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Enhancement of South Dakota's Amber Alert System

Study SD2004-01
Final Report

Prepared by
South Dakota Department of Transportation
700 East Broadway Avenue
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16. Abstract

From November of 2004 to May of 2006, several state departments formed a system to work in response to Amber Alerts. The South Dakota Public Broadcasting System purchased equipment to efficiently post high-quality Amber Alerts and photos to television, no matter what time of day or staff available. A cost-effective and valuable structure was installed to the South Dakota 511 Traveler Information System to alert callers to Amber Alert information. The Department of Criminal Investigation includes a call center where volunteers operate a phone system which records information received from callers. Amber Alerts are also posted at all South Dakota kiosks quickly and reliably now that they are connected to a network-based system rather than dial-up communication. The agencies have established a system and tested the program quarterly to continue being prepared in case of a true Amber Alert.

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EXECUTIVE SUMMARY

On March 5, 2003 South Dakota implemented and tested its AMBER (America's Missing: Broadcast Emergency Response) Alert process. The process was established through a collaborative effort between four agencies of South Dakota state government, commercial media, and other interested parties. South Dakota focused on linking as wide a range of communication paths and systems as possible using only preexisting infrastructure to reach its citizens.

By choosing to use existing infrastructure, South Dakota assured good communication coverage for Amber Alert at a low startup cost. However, this focus also meant bypassing a number of potential communication avenues because the systems involved would require considerable effort and cost to make them suitable for use in an Amber Alert. It also meant including several communication paths that, due to obsolete or simplistic technology, required considerable manual intervention to use and consequently added undesirable delays in the time it took to get an Amber Alert notice to the public.

In December 2003 and again in April 2004, South Dakota applied for funding under the Amber Plan Program Support Assistance Program to enhance South Dakota's existing Amber Alert system through a project to:

1. shorten the time required to post high-quality Amber Alert photos to television;
2. make Amber Alert details available via the 511 Statewide Travel Information Service;
3. create a location for telephone calls from travelers to be received and recorded in an efficient manner;
4. improve the speed, reliability, and capability of the communication system feeding Dynamic Message Signs (DMS) operated by the South Dakota Department of Transportation (SDDOT);
5. improve the speed, reliability, and capability of the communication system feeding the twenty-one Interstate Rest Area kiosks to make them suitable for use in Amber Alerts;
6. acquire and deploy Portable Dynamic Message Signs (PDMS) capable of displaying Amber Alerts
7. integrate the improvements from items 1-5 into the existing Amber Alert system by developing training documents and programs and presenting those programs to staff involved in SD Amber Alerts.

In addition to the work through the Amber Plan Program Support Assistance Program, the SDDOT also undertook other work that also enhanced Amber capability. The Department's ITS Deployment Plan included purchase and installation of 22 additional permanent Dynamic Message Signs on South Dakota's Interstate highway system. These signs, which were installed in 2004 and 2005, seamlessly support Amber notifications to travelers on Interstate Highways throughout South Dakota. In conjunction with the purchase and installation of signs, SDDOT also acquired software that tests the signs for National Transportation Communication for Intelligent Transportation Systems (ITS) Protocol (NTCIP)

compliance and controls the signs in conformance with NTCIP standards and protocols. The software provides interoperability not only for the existing and planned signs, but for all future message signs placed on the South Dakota state highway network.

PROBLEM DESCRIPTION

Prior to November of 2004, South Dakota did not have the capability to handle an Amber Alert adequately. Due to older computer systems and dial-up communication, it was difficult to inform the public of an Amber Alert in a timely and efficient manner. It was necessary for South Dakota to incorporate as many media sources as possible to publicize the Alert. The South Dakota Public Broadcasting was not able to quickly transmit Alerts because they did not have adequate equipment to clearly televise both the text and the pictures included in Alerts. Because the traveling public was the best audience to report vital tips, notifying them of the Alert was time- and resource- valuable. To inform travelers, South Dakota needed to post Alerts on 511 and deploy Portable Dynamic Message Signs (PDMS) with information. Improving communication to Dynamic Message Signs (DMS) and Rest Area Kiosks around the state was a necessary improvement. Upgrading from dial-up communication to network-communication allowed state employees to post information immediately and simultaneously and to continue updating the signs as new information arrived. Resources to receive incoming calls from those with tips were also limited. When a call would be received, most often it was not recorded and could not be referenced again. South Dakota needed to implement a stronger system which could alert the public at a moment's notice, maintain numerous calls, and provide a way to document these calls for later reference.

OBJECTIVES

1) ENABLE SOUTH DAKOTA PUBLIC TELEVISION AMBER ALERTS

Shorten the time required to post high quality Amber Alert photos to South Dakota Public Television.

A scan converter would allow any of the Operations staff present at SDPBS to post high-quality Amber Alert photos to television in a manner of minutes, around the clock. This would reach that segment of the traveling public who are in one of the hundreds of public locations displaying televisions 20 to 30 minutes sooner than was possible.

2) ESTABLISH AMBER ALERT CALL CENTER

Provide a call center allowing all calls from travelers to be received and recorded in a timely manner.

Few local law enforcement groups in South Dakota had the staffing or phone lines to handle a deluge of calls from citizens and travelers who had information during an Amber Alert. This created a serious risk that callers with vital tips and sightings may not have been able to complete the calls until it is too late. The most effective means to prevent such an inundation of calls was to provide a call center. This not only allowed all calls to be received, but to also be recorded and handled in an appropriate and effective manner. Although the telephone system was portable, locating the call center in the Department of Criminal Investigation building allowed law enforcement agents to be readily available.

3) POST AMBER ALERTS ON 511

Make Amber Alert details available on demand via the existing 511 traveler information service.

Providing information to citizens as quickly as possible when an Amber Alert was reported is vital to success. Because it was difficult for travelers to obtain information indicating the circumstances of a child abduction while driving down an interstate, it was necessary to provide the information in a safe and timely manner. Supplying Amber Alert information to the state's 511 Statewide Traveler Information System allows travelers to receive a description of individuals involved safely and effectively.

4) IMPROVE COMMUNICATION TO DYNAMIC MESSAGE SIGNS

Improve the speed, reliability, and changeability of the communication system feeding the 30 SDDOT Dynamic Message Signs (DMS).

Upgrading SD's DMS sped up and simplified the process of posting basic Amber Alert information, thus alerting the traveling public of an Amber Alert sooner during the first critical minutes of an alert. This was accomplished by moving from a "dial-up" communication system to a networked communication system that could activate or update all connected signs simultaneously.

5) IMPROVE COMMUNICATION TO REST AREA KIOSKS

Improve the speed, reliability, and changeability of the communication system feeding the SD Interstate Rest Area Kiosk system to make the Kiosks suitable for use in Amber Alerts.

Upgrading the current dial-up communication system supporting the kiosks to a network-based system allowed all 21 kiosks in SD to be updated quickly and reliably, any time of the day or night, with photos or text pertaining to an Amber Alert. Once the kiosks were networked, they reached a segment of the traveling public during an Amber Alert who might otherwise be unaware the alert had been declared and were in a safe place to stop, look at, and read available information.

6) DEPLOY PORTABLE DYNAMIC MESSAGE SIGNS

Acquire and deploy portable dynamic message signs capable of displaying Amber Alert messages.

Purchasing 26 PDMS to be available during an Amber Alert was an invaluable asset as a means to notify the traveling public. Ten PDMS were purchased from Vermac in 2005, and an additional 16 are being currently being deployed by Daktronics. It was important to ensure these signs were NTCIP compliant to ensure reliable communication with other systems. For similar reasons, the original 10 Vermac signs were equipped with spread spectrum wireless to aid in communication systems. They were also equipped at the time with cellular communication, which now needs to b updated in order to ensure better communication. By the time the Daktronics PDMS began to be deployed, cellular coverage around the state had grown to such an extent that spread spectrum wireless was not necessary, although this option was available. PDMS are deployed among the four South Dakota Department of Transportation regions to be used for work zones, special events, and Amber Alerts. Priority is given the same status as with DMS: Amber Alerts would be posted unless a traveler or road condition advisory was already in place. Due to the cellular wireless being a part of their infrastructure, PDMS were able to be located signs at a moment's notice, making them even more valuable during an Amber Alert.

7) INTEGRATE IMPROVEMENTS INTO THE EXISTING AMBER ALERT SYSTEM

Integrate items 1-6 into the existing Amber Alert system by developing training documents and programs and presenting those programs to staff involved in SD Amber Alerts.

It was important to ensure that changes resulting from the completion of each of the other five phases are integrated into the documented SD Amber Alert process and tested. In addition, this ensured that training documents were prepared and training classes developed and presented to staff involved in South Dakota's Amber Alert process.

TASKS

1) PROVIDE VIDEO SCAN CONVERTER TO SOUTH DAKOTA PUBLIC BROADCASTING

Transfer high quality Amber Alert posters to South Dakota Public Broadcasting System (SDPBS).

Prior to the purchase and installment of the Scan Converter, broadcasting the Amber Alert poster on TV from the web was a time consuming process requiring the skills of staff on duty only Monday-Friday 8AM to5PM. For Amber Alerts outside this time frame, trained staff had to be called in. Once they arrived on site they must perform a number of manual processes to get an image posted to TV.

With a Scan Converter it was now possible for the staff normally present at PBS around the clock to load an Amber Alert poster directly from the Amber Alert web page to the TV within minutes. By establishing a system with Scan Converters .pdf or .doc files could be broadcasted on the air, allowing SDPBS to partake in circulating Amber Alert information much more quickly. If pictures were involved, a Scan Converter could relay those images to the public 20-30 minutes sooner during the first critical minutes of an Amber Alert. It also allowed the photograph image on the Amber Alert poster to be transmitted much more clearly.

2) ESTABLISH AMBER ALERT CALL CENTER

Establish a secure location for a call center and a system capable of recording calls.

Prior to creating a call center, Amber Alerts instructed persons with information relevant to child abductions to call the local law enforcement agency where the abduction occurred. Only a small number of agencies in South Dakota had the capacity to handle the substantial call volumes that could potentially arise. Many local police departments and county sheriff departments lacked the number of staff, and the number of phone lines, to handle high volumes of concurrent phone calls. The center needed to provide an ample number of phone lines, reliable communications, and the ability to record calls for later review. It was also necessary to present the well publicized toll-free phone number (1.877.plz.look, or 1.877.759.5665) in advance of and during alerts, simplifying the public's task of passing on information tips.

The call center was located at the Division of Criminal Investigation's new facility in Pierre, the George S. Mickelson Criminal Justice Center, and was installed by and under the direction of the South Dakota Bureau of Information and Telecommunications (SDBIT), which had established similar Call Centers for other state agencies. Once installed, the Division of Criminal Investigation and the Department of Public Safety took responsibility for maintenance and operations of the center, including staff and training.

The George S. Mickelson Criminal Justice Center operated three separate rooms for the calls to be received. This call center also had computers available with the ability to transfer recorded telephone calls to files with email capability. Volunteers to staff the call center during an Amber Alert had a training manual available on site. The center drew upon a ready pool of assigned staff and well trained volunteers to accept calls during alerts, reducing the need to recruit people locally who may or may not have been

trained to handle calls. The selection of people answering calls would be volunteers from the Department of Public Safety and the Department of Criminal Investigation as they had the law enforcement background necessary to complete and record the calls.

SDBIT researched communication options and received funding from SDDOT for the system chosen which allowed the telephone system to be installed in the call center. Questions BIT considered while considering which telephone system to purchase include: how many inbound/outbound lines were preferred, if it was necessary to record all calls, and the process preferred for handling incoming calls. BIT opted to buy 18 telephones from the same company the state had contracted with prior: Consolidated Business Products in Yankton, SD.

Once agents are logged onto the phone system, they are able to take and record calls. The telephones used during Amber Alerts  are portable and easily maneuvered. The phone system is stored in the George S. Mickelson Criminal Justice Center   . The server that traces all incoming telephone calls is called the Call Tracer.  The software for tracing the calls is installed on computers in the DCI building.

3) ADD AMBER ALERTS TO SOUTH DAKOTA'S 511

Provide Amber Alert information to motorists via the 511 Traveler Information System.

A total of six employees (see list below) within the SD DOT had the capability to use their individual computers to create a file for voice recordings to be placed onto 511. In an attempt to be prepared for unexpected emergencies, these six people were based out of the central office in Pierre and in each regional office throughout the state. This was also the best option given that some Amber Alerts may last multiple days, in which case it was valuable to have numerous people able to work on the system rather than simply one person in one location. To keep all six employees from repeating each other's actions, email notifications were automatically sent between the members communicating what has been done. This also kept employees from having to lose time trying to correspond through the main contact at any given time.

As of August 2007, SDDOT employees capable of installing and updating Amber Alerts on South Dakota's 511 system are:

Name	Title	Phone
Ed Rodgers	Statewide Maintenance Engineer Specialist	605.773.3704

Tom Newell	Operations Support Draftsman	605.773.3704
John Forman	Pierre Region Engineer	605.773.3464
Doug Kinniburg	Rapid City Region Project Engineer	605.394.2244
Jeff Gustafson	Mitchell Area Engineer	605.995.8129
Alan Petrich	Aberdeen Region Traffic Engineer	605.626.7879

Because 511 is a telephonic system, it requires a recording of the Amber Alert information that callers will hear. The recording must be provided as an audio (.wav) file using the Microsoft Sound Recorder. The Sound Recorder display should resemble:

Recording can easily be done by simply clicking the Record button in the Microsoft Sound Recorder system to start recording and using the Stop button to end the recording.

> "This is an activation of the South Dakota Amber Alert System. An Amber Alert was issued on August 1, 2006, at 2:35 p.m. The abducted child is Elijah Rodriguez, 16 months old, a white Hispanic male. There is also an abducted adult – Lupe Lee Miranda, 20 yrs old, a white Hispanic female, 5'3" tall, 90 lbs., brown hair and brown eyes.
>
> The suspect is Jose Edwardo Rodriguez, also known as Eddie Rodriguez, 28 years old, a white, Hispanic male. He is 5'5" tall, 165 lbs, black hair, hazel eyes, last seen wearing a white t-shirt, blue jeans and a baseball cap. He is armed with a knife and a handgun. The suspect is driving a white, 1994 Oldsmobile Cutlass, South Dakota license plate: 9AV 765.
>
> Please call (phone number) to report any information regarding this abduction. Do not try to apprehend or stop this suspect, but call local law enforcement or (phone number). Thank you."

The Division of Criminal Investigation (DCI) provides this script, which is read almost verbatim from the poster, to simplify the process for the reader. Such items as date of birth can be omitted from the 511 message. The intent is to keep the recorded message less than 120 seconds, which is made possible by editing the track to eliminate any unused silence from the end of the Amber Alert recording. When saving the file, it is possible to use any directory and filename, but needs to be accessed later when the Amber Alert is registered in Road Condition Reporting System (RCRS).

The 511 Traveler Information System and Safe Travel USA receive notification of the Amber Alert via SDDOT's RCRS. For individuals authorized to enter Amber Alerts, RCRS displays an Amber button near the lower right-hand corner of the RCRS screen as seen below.

The Amber Alert will appear on 511 and Safe Travel USA within seconds after being registered in RCRS.

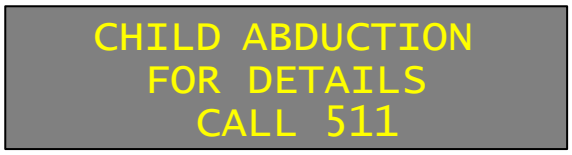
Simply dialing 511 from any phone in South Dakota will verify 511. The Amber Alert audio message will precede all other menu options for road condition and weather information and cannot be interrupted by striking phone menu keys.

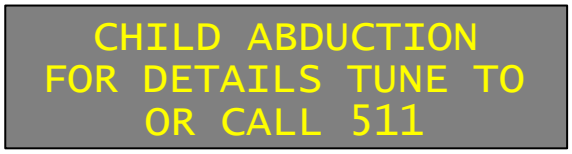
Verifying if the Alert was posted successfully is easily done by simply visiting the SafeTravelUSA website (http://safetravelusa.com/sd/). When an Amber Alert is in effect, the national AMBER ALERT logo will be displayed in the upper right-hand corner of the screen. Clicking on the logo will link to South Dakota's Amber Alert web page http://www.state.sd.us/amberalert/.

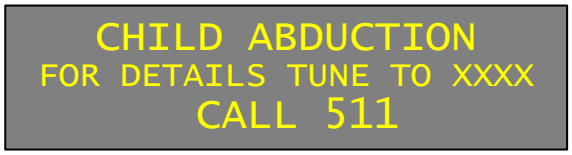
4) UPGRADE COMMUNICATION TO DYNAMIC MESSAGE SIGNS

Upgrade communication to Dynamic Message Signs (DMS) and allow Amber Alert information to be easily processed from computers to DMS across the state.

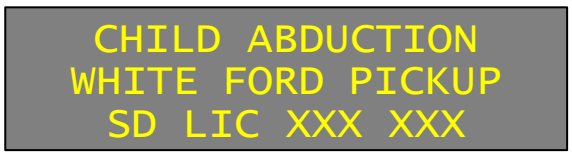
The system set up by the SDDOT to use the DMS to alert travelers of an Amber Alert was similar to the process used with 511. The same six SDDOT employees authorized to initialize and update the 511 system also had the capability to upload information onto the 31 DMS signs around the state. A script was provided to list only essential facts on the board:







In instances where DMS was able to provide further information, the following messages may be posted:



In the event that there were already traffic messages on boards across the state, DOT personnel would start placing messages on boards from the point of incidence as much as possible, radiating out across the state. Traffic messages currently being displayed on DMS had the highest priority. Road closures, detours, etc. would not be over-ridden by Amber Alert messages. Amber Alert messages would be

discontinued on DMS should they be determined to be creating adverse traffic impacts, such as markedly slowing traffic or congestion.

While SDDOT is still in the process of purchasing and obtaining PDMS, four are currently in use. All PDMS were installed with Global Positioning Units which allowed workers to easily gather information about where signs were and what message they were displaying. Workers were also able to communicate with them remotely via the cellular modems incorporated into their structure. However, because the PDMS are being installed and purchased now, they do not post Amber Alerts. In the future this will potentially be an option, but at the present is not included in the Amber Alert process.

5) UPGRADE COMMUNICATION TO REST AREA KIOSKS

Upgrade communication to Rest Area Kiosks to allow Amber Alert information to be distributed as quickly as possible.

Upgrading the current dial-up communication system supporting the kiosks to a network-based system allowed all 21 kiosks to be updated quickly and reliably, any time of the day or night, with photos or text pertaining to an Amber Alert. Once the kiosks were networked, they reached a segment of the traveling public during an Amber Alert who might otherwise have been unaware the alert had been declared and who were in a safe place to stop, look at, and read available information.

In May of 2006, the computers in rest area kiosks were made compatible with the Amber Alert poster, permitting the Amber Alert to be shown on computer screens along with the other travel options. This was made possible by simply creating an Actor Server Page (ASP) which allowed all computers to automatically post and update Amber Alerts. The computers were made to refresh every five minutes, enabling a screen to return to the homepage in five minutes' time.

Table 1: Rest Area Kiosks within South Dakota

Site	Highway	MRM	Telco	Speed	Communication
Chamberlain	I-90	264	Qwest	T1	T1
Junction City / Vermillion	I-29	26	Qwest	T1	T1
Ward Road /Brookings	I-29	121	none	n/a	Spread Spectrum
Wasta Eastbound	I-90	100	Golden West	56K	56K
Wasta Westbound	I-90	100	Golden West	56K	56K
Belvidere Eastbound	I-90	166	None	n/a	Spread Spectrum
Belvidere Westbound	I-90	166	none	n/a	Spread Spectrum
Hidewood / Clear Lake Eastbound	I-29	164	Interstate Tele.	56K	56K
Hidewood / Clear Lake Westbound	I-29	164	Interstate Tele.	56K	56K
New Effington Southbound	I-29	248	Roberts Co.	56K	56K
Presho / Vivian Eastbound	I-90	219	Kennebec	56K	56K
Presho / Vivian Westbound	I-90	221	Kennebec	56K	56K
Salem Eastbound	I-90	363	McCook	56K	56K
Salem Westbound	I-90	363	McCook	56K	56K
Spearfish Eastbound	I-90	1	Qwest	56K	56K
Tilford Eastbound	I-90	41	Qwest	56K	56K
Tilford Westbound	I-90	41	Qwest	56K	56K

Valley Springs Westbound	I-90	411	Valley Springs	56K	56K
White Lake Eastbound	I-90	301	Midstate	56K	56K
White Lake Westbound	I-90	301	Midstate	56K	56K
Wilmot / Summit	I-29	213	Roberts Co.	56K	56K

6) DEPLOY PORTABLE DYNAMIC MESSAGE SIGNS

Acquire and configure Portable Dynamic Message Signs to be organized across the state.

In 2005, 10 PDMS were purchased from the lowest bidder, Vermac. It was vital that these signs be NTCIP compliant, as this allowed signs to communicate with other data devices. The signs purchased through Vermac were installed with cellular communication as well as with spread spectrum capability, which further allowed the equipment to correspond with other communication devices, in the case that cellular reception was not available. The PDMS were considered to be "full matrix" message boards, which allowed them to display words as well as graphics. The signs were produced to display 27x48 pixels, with enough room for three lines on the board containing characters a maximum of 18 inches high.

In 2007, 16 additional PDMS were acquired through Daktronics. These signs were also considered to be "full matrix", but displayed characters with 30x72 pixels. The signs, also similar to the Vermac signs, were able to display three rows of words with characters 18 inches high. In the two years between purchases, cellular coverage improved to the extent that only cellular communication was installed into this latter batch of PDMS, although the capability to add spread spectrum communication is still available.

7) PROVIDE TRAINING DOCUMENTS AND PRESENTATIONS

Provide training documents and presentations for every aspect of Amber Alerts in South Dakota.

It was necessary to ensure that changes resulting from the completion of each of the other tasks were integrated into the documented SD Amber Alert process and tested. Ensuring that training documents were prepared and training classes were developed and presented to staff involved in South Dakota's Amber Alert process was a vital closing step to this project. Each department's regulations are unique, and the trainings and available documentation varied depending on the regulations of each organization.

FINDINGS AND CONCLUSIONS

Due to the committed support all of the agencies exhibited while working on this project, Amber Alerts are now a working and successful part of South Dakota's response program. Since the program was established in its entirety in May of 2006, no authentic Amber Alert has been organized. However, the program is tested quarterly within the state for training purposes. These trials aid those involved in the process to be alert and aware of the procedure as well as to help the group enhance potential weak points.

By receiving funding through the Amber Alert grant, and purchasing a Scan Converter, SDPBS was capable of transferring and broadcasting a clear image of pictures in an Amber Alert. Once the SDPBS purchased the Scan Converter and applied it to their program and training, all employees know how to post an Amber Alert. With the Scan Converter, both pictures and text are updated and broadcasted with minimal effort and in little time. Anywhere a TV resided in a public place had the potential to give detailed information to members of the public who would shortly be on the road. Unlike mobile motorists, these people were able to safely stop, listen, and look for as long as necessary for the Amber Alert to be presented. They would, in most cases, be back on the road as motorists soon. See Appendix D for operation procedures.

The Department of Criminal Investigation (DCI) assigned three rooms to use in an Amber Alert. Eighteen portable telephones were purchased, capable of recording calls which could then be transferred to a file to be emailed to authorities if necessary. The phones functioned on a rotating basis, with each new call ringing through to the line idle the longest. Law enforcement employees were trained in Amber Alert procedures and documents available on-site for further reference. Creating a call center was a vital step in the process of integrating a true system for Amber Alerts in South Dakota. Having a specific physical site as well as having a location for the public to call caused the procedure flow ably and produce confidence in the system. Appendix A outlines the steps to be taken through every agency when an Amber Alert is reported. The DCI developed a Standard Operations Procedures which describes in detail the roles of participants in an Amber Alert, the procedures for the various agencies involved during an Amber Alert, as well as an outline and script of all documents to be made and publicized during an Alert.[1]

A format was established and programming proven successful to the 511 Traveler Information System. Six people within SDDOT were given authorization and training on the process of setting up and updating the system with new reports. Users who call 511 did not have the option of skipping over the Amber Alert, which was be the first message heard. Communication lines were formed to keep all members updated of proceedings. Placing Amber Alerts on the 511 system was beneficial because it served as an immediate resource for people to receive information, no matter where they are located within the state. Placing this real-time alarm on South Dakota's 511 system allowed for easy access and was able to be changed as updates were received. Appendix C provides the Amber Alert Training Manual for the South Dakota Department of Transportation.

[1] *South Dakota's Child Abduction Alert Procedures and Call lists*, Document stored in location: M:\All_SD\Amber Alert\Current Amber Procedures\Master Amber Alert SOP 04 05 07.doc

DMS systems were an effective way to transmit basic Amber Alert information to motorists. Prior to moving from a dial-up communication system to a networked communication system, activating and updating SD's DMS system was labor- and time- intensive. It may have taken as much as half an hour to individually activate all of the DMS signs in place. By updating the communication system, DMS across the state could be started and revised at the same time. The 30 DMS sites across the state can be seen in the document attached as Appendix B.

The Department of Transportation operated the 21 information kiosks at Interstate highway rest areas across South Dakota. Until recently, these kiosks had provided motorists travel information that was sufficiently static enough to be updated on a once-a-day schedule. They had been used only for this type of information because updating them outside of a preset schedule was a slow, labor-intensive, and error-prone process. The process of manually updating the kiosks with dynamic information was sufficiently labor-intensive and error-prone that they were originally rejected for use in the implementation of Amber Alerts in South Dakota. In 2005 however, South Dakota Rest Area Kiosks were equipped with computer screens in the building. These computers allowed users to check DOT road conditions such as road weather and traffic using a touchpad screen. In May of 2006, the computers were updated to display Amber Alerts automatically. The computers also routinely automatically refresh to return to the homepage every five minutes, which allowed viewers to consistently be met with the homepage, giving real-time information at first glance. Attached by Appendix E plots out exactly where these Rest Area Kiosks are across the state.

Because each objective revolves around different aspects of agencies, it has been dependent upon each department to compile a training session and manual, when necessary. The Department of Criminal Investigation's (DCI) training included only law enforcement as this was the population who would be answering and recording the telephone calls. Guidebooks were also available on-site to remind those answering the telephones of their duties and describe the list of contacts. Once the DCI has established the Amber Alert, any employee of SDPBS was able to broadcast the Alert on television screens. A recording could be made on 511, and a message displayed on the DMS around the state as well as on the computer screens within Rest Area Kiosks. Trainings have taken place within each agency where appropriate and manuals made easily accessible. Since the inception of Amber Alerts in South Dakota, the full system and flow-chart of actions have been tested quarterly. These trials allow workers to catch problems and work out any possible glitches before an actual Alert, as well as helping staff to stay informed.

RECOMMENDATIONS

RECOMMENDATION 1: *Testing the Amber Alert system quarterly is beneficial as it helped workers be reminded of appropriate actions and their individual role in the process. All involved agencies continuing with this testing process would be the optimum approach for a successful outcome.*

Because the success of an Amber Alert victim being found relies a good deal upon the effectiveness of Alerts being delivered to the public, and because Amber Alerts do not occur regularly, it is important for all parties involved to know procedures well. Continuing to perform quarterly tests brings to light changes that need to be made and also helps employees continue to have a solid grasp of policies and steps to take when an Amber Alert occurs. While minor problems will inevitably occur during an actual Alert, these cannot be prepared for; the best solution would be to be prepared for these issues to arise as best as possible.

RECOMMENDATION 2: *Upgrade Vermac PDMS from Data Remote cellular modems to an Airlink Raven cellular modem.*

Currently the majority of Vermac PDMS in the state are equipped with a circuit switch cellular communication. Upgrading the signs to Airlink Raven communications, which is an Ethernet modem, would allow communication to process more quickly and with fewer glitches. Airlink Raven is a more current mode of communication that would be able to correspond to other equipment without the concern about being outdated. Upgrading the signs could be done at an estimated cost of $500 per sign.

RECOMMENDATION 3: *Assign and include the responsibility of posting Amber Alerts to DMS, 511, and SafeTravelUSA in the standard operating procedures at the planned Traffic Operations Center.*

When the planned Traffic Operations Center opens, it would be advantageous if included in their standard operations were a procedure for Amber Alerts. A central location to more systematically post and distribute responsibilities for posting Alerts would benefit and simplify the process. This would take out steps on the flow-chart of actions and provide a centralized location for information among the agencies working with Amber Alerts.

RECOMMENDATION 4: *Utilizing and programming Portable Dynamic Message Sings to be able to quickly display Amber Alerts. This would involve knowing where all PDMS were at all time, having the capability to know what the signs were displaying and, if possible, post an Amber Alert.*

At the time this report was written, SDDOT was in the process of acquiring a total of 26 PDMS. These signs have cellular modems which allow them to be utilized and talked to remotely. While PDMS were not currently being utilized in the same fashion as DMS for Amber Alerts, the option could be available in the future. Completing recommendation three, to include responsibility for posting Amber Alerts to the procedures in the Traffic Operations Center, would enable PDMS to be used for Amber Alerts. Because these signs are equipped with Global Positioning Units workers can easily know their location and status. Due to their simple nature, it would not be difficult to display Amber Alerts on PDMS using the same process as posting Alerts on DMS. Because workers can view the location of PDMS as well as

communicate with the signs from their desk, from the Traffic Operations Center, posting Amber Alerts on PDMS should be feasible once all 26 are installed. Although Amber Alerts do not supersede any road condition messages, using idle PDMS where applicable would be another beneficial mode of communication to the traveling public as well as an efficient use of money.

ANALYSIS OF RESEARCH BENEFITS

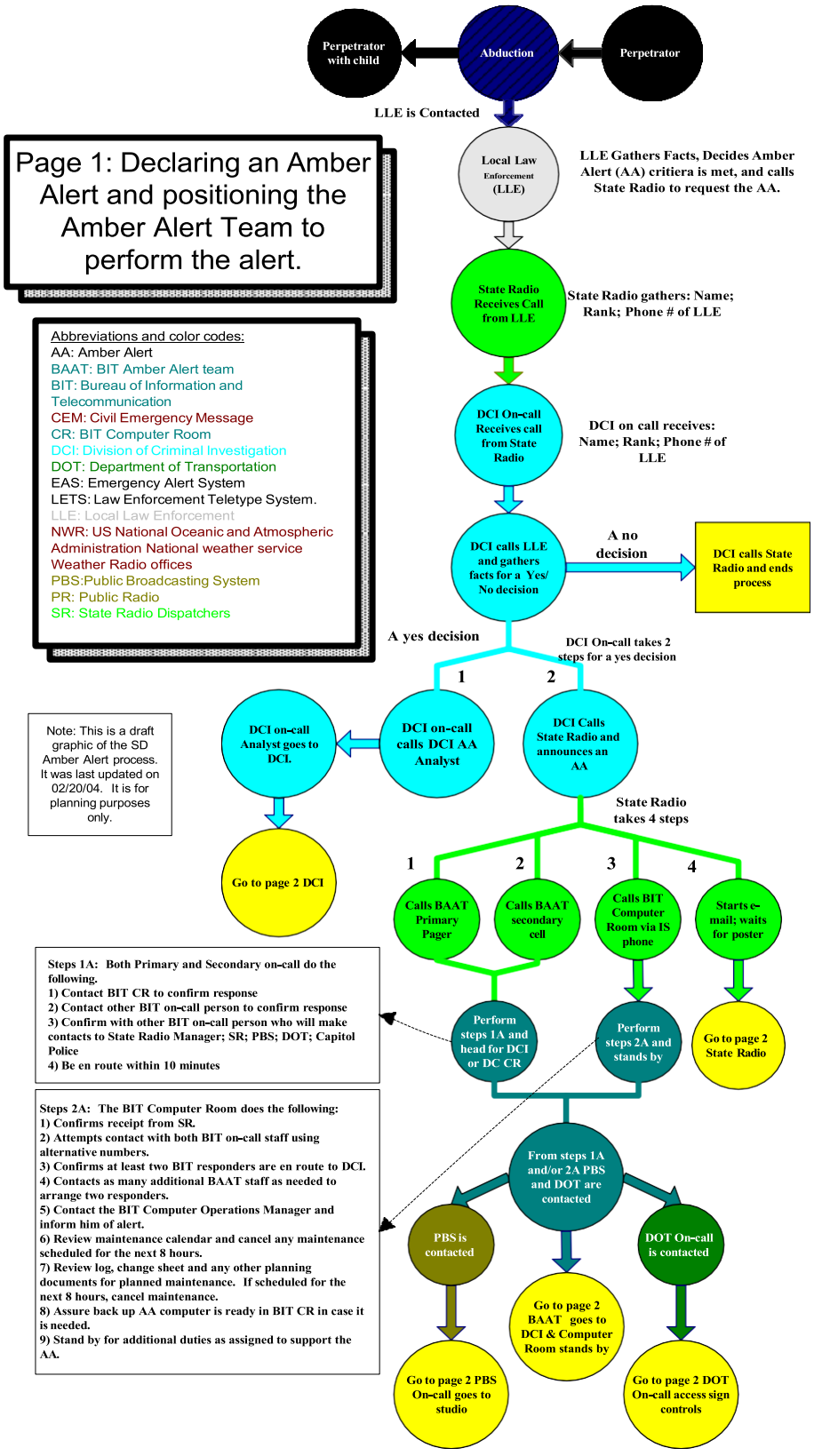
Posting an Amber Alert was the first step toward recovering a missing child. Dissemination of the alert to the public is now easily done via the television with SD PBS, 511 Traveler Information, DMS locations across the state as well as in Rest Area Kiosks. Because of its speed and reliability, network based communication was the chosen method to transfer Amber Alert posters and information. Due to the quarterly testing, each organization continues to be reminded of the Amber Alert process and their role in the program. With the Call Center established, the procedure is much more efficient and able to withstand more interaction with the public. Information is quickly circulated throughout the state through a number of programs, which allows the Alerts to be viewed by more citizens.

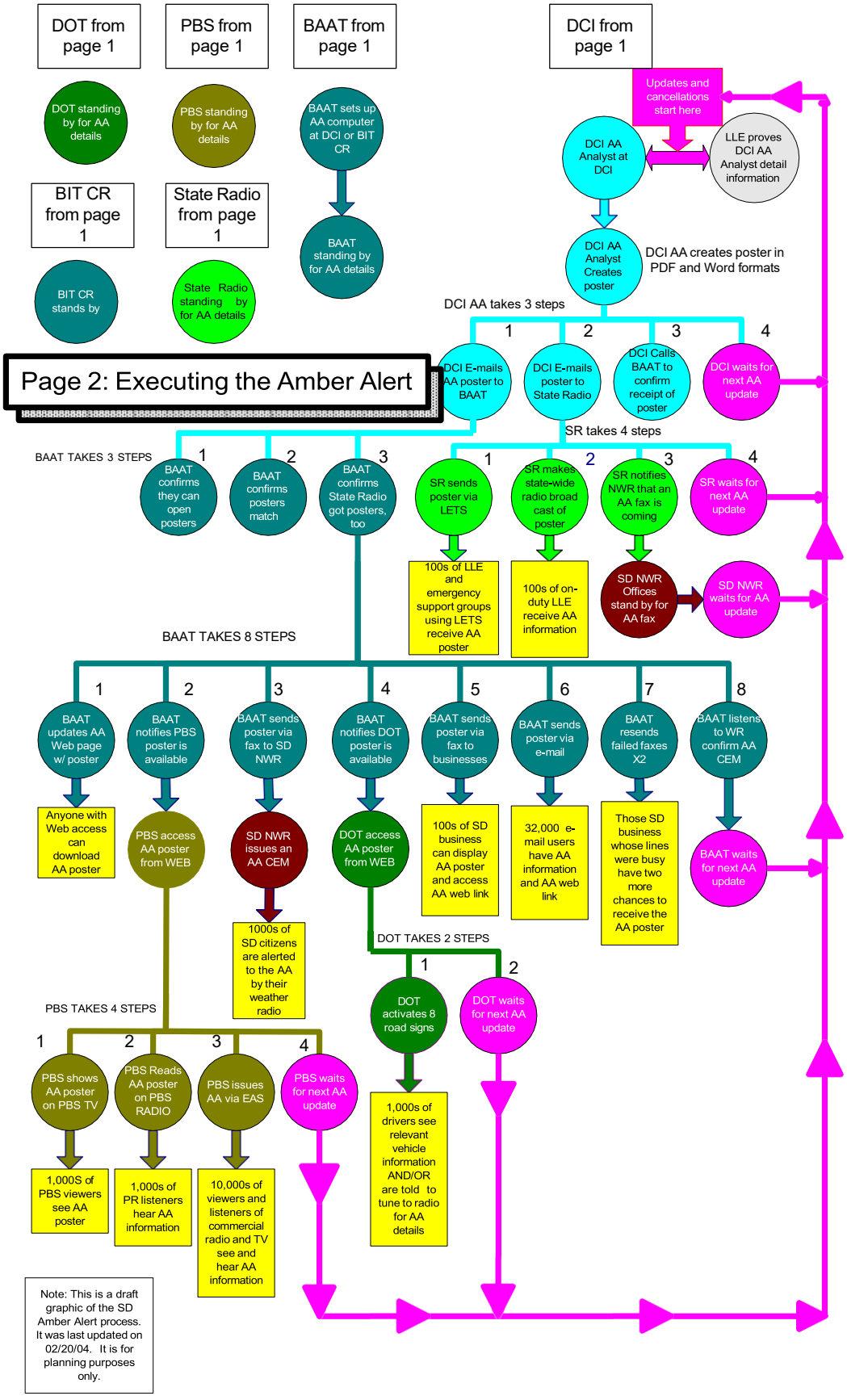
EXPENDITURES

As anticipated with any large project, the finances vary greatly with each phase. Funding was received from several sources, including BIT, SD DOT, PBS capital expenditure funds and federal aid grants. The financing for these different projects came from various federal and state grants and funding.

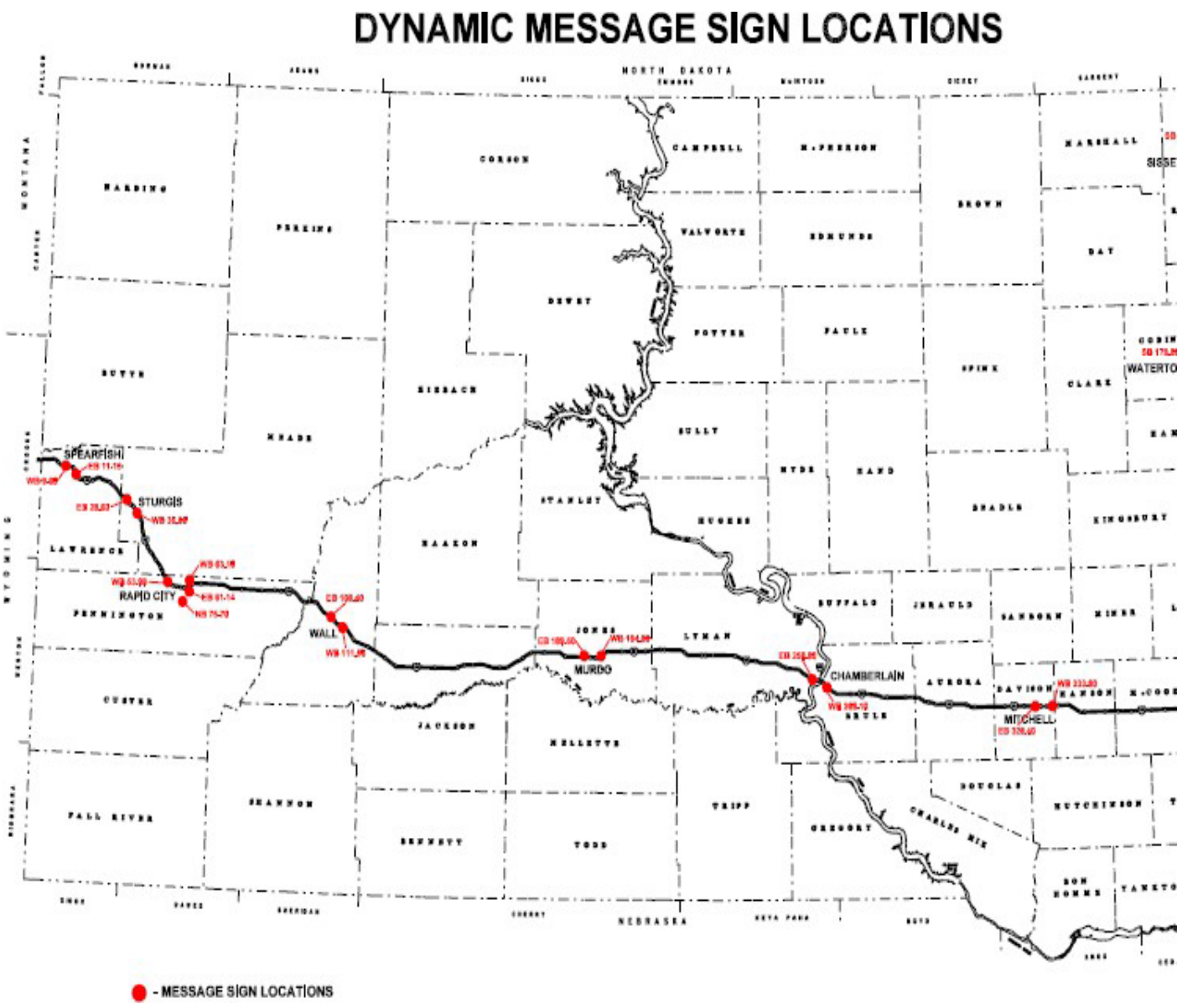
Description	Total Cost
Web to Television Image Processing	$3,400
Call Center	$106,400
Upgrade Communication to Dynamic Message Signs	$105,000
Portable Dynamic Message Signs (26)	$395,400
Engineering and Project Management	$3,900
Total	$614,100

APPENDIX A: AMBER ALERT FLOW CHART




DOT from page 1
PBS from page 1
BAAT from page 1
DCI from page 1
DOT standing by for AA details
PBS standing by for AA details
BAAT sets up AA computer at DCI or BIT CR
Updates and cancellations start here
DCI AA Analyst at DCI
LLE proves DCI AA Analyst detail information
BIT CR from page 1
State Radio from page 1
BAAT standing by for AA details
DCI AA Analyst Creates poster
DCI AA creates poster in PDF and Word formats
BIT CR stands by
State Radio standing by for AA details
DCI AA takes 3 steps
1
2
3
4
Page 2: Executing the Amber Alert
DCI E-mails AA poster to BAAT
DCI E-mails poster to State Radio
DCI Calls BAAT to confirm receipt of poster
DCI waits for next AA update
SR takes 4 steps
BAAT TAKES 3 STEPS
BAAT confirms they can open posters
BAAT confirms posters match
BAAT confirms State Radio got posters, too
SR sends poster via LETS
SR makes state-wide radio broad cast of poster
SR notifies NWR that an AA fax is coming
SR waits for next AA update
100s of LLE and emergency support groups using LETS receive AA poster
100s of on-duty LLE receive AA information
SD NWR Offices stand by for AA fax
SD NWR waits for AA update
BAAT TAKES 8 STEPS
1
2
3
4
5
6
7
8
BAAT updates AA Web page w/ poster
BAAT notifies PBS poster is available
BAAT sends poster via fax to SD NWR
BAAT notifies DOT poster is available
BAAT sends poster via fax to businesses
BAAT sends poster via e-mail
BAAT resends failed faxes X2
BAAT listens to WR confirm AA CEM
Anyone with Web access can download AA poster
PBS access AA poster from WEB
SD NWR issues an AA CEM
DOT access AA poster from WEB
100s of SD business can display AA poster and access AA web link
32,000 e-mail users have AA information and AA web link
Those SD business whose lines were busy have two more chances to receive the AA poster
BAAT waits for next AA update
1000s of SD citizens are alerted to the AA by their weather radio
DOT TAKES 2 STEPS
1
2
DOT activates 8 road signs
DOT waits for next AA update
PBS TAKES 4 STEPS
1
2
3
4
PBS shows AA poster on PBS TV
PBS Reads AA poster on PBS RADIO
PBS issues AA via EAS
PBS waits for next AA update
1,000s of drivers see relevant vehicle information AND/OR are told to tune to radio for AA details
1,000S of PBS viewers see AA poster
1,000s of PR listeners hear AA information
10,000s of viewers and listeners of commercial radio and TV see and hear AA information
Note: This is a draft graphic of the SD Amber Alert process. It was last updated on 02/20/04. It is for planning purposes only.

APPENDIX B: DMS MAP



APPENDIX C: DOT AMBER ALERT MANUAL

DOT: Procedures for An Amber Alert

1) When an Amber Alert is activated, the contacted DOT Amber Alert individual will do one of the following: report to their home office, log into the state network via laptop from remote location, or access the state network via Citrix
   - On-call SDDOT personnel are:
     - Ed Rodgers office 773-3704 home 224-9042 cell 280-8042
     - Tom Newell office 773-3704 home 224-7033
     - John Forman office 773-3464 home 224-6951 cell 280-3823
     - Doug Kinniburgh office 394-2244 home 393-0569 cell 381-1040
     - Jeff Gustafson office 995-8120 home 227-4419 cell 770-7399
     - Alan Petrich office 626-7879 home 226-1124 cell 380-9011

2) DOT personnel will be contacted by the BIT or DCI Amber Alert primary on-call personnel when the SD Child Abduction poster is ready.
3) DOT personnel will receive SD Child Abduction Alert poster from viewing the poster on the SD webpage.
4) DOT personnel will follow the following instructions for putting information on 511 and Safetravel USA.

Instructions for Posting Amber Alerts to the South Dakota 511 Traveler Information System and the SafeTravelUSA Web Site

This document describes the steps required to post an Amber Alert to the South Dakota 511 Traveler Information System and the SafeTravelUSA web site. The process involves:

- Creating an audio (.wav) file that will communicate the Amber Alert on ;
- Registering the Amber Alert into the Road Condition Reporting System, which activates the Amber Alert on both and SafeTravelUSA;
- Using the same techniques to update the Amber Alert as necessary throughout its duration;
- Removing the Amber Alert from and SafeTravelUSA when the alert is cancelled.

1. Create Audio File with Microsoft Sound Recorder

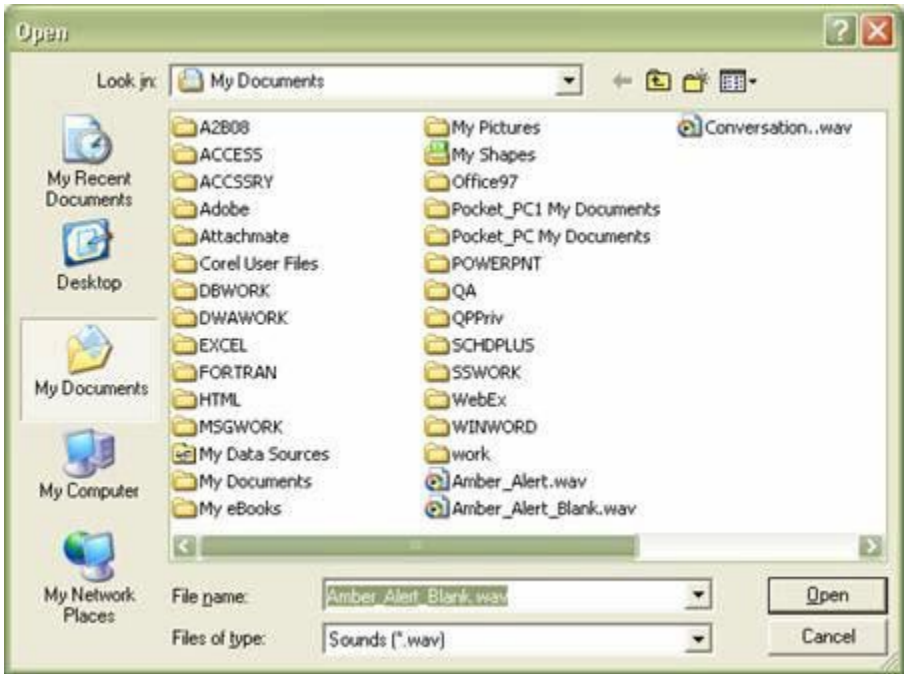
Because is a telephonic system, it requires a recording of the Amber Alert information that callers will hear. The recording must be provided as an audio (.wav) file using the Microsoft Sound Recorder.

1.1. Open Microsoft Sound Recorder

The Microsoft Sound Recorder can be opened by clicking on and , and the following menu sequence:

When the Sound Recorder opens, this screen should appear:

Next, click on File, Open to open the blank recording ***Amber_Alert_Blank.wav***. This file has been set up in the correct format and with a maximum recording time of 2 minutes.



When ***Amber_Alert_Blank.wav*** opens, the Sound Recorder window will display:

1.2. Record, Clip, and Save .wav File for Current Amber Alert

Next, record the alert-specific message for this Amber Alert. Click on the Record button to start recording. Use the Stop button to end the recording. The Sound Recorder display should resemble:

Example text for Amber Alert 511 message:

> "This is an activation of the South Dakota Amber Alert System. An Amber Alert was issued on August 1, 2006, at 2:35 p.m. The abducted child is Elijah Rodriguez, 16 months old, a white Hispanic male. There is also an abducted adult – Lupe Lee Miranda, 20 yrs old, a white Hispanic female, 5'3" tall, 90 lbs., brown hair and brown eyes.
>
> The suspect is Jose Edwardo Rodriguez, also known as Eddie Rodriguez, 28 years old, a white, Hispanic male. He is 5'5" tall, 165 lbs, black hair, hazel eyes, last seen wearing a white t-shirt, blue jeans and a baseball cap. He is armed with a knife and a handgun. The suspect is driving a white, 1994 Oldsmobile Cutlass, South Dakota license plate: 9AV 765.
>
> Please call (phone number) to report any information regarding this abduction. Do not try to apprehend or stop this suspect, but call local law enforcement or (phone number). Thank you."

This information is read almost verbatim from the poster produced by the Division of Criminal Investigation. Such items as date of birth can be omitted from the 511 message. The intent is to keep the recorded message less than 120 seconds.

Example text for quarterly test message:

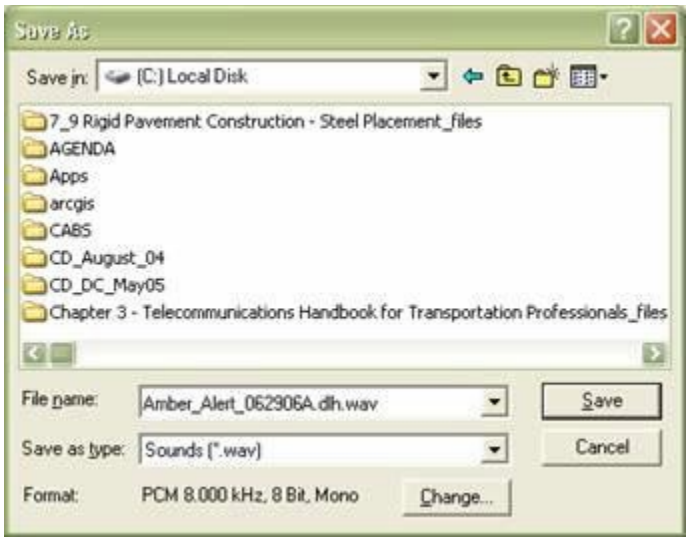
> "This is a test of the South Dakota Amber Alert System. Had this been a real activation, you would have been given details of the incident and a phone number to report information. Again, this is a test of the South Dakota Amber Alert System."

Next, clip the excess length from the recording by selecting Edit, Delete After Current Position. This will eliminate any unused silence from the end of the Amber Alert recording. **Do not omit this step.**

When the Sound Recorder asks you to verify the deletion, respond OK.

After the excess length is clipped, the length of the recording should match the length actually recorded:

Finally, save the file by selecting File, Save As. You may use any directory and filename you wish, but you will need to remember the directory and filename when you register the Amber Alert in RCRS later. *(Note: Please temporarily use your C: drive for this purpose, until a question about RCRS's ability to use network drives is resolved.)*



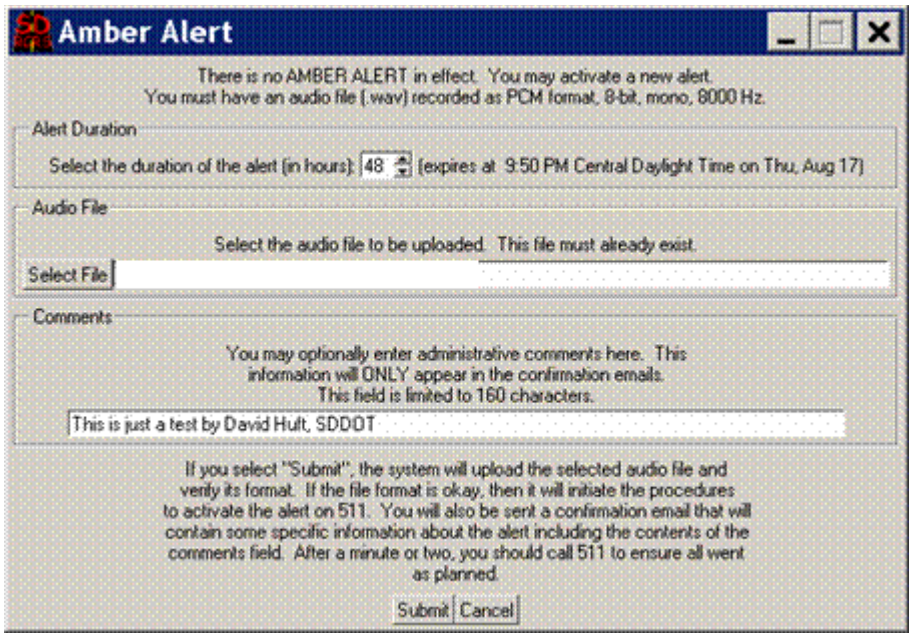
Finally, select File, Exit to close the Sound Recorder.

2. Register the Amber Alert in the Road Condition Reporting System

2.1. RCRS Entry

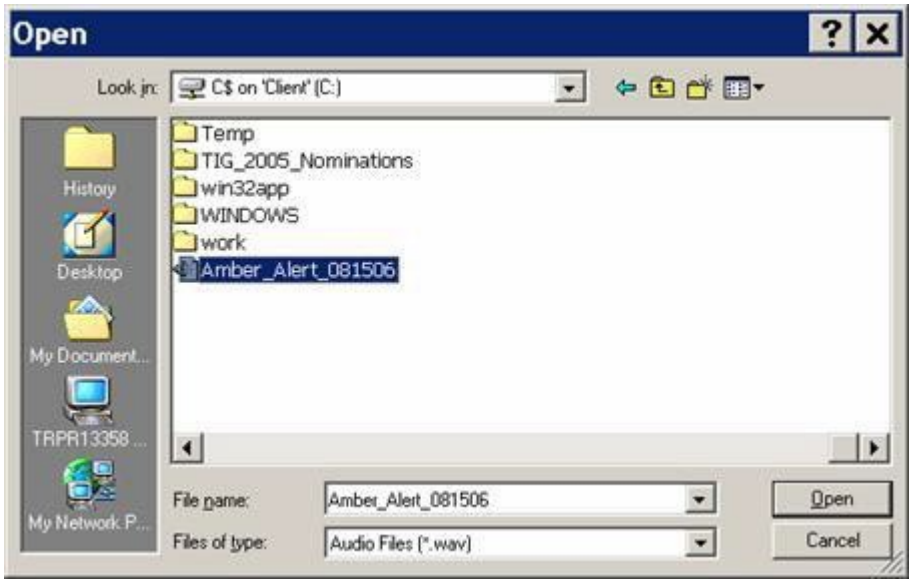
The 511 Traveler Information System and SafeTravelUSA receive notification of the Amber Alert via SDDOT's Road Condition Reporting System (RCRS). For individuals authorized to enter Amber Alerts, RCRS displays an Amber button near the lower right-hand corner of the RCRS screen.

Click on the Amber button to open the Amber Alert dialog box:

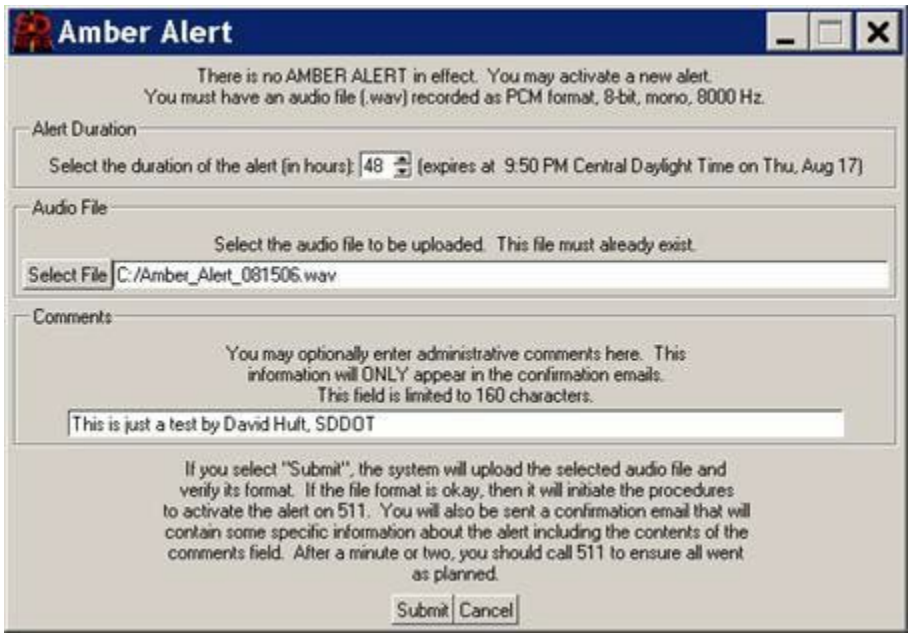


Set the Amber Duration (in hours) by increasing or decreasing the default value of 48 hours.

Identify the audio (.wav) file by clicking on the Select File button and opening the correct file.



Finally, enter any informational comment that is appropriate to the Amber Alert. This comment will not appear on 511 or on SafeTravelUSA. It will only appear on internal confirmation e-mail. Click on Submit to actually register the Amber Alert in 511 and SafeTravelUSA.



After the Amber Alert is registered, the Amber button at the bottom of the RCRS screen will be highlighted in red text. Within a few seconds, a confirmation e-mail will be sent to all individuals who are authorized to register Amber Alerts (not just the individual who actually did register it)

2.2. Verify 511 and SafeTravelUSA

The Amber Alert will appear on 511 and SafeTravelUSA within seconds after being registered in RCRS.

To verify 511, simply dial 511 from any phone in South Dakota. The Amber Alert audio message will precede all other menu options for road condition and weather information. The Amber Alert message cannot be interrupted by striking phone menu keys.

To verify SafeTravelUSA, go to http://safetravelusa.com/sd/. When an Amber Alert is in effect, the national Amber Alert logo will be displayed in the upper right-hand corner of the screen. Clicking on the logo will link to South Dakota's Amber Alert web page http://www.state.sd.us/amberalert/.

3. Updating an Active Amber Alert

After an Amber Alert has been registered, the Amber button at the bottom of the RCRS screen will be highlighted in red text. Click on the Amber button near the bottom of the RCRS screen to reopen the Amber Alert dialog box:

Three changes can be made during the update process:

- the duration of the Amber Alert can be changed by increasing or decreasing the existing duration;
- the audio file can be replaced with a different file (which is recorded in the same manner as the original file was);
- another informational comment can be entered.

Click on Submit button to register the updated Amber Alert in 511 and SafeTravelUSA. After the update, the new audio message (if one was provided) will be active on 511 and the national Amber Alert logo will remain active on SafeTravelUSA.

4. Deactivating an Active Amber Alert

Deactivation of an active Amber Alert is a two-phase process:

1. The public needs to be told the Amber Alert has been cancelled. Update the message as in Step 3 above using a message similar to the following:

   "The South Dakota Amber Alert activated on August 1, 2006 at 2:35 pm was cancelled on August 2, 2006 at 10:15 a.m."

   This message should be set to run for approximately 24 hours.

2. To cancel the Amber Alert at the end of the 24 hours, click on the Amber button near the bottom of the RCRS screen to reopen the Amber Alert dialog box. Click on the Delete button to deactivate the Amber Alert.

3. Alternatively, the Amber Alert will automatically deactivate when the set duration expires.

After the Amber Alert is deactivated, the Amber button will return to regular black text, the Amber Alert Message will disappear from 511, and the national Amber Alert logo will disappear from SafeTravelUSA.

5) DOT personnel will then proceed with putting messages on all permanent Dynamic Message Signs (DMS). If all message boards are blank, an immediate general message (located in the Default Folder titled "**Amber Alert – Immediate Display**" can be broadcast to all signs. This message reads:

CHILD ABDUCTION
FOR DETAILS
CALL 511

In the event that there traffic messages on boards across the state, DOT personnel will start placing messages on boards from the point of incidence as much as possible, radiating out across the state. Folders within the library have been made for each DMS. These folders hold the below pre-programmed messages for each appropriate sign.

Traffic messages currently being displayed on DMS have the highest priority. Road closures, detours, etc. will not be over-ridden by Amber Alert messages. Amber Alert messages will be discontinued on DMS should they be determined to be creating adverse traffic impacts, such as markedly slowing traffic or congestion.

A) Should the SD Child Abduction poster received not include vehicle license plate information, the DMS message should read as follows:

CHILD ABDUCTION
FOR DETAILS TUNE
TO xxxx xx

OR CALL
511

This message is pre-programmed for each sign and designated in the library as "Amber Alert - General". The radio frequency given will be the Public Broadcasting station in that area.

B) Should the SD Child Abduction poster include complete vehicle license plate info, DMS message should include as much vehicle identification information as possible, not to exceed 2 frames.

CHILD ABDUCTION
WHITE FORD PICKUP ← Example vehicle description
SD LIC XXX XXX

CALL 511 OR
TUNE TO XXXX XX
FOR MORE DETAILS

6) DOT personnel should anticipate staying available for a minimum of 6 hrs. If you need to hand this duty off to other personnel, be sure to contact the BIT Amber Alert contact to let them know where they should be calling with updates.
7) Notification of Amber Alert updates or cancellation will come from the BIT or DCI Amber Alert primary on-call person via email or direct phone contact.

APPENDIX D: SOUTH DAKOTA PUBLIC BROADCASTING PROCEDURES

AMBER ALERT ANNOUNCEMENTS.

In the event of an Amber Alert through our Radio and TV Networks. In this event the E.A.S. System may be used. The following instructions are for receiving and airing Amber Alert Announcements.

1. Have **"Amber Alert Activation"** slide up on the Chyron.
2. Have **"Actual Alert Pre Warning announcement"** cued and ready to play.

****STEP'S 3 THROUGH 9 ARE DONE ON BOTH TV & RADIO ENCODERS**

3. Push button marked **"PASSWORD"** on E.A.S. Encoder's.
4. Enter password on lighted **"LOCATION"** buttons (Password is **911**).
5. **"EVENT"** buttons will light and flash. Select appropriate "EVENT" for the announcement. (AMBER ALERT)
6. **"CONFIRM"** button will light and flash. Push **"CONFIRM"** button in the "EVENT" group.
7. **"LOCATION"** buttons will light and flash. Select appropriate "LOCATION" Select **"1"** (All of South Dakota).
8. **"LOCATION"** buttons will continue to flash. Select **"CONFIRM"** button in the "LOCATIONS" group.
9. **"SEND HEADER"** button will light and flash.
   You are now ready to go !!

RUNNING AMBER ALERT ANNOUNCEMENT

1. Put CG-2 (Amber Alert Activation slide) on air.

****STEPS 2 THROUGH 5 DONE SIMULTANEOUSLY ON BOTH TV AND RADIO ENCODERS****

2. Run **"Actual Alert Pre Warning Announcement"** audio cart at the same time the Amber Alert Slide hits the air.
3. When audio cart is finished, press **"SEND HEADER"** button on the E.A.S. Encoder's.
4. When header tones have finished, Press **"SEND EOM"** button.
5. Resume normal programming.

APPENDIX E: REST AREA KIOSK MAP

DEPARTMENT OF TRANSPORTATION REST AREAS