

# **The Board of Elections in the City of New York**

## **Plan B – BMD Implementation Fall 2008 Cost Analysis Report**

**Presented to Commissioners:**

February 6, 2008

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## 1.0 Introduction

On January 29, 2008 the Board of Elections Commissioners approved the Ballot Marking Devices (BMD) Evaluation Plan for the review and evaluation of BMDs proposed by voting system vendors for the Fall 2008 elections in accordance with the State Board of Elections regulations and the State Office of General Services (OGS) contract and Request for Proposal (RFP). At that same meeting, Commissioners also requested a separate Cost Analysis Report (prepared by Gartner) of the same vendor offerings.

## 2.0 Cost Analysis Schedule

In an email from the State Board of Elections (SBOE) to the County Commissioners on Monday, January 28, 2008, the SBOE provided each county with the negotiated prices of each vendor's proposed products and services.

## 3.0 Systems Costed

Gartner analyzed the costs of the same three vendor offerings as the BOE Evaluation Team reviewed in accordance with BOE Executive Management Direction. The three vendor offerings analyzed were:

- a) ES&S – AutoMark BMD
- b) Premier – AutoMark BMD
- c) Sequoia - ImageCast BMD

## 4.0 Cost Analysis Methodology and Assumptions

### 4.1 Methodology

Gartner received the SBOE order instructions and vendor prices on Tuesday, January 28, 2008 and used those unit prices as the basis for its analysis. Since vendors provided no recommended quantities of either systems or services, Gartner used the service quantities established by the BOE in NYC staff in the Request for Information (RFI) issued to the vendors. The system quantities (how many BMDs will be ordered) was pegged at 1,798 by BOE in NYC staff. This was based upon the following criteria:

- A BMD for each used pollsite -1,353 BMDs
- An additional BMD for every pollsite where the registered voters exceed 5,000 or where there were more than 10 Election Districts in the pollsite – 83 BMDs
- An additional 20% spares – 287 BMDs
- Additional BMDs to be dedicated to training and demonstrations – 75 BMDs

Criteria	One BMD per Pollsite	Criteria Based Additional BMD	Spares @ 20%	Training Machines	Grand Total
10 ED/5,000 Voters	1,353	83	287	75	1,798

The number of BMDs then drove many of the other quantities of the analysis, such as the numbers of ballots and other consumables.

## 4.2 Assumptions

The following are the key assumptions made when conducting the cost analysis. These assumptions enable an “apples to apples” comparison of all the BMD products and services across all cost categories.

1. **Cost Period** – Only costs anticipated to conduct the Fall 2008 elections have been analyzed. Since it is not certain that the BMD selected will be part of the long-term (Plan A) solution for BOE in NYC, on-going cost of ownership issues were not investigated. Thus this analysis covers one-time acquisition and implementation costs and the cost of conducting two (2) elections; the Fall 2008 Primary and General Elections.
2. **Maintenance Costs** – Annual maintenance costs are not included for 2008 because it is anticipated that BOE staff will conduct maintenance activities in accordance with vendor specifications.
3. **Shipping Costs and Taxes** – Some vendors provided shipping costs and taxes and others did not. To keep an “apples to apples” comparison, no shipping costs or taxes are included in this analysis.
4. **Daily Vs. Hourly Rates** – Daily rates were converted to hourly rates (at the ratio of one day equals 8 hours) in order to calculate all rates across all vendors offerings.
5. **Central Server Costs** – Though vendors offered central server hardware, BOE in NYC purchased central servers which are dedicated to current Avante BMDs and which could be used for the new BMDs. Therefore no central server hardware costs were included in this analysis.
6. **Project Manager Hours** – It was assumed that there would be one (1) full time BMD vendor project manager dedicated to BOE in NYC for the remaining 10 months of 2008.
7. **Post Election Support Costs** – Post election support costs (such as vendor support for canvass/recanvass of the vote, were not factored into this cost analysis.
8. **BMD EMS Costs Vs. Voting System EMS Licensing Costs** – For AutoMark solutions both the AIMS EMS and the vendor’s standard EMS is required. Further, if an EMS license is priced by the number of workstations used (Sequoia), then the license cost for that solution must be based upon five (5) workstation (one for each borough).
9. **Training Costs** – It was assumed that EMS training and VMT training will only be conducted one-time, while poll worker training will occur twice (once for each of two elections).
10. **Paper Ballot Costs** – We used \$1 per printed paper ballot as the cost of ballots for AutoMark Solutions based on prices submitted by the vendors. It was also assumed that each poll site will be supplied with 100 BMD printed ballot per ED.
11. **Missing Cost Components** – If a vendor did not propose prices for an item that needed to be included in this cost analysis then either the price for that vendor was estimated based on the average of the other vendor’s prices or the price was obtained from prices previous given by that vendor in previous submissions. This occurred in only minor price elements such as the price of “sip and puff” straws, privacy screens and rocker paddles.

## 5.0 Cost Constraints

- 1) **Limited Review Time** - The time for review and analysis of the OGS Costs was very short, namely only four (4) days which occurred the week prior to the Presidential Primary in which Gartner was assisting in preparations for the use of BMDs at Super pollsites.

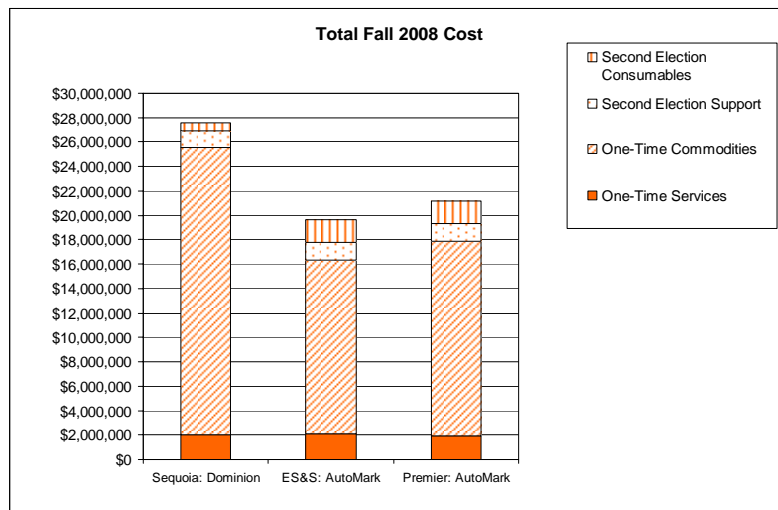
## 6.0 Cost Analysis Results

### 6.1 Overall Fall 2008 Election BMD Vendor Costs

#### 6.1.1 Cost Estimate

The following table and chart show the overall estimate of fall 2008 BMD vendor costs for implementing each of the three BMD products under consideration. This includes all the services (e.g., training and Election Day support) and commodities (e.g., equipment and consumables) that have been proposed by the vendors.

Total First Year Cost	Sequoia: Dominion	ES&S: AutoMark	Premier: AutoMark
One-Time Services	\$2,032,100	\$2,068,425	\$1,929,315
One-Time Commodities	\$23,553,709	\$14,275,294	\$15,916,464
Second Election Support	\$1,375,400	\$1,485,900	\$1,446,330
Second Election Consumables	\$575,285	\$1,831,337	\$1,885,823
<b>Total</b>	<b>\$27,536,494</b>	<b>\$19,660,957</b>	<b>\$21,177,932</b>



#### 6.1.2 Cost Observations

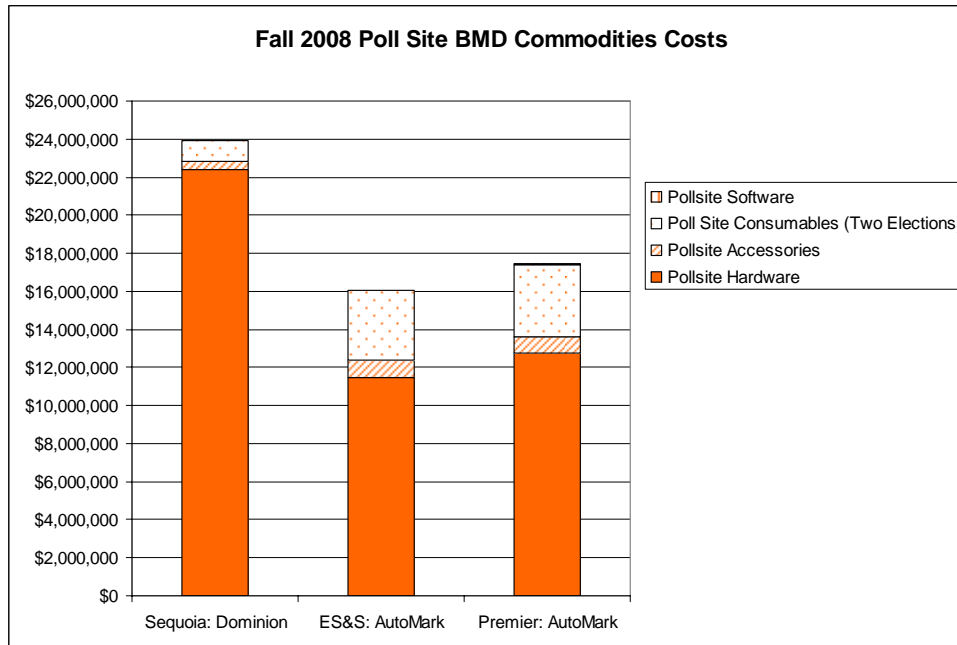
- Overall Observation** – The Fall 2008 BMD vendor costs were about \$7 million more for the Sequoia ImageCast offering than for the Premier and ES&S AutoMark offerings (which were similarly priced).
- Highest Cost** – Sequoia’s cost was driven higher by the cost of its BMD device in relation to that of the other two vendors. Sequoia has proposed a cost of \$11,500 per unit as opposed to Premier at \$6,280 per unit and ES&S at \$5,955 per unit. One-time and Election Day service costs are relatively consistent across all three vendors since standard numbers of hours were applied. Sequoia labor rates were lower than those of Premier or ES&S (who were again, similar).
- Lowest Cost** – ES&S is the lowest cost vendor mainly due to the lower cost of its BMD.

## 6.2 Poll Site Equipment & Other Commodity Costs

### 6.2.1 Cost Estimate

The following table and chart show the estimate of poll site equipment and other commodities costs needed for the Fall 2008 elections. These are the costs of the BMD equipment (hardware and software), accessories (sip & puff, etc.) and consumables (paper, ink, etc.) to be deployed at New York City poll sites during the 2008 Fall Primary and General Elections.

Fall 2008 Poll Site Commodities Costs	Sequoia: Dominion	ES&S: AutoMark	Premier: AutoMark
Pollsite Hardware	\$22,371,856	\$11,491,847	\$12,746,091
Pollsite Accessories	\$431,568	\$891,278	\$891,098
Poll Site Consumables (Two Elections)	\$1,150,570	\$3,662,675	\$3,771,646
Pollsite Software	\$0	\$0	\$62,937
<b>Total</b>	<b>\$23,953,994</b>	<b>\$16,045,799</b>	<b>\$17,408,835</b>



### 6.2.2 Cost Observations

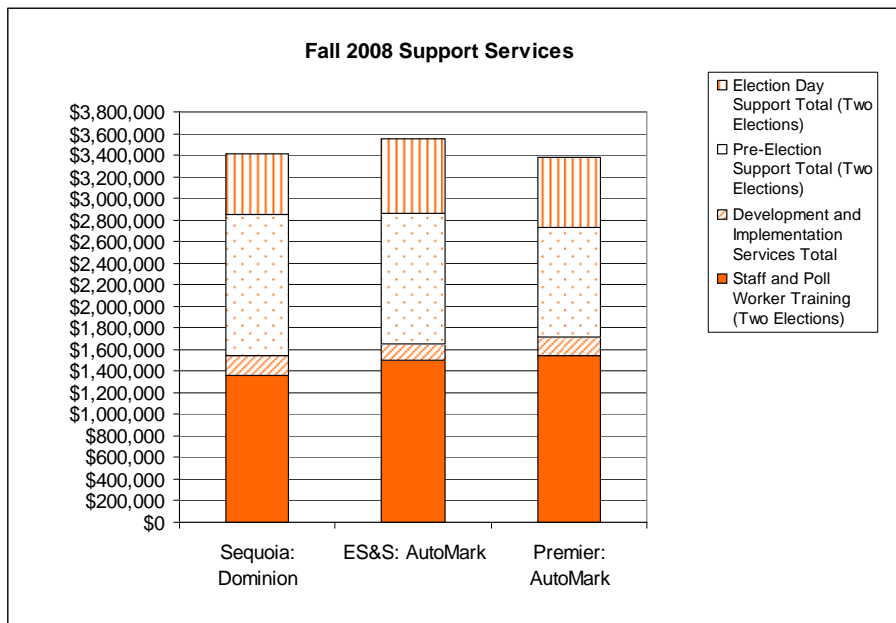
- High Cost Factor** – The poll site equipment & other commodity costs are driven primarily by the unit cost of the BMDs. Sequoia has the highest overall costs due to the cost of its BMD in relation to the other vendors. Sequoia has proposed a cost of \$11,500 per unit as opposed to ES&S at 5,955 per unit and Premier at \$ 6,280 per unit.
- Low Cost Factor** – While Sequoia had high equipment costs, its paper costs were lower since its BMD prints on plane paper while the AutoMark requires pre-printed ballots.

## 6.3 Support Services Costs

### 6.3.1 Cost Estimate

The following table and chart show the estimate of Fall 2008 total support service costs. These are the costs of training, development and implementation, Pre-Election and Election Day services to be provided by each vendor.

Fall 2008 Total Support Services	Sequoia: Dominion	ES&S: AutoMark	Premier: AutoMark
Staff and Poll Worker Training (Two Elections)	\$1,358,400	\$1,495,800	\$1,539,480
Development and Implementation Services Total	\$187,200	\$158,400	\$172,480
Pre-Election Support Total (Two Elections)	\$1,307,100	\$1,204,425	\$1,014,365
Election Day Support Total (Two Elections)	\$554,800	\$695,700	\$649,320
<b>Total</b>	<b>\$3,407,500</b>	<b>\$3,554,325</b>	<b>\$3,375,645</b>



### 6.3.2 Cost Observations

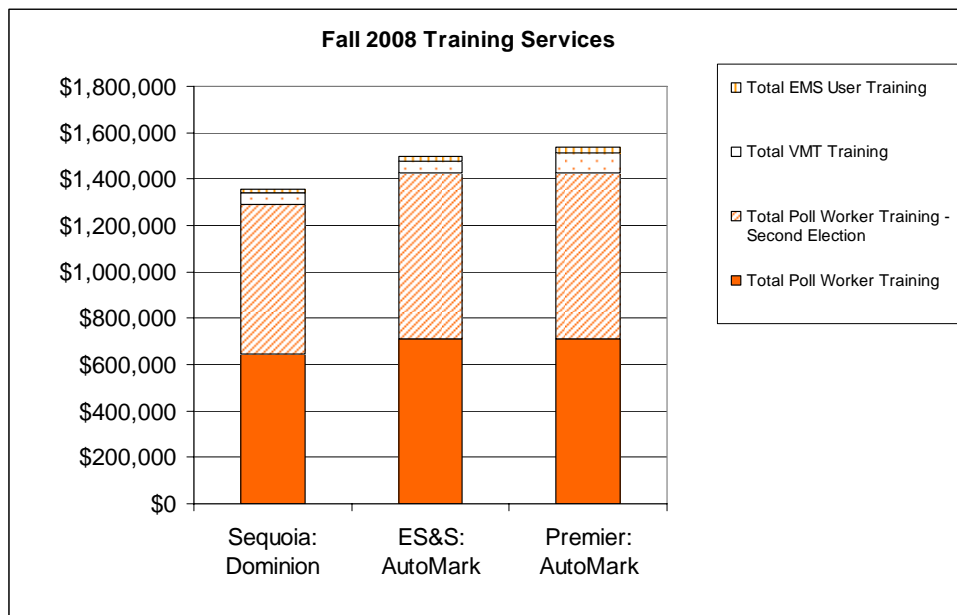
- Overall Observations** – The estimate of support services is relatively consistent across all across all vendors. Differences are mainly due to the slight rate differences between the vendor offerings.
- Highest Cost** – ES&S is has the highest overall support costs because they have proposed a uniform \$ 1,800 per day rate across all types of support services including training, whereas the other two vendors have tailored their rates according to the service provided. This has resulted in a higher average rate for ES&S when compared to the other vendors.
- Lowest Cost** – Premier is the lowest cost support services vendor only by a slight margin (\$31,855) when compared to ES&S.

## 6.4 Fall 2008 Training Costs

### 6.4.1 Cost Estimate

The following table and chart show the estimate of Fall 2008 training costs. These are the costs of training poll workers, Voting Machine Technicians (VMTs) and EMS end users on the technical skills and processes necessary to implement and operate the BMDs during the Fall 2008 implementation.

Fall 2008 Training Services Costs	Sequoia: Dominion	ES&S: AutoMark	Premier: AutoMark
Total Poll Worker Training	\$644,400	\$712,800	\$712,800
Total Poll Worker Training - Second Election	\$644,400	\$712,800	\$712,800
Total VMT Training	\$50,800	\$53,100	\$86,140
Total EMS User Training	\$18,800	\$17,100	\$27,740
<b>Total</b>	<b>\$1,358,400</b>	<b>\$1,495,800</b>	<b>\$1,539,480</b>



### 6.4.2 Cost Observations

- Overall Observations** – The estimate of training services is relatively consistent across all vendors. Differences are mainly due to slight rate differences among the vendors.
- Highest Cost** – Premier has the highest training costs which are only slightly above that of the other two vendors because of the higher rate Premier charges for EMS user and VMT training.
- Lowest Cost** – Sequoia has the lowest training costs which are estimated to be \$137,400 less than ES&S and \$181,080 less than Premier.