

# Capturx Case Study

City of Nashua Division of Public Health  
& Community Services

**capturx**<sup>™</sup>  
FOR FIELD DATA COLLECTION



## Capturx Speeds Public Health Data Collection for Better Emergency Response and Preparedness

Public health officials face ongoing challenges in identifying, preparing for, and managing outbreaks of diseases and other illnesses. The Centers for Disease Control and Prevention (CDC) have released a newly developed Community Assessment for Public Health Emergency Response (CASPER) toolkit to help Epidemiologists and other Public Health professionals collect pertinent health information during a large-scale emergency or natural disaster. During a disaster, existing infrastructure is compromised and communication and transportation systems may be inoperable. Finding a method to collect health data to detect and prevent outbreaks and to minimize health risks within the community becomes an important task for public health professionals.

The CDC is encouraging local public health agencies to adopt the CASPER protocol to better prepare for and respond to future emergencies by increasing their capability to quickly establish surveillance systems during disasters. An innovative application of this protocol is being implemented by the City of Nashua, New Hampshire's Division of Public Health & Community Services. The Division is using the protocol to develop field procedures to gather community health information for a local health assessment. By utilizing this tool during non-emergencies, local health departments can practice using the toolkit, train volunteers and staff to use the toolkit and increase their ability to use this method to respond more efficiently during a disaster.

### Summary

**Customer:** City of Nashua, New Hampshire's Division of Public Health & Community Services.

**Challenge:** Finding an efficient way to transpose handwritten survey information into electronic reports for review and action. Finding an effective tool to collect health information, while still operating under its fixed budget.

**Solution:** Data Collection solution, Capturx Software for Digital Pens, enabling surveyors to instantly digitize handwritten surveys using digital pens as they write on paper forms, and maps

**Results:** Capturx provided the opportunity for City of Nashua to complete an in-depth and statistically significant survey at a fraction of the typical cost.

### Challenges: Tracking, Mapping, Surveying & Reporting on Data

Nashua is the first Health Department in New Hampshire to use this method to assess their community's health and wellness. The survey requires teams comprised of two individuals to go door-to-door in the community to interview residents. Finding an efficient way to transpose handwritten survey information into electronic reports for review and action was a challenge. After exploring methods to collect and synthesize data, Nashua began using Capturx software for digital pens. In addition to the health survey, Nashua is considering using the Capturx software for use in emergency shelters, Medical Dispensing Sites (MDS) also referred to as Point of Dispensing Sites (PODs), Neighborhood Emergency Health Centers (NEHC), or triage centers, and Alternate Care Sites.

As with many municipalities, the ability to complete a comprehensive Community Health Assessment is often inhibited by the availability of financial and human resources. Nashua had been searching for an effective tool to collect health information, while still operating under its fixed budget. The use of the CASPER toolkit, paired with the efficiency of the Capturx software and digital pens, provided the opportunity for the Division to complete an in-depth and statistically significant survey at a fraction of the typical cost.

For the initial assessment, City of Nashua Epidemiologist, Ashley Conley oversaw the selection of the survey assessment components including, data collection requirements for the neighborhoods, interview teams, and types of health information targeted. According to the cluster sampling method used, the teams would need to complete over 200 surveys over the course of 6 hours for their health assess-

***“Our volunteers found the pens easy to use for the health surveys.”***

***“Downloading the data from the pens into Excel took a matter of minutes. Entering the data into Excel by hand would have taken much longer and is more prone to errors.”***

**ASHLEY CONLEY**  
Epidemiologist,  
City of Nashua

Division of Public Health &  
Community Services

ment. The time required to enter data from the surveys is markedly decreased by the use of the Capturx digital pens. The teams also documented their walking paths through neighborhoods using ArcGIS and the digital pens.

One of the most significant challenges during and after an emergency is the collection of real-time data to facilitate decision making. The task of manually entering the data collected during an on-going emergency would create a significant burden on local health department staff as well as result in critical response time being lost. Due to the highly mobile nature of the surveys, deploying mobile computers for data collection would be a challenge. Complex mobile computers would also be expensive, involve extra training, and IT support. Their goal was to keep the paper-based survey data collection, but to speed up the delivery time, and the data entry process from paper.

### **Solution: Capturx Forms & Mapping Software for Digital Pens**

Nashua selected a Capturx data collection solution that enables surveyors to instantly digitize handwritten surveys using digital pens as they write on paper forms and maps. With Capturx, survey teams use the familiar paper survey forms and route maps, which are also printed with unique digital watermarks that enable handwritten data to be recorded by digital pens. As teams fill out the health surveys and mark which homes they've visited on the maps, the digital pen creates a normal ink record on the paper while also making a digital copy which it stores on the pen's memory.

When the pens are connected to PCs, all the recorded data is integrated as structured data into Microsoft Office Excel files or as GIS data in ArcGIS. The form data is available in the original handwriting and as converted text which can be easily aggregated for quick reporting, key word search, and archiving. Capturx tracks the data, time, and author of form for more detailed analysis. If teams are using Bluetooth-enabled cell phones, they can also transmit the data from the pen directly to the back office from the field including GPS data. There is no new technology to learn or data to re-enter.

### **Benefits**

#### **Teams Collect More Data Instead of Manual Data Re-entry**

Survey teams can now immediately share recorded survey data with their main point of contact. Data entry is eliminated since the digital pen records and integrates all the form and map data that is written. The handwritten form or marked-up maps can be archived or destroyed for sensitivity sake. Capturx not only reduces the time and expense of processing paper-based data, but it also enables survey teams to stay in the field longer and gather more information.

#### **Faster Information - Better Decisions Now and Later**

Decision makers get immediate visibility into conditions, allowing issues to be identified and resolved earlier than before. Faster data access and eliminating data entry reduces the risk of unaddressed problems caused by delayed issue reporting or data entry errors. To help with planning for future scenarios, teams can look back at historical data automatically archived by Capturx. The archives contain the original handwriting, any signatures, converted data as keywords, and author, date and time stamps

#### **Works the Way They Do**

With Capturx, the City of Nashua, NH Division of Public Health and Community Services was able to automate their survey data without changing their simple paper-based process. Unlike mobile computers, software for digital pens does not require complex training, support, or suffer from limited use in harsh or remote environments. Paper can be used in any environment – indoors, outdoors, rain, or direct sunlight. The pen is durable, easy to carry, and the data upload can be performed by nearly anyone.