



Center for Technology in Government

Assessing Mobile Technologies in Child Protective Services

**Albany County
Department for Children, Youth, and Families
District Profile**

**Meghan E. Cook
Anthony M. Cresswell
Natalie Helbig
Fawzi H. Mulki
Bahadir K. Akram
Jana L. Hrdinová**

Center for Technology in Government
University at Albany, SUNY
187 Wolf Road, Suite 301
Albany, NY 12205
Phone: (518) 442-3892
Fax: (518) 442-3886
<http://www.ctg.albany.edu>

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Introduction

Demonstration Project

The New York State (NYS) Mobile Technology Demonstration Project is an initiative to assess the use of mobile technologies in child protective services work in New York State. The project, a collaborative effort among the NYS Office of Children and Family Services (OCFS), 23 NYS County Departments of Social Services (DSS), and the Center for Technology in Government (CTG), focused on two core questions – how is mobile technology used in the work setting and did the technology impact the work itself?

In this project, OCFS was responsible for the selection, procurement, and deployment of mobile technologies. The County DSS were also responsible for the deployment of mobile technologies, in addition to the coordination and procurement of wireless connectivity, training, and the selection of Child Protective Services (CPS) staff to participate in the demonstration. CTG was responsible for the independent assessment of the use of the technology.

The *Demonstration Project in 23 Local Social Service Districts* produced profiles for each of the participating districts as well as a summary report. It may be useful to read through the summary report before reading the local district profile as the summary report explains the variability in the CPS environment across the state as well as describes the many policies and practices developed and implemented by districts. The report is available at:

<http://www.ctg.albany.edu/publications/reports/demonstration2008>.

This profile presents findings for the Albany County Department for Children, Youth, and Families (DCYF). Findings are based on data collected through online surveys, teleconferences, district questionnaires, and analysis of CONNECTIONS data (data collection methodology and timeframe can be found in Appendix A). The field test lasted 60 days from 11/10/07-1/9/08.

District Deployment

Albany County DCYF has approximately 125 CPS staff responsible for child protective services. Albany County is a split urban and rural community, which includes NYS's capital. The Albany County DCYF participated in the demonstration project to learn if mobile technologies can increase CPS caseworker performance and the opportunities available to complete documentation while out of the office.

The Albany County DCYF deployed 39 Dell Latitude D620 laptops and two HP Compaq tc4400 Tablets to 40 CPS caseworkers on 11/10/07 (see Appendix B for device specifications).

Caseworkers were selected on a first come, first served basis to participate in the field test. All caseworkers received their own device and of that group, 37 received docking stations with keyboards and monitors.

No external broadband cards were provided or procured for any of the devices during the pilot period. The wireless connectivity options were public wireless networks within the area and any home Internet Service Provider (ISP) access. Regardless of the network connections used, all access to the State network was through a virtual private network (VPN) that secures the transmission to

and from the portable device and the network. In addition, PointSec encryption software was installed on each device before deployment.

Finally, no policies were changed to support the introduction of mobile technologies before or during the pilot period. In both periods, caseworkers were allowed, with prior approval, overtime pay for work done at home after regular work hours.

Characteristics of Respondents

A total of 40 CPS caseworkers participated in this study: 27 took the baseline survey (response rate 68%); 22 took the post-pilot survey (response rate 55%), and 18 took both the baseline and post-pilot surveys (response rate 45%).

The length of experience in CPS work, amount of overtime accrued weekly, the number of court days and estimated court waiting time are all important to understanding the overall context of the work environment. The Albany County DCYF respondents¹ were relatively new to CPS field work, with an average of 4.8 years of CPS experience; 59% reported CPS experience of three years or less. The percentage of respondents reporting overtime of five hours or less in a week slightly decreased from 94% in the pre-pilot period to 89% in the pilot period. Additionally, the average overtime hours slightly increased from 3.2 hours in the pre-pilot period to 3.8 hours in the pilot period. Seventy-four percent of respondents reported a typical court waiting time of two hours or less and 82% reported spending on average four or fewer days in court per month.

Mobility

The laptops provided caseworkers opportunities to work outside the office environment in new ways. This section reports on how the participants used those opportunities in terms of the type of work done, locations, and issues that influenced use. Survey questions inquired about use at home, in court houses, and in the field. Issue questions focused on using the laptop outside of the office, such as (1) difficulty establishing connection, (2) loss of connection, (3) the speed of connection, (4) level of privacy (or personal work space and ability to ensure confidentiality of information), (5) personal safety, and (6) amount of time available to use the laptop. How information was accessed and entered by participants was also examined.

Use

In the Albany County DCYF respondents reported using the laptop during normal work hours, after work hours, on-call, and when working overtime. Albany County DCYF removed CPS desktops and installed docking stations. Therefore, the full range of CPS-related work was completed using

¹ Participant(s) refers to those CPS caseworkers who tested the technology. Respondent(s) refers to the total number of participants who answered specific questions in either the baseline or post-pilot surveys or participated in the district teleconferences.

the laptops. The laptop was used in case investigation and interventions, documentation and reporting, and court-related activities. Case documentation was the most frequent use, including inputting and updating notes. Other work included court-related documents, safety assessments, reading and reviewing case histories, opening new cases, doing person searches, checking client histories, email, and accessing the Welfare Management System (WMS). Approximately 91% of the respondents reported using the laptop to access various forms of information from government Web sites at least once a day. Similarly, all (100%) of the respondents accessed email at least once a day or more, while 96% of respondents reported using their laptop at least once a day or more to access map directions.

The extent to which caseworkers could access information while out of the office has a big influence on what kinds of mobile work are possible. Respondents reported returning to the office to access case information less frequently during the pilot period. Fifty-six percent of respondents reported returning to the office once a week or less to access case information during the pilot period, compared to only 35% in the pre-pilot period. The respondents were in the field approximately the same number of days per week (average 2.75 days) during the pre- and pilot periods.

Albany County DSS did not have district-provided external broadband cards during the pilot period. While out of the office, respondents reported using ‘hot spots’ and court house provided wireless connections. While at home, most used their personal Internet Service Providers (ISPs). While many respondents reported encountering few problems, several reported obstacles to mobile use such as the inability to establish a connection, slow speed, or unreliable connections while in the field. A few noted similar connection problems while at home. Most respondents did not perceive privacy as problematic at the court house, but some did have privacy concerns in the field. Several respondents noted small blocks of time available to do work were an issue at court and in the field. One respondent stated, “The only problem I have experienced with the use of the laptop is the inability to log-on in various places. Relying on ‘hot spots’ for usage takes away from the ability to use [it].” The device characteristics such as the built-in mouse were an issue; several respondents described how they taped an index card over the mouse pad area to prevent the cursor from jumping around the screen.

Participants were asked about the ease of logging-on to the device. Overall, 72% said it was “Easy” to “Extremely easy,” 23% rated it as “Neither difficult nor Easy,” and another 5% rated the log-on process as “Difficult.” One respondent commented on the need for training on “short cuts and log-on tips for hot spots.”

Location

Table 1 below details the percentage of respondents using the laptop at different locations, as well as the average length of time the laptop was used. Aside from the office, respondents used the laptop most frequently at home (73%), for an average of over three hours per week. Fewer reported using the laptop in the field and at court (32%) for an average of about one hour per week.

Table 1 - Location and Hours of Laptop Use per Week

	Use of Laptop (n)	Average length of use per week
Field	32% (7)	1.14 Hours
Court	32% (7)	0.86 Hours
Home	73% (16)	3.36 Hours
Do not use at all	0% (0)	--

** Based on survey respondents who took the post survey n=22. Total number of testers n=40.*

Respondents expressed the importance of being connected and emphasized that having constant connectivity would enhance the benefits of using a laptop. One respondent stated, “I think the laptop would be even more useful if we had wireless Internet cards so that we could use them to access information while in the field when access points are not available. I do not bring my laptop in the field with me at all because there are not many places I would be able to access CONNECTIONS and WMS.”

The amount of time caseworkers spend in court suggests that it is an unexploited location for mobile work in many districts. Respondents in the Albany County DCYF spent on average 2.5 days a month at court and approximately 74% reported waiting in court two hours or less during a court visit. However, caseworkers may not be using the laptop in the court house because of other competing interests that may limit the amount and type of work they can do. Also, respondents suggested the wait times in court were pretty short and this impacts the ability to get work done while waiting. Respondents suggested they did not use the laptop in the court house because there are already two desktop computers available and a private room to use. Others stated that bringing the laptop did not add additional capability or benefit, the walk to the court house was a significant distance (about one mile and they would have to carry the laptop), and the risk of loss or damage was too great.

Caseworkers could work overtime from home if they got prior approval, however, there is a policy in place that caseworkers are not allowed to work from home during business hours. Several respondents stated that working from home was now more efficient because they did not have to deal with the constant interruptions found in the office, and it increased their flexibility. One respondent expressed that it was beneficial because he did not have to stay at the office until seven o’clock in the evening each night, and instead could go home, eat dinner, and then spend one or two hours finishing notes.

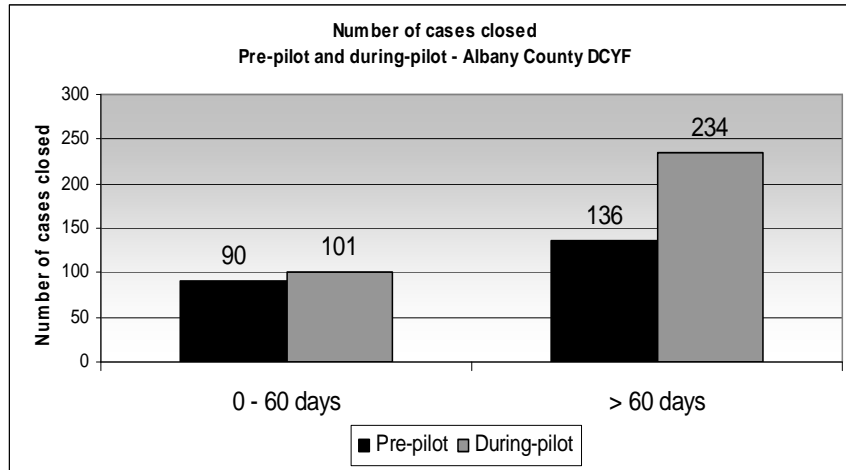
Productivity and Efficiency

This analysis uses central database data and survey responses to examine two core questions about possible technology impacts within the Albany County DCYF: (1) Are workers more productive with respect to case closings and progress note reporting? and (2) Does timeliness of reporting change?

Case closing is one way to assess any changes in efficiency and productivity. Figure 1 below shows the rate of timely closing of cases (in 60 days or less) increased during the pilot period, up from 90 in the pre-pilot period to 136 during the pilot period. The number of cases closed in over 60 days

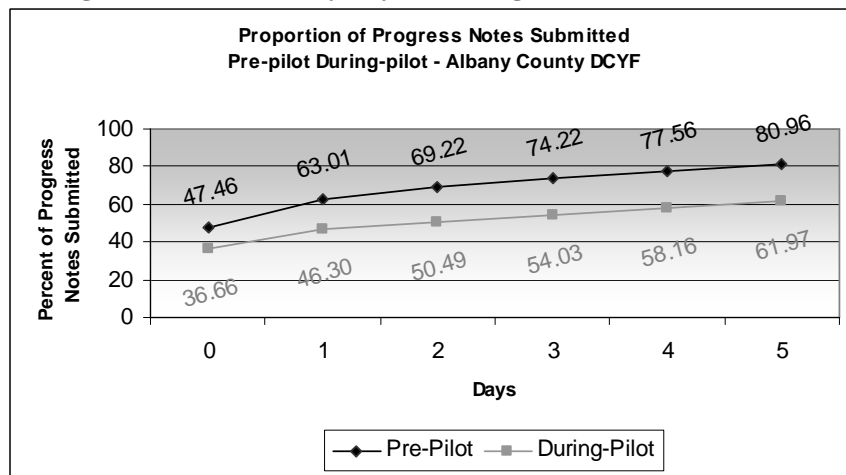
increased from 136 in the pre-pilot period to 234 during the pilot period. This is a marked increase in productivity; the total number of cases closed increased substantially from 226 in the pre-pilot period to 335 during the pilot period – a 48% increase. It is important to note that in this county the total number of cases available to be worked on² slightly increased from 800 in the pre-pilot period to 821 during the pilot period – a 2.6% increase.

Figure 1 – Proportion of Albany County DCYF Cases Closed Pre-Pilot and During-Pilot



An indicator of timeliness is elapsed time – or the number of days between an event and the posting of documentation regarding that event in the central database system. Figure 2 below shows trends in the elapsed time between progress note entry and the related event. During the pre-pilot period, the majority of all progress notes were entered by the fifth day following the event. But contrary to expectations, the proportion of progress notes entered in each time period in the pilot period is consistently below that of the pre-pilot period. During the pre-pilot period almost 70% of notes were entered by the second day, compared to just over 50% for the period of laptop use. By this measure, timeliness decreased somewhat during the pilot period, but is still high overall.

Figure 2 - Number of Progress Notes Entered by Days Following Event



² The number of cases available to be worked on is the total of investigation stages that were open at any time during each of the pre-or pilot periods.

There may be multiple reasons for this decrease in the timeliness of note entry, including: the replacement of the desktop PCs by the laptops with docking stations and learning to use the new equipment configuration may have slowed the normal work processes. The laptops were not equipped with wireless access cards, which limited their utility in the field. The overall increase in case closings during the test may have changed the usual pattern of progress note entry. There was clearly an effort put into closing cases during the pilot period that could have had this effect. Some additional adjustments to work processes may be necessary to take full advantage of the laptops. Adjusting use and deployment to these and related issues can be part of the learning process in implementing the new technologies.

Participants were asked to what extent using a laptop made a difference in CPS work compared to not having the laptop. Five different areas were examined: (1) timeliness of documentation, (2) ability to do work in court, (3) ability to access case information, (4) communication with supervisors, and (5) service to clients. Respondents were asked to rate the difference on a five-point scale where 1 = “Much worse,” 3 = “About the same,” and 5 = “Much better.”

Most respondents reported the use of laptops improved their work in terms of timeliness and accessing information, with none reporting a negative impact (Table 2 below).

Table 2 - Perceived Change in Timeliness and Work Impacts – Albany County DCYF

	Much worse (n)	Somewhat worse (n)	About the same (n)	Somewhat better (n)	Much better (n)
Timeliness of documentation	0%(0)	0%(0)	27%(6)	64%(14)	9%(2)
Ability to do work in court	0%(0)	0%(0)	68%(15)	23%(5)	9%(2)
Ability to access case information	0%(0)	0%(0)	23%(5)	55%(12)	23%(5)
Communication with supervisors	0%(0)	0%(0)	82%(18)	9%(2)	9%(2)
Service to clients	0%(0)	0%(0)	64%(14)	27%(6)	9%(2)

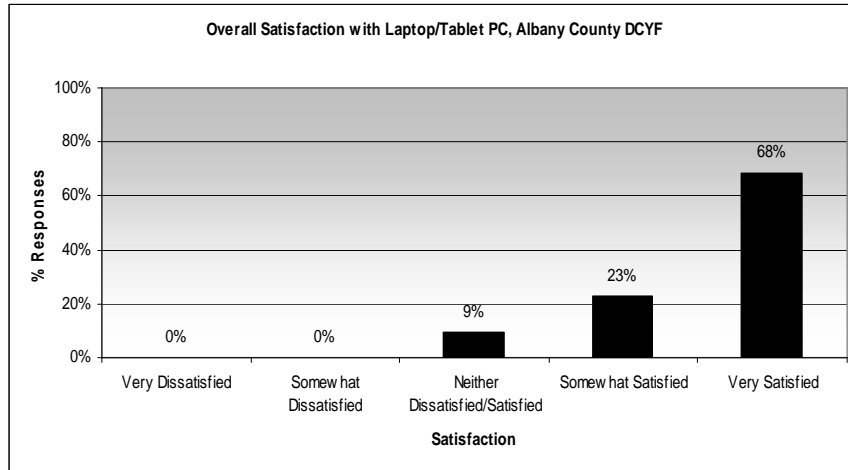
Overall, 73% of respondents reported timeliness of documentation was “Somewhat better” or “Much better” using the laptop. And 77% of respondents reported the ability to access case information as being “Somewhat better” or “Much better” using the laptop. Respondents also reported a somewhat smaller but positive impact on communicating with supervisors and service to clients (18% and 36% reporting an improvement respectively). Ability to work in court improved for 32% of the respondents.

No respondents reported a negative impact on timeliness, which is somewhat inconsistent with the timeliness of documentation results obtained from the central database. It is possible that the reduction in timeliness seen in those results was too small to be noticed by the caseworkers.

Satisfaction

The overall level of satisfaction with the laptops was exceptionally high. Figure 3 below shows 91% of respondents expressed being “Somewhat satisfied” or “Very satisfied.” None of the respondents expressed being “Dissatisfied” with the laptops, while only 9% indicated that they were “Neither Dissatisfied/Satisfied.”

Figure 3 - Overall User Satisfaction with the Laptops



** Based on survey respondents who took the post survey n = 22. Total number of testers n = 40.*

Laptop use generally was seen as contributing to lower job-related stress; 72% of respondents said that it reduced stress, while roughly 27% said it did not. Those who reported a reduction in stress attributed this to their ability to catch up on work, just knowing the laptop was available, and having the flexibility of working on documentation outside of the office. One respondent said, “It [the laptop] has made it very convenient for me to do work from home, specifically entering case notes, which has allowed me to keep more up-to-date on my work.” However, several others expressed a different sentiment stating, “It [the laptop] does not decrease the volume of work we have or amount of cases we have. It makes it easier to bring work home but that doesn’t change our case loads or the demands of the paperwork and mandates.”

Overall, 96% of respondents would recommend the use of the laptops to colleagues. The reasons mentioned included increased flexibility in respondents’ ability to do work, ability to use time more efficiently, opportunities to do work outside of the office when it is convenient for them, increased access to information, and more timely documentation.

APPENDIX A – Methodology, Data Collection, and Timeline

There were three streams of data collection throughout the project. Two online surveys, as well as data from the central OCFS CONNECTIONS database, provided quantitative data to assess various productivity, satisfaction, and timeliness measures. In addition, the different uses and locations of use were documented. This data was supplemented by qualitative data gathered from ten district teleconferences. Each method is described in greater detail below.

Online Surveys

Two separate surveys, a baseline and post-pilot survey, were administered. The surveys collected data about respondents' perceptions and attitudes using the laptop or tablet PC within several areas of CPS work – work practice, work time, demographic information, mobility/location, skill and stress levels, technology acceptance, training, and use of technology. The surveys were developed over a period of several months and a pre-survey was tested. The surveys were modified based on the pilot survey results and the project team's knowledge and understanding of CPS work. The online surveys were developed and administered through commercial software (Survey Monkey).

The names, email addresses, and titles of participating CPS caseworkers were collected from each of the participating County DSS. Personalized survey invitations were emailed to participants. The baseline survey was administered prior the deployment of laptops or tablet PCs to participating caseworkers. The baseline survey was open for three weeks starting on 9/21/07 and ending on 10/5/07.

The post-pilot survey was administered three months following the deployment of laptops. The survey was open for one week; starting on 1/3/08 and ending on 1/10/08. Data was collected from three new thematic categories: the impact of laptops on caseworkers' daily activities, mobility-related issues, and technical difficulties experienced during the pilot. Data quality checks were performed and the data was recoded as needed.

Teleconferences

During the week of December 10 – 14, 2007, CTG held separate teleconferences with project participants in 10 County DSS in NYS to learn more about how they were using the laptops and tablets deployed for CPS work. Participating County DSS were chosen by CTG and the NYS OCFS liaisons. Criteria for choosing the districts included (1) how long they had the technologies in use, and (2) districts that provided a full range of geographical representation across the state, in terms of rural and urban settings and overall size.

Each district participated in one teleconference with CTG interviewers. All participants were given sample questions before the teleconferences that dealt with deployment, connectivity, use and location, changes in work, issues/concerns, policy implications, and overall benefits of laptop use. The following table shows the districts interviewed and the number of participants in each call.

Table 3 – Teleconference time and participant information

County DSS	Date of Teleconference Interview	# of Caseworkers	#of Supervisors	Other(s) Participating
Albany	12/10/07	6	0	LAN Administrator
Chemung	12/11/07	6	1	-
Clinton	12/10/07	7	1	-
Nassau	12/13/07	13	0	Assistant Director
Niagara	12/10/07	2	2	Staff Development Coordinator; IT Representative
Onondaga	12/11/07	8	0	IT Representative
Orleans	12/11/07	3	0	LAN Administrator
Putnam	12/13/07	3	1	-
Ulster	12/15/07	4	3	-
Washington	12/12/07	4	0	-

CONNECTIONS Data

The overall objective for using CONNECTIONS data was to measure the effect of the use of mobile technologies on CPS work practices by using data from the central database. The CONNECTIONS dataset (i.e., the central database) contained information on case records and caseworkers' progress notes. The information contained within each of these records included: Stage ID, Person ID, time-related information about the *investigation stage* (Intake Start Date, Investigation Stage Start Date, Investigation Stage End Date); *progress notes information* (Progress Notes ID, Progress Notes Event Date, Progress Notes Time, Progress Notes Entry Date, Progress Notes Types, Progress Notes Purposes); *safety assessments* (Safety Submit Date, Safety Approval Date) logged by caseworkers in each County DSS. The CONNECTIONS data was pulled by the date a progress note was entered by participants during two timeframes, the pre- and during-pilot phases (09/10/07 – 11/09/07 and 11/10/07 – 01/09/08 respectively). A total of 11,238 progress note entries and 1,047 unique investigation stages made up the dataset from 40 caseworkers.

Appendix B – Device Specifications

All devices were selected, procured, imaged, and delivered to the County DSS by OCFS.

Laptop

Latitude D620, Intel Core 2 Duo T5500, 1.66GHz, 667Mhz, 2ML2 Cache, Dual Core, 14.1 inch Wide Screen WXGA LCD for Latitude D620, 1.0GB, DDR2-667 SDRAM, 1 DIMM for Dell Latitude Notebooks, Internal English Keyboard for Latitude Notebooks, Intel Integrated Graphics Media Accelerator 950 Latitude D620, 60GB Hard Drive 9.5MM, 5400RPMfor Dell Latitude DX20, Standard Touchpad for LatitudeD620, No Floppy Drive for Latitude D-Family Notebooks, Windows XP Professional, SP2 with media, for Latitude English, Factory Installed, Dell Black USB 2 Button Optical Mouse with Scroll for Latitude.

Tablet

HP Compaq tc4400 Tablet PC 26 EN376AV Product - HP Compaq tc4400 Tablet PC, Operating system - Genuine Windows® Vista Business, VISTA label - Microsoft® Vista Ready Label, Form Ultramobile form factor, Intel® Core™2 Duo Processor T5600, (1.83GHz, 2MB cache, 667MHz FSB), Intel® Centrino® Duo Label, 1024MB (667MHz, DDRII memory, 1 DIMM), 80GB Hard drive (5400 rpm), 12.1-inch TFT XGA WVA Display with Fingerprint Reader, 56K Modem, 10/100/1000 NIC, 6-cell high capacity Lithium Ion internal battery, Digital Eraser Pen with tether and clip, Keyboard with Enhanced Dual Pointing, Intel® Pro Wireless 3945ABG, security - Embedded TPM 1.2 security chip, and three year worldwide limited warranty.

Appendix C – The Center for Technology in Government (CTG)

The Center for Technology in Government (CTG) is an applied research center committed to improving government and public services through policy, management, and technology innovation. Through its program of partnership, research, and innovation, the Center provides government organizations and individuals with an array of tools and resources designed to support the development of a digital government. The goal of every CTG partnership project is to build knowledge that improves the way government works. CTG projects have helped state, local, and federal agencies increase productivity and coordination, reduce costs, enhance quality, and deliver better services to citizens and businesses. The results generated by each project add to a growing knowledge base designed to support the work of both government professionals and academic researchers. CTG receives funding through the University at Albany's state allocation, as well through grants and awards from foundations and federal agencies such as the National Science Foundation.

Since its creation in 1993, the Center has:

- conducted almost 50 partnership projects, which produced outcomes that have helped state, local, and federal government agencies improve services and operations;
- collaborated with nearly 100 government agencies, 42 private companies, and 14 academic institutions and research organizations;
- issued over 100 guides, reports, and online resources designed to support the work of government professionals, and over 300 scholarly articles that have contributed to the field of research on IT innovation in government organizations;
- developed and evaluated 12 prototype systems that answered critical policy, management, organizational, and technology questions;
- obtained 37 research grants and fee-for-service contracts for over \$10 million;
- been honored with 16 state and national awards such as the Ford Foundation's Innovations in American Government award;
- given over 250 trainings, workshops, and conference presentations provided data; and
- support to more than 20 doctoral dissertations and masters projects.

For more information about CTG or this report please contact:

Meghan Cook, Program Manager
Center for Technology in Government
University at Albany, State University of New York
187 Wolf Road, Suite 301
Albany, NY 12205
Phone 518-442-3892