

This study was conducted to discover the barriers and challenges of local law enforcement agencies preventing a transition from paper to electronic citations and to identify possible solutions, strategies and opportunities to support statewide expansion

Statewide eCitation Study

Minnesota Judicial Branch

State Court Administration
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Executive Summary

The Statewide eCitation Study was conducted to provide information to the Minnesota Judicial Branch related to the current state of electronic citations (“eCitations”) in Minnesota. The scope of the study included the identification of challenges and barriers preventing law enforcement agencies from transitioning from paper to eCitations, strategies to support statewide expansion, as well as identification of related business and technical opportunities and challenges.

Approximately 63% of the state’s citation volume is currently submitted electronically by 258 of Minnesota’s law enforcement agencies. The remaining are paper citations issued by the 181 Minnesota law enforcement agencies that have not yet made this transition. A variety of activities were conducted to provide information for this study. A statewide electronic survey of law enforcement agencies using paper citations was conducted. Personal Interviews were held with a variety of state agency stakeholder representatives. In addition, telephone interviews were conducted with eCitation software vendors working with Minnesota law enforcement agencies already submitting electronic citation data.

There are many systemic benefits of eCitations. Officer safety by reducing paperwork and time spent on the side of the road are important key benefits. Further, mobile computing tools can increase patrol officer productivity and easy access to state systems allows for electronic retrieval of information. This information can be used to populate the citation and field reports, saving time and reducing errors. Courts also benefit from reduced labor costs related to manual entry of citation data. More timely availability of citation data improves services to citizens by making fine payment quick, easy and convenient.

Key Findings

Survey results indicate that 83% of the law enforcement agencies that responded are interested in transitioning to electronic citations. No cultural opposition to electronic citation technology was indicated. Upfront costs associated with the implementation of eCitations were described as the biggest barrier for local law enforcement. Specifically, the cost of the hardware needed to support mobile computing in patrol cars as well as ticket-writer software costs were indicated as top barriers in the transition to eCitations. Specifically with respect to software, 75% of the agencies responding indicated that the agency has a records management system (“RMS”) but lacks the required ticket-writer functionality while 25% have neither RMS nor ticket-writer software. Other top barriers following

hardware and software costs include lack of access to information technology (“IT”) assistance and lack of reliable and consistent data connectivity, respectively.

Information regarding industry trends related to computer hardware, funding and software pricing models is also included in this report. First, a move toward ruggedized tablets rather than laptops as a means to reduce hardware expenses and provide additional officer productivity tools are discussed. Next, legislation adding a fine surcharge as a means to fund eCitations is noted as a strategy in place in states such as Illinois, Tennessee and Virginia. Similar legislation is also reportedly under consideration in Alabama, Georgia and Wyoming. Finally, trends regarding hosted and subscription software pricing models as strategies are also discussed as an industry trend.

It is recognized that a strategy for statewide expansion of eCitations which includes mobile computing for law enforcement carries high implementation costs. It is also the approach which provides the broadest systemic benefit and efficiencies. A recommendation for a funding plan which shares costs between state and local agencies as means to move toward an “ideal state” of eCitation processing in Minnesota is included in this report. The associated one-time costs as well as anticipated recurring monthly and annual costs are described. Further, a recommendation regarding the possible use of any available State funds for certain one-time costs and assigning agency responsibility for other one-time and recurring costs is a recommendation included as a balanced funding approach for further consideration. In addition, local collaboration efforts are strongly encouraged to take advantage of related cost-sharing opportunities. Finally, a no cost alternative for agencies without RMS/ticket-writer software and with low citation volume is also included to achieve statewide expansion.

The need for technical and data standards as well as information sharing opportunities is also described in this report. In an effort to improve the integrity of eCitation data submitted as well as to increase efficiencies, certain additional technical standards are recommended. In addition, based on feedback and suggestions from eCitation software vendors, more information regarding current standards including aspects of the statewide uniform citation in the electronic environment is needed. A number of suggestions related to possible strategies intended to improve communications and data integrity, including reduction of common data errors are included in this report.

Introduction

Purpose and Scope

The Minnesota Judicial Branch has been embarking on a multi-year effort to transition to all electronic records. This is referred to as the eCourtMN initiative¹ and includes all documents received for filing, outgoing documents and how the court file is maintained. Proposed Amendments to the Minnesota Rules of Court are currently under consideration which includes making the submission of citation data electronic.

The transition to eCitations across Minnesota law enforcement agencies has been underway on a voluntary basis for several years. Approximately 63% of the state's citation volume is currently submitted electronically by 258 of Minnesota's law enforcement agencies. The remaining are paper citations issued by the 181 Minnesota law enforcement agencies that have not yet made this transition. The purpose of this study was to conduct comprehensive research and analysis related to the current state of eCitations in Minnesota. This includes identification of those challenges and barriers preventing local law enforcement agencies from making the transition, and strategies which would support statewide expansion of eCitations. Identification of current business and technical opportunities and challenges related to electronic citation processing was also included.

Approach and Activities

Information was gathered from a number of state and local stakeholders as well as non-profit and private entity stakeholders to provide the background and information needed for this study. The following activities were conducted:

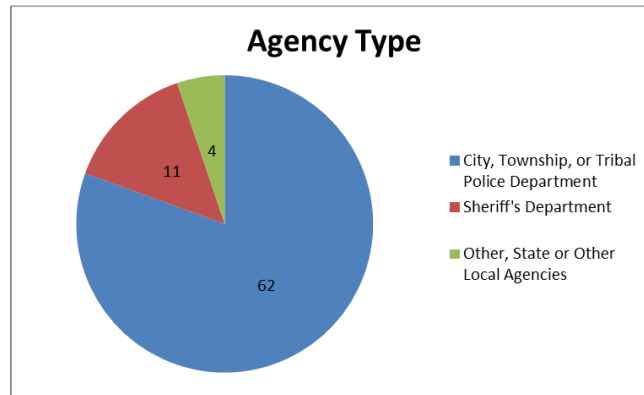
Law Enforcement Survey

Law enforcement agencies currently not submitting citations electronically were identified and invited to participate in an electronic survey. The purpose of this survey was to gather information regarding the challenges and barriers facing local law enforcement related to the transition to electronic citations. The survey was distributed to 158 state and local law enforcement agencies², resulting in 77 completed surveys returned (49% response rate). Survey respondent demographics are shown in Figure 1.

¹ <http://www.mncourts.gov>

² Survey distribution was facilitated primarily through law enforcement professional organizations (MN Sheriff's Association and MN Chiefs of Police Association) however, not all agencies are members. Where possible, contact information was located through other means and a link to the electronic survey sent directly.

Figure 1. Survey Respondent Demographics



The largest number of completed surveys returned was from small agencies with 3 to 5 full-time sworn officers and from 0-3 part-time sworn officers. The largest agency responding to the survey employs 98 sworn full-time officers.

State Stakeholder Interviews

State stakeholders responsible for the technical, operational and production support of electronic citations were interviewed as part of this study. This included several representatives of State Court Administration (“SCAO”) and the Bureau of Criminal Apprehension (“BCA”/”MNJIS”).

Vendor Interviews

RMS and ticket-writer vendors providing software and support services to Minnesota law enforcement agencies were interviewed as part of this study. The focus of these interviews was to gather insight as to local law enforcement barriers and challenges from the vendor perspective as well as information regarding product and service offerings. In addition, the eCitation Coalition³ was consulted for broader industry trends and information.

The foregoing study activities were used to develop key findings regarding the current state and business operations related to electronic citations in Minnesota as well as to formulate recommendations regarding possible expansion options, operational strategies and improvement opportunities.

³ The [eCitation Coalition](#) is a trade group for the eCitation industry. Their stated purpose is to serve as a national clearinghouse for information related to eCitations and to provide information to policymakers, law enforcement, judicial officials, the public and the media regarding electronic citation technology.

Systemic Benefits of Electronic Citations

While the impetus of this study relates to the Judicial Branch's eCourtMN initiative; it is important to recognize the systemic benefits of electronic citation processing:

- Officer safety is increased by reducing the time the officer is roadside.
- Electronic citation processing reduces paperwork, freeing up officer time for other duties and increasing enforcement.
- Citation data is retained for agency budget and statistical purposes without manual data entry.
- Electronic data builds upon RMS name look-up repository for better intel.
- Mobile computing capabilities used to issue electronic citations increases officer productivity in other ways by providing easy and quick access to dispatch, crash and incident reporting and access to other state systems (DVS records, hot files, warrant information).
- Citation data is populated automatically through driver license and plate system look-ups and reused from creation of the citation through conviction reporting; increasing efficiencies and reducing errors.
- Data latency is significantly reduced, providing better, more accurate and timely information.
- Ease of citation entry reduces time and labor investment for the Court.
- Improves service to citizens by making fine payment faster and easier.

A transition for paper to electronic citations provides many benefits to state and local governments and their constituency. The goal to expand this technology statewide is important but requires collaboration across state and local government to accomplish.

Key Findings

Level of Interest

Survey results indicate a high level of interest among law enforcement agencies to transition from paper to electronic citations. Nearly eighty-two percent (81.8%) of survey respondents indicated they were very interested or somewhat interested in moving to eCitations. No cultural opposition to this type of change or use of technology was indicated.

Challenges, Barriers and Industry Trends

The primary challenges and barriers for local law enforcement fall into three key categories:

- Lack of funding for associated costs and for many agencies, difficulty justifying technology costs based on annual citation volume.
- Lack of local IT expertise and support.
- Lack of reliable and consistent data connectivity.

Software/Hardware Needs and Costs

It is helpful to begin by discussing what law enforcement agencies need in order to transition to electronic citations. As discussed above, there are systemic benefits to issuing electronic citations. The degree to which these benefits can be achieved depends largely on the desired outcome and approach taken, which also influences cost. For example, data entry of hand-written paper citation information into some type of system would certainly result in electronic citation data. While this might be a simpler and least costly approach for the creation of electronic citation data, it forgoes nearly all of the benefits and efficiencies of an end-to-end fully electronic eCitation process.

What is needed to support electronic citations to achieve the most systemic value? The ideal state of e-Citation processing typically includes upfront expenditures such as agency RMS software (if not already in place) with an integrated ticket-writer module or integrated ticket-writer solution. In addition, mobile computing hardware and printers for patrol vehicles are needed. Backbone data connectivity to state systems and server hardware⁴ is also necessary. Optionally, agencies may choose to include additional interfaces with other local agency systems.

Once in place, there are certain recurring costs involved in sustaining eCitations. These include Virtual Private Network (“VPN”) access⁵ as required for secure mobile access to the state’s Criminal Justice Data Network (“CJDN”) and data plans for connectivity. Annual software maintenance expenses, typically 15-25% of the initial software cost, can be expected as well as hardware refresh about every 3-4 years.

This would result in what could be referred to as the “ideal” condition for eCitations to provide the most comprehensive system-wide benefits. However, it also carries the greatest cost. Upfront costs can vary due to such things as agency size and the software and hardware used, but can be upwards of \$50,000 for a medium-sized agency. Recurring costs for VPN, data plans and annual system maintenance can also vary. Upfront costs can and do compete with other critical agency needs, in some

⁴ Some vendors offer a hosted solution eliminating the need for local servers. Cost for this service would be part of the service level agreement (“SLA”).

⁵ Some vendors offer VPN access as part of their agreement with the local agency.

instances approaching the cost of an additional officer. For agencies serving smaller communities, particularly those without a RMS, upfront costs can be prohibitive. For example, a small city police department responding to the survey (issuing just 12-14 citations annually) indicated receiving a quote of \$10,000 for first year upfront costs for ticket-writer software and hardware, an amount which would consume most of the department's annual operating budget.

Possible Lower Cost Alternatives

Standalone Ticket -Writer Software

Some of the vendors interviewed indicated that it is possible to run their ticket-writer solution without integrating with a full RMS. This is an approach that would appear to be pursued infrequently for several reasons but from a cost perspective, savings are primarily limited to upfront software costs.

Pros:

- Provides a mechanism to submit citation data electronically to the state.
- Low or no costs options to retain data in a local database or other file format possible, if not integrated with RMS.
- Software costs lower than full RMS (actual costs depend on vendor/product).
- Return error message capabilities provided.
- Vendor support available based on service level agreement ("SLA").

Cons:

- Relies on mobile data system to complete citation and/or other pieces of software for use.
- Hardware, data connectivity and VPN required.
- Lacks functionality for other law enforcement functions (available in a RMS).
- Limits ways in which local data can be consumed and analyzed.
- Requires annual maintenance cost.

BCA Citation Delivery System

The BCA will be providing a web-based citation delivery solution. This solution is intended for use by those agencies with no RMS or ticket-writer software and low citation volume. It could also be considered as an interim solution for other agencies. While it does not provide all of the broader systemic benefits discussed earlier, it does accomplish electronic delivery of citation data without the traditional high costs associated with hardware, printers, and data plans for connectivity. When asked about this possible solution (even if it requires providing a paper citation to the offender) 76.6% of

survey respondents indicated they would be very likely or likely to use this tool. The Citation Delivery System is expected to be available in the 3rd quarter of 2015.

Pros:

- Provides a mechanism to submit citation data electronically to the state.
- Web-based: no additional software, new hardware, wireless connectivity or maintenance costs.
- VPN is not needed.
- Field level data validation and completed data validation provided.
- Few user support issues anticipated.
- Support available during business hours.
- Provides access to PDF copy of citation for agency record-keeping needs.

Cons:

- 24/7 support not available.
- No additional RMS functionality.
- Requires law enforcement to provide a paper citation to the offender as well as manually enter citation date into the web-based tool.
- Manual data entry would occur sometime after the stop and could be done by someone other than the issuing officer (such as records clerk), resulting in some delay and possible errors.

Challenges and Barriers

Funding

Survey responses indicate the greatest barrier for law enforcement agencies is funding for hardware and equipment in patrol cars. As shown in Figure 2. Seventy-five percent (75%) of agencies responding indicated that the agency does have RMS software. This is not entirely surprising since the RMS supports other key law enforcement functions (such as evidence management, computer aided dispatch (“CAD”), and reporting).

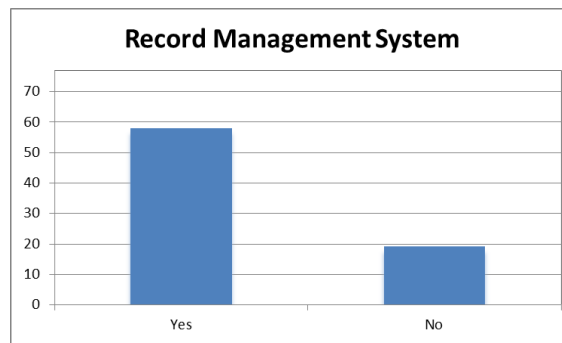
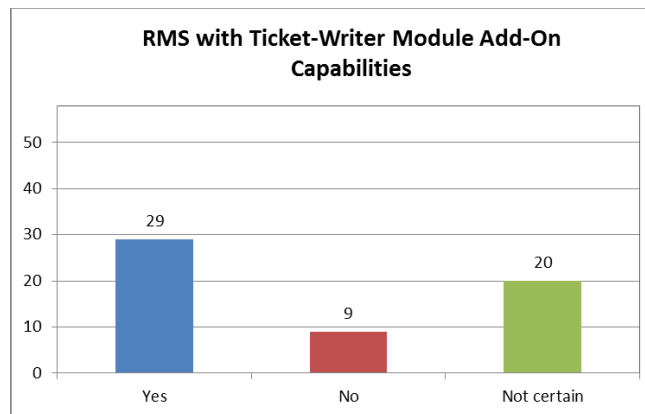


Figure 2. Agency RMS

Figure 3. Below shows that of those that do have a RMS, 38% responding indicated that they are aware that their RMS vendor offers a ticket-writer component or partners for an integrated ticket-writer solution; another 38% indicated that their RMS vendor either does not offer a ticket-writer module or they are unaware if this functionality is offered. Twenty-five percent (25%) of respondents indicated their agency has no electronic records management system. Costs to obtain the necessary software were indicated as a top barrier behind upfront hardware costs.

Figure 3. RMS & Citation Component Add-On Capabilities



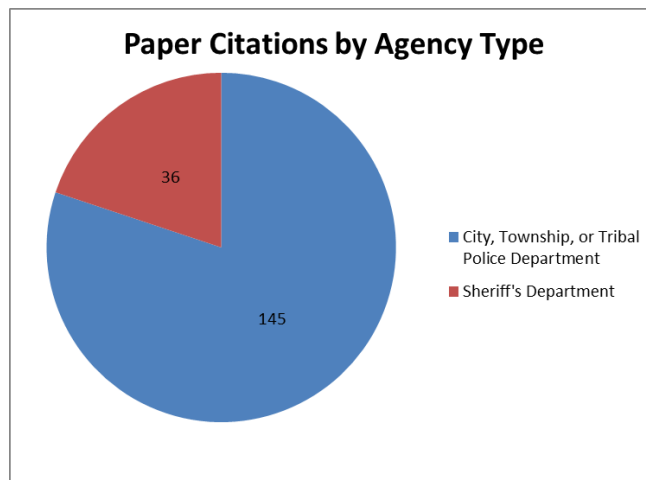
The fact that a high percentage of agencies indicated that they already have a RMS can be considered encouraging for a statewide eCitation expansion effort since acquiring the RMS software is a significant part of the upfront costs needed. Adding a citation module to an existing RMS is typically a reasonably affordable option. Integrating another ticket-writer solution with an existing RMS is another option.⁶ Some agencies with a RMS may already have laptops in their vehicles for use with other productivity features such CAD and reporting, however, survey results do suggest that many with RMS are without mobile computing hardware.

Many local agencies currently issuing eCitations have collaborated locally as a cost containment strategy. In a number of counties, the sheriff's department hosts and picks up certain costs when the smaller city police department is without a RMS. In this scenario, the city police department still needs ticket-writer software, hardware for the patrol cars and a data plan for connectivity. The backbone connection and RMS are shared and the system architecture can then manage how the records of each

⁶ Costs vary by product vendor. Many software products offer an integrated ticket-writer module as part of the RMS which can be licensed at additional cost. Use of a third-party ticket-writer to integrate with an existing RMS is possible however; there appears to be limited options of this nature in the current marketplace.

agency are handled, distinguished by agency ORI. In most cases, the county has IT staff available to assist the agencies. The need for the city police departments to acquire a VPN in this scenario can depend on how the network is configured. The vendor may offer VPN as part of the installation. If not, the BCA does offer VPN at a very low monthly cost for those agencies without a secure mobile connection to the Sheriff's department. This also provides electronic access to other state systems such as DVS, Criminal History, etc. This type of collaborative effort has many advantages with no significant disadvantages, as it allows local agencies to work out an agreement to their mutual satisfaction and benefit. This local collaborative approach is described as a standard installation for one of the RMS vendors interviewed for this study. As part of the eCitation survey, a few law enforcement agencies did infer that relationships and/or differing priorities are preventing this type of local collaboration in their jurisdiction. As shown in Figure 4, there does appear to be significant opportunity for additional local collaborations across the state. Sheriff's Departments in 36 counties are not yet issuing eCitations.

Figure 4. Agencies with No eCitations (by Agency Type)



IT Resources

One of the other frequently mentioned barriers facing law enforcement agencies is a lack of local IT expertise. Local Sheriff's Departments typically have county IT staff resources and it is the local police departments, particularly in remote/rural areas that do not have access to IT staff or expertise. A number of agencies mentioned that they do what they can in-house in this regard and often times, the police chief or a deputy with IT knowledge will fulfill the IT role however, it can be challenging. The typical implementation with most vendors is a short lifecycle, but IT support for server and computing hardware trouble-shooting is an ongoing need. Many vendors indicate a willingness to assist the agency

with IT issues during implementation to some degree while others do not routinely address local IT issues.

Agencies without local IT support might benefit from a hosted RMS solution to address data storage needs. Cost for this service would be reflected in the SLA however, the trade-off would be that there would be no need to acquire and maintain a local server. Computer and printer support needs would remain. Joining a local consortium is another option that some agencies use to meet technology, VPN service and data storage needs. The BCA Citation Delivery System discussed above is a solution that does not require new local IT support.

Data Connectivity

Lack of reliable and consistent data connectivity was mentioned as a barrier by 20% of the survey respondents. It is recognized that there still are pockets around the state where cellular connectivity can be unreliable or even unavailable. Most modern RMS and ticket-writer systems will preserve citation data entered allowing it to be uploaded later when connectivity is restored. Data captured in the field is not lost. At the time of the stop, officers without connectivity would not have electronic access to information such as driver and plate information. Rather the officer would likely rely on dispatch to provide them with this information. Use of a mag reader or barcode scanner could populate driver license information for the electronic citation, avoiding manual data entry and reducing errors. The offender's copy could still be printed based on citation data entered. While connectivity issues would prevent citation data from being uploaded in real time, it does not prohibit the officer from issuing an electronic citation. This may be new information for agencies that have not yet fully explored eCitation capabilities.

Industry Trends

Mobile Computing Hardware

According to the eCitation Coalition, the industry is trending away from ruggedized laptops in patrol vehicles and moving toward ruggedized tablets (not consumer tablets). The advantage to ruggedized tablets is that they cost approximately 40% less than the popular ruggedized laptops (ruggedized tablet industry average cost: \$2,100 vs. ruggedized laptop average of \$3,500) while also providing other field productivity tools. For example, an officer could use a tablet to take pictures at the scene or record an interview with a witness as well as issue a citation, complete a crash or ICR report, or leverage CAD and

access state data systems – all with one very portable device. Peripherals such as wireless keyboards may optionally be added. Thermal printers are in the \$450 cost range.

In Minnesota, the BCA does require a two factor authentication for security purposes, which may be viewed as cumbersome on a tablet. Technology options exist to make this less cumbersome while also meeting security standards. An example of one solution option that is commonly used is a multi-factor identification system which utilizes a second common device belonging to the same individual (such as a call to a cellphone) to verify identity.

Funding

Nationally, trends are also emerging in terms of how the associated costs of electronic citations are funded. According to eCitation Coalition research, several states and other jurisdictions are pursuing or already have in place, legislation which adds a surcharge to the fine specifically for the funding of eCitations. The typical surcharge is a flat \$5.00 fee assessed to the offender in addition to the scheduled fine amount. This surcharge is divided between the state and the local issuing agency (typically \$1.00 to the state and \$4.00 to the agency). Statutory language in place or currently under consideration typically specifies and limits use of the funds as follows:

- Procurement of electronic citation systems and related expenditures.
- Ongoing maintenance, repair, overhaul and replacement of hardware and software related to electronic citation systems.
- All funds collected shall be preserved and employed exclusively for the purposes set forth above and shall not, in any instance, revert to the general fund at the end of the budget year if unexpended.

This type of eCitation surcharge is currently in place in Illinois, Tennessee and Virginia and is reportedly under consideration in Alabama, Georgia and Wyoming.

Software Pricing

Another industry trend is subscription-based pricing options, which provide lower upfront costs when purchasing software. Amortized over the life of the software, this approach will likely cost more after the first several years however, the trade-off is that initial software costs are much more affordable. A few RMS vendors supporting law enforcement agencies in Minnesota indicated that they do offer subscription-based pricing as well as other pricing alternatives.

Technical and Data Considerations

When moving to 100% electronic citations statewide; it is important to address the technical and operational issues currently impacting efficiencies as it can be expected that these kinds of issues will be magnified as eCitation volume increases. The need to reduce support and human intervention in electronic citation processing should also be a consideration. As this study was conducted, themes emerged in terms of those business practices and technical issues that may need to be improved, formalized or standardized for greater efficiencies and system integrity.

Vendor Community

There are 10 different software vendors providing RMS and supporting electronic citations through service level agreements with Minnesota law enforcement agencies today. While it may seem to some that a single software vendor would serve to streamline processes, competition in the marketplace is important in terms of driving down costs and encouraging innovation. As discussed, law enforcement RMS is critical to many key business functions of the agency in addition to electronic citation processing. Business needs can vary based on things such as agency size, culture, geographical location and demographics, making choices for off-the shelf RMS systems important to meeting a variety of needs. It is not impractical however, to ensure that vended software products used by Minnesota law enforcement agencies to submit eCitation data comply with certain State requirements articulated through data and technical standards.

Technical Standards

The eCitation schema is an example of how standards or requirements are imposed to serve the greater good in terms of how citation data is collected, managed and reported statewide and in some cases, nationwide. Automated data validation is a measure which helps ensure data not meeting certain standards does not reach the system. The statewide uniform citation is another example of a standard in place which, when applied in conjunction with the eCitation schema, helps ensure that citation data is uniform regardless of whether that data originated on paper or electronically. These measures also promote citation processing efficiencies. Both the eCitation schema and the standard citation are updated from time to time as data requirements change with the primary driver often new or changed state and federal legislation.

Software vendors interviewed as part of this study reported that they have no concerns regarding compliance with the State's eCitation schema. They indicate that they are typically provided with

adequate notice and information regarding planned citation schema changes. Most reported that they have successfully made changes to local systems prior to the published date when the current version of the schema is no longer supported. Others indicated that they have missed deadlines in the past but have improved processes over time. Most indicated that 3-6 months' notice as to upcoming changes is a reasonable length of time to prepare for schema changes.

Implementation of eCitation software was reported as taking an average of 30-60 days for most vendors interviewed. Some vendors reported that unavailability of the hardware (if ordered by the customer), and the unavailability of local IT and testing resources can result in delays.

The experience of the State entities involved with eCitations is that certain eCitation vendors tend to consume more state resources than others, and the ability of vendors to accomplish timely compliance with schema changes as well as implementation of an agency varies rather significantly. This is most often due to ongoing and repeat support, trouble-shooting and testing issues when working with an agency to implement eCitations as well as the product software technology platform. Certain attributing factors appear to be related to lack of certain required technical standards.

In addition to the current requirement to comply with the State's eCitation schema, examples of additional **technical standards** that could be considered include:

1. Single Citation Data Submission

Currently, there are three ways that agencies submit eCitation data to the State through their software vendors – through the BCA or directly to the Court's case management systems, ("MNCIS") or VIBES⁷. The preference of the both the BCA and the Judicial Branch is that all citation data is submitted to the BCA. Nearly all vendors interviewed reported that they support a single process for submitting eCitation data and the majority of agencies (although not necessarily the majority of citation volume) are already submitting through the BCA. The primary reason that some agencies/vendors are submitting data directly to the courts is that their eCitation implementation predates the existence and availability of the BCA eCharging adapter (which is also the vehicle for accepting citation data). The process to transition an agency to submitting through the BCA adapter is seamless to the end user and is described as a relatively simple process. There are no direct costs to either the agency or vendor if the agency/jurisdiction is already on eCharging. The BCA has been providing funding to build the adapter

⁷ VIBES is the case management system currently used in Hennepin and Ramsey Counties for citation processing. This system will be retired in Q3 of 2015 at which time all citations statewide will be processed in MNCIS.

necessary to access eCharging to facilitate statewide implementation of that application. Using the same “path” then to submit eCitation data further capitalizes the state’s investment in the adapters. There are advantages to the local agency as well as the State in making this transition. These include:

- Real-time message validation is one second, much shorter than the court’s batch process.
- BCA validation checks for additional items beyond metadata, such as booking records.
- Support services are streamlined through BCA resources available to assist with interpretation of error messages and other trouble-shooting needs.
- Citation data submitted through the BCA adapter can notify the prosecutor and be easily transformed into a formal complaint (in eCharging) if necessary as well route juvenile citations.

2. Standard Build

Most eCitation software vendors indicated that they maintain a standard build of their citation software that is used by all of their customers. This makes completing necessary software updates, such as schema changes, more efficient across their customer base and is much more cost effective from a programming and implementation perspective. Others indicated that they maintain multiple custom builds based on customer preferences or variances in local business practice. Specifically, one vendor articulated a need for multiple versions of the same build as necessary due to local variation in court business practices related to differences in the use of assigned court dates and “respond by” methods. In this situation, differences in the court’s schedule for hearing traffic matters and differences in local court holidays results in multiple versions of multiple builds.

Regardless of the reasons, multiple builds of citation software cause issues and inefficiencies for state agencies. Most commonly, they require that old schema versions continue to be supported to accommodate those vendors needing additional time to make multiple programming changes to each custom build of their software. In some instances, this has resulted in extended delays of planned schema changes, putting the State at risk of being noncompliant with statutory effective dates. Custom builds based on customer preference also mean that some agencies may be out of compliance with the statewide uniform citation.

3. Statute Validation

The State Statute Service is a repository maintained by the State for charging and other related offense information. As an alternative, simple type tables are also maintained and provided to software vendors. These XML files contain offense information found in the Statute Service as well as information not contained there, such as default offense levels, ordinances and administrative rules. Some vendors

and/or agencies chose to maintain this information in systems themselves without electronically consuming the State statute information provided.

One of the challenges for the State associated with imposing vendor requirements (or a certification process) is that it is difficult to enforce compliance. There are limited ways in which the State can ensure compliance through consequences that would not result in negative systemic impacts. For example, it is not reasonable to preclude a vendor or agency from submitting electronic citation data to the State for noncompliance to these types of technical standards. Such a measure would force a return to paper which, even for a short time, would be counterproductive. The fact that Service Level Agreements between the eCitation vendor and the local agency typically do not include the State (except for those agreements involving the eCharging adapter) precludes compliance language related to broader State technical standards through these contractual agreements. A mandatory transition to statewide electronic citations may present an opportunity for the State to impose technical requirements from a timing perspective however; compliance and enforcement must also be addressed.

Data Standards/ Statewide Uniform Citation

The statewide uniform citation was introduced in Minnesota in 2011 and promulgated through amendments to the Minnesota Rules of Court. Early iterations of the uniform citation focused primarily on the aspects of the physical paper citation. Standards included those data elements and required notice and other language to be included on citations issued statewide. In addition, the layout and format of the citation, physical dimensions and other details such as the number and color of carbonless copies to be included for distribution were also prescribed. The initial iteration of the uniform citation did not apply directly to citation data submitted electronically however, it did influence what information was to be included on the paper copy provided to the offender when issuing an electronic citation. Since that time and as the use of electronic citations continued to evolve; the citation schema and the uniform citation have become intrinsically intertwined.

Feedback from eCitation vendors indicates that there is room for improvement in terms of marrying the paper citation and its data elements with the electronic world as well as in the level of information provided to them. Observations and suggestions include:

- BCA and Courts validation do not match.
- Information specific to what is accepted electronically for certain data elements and what will be rejected, as well as number of characters allowed is needed.
- Vehicle make and model data elements accepted are unclear.

- BCA observes NCIC vehicle information while the Court does not.
- More user friendly error messages would help reduce support needs.
- Physical dimensions of the paper citation should not apply to the electronic printed offender copy.
- Statue and related information needed (default offense levels, ordinances, administrative rules) should be located in a single reference tool.

Recommendations:

Funding Recommendations

In consideration of the systemic benefits of eCitations in a mobile computing environment, it becomes reasonable to contemplate a funding strategy that shares the costs of moving to 100% electronic citations between state and local agencies. This is particularly important for small to mid-sized agencies whose budgets will not accommodate costs and whose funding authorities do not view eCitations as a priority. Due to the broader functions it provides, the need for local discretion as well as responsibility for RMS is also needed. The additional challenge is for the local agency to be able to sustain operations once eCitations are in place. Stated another way, smaller agencies would likely be best served by forming cost-sharing partnerships with larger agencies.

Recommended Option for Consideration:

As discussed earlier in this report, the following items must be in place in order to achieve the ideal state for electronic citations for the highest level of systemic benefit:

One-time Costs:

- RMS software with integrated ticket-writer module or an integrated ticket-writer solution.
- Backbone connectivity to state systems (the BCA adapter is used for agencies on eCharging).
- Mobile computing hardware and thermal printers for patrol vehicles.
- Server hardware.
- Optional local interfaces.

Recurring Costs:

- Annual system software maintenance.
- Data plans for connectivity.
- VPN for secure access to CJDN network.
- Hardware refresh (approximately every 3-4 years).

If available, it is recommended that the State provide grant funding to law enforcement agencies not already submitting electronic citations to assist with the funding of *one-time* needs such as hardware needed for vehicles, upfront ticket-writer software costs and adapters needed to connect to State systems.

- Possible funding sources: MJB technology grants, BCA Integrations Funding, Office of Traffic Safety (“OTS”) grants.

Due to the additional benefits provided, it is further recommended that the *Agency* be responsible for acquiring RMS software and associated costs. Collaboration between the county sheriff’s department and city police departments as well as transition to eCharging would be strongly encouraged as means to share RMS costs and server hardware and to achieve connectivity to the State. A hosted solution and/or alternative pricing options might also be considered as strategies. The agency would need to be in a position to fund recurring costs for annual system maintenance, VPN and monthly data plans.

Local agencies not in a position to acquire a RMS , fund recurring costs or accomplish a local collaborative for the same would use the BCA Citation Delivery system as a means to submit citation data to the State electronically. This solution would be without additional cost but would require that a paper citation be issued and data manually entered into this system.

Technical Standards Recommendations

It is recommended that a process be developed which requires eCitation vendors supporting Minnesota law enforcement agencies to comply with certain state technical standards as follows:

1. eCitation vendors and agencies working with Minnesota law enforcement agencies submit citation data via a single path, through the BCA broker.
2. eCitation vendors working with Minnesota law enforcement agencies maintain a standard build of the citation software which complies with the current version of the Judicial Branch eCitation schema. The offender copy of electronic citations issued from these systems must comply with the Uniform Standard Citation.
3. To ensure the integrity of charging and related offense data, resources for charging information provided by the State (Statute Service integration and/or use of Simple Type files) be consumed electronically rather than populating and maintaining statute tables manually within systems.

Enforcement of Technical Standards

It is recommended that eCitation software vendors comply with these technical requirements first for any **new** eCitation business (MN law enforcement agencies) as of a particular date, e.g. effective date of anticipated changes to the Minnesota Rules of Court affecting eCitations. If the vendor meets these requirements in anticipation of an expanded customer base, the resulting changes made to their software solution would be applied to the existing customer base as well. If the vendor does not take on new customer agencies, it is recommended that they be given a future date by which to apply these standards to their software solution. The State would impose a financial sanction to a vendor choosing not to comply with the standards. This assumes proper authority through Rule or Statute is in place and a designated fund/purpose for any sanctions imposed and monies collected is determined.

Data Standards Recommendations

The following activities are recommended to improve information and awareness regarding citation data standards:

1. eCitation Vendor Conference

It is recommended that the Judicial Branch and the BCA hold a vendor conference specific to electronic citations to provide a forum to present information and receive questions as well as feedback from eCitation vendors. This type of session could improve communications and understanding over what can be conveyed through written information alone.

Topics could include:

- Changes to the uniform citation and eCitation schema and communication methods/preferences regarding changes.
- Application of data elements to the electronic environment.
- Common rejection reasons and tips to avoid them.
- eCitation Vendor Q & A/feedback.
- Summary of changes to the Minnesota Rules of Court impacting eCitation processing.
- Review system improvements, updates and recent business communications.
- Resources available (e.g. simple type files) and best practices for use.

Timing for such an event could be held in advance of new effective dates for standard uniform citation changes and schema changes and following decisions regarding any Rule changes impacting eCitations. Given that many vendors are located out of state, remote methods for participation would likely be needed. If well received, this could become a regular event.

2. Vehicle Make and Model Data Elements

It is recommended that the Courts consider converting to NCIC data elements related to vehicle make and model in MNCIS to avoid confusion and minimize rejections. It should be noted however; that some questions as to the value add of this information on citations has been raised. The origin of the requirement to include these data elements on the uniform citation and in the schema is believed to be that of DVS for suspensions and convictions based on interpretation of [Minn. Stat.169.92 subd.4\(c\)](#). There is some question whether this interpretation may be applied more literally than intended, resulting in the broader effort to facilitate a “pass through” of this information via citation data. Whether this information is also utilized by other state and local agencies is unclear. Since the Court’s conversion to NCIC data elements as the means to address these data quality issues would require significant effort; questions raised suggest that a legal review of the statute as to original intent and the ongoing business need for the uniform citation to contain this information first be conducted.

3. Error Messages

It is recommended that eCitation error (rejection) messages currently in use be reviewed by the Court and the BCA for both consistency as well as opportunities to apply more end-user friendly language to convey data deficiencies.

4. Statewide Uniform Citation/ Compliance Validation

To ensure compliance with the statewide uniform citation as prescribed by the Minnesota Rules of Court, the State Court Administrator’s Office might consider a process to verify law enforcement agency compliance with the uniform citation for electronic citation processes. One approach to this type of verification process would be to compel local law enforcement agencies to submit a sample of the offender’s copy of the electronic citation used by their agency. This sample would then be checked and verified against the statewide uniform citation requirements and approved as to form for continued use. Law enforcement agencies whose citation does not conform to the requirements of the statewide uniform citation would be directed to work with their eCitation vendor to make any necessary changes needed to bring the citation into compliance.

Glossary of Terms

Bureau of Criminal Apprehension (BCA): a division of the Minnesota Department of Public Safety providing investigative and specialized law enforcement services to prevent and solve crimes in partnership with law enforcement, public safety and criminal justice agencies.

Citation Delivery System: a web-based tool created and supported by the BCA for electronic delivery of citation data to the State.

eCitation Schema: XML technologies used as a standard means to receive and disseminate citation data electronically.

Electronic Citations: eCitations. The electronic creation and processing of citation data.

Error Messages: electronic notification returned to the source system when a data element as submitted does not pass error validation.

Hosted Service: (also known as SaaS) refers to software that is installed, hosted and accessed entirely from a remote server or location, managed by the software manufacturer or a third-party vendor.

State Court Administration (SCAO): administrative office of the courts providing leadership, direction and central administrative infrastructure services for the effective operations of the Minnesota Judicial Branch.

Minnesota Court Information System (MNCIS): the Minnesota Judicial Branch's statewide case management system for the filing and processing of all case types in the trial courts

Records Management System (RMS): a software system containing functionality and automation to support a variety of law enforcement functions.

Service Level Agreement (SLA): a contract between a service provider and the end user that defines the level of service expected from the service provider.

Simple Type Files: lists the appropriate codes and phrases to communicate and record data. Values are extracted from MNCIS and reflect the current values used by court staff ensuring that what is filed electronically will appear and be recorded the same as documents filed manually.

Subscription-Based Pricing: an alternative to traditional software licensing models, typically allows the customer to acquire software at a lower upfront cost, extending payment for use over time.

Ticket-writer: software designed to facilitate the creation and submission of electronic citation data.

Virtual Private Network (VPN): a secure network connection in a mobile computing environment, required by authorized personnel accessing state systems remotely.

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 - ProPhoenix
 - Tac10
 - Local Government Information Systems (LOGIS)
 - iyeTek
- The eCitation Coalition
- State Court Administrator's Office
- The Bureau of Criminal Apprehension - MNJIS
- Stearns County Court Administration
- Watonwan County Court Administration