

Analysis of the Cost of Procuring and Implementing an Optical Scan Voting System in Maryland

Background: Chapter 428, Laws of 2009 requires a voting system that provides a voter-verifiable paper record of each vote cast, beginning with the 2010 Gubernatorial Primary Election. The law, as amended in 2009, permits continued use of a limited number of Maryland's existing touch-screen voting machines until the state approves equipment that enables voters with disabilities to mark paper ballots.

On December 17, 2009, Maryland's State Board of Elections (SBE) approved the following procurement proposals for submission to the Board of Public Works (BPW):

- **An Optical Scan Voting System from Election Systems and Software, Inc. (ES&S)** with a base contract price of **\$14 million**. (Capital lease :\$2.5M per year. **FY2011: \$1.3M** lease plus software & services)
- **Voting System Support Services from Cirdan Group, Inc. (Cirdan)** with a base contract price of **\$20.9 million for 3 years. (FY2011 cost: approx. \$13M)**. BPW approved this contract on February 24, 2010.

An analysis of the available data on both of these proposals indicates that:

1. **The Costs to Implement an Optical Scan Voting System are Overstated.**

- The optical scan equipment prices offered are consistent with those of similar procurements in other states. Costs could be further reduced by reevaluating the equipment **quantities** required to reflect the reliability of scanning technology.
- The Services RFP vastly **overestimates** the amount of services needed to operate an optical scan/touch-screen "hybrid" voting system. The 80% reduction in voting equipment with this system should be reflected in decreased costs for project management and support services. SBE projects spending nearly 25 times as much as Cuyahoga County, OH for similar support services.
- Additional cost savings could occur if auxiliary equipment, such as voting booths, was purchased off the shelf or through local vendors.

2. **The Costs of Continuing to Use the Current Touch-Screen Voting System are Understated.** Operating costs during the 2006 Gubernatorial Election cycle were **\$13.3M**. Early voting increases support costs.

The cost of buying & operating a new Op-Scan system = the cost of continuing to use the Touch-Screens.

Comparative data from similar procurements in other states indicate that well negotiated procurements of both equipment and support services should bring the costs of both purchasing and implementing an optical scan voting system to about the same cost as continuing to deploy the existing touch-screen voting system.

Recommendations

1. **The funding allocated for the support services contract should be reduced to reflect the actual needs of an optical scan system.** Less support is needed for a system that uses 80% less equipment. Service contracts should be structured to provide flexibility for counties to procure services on a per-day or as-needed cost basis that may better fit their actual needs.
2. **Implementation supplies should be more cost-effectively procured.** Privacy booths and other implementation supplies should be more competitively procured from other vendors, and simpler, more economical solutions, such as tabletop privacy screens, should be considered.
3. **SBE should make the above revisions and submit the optical scan contract to BPW immediately.**

1. THE HIGH COST OF TOUCH-SCREEN VOTING

The greatest cost of operating Maryland's touch-screen voting system has been vendor staffing and support. During Maryland's 2006 Gubernatorial Elections, our touch-screen voting system cost more than **\$13 million to operate**, and there is no reason to expect it to cost less in 2010. Gubernatorial Elections are always the most expensive years in Maryland's election cycle because both the Primary and General Elections occur within the same fiscal year. But ever since the touch-screen voting system was fully deployed statewide in 2006, Maryland's voting system **operating costs have averaged \$10.7 million per year**, not including the cost of repaying the capital lease used to purchase the equipment.

Exhibit 2 provides a detailed breakdown of the types of services needed to operate a touch-screen voting system. This level of staffing is essential to support a system that uses roughly 20,000 voting machines and in which an election is unrecoverable if a single error causes votes to be lost or incorrectly recorded. Both the quantity and complexity of the touch-screen equipment require far more skilled technicians and labor-intensive procedures to maintain and operate than an optical scan system.

Differences in Technology = Differences in Cost. The essential difference between an optical scan system and a touch-screen system is that optical scanners are used only to count the ballots, not to cast the votes, so the system is simpler and requires far less equipment. **Maryland's nearly 20,000 touch-screen voting machines will be replaced by approximately 2,000 optical scanners**, plus about 4,000 touch-screen machines retained to provide access for voters with disabilities. In the future, these will be replaced by approximately 2,000 ballot marking devices to aid voters with disabilities in marking paper ballots.

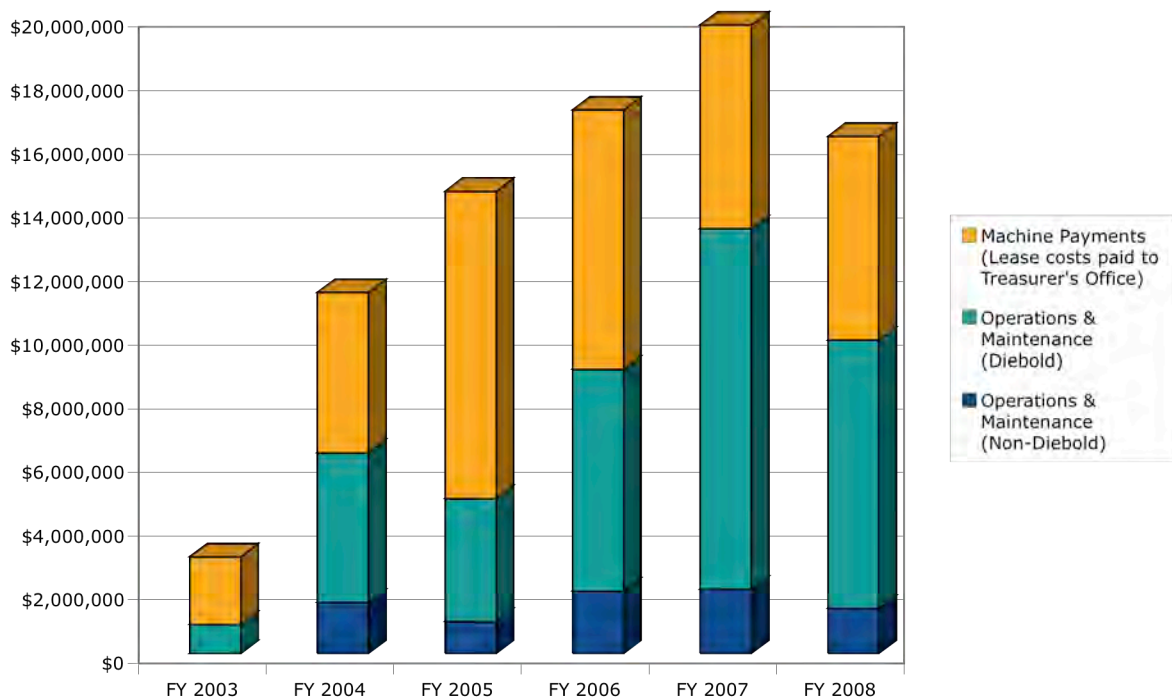


EXHIBIT 1: COSTS OF MARYLAND'S TOUCH-SCREEN VOTING SYSTEM, FISCAL 2003 – 2008

Maryland began using touch-screen electronic voting equipment in 2002 with four "pilot" counties: Montgomery, Prince George's, Allegany, and Dorchester. By 2004, all counties had moved to touch-screens except Baltimore City, which switched in 2006. In the three years following statewide implementation of the touch-screen voting system, **FY2006 – FY2008, the costs of maintaining and operating the equipment averaged \$10.7 million per year, not including the capital lease payments to purchase the equipment.** See Exhibit 2 for a detailed breakdown of these costs.

EXHIBIT 2: DETAILED COST ANALYSIS OF MARYLAND'S TOUCH-SCREEN VOTING SYSTEM, FY2003–08¹

Table 1: Maryland Touch Screen Voting System Costs⁶

STATEWIDE COSTS*

	FY03	FY04	FY05	FY06	FY07	FY08	FY09	Total
Hardware Payments	2,131,933	5,034,100	9,654,582	8,142,292	6,412,403	6,411,015	6,409,343	44,195,668
Maintenance		0	0	449,880	1,509,318	1,628,890	828,455	4,416,543
Warehouse		237,797	237,215	348,166	321,996	318,874	316,674	1,780,722
Transportation		280,776	280,776	177,198	775,126	517,695	355,177	2,386,748
All Training (SBE/LBE/Judges)		341,271	56,271	47,877	183,624	111,385	88,633	829,061
Absentee Ballot Printing		72,023	72,023	178,222	214,462	116,476	110,428	763,634
Voter Outreach		1,000,000	354,394	500,000	444,120	50,000	50,000	2,398,514
Support Services		1,064,140	1,119,422	1,757,665	2,018,814	1,696,040	2,110,978	9,767,059
Total Services	914,704	2,996,007	2,120,101	3,009,128	3,958,142	2,810,470	3,031,890	18,840,442
Technical Support		1,497,263	1,529,513	3,520,456	5,207,019	3,607,748	1,529,145	16,891,144
Acceptance Testing		491,400	0	163,830	75,000	75,000	75,000	880,230
IV&V		380,000	191,673	1,000,000	1,200,000	600,000	500,000	3,871,673
Set-up/Breakdown		182,000	182,000	0	545,200	326,601	239,701	1,475,502
DRE Ballot Preparation		37,950	37,950	0	105,800	47,050	43,550	272,300
Project Mgmt		733,688	816,515	800,000	750,000	750,000	750,000	4,600,203
Total Optional Services		3,322,301	2,757,651	5,484,286	7,883,019	5,406,399	3,137,396	27,991,052
Total	3,046,637	11,352,408	14,532,334	17,085,586	19,762,882	16,256,774	13,407,084	95,443,705

*This chart assumes that the State continues to use the voting system without any additional verification methodology.

Notes:

1. Hardware total for Phase III which begins in FY2006 totals \$7,570,750, financed over five years, estimated at \$1.9 million/year.
2. FY2003, 2004, and 2005 were not altered since they occurred in the past.
3. Voter Outreach: This chart assumes that SBE will provide the brochure the LBEs pay for printing/distribution costs as needed. \$50,000 is included for misc unexpected costs.
4. Diebold currently provides all services except for Project Mgmt and IV&V and Acceptance Testing (which are all provided through separate vendors). The Diebold contract is through half of FY09; the services will be rebid at that point.
5. If the 2006 primary is moved forward, the bulk of the training costs will occur in FY06 rather than FY07.

⁶ Provided by the staff of the SBE, January 2006.

2. COSTS OF OPERATING AN OPTICAL-SCAN VOTING SYSTEM

Having no prior experience with administering a statewide precinct-based optical-scan voting system, the SBE anticipates that the same level of staffing is required as that currently needed to support the touch-screen voting system, but **data from other jurisdictions indicate that optical scanners require far less support.**

Cuyahoga County, Ohio provides a good comparison because it recently completed a smooth transition from a Premier touch-screen DRE system very similar to Maryland's (which had been purchased just 2 years before) to the same system of ES&S optical scanners Maryland has selected. Though its population is much smaller, with about 1.1 million voters compared to Maryland's 3.4 million, Cuyahoga has about 80% as many precincts as Maryland (1437 precincts compared to Maryland's 1824). This is an important factor, because each precinct requires one optical scanner and equipment to provide accessibility for voters who are unable to use paper ballots. Cuyahoga County has 1,500 optical scanners, or 75% of the roughly 2,000 scanners Maryland needs.

The SBE anticipates spending nearly 25 times as much as Cuyahoga County does for similar support services. Even factoring in the difference in the amount of equipment and the number of jurisdictions involved, this disparity is difficult to justify.

SBE's Projected Support Staff Costs for an Optical Scan System: \$6.4 million per year (on average)

Key Project Personnel (Cirdan): \$6 million for 7 years

Other Personnel (Cirdan): \$14.2 million for 7 years

Optical Scan System Vendor Support (ES&S): \$8.8 million for 7 years

Election Support Personnel (Cirdan): \$16 million for 7 years

Total Personnel: \$45 million (average \$6.4 million per year)

Cuyahoga County's Actual Support Staff Costs for an Optical Scan System: \$264,000 per year (avg)

Project Management: (average \$154,500 per year)

2008: 110 days at \$1,500 per day = **\$165,000 per year**

(includes implementation of an Optical Scan system with AutoMark Ballot-Marking Devices for disabled voters)

2009: 96 days at \$1,500 per day = **\$144,000 per year**

(includes replacement of an older model of rented Optical Scanners with new DS200 scanners when they received federal certification)

Training:

2008: 14 days at \$1,500 per day = **\$21,000 per year**

(includes implementation of an Optical Scan system with AutoMark Ballot-Marking Devices for disabled voters)

2009: 2 days at \$1,500 per day = **\$3,000 per year**

(includes replacement of an older model of rented Optical Scanners with new DS200 scanners when they received federal certification)

Election Support: (average \$97,500 per year)

2008: (4 elections) 82 days at \$1,500 per day = **\$123,000 per year**

2009: (4 elections) 48 days at \$1,500 per day = **\$72,000 per year**

Total Personnel: (average \$264,000 per year)

2008: 206 days at \$1,500 per day = **\$309,000 per year**

2009: 146 days at \$1,500 per day = **\$219,000 per year**

SBE makes these assumptions about support staffing needed for an optical scan system (see Exhibit 3):

Project Management:

SBE says: “Currently the vendor provides a project manager and six regional managers. This level of staffing has been in place since 2002 when the State first implemented a uniform voting system, and we will continue to need this level of staff support regardless of the system being used.”

Analysis: Ohio, with more than twice as many registered voters as Maryland, requires only a statewide project manager from the vendor; no regional managers are necessary. (See **Appendix 1** at www.saveourvotes.org for a detailed listing of each type of service used by Cuyahoga County, OH, in its first two years of conversion to and operation of an optical scan system.) Individual counties contract for project management as needed on a daily-rate basis. While Maryland’s past level of staffing may have been appropriate to oversee nearly 20,000 touch-screen machines, it is unnecessary for an optical-scan system.

Maintenance:

SBE says: “Most routine maintenance activities on the voting system are conducted by staff and therefore costs are not anticipated to change. However, non-routine maintenance, such as installing a new software version is a major project when performed on 18,000 voting units. Generally, SBE has had to contract with an independent trusted agent to perform software upgrades. The cost of such service is approximately \$200,000. This is one area in which less equipment will clearly reduce costs. However, in the short term, no software upgrades are contemplated for the current system. Accordingly, when comparing the FY 11 costs of using the current touch-screen system versus a new optical scan system maintenance costs were not a factor.”

Analysis: Every operation that needs to be performed on each piece of equipment, including maintenance, installing software upgrades, testing, repairs, battery replacement, or any other routine tasks, requires far fewer hours of labor with an optical scan system. Whether performed by elections staff or a highly paid contractor, all labor has a cost. An optical scan system, with 70% to 80% less equipment than our current system, can significantly reduce labor costs on an ongoing basis, year after year.

In the claim filed by the Attorney General’s Office in November, 2008, against Premier, the SBE estimated that **Maryland has spent nearly \$8.5 million** in costs incurred during Fiscal 2004-2009 to evaluate and mitigate security flaws inherent in the current touch-screen DRE voting system. These costs, which “include consulting and technical services, personnel and logistics, and materials and supplies,”² **will continue to accrue as long as Maryland continues to use this insecure equipment.**

In addition, **a serious flaw³ in the tabulation software of all Premier voting equipment** was discovered during an audit of the 2008 elections. It allows votes to be deleted or changed without triggering an entry in the “audit log” of the tabulation software, which is a violation of federal certification requirements. Premier acknowledged this problem and quietly fixed it in the updated version certified last summer. **It would be reckless for Maryland to conduct another statewide election on the touch-screen machines without installing this software upgrade.** Upgrading would require installation on each of the touch-screen machines, and each machine would need to be tested after the upgrade. According to SBE, this would increase the cost of continuing to deploy the existing touch-screen equipment by at least \$200,000, not including the cost of the software itself.

EXHIBIT 3: VOTING SYSTEM SUPPORT SERVICES STAFF POSITIONS SPECIFIED IN THE RFP

Number needed	Hourly rate	FY2011 cost	COMMENTS/RECOMMENDATIONS FOR AN OP-SCAN SYSTEM
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FULL-TIME PERMANENT STAFF for duration of contract

Project Manager	1	\$ 150	\$ 312,000	Ohio has just one vendor project manager for the state and no other statewide vendor personnel. Project management is contracted by counties as needed, by the day.
Overall responsibility for contract performance, including transition, training, contract services, risk management, quality control, election support for and operations and maintenance of voting system; organize, direct, & coordinate the planning and execution of all contract activities, including sub-contractors; etc.				
Quality Manager	1	\$ 120	\$ 249,600	Eliminate. State proj. manager should establish procedures to be executed by LBE staff and LBE support techs
Define & enforce quality control standards; develop, implement, and execute quality assurance procedures for voting system & related services; etc.				
Training Coordinator	1	\$ 120	\$ 249,600	This position should be temporary , per election cycle (6 months)
Plan, prepare, schedule, and deploy voting system training.				
Documentation Specialist	1	\$ 120	\$ 249,600	Eliminate. Should be done by proj. mgr & election subj matter specialist
Gather, analyze, compose and consolidate info, inc. technical info from VS vendors.				
Regional Managers	6	\$ 85	\$ 1,060,800	Eliminate. These are all election-related tasks, could be performed by LBE support techs.
Logic and Accuracy testing for VS equipt; early voting & election day support; canvassing support; post-election maintenance; Inventory management; etc.				
SUBTOTAL FULL-TIME PERMANENT STAFF	10		\$ 2,121,600	Op-scan cost: \$438,000 per year

FULL-TIME STAFF through 2010 elections

PR/Outreach Coordinator				This is a one-time cost built into the cost of the voter outreach project
Develop & implement strategies to instill public confidence in the voting system and MD elections; manage temporary resources supporting voter outreach events				
Election Subject Matter Expert	1	\$ 120	\$ 249,600	Eliminate. Expertise should be supplied by SBE Voting System Project Manager
Provide expert knowledge of election management practices, federal laws, and voting system practices in other states; assist SBE in defining statewide standard practices to meet federal, State, and local reporting requirements; analyze & develop plans and requirements for effectively implementing voting system, etc				
SUBTOTAL STAFF THROUGH 2010 ELECTIONS			\$ 249,600	

TEMPORARY STAFF per election (2 elections in FY2011)

LBE support techs: full-time 10 weeks around each election	24	\$ 110	\$ 1,478,400	Cuyahoga County combines project mgmt with LBE support costs. They averaged \$154,500 per year for this combined category, hired per day.
Technical assistance to LBE; serve as the liaison between election judges, LBE, statewide help desk, & others to troubleshoot problems & document incidents; etc.				
Election Specific Support Staff		\$ 85	\$ 1,440,750	Cuyahoga County averaged \$97,500 per year to support about 75% as many precincts & equipt as MD
Support election judges; serve as liaison between election judges, LBE, statewide help desk, and others to resolve issues and troubleshoot problems; etc.				
SUBTOTAL TEMPORARY STAFF			\$ 2,919,150	Reflects 2 elections in FY2011

TOTAL SUPPORT STAFF SPECIFIED IN RFP, cost for FY2011: \$ 5,290,350

TOTAL OP-SCAN SUPPORT STAFF NEEDED for FY2011: \$ 438,000 per year state staffing plus election support for LBEs as needed

Election support:

SBE says: “Currently the vendor provides a county technical resource to provide assistance and support to the local election office prior to each election. They provide assistance with all aspects of preparing the voting system for election day and assisting with post-election activities. Additionally, the vendor provides election day staff support to be in the field to help trouble shoot problems and address any last minute needs. For a successful election we will need to continue this same level of election support with the optical scan system.”

Analysis: The technical support staff needed to prepare and deploy 2,000 optical scanners and 2,000 to 4,000 touch-screen DREs for election day and to perform post-election tasks will be significantly less than that needed for a system more than 3 times as large. Most jurisdictions require far fewer election day technical support field staff to support the relatively trouble-free scanners. For example, **Cuyahoga County, OH required just 16 election support technicians for 3 days each during its November 2008 Presidential Election**, though it had about 80% as many precincts as the entire state of Maryland.

Also, it should be noted that Maryland’s two largest counties, Montgomery and Prince George’s, have declined to use the technical support staff provided by the vendor in previous years, preferring to hire their own personnel directly even though the SBE continues to charge them for these unwanted services. **Election support services are an area where the SBE should consider providing a master contract** and giving counties the option of using the services at the prices negotiated or hiring their own personnel.

3. COSTS OF OPTICAL-SCAN VOTING EQUIPMENT

The optical-scan voting system proposal approved by the SBE includes the following components:

- **2,083 DS200 Precinct Tabulators (optical scanners) @ \$7,313 each: \$15,232,979**
- **34 M650 Central Tabulators (for absentee/provisional ballots) @ \$42,144 each: \$1,432,896**
- **Election Management System: \$2,771,000**
- **Total Equipment plus 6 option years (after vendor discounts): \$24,039,350**
- **Personnel Service (including 6 option years): \$8,765,120**
- **TOTAL PROPOSAL: \$32,804,470**

SBE has already revised this proposal to include only the following components in the base contract, according to information supplied by Deputy Administrator Ross Goldstein via email (see **Exhibit 12**):

- DS200 Precinct Tabulators (optical scanners)
- M650 Central Tabulators will be provided at no charge and only for the largest counties
- Software and some services
- **TOTAL BASE CONTRACT (including first year of services): approx. \$14 million**
- **CAPITAL LEASE: approx. \$2.5 million per year, split between state and counties**
Only 1 payment due in FY2011 of approx. \$1.3, of which state would pay half

Pricing from other states indicates that the SBE’s revised costs are in line with ES&S offerings in other jurisdictions (see **Exhibit 4**). The SBE might consider whether it needs such a large inventory of back-up machines (currently calculated at 10%), since the scanners tend to be far more reliable than the touch-screen units have been. It is unlikely that counties would need more than 5% additional back-up units, which would mean that **Maryland needs less than 2,000 optical scanners statewide**. See **Exhibit 5** for an analysis of equipment quantities needed per county for both the touch-screen units and an optical-scan system. Also, SBE might reconsider whether it needs to continue purchasing warranties for the touch-screen equipment when the abundance of spare touch-screen inventory could be used instead.

EXHIBIT 4: ES&S PRICE OFFERINGS IN OTHER STATES

	Maryland	Cuyahoga Co., OH	New York City, NY	Nassau Co., NY	Miami-Dade, FL
Date of Offer	Dec-09	Jul-08	Dec-09	Jan-10	Oct-07
TOTAL COST	\$32.8M (now \$14M?)	\$13,417,315	\$50,000,000*	\$9,503,000	\$16,232,020
Number of Precincts	1,824	1,436	1,370	1,142	519
Registered Voters	3.4 million	1.1 million	4.3 million	0.93 million	1.225 million
Duration	7 years	5 years	not available	not available	5 years
Includes AutoMark?	no	yes	yes	yes	no
DS200 op scan units	2083 units	1500 units	not available	1300	1,650
Pre-discount unit cost	\$7,313 (now \$5,185?)	\$6,225 + \$85 s&h	\$6,461 + \$76 s&h	\$8,347 / \$4,738**	\$5,350
Inclusive of	not available	installation acceptance testing performance bond	5-yr hardware wty 5-yr software wty shipping to end user Ballot Box, 2 Jump drives, Start up kit	shipping, 5-yr hdwr, 5-yr software, ballot box, 2 jump drives, start up kit old equip buy back	shipping, thumb drive, start-up kit, regional training Not Ballot Box Not Maintenance
Discounts / Trade Ins	\$6,626,239	\$2,485,000 plus \$122,500/yr.	not available	\$4,692,012.50 plus \$500,000 credit	
M650 Central Scanners	34 (now 6 or 8?) units	15 units	not available	not listed	maintenance only
Cost per unit	\$42,144 (no charge?)	\$27,000	not available	not available	not available
AutoMark units	none	635 @ ea	not shown on	450	none
Cost per unit		\$5,200 + \$45 s&h	ES&S price list	\$5,955	
Unity EMS Software cost	\$2,771,000???	\$145,500	\$300,440/20 users	\$330,600	not available
Unity Software annual fee	???	\$44,549	\$0	\$0	?
Project Management	\$8,765,120 for 7yrs	\$187.50/hr;\$1500/day	\$1,800/day/person	\$1,800/day/person	\$1300-\$2000/day
Staff training	Details not available	\$187.50/hr;\$1500/day	\$1,800/day/person		\$900-\$2300/day
Pollworker training	inclusive above?		\$1,800/day/person		\$900-\$2300/day

*As reported on the NY Times website: <http://cityroom.blogs.nytimes.com/2010/01/05/city-selects-company-for-new-voting-machines>

** ES&S guaranteed Nassau Co. a fixed price of \$4,692,012 for their old Sequoia units = \$4,738 per unit op scan discounted.

Cuyahoga County, Ohio data: http://boe.cuyahogacounty.us/pdf_boe/en-US/Final%20ES&S%20Signed%20Contract%207.10.08.pdf

New York City, NY data: <http://www.vote.nyc.ny.us/pdf/documents/boe/ESS.pdf>

Nassau County, NY data: http://www.wheresthepaper.org/10/NassauEquipPurchaseProposalJan4_10.pdf

Miami Dade County, FL data: http://accurate-voting.org/contracts/FL/Miami_Dade/FL_miamidade_2007.pdf

EXHIBIT 5: MARYLAND STATEWIDE VOTING SYSTEM EQUIPMENT NEEDS, BY COUNTY

Jurisdiction	2010 Registered Voters	Total number of precincts	Early Voting Sites	Required touch-screen units + 10% back-up	Required* OpScan units + 10% back-up	Required* OpScan units + 5% back-up
Allegany County	41,610	36	1	268	41	39
Anne Arundel County	321,485	189	5	1,976	213	204
Baltimore City	362,235	290	5	2,311	325	310
Baltimore County	479,324	219	5	2,877	246	235
Calvert County	54,838	23	1	327	26	25
Caroline County	17,623	8	1	106	10	9
Carroll County	103,086	46	1	618	52	49
Cecil County	57,915	19	1	339	22	21
Charles County	86,909	36	1	518	41	39
Dorchester County	19,340	31	1	140	35	34
Frederick County	133,304	66	1	806	74	70
Garrett County	17,960	19	1	120	22	21
Harford County	147,683	72	1	891	80	77
Howard County	172,253	110	3	1,068	124	119
Kent County	12,255	10	1	78	12	12
Montgomery County	564,410	245	5	3,374	275	263
Prince George's County	509,687	223	5	3,049	251	239
Queen Anne's County	29,087	17	1	179	20	19
Saint Mary's County	57,505	31	1	350	35	34
Somerset County	12,949	22	1	95	25	24
Talbot County	24,532	12	1	148	14	14
Washington County	83,670	50	1	515	56	54
Wicomico County	52,842	37	1	331	42	40
Worcester County	34,321	18	1	209	21	20
TOTALS	3,396,823	1,829	46	20,694	2,063	1,969

* With touch-screen machines the ballot is marked on the machine, requiring significant backup units for standby. With op scan, the ballot is marked on paper and can be centrally scanned in the case of catastrophic (power) failure. DS200 scanners have proven to be more reliable than DREs. For these reasons, fewer backup units are required for an op scan system.

4. COSTS OF AUXILIARY EQUIPMENT FOR AN OPTICAL-SCAN VOTING SYSTEM

SBE has budgeted more than \$6 million for costs associated with implementing an optical scan voting system, but many options are available to bring this cost down

Voting booths:

SBE says: “Voting booths will also be needed to provide voters with a private area to vote their ballots. The State intends to procure a high quality re-useable booth. SBE’s estimate for the cost of a high-quality booth was \$100 per booth for a total cost of \$4 million. However, the proposal submitted by ES&S included a booth for \$360 for a total cost of \$5.3 million. It has been suggested that there are cheaper alternatives available – such as cardboard privacy booths that sit on top of a table. However, election officials assert that this is impractical because it would require them to have to either purchase tables and chairs or ensure that they are at the polling place.”

SBE’s Projected cost: 14,725 voting booths at \$360 each; \$5.3 million total

Actual cost in other states: \$7 each for cardboard privacy screens; \$210,000 for 30,000 screens

The choice of voting booths affects both procurement costs as well as the ongoing cost of transporting and storing election equipment. Many voting booths are commercially available for far less than the \$360 quoted by ES&S, including used equipment. Other jurisdictions use a wide range of voting booths, including folding cardboard or corrugated plastic privacy screens placed on a tabletop such as those Maryland currently uses for provisional voters in the polling place. Many voters prefer to sit while they vote and are more likely to mark their ballots thoughtfully and review them carefully than voters who feel rushed. **Tables and chairs are currently used for check-in and other polling-place tasks**, so most polling places, such as school cafeterias, public libraries, community centers, firehouses, and churches, have them readily available. They may be easily rented for polling places that do not have enough.



EXHIBIT 6: TABLETOP FOLDING PRIVACY SCREENS

Privacy screens are an inexpensive solution for providing private spaces for voters to mark paper ballots. Maryland currently uses screens like these for provisional voters. They are lightweight and compact and are often transported to the polling place by election judges in their cars along with polling place signage and other supplies. The ones shown at left are from a catalog, but might be procured more economically from a local supplier to keep those dollars — and jobs — in Maryland.

From Election Source catalog, page 5: www.votingbooths.org/issue2008

Carteret County, NC **converted its discarded touch-screen DREs into voting booths**, which is something Maryland could consider. The DREs have cases with extending legs and privacy flaps, so county facilities staff retrofitted the equipment by removing the voting machines and placing a writing surface into the empty case instead. Other counties have converted their old punch-card voting booths in the same way, including Cuyahoga County, OH, where the cost was about \$35 per booth in labor and materials.

In this austere budget year, this is one area where the State of Maryland and its cash-strapped counties can save several million dollars. **Counties should have input into the selection of voting booths** appropriate for their own needs, and master contracts should be negotiated that allow counties to select from price lists.

No matter which type of voting booths is selected, **each precinct should provide plenty of ballot-marking spaces to prevent long lines at peak voting hours**. The number of voting booths the SBE has proposed is insufficient. Each precinct should have at least as many booths as the number of touch-screen machines previously supplied, and preferably far more. One of the greatest problems created by the touch-screen voting system has been long lines, with wait times of two hours or more documented across the state during the 2008 General Election. At the very least, additional folding privacy screens should be provided that could be set up at peak voting hours if lines begin to form.



EXHIBIT 7: TAIL END OF VOTING LINE IN PRINCE GEORGE’S COUNTY, NOVEMBER 2008

This line extended approximately three times this distance in the other direction before entering Hyattsville Middle School’s polling place. Wait times longer than two hours were documented throughout the state during the 2008 Presidential General Election. Long lines are caused by insufficient voting equipment to accommodate the high volume of voters at peak voting hours.

Supply carts:

SBE says: “Supply carts will be needed to store and transport equipment to the polling places. SBE’s estimated cost for the supply carts was \$1.8 million. However, the proposal by ES&S included carts for \$3 million. (The current carts used for the touch-screen units would not be a suitable size or configuration to securely store and transport the new OS equipment. Staff has reviewed the possibility of retrofitting them, but notes that the time and cost would be significant.)”

SBE’s Projected cost: \$3 million (roughly \$1400 each)

Actual cost in other states: This cost could be eliminated by using existing equipment.



The ES&S DS200 optical scan voting units selected by the SBE are attached to a ballot box on wheels (see photo at left⁴) and do not need to be stored or transported on carts, so the voting booths and the equipment used for disabled voters are the main components that would require some type of equipment to transport them to and from the polling place. **The size and quantity of voting booths selected will largely determine the supplies or equipment needed to transport them.** The existing carts probably could be used, but if that is not possible, many third-party options exist.

Folding table-top privacy screens and some other types of voting booths are very compact. Currently, election judges in some counties transport the folding privacy screens used by provisional voters to the polling place in their cars, in a bag with other signs and equipment.

This cost could be eliminated entirely, or greatly reduced through competitive bidding. This is another area where both the State of Maryland and its counties could save money. Counties should have input into the selection of transportation supplies appropriate for their own needs since smaller counties may have different considerations than more populous ones.

EXHIBIT 8: ES&S DS200 optical scanners have wheels and do not need to be transported on carts.

5. COMPARING THE COST OF IMPLEMENTING AN OPTICAL SCAN SYSTEM IN 2010 WITH THE COST OF CONTINUING TO USE THE TOUCH-SCREEN EQUIPMENT

SBE has presented projections comparing the estimated costs of procuring and implementing an optical scan voting system with the costs of continuing to use the existing touch-screen system (see **Exhibit 9**). SAVE our Votes has adjusted these projections, based on the data presented on previous pages, for the costs of procuring and operating an op-scan system (see **Exhibit 10**) and the costs of operating Maryland’s touch-screen voting system (see **Exhibit 11**). Some costs, especially those included in the Cirdan proposal, have not been provided in enough detail to assess their accuracy, so a more detailed accounting of the support services included would improve the accuracy of these estimates.

Based upon the best information publicly available, the cost of implementing and operating an optical scan system would be less than or equal to the cost of continuing to use the touch-screen machines in 2010.

**EXHIBIT 9: SBE'S PROJECTED COSTS FOR IMPLEMENTING OPTICAL SCAN VS USING TOUCH-SCREEN SYSTEM
(presented to House Ways & Means Committee at January 27 briefing)**

New vs. Existing Voting System Three Year Cost Comparison

Implementing a New Voting System

	Item	FY 10	FY 11	FY12
1	Optical Scan (OS) Equipment Lease Payments*	\$ -	\$ 1,790,811	\$ 2,697,916
2	OS Vendor Support	\$ 382,000	\$ 342,000	\$ 342,000
3	OS Supplies (carts, paper rolls, booths, etc.)	\$ -	\$ 6,132,900	
4	Voting System Central Servers Lease Payments*	\$ -	\$ 45,374	\$ 68,357
5	Certification Analysis	\$ 30,000	\$ -	\$ -
6	Services - includes all services related to implementation and general election operations	\$ 1,766,298	\$ 2,030,371	\$ 2,030,371
7	Voter Outreach	\$ 500,000	\$ 30,000	\$ -
8	Touchscreen (TS) Equipment Warranty	\$ 120,000	\$ 120,000	\$ 120,000
9	TS Software License Maintenance	\$ 24,960	\$ 24,960	\$ 24,960
10	TS Vendor Support	\$ 382,000	\$ 342,000	\$ 342,000
11	Server Software License Agreement	\$ 272,000	\$ 272,000	\$ 272,000
12	TS Accessories (smart cards)	\$ -	\$ 5,000	\$ 2,500
13	Ballot Printing and Delivery	\$ -	\$ 3,135,805	\$ 1,964,269
14	Implementation Phase - Testing and Delivery	\$ 90,000	\$ 190,000	\$ -
15	Early Voting - Ballot on Demand Printers (lease)*	\$ -	\$ 189,662	\$ 285,732
16	Ongoing TS Lease Payments	\$ 5,327,673	\$ 5,325,469	\$ 3,540,149
17	Delivery of equipment and supplies to polling places		\$ 929,500	\$ 464,750
	Total	\$ 8,894,931	\$ 20,905,852	\$ 12,155,004

* Total OS Equipment Cost = \$11,840,400

* Total Central Server Cost = \$300,000

* Total Ballot on Demand Printer Cost = \$1,276,000

Using the Existing Voting System

	Item	FY10	FY11	FY12
1	Services - includes all services related to general election operations	\$ 1,266,000	\$ 1,266,000	\$ 1,266,000
2	Touchscreen (TS) Equipment Warranty	\$ 470,250	\$ 470,250	\$ 470,250
3	TS Software License Maintenance	\$ 97,812	\$ 97,812	\$ 97,812
5	Server Software License Agreement	\$ 272,000	\$ 272,000	\$ 272,000
6	TS Accessories (smart cards, batteries)	\$ -	\$ 300,000	\$ 5,000
7	Ballot Printing and Delivery	\$ -	\$ 600,000	\$ 300,000
8	Ongoing TS Lease Payments	\$ 5,327,673	\$ 5,325,469	\$ 3,540,149
9	New servers for election management system	\$ -	\$ 45,374	\$ 68,357
10	Delivery of equipment and supplies to polling places		\$ 929,500	\$ 464,750
	Total	\$ 7,433,735	\$ 9,306,405	\$ 6,484,318

Three Year Cost Comparison

FY10	Additional costs for implementing a new system =	\$ 1,461,196
FY11	Additional costs for implementing a new system =	\$ 11,599,447
FY12	Additional costs for implementing a new system =	\$ 5,670,686
	Total 3 Year Additional Costs Related to Implementation of a New System	\$ 18,731,329

EXHIBIT 10: ADJUSTED COST PROJECTIONS FOR IMPLEMENTING OPTICAL SCAN

	ITEM	SBE projected FY 2011	Adjusted FY 2011	Comment
OPTICAL SCAN EQUIPMENT COSTS				
	Optical Scan Lease Payment	\$1,790,811	\$1,300,000	SBE's revised cost (see Exhibit 12).
2	OS Vendor Support	\$342,000	\$342,000	Details not supplied
5	OS Certification Analysis	–	–	One-time cost: \$30,000 included in FY10
14	Implementation Test & Deliver	\$190,000	\$190,000	
TOUCH-SCREEN EQUIPMENT COSTS				
8	Touch-screen Warranty	\$120,000	–	Do not need warranty with so many extra units in storage
9	TS Software License	\$24,960	\$20,800	4,000 accessible units @ \$5.20 each
10	TS Vendor Support	\$342,000	\$342,000	Support for 4,000 TS units: \$85.50 each
11	Server Software License	\$272,000	\$272,000	Same cost for either system?
12	TS Accessories (smart cards)	\$5,000	\$5,000	1000 cards, 500/per election
OPTIONAL EQUIPMENT COSTS				
4	Voting System Servers Lease Paymt	\$45,374	\$45,374	Total Central Server cost: \$300,000 If new servers are necessary, they would be needed for either system
15	Early voting Ballot on Demand Printers Lease paymt	\$189,662	\$189,662	Total cost: \$1,276,000. Should reduce need for pre-printed ballots
3	OS Supplies (carts, booths, etc)	\$6,132,900		
	Voting booths		\$210,000	30,000 folding tabletop privacy screens @ \$7 ea.
	Transportation carts		–	Re-use existing DRE carts.
SERVICE COSTS				
6	Services: includes all services related to implementation and general election operations	\$2,030,371	\$1,500,000	Details not supplied, but this is probably project management & election support in Cirdan contract; reduced to reflect less support needed
7	Voter Outreach	\$30,000	\$30,000	FY10 projection includes \$500,000
13	Ballot Printing and Delivery	\$3,135,805	\$2,284,800	Could preprint 80% and supplement with Ballot on Demand printers as needed
17	Delivery of equipment and supplies to polling places	\$929,500	\$929,500	Equals about \$255 per precinct per election (2 elections in FY11). Cuyahoga pays \$121 per delivery location.
	TOTAL TO IMPLEMENT OP-SCAN	\$15,580,383	\$7,661,136	
16	Remaining TS Lease Payments	\$5,325,469	\$5,325,469	Lease payment due regardless of system.
	TOTAL NEEDED FY2011	\$20,905,852	\$12,986,605	\$7,919,247 less than SBE projections

EXHIBIT 11: ADJUSTED COST PROJECTIONS FOR USING CURRENT SYSTEM

	ITEM	SBE projected FY 2011	Adjusted FY 2011	Comment
1	Services- includes all services related to general election operations	\$1,266,000	\$5,040,750	Details not supplied, but this is probably project management & election support in Cirdan contract
2	Touchscreen (TS) warranty	\$470,250	\$500,000	20,000 units at \$25 each
3	TS Software License	\$97,812	\$104,000	20,000 units at \$5.20 each
4	TS Vendor Support	\$-	\$1,710,000	20,000 units at \$85.50 each
5	Server Software License	\$272,000	\$272,000	Same cost for either system?
6	TS Accessories: TS batteries	\$300,000	\$308,000	70% of Phase II & III counties need batteries replaced: 11,000@\$28 ea
	TS smart cards		\$25,000	Smart Cards: 5,000 at \$5 ea.
7	Ballot Printing and Delivery	\$600,000	\$600,000	At per unit price of \$.42 + Delivery
9	Voting System Servers Lease Paymt	\$45,374	\$45,374	Total Central Server cost: \$300,000 If new servers are necessary, they would be needed for either system
10	Delivery to polling places	\$929,500	\$929,500	Same charge for more equipment than opscan?
Additional Costs				
	Voting units for registration increase		\$245,000	2008 General Election rental cost
	Voter Outreach		\$500,000	Required for Early Voting, either system
	GEMS software upgrade		\$200,000	Upgrade & testing of 20,000 TS units to correct serious problem in tabulation software
	TOTAL TO USE TOUCH-SCREENS	\$3,980,936	\$10,479,624	
8	Remaining TS Lease Payments	\$5,325,469	\$5,325,469	Lease payments are due regardless of system used
	TOTAL NEEDED FY2011	\$9,306,405	\$15,805,093	\$6,498,688 more than SBE projections

EXHIBIT 12: EMAIL FROM ROSS GOLDSTEIN CLARIFYING OPTICAL SCAN PROPOSAL

From: Ross Goldstein <RGoldstein@elections.state.md.us>
Subject: RE: Copy of Presentation
To: rebecca@saveourvotes.org
Date: Monday, February 1, 2010, 11:45 AM

Please see my answers below.

From: Rebecca Wilson [mailto:rebecca@saveourvotes.org]
Sent: Friday, January 29, 2010 6:13 PM
To: Ross Goldstein
Subject: Re: Copy of Presentation

I have a few questions for you about the cost charts in your handout distributed at the [Ways & Means Committee] briefing:

1) At this point, what are you estimating will be the total price for the Optical Scan Voting System proposal? How does that break out by Fiscal Year? How much would be included in a capital lease?

Approximately \$14 million for the initial purchase. The lease payments will be the primary cost and will be approximately \$2.5M per year (although the first year will be around \$1.3M).

2) Your memo to the Governor's Office quotes voting booths as \$5.3M and carts as \$3M, yet your cost chart shows \$6.1M for "OS Supplies (carts, paper rolls, booths, etc.) How much are you currently projecting those supplies would cost?

Our original estimate was \$200 per booth (for a total \$4M) and \$1,000 for carts (for a total of \$1.8M). I think the estimate in the Governor's memo was based on the ES&S proposal. I still think that our original estimate will prove to be more in line with what our actual costs will be.

3) Why would booths and carts not be included in the capital lease, since they are capital investments that would probably last at least for the life of the voting system itself? Who decides which components to include in the lease?

The State Treasurer manages the Master Equipment Lease-Purchasing Financing program. According to the State Treasurer's office, items such as computer hardware are acceptable for the program. However, items, such as furniture, are not considered acceptable for the master lease program. It is my understanding that it has been determined that carts and booths are analogous to furniture and therefore not acceptable for the financing program.

4) How many central-count scanners do you plan to buy, and at what cost? I don't see that indicated on this chart. How/where would those be deployed?

Most of the smaller counties will use the same OS units as will be used in the polling places. For the larger counties, we will be obtaining a high speed central count scanner, the M650. Pursuant to our agreement, we will be getting the M650 units at no additional cost.

5) Central servers: These appear in the cost charts for both systems. How would these be procured if not as part of the new OS Voting System? Have funds been allocated for that procurement?

The servers would most likely be procured directly by SBE, not the vendor. They would be paid for through the Treasurer's financing program. We do not think we will need new servers for the current voting system – only the new system.

6) Yesterday I believe you explained to Stan Boyd that the contract submitted to the BPW would not obligate the state to procure items designated as optional -- is that correct? Exactly which elements of the contract as presented would be designated as optional? What would be the total value of the base contract, and what is the total value including all the options?

That is correct. The items definitely being procured are the DS200 Precinct Tabulators, the M650 Central Tabulators, software, and certain services. All of the other items remain as options.

6. RECOMMENDATIONS

Procurements in other states show that skillfully negotiated prices and contract terms make an optical scan voting system the most cost-effective way to conduct elections, which is why more than 60% of Americans vote this way. That number is increasing as states and counties across the nation abandon their electronic voting systems in the face of increasing costs and decreasing confidence in election outcomes.

Well negotiated procurements of both equipment and support services should bring the costs of both purchasing and operating an optical scan voting system to the same cost — or less — as operating our current touch-screen equipment. SBE should revise its estimates to more accurately reflect the costs of procuring and operating optical scan voting equipment.

Funds invested in an optical scan system will reap savings over time, instead of being spent on consumable services for a system that has already reached the end of its lifespan. The touch-screen system's original vendor is no longer in business and the future is uncertain for continued support from the new vendor or the availability of software upgrades and replacement parts. The longer we delay implementing an optical scan voting system, the more it will cost our state and counties to continue to patch together our aging touch-screen system. An optical scan system will reduce our dependence upon expensive vendor support and return our election administration to a level that local election officials can more easily manage.

Cuyahoga County is a good model for excellent contract⁵ negotiation. Ohio election officials actively sought input from technical and legal experts and election officials in other jurisdictions, and their participation resulted in a carefully crafted contract with excellent pricing. Some of the same national experts who assisted Cuyahoga County have offered to provide their legal, technical, and practical expertise immediately and on a pro bono basis to review Maryland's contract proposals if the state is interested and if the timeframe allows.

As Maryland has learned from its current voting system, the decisions we make now may have long-term consequences, both fiscally and in securing our most fundamental right as citizens of a democracy: the right to choose those who govern us. Let's move forward and put in place a voting system that will serve us well, both now and in the future.

Rebecca Wilson
Co-Director, SAVE our Votes
Rebecca@saveourvotes.org
202.716.3759 (cell)

REFERENCES

1 Annual costs of the touch-screen voting system are from *A Study of Vote Verification Technologies, Part I: Technical Study*, page 7:
<http://www.umbc.edu/mipar/Documents/VoteVerificationStudyReport-FINAL.pdf>

2 Linda Lamone, State Administrator of Elections, "Response to Department of Legislative Services' FY 10 Budget Analysis."
http://www.dbm.maryland.gov/agencies/operbudget/Documents/2010Testimony/d38i01_sbe.pdf

3 Zetter, Kim. Wired.com: *Diebold Quietly Patches Security Flaw in Vote Counting Software*:
<http://www.wired.com/threatlevel/2009/08/diebold-audit-logs>

4 Election Systems & Software, DS200 brochure: <http://www.essvote.com/HTML/products/DS200.html>

5 The contract is posted at: <http://www.boe.cuyahogacounty.us/en-US/07102008-contract-resolution.aspx>

CUYAHOGA COUNTY, OH 2008 Service Days Summary

Service Day Totals								Color Coding for 4 Elections:		
Training Days	14	\$ 21,000						August 5 Special Eleciton		
Project Mgmt Days	110	\$ 165,000						October 14 Election		
Site Support Days	82	\$ 123,000						November 4 General Election		
Total Days	206	\$ 309,000						November 18 Election		

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
7/2/08	Wed	1	Coding Services	0	1	0	KW	Programming and coding assistance for August 5 special election		Election Prep: 1 tech; 2 days
7/3/08	Thu	1	Coding Services	0	1	0	KW	Programming and coding assistance for August 5 special election		
7/24/08	Thu	1	Project Management	0	1	0	AC	Project Kick-off meeting and calendar review	AT, CS, JH, MD	
7/25/08	Fri	1	Project Management	0	1	0	AC	Warehouse meeting and walk-through	AT, CS, JH, MD	
7/28/08	Mon	1	Training Service	1	0	0	MD	Poll worker training observation and consulting		
7/29/08	Tue	1	Training Service	1	0	0	MD	Poll worker training observation and consulting		
7/28/08	Mon	1	Training Service	1	0	0	RR	Unity Software Training		Unity Software Training: 1 person 5 days total
7/29/08	Tue	1	Training Service	1	0	0	RR	Unity Software Training		
7/30/08	Wed	1	Training Service	1	0	0	RR	Unity Software Training		
7/31/08	Thu	1	Training Service	1	0	0	RR	Unity Software Training		
8/1/08	Fri	1	Training Service	1	0	0	RR	Unity Software Training		
8/4/08	Mon	1	Election Site Support	0	0	1	AC	August 5 Special Election Pre-election on-site support		On-site Election Support: 2 people 2 days each
8/4/08	Mon	1	Election Site Support	0	0	1	JH	August 5 Special Election Pre-election on-site support		
8/5/08	Tue	1	Election Site Support	0	0	1	AC	August 5 Special Election on-site support	CS	
8/5/08	Tue	1	Election Site Support	0	0	1	JH	August 5 Special Election on-site support		
8/6/08	Wed	1	Project Management	0	1	0	AC	Review of acceptance testing plan meeting	JH, CS	
8/11/08	Mon	1	Project Management	0	1	0	AC	Assistance with 1st Ballot Box Delivery	JH, CS	
8/12/08	Tue	1	Project Management	0	1	0	AC	Assistance with Ballot Box Acceptance and Mgmt Meeting	JH, CS	
8/13/08	Wed	1	Project Management	0	1	0	AC	Assistance with Ballot Box Acceptance and Acceptance Process Review	JH, CS	
8/18/08	Mon	1	Project Management	0	1	0	AC	Assistance with 2nd Ballot Box Delivery and Official certification of August 5 special election	JH, CS	
8/19/08	Tue	1	Project Management	0	1	0	AC	Assistance with 2nd Ballot Box Delivery and Official certification of August 5 special election		
8/18/08	Mon	1	Training Service	1	0	0	MD	Equipment Operations Training		Equipment Operations Training: 1 person 7 days total
8/19/08	Tue	1	Training Service	1	0	0	MD	Equipment Operations Training		
8/20/08	Wed	1	Training Service	1	0	0	MD	Equipment Operations Training		
8/21/08	Thu	0	Training Service	0	0	0	MD	Equipment Operations Training		
8/22/08	Fri	1	Training Service	1	0	0	MD	Equipment Operations Training		
8/25/08	Mon	1	Training Service	1	0	0	MD	Equipment Operations Training		
8/26/08	Tue	1	Training Service	1	0	0	MD	Equipment Operations Training		
8/26/08	Tue	1	Project Management	0	1	0	AC	Assisted with Ballot Box Acceptance, finalized official certification, staged and ...	JH, CS	
8/27/08	Wed	1	Project Management	0	1	0	AC	Received 50 M100s. Mgmt Meeting, Automark acceptance training and testing	JH, CS	
8/28/08	Thu	1	Project Management	0	1	0	AC	Received 300 M100s. M100 & Automark acceptance training and testing	JH, CS	
9/2/08	Tue	1	Project Management	0	1	0	BB	Creation of UnityDatabase, DIMS data import, and ballot layout consulting		
9/3/08	Wed	1	Project Management	0	1	0	BB	Creation of UnityDatabase, DIMS data import, and ballot layout consulting		
9/4/08	Thu	1	Project Management	0	1	0	BB	Creation of UnityDatabase, DIMS data import, and ballot layout consulting		
9/5/08	Fri	1	Project Management	0	1	0	BB	Creation of UnityDatabase, DIMS data import, and ballot layout consulting		
9/2/08	Tue	1	Project Management	0	1	0	AC	Unity assistance, helped manage and train new staff, equipment receiving	JH, CS	
9/3/08	Wed	1	Project Management	0	1	0	AC	Unity assistance, helped manage and train new staff, equipment receiving	JH, CS	
9/4/08	Thu	1	Project Management	0	1	0	AC	Unity assistance, helped manage and train new staff, equipment receiving	JH, CS	
9/4/08	Thu	0	Training Service	0	0	0	GL	Equipment Operations Training		

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
9/5/08	Fri	1	Training Service	1	0	0	GL	Equipment Operations Training		
9/8/08	Mon	1	Project Management	0	1	0	AC	Assisted with acceptance. Ballot layout, and various activities	JH, CS	
9/9/08	Tue	1	Project Management	0	1	0	AC	Assisted with acceptance. Ballot layout, and various activities	JH, CS	
9/9/08	Tue	1	Project Management	0	1	0	BB	Creation and update of Unity Database, DIMS data import, and ballot layout consulting		
9/10/08	Wed	1	Project Management	0	1	0	BB	Creation and update of Unity Database, DIMS data import, and ballot layout consulting		
9/10/08	Wed	1	Project Management	0	1	0	KW	Creation and update of Unity Database, DIMS data import, and ballot layout consulting	JH, CS	
9/11/08	Thu	1	Project Management	0	1	0	KW	Creation and update of Unity Database, DIMS data import, and ballot layout consulting	JH, CS	
9/12/08	Fri	1	Project Management	0	1	0	KW	Creation and update of Unity Database, DIMS data import, and ballot layout consulting	JH, CS	
9/13/08	Sat	1	Project Management	0	1	0	AC	Project management and ballot/coding + L&A support/consulting		
9/15/08	Mon	1	Project Management	0	1	0	AC	Project management and ballot/coding + L&A support/consulting	JH, CS	
9/16/08	Tue	1	Project Management	0	1	0	AC	Project management, team meeting, and ballot/coding + L&A support/consulting	JH, CS	
9/16/08	Tue	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/17/08	Wed	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/18/08	Thu	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/19/08	Fri	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	JH, CS	
9/20/08	Sat	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/22/08	Mon	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/23/08	Tue	1	Project Management	0	1	0	AC	Manager meeting, ballot layout/coding assistance, and L&A assistance	CS	
9/23/08	Tue	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	CS	
9/24/08	Wed	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	CS	
9/25/08	Thu	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	CS	
9/26/08	Fri	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/27/08	Sat	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
9/29/08	Mon	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	CS, JH, DF	
9/30/08	Tue	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	CS, JH, DF	
9/30/08	Tue	1	Project Management	0	1	0	AC	Project Management, ballot layout/coding, and L&A consulting		
10/1/08	Wed	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
10/2/08	Thu	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
10/3/08	Fri	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting	JH, DF, AC	
10/4/08	Sat	1	Project Management	0	1	0	AC	Ballot layout, coding, and Automark L&A consulting		
10/6/08	Mon	1	Project Management	0	1	0	AC	Ballot layout, coding, manager meeting, and L&A consulting	JH	
10/6/08	Mon	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
10/7/08	Tue	1	Project Management	0	1	0	KW	Ballot layout, coding, M650 maintenance and L&A consulting	JH	
10/8/08	Wed	1	Project Management	0	1	0	KW	Ballot layout, coding, M650 maintenance and L&A consulting	JH	
10/9/08	Thu	1	Project Management	0	1	0	KW	Ballot layout, coding, M650 maintenance and L&A consulting	JH	
10/10/08	Fri	1	Project Management	0	1	0	KW	Ballot layout, coding, M650 maintenance, pre-test, and L&A consulting	JH	
10/11/08	Sat	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
10/12/08	Sun	1	Project Management	0	1	0	KW	Ballot layout, coding, and L&A consulting		
10/13/08	Mon	1	Election Site Support	0	0	1	MD	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	EO	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	KW	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	JH	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	DF	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	PW	On-site election support for Oct. 14 election		
10/13/08	Mon	1	Election Site Support	0	0	1	AC	On-site election support for Oct. 14 election		

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
10/13/08	Mon	1	Election Site Support	0	0	1	RM	On-site election support for Oct. 14 election		October 14 Election Day support: 8 technicians 3 days each
10/14/08	Tue	1	Election Site Support	0	0	1	MD	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	EO	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	KW	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	JH	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	DF	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	PW	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	AC	On-site election support for Oct. 14 election		
10/14/08	Tue	1	Election Site Support	0	0	1	RM	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	MD	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	EO	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	KW	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	JH	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	DF	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	PW	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	AC	On-site election support for Oct. 14 election		
10/15/08	Wed	1	Election Site Support	0	0	1	RM	On-site election support for Oct. 14 election		
10/16/08	Tue	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/16/08	Tue	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/17/08	Fri	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/17/08	Fri	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/18/08	Sat	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM	
10/18/08	Sat	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM	
10/19/08	Sun	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/19/08	Sun	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/20/08	Mon	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/20/08	Mon	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/21/08	Tue	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/22/08	Wed	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/23/08	Tue	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/24/08	Fri	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election	JM, JH	
10/24/08	Fri	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/25/08	Sat	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/25/08	Sat	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/26/08	Sun	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/26/08	Sun	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/27/08	Mon	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/27/08	Mon	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/28/08	Tue	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/28/08	Tue	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/29/08	Wed	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/30/08	Tue	0	Project Management	0	0	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/30/08	Tue	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/31/08	Fri	1	Project Management	0	1	0	AC	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		
10/31/08	Fri	1	Project Management	0	1	0	KW	Project management, ballot coding, and L&A consulting for Nov. 4 presidential general election		

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
11/5/08	Wed	1	Election Site Support	0	0	1	JB	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	TR	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	NL	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	PC	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	HN	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	HR	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	PN	On-site election event support for Nov. 4 presidential general election		
11/5/08	Wed	1	Election Site Support	0	0	1	AN	On-site election event support for Nov. 4 presidential general election		
11/7/08	Fri	1	Project Management	0	1	0	KW	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/8/08	Sat	1	Project Management	0	1	0	KW	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/11/08	Tue	1	Project Management	0	1	0	AC	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/12/08	Wed	1	Project Management	0	1	0	AC	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/13/08	Thu	1	Project Management	0	1	0	KW	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/13/08	Thu	1	Project Management	0	1	0	AC	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/14/08	Fri	1	Project Management	0	1	0	KW	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/14/08	Fri	1	Project Management	0	1	0	AC	Project management, bailot coding, and L&A consulting for Nov 18 election	JH	
11/15/08	Sat	1	Project Management	0	1	0	KW	Project management, bailot coding, and L&A consulting for Nov 18 election	JH	
11/15/08	Sat	1	Project Management	0	1	0	AC	Project management, bailot coding, and L&A consulting for Nov 18 election		
11/16/08	Sun	1	Project Management	0	1	0	KW	Proiect management and official canvass	JH	
11/17/08	Mon	1	Project Management	0	1	0	KW	Proiect management and official canvass		November 18 Election Day support: 4 technicians 3 days each
11/17/08	Mon	1	Project Management	0	1	0	AC	Election support and official canvass		
11/18/08	Tue	1	Project Management	0	1	0	KW	Election support and official canvass		
11/18/08	Tue	1	Project Management	0	1	0	AC	Election support and official canvass		
11/19/08	Wed	1	Project Management	0	1	0	KW	Election support and official canvass		
11/19/08	Wed	1	Project Management	0	1	0	AC	Election support and official canvass	JH, CS	
11/17/08	Mon	1	Election Site Support	0	0	1	JH	Election support		
11/17/08	Mon	1	Election Site Support	0	0	1	DF	Election support		
11/18/08	Tue	1	Election Site Support	0	0	1	JH	Election support		
11/18/08	Tue	1	Election Site Support	0	0	1	DF	Election support		
11/19/08	Wed	1	Election Site Support	0	0	1	JH	Election support	JH, CS	
11/19/08	Wed	1	Election Site Support	0	0	1	DF	Election support		
11/21/08	Fri	1	Project Management	0	1	0	KW	Proiect management and official canvass		
11/22/08	Sat	1	Project Management	0	1	0	KW	Proiect management and official canvass		
11/23/08	Sun	1	Project Management	0	1	0	KW	Proiect management and official canvass		
11/24/08	Mon	1	Project Management	0	1	0	KW	Project management, manager meeting, and official canvass		
11/25/08	Tue	0	Project Management	0	0	0	AC	Official count board meeting - elected attendance, not billable		
12/9/08	Tue	0	Project Management	0	0	0	KW	Database review for December election - not billable		
2008 TOTALS		206		14	110	82				

CUYAHOGA COUNTY, OH 2009 Service Days Summary

Service Day Totals								May 5 Primary Eleciton		
Training Days	2	\$	3,000					September 8 Primary Election		
Project Mgmt Days	96	\$	144,000					September 29 Primarv Election		
Site Support Days	48	\$	72,000					November 4 General Election		
Total Days	146	\$	219,000							
Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
2/25/09	Wed	1	Project Management	0	1	0	KW	Reconfigure Unity Server		
2/26/09	Thu	1	Project Management	0	1	0	KW	Unity Server Configuration. Training and Procedures Documentation		
2/27/09	Fri	1	Project Management	0	1	0	KW	Training and Procedure Documentation and Ptanning		
3/2/09	Mon	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentalio	M100 Conversion Team	
3/3/09	Tue	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentation	M100 Conversion Team	
3/4/09	Wed	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentation	M100 Conversion Team	
3/5/09	Thu	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentalio	M100 Conversion Team	
3/6/09	Fri	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentalio	M100 Conversion Team	
3/9/09	Mon	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentalio	M100 Conversion Team	
3/10/09	Tue	1	Project Management	0	1	0	KW	Unity Training and Procedure Documentalio	M100 Conversion Team	
3/11/09	Wed	1	Project Management	0	1	0	KW	Unity Training, Procedure Documentation and Fall Election Simulation	M100 Conversion Team	
3/12/09	Thu	1	Project Management	0	1	0	KW	Unity Training, Procedure Documentation and Fall Election Simulation	M100 Conversion Team	
3/13/09	Fri	1	Project Management	0	1	0	KW	Unity Training, Procedure Documentation and Fall Election Simulation	M100 Conversion Team	
3/16/09	Mon	1	Project Management	0	1	0	KW	Import County Redistricting, Coding for May Primary Election		
3/18/09	Wed	1	Project Management	0	1	0	KW	Review/Troubleshoot Coding for May Primary Election		
3/23/09	Mon	1	Project Management	0	1	0	KW	EDM Coding, ESSIM Ballot Layout, Create Print Files		
3/26/09	Thu	1	Project Management	0	1	0	KW	Unity Coding Issue Resolution, M650 Logic & Accuracy Testing, Partial M100 Testing		
4/3/09	Fri	1	Project Management	0	1	0	KW	Unity Procedures Documentation		
4/10/09	Fri	1	Project Management	0	1	0	KW	Unitv Procedures Documentation		
4/13/09	Mon	1	Project Management	0	1	0	KW	Unity Procedures Documentation		
5/4/09	Mon	1	Election Site Support	0	0	1	AC	May 5 Primary Election Pre-Election Support		May 5 Primary Election support: 2 technicians 3 days each
5/4/09	Mon	1	Election Site Support	0	0	1	JH	May 5 Primary Election Pre-Election Support		
5/5/09	Tue	1	Election Site Support	0	0	1	AC	May 5 Primary Eleciton Site Support		
5/5/09	Tue	1	Election Site Support	0	0	1	JH	May 5 Primary Eleciton Site Support		
5/6/09	Wed	1	Election Site Support	0	0	1	AC	May 5 Primary Eleciton Site Support		
5/6/09	Wed	1	Election Site Support	0	0	1	JH	May 5 Primary Eleciton Site Support		
CONVERSION FROM M100 OPTICAL SCANNERS TO NEW DS200 OPTICAL SCANNERS										
6/23/09	Tue	1	Training Service	1	0	0	MD	DS200 Hardware Training		1 trainer 2 days
6/24/09	Wed	1	Training Service	1	0	0	MD	DS200 Hardware Training		
7/6/09	Mon	1	Project Management	0	1	0	KW	Unity 3.2 Training and Document Revision		
7/7/09	Tue	1	Project Management	0	1	0	KW	Unity 3.2 Training and Document Revision		
7/8/09	Wed	1	Project Management	0	1	0	KW	Unity 3.2 Training and Document Revision		
7/8/09	Thu	1	Project Management	0	1	0	KW	Unity 3.2 Training and Document Revision		
7/14/09	Tue	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/15/09	Wed	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/16/09	Thu	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/20/09	Mon	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/21/09	Tue	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/22/09	Wed	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	
7/23/09	Thu	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS	

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments	
7/24/09	Fri	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	JH, MS		
7/27/09	Mon	1	Project Management	0	1	0	AC	Project Management - DS200 Implementation	JH, TJ, BV, GJ, DD		
7/28/09	Tue	1	Project Management	0	1	0	AC	Project Management - DS200 Implementation	JH, TJ, BV, GJ, DD		
7/29/09	Wed	1	Project Management	0	1	0	AC	Project Management - DS200 Implementation	JH, TJ, BV, GJ, DD		
7/30/09	Thu	1	Project Management	0	1	0	AC	Project Management - DS200 Implementation	JH, TJ, BV, GJ, DD		
7/31/09	Fri	1	Project Management	0	1	0	AC	Project Management - DS200 Implementation	JH, TJ, BV, GJ, DD		
8/3/09	Mon	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	AC		
8/4/09	Tue	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	AC		
8/5/09	Wed	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation	AC		
8/6/09	Thu	1	Project Management	0	1	0	KW	Project Management - DS200 Implementation			
8/10/09	Mon	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH		
8/11/09	Tue	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH		
8/12/09	Wed	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH		
8/13/09	Thu	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH		
8/14/09	Fri	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH		
8/17/09	Mon	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH, MS, DD		
8/18/09	Tue	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH, MS, DD		
8/19/09	Wed	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH, MS, DD		
8/20/09	Thu	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH, MS, DD		
8/21/09	Fri	1	Project Management	0	1	0	KW	DS200 Implementation Project Management	JH, MS, DD		
8/25/09	Tue	1	Project Management	0	1	0	AC	DS200 Implementation Project Management			
8/26/09	Wed	1	Project Management	0	1	0	AC	DS200 Implementation Project Management			
8/31/09	Mon	1	Project Management	0	1	0	KW	DS200 Implementation Project Management			
9/1/09	Tue	1	Project Management	0	1	0	KW	DS200 Implementation Project Management			
9/2/09	Wed	1	Project Management	0	1	0	KW	DS200 Implementation Project Management			
9/3/09	Thu	1	Project Management	0	1	0	KW	DS200 Implementation Project Management			
9/7/09	Mon	1	Election Site Support	0	0	1	KW	September 8, 2009 Primary Election Site Support		September 8 Primary Election Site Support: 6 technicians 3 days each	
9/7/09	Mon	1	Election Site Support	0	0	1	JH	September 8, 2009 Primary Election Site Support			
9/7/09	Mon	1	Election Site Support	0	0	1	AC	September 8, 2009 Primary Election Site Support			
9/7/09	Mon	1	Election Site Support	0	0	1	CC	September 8, 2009 Primary Election Site Support			
9/7/09	Mon	1	Election Site Support	0	0	1	SM	September 8, 2009 Primary Election Site Support			
9/7/09	Mon	1	Election Site Support	0	0	1	DF	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	KW	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	JH	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	AC	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	CC	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	SM	September 8, 2009 Primary Election Site Support			
9/8/09	Tue	1	Election Site Support	0	0	1	DF	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	KW	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	JH	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	AC	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	CC	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	SM	September 8, 2009 Primary Election Site Support			
9/9/09	Wed	1	Election Site Support	0	0	1	DF	September 8, 2009 Primary Election Site Support			
9/10/09	Thu	1	Project Management	0	1	0	KW	November 4th General Election Coding	JH		
9/15/09	Tue	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout			

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
9/17/09	Thu	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout		
9/18/09	Fri	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout		
9/19/09	Sat	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout		
9/21/09	Mon	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout		
9/22/09	Tue	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout/Sept Special Official Count		
9/23/09	Wed	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout/Sept Special Official Count		
9/24/09	Thu	1	Project Management	0	1	0	KW	November General Election Coding and Ballot Layout		
9/28/09	Mon	1	Election Site Support	0	0	1	KW	September 29, 2009 Primary Election Site Support		September 29 Election Site Support: 2 technicians 3 days each
9/28/09	Mon	1	Election Site Support	0	0	1	JH	September 29, 2009 Primary Election Site Support		
9/29/09	Tue	1	Election Site Support	0	0	1	KW	September 29, 2009 Primary Election Site Support		
9/29/09	Tue	1	Election Site Support	0	0	1	JH	September 29, 2009 Primary Election Site Support		
9/30/09	Wed	1	Election Site Support	0	0	1	KW	September 29, 2009 Primary Election Site Support		
9/30/09	Wed	1	Election Site Support	0	0	1	JH	September 29, 2009 Primary Election Site Support		
10/1/09	Thu	1	Project Management	0	1	0	KW	November General Election Preparation	JH	
10/2/09	Fri	1	Project Management	0	1	0	KW	November General Election Preparation	JH	
10/5/09	Mon	1	Project Management	0	1	0	KW	Audit of September 8 Primary Election		
10/6/09	Tue	1	Project Management	0	1	0	KW	2009 General Election L&A Testing		
10/7/09	Wed	1	Project Management	0	1	0	KW	2009 General Election L&A Testing		
10/8/09	Thu	1	Project Management	0	1	0	KW	2009 General Election L&A Testing		
10/9/09	Fri	1	Project Management	0	1	0	KW	2009 General Election L&A Testing		
10/12/09	Mon	1	Project Management	0	1	0	KW	2009 November General Election Preparation	JH	
10/13/09	Tue	1	Project Management	0	1	0	KW	2009 November General Election Preparation	JH	
10/14/09	Wed	1	Project Management	0	1	0	KW	2009 November General Election Preparation	JH	
10/15/09	Thu	1	Project Management	0	1	0	KW	2009 November General Election Preparation	JH	
10/16/09	Fri	1	Project Management	0	1	0	KW	2009 November General Election Preparation	JH	
10/17/09	Sat	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/19/09	Mon	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/20/09	Tue	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/21/09	Wed	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/22/09	Thu	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/23/09	Fri	1	Project Management	0	1	0	KW	2009 November General Election Preparation		
10/26/09	Mon	1	Project Management	0	1	0	KW	2009 General Election Testing		
10/26/09	Mon	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
10/27/09	Tue	1	Project Management	0	1	0	KW	2009 General Election Absentee Testing		
10/27/09	Tue	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
10/28/09	Wed	1	Project Management	0	1	0	KW	2009 General Election Absentee Ballot Scanning		
10/28/09	Wed	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
10/29/09	Thu	1	Project Management	0	1	0	KW	2009 General Election Absentee Ballot Scanning		
10/29/09	Thu	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
10/30/09	Fri	1	Project Management	0	1	0	KW	2009 General Election Absentee Ballot Scanning		
10/30/09	Fri	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
10/31/09	Sat	1	Project Management	0	1	0	KW	2009 General Election Absentee Ballot Scanning		
10/31/09	Sat	1	Project Management	0	1	0	JH	2009 General Election Absentee Ballot Scanning		
11/2/09	Mon	1	Election Site Support	0	0	1	KW	November 3 2009 General Election Site Support		
11/2/09	Mon	1	Election Site Support	0	0	1	JH	November 3 2009 General Election Site Support		
11/2/09	Mon	1	Election Site Support	0	0	1	TL	November 3 2009 General Election Site Support		

Date	Day	Days Performed	Service Type	Training	Project Mgmt	Site Support	Performed by	Activity	Additional Personnel Present	Comments
11/2/09	Mon	1	Election Site Support	0	0	1	CJ	November 3 2009 General Election Site Support		November 3 Election Site Support: 6 technicians 3 days each
11/2/09	Mon	1	Election Site Support	0	0	1	JW	November 3 2009 General Election Site Support		
11/2/09	Mon	1	Election Site Support	0	0	1	TM	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	KW	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	JH	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	TL	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	CJ	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	JW	November 3 2009 General Election Site Support		
11/3/09	Tue	1	Election Site Support	0	0	1	TM	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	KW	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	JH	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	TL	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	CJ	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	JW	November 3 2009 General Election Site Support		
11/4/09	Wed	1	Election Site Support	0	0	1	TM	November 3 2009 General Election Site Support		
2009 TOTALS		146		2	96	48				