



Background

On November 10, 2016, Protus3 was contacted by Marie Inserra, the Senior Assistant County Attorney for Durham County, North Carolina. Attorney Marie Inserra requested assistance in identifying possible flaws with VR Systems' EViD application used during the election in Durham County, NC, on November 8, 2016, and interviewing poll workers and Chief Judges to see if other issues could have created the problem that occurred during the election.

Investigative Summary

On November 8, 2016, an election was held in Durham County, NC. Durham County uses VR Systems' EViD application to maintain voter records. The EViD application streamlines voter verification and check-in, eliminating the need for paper registers. During the first few hours of the election, several precincts reported problems with the EViD application as well as other issues not related to EViD. The errors being reported related to EViD included voters being identified as having previously voted and voters being asked to show a picture ID. As a result of the number of issues being reported to the Durham County Board of Election's Help Desk, it was decided to shut down the EViD application and just use the backup paper poll books. This caused a delay during the voting period. Attorney Marie Inserra requested Protus3 to analyze the data from the computers which includes authentication keys (USB devices known as activators), databases, and logs to help determine what caused the errors on November 8, 2016. It was also requested to conduct interviews with poll workers and Interim Director Kate Cosner to get witness accounts of what exactly happened at certain precincts on November 8, 2016.

The combination of a forensic review of data collected from laptops and activators by the Protus3 team, a review of all activator logs related to the November 8, 2016, election by VR Systems, and interviews conducted with specific individuals with personal knowledge of the issues that occurred on November 8, 2016, indicates that the EViD application did not fail during the election. It appears that certain steps were not taken to verify all laptops were properly prepared for the November election. Interviews indicate that it is likely some poll workers were not familiar with the EViD application and caused a false positive as it relates to some voters being misidentified as already having voted. Additional factors that led to the decision made by Interim Director Kate Cosner include not all of the laptops being updated with the newer EViD application, issues regarding the uploading of voter data to the EViD activators on November 7, 2016, printer problems, and miscommunications.

It should be noted that Interim Director Kate Cosner's decision to suspend the use of the EViD application was intended to be temporary. VR Systems representatives were on hand to assist with issues, and Kate Cosner reportedly felt the issues or problems could be identified and corrected. The decision to go to paper ballots for the remainder of the day was made by the North Carolina State Board of Elections.

Investigative Notes

On November 14, 2016, Protus3 team members met with Attorney Marie Inserra and Interim Director Kate Cosner at the Durham County Board of Elections Office in Durham, NC. During this meeting, information was provided to Protus3 and a plan of action was identified in an effort to isolate the issues related to the EViD application that occurred on the morning of November 8, 2016.

It was explained that laptop computers are utilized by Durham County as electronic voting books. These laptops have either Windows 7 or Windows 10 operating systems. Each laptop is assigned an activator. The activator is required to update and run the EViD application. Prior to voting day, the VR Systems application is run on a central workstation that downloads the voting data for Durham County from the North Carolina State Board of Elections. This data, once downloaded, is put onto activators. Durham County has 225 activators. During the process of placing the database on the activators, a new version of the EViD application is also placed on the activators.

Once all activators are updated, they are secured and later distributed to the precincts with a laptop. On voting day, each precinct gets a specific number of laptops and an equal number of activators (a USB device). An activator is plugged into the USB port of each computer which allows the laptop to run the EViD application as well as utilize the updated voter data. The laptops at each precinct are connected by a network router. This allows data on each laptop at a particular precinct to be synchronized.

In the early morning hours on Election Day, a number of precincts reported that a number of voters were being identified as already having voted and that the EViD application was prompting for voters to show a picture ID. As more of these complaints came in to the Help Desk, a decision was made to shut down the electronic poll book application and resort to using a paper poll book.

Protus3 was asked to identify what, if anything, was done wrong or what part of the electronic process could have caused these issues. This included:

- Determine if the proper voter record database was downloaded from the State Board of Elections.
- Determine if the proper database was uploaded to the EViD application on each of the activators.
- Determine if the laptops were updated with the latest version of the EViD application.
- Determine if the laptops were updated with the updated November voting records.
- Determine if the laptops were sanitized in preparation for the election.
- Determine if the laptops were not sanitized, would the EViD application still have used the proper database.
- Interview Chief Judges at precincts that reported issues.

During the week of November 14, 2016, Protus3 team members, utilizing computer forensics, imaged 13 laptops and 19 activators. The desktop computer used to download the voter database was also forensically imaged. With the assistance of VR Systems, all databases on the imaged activators, all databases on the imaged laptops, and versions of the application and data and all available logs were researched and analyzed. Protus3 collected all logs from all activators in a forensically sound manner and provided them to VR Systems. During this review, the forensic analysts and examiners never had access to the voting machines or the ballots.

As of the time of this report it appears that:

- The proper database was downloaded from the North Carolina State Board of Elections.
- The proper procedure was used to update the EVID activators with the database and the EVID application.
- VR Systems identified 17 laptops that were not properly cleaned after the last election. The cleaning process removes all data after an election takes place. According to VR Systems, failure to clean a system would not affect voter data.
- A number of laptops, as a result of not being cleaned, used a previous version of the EVID application. This resulted in the issue related to the request for voter picture ID. The November version of the EVID application had removed that prompt.

The EVID application logs indicate that nine people were issued a Provisional ballot for the reason of having already voted. The Durham County Board of Elections has identified an additional six people that either voted twice on Election Day or voted One Stop and on Election Day. The information related to the nine people that EVID indicated that had already voted will have to be confirmed by the Durham County Board of Elections.

Additional review indicated that individuals that went to Precinct 39 on the morning of November 8 and were told they had voted, in fact had not voted prior to November 8. A portion of those logs have been provided with the redaction of the voter name and date of birth.

On November 8, Voter A was told he had already voted. The activator logs indicate otherwise. They show that at 6:44AM, Voter A was issued an Authorization to Vote (ATV). This can only take place if the voter was in the database and listed as not voting already. For some reason Voter A was again issued an ATV at a second computer at Precinct 39. The reason for this activity has not been learned as of this report. Exactly one minute later, the voter was issued a provisional ballot. This was done because the voter had been issued an ATV just one minute earlier. The fact that the voter was issued two ATVs also indicates that the computers at this facility were not networked and syncing data between the workstations using the EVID application at the precinct.

Voter A						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000152	Manual Search	Name.VOT AAA Address BirthDate //		11/8/16 6:44 AM		ATV Issued

Voter A						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000152	Exit Manual Search			11/8/16 6:44 AM		
DURH0000152	ATV Issued	Transaction = 2		11/8/16 6:48 AM		
DURH0000152	Exit Voter Information			11/8/16 6:48 AM		
DURH0000152	Enter Manual Search			11/8/16 6:48 AM		
DURH0000154	Manual Search	Name VOT AAA Address: BirthDate //		11/8/16 7:34 AM		ATV #2 Issued
DURH0000154	Exit Manual Search			11/8/16 7:34 AM		
DURH0000154	ATV Issued	Transaction = 2		11/8/16 7:34 AM		
DURH0000154	Exit Voter Information			11/8/16 7:34 AM		
DURH0000154	Enter Manual Search			11/8/16 7:34 AM		
DURH0000154	Manual Search	Name VOT AAA Address: BirthDate //		11/8/16 7:35 AM		Provisional Issued- Already Voted
DURH0000154	Exit Manual Search			11/8/16 7:35 AM		
DURH0000154	Exit Voter Information			11/8/16 7:37 AM		
DURH0000154	Enter Manual Search			11/8/16 7:38 AM		

Similar activity can be seen with Voter B who voted at the same time and at the same precinct at Voter A.

Voter B						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000152	Manual Search	Name VOT BBB Address: BirthDate //		11/8/16 6:34 AM		ATV
DURH0000152	Exit Manual Search			11/8/16 6:34 AM		
DURH0000152	ATV Issued	Transaction = 1		11/8/16 6:37 AM		
DURH0000152	Exit Voter Information			11/8/16 6:37 AM		
DURH0000152	Enter Manual Search			11/8/16 6:37 AM		
DURH0000152	Manual Search	Name VOT BBB Address: BirthDate //		11/8/16 6:38 AM	no	n/a
DURH0000152	Exit Manual Search			11/8/16 6:38 AM		
DURH0000152	Exit Voter Information			11/8/16 6:43 AM		

Voter B						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000152	Exit Voter Information			11/8/16 6:43 AM		
DURH0000154	Enter Manual Search			11/8/16 7:19 AM		
DURH0000154	Manual Search	Name VOT BBB Address: BirthDate //		11/8/16 7:31 AM		
DURH0000154	Exit Manual Search			11/8/16 7:31 AM		
DURH0000154	ATV Issued	Transaction = 1		11/8/16 7:32 AM		
DURH0000154	Exit Voter Information			11/8/16 7:32 AM		
DURH0000154	Enter Manual Search			11/8/16 7:32 AM		
DURH0000154	Manual Search	Name VOT BBB Address: BirthDate //		11/8/16 7:32 AM		
DURH0000154	Exit Manual Search			11/8/16 7:32 AM		
DURH0000154	Cancel Search			11/8/16 7:33 AM		

Again, Voter C was at Precinct 39 at the same time as Voter A and Voter B. Voter C was also issued an ATV but for some reason minutes later issued a provisional ballot.

Voter C						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000153	Manual Search	Name VOT CCC Address: BirthDate //		11/8/16 6:36 AM		ATV
DURH0000153	Exit Manual Search			11/8/16 6:36 AM		
DURH0000153	ATV Issued	Transaction = 3		11/8/16 6:36 AM		
DURH0000153	Exit Voter Information			11/8/16 6:37 AM		
DURH0000153	Enter Manual Search			11/8/16 6:37 AM		
DURH0000153	Manual Search	Name VOT CCC Address: BirthDate //		11/8/16 6:37 AM		Cancel
DURH0000153	Exit Manual Search			11/8/16 6:37 AM		
DURH0000153	Exit Voter Information			11/8/16 6:37 AM		
DURH0000153	Enter Manual Search			11/8/16 6:39 AM		
DURH0000153	Manual Search	Name VOT CCC Address: BirthDate //		11/8/16 6:39 AM		Cancel
DURH0000153	Exit Manual Search			11/8/16 6:39 AM		

Voter C						
Activator ID	PLOG Description	Supplemental Information	VRN	Time	Voter Selected	Vote Action
DURH0000153	Exit Voter Information			11/8/16 6:39 AM		
DURH0000153	Enter Manual Search			11/8/16 6:40 AM		
DURH0000153	Manual Search	Name VOT CCC Address BirthDate //		11/8/16 6:40 AM		Provisional - Already Voted
DURH0000153	Exit Manual Search			11/8/16 6:40 AM		
DURH0000153	Exit Voter Information			11/8/16 6:41 AM		
DURH0000153	Enter Manual Search			11/8/16 6:42 AM		
DURH0000153	Manual Search	Name VOT CCC Address BirthDate //		11/8/16 6:42 AM		Provisional - Already Voted
DURH0000153	Exit Manual Search			11/8/16 6:42 AM		
DURH0000153	Exit Voter Information			11/8/16 6:42 AM		
DURH0000153	Enter Manual Search			11/8/16 6:46 AM		
DURH0000153	Manual Search	Name VOT CCC Address BirthDate //		11/8/16 6:47 AM		Cancel
DURH0000153	Exit Manual Search			11/8/16 6:47 AM		
DURH0000153	Exit Voter Information			11/8/16 6:48 AM		
DURH0000153	Exit Voter Information			11/8/16 6:48 AM		
DURH0000153	Enter Manual Search			11/8/16 6:48 AM		

It is not known at this time why this issue occurred. Analysis shows that it was not caused as a result of the software not being updated as one of the three systems had been updated with the newest EViD software. Activity indicated by the logs of Voter A and B show the systems at the precinct were not connected together by the provided router. Additional analysis would need to be conducted to determine the exact reason for this error.

Interviews

At 6:45 AM on Tuesday, November 8, the Durham County Board of Elections staff received phone calls from Precincts 9, 19, 20, 31, 39, and 44 reporting problems. A decision was made to interview the Chief Judge at each of these precincts to get a firsthand account of what happened during the first hour of voting on November 8, 2016. The interviews are paraphrased below.

Precinct 9 – Chief Judge Joel Doug Wheeler was interviewed on 11/28/2016 at 11:30 AM

The first problem I had concerned a wrong power cord for one of our computers. We reported this issue to the Board of Elections around 6:45 AM. At or around 10:30 AM, the Board of Elections called our precinct and told us to switch to all paper. We were doing just fine until the

Board of Elections called at 10:30 AM and screwed us up. We never had a problem that was not created by someone downtown.

Precinct 20 – Chief Judge Doris Burnett was interviewed on 11/28/2016 at 11:46 AM

Our day was good. One of our EViD books froze early in the morning. I called the Board of Elections around 6:45 AM. Someone from the Board of Elections came over and fixed the problem. We had two other EViD books so it was not a problem. I don't know why the computer froze. Around three to four hours later the computer froze again. I called back and that is when they told us to go to paper ballots. We did not have any other problems.

Precinct 44 – Chief Judge Janet Whichard was interviewed on 11/28/2016 at 3:10 PM

We set up the night before and put the ballots in a locked closet. I got there on Election Day and forgot the key to the closet. I called the Board of Elections around 6:45 AM and reported this. Someone came by with a key. The second problem we had was that one of our printers was not working. I called again and someone walked me through the process to fix the printer. Later in the morning, a couple of voters came in. I don't know if they came in back to back, but they were both here around the same time. The EViD book was showing that they both had already voted. The voters were sent to the Help Desk, and the person at the Help Desk looked them up and received the same information that they had both voted already. We looked at three other EViD books, and all of them indicated that the two people had already voted. We had five EViD books altogether. The two voters were given provisional ballots and we reported the problem to the Board of Elections.

Precinct 31 – Interview with Chief Judge Rashanne (Anne) Woods on 11/29/2016 at 10:57 AM

We never called to report a problem at our precinct. The report that indicated that our precinct had a problem was erroneous. The only problem we had all day was the fact that we were running out of emergency supplies. At 8:09 AM, Rose Wolf from the Board of Elections called and told us to stop using our computers.

Precinct 39 – Interview with Chief Judge Beth Sholtz on 11/29/2016 at 11:10 AM

Our issue started as soon as we opened the doors. The computer system showed that the very first three people that checked in and tried to vote had already voted, so we had to do provisionals for them. I knew two of the people, [a husband and wife, names redacted], because they live in my neighborhood. The third person was an elderly man and I do not remember his name. As soon as we realized that more than one person was affected by this, I called downtown to report the problem. These three people were adamant that they had not already voted. We checked both computers at the registration desk and both were showing that all three of them had already voted. Right after that happened one of the computers stopped working so we were now down to one computer at the registration desk. At that point I decided to have our crew check people in the old-fashioned way. There were probably 70 people in line at that point and we were down to one computer. At some point in the morning we got a call from the Durham County Board of Elections telling us to shut down the computers and do everything manually. By the middle of the day, I called the three people back and had them come in for regular voting. [REDACTED] The first voter with a problem [wife, name withheld] came back around 2:00 or 3:00 in the afternoon. She was very, very upset about the computer indicating that

she had already voted. Her husband, [name withheld], came back after he got off of work. We had no other issues during the day.

Precinct 19 - Interview with Chief Judge Marc Macenko on 11/29/2016 at 11:50 AM

We called early in the morning to report a problem. We had four computers assigned to our precinct. Three were at the registration desk and the fourth was at the Help Desk. One of the computers at the registration desk kept displaying an error message. I don't remember what the message said. It was like a Windows error that said this program did something wrong and needs to shut down. The computer assigned to the Help Desk was asking everyone for photo ID. I am assuming that there must have been old software on this computer because it was asking for photo ID to vote. We did not have to use the computer at the Help Desk much so we just ignored the request to have the voter show photo ID. We called to report both of these issues. At around 10:00 AM, an EVID tech came to our precinct to look at the computers. He seemed frustrated. He made it very clear to me that it looked like the proper maintenance to update the computers had not been done. He spent about 10 to 15 minutes on the laptops and said they were good to go. The EVID tech mentioned that he was going around to all the precincts performing maintenance on the computers. We never had a problem with our computers showing that someone had already voted when they said they had not.

Interview with Kate Cosner on 12/20/2016 at 9:30 AM

Protus3 investigators interviewed Kate Cosner, the director of the Durham County Board of Elections (DCBOE). The interview took place at 201 N. Roxboro Rd. in Durham, NC, in the office of Kate Cosner.

At the onset, it was revealed by Cosner that she had not read the Protus3 draft investigative report. The investigators collectively made the decision to allow her to read it. [REDACTED]

The Protus3 investigators continued with the interview, which is paraphrased below:

I came to work for the NCBOE on September 29 of this year (2016). Some of the things that took place occurred before I ever arrived here. I had no feelings one way or the other about EVID, other than I knew I wouldn't be able to help because I didn't know how to run the EVID system. I've known Jerry Smith of VR Systems for years, and I had previously seen a demonstration that he had done with EVID.

I don't know about any EVID issues that occurred back in March. I know what happened on the back end in March during reconciliation with Durham County. What I know about Election Day in March is very limited and heard about while I was still working with the State Board of Elections (SBOE). I had gone straight from the SBOE to the Durham County Board of Elections (DCBOE). I worked with Alleghany CBOE for eight years followed by the SBOE for two years. When I arrived and started working at the DCBOE, it was my understanding that they had finished cleaning the laptops and were prepping them for Election Day. [REDACTED]

[REDACTED] The spreadsheet that has the precincts and issues

reported was created by Veronica. She is the Election Preparation Support Manager for the SBOE.

On Election Day (November 8, 2016) we started getting phone calls right away. The election started at 6:30 AM. The doors had to be open at the precincts by 6:30 AM for people to start voting. Our office opened at 5:30 AM. We had no issues except for the lady (Chief Judge) that forgot her keys and I think she still was able to open at 6:30 AM. Everyone – temps and staff – had to report to work on Election Day. I had the temporary workers, along with Sam, Heidi and Joe focused on the call center. I did not answer the phones. I was overseeing and making sure that issues were resolved. My job is to oversee what happens out there (precincts) and what happens in here (DCBOE office).

[REDACTED]
[REDACTED]
[REDACTED] The Chief Judges knew exactly who to call on issues such as missing power cords and printers not working. We had runners to take care of the smaller issues. All the Chief Judges had cell phones to use, so, if we needed to contact a precinct we called their cell phone.

Jerry Smith (VR Systems) stationed himself here at the DCBOE because it was my first election. It was almost everyone's first election for Durham County, and VR Systems wanted to provide support. [REDACTED] Jerry was helping all day with stuff until the SBOE got involved, and then we were told that Jerry was not to touch anything.

I handle the problems that the call center operators can't answer, such as calls from precincts saying that voters are coming in that have already voted according to the EVID system. [REDACTED]
[REDACTED] It was my understanding that the calls were coming in left and right. Calls were coming in that I needed to handle because they needed a top level response, media response, and customer response. The messages passed on to me were about computers requesting voter ID and people showing up that already voted. I did a provisional for someone that walked in to the DCBOE and told me that the computer was saying that he was not a U.S. Citizen. When I looked up his record, I discovered that he had been voting in Durham County for quite some time. He had been a registered voter in this county for years. I think his name was [name redacted]. Those sorts of calls started coming in almost immediately after the polls opened. I had quite a few people coming to me asking what they should do. [REDACTED]

[REDACTED] I made the decision to revert to the emergency plan until we could figure out what was going on. Jerry was very upset by this decision. Jerry did not know what to think. On Election Day, it's almost like triage. You are doing the best you can at 90 miles per hour. At that point, you are pretty much on the fly. [REDACTED]
[REDACTED]

We knew we had issues with the activators on Sunday before Election Day. The activators were having a hard time loading. [REDACTED]
[REDACTED]

[REDACTED] We had to be here at 5:00 AM on Election Day.

The problems that we were having with the activators not loading was in the back of my mind on Election Day. I was on high alert, so when the calls started coming in, I made the decision to revert to the emergency plan until we could find out what the problem was.

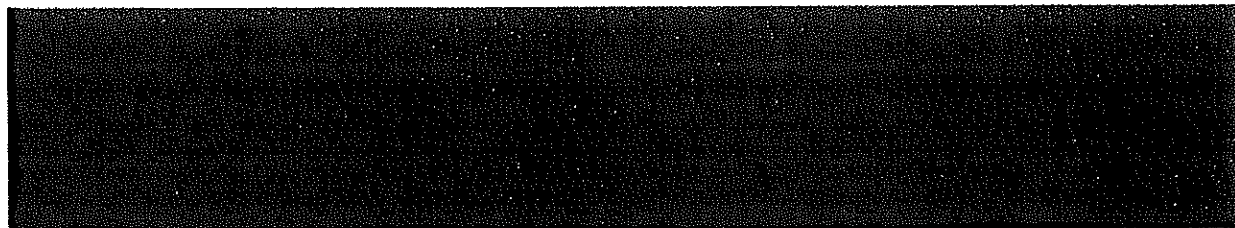
Jerry requested to go out to Precinct 39 to see what he could do. He went to Precinct 19, too. There was an easy issue to fix at 19. He was able to help them, and then he went to 39. I then contacted the State Board and told them we were having some issues. Under protocol that is what I was supposed to do. Kim Strach, the Executive Director of the State Board, said I made a good call. She said to let her know if I needed anything. I got a call two minutes later from Kim and she told me to go manual the rest of the day. We did not know how widespread the issue was and did not want to take a chance. The call from Kim came in before I could get a resolution on what was going on at Precinct 39. It was not my original intention to go manual all day. I wanted to figure out what the problem was first and try to fix it.

All the Chief Judges are familiar with the emergency plan procedure. They are trained on it. It turned out that some of the precincts did not follow the emergency plan. We give them a certain number of supplies in case the computers go down. They use a printed poll book. Under the emergency plan, they would revert to handwriting the ATVs until we could get the problem fixed. Everyone would have had enough supplies to handle that. However, we did not have enough supplies to go the whole day. Some precincts defied the order and used the electronic voting books all day. I found this out near the end of the day. Apparently, everything was going okay in their precincts and they were not having issues so they defied the order. [REDACTED]

Some precinct judges called me and asked if they could use the laptops to look up addresses. I told them they could, but they absolutely could not use it for voting. It was later in the day that I found out that some were printing the ATVs, which I told everyone not to do.

Bill Brian, the Republican Chairman of the Durham County Board of Elections, came over to the DCBOE after he voted and I explained what had happened. He said he did not have any issues where he voted.

The training schedule and presentations were already underway when I arrived in September. I was not involved, but all the poll workers were trained on the EViD application. This is the first election that I have ever run that I had no hand in the training. All the training is documented. Poll workers are trained on the EViD application. We have training material for Election Day that was created by Sam and Heidi. The training room was set up with laptops so that the poll workers could do hands-on training.



[REDACTED]

[REDACTED]

[REDACTED]

The County was protecting their brand. They told me if I needed anything to just ask. The County really did everything they could to help us get through this election.

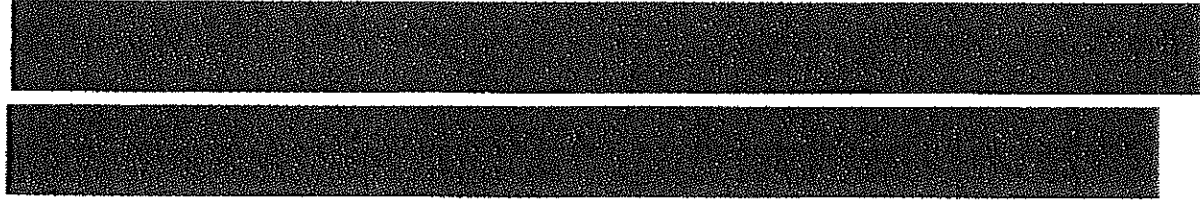
It was a reactionary election on different levels. The November election was supposed to be the start of something new and it was not. We saw the same issues. I know that you have to be well prepared for elections so that you don't have to go into a reactionary mode as much as we had to in this election.

[REDACTED]

I don't know if there are any processes or procedures in place for cleaning up the laptops.

[REDACTED]

There are no policies and procedures in place that I have found. This is one of the things I want to implement.



Recommended Additional Tasks (as of 12/21/2016)

To complete this review, the following tasks should be considered. As the review process continues, additional tasks may come to light.

- Laptops that were not used during the November election and that were not sanitized as part of the EViD setup need to be tested.
- Additional interviews with precinct workers and Durham County Board of Elections staff needs to be completed.
- All laptops from two precincts that reported EViD issues need to be set up in a lab setting just as they were at the precinct. This would allow researchers and examiners to run tests to recreate any issues that may exist, specifically Precinct 39.
- All training material for the EViD program needs to be reviewed.
- Procedures for dealing with voting day issues need to be reviewed.

Important Notice

The findings, conclusions, recommendations and opinions in this report are based on the information known by and disclosed to Protus3 and its investigators as of the date of this report. While reasonable efforts are made to verify the accuracy of information provided to Protus3, factors beyond Protus3's control may limit its ability to do so. Therefore, unless otherwise indicated, this report is furnished as-is, without any warranty or guarantee of any kind, including that the information contained in this report is correct, accurate, or complete, or that the recommendations contained in this report, if any, will result in any particular outcome. Protus3 reserves the right to modify or amend any finding, conclusion, recommendation or opinion contained herein based on the discovery of new, additional or previously undisclosed information.

Authorized Signature

Handwritten signature of Russell W. Gilmore.

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