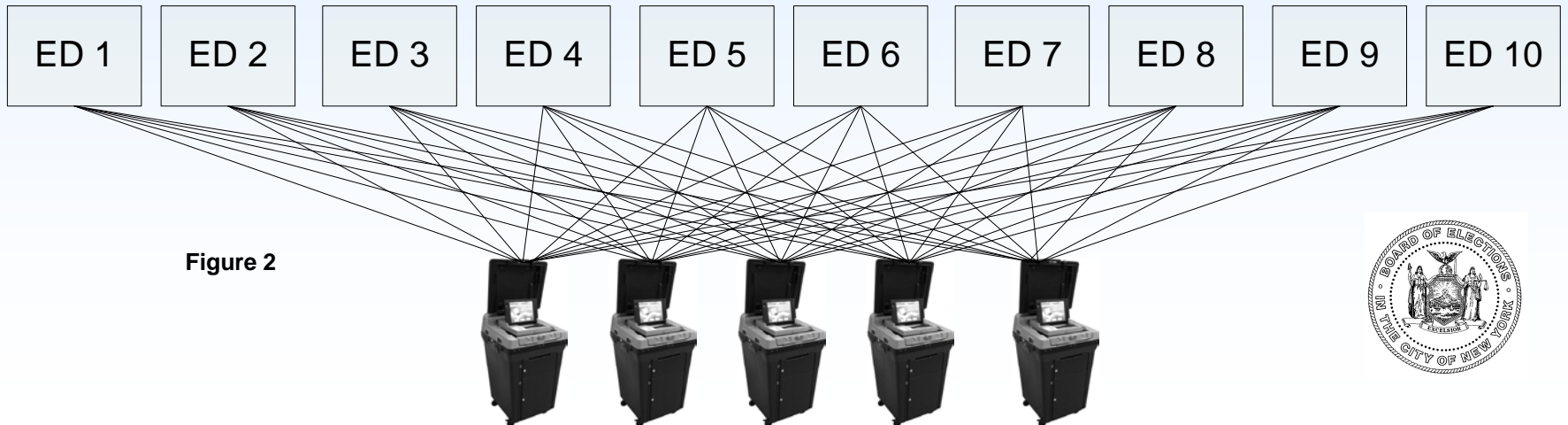| ED 1 | ED 2 | ED 3 | ED 4 | ED 5 | ED 6 | ED 7 | ED 8 | ED 9 | ED 10 |

Figure 2

For the 2010 General Election, New York City Tested…

➢ **1,979** Ballot Styles

➢ On **3,921** Scanners and **1,441** BMDs

➢ For **6,105** Election Districts

➢ In **1,363** Poll Sites

…between the initial ballot deliveries on October 14, 2010 and the General Election on November 2, 2010

It was impossible to construct and scan the original SBOE Comprehensive Test Deck in the timeframe allowed for the 2010 General Election

## Original SBOE General Election Comprehensive Test Deck Requirements

1. **Optical Scanner Election Verification Deck** - Every Candidate and Write-In receives one vote

2. **Optical Scanner Pattern Vote Deck** - Candidates receive votes in a sequential and/or ascending pattern

3. **Optical Scanner Over-Vote Deck** - Contests are over-voted one ballot at a time

4. **Optical Scanner Under-Vote Deck** - Contests are under-voted one ballot at a time

5. **Optical Scanner Cross Endorsement Deck –** Candidates appearing in more than one column are voted

6. **Optical Scanner Random Vote Deck** – Votes are randomly cast on a specified number of ballots

7. **BMD Election Verification Deck** - Every Candidate and Write-In receives one vote

8. **BMD Over-Vote Deck** - Contests are over-voted one ballot at a time

9. **BMD Under-Vote Deck** - Contests are under-voted one ballot at a time

10. **BMD Cross Endorsement Deck –** Candidates appearing in more than one column are voted

11. **BMD Random Vote Deck** - Votes are randomly cast on a specified number of ballots

* All sub-decks are constructed by hand or with the BMD
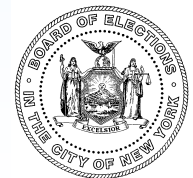
The NYCBOE proposed revisions to the SBOE Comprehensive Test Deck to reduce its size while still maintaining confidence that every scanner was programmed and setup correctly

1. **Optical Scanner Election Verification Deck** – Must be hand marked

2. **Optical Scanner Pattern Vote Deck** – May be pre-marked

REMOVED – Optical Scanner Over-Vote Deck – Verified with BMD Print Validation

REMOVED – Optical Scanner Under-Vote Deck – Verified with blank ballot

3. **Optical Scanner Cross Endorsement Deck –** May be pre-marked

4. **Optical Scanner Random Vote Deck** – Must be hand marked

REMOVED – BMD Election Verification Deck – Verified by OS EV Deck

REMOVED – BMD Over-Vote Deck – Verified with BMD Print Validation

REMOVED – BMD Under-Vote Deck – Verified with blank ballot

REMOVED – BMD Cross Endorsement Deck – Verified with OS CE Deck

5. **BMD Random Vote Deck** – Verifies candidate and write-in spaces

6. **One Blank Ballot –** Verifies under-votes

7. **One BMD Print Validation Ballot –** Verifies over-votes
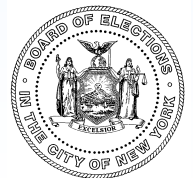
After discussions with the SBOE, both parties adopted the *Amended Comprehensive and Standard Test Deck Process**

1. **Optical Scanner Election Verification Deck** – Must be hand marked

2. **Optical Scanner Pattern Vote Deck** – May be pre-marked

3. **Optical Scanner Cross Endorsement Deck –** May be pre-marked

4. **Optical Scanner Random Vote Deck** – Must be hand marked

5. **BMD Random Vote Deck** – Verifies candidate and write-in spaces

6. **One Blank Ballot –** Verifies under-votes

7. **One BMD Print Validation Ballot –** Verifies over-votes

## The Average Amended Comprehensive Test Deck Size was still 120 ballots!

➢ Over 180,000 ballots were pre-printed for the Pattern Vote and Cross Endorsement sub-decks for an average of **91 pre-printed ballots per style**

➢ The manually created sub-decks **averaged 30 ballots per style**

* "*Amended Comprehensive and Standard Test Deck Process*" v1.1, 10/8/10

Organization, tracking, and control of 1,979 Comprehensive Tests Decks required extensive planning and management…

- Voting Machine Facilities are organized into geographic 'zones' to aid with testing and shipping

- A "Test Deck Library" was constructed to securely house all test decks, record check-in/outs, and record usage
  - Test deck ballots were packaged by the vendor according to style number to expedite testing. Election Day ballots were packaged by poll site to expedite setup

- Teams were assembled to fill in manual portions of test decks while pre-marked decks were in printing

- Required documentation was placed on scanners and BMDs

- All BMDs were setup and tested before scanners to complete necessary BMD portions of the test deck

- Testing progress was accurately monitored by referencing Test Deck Library documentation with Scanner/BMD Testing documentation
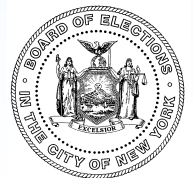
To accomplish the task of running the required test decks in accordance with SBOE Pre-Qualification Testing procedures, the NYCBOE utilized the following resources…

- 76 vendor (ES&S) support staff to assist with overall management of testing process, creation and management of test decks, maintenance/repairs and testing of BMDs/Scanners

- 158 temporary workers to assist with creation and management of test decks, and testing of BMDs/Scanners

- 70 BOE warehouse staff and 66 BOE office staff involved in all aspects of testing

Suggested changes for discussion…

1. **Remove the Optical Scanner Election Verification Deck** – Candidates spaces are verified using the Pattern Vote Deck, test Write-In spaces with 1 ballot

2. **Optical Scanner Pattern Vote Deck** – Explore options for reducing the overall size of the pattern vote while still maintaining confidence in election integrity

3. **Remove or Reduce the Optical Scanner Random Vote Deck** – Candidates spaces are verified using the Pattern Vote Deck; randomness increases probability of error in verifying testing results

4. **Remove or Reduce the BMD Random Vote Deck** – Candidates spaces are verified using the Pattern Vote Deck; randomness increases probability of error in verifying testing results

5. **In addition to changes to the Comprehensive Test Deck, NYC would like to explore options to streamline Pre-Qualification Testing**
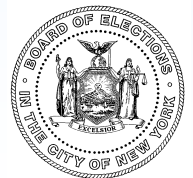
We thank you for your time and, as always, we are happy to answer any questions you may have.