

# Out of the Ashes: Lessons Learned from a Disaster

In 55 days, despite total destruction of their voting equipment, Harris County, Texas pulled off a successful election.





Fire destroys Harris County's Election Technology Center building, voting equipment, and election supplies



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hen John German, Administrator of Elections in Harris County, Texas, left the risk mitigation workshop presented by Hart InterCivic at the Texas Secretary of State conference on August 24th, 2010, he did not realize that his knack for constant risk analysis and mitigation would come in handy three days later. It is German's nature to always plan for the "what if's." This proactive planning, along with a dedicated staff and an elections vendor he knew he could count on, would get Harris County through the worst election equipment disaster in U.S. history.

Harris County, home to Houston, Texas, is the third-largest election jurisdiction in the nation. A mere 55 days before the November 2, 2010 General and Gubernatorial Election, the county experienced a three-alarm fire at its Election Technology Center. The "ETC," as it was known, housed over 10,000 pieces of "eSlate" voting equipment manufactured and supported by Hart InterCivic, as well as all of the county's election supplies. The building and all of its contents were destroyed.

As every elections administrator knows, running a seamless election requires that people, communications, processes, equipment, and facilities all work in concert – and not just on Election Day. Developing an effective approach to risk mitigation and disaster recovery involves coming up with a Plan A, B, and C for each of these elements. How did Harris County rise from the ashes of the fire that befell them on August 27th to deliver a successful election on November 2nd? According to longtime Harris County Clerk and Chief Election Officer, Beverly Kaufman, "All of the positive elements that were in place to make it happen came together."





In 2001, Harris County launched electronic voting with an award winning voter education program. The relationship built between Ms. Kaufman, Harris County Clerk, and Hart InterCivic would prove critical nine years later when a devastating fire destroyed that same voting equipment.

“You just need to identify what your key resources are and then bring them together at the table.”

Beverly Kaufman  
Harris County Clerk

## The Right People

Beverly Kaufman’s high opinion of Harris County’s administrators and staff was put to the test when disaster struck. Her colleagues didn’t let her down. Before the sun set on “fire day,” a cohesive team – the county’s risk management department, facilities group, IT department, commissioners, and others – were already working to overcome the hurdles that now stood in the way of a business-as-usual election.

Central to this effort and first on the scene from county offices was John German. German’s first thought, as he gazed incredulously at the flames, was “Who do I need to call?” Once the county response team was assembled, they began assessing the problem. As German describes the situation, “We no longer had a building; we no longer had any equipment. What comes first, the chicken or the egg? Do you find a building or equipment first? Obviously, you do both at the same time.” Developing a viable plan of action required the specialized expertise of every member of the Harris County elections team and that of the county’s voting equipment partner, Hart InterCivic.

Hart’s Director of Operations, Pete Lichtenheld, showed up on the scene within hours of receiving a call from German. He was accompanied by Sales Executive Ted Gilkey. German comments, “I wasn’t surprised when Pete and Ted showed up that day. I have come to expect that kind of response from Hart because of the partnership that Hart and Harris County have had over the past nine years.”

German, Lichtenheld, and Gilkey sat down Friday afternoon and began to determine the parameters that would drive equipment goals for Early Voting and Election Day. Working also with Beverly Kaufman and the county’s legal counsel, German outlined the following parameters for the election:

- The election had to meet all federal and state legal requirements.
- eSlates would be used for in-person Early Voting, as usual.
- All of the customary polling places would be open for Early Voting and on Election Day.
- Equipment would be allocated to the 37 Early Voting locations in the quantities originally planned.
- On Election Day, at least one set of eSlate voting equipment would be deployed at each of the 736 polling locations to ensure compliance with HAVA requirements for voters with disabilities, and more would be deployed if Hart could supply the equipment in the short time remaining before Election Day.



## Harris County Timeline

**August 27, 2010** — Fire destroys Harris County's Election Technology Center building, voting equipment, and election supplies

**August 30, 2010** — Commissioners' Court approves plan for conducting November's General Election (United States Department of Justice subsequently approves plan)

**August 31, 2010** — Hart begins manufacturing replacement voting equipment

**September 18, 2010** — Harris County sends out postal ballots for by-mail absentee

**September 20, 2010** — Harris County receives initial shipment of election equipment from counties across Texas

**October 4, 2010** — Hart ships Harris County's first batch of newly manufactured replacement equipment

**October 18, 2010** — Early voting begins

**October 25, 2010** — Hart ships final batch of newly manufactured replacement equipment

**October 29, 2010** — Early voting ends

**November 2, 2010** — Harris County holds successful mid-term General and Gubernatorial Election

Additionally, voting equipment had to be distributed equitably across all polling locations for both election phases (Early and Election Day voting) to provide all Harris County voters equal access to a fair voting experience. While paper ballots would augment the electronic equipment at the polls, voters would be urged to use the method most familiar to them – casting their ballots on the eSlate voting machines.

## Communication is Key

As the nation watched news footage of the election warehouse fire, one question was foremost on the minds of many: how would Harris County hold a legitimate midterm election despite this tragedy?

Even while the fire still blazed, Beverly Kaufman began broadcasting her consistently positive message to election stakeholders in the county and nationwide. She immediately assured the public, “There is no doubt in my mind that we’re going to have a timely election here and that we’re going to take care of the voters.” She understood the need “not only to assure the voters that everything was going to be in place for the election, but also to assure the really nervous people out there – the parties and candidates – that their interests were being protected.”

On faith, Kaufman assured the press on the day of the fire that other counties around the state – other users of Hart’s voting system – would loan the necessary equipment to help Harris County get through the election. To her delight, they did! Fourteen counties sent several thousand pieces of equipment on loan. Even non-Hart customers were able to help. For example, Bexar County, Texas provided close to 800 ballot boxes and 2,300 polling booths – a welcome loan, since the booths could be pressed into service to hold the Hart voting machines.

When the first trucks rolled in with the equipment borrowed from other counties, Kaufman’s office held a large press event to build upon their continuing message to the voters that things were coming together. Video clips of the loaned equipment being unloaded from the trucks provided visual assurance that preparations for the election were progressing as promised. Each milestone in the election – the mailing of postal ballots, for example – served as an opportunity to reach out to the media and educate the public about the process. German says, “You have to tell your story. You have to get out front and update the media so that they become your partner in getting out the word that the election will run as normally as it can under the circumstances.”

The other consistent message to Harris County citizens was, “Vote early!” Kaufman and other county workers encouraged voters to hit the

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John German  
Administrator of  
Elections





polls during the Early Voting period and for those qualified to vote by mail to get their ballots in on time. This would ease the potential of long lines on Election Day.

## Commissioners' Court Meeting

The Friday of the fire, Hart Professional Services Manager Rich Geppert was in paradise. Nearly 4,000 miles and four time zones separated him from Hart's Austin, Texas headquarters – when his phone rang. It was 1:51 a.m. Hawaii time.

Geppert answered and quickly learned that his stint in Hawaii was over. Phillip Braithwaite, President of Hart InterCivic, let Geppert know that Hart had formed the Harris County Disaster Recovery team, and Geppert was to lead the logistical planning. Supply Chain Manager Dan Gately, also working in Hawaii, would return to the mainland to oversee the manufacturing effort that would surely be needed.

"We talked through the logistics for some time," Geppert says of his trans-Pacific phone call. "And as we were wrapping up, Braithwaite said, 'Harris County made this company, and we will do everything we can to stand by them and help them.'"

On Sunday, August 29th, Geppert and Gately arrived at Harris County's downtown offices along with other members of Hart's disaster recovery team. There they found an already-developed, and more importantly, realistic plan of action. The plan included an interim facility, a suggested approach for the production of new units, sources for borrowing units, and a strategy for staffing the project itself. This core team worked with German, Kaufman, and other key county personnel to finalize their report to be presented Monday to the emergency Commissioners' Court meeting called by the County Judge.

A crowd of election stakeholders – advocacy group members, party representatives, county staff, and other avid poll-watchers – gathered to witness the outcome of the meeting. The chief concern was that the disaster would necessitate the closing of polling places, which would compromise the fairness of the election. This was an important election; it could literally hold up putting somebody in the Governor's mansion. As one person describes the beginning of the meeting, "The first words out of the County Clerk's mouth were, 'We are going to be able to do this without closing any polling places.' You could hear gasps go all through the crowd."

Hart had five weeks to build what normally takes five months of production time.



The Commissioners' Court immediately took decisive action and approved the plan – and the budget – to purchase equipment, as the clerk requested.

## Equipped for Success

The Hart Voting System polling place configuration deployed in Harris County since 2002 consists of three primary components: the eSlate, the Disabled Access Unit (DAU) eSlate, and the Judge's Booth Controller (JBC). The eSlate is a direct-recording electronic (DRE) voting machine on which voters cast their ballots. The DAU eSlate allows voters with disabilities to use headphones or other adaptive devices to vote privately and independently. The JBC is a polling place control console that transmits the correct ballot information to each of the eSlates.

Manufacturing 2,525 eSlates, 1,075 DAU eSlates, and 1,235 JBCs under two strict and fast-approaching deadlines was, as John German describes it, "a feat in itself." Hart had five weeks to build what normally takes five months of production time. The company turned to Suntron, Hart's longtime manufacturer, located conveniently near Houston in Sugarland, Texas. Suntron agreed to dedicate 260,000 square feet of its production facilities to the Harris County effort and geared up for production.

Dan Gately from Hart set up camp at Suntron for the duration of the effort to replace the voting equipment Harris County had lost.

Hart's manufacturing process involves three phases: sourcing parts, building circuit boards, and conducting final assembly and tests. Of these phases, sourcing parts is always the trickiest. More than 1,100 unique part numbers would have to be made or bought to build the eSlates and JBCs – circuit boards, plastic and metal housings, electronic components, and more. Since Hart's focus had recently shifted from manufacturing to ongoing support of its elections customers, the company was practically starting this manufacturing push from scratch.

German continues, "My hat is off to Dan Gately. I know that guy must have spent many hours late into the night getting those parts together." Fortunately, the originators of the Hart voting system designed the equipment around standard parts still available today. Still, there were challenges – integrated circuits to source, days lost to Federal holidays, and damaged packaging, which rendered parts unusable.

Hart, Harris County, and the county's voters owe a debt of gratitude to many of Suntron's customers. Gately talked companies worldwide out





of their parts orders and “begged, wheedled, and whined” to find even one or two chips, capacitors, and other small but integral pieces. Harris County accounts for 20 percent of the total vote in Texas. Helping the county have a successful election became a community project.

“I never had to sign one piece of paper. That was amazing,” says Gately. “Everybody was doing it based on a phone call.”

Phase two was getting the circuit board shop up and running. Manufacturing in the United States is in a lull. However, Suntron, through all its ups and downs, has kept a core team of people who know how to build Hart’s product. Suntron brought in these knowledgeable workers and increased capacity from one production line to four. With this skilled crew on board, production line rejection levels remained at an unheard of 0.3 percent – an indicator of extremely high-quality work.

Every piece of election equipment, whether loaned or newly manufactured, had to go through acceptance testing to ensure that it was working properly and had the correct firmware installed. Harris County and Hart personnel conducted the crucial tests in their temporary home for equipment distribution, Reliant Arena, where Hart delivered 50 to 70 units a day.

Each evening, after a full day’s work at county offices, 20 to 40 volunteers showed up at Reliant to test these units. Once the equipment had passed acceptance tests and Harris County had conducted the state-required Logic and Accuracy Testing for every ballot style in the General Election, equipment was packaged and ready to be securely shipped to the appropriate polling sites.

## A Successful Election Day

If you take a moment to Google “Harris County November 2010 election,” you will not find reports of delayed voting, equipment shortages, problematic equipment, or long lines at polling places. You will find election results.

This is a testament to Harris County successfully fulfilling its “responsibility of ensuring each citizen the opportunity to exercise their right to vote,” as County Clerk Beverly Kaufman describes her charter as Chief Election Officer. Voter turnout was high for this important General and Gubernatorial Election; a total of 798,995 voters cast their ballots in Harris County. While paper ballots were available at each Election Day polling place as a backup, nearly 99 percent of voters chose to use the familiar electronic voting method they trusted.



Dan Gately, Supply Chain Manager from Hart, set up camp at Suntron to source parts and gear up for manufacturing thousands of pieces of voting equipment.





## Be Prepared

To prepare for the unforeseen in the world of elections administration, John German suggests you start by looking around your office. Now, close your eyes and imagine it is all gone. What will it take to continue to do your job?

**Documented procedures.** In German's case, not only did he have in place a group of competent election professionals; he had a standard, documented way of putting an election together operationally. He knew where all his polling operations were, how to transport all supplies and equipment, and how to set everything up. German says, "So, what we did was to simply take those procedures and put the schedule on steroids. We said, 'this is what we need to do. These are our standard procedures; we will not shirk anything. We will not cut corners. We will do what we normally do; we just need to speed it up.'"

**Backups.** Here is a remarkable fact about Harris County's experience of its August disaster. Even though the Elections Department lost all of its servers in the fire, the department did not lose a single bit of data. Everything – procedures manuals, forms, records – was stored off-site in electronic format. German's recommendation is, "Make backing up your data a daily routine. There are several easy, economical ways to do that. Store a copy of your backed-up data in another location. This is the most important thing I can say."

**Believe in your staff.** Essential to the success of Harris County's election was the County Clerk's complete confidence in her staff. The election management team and warehouse staff had the skills, knowledge, and work ethic to get tough jobs done and to meet deadlines. Though starting from zero on voting equipment gave the logistics of running this election a new twist, the staff had the management team's full support and confidence.

**Communications plan.** It is a good idea to plan ahead on how your department will communicate in the case of an emergency. German's words of wisdom are, "Identify who in your county you would call first. Do you have those phone numbers in your cell phone?" Establish a point person or group to develop and present your message to the media. Keep the public, political parties, candidates, special interest groups, and other election stakeholders informed of what is going on. If you don't tell your story, the media or someone else will tell it for you!

**Vendor conversation.** German suggests you have a conversation with your voting system vendor before a disaster strikes. He says, "If you don't have a relationship as we did with Hart, you need to ask your

"We're going to be able to do this without closing any polling places."

Beverly Kaufman  
Harris County Clerk



vendor, 'where will you be if I come to you tomorrow and say I need all of my equipment replaced?' It is important to understand whether your vendor can quickly replace the system you use today – not a newer version of the system that might present additional expense to your jurisdiction as well as a steep learning curve for your staff or the voters. It is unlikely that other voting system vendors in the United States could provide you with an exact replacement if your system is several years old. Hart could, and did.

## Conclusion

If you are an election professional on Election Day, all eyes are on you. If you have surrounded yourself with committed, competent people; established and documented procedures for each aspect of your operation; worked out contingency plans with your voting equipment vendor and staff; and taken action to mitigate known risk factors, it is likely your Election Day will shine.

If disaster strikes, you can reflect on Kaufman's words. "You just need to identify what your key resources are and then bring them together at the table. You don't need to ever be afraid to ask for help. The more humble you are, the better. Don't panic! Keep a cool head. Keep expressing your thanks and heaping on the praise."

About August's Harris County disaster, Kaufman says, "I'm sorry I had to go through this experience. It wasn't anything I relished. I was winding down to the end of my term and wanting to retire peacefully. When this happened, the adrenalin started flowing. I'm just grateful we got through it in such great shape."

Beverly Kaufman expresses appreciation for the support she received from everyone involved. "The credit goes in a lot of places. The Election Judges pitched in. Everybody had a good attitude about being asked to do more. When Early Voting started, it was obvious that the community came in to vote with a good, supportive attitude. We've never felt anything other than solid support everywhere we could find it. Hart has really shown their mettle; they're my heroes! We were talking about Apollo 13 and saying 'this could be our finest hour.' Well, it was!"

Phillip Braithwaite echoes Kaufman's sentiment. He says of Hart employees' unwavering commitment to support Harris County's recovery from the fire, "This is the proudest I have been of this organization. It is one of our best moments."





## Harris County November 2010 Election

**450,000** — approximate number of voters who cast their ballots early or by mail (about 65 percent of the total - more than twice the total number of early votes in previous similar elections).

**798,995** — total number of voters, including Early Voting and Election Day (41.67 percent voter turnout)

**1.4 million** — number of paper ballots available at polling places on Election Day

**10,000** — approximate number of voters who chose the paper ballot option on Election Day (only about 1.25 percent of Election Day voters)

**885** — number of precincts in Harris County

**37** — number of Early Voting locations

**100** — number of JBCs needed for Early Voting

**824** — number of eSlate DRE voting units required for Early Voting (86 of these DAU-enabled to accommodate voters with disabilities)

**736** — number of Election Day polling locations

**1,472** — number of JBCs required for Election Day

**5,100** — number of eSlate DRE voting units required for Election Day

**1,100** — number of unique part numbers needed to manufacture JBCs and eSlates

**2,525** — total number of eSlate DRE voting units manufactured to replace equipment destroyed in fire

**1,075** — total number of DAU eSlates manufactured to replace equipment destroyed in fire

**1,235** — total number of JBCs manufactured to replace equipment destroyed in fire

## Top 10 Risk Mitigation Tips from Hart's Texas Customers

- 1) **Natural disaster** – List the major risks for your area (flood, hurricane, tornado, (and fire!)), and make contingency plans.
- 2) **Ballot inaccuracies** – proof audio and print ballots, getting sign-off from entities and perhaps even candidates. Perform logic and accuracy tests (LAT) before mailing ballots to find and correct errors before voting starts.
- 3) **Compromised facilities** – install security devices, limit access, and light your facility well to prevent unauthorized access or vandalism.
- 4) **Electrical and connection problems** - test all electrical sources (outlets, batteries, extension cords, surge protectors, and other equipment) and all connections to be sure electronic voting equipment components are receiving power and functioning properly together.
- 5) **Shortage of trained poll workers** – train more poll workers than you need, so that you have enough knowledgeable workers on Election Day.
- 6) **Phone line failure** – plan to use both land lines and mobile phones so that if one fails, you can still communicate with people at other locations.
- 7) **Computer lockout due to incorrect password** – be systematic about updating passwords, and assign one individual to log new passwords. If you receive a password error, get the correct password from the log to avoid entering an incorrect password more times than your system allows within a given time period.
- 8) **Equipment backup shortage** – purchase backup voting equipment! Keep spare connector cables on hand (eSlate booth pigtails, for example). Have a locked down backup PC with vote-tallying software (Tally for Hart's system) in case the original PC crashes due to hard drive failure or another problem.
- 9) **Out-of-date equipment** – work with your equipment vendor to plan for replacing each equipment type as it nears the end of its lifespan. Your vendor may have a cost-saving program to help keep your system up-to-date.
- 10) **Losing track of equipment** – use local procedures and the appropriate software (such as Hart's SERVO equipment list) to keep an inventory of your voting equipment components, their locations, and the date you purchased them.

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