



# New Yorkers for Verified Voting

## Survey Data on the Number of Voters per DRE in Other State Jurisdictions

By Marge Acosta  
NYVV Long Island Representative

The New York State Board of Elections is currently considering the question of the maximum number of registered voters who can be served by each type of voting system. It is essential to correctly determine this number in order to ensure that long lines do not form at the polls at peak voting times. At a meeting on March 27, 2007, New York State Election Commissioners adopted a proposal for public comment suggesting that a single DRE can adequately accommodate 550 registered voters. But data from other states and simulations using queuing theory (the mathematics of waiting lines), have shown that 550 voters per DRE is too large by at least a factor of 2.5!

Jurisdictions in DRE states report problems with long lines, even those using far fewer voters per DRE than the New York State proposal. In order to get some guidance from the practices of other states already using DREs, I contacted election officials in six jurisdictions – Lincoln, Tennessee; Cheyenne, Colorado; Carson City, Nevada; Esmeralda, Nevada; Clark, Nevada; and Palm Beach, Florida – to determine what ratios of registered voters to DREs they use, the length of time spent waiting in lines at the polls, and other relevant data.

The table below gives a simple outline of the key results. The full set of data is presented on the following pages. Of immediate note is that voter to DRE ratios used in other states are significantly smaller than the 550 voters per DRE number proposed by the Board of Elections. Lacking any compelling evidence that New York's DREs will be over twice as fast as any other state, one must conclude that the Board's proposal is far too high and will result in long waiting times and disenfranchised voters.

Since all of the surveyed counties have Early Voting, the actual numbers of voters per DRE are even lower on Election Day than the reported averages. It is significant that 4 of 6 counties use DREs with a VVPAT (which takes additional time for the voter to review), and have on average 175 registered voters per DRE. Of the counties using DREs without VVPAT, Lincoln Tennessee reports on average 328 registered voters per DRE, and Palm Beach Florida reports only 175–375 voters less than the New York State Board of Elections proposal!

These findings strongly suggest that allowing 550 registered voters to vote on a single DRE will bring havoc to New York State's elections, causing long lines and unprecedented voter disenfranchisement.

County and State	Registered Voters	Vendor and DRE	VVPAT	Average Number of Registered Voters per DRE
Lincoln, TN	18,000	ES&S iVotronic	No	328
Cheyenne, CO	1277	Hart eSlate	Yes	213
Carson City, NV	25,000	Sequoia AVC Edge	Yes	184
Clark, NV	803,808	Sequoia Edge II	Yes	179
Esmeralda, NV	667	Sequoia Edge	Yes	74
Palm Beach, FL	779,748	Sequoia Edge	No	175

**Survey Data On Number of Voters Per DRE  
In Other State Jurisdictions**

County	Vendor and DRE Model	Registered Voters	Precincts	Poll Sites	No. of DREs	VVPAT	Early Voting Period Length	Number of Early Voters	Absentee Ballot Excuse Type	No. of Absentee Ballots	Hours In Election Day	Average No. of Registered Voters per DRE	App. No. of Registered Election Day	Waiting Times in Lines
Lincoln, TN	ES&S iVotronic	18,000	20	N/A	55	No	2 weeks	N/A	Excuse	N/A	10	<b>328</b>	N/A	Up to 30 minutes
Cheyenne, CO	Hart eSlate	1277	5	2	6 <i>(1 for Early Voting)</i>	Yes	7-10 days	178	No Excuse	308	12	<b>213</b>	84	Up to 60 minutes
Carson City, NV	Sequoia AVC Edge	25,000	26	2	136	Yes	12 days	App. 50% of voters	No Excuse	2500 (in 2004)	12	<b>184</b>	App. 100	No Waiting
Esmeralda, NV	Sequoia Edge	667	5	3	9	Yes	12 days	N/A	No Excuse	N/A	12	<b>74</b>	App. 67	Small lines
Clark, NV	Sequoia Edge II	803,808	1090	336	App. 4500	Yes	14 days	App. 50% of voters	No Excuse	N/A	12	<b>179</b>	App. 100	5 minute wait maximum
Palm Beach, FL	Sequoia Edge	779,748	767	N/A	4463	No	15 days	60 to 70,000	No Excuse	60 to 70,000	12	<b>175</b>	App. 100	Lines during peak hours in 2004

**Survey Data On Number of Voters Per DRE  
In Other State Jurisdictions**

County	Comments	Contact Name	Contact Phone	Contact Date		
Lincoln, TN	Always have at least 2 DREs at each site in case one fails	Sheila Allen, Commissioner	931-433-6220	4/23/07		
Cheyenne, CO	Approximate Usage Times cited are: 5 minutes for general voters 40 minutes for disabled voters	Kay Feyh, Co Clerk	719-767-5685	4/23/07		
Carson City, NV	Takes a minimum of 4 minutes to vote. Usage Time for disabled voter app. 30 minutes.	Alan Glover, County Clerk	775-887-2087	4/23/07		
Esmeralda, NV	7 DREs are used at 3 polling sites. 2 DREs are used for Early Voting.	Lacinda Elgan, County Clerk	775-485-6367	4/26/07		
Clark, NV	Approximate Usage Times cited are: 5 to 20 minutes for general voters 30 to 40 minutes for disabled voters	Steve Pak, Registrar's Asst	702-455-2846	4/24/07		
Palm Beach, FL	Usage Time for disabled voters 15 to 30 Minutes. Not all DREs were accessible, none had Sip&Puff	Tony Enos, Manager	561-656-6227	4/24/07		

**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Lincoln, TN**

<b>Lincoln, TN</b>	
<b>County</b>	Lincoln, TN
<b>Vendor and DRE Model</b>	ES&S iVotronic
<b>Registered Voters</b>	18,000
<b>Precincts</b>	20
<b>Poll Sites</b>	N/A
<b>No. of DREs</b>	55
<b>VVPAT</b>	No
<b>Early Voting Period Length</b>	2 weeks
<b>Number of Early Voters</b>	N/A
<b>Absentee Ballot Excuse Type</b>	Excuse
<b>No. of Absentee Ballots</b>	N/A
<b>Hours In Election Day</b>	10
<b>Average No. of Registered Voters per DRE</b>	328
<b>App. No. of Voters per DRE on Election Day</b>	N/A
<b>Waiting Times in Lines</b>	Up to 30 minutes
<b>Comments</b>	Always have at least 2 DREs at each site in case one fails
<b>Contact Phone</b>	Sheila Allen, Commissioner
<b>Contact Name</b>	931-433-6220
<b>Contact Date</b>	4/23/07

**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Cheyenne, CO**

<b>Cheyenne, CO</b>	
<b>County</b>	Cheyenne, CO
<b>Vendor and DRE Model</b>	Hart eSlate
<b>Registered Voters</b>	1277
<b>Precincts</b>	5
<b>Poll Sites</b>	2
<b>No. of DREs</b>	6 (1 for Early Voting)
<b>VVPAT</b>	Yes
<b>Early Voting Period Length</b>	7-10 days
<b>Number of Early Voters</b>	178
<b>Absentee Ballot Excuse Type</b>	No Excuse
<b>No. of Absentee Ballots</b>	308
<b>Hours In Election Day</b>	12
<b>Average No. of Registered Voters per DRE</b>	213
<b>App. No. of Voters per DRE on Election Day</b>	84
<b>Waiting Times in Lines</b>	Up to 60 minutes
<b>Comments</b>	Approximate Usage Times cited are: 5 minutes for general voters 40 minutes for disabled voters
<b>Contact Phone</b>	Kay Feyh, Co Clerk
<b>Contact Name</b>	719-767-5685
<b>Contact Date</b>	4/23/07

**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Carson City, NV**

<b>Carson City, NV</b>	
<b>County</b>	Carson City, NV
<b>Vendor and DRE Model</b>	Sequoia AVC Edge
<b>Registered Voters</b>	25,000
<b>Precincts</b>	26
<b>Poll Sites</b>	2
<b>No. of DREs</b>	136
<b>VVPAT</b>	Yes
<b>Early Voting Period Length</b>	12 days
<b>Number of Early Voters</b>	App. 50% of voters
<b>Absentee Ballot Excuse Type</b>	No Excuse
<b>No. of Absentee Ballots</b>	2500 (in 2004)
<b>Hours In Election Day</b>	12
<b>Average No. of Registered Voters per DRE</b>	184
<b>App. No. of Voters per DRE on Election Day</b>	App. 100
<b>Waiting Times in Lines</b>	No Waiting
<b>Comments</b>	Takes a minimum of 4 minutes to vote. Usage Time for disabled voter app. 30 minutes.
<b>Contact Phone</b>	Alan Glover, County Clerk
<b>Contact Name</b>	775-887-2087
<b>Contact Date</b>	4/23/07

**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Esmeralda, NV**

<b>Esmeralda, NV</b>	
<b>County</b>	Esmeralda, NV
<b>Vendor and DRE Model</b>	Sequoia Edge
<b>Registered Voters</b>	667
<b>Precincts</b>	5
<b>Poll Sites</b>	3
<b>No. of DREs</b>	9
<b>VVPAT</b>	Yes
<b>Early Voting Period Length</b>	12 days
<b>Number of Early Voters</b>	N/A
<b>Absentee Ballot Excuse Type</b>	No Excuse
<b>No. of Absentee Ballots</b>	N/A
<b>Hours In Election Day</b>	12
<b>Average No. of Registered Voters per DRE</b>	74
<b>App. No. of Voters per DRE on Election Day</b>	App. 67
<b>Waiting Times in Lines</b>	Small lines
<b>Comments</b>	7 DREs are used at 3 polling sites. 2 DREs are used for Early Voting.
<b>Contact Phone</b>	Lacinda Elgan, County Clerk
<b>Contact Name</b>	775-485-6367
<b>Contact Date</b>	4/26/07

**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Clark, NV**

<b>Clark NV</b>	
<b>County</b>	Clark, NV
<b>Vendor and DRE Model</b>	Sequoia Edge II
<b>Registered Voters</b>	803,808
<b>Precincts</b>	1090
<b>Poll Sites</b>	336
<b>No. of DREs</b>	App. 4500
<b>VVPAT</b>	Yes
<b>Early Voting Period Length</b>	14 days
<b>Number of Early Voters</b>	App. 50% of voters
<b>Absentee Ballot Excuse Type</b>	No Excuse
<b>No. of Absentee Ballots</b>	N/A
<b>Hours In Election Day</b>	12
<b>Average No. of Registered Voters per DRE</b>	179
<b>App. No. of Voters per DRE on Election Day</b>	App. 100
<b>Waiting Times in Lines</b>	5 minute wait maximum
<b>Comments</b>	Approximate Usage Times cited are: 5 to 20 minutes for general voters 30 to 40 minutes for disabled voters
<b>Contact Phone</b>	Steve Pak, Registrar's Asst
<b>Contact Name</b>	702-455-2846
<b>Contact Date</b>	4/24/07



**Survey Data On Number  
of Voters Per DRE  
In Other State Jurisdictions -  
Palm Beach, FL**

<b>Palm Beach FL</b>	
<b>County</b>	Palm Beach, FL
<b>Vendor and DRE Model</b>	Sequoia Edge
<b>Registered Voters</b>	779748
<b>Precincts</b>	767
<b>Poll Sites</b>	N/A
<b>No. of DREs</b>	4463
<b>VVPAT</b>	No
<b>Early Voting Period Length</b>	15 days
<b>Number of Early Voters</b>	60 to 70,000
<b>Absentee Ballot Excuse Type</b>	No Excuse
<b>No. of Absentee Ballots</b>	60 to 70,000
<b>Hours In Election Day</b>	12
<b>Average No. of Registered Voters per DRE</b>	175
<b>App. No. of Voters per DRE on Election</b>	App.100
<b>Waiting Times in Lines</b>	Lines during peak hours in 2004
<b>Comments</b>	Usage Time for disabled voters 15 to 30 Minutes. Not all DREs were accessible, none had Sip&Puff
<b>Contact Phone</b>	Tony Enos, Manager
<b>Contact Name</b>	561-656-6227
<b>Contact Date</b>	4/24/07