Los Angeles County Registrar-Recorder/County Clerk

2011 Inspector Survey Analysis Report

November 8, 2011
Local and Consolidated Elections

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Executive Summary

The Los Angeles County Registrar-Recorder/County Clerk (RRCC) releases its 7th Inspector Survey Analysis Report. The surveys, begun in 2006, study various aspects of the Inspector's experience on Election Day including ballot drop-off, communication with fellow poll workers and Norwalk Headquarters, equipment functionality, and training[1]. Questions were added to the November 2011 survey to assess the overall experience of Inspectors overall experience.

The surveys are mailed to each of the Inspectors who are scheduled to work in the November 2011 election and are sent approximately 3 days after Election Day[2].

This study of Inspector responses presents a valuable perspective on how well election day/night activities are being remedied, when needed, and offers insights into trends in demographics of Inspectors. Although this report uses data to draw comparisons between elections, it should be noted that elections vary greatly for a number of reasons: the size of the voting population; voter interest and turnout; and election type (e.g. Primary, Local and Municipal, General). Comparisons between like elections are made in this report whenever possible; however, trends may exist regardless of the factors listed above.

Several key indicators of election operations have improved, dramatically in some cases, since the inception of the surveys.

Important highlights include:

- Inspectors are waiting far less time at Check-In-Centers (CIC) compared to figures from 2006. 100% of respondents, the most ever, reported waiting less than 1 hour. In fact 85.9% reported waiting less than 15 minutes at the CIC.

- Not since November 2008 has Coordinator contact with Inspectors been as high. 83.2% of Inspectors reported being contacted by their Coordinator prior to Election Day. Also, more Inspectors were visited by their Coordinator (98%), the highest since November 2008 when there was high interest in the presidential contest.

- Of those who called Norwalk Headquarters for Election Day assistance, only 12% said they had questions about procedures. Coupled with the fact that 97% felt training prepared them for Election Day, this suggests that the quality of training is high.

- 68% of Inspectors reviewed their training books before the election and used them on Election Day as well. However, they generally prefer to use the "Election Guide and

[1] Questions regarding Inspector training and opinions on various procedures were added to the November 8, 2011 survey. The survey undergoes regular assessment to ensure that data captures key indicators of operations.
[2] Previously, surveys were mailed 3 weeks after Election Day; however, the process was changed to allow sooner mailings in hopes of obtaining a higher response rate and more accurate data.

Checklist" more frequently than the "What to Do If?" – 84% compared to 57% before an election, respectively.

- 91.9% of Inspectors feel confident in their ability to process provisional voters correctly.

- 59.7% of Inspectors rated their fellow poll workers' performance as excellent, which is a 5.5% increase from last year.

- Compared to last November, 10% more Inspectors felt that they were assigned enough poll workers for the day (89.5%).

Statistical tests were performed on sets of variables and are included in Appendix A. Correlation measures showed the following results:

- The time an Inspector made their first call to Norwalk Headquarters had a strong correlation to the time the issue was resolved.

- Malfunctioning equipment tended to be replaced on a rolling basis; if a piece of equipment malfunctioned in the morning, it tended to be replaced in the morning.

- A Coordinator was more likely to visit an Inspector if they had contacted the Inspector before Election Day.

- If an Inspector reviewed their training books before the election, they tended to also use their books on Election Day; however, this correlation is not particularly strong.

- The number of times that an Inspector has served has a weak correlation with whether or not the Inspector used training materials on Election Day.

Based on results of the full Report, recommendations include the following:

- Continue to encourage Coordinators to be aware of staffing issues at the polling place. 10.5% of Inspectors said that there were not enough poll workers assigned to their location. Since Coordinator contact and visits are at high levels, Coordinators should be utilized to communicate staffing issues to headquarters. Also, Inspectors should be reminded that they can recruit voters to become Clerks when needed on Election Day. This may alleviate their concerns regarding the staffing levels at polling places.

- The booklets distributed at Inspector training classes should be used more efficiently. Generally, Inspectors used the "Election Guide and Checklist" far more frequently than the "What to Do If?" book.

- Continue dispatching troubleshooters to resolve issues before they escalate. Overall, fewer pieces of equipment require replacing because troubleshooters and coordinators have been present to correct problems.

Section I-

The November 2011 Inspector Survey Report: Components

The Inspector Survey Report focuses on five main areas[3]: CIC operations, communication and support, equipment functionality, training, and overall Election Day experience. It presents information critical to the formulation and/or amendment of departmental policy.

This Report is divided into the sections mentioned above. It analyzes questions relevant to each area and discusses possible relationships that might explain correlations between policy and operational effectiveness.

The Methodology and Justification sections are included in Appendix A and discuss changes made to the survey and the statistical tests used to determine relationships. Appendix B includes the Data Entry and Analysis code book used for this particular survey report and Appendix C presents the survey used for this Report.

Section II-

Question 1 – Did you work as an Inspector during the November 8, 2011 Consolidated Election?

Respondents were asked to verify that they had worked during this particular election in order to capture an accurate picture of Election Day experiences for Inspectors. This question was necessary since the survey distribution list was generated within one week prior to Election Day and Inspectors may occasionally withdraw from serving up until the day of service.

If a respondent marked "NO", then their survey was not counted in the analysis. If a respondent did not answer the question and left the field blank, the survey was set aside to investigate whether or not the person actually served on Election Day[4].

Section III-

Questions 2-5: Ballot Drop-Off at the Check-In-Center (CIC)

Check in Centers are located throughout Los Angeles County and are operated by trained staff members who receive voting supplies and ballots from each Inspector after the polls close on Election Night along with an assigned Clerk.

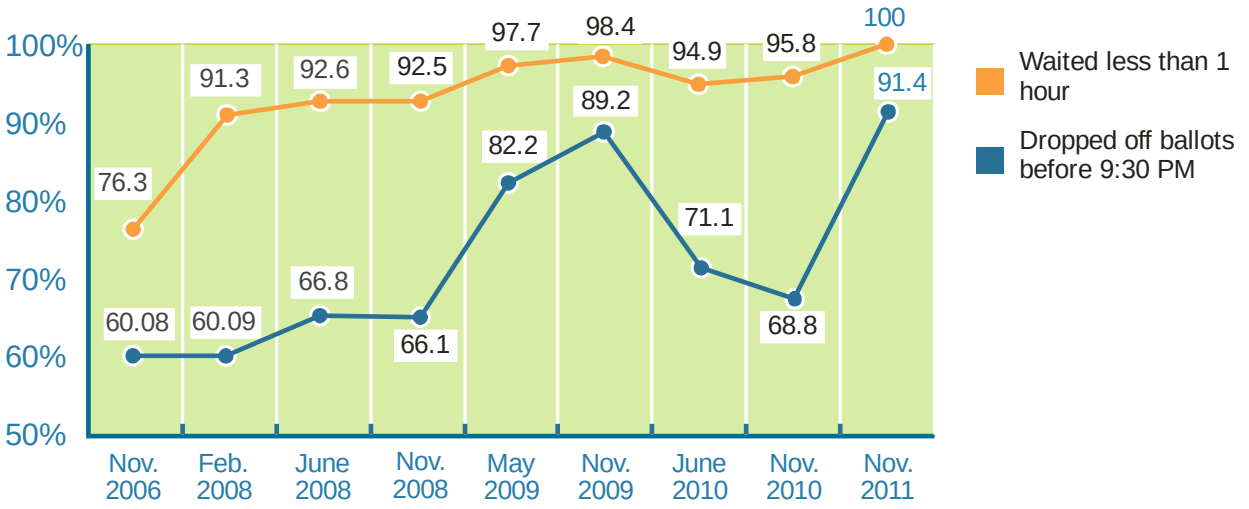
Voted ballots are sealed in red boxes, which are scanned at CICs and prepared for secure transport to Norwalk Headquarters. Provisional and Vote By Mail (VBM) ballots are also transported in separate security envelopes to Norwalk where they are prepared for signature verification.

[3] The training and voting system assessment sections were added to the November 2010 survey.

[4] There were approximately 30 surveys that were left blank for question 1. Upon further research, all respondents were found to have served for this particular election; therefore, all collected surveys were counted in this analysis.

In order to measure CIC performance, survey questions asked the respondents to report when they arrived and dropped their ballots off and how long they waited in line to do so. Questions were also asked to measure the subjective aspects of Election Day, such as the difficulty in locating the CIC and whether or not Inspectors felt CIC staff members were helpful and professional.

Respondents reported that they arrived at the CIC to drop off their ballots earlier than ever before. The data shows that 91.4% of all Inspectors arrived before 9:30 PM, compared to only about 69% of Inspectors who reported the same from the 2010 November election. In fact, 48.1% said that they dropped off their ballots between 8:31 and 9:00 PM. Although this is a noteworthy trend, a comparison with a similar election in November 2009 shows an increase of only 2.2% in this area. Overall, when comparing like elections, there has been an increase in Inspectors dropping off their ballots before 9:30 PM.



Even more impressively, 100% of respondents said that they waited less than one hour once they arrived at the drop-off location (CIC)[5]. Of these, 85.9% of Inspectors reported that they waited less than 15 minutes. This was the first time that 100% of all respondents reported waiting under an hour, since 2006 when data tracking first began.

Typically, small elections like this produce a lower voter turnout. In turn, this makes Election Day activities and closing procedures easier for Inspectors to handle, which allows Inspectors to arrive at the CIC earlier. Also, the consolidation of precincts in this election meant that there were fewer polling locations than in a Primary or General Election, for example. Still, these improvements are noteworthy when compared to a similar type of election, such as in November 2009, where 98.4% waited less than an hour and 89.2% dropped off their ballots before 9:30 PM.

[5] The possible responses to this question were expanded to include 15 minute increments of the first hour (i.e. 0-15, 16-30, 31-45, and 46 to one hour).

Before Election Day, Inspectors are provided materials to help locate their CIC once they close for the night. When asked about locating their drop off location, 98.1% said that it was not difficult to find their CIC. This is up from 96.7% from last year when data for this subject first began.

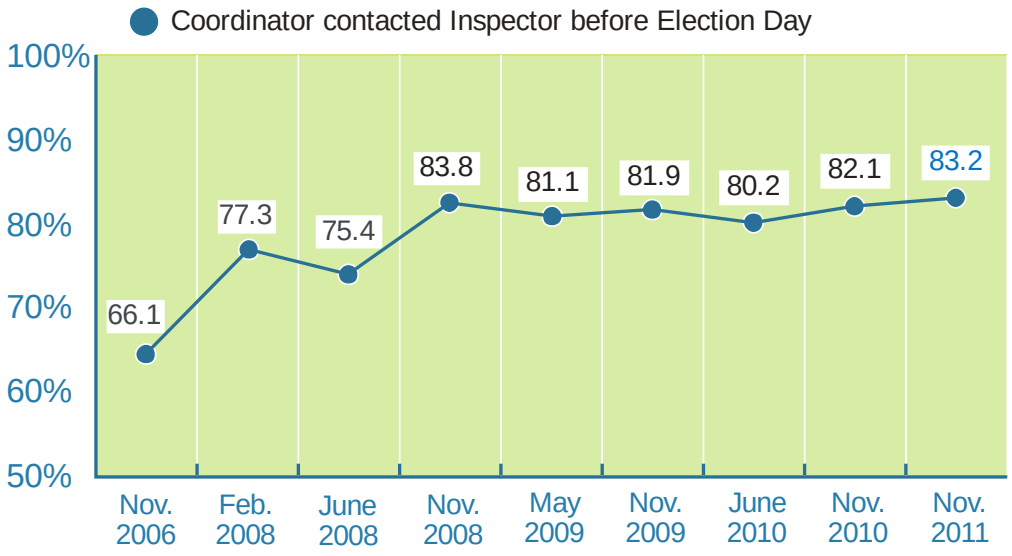
A new question was added to this survey that aimed to gain the perspective of staffing levels at the CIC. Given that a record percentage of Inspectors reported waiting under an hour, it is not surprising that 96.9% felt that staffing levels at the CIC were sufficient.

Section IV-

Questions 6-10: Communication and Support – Coordinator Contact and Poll Workers

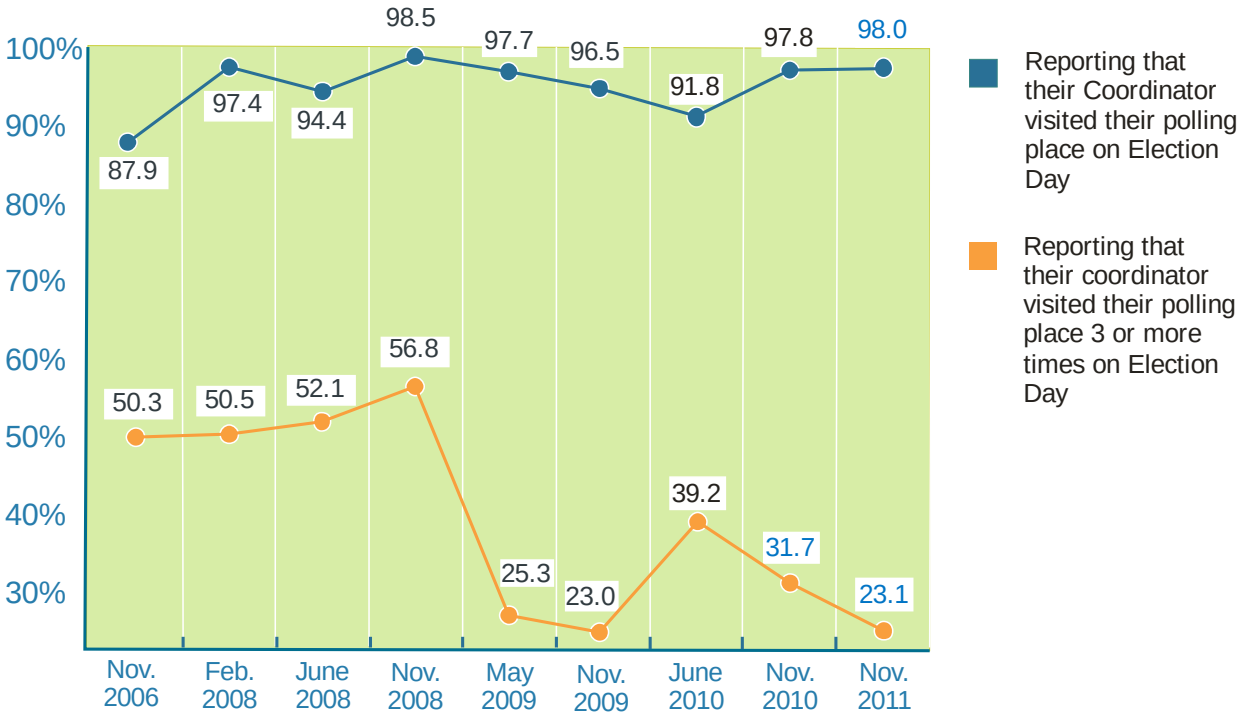
Coordinators contact Inspectors before Election Day to provide them their contact information and to discuss any issues prior to Election Day. They act as liaisons with RRCC Headquarters and also monitor their assigned polling places throughout the day.

The graph below shows a steady increase in communication between Coordinators and Inspectors. About 83% of Inspectors reported that their Coordinator contacted them before Election Day. This figure has been steadily rising since June 2010 and has not been this high since the Presidential Election of November 2008, where a high interest in elections was experienced.



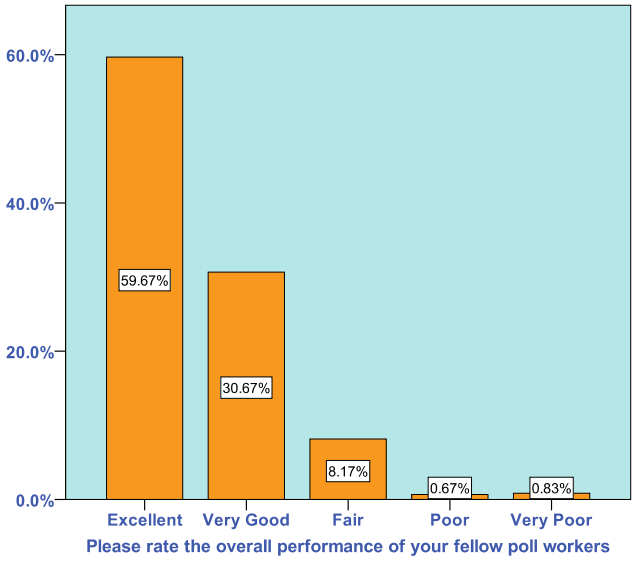
Coordinators are responsible for 10-20 precincts, on average, and are required to visit their assigned polling places from when polls open at 7:00 AM until they close at 8:00 PM. According to the survey, 98% of Coordinators visited their polling places at least once, while 23.1% visited them 3 times or more. Although there has been an increase of Coordinators visiting their polling place at least once, there has been a trend of fewer Coordinators visiting less than 3

times. In this election, the percentage of Coordinators who visited 3 or more times is about on par with that of November 2009, the most comparable election.



In order to measure poll worker staffing and performance, Inspectors were asked whether they felt there were enough poll workers assigned to their polling place and to rate the overall performance of their poll workers.

When asked to rate the overall performance of their poll workers, 90.3% of Inspectors said that they were either "excellent" or "very good" (cumulatively). Although this is down slightly from 91.2% last November, those that rated their poll workers as "excellent" rose from 54.2% to 59.7%. It appears that more Inspectors were willing to rate poll workers as either "excellent" or "fair", where the figures increased by 5.5% and 1.5% respectively. The changes in these categories[6] primarily explain the overall dip in Inspectors reporting that their poll workers were either "excellent" or "very good".



According to the survey, 89.5% of

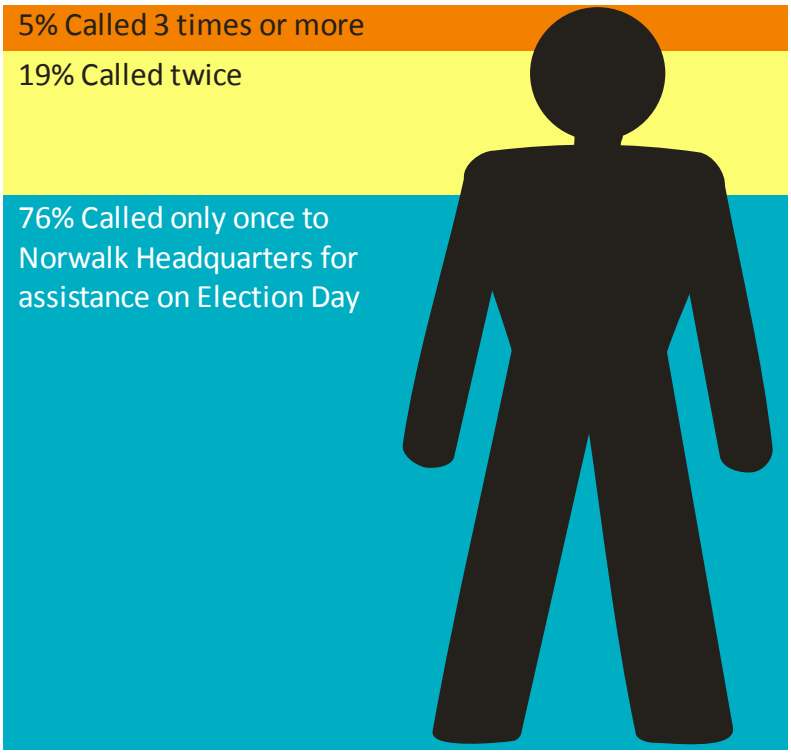
[6] Those reporting that their poll workers were "poor" or "very poor" fell 0.6% for this election.

Inspectors felt that they were assigned enough poll workers for the day. This figure is up from 79.5% last November, when data was first tracked in this category. This could be attributed to the sharp decline in voter turnout (-40%) from the last election[7]. The data suggests that when there are fewer voters at the polls, Inspectors may generally feel more able to manage with the resources assigned to them. However, in tandem with an expected lower turnout for this past election, the consolidation of precincts meant that, overall, fewer poll workers were recruited to assist at the polls compared to November 2010. The fact that there were fewer poll workers did not have a negative effect on how Inspectors felt about staffing levels.

Questions 11-16: Communication and Support – Contact With Norwalk Headquarters

This section of the survey was expanded to understand how Inspectors utilize and perceive the general support from Norwalk Headquarters on Election Day. Questions regarding support from Precinct Coordinators had existed in previous iterations of the survey; however, various comments from Inspectors suggested that data was needed to document support from the main office. Inspectors were asked about issues they reported to Norwalk and the experience they had in resolving those issues. Of all respondents, 20.6% (126 respondents) said that they called Headquarters for assistance or troubleshooting.

Survey data shows that 76% called only once regarding any issue they may have had on Election Day, while another 19% called twice for assistance. Only 5% called the main office three times or more. Of those who called for help, 75.4% said that their issue was resolved by calling Norwalk Headquarters.

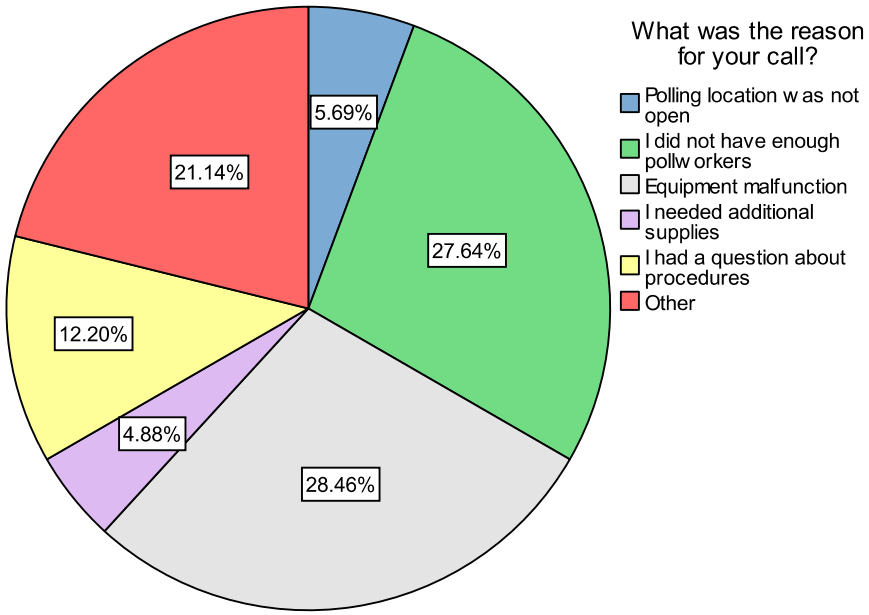


The most frequent reason (28.5%) for calling Norwalk Headquarters on Election Day was related to malfunctioning equipment (equipment functionality is covered in a later part of the survey and will be further discussed). Second to equipment malfunctions, the next frequently appearing reason (27.6%) was that Inspectors claimed to not have enough poll workers. About 12% said that they had questions about Election Day procedures and only 5.7% said that they

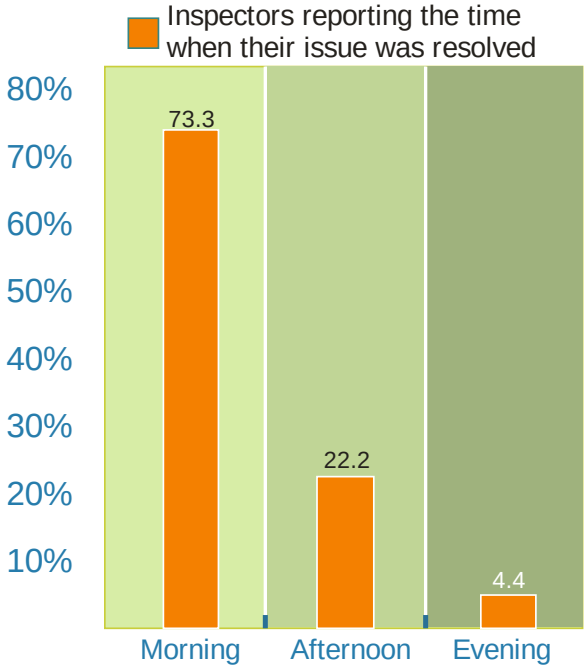
[7] Turnout for this election was 13.79% compared to last November 2010 where turnout was 53.77%.

called because their polling location was not opened[8]. The chart below illustrates the reasons Inspectors gave for calling Norwalk Headquarters for assistance.

Of those who called for assistance, 21% described their reason as "other". At the time of the survey, respondents were not provided with the opportunity to clarify their reason if they selected "other". The high percentage of those who selected this category is significant enough to explore possible reasons in future surveys.



Inspectors were asked to indicate the approximate time that their first call was made to Norwalk on Election Day. They were given three categories to choose from; morning (6:00-11:59 AM), afternoon (12:00-5:00 PM), and evening (5:01-8:00 PM). Nearly 84% responded that their first call was in the morning. This seems to agree with data that shows the primary reasons for calling were related to equipment malfunctioning and not having enough poll workers. These types of issues would normally present themselves when opening the polls and starting up the equipment. And of those that said their issue was resolved by calling Norwalk, 73.3% of Inspectors said that it was



[8] Most polling locations, such as schools and event halls, are not owned or managed by the RR/CC. The RR/CC attempts to coordinate appropriate hours of operation with proprietors to ensure that polls are open as required by law.

resolved in the morning. A correlation test between these two variables of the "first call time" and "resolve time" will be discussed later in this report in order to determine if a relationship exists between the two.

Section V-

Questions 17-19: Training

Election Day requires a vast knowledge of procedures in order to ensure that all eligible voters are able to cast their ballot independently and privately. The ever changing landscape of the laws that govern the administration of elections makes training thousands of workers a constant challenge. Before each election, Inspectors are required to attend an in-class training session in addition to an optional online course. For major elections, in-class training is offered throughout Los Angeles County at various days, times, and locations for the convenience of the Inspector. Inspectors are not required, or allowed, to make reservations for any particular session, so class attendance can vary from a few dozen to over a hundred Inspectors.

The survey asked Inspectors about the effectiveness of these training sessions in preparing them for Election Day and the usefulness of handing out training materials during class. Training materials given in class are the "Election Guide and Checklist" and "What to Do If?" booklets[9].

The findings were that 97% said that the training prepared them for Election Day. This figure is slightly up from 96% last November.

Use of the Training Materials

Each Inspector is provided with a copy of the "Election Guide and Checklist" and "What to Do If?" training manuals when they attend the required training class. These books contain crucial information for Inspectors and are encouraged to be reviewed when Inspectors go home after training and brought with them on Election Day. Additional copies of these books are also provided in the Inspector supply tub in case an Inspector loses or forgets to bring these materials on Election Day.

68% Reviewed their books before the election and used them on Election Day too

In order to measure the usefulness of training materials, the survey was expanded to capture data regarding which books were used and when they were used in relation to Election Day. Of all respondents, 89% said that it was helpful to review their books between the training class and Election Day while 76.4% said that they used the books on Election Day. Only about 68% of Inspectors said that they reviewed their books before and during Election Day.

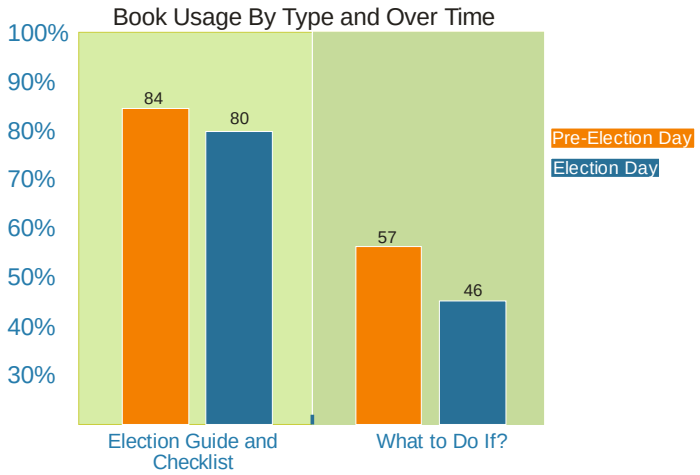
[9] Beginning with the November 2011 election, content from the "InkaVote Plus Manual" was integrated into the "Election Guide and Checklist" and "What to Do If?" books.

Reviewing Books Prior to Election Day

An analysis of the survey data shows that Inspectors reviewed the "Election Guide and Checklist" more frequently than the other training book, "What to Do If?". The "Election Guide and Checklist" was reviewed by 84% of the respondents before Election Day. This is significantly higher than the 57% of Inspectors who found it helpful to review the "What to Do If?" book. About 39% said that they reviewed both books before Election Day.

Using Books on Election Day

When asked if either of the training books were used on Election Day, 76.4% of Inspectors responded that they indeed used their books that day. This data indicates that Inspectors are using training materials less frequently on Election Day itself rather than between their training session and Election Day where usage is a higher, 89%. In fact, about 13% fewer Inspectors use their training materials on Election Day. When it comes to those who reported using both books on Election Day, only about 23% said that they used both. On Election Day, Inspectors tend to use the Election Guide and Checklist (80% of the time).



% of Inspectors Who Use Their Books By Times They Served

	Before E-Day	E-Day	
First Time	100%	100%	-0%
2-10 Times	93.4%	84.7%	-8.7%
11-20 Times	84.4%	63.97%	-20.43%
21-30 Times	84.4%	75.82%	-8.58%
31-40 Times	93.75%	75.75%	-18%
Over 40 Times	77.78%	72%	-5.78%

The fall off in book usage from pre-Election Day to Election Day could be that Inspectors are reviewing the procedures well enough for the election and do not feel the need to refer to the materials on the big day.

Additionally, many Inspectors have served numerous times and are familiar with the usual procedures outlined in the books (e.g. setting up a polling place, processing voters, and closing for the day). Generally, the more times an Inspector has served, the less he/she is likely to utilize the training books (see table above). However, the number of times served does not have a perfect correlation with the overall training book usage. For instance, those who served for their first time were just as likely (100%) to review their books before Election Day as they were to use them on the actual day. In the next category (2-10 Times), a difference of 8.7% is observed when comparing usage before and on Election Day. From there, the differences fluctuate from 20.43% to 8.58%.

However, as elections vary by type (e.g. Open/Closed Primary, General, Special Districts) and regulations surrounding elections change, the processing of voters may also vary. Because of this, Inspectors must realize the importance of staying current with procedures despite their experience. The data demonstrates that a high percentage of Inspectors chose to refresh themselves to some extent regardless of how many times they have served (at least 3 out of 4 will review the materials before Election Day no matter how many times previously served).

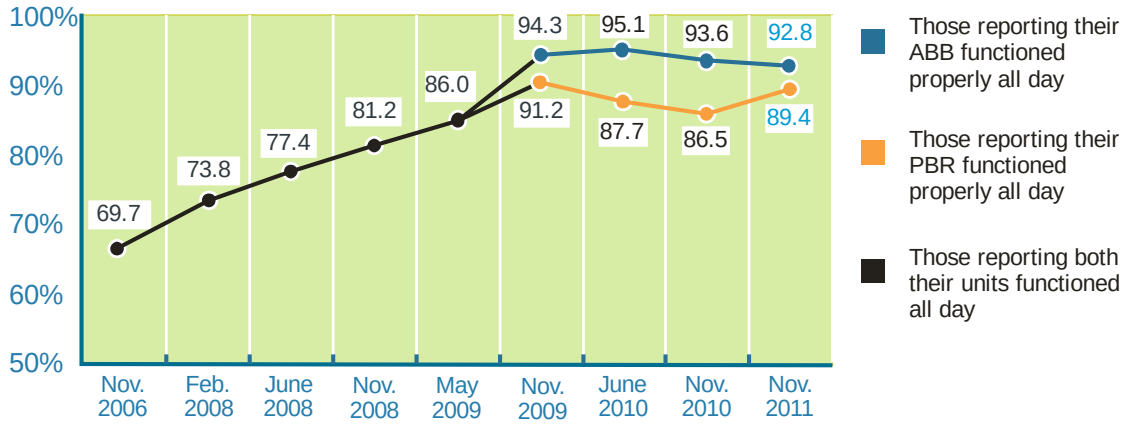
Section VI-

Questions 20-28: Equipment Functionality

The InkaVote Plus system consists of a Precinct Ballot Reader (PBR), which provides voters with "second chance" voting[10]. The system also includes an Audio Ballot Booth (ABB) which assists voters with specific needs. The ABB consists of a key pad and headphones, and provides audio instructions and ballot choices in 7 languages. Voters navigate through the ballot, make choices, and cast their ballots.

The PBR and ABB are programmed in advance of Election Day, checked, and shipped to distribution centers for Inspectors to pick up and install in their respective polling places.

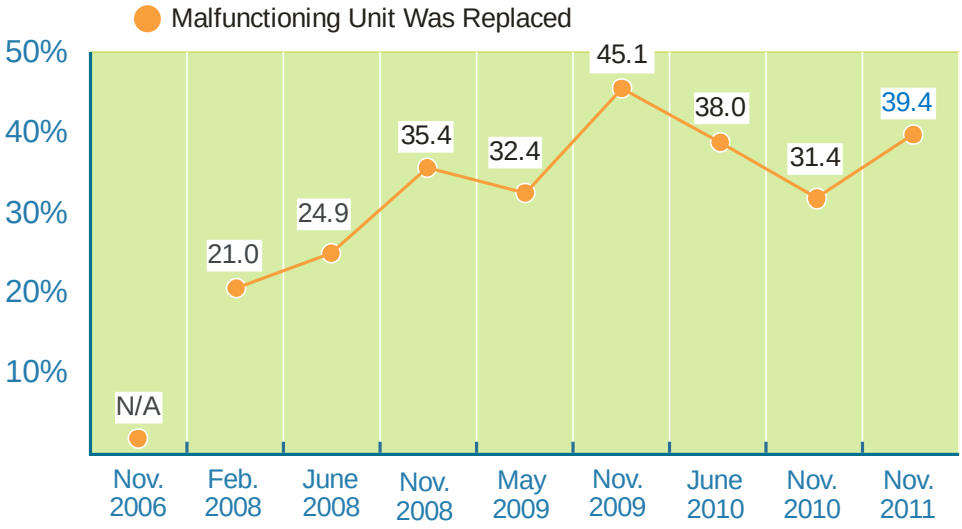
In this survey, 89.4% of respondents said that their PBR functioned properly for the entire day. That figure is up from 3% from last year and represents an upswing in those saying the PBR functioned without issue all day. The graph below shows the functionality of the PBR and ABB over the years as reported by Inspectors.



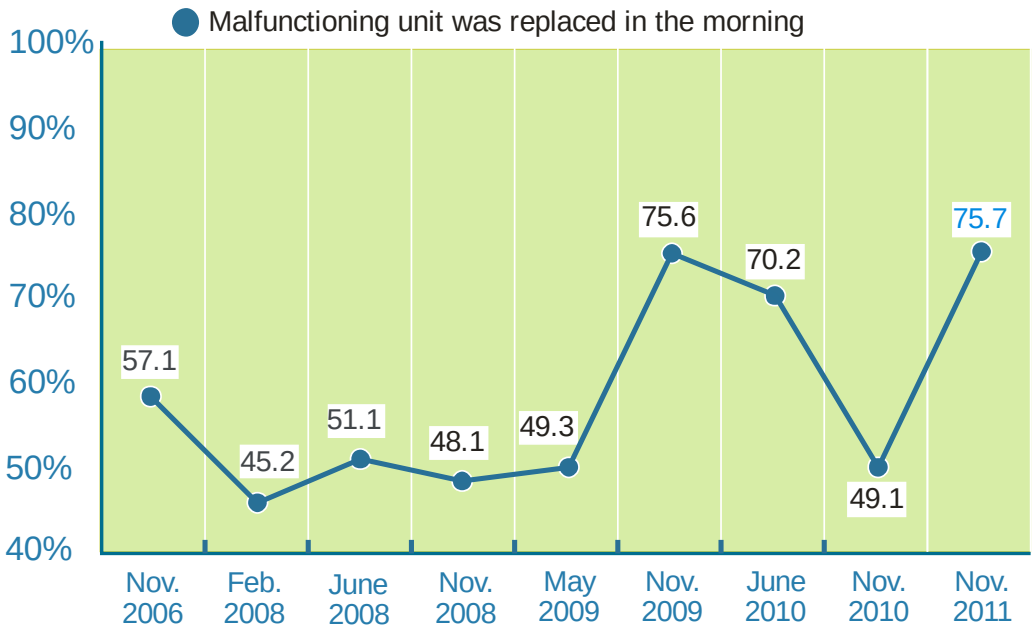
Note: In November of 2009 the questionnaire was changed to separate the PBR and the ABB in order to determine the operable rates of both pieces of machinery. The graph above represents the machinery success rate of the units as a whole until November 2009 when they are delineated.

[10] Second chance voting consists of a function in the PBR that kicks back a ballot if there is an over vote. An over vote occurs when a voter votes for more candidates than a contest allows. That voter can either override the ballot and have it counted as is, or they can choose to invalidate the ballot and vote a new one. Blank ballots fall into the same category and can either be cast or invalidated and voted again.

The percentage of Inspectors who reported that their malfunctioning equipment was replaced was 39.4%, which is the highest since the November 2009 election. Of malfunctioning units, 60.6% of problems were with the PBR. Typically, problems with the PBR can be resolved by restarting the machine or calling a Coordinator. Additionally, RRCC deploys a large number of troubleshooters who are assigned a group of precincts to routinely check in with and assist when needed.



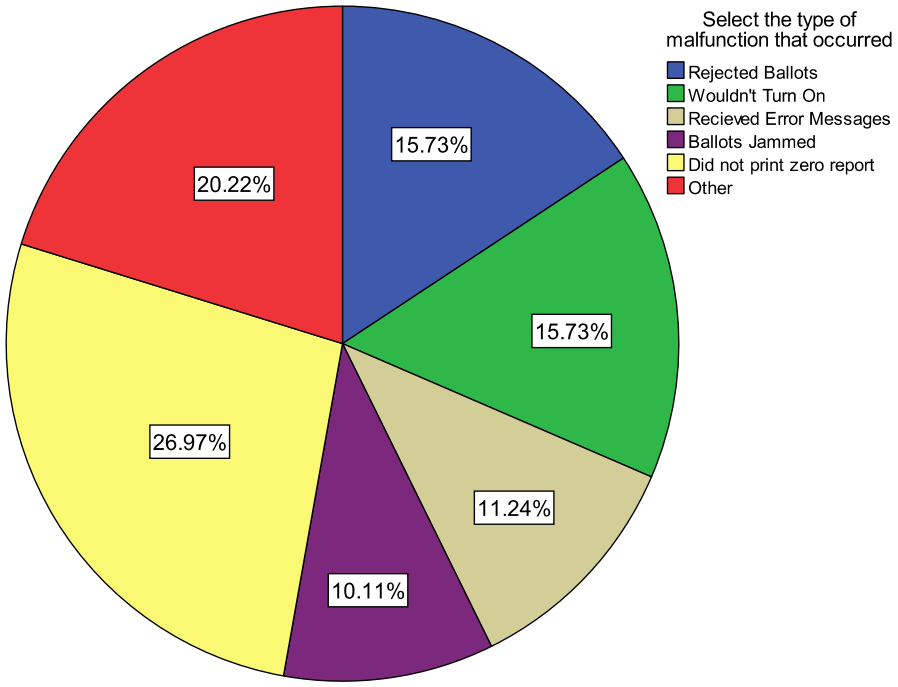
Approximately 57% of respondents said that their unit malfunctioned in the morning and of these, 75% said that it was replaced in the morning. Statistical tests (see Appendix A) show strong evidence that there is a relationship between when a unit was reported to malfunction and when it was replaced.



Inspectors were asked to identify the type of malfunction that occurred and were given several options of common problems. Most options are specific to the PBR (e.g. "Did not print zero report"), however future surveys will offer common ABB error types as options. Future surveys will also need to clearly state that more than one option may be selected in order to understand the range of difficulties Inspectors may face on Election Day.

The following chart illustrates the survey responses. The most frequent malfunction type (27% of all types) was that the zero report was not printed. The zero report is normally printed by the PBR when turning on the machine in the morning. During that time, a report prints out that displays all the contests in the election that provides proof that the machine has not been voted on.

Other frequent malfunction types were that the ballots were rejected and that the machine would not turn on (each tied at 15.7%). A rejected ballot is also a type of malfunction that is unique to the PBR. About 20% of Inspectors reported "other" types of malfunctions and listed that other reason. Many of these write-in responses were duplicates of options already provided, however 6 respondents (6.74%) listed some type of difficulty with the ABB in this category. These responses generally stated that the audio did not function at all with the machine.



Section VII-

Questions 29-31: Overall Experience

Questions were added to last year's survey in an attempt to gauge the overall experience of Inspectors on Election Day. Inspectors were asked if they would be willing to work in future elections and to rate their overall experience working in this past election. The survey found that 95.5% of respondents rated their experience as either excellent or very good. This is up by almost 4% from last year. Only 0.5% rated their experience as either poor or very poor. This figure is down 1% from last November. When asked if they would work in future elections, 98.6% said, "yes", that they would. This is about the same from last year.

Inspectors were shown statements regarding general Election Day activities and asked to rate how they agree with each one. The options were: Strongly Agree; Somewhat Agree; Somewhat Disagree; and Strongly Disagree. As shown in the table below, most respondents strongly agreed with the statements.

		Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1	Closing procedures are simple	60.6%	34%	3.7%	1.2%
2	Setting up the polling place is quick and easy	62.7%	31.5%	4.5%	1.3%
3	Setting up the voting equipment is quick and easy	70.6%	26.1%	2.7%	0.7%
4	I feel confident that I can process provisional voters correctly	91.9%	7.9%	0.2%	0%
5	I am confident I have the resources to address problems on Election Day	87.3%	11.5%	1%	0.2%
6	The quality of my work on Election Day is important to what the Registrar does after the election	94.2%	5.7%	0.2%	0%
7	I know who to call if I have trouble on Election Day	92.1%	6.6%	1.2%	0.2%

There was a cumulative total of 4.9% of Inspectors who disagreed with the statement, "Closing procedures are simple" (includes those who somewhat and strongly disagreed). Even more (5.8%) disagreed to some extent with the second statement, "Setting up the polling place is quick and easy". Although training extensively covers these areas, the difficulty that Inspectors experience likely stems from the numerous steps and procedures that accompany these activities. Further research should be conducted to identify the primary causes of difficulty in these areas.

APPENDIX A: METHODOLOGY AND JUSTIFICATION

Questionnaire and Database Redesign

Both the survey questionnaire and the database were redesigned in order for data to be collected and entered to facilitate effective analysis.

The Microsoft Access database was also modified to accommodate the questionnaire redesign and to provide ordered categories in order to reduce the number of variable recodes.

Database Coding and Re-Coding Methodology

Data was imported from MS Access into SPSS for coding, recoding, and analysis. Variable fields were renamed and some were recoded to rearrange categories within questions. An explanation of the recoding procedure follows below.

Yes/No answers were given new variable names but were not recoded; only chronological data was recoded. It was necessary to reorder some chronological information because several database categories did not correspond to logical chronology (i.e. 8:30-9:30 before 7:30-8:30). It was also necessary to categorize and code the variable (Time Served) that designates how many elections each respondent has served.

The answers to multiple response questions were considered as separate variables in order to perform analyses using SPSS software. Each answer was treated as a Yes/No response and recoded (2 = Yes, 3 = No) to maintain uniformity in the data.

The table on the next page shows the MS Access variable name and whether it was binary or ordinal, and the new SPSS data table name. An explanation and justification of each recoded item follows. Note that the new variable names may be different from the previous report but the data remains the same.

Timeserve was recoded to produce proper chronological time frames. The original data was entered as a string variable (single number) from 0 to 75. The recode grouped numerical data into categories for presentation and measurement purposes (i.e. “0-10, 11-20”, etc.

Age was recoded to produce age in years and placed in proper chronological time frames. The original data was entered as birth date, (mm/dd/yyyy) and calculated to produce age in years. Following that calculation, age in years was grouped into ordered categories for presentation and measurement purposes.

Table 1. Variable Changes and Recodes

MS Access Variable Name	Binary/Chron./Nominal	SPSS Variable Name	Recode
Time Served	Chronological (Ordinal)	Timeserve	Yes
Gender	Binary	Gender	Yes
Age	Chronological (Ordinal)	Age	Yes
Drop off time	Chronological (Ordinal)	Droptime	Yes
Wait at drop off			
Difficulty locating CIC	Binary	Locatecic	No
Staff levels sufficient	Binary	Cicstaff	No
Contact w/Pct Coord	Binary	Coorcontact	No
Did Coord visit	Binary	Coorvisit	No
If yes # times	Numerical	Coortimes	No
Enough PW assigned	Binary	Pwassigned	No
Rate PW performance	Chronological (Ordinal)	Pwperform	Yes
Call Norwalk HQ	Binary	Callhq	No
Call frequency	Chronological (Ordinal)	Callfrequency	No
Reason for call	Nominal	Callreason	Yes
Time of first calll	Chronological (Ordinal)	Firstcall	Yes
Was issue resolved	Binary	Callresolved	No
Time issue resolved	Chronological (Ordinal)	Resolvetime	Yes
Did training prepare	Binary	Trainingprep	No
Use training books	Binary	Bookuse	No
Review books	Binary	Bookreview	No
PBR/ABB received	Binary	Pbrabbrecvd	No
Voters use ABB	Binary	Abbused	No
Did PBR function	Binary	Pbrfunc	No
Did ABB function	Binary	Abbfunc	No
Unit malfunction	Binary	Malunit	No
Time of malfunction	Chronological (Ordinal)	Maltime	Yes
Type of malfunction	Nominal	Maltype	Yes
Was unit replaced	Binary	Replaced	No
If yes what time	Chronological (Ordinal)	Replacetime	Yes
Closing is simple	Nominal	Closesimple	Yes
Setup is easy	Nominal	Pollsetup	Yes
Equipment setup	Nominal	Equipsetup	Yes
Process provisionals	Nominal	Provcorrect	Yes
Resources on E-Day	Nominal	Resourceconf	Yes
Quality of work	Nominal	Qualimport	Yes
Know who to call	Nominal	Knowtocall	Yes
Rate overall exp	Chronological (Ordinal)	Overallexp	Yes
Work elections again	Binary	Workfuture	No

Table 2. Multiple Response Variable Changes

MS Access Variable Name	Binary/Chron. /Nominal	SPSS Variable Name	Recode
Used Election Guide and Checklist	Binary	EGCused	Yes
Used What to Do If?	Binary	WTDIused	Yes
Don't remember which one used	Binary	Dontremember	Yes
Reviewed Election Guide	Binary	EGCreviewed	Yes
Reviewed What to Do If?	Binary	WTDIused	Yes
Don't remember which one reviewed	Binary	Dontremember	Yes

Answers to multiple response questions were treated as individual variables. Data entry operators marked a check box to indicate the Inspector's selection, which the database recorded as "1 = Yes" (an unmarked box was recorded as "0 = No"). Each answer, as a separate variable, was recoded to fit the recoding scheme (2 = Yes, 3 = No). A group of these separate variables (e.g. Secure1, Easy1, Accurate1, and Accessible1) point to a single underlying variable (i.e. the specific training books that were reviewed or used).

Table 3. Variable Definitions

SPSS Variable Name	Variable Definition
Timeserve	How many times have you served?
Gender	Gender
Age	Age range
Droptime	What time did you drop off ballots at CIC?
Dropwait	How long did you wait at CIC?
Locatecic	Was it difficult to locate your CIC?
Cicstaff	Do you feel staffing levels were sufficient at CIC?
Coorcontact	Did Coordinator contact you before Election Day?
Coorvisit	Did Coordinator visit you on Election Day?
Coortimes	If yes, how many times?
Pwassigned	Were there enough poll workers at your precinct?
Pwperform	Rate the overall performance of fellow poll workers
Callhq	Did you call Norwalk Headquarters for assistance?
Callfrequency	If yes, how many times did you call?
Callreason	What was the reason for your call?
Firstcall	When did you make your first call?
Callresolved	Was your issue resolved by calling headquarters?
Resolvetime	If yes, when was the issue resolved?
Trainingprep	Do you feel training prepared you for Election Day?
Bookuse	Did you use your training books on Election Day?
Bookreview	Were training books helpful between training and Election Day?
Pbrabbrecvd	Did you receive a PBR/ABB?
Abbused	Did any voter use the ABB?
Pbrfunc	Did your PBR function properly all day?
Abbfunc	Did your ABB function properly all day?
Malunit	If no, which unit malfunctioned?
Maltime	What time was the malfunction?
Maltype	Select the type of malfunction that occurred
Replaced	Was unit replaced?
Replacetime	What time was the unit replaced?
Closesimple	Closing procedures are simple
Pollsetup	Setting up the polling place is quick and easy
Equipsetup	Setting up the voting equipment is quick and easy
Provcorrect	I feel confident that I can process provisional voters correctly
Resourceconf	I have the resources to address problems on Election Day
Qualimport	The quality of my work is important to what the Registrar does
Knowtocall	I know who to call if I have trouble on Election Day
Overallexp	Rate your overall experience working this election
Workfuture	Would you be willing to work in future elections?

The analysis contains three methods of measurement. These are frequencies, cross tabulations, and correlation measurements.

Frequencies are the number of times an event occurs, calculated numerically (i.e. 356 respondents answered “yes” to question 3), and percentages (47 percent of respondents answered “yes”). The measurement is useful for an overview of complete responses and is used to design charts and graphs for single variables. Frequencies are also valuable to track changes in responses over time.

Cross tabulations are numerical and percentage comparisons of two or more variables. Cross tabulations are used in this report to measure potential relationships between two variables or to show the relationship in percent of one variable to another (i.e. 74 percent of African American voters voted for John Kerry). Cross tabulations are beneficial for two reasons: they present findings in tabular form and they can measure relationships by performing standard statistical tests for linearity. For example, one can determine the relationship between Droptime and Dropwait by a cross tabulation table that applies a correlation measure for the strength of the relationship.

The current analysis uses correlations between two variables, although they can also be used for multiple variables. Correlation measures are presented in Table X. They show statistical significance, direction and strength of the association. For example, the correlation between Droptime and Dropwait showed a positive and significant relationship with a significance level of .000 (anything above .05 is considered not significant) and a Pearson correlation coefficient which portrays a weak but significant and positive relationship. Therefore, one could say with .99 percent confidence that the two variables could be related. Further, one could test the assumption that the wait time at a CIC depended on when the Inspector arrived to drop off ballots.

RESEARCH FINDINGS

A. Frequency Reports

The frequency report provides responses to each question included in the survey as well as percentages of responses within the category where the majority of responses reside[11]. Also included in the table below are responses from the RR/CC's previous surveys for comparison purposes.

Table 4. Frequency Responses

Variable Name	Category	Percentage								
		Nov '11	Nov '10	June '10	Nov '09	May '09	Nov '08	June '08	Feb '08	Nov '06
Timeserve	0 to 10 times	43.5	75.2	77.6	60.6	61.0	75.6	68.0	37.5	N/A
Droptime	9-9:30 PM	32.3	46.5	42.8	10.0	46.4	46.9	44.4	43.9	47.4
Dropwait	0-30 minutes	97.5	75.3	81.4	93.6	85.2	85.2	76.9	75.4	67.6
Coorcontact	Yes	83.2	82.1	80.2	81.9	81.1	83.8	75.4	77.3	66.1
Coorvisit	Yes	98.0	97.8	91.8	96.5	97.7	98.5	94.4	97.4	87.9
Coortimes	3 times	23.1	31.7	39.2	23.0	25.3	56.8	52.1	50.3	50.3
Abbused	No	88.6	86.6	90.9	95.0	93.1	83.2	89.7	89.7	82.2
PBRABBfunc	Yes				46.4	86.0	81.2	77.4	73.8	69.7
Malunit	PBR	60.6	74.0	84.1	68.7	67.5	70.1	78.7	70.0	71.8
Maltime	Before 7 AM	57.1	37.5	54.3	66.7	54.6	32.6	46.8	46.2	28.4
Replaced	No	60.6	68.6	62.0	54.9	67.6	64.6	75.1	79.0	N/A
Replacetime	Afternoon (12-5 PM)	21.6	44.6	22.8	22.0	43.5	48.1	51.1	47.8	35.1
Pbrabbreceived	Yes	99.7	99.8	99.3	98.7	99.5	99.2	75.8	N/A	N/A
Age	62-72	31.9	22.9	22.9	30.2	29.8	29.1	28.9	29.9	26.2
Gender	Female	59.5	59.7	59.6	64.5	57.4	63.5	63.2	61.0	61.9
Locatecic	No	98.1	96.7	-	-	-	-	-	-	-
Cicstaff	Yes	96.9	-	-	-	-	-	-	-	-
Pwassigned	Yes	89.5	79.5	-	-	-	-	-	-	-
Pwperform	Excellent	59.7	54.2	-	-	-	-	-	-	-
Trainingprep	Yes	97.0	96.1	-	-	-	-	-	-	-
Callhq	No	79.4	-	-	-	-	-	-	-	-
Callfrequency	1 time	76.0	-	-	-	-	-	-	-	-
Callreason	Equipment mal.	28.5	-	-	-	-	-	-	-	-
Firstcall	Morning (6-11:59 AM)	83.6	-	-	-	-	-	-	-	-
Callresolved	Yes	75.4	-	-	-	-	-	-	-	-
Resolvetime	Morning	73.3	-	-	-	-	-	-	-	-
Bookuse	Yes	76.4	-	-	-	-	-	-	-	-
Bookreview	Yes	89.0	-	-	-	-	-	-	-	-
Maltype	No zero report	27.0	-	-	-	-	-	-	-	-
Workfuture	Yes	98.6	98.0	-	-	-	-	-	-	-
Overallexp	Excellent	57.9	49.7	-	-	-	-	-	-	-

[11] As time has elapsed, the majority of responses for some variables has shifted into other categories. For instance, a downward trend in Coortimes is due to the fact that the majority of responses now fall in the "2 times" category, which is not detailed in this table. Historical data is shown here for comparison purposes only.

B. Cross-Tabulations

Cross tabulations are performed to determine which variables have potential relationships and to determine the strength and direction of those relationships. The analysis includes variables with the highest measures of association, making them likely candidates for further testing.

C. Correlations

Correlation testing was also performed on selected variable sets to test the strength, direction and significance of their relationships based on a cross tabulation grid. All relationships proved significant, though moderate to weak, and either positive or negative. That is, they are probably not independent of each other. There is some evidence that the hypothetical statements following each set of variable relationships above are supported at the 99th percentile.

The following correlation table shows the variable relationships, their correlation coefficient, and the significance of the relationship. Significance is suggested if the value in column three is <.05.

Table 5. Correlation Tests

Variable Relationship	Correlation Coeff. (Kendall's tau-b and Pearson's R)	Significant (Y/N)	Direction (+/-)
Maltime*Replacetime	.490 - tau	Y (.000)	+
Dropwait*Droptime	.091 - tau	Y (.000)	+
Coorcontact*Coortimes	.151 - Pearson's	Y (.000)	+
Coorcontact*Coorvisit	.224 - Pearson's	Y (.000)	+
Dropwait*Cicstaff	.246 - tau	Y (.000)	-
Pwassigned*Overallexp	.192 - tau	Y (.000)	-
Timeserve*Bookreview	.114 - tau	Y (.000)	-
Timeserve*Bookused	.136 - tau	Y (.000)	-
Bookused*Bookreview	.245 - Pearson's	Y (.000)	+
Firstcall*Resolvetime	.741 - tau	Y (.000)	+

Although all measurements in Table 5 show potential relationships we can only state with some confidence that they may not be independent of one another because of their weak correlation coefficients. If these numbers approached 1 there would be very strong evidence that the independent and dependent variables are directly related to each other and would have a perfect linear relationship (a unit change in *x* produces the same unit change in *y*). The significant variable relationships are listed below with descriptive assumptions.

Maltime*Replacetime: The time of the malfunction is strongly related to the time of replacement. If a malfunction was reported in the morning it tended to be replaced in the morning.

Dropwait*Droptime: In this election, the time that Inspectors waited at the CIC depended very little on when they dropped off their ballots. Although positive, the correlation coefficient proved to be weak.

Coorcontact*Coorvisit: If a Coordinator contacted an Inspector before Election Day that Coordinator tended to visit the Inspector on Election Day.

Coorcontact*Coortimes: If a Coordinator contacted an Inspector before Election Day that Coordinator tended to visit the Inspector more times on Election Day.

Dropwait*Cicstaff: The time that Inspectors waited at the CIC depended on CIC staffing levels (as perceived by Inspectors).

Pwassigned*Overallexp: If a poll worker felt that they were assigned enough poll workers at their polling location, they tended to rate their overall experience as "excellent" or "very good".

Timeserve*Bookreview: The number of times that an Inspector has served has a relatively weak correlation with whether or not the Inspector found a review of training materials to be helpful before Election Day.

Timeserve*Bookused: The number of times that an Inspector has served has a weak correlation with whether or not the Inspector used training materials on Election Day.

Bookused*Bookreview: An Inspector who reviewed their training books was likely to use their books on Election Day; however, this correlation is not particularly strong.

Firstcall*Resolvetime: The time an Inspector made their first call to Norwalk Headquarters had a strong correlation to the time the issue was resolved. Tests proved that if Norwalk HQ was notified of issues in the morning, they were often resolved in the morning.

APPENDIX B: SPSS CODE BOOK

SPSS Variable:	1
Variable Name:	Timeserved
Variable Description:	How Many Times Have You Served?
Coding:	2 = First Time
	3 = 2-10 Times
	4 = 11-20 Times
	5 = 21-30 Times
	6 = 31-40 Times
	7 = Over 40 Times

SPSS Variable:	2
Variable Name	Droptime
Variable Label:	Drop off time
Coding:	2 = 8:00 – 8:30PM
	3 = 8:30 – 9:00PM
	4 = 9:00 – 9:30PM
	5 = 9:30 – 10:00PM
	6 = 10:00 – 10:30PM
	7 = 10:30 – 11:00PM
	8 = 11:00 – 11:30PM
	9 = 11:30 – 12:00

SPSS Variable:	3
Variable Name:	Dropwait
Variable Label:	Drop off wait
Coding	2 = 0-15 min.
	3 = 16-30 min.
	4 = 31-45 min.
	5 = 46 min. to 1 hr.
	6 = 1.5 hrs.
	7 = 2 hours
	8 = 3 hours

SPSS Variable:	4
Variable Name:	Locatecic
Variable Label:	Difficulty locating CIC
Coding	2 = No
	3 = Yes

SPSS Variable: 5
Variable Name: Cicstaff
Variable Label: Were staffing levels sufficient at CIC
Coding 2 = No
3 = Yes

SPSS Variable: 6
Variable Name: Coorcontact
Variable Label: Coordinator contact
Coding: 2 = No
3 = Yes

SPSS Variable: 7
Variable Name: Coordinator Visit
Variable Label: Did coordinator visit
Coding: 2 = No
3 = Yes

SPSS Variable: 8
Variable Name: Coortimes
Variable Label: How many times did coordinator visit
Coding: 2 = 1
3 = 2
4 = 3 or more

SPSS Variable: 9
Variable Name: Pwassigned
Variable Label: Enough PW assigned
Coding: 2 = No
3 = Yes

SPSS Variable: 10
Variable Name: Pwperform
Variable Label: Rate PW performance
Coding: 2 = Excellent
3 = Very Good
4 = Fair
5 = Poor
6 = Very Poor

SPSS Variable: 11
Variable Name: Callhq
Variable Label: Did you call Norwalk Headquarters
Coding: 2 = No
3 = Yes

SPSS Variable: 12
Variable Name: Callfrequency
Variable Label: How many times did you call
Coding: 2 = 1
3 = 2
4 = 3 or more

SPSS Variable: 13
Variable Name: Callreason
Variable Label: Reason for the call
Coding: 2 = Polling location was not open
3 = I did not have enough pollworkers
4 = Equipment malfunction
5 = I needed additional supplies
6 = I had a question about procedures
7 = Other

SPSS Variable: 14
Variable Name: Firstcall
Variable Label: What time was your first call
Coding: 2 = Morning (6-11:59 AM)
3 = Afternoon (12-5 PM)
4 = Evening (5:01-8 PM)

SPSS Variable: 15
Variable Name: Callresolved
Variable Label: Was your issue resolved by calling
Coding: 2 = No
3 = Yes

SPSS Variable: 16
Variable Name: Resolvetime
Variable Label: What time was the issue resolved
Coding: 2 = Morning (6-11:59 AM)
3 = Afternoon (12-5 PM)
4 = Evening (5:01-8 PM)

SPSS Variable: 17
Variable Name: Trainingprep
Variable Label: Did training prepare you for Election Day
Coding: 2 = No
3 = Yes

SPSS Variable: 18
Variable Name: Bookuse
Variable Label: Use your training books on Election Day
Coding: 2 = No
3 = Yes

SPSS Variable: 19
Variable Name: Bookreview
Variable Label: Training books helpful to review before Election Day
Coding: 2 = No
3 = Yes

SPSS Variable: 20
Variable Name: Pbrabbrcvd
Variable Label: Did you receive a PBR and an ABB
Coding: 2 = No
3 = Yes

SPSS Variable: 21
Variable Name: Abbused
Variable Label: Did voters use Audio Ballot
Coding: 2 = No
3 = Yes

SPSS Variable: 22
Variable Name: Pbrfunc
Variable Label: Did PBR function all day
Coding: 2 = No
3 = Yes

SPSS Variable: 23
Variable Name: Abbfunc
Variable Label: Did ABB function all day
Coding: 2 = No
3 = Yes

SPSS Variable: 24
Variable Name: Malunit
Variable Label: Which unit malfunctioned?
Coding: 2 = Audio Ballot Booth
3 = Precinct Ballot Reader
4 = Both

SPSS Variable: 25
Variable Name: Maltime
Variable Label: What time was malfunction?
Coding: 2= Before 7 AM
3 = 7:01 – 9:00 AM
4 = 9:01 – 11:00 AM
5 = 11:01 – 1:00 PM
6 = 1:01 – 3:00 PM
7 = 3:01 – 5:00 PM
8 = 5:01 – 8:00 PM

SPSS Variable: 26
Variable Name: Maltype
Variable Label: What was the type of malfunction
Coding: 2 = Rejected ballots
3 = Wouldn't turn on
4 = Received error messages
5 = Ballots jammed
6 = Did not print zero report
7 = Other

SPSS Variable: 27
Variable Name: Replaced
Variable Label: Was unit replaced
Coding: 2 = No
3 = Yes

SPSS Variable: 28
Variable Name: Replacetime
Variable Label: Time of replacement
Coding: 2 = Morning (6-11:59)
3 = Afternoon (12:00-5:00)
4 = Evening (5:01-8:00)

SPSS Variable: 29
Variable Name: Closesimple
Variable Label: Closing procedures are simple
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable: 30
Variable Name: Pollsetup
Variable Label: Setting up the polling place is quick
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable: 31
Variable Name: Equipsetup
Variable Label: Setting up the voting equipment is quick
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable: 32
Variable Name: Provcorrect
Variable Label: Confident I can process provisional voters correctly
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable: 33
Variable Name: Resourceconf
Variable Label: I have resources to address problems on Election Day
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable: 34
Variable Name: Qualimport
Variable Label: Quality of my work is important to the Registrar
Coding: 2 = Strongly Agree
3 = Somewhat Agree
4 = Somewhat Disagree
5 = Strongly Disagree

SPSS Variable:	35
Variable Name:	Knowtocall
Variable Label:	I know who to call if I have trouble on Election Day
Coding:	2 = Strongly Agree
	3 = Somewhat Agree
	4 = Somewhat Disagree
	5 = Strongly Disagree

SPSS Variable:	36
Variable Name:	Overallexp
Variable Label:	Rate overall experience
Coding:	2 = Excellent
	3 = Very Good
	4 = Fair
	5 = Poor
	6 = Very Poor

SPSS Variable:	37
Variable Name:	Workfuture
Variable Label:	Would you work again
Coding:	2 = No
	3 = Yes

SPSS Variable:	38
Variable Name:	Age
Variable Label:	Age range of Inspectors
Coding:	2 = 18-28 yrs
	3 = 29-39 yrs
	4 = 40-50 yrs
	5 = 51-61 yrs
	6 = 62-72 yrs
	7 = 73 and over

SPSS Variable:	39
Variable Name:	Gender
Variable Label:	Gender of Inspectors
Coding:	2 = Female
	3 = Male