

**The Pennsylvania Department of Transportation  
Research and Demonstration Grant Project  
Enhanced Transit Website through the use of Streaming Media  
Final Report-October 31, 2001**

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Getting transit information out to the public is a crucial activity for all transit systems, but nowhere more than in State College, where each fall brings about 10,000 new Penn State students and faculty, all of whom are potential transit riders. CATA continually struggles with how to get transit information into their hands quickly, and in an easy-to-use format that works for both CATA and the intended recipients. Print, broadcast and collateral media are all very limited in the amount of information they can convey, but the internet is virtually unlimited. Furthermore, it is a medium that is readily accepted by the academic community. CATA applied for, and in the fall of 1999, was awarded a PennDOT Research and Demonstration Grant of \$30,000 to develop this concept.

**1. PROJECT GOAL:**

The goal of this project is to demonstrate the use of emerging internet technology in providing vastly improved information about public transportation to riders, potential riders, local elected officials and the general public. The project will enable CATA to determine the feasibility of conveying transit information over the internet and the degree to which the general public accepts this medium as a means to learn about, and then use, CATA.

**2. PLAN:**

Working with a local internet technology firm, Resource Communications Group of State College PA, CATA came up with the idea of an internet based video "CATA User's manual" through the use of streaming video as an effective way to use the latest technology to reach the project goal and enhance our educational and marketing outreach materials. CATA provides information about its services and how to use them in all kinds of text based formats. Video however is an excellent educational tool and alternative to static text and graphics as it allows you to actually show people your services and how to use them while explaining through accompanying audio.

Streaming video is a method of delivering that multimedia content through the internet-thereby allowing users to access the video without even leaving their desk or house. Because it is "streamed" to the user over the internet there are no lengthy downloads so file size and length of the video are not issues. Streaming video gives users the option of viewing as little or as much as they want and is available to users regardless of bandwidth. Distribution costs are minimal as they are limited to web hosting cost which anyone with a website is already paying.

Streaming video is also an excellent fit in the State College Community. The home of Penn State University, this is an internet savvy community where the members are already "on-line" and comfortable using the internet.

### 3. PROCESS:

Work on the project began in January 2000 when CATA and Resource staff met several times to organize the project, assign tasks, outline procedures and determine the general scope of the streaming video element of the project. Based on initial estimates by Resource, the project budget will support the design and production of up to eight video segments, with a total time of approximately 15 minutes.

***Determined topics/Focus groups*** CATA and Research formed and conducted two separate public focus group sessions in early February to help identify the best 7-8 topics a short video would be most useful for. The idea was to use the video to help riders and potential riders be as comfortable as possible with using the services CATA offers. Those sessions identified several issues with the public sees as disincentives to using local transit. Trying to distinguish between the different fixed-route services CATA provides was hard-LOOPS, LINK, Centre Line, what did all of this mean? Traditional transit challenges like trying to understand the schedule were also noted. Then if you figure out when it comes how do you actually use it without looking stupid? Does the driver provide change and how will they know when I need off?

By the end of February, using that focus group data along with information gathered from drivers and staff, CATA identified the following topics where video could be most valuable. The first five addressed the identified disincentives while the last two addressed CATA's desire to promote it's recent conversion to a fully-accessible system (particularly with the introduction of it's new low-floor buses) and the recent installation of bicycle racks on all of it's buses:

1. ***Identifying Services:*** *A look at all of the services CATA provides to help riders quickly see the difference and identify which one, or ones, they need.*
2. ***Introduction to "Bus 101":*** *A light-hearted look at riders having problems. Intended to introduce the other five videos and encourage riders to view them in order to avoid those same problems.*
3. ***Reading your CATA schedule:*** *Follow the example through the basics steps of reading a schedule.*
4. ***Bus Riding Fundamentals:*** *Once you mastered the schedule, see how to identify your bus, board it, pay the fare and get off.*
5. ***Rider Etiquette:*** *See what's expected from you as a rider; common courtesies along with CATA policies.*
6. ***Accessibility for the Disabled:*** *A demonstration of the accessibility features on the different buses along with an overview of our complimentary paratransit service-Centre Ride.*
7. ***Use of Bicycle racks:*** *A step-by-step demonstration on just how easy it is to use the racks now installed on all CATA buses.*

***Develop Scripts*** Using CATA's existing public information on these topics, Resource staff drafted preliminary copy for each of the content subjects. After several meetings and revisions with CATA staff, copy was finalized in late April.

***Production of Video:*** With the scripts finalized, Resource staff began production of the video in May using CATA staff and drivers along with Resource staff as actors. By the end of May, Resource had finished the first draft of the video segments on VHS format for review and comment by our staff and Board of Directors.

***Enhance CATA's website so that it can host streaming video:*** While the video shots were being edited CATA staff worked with Resource to draft the format and content of the new website pages to display the streaming video. By the end of June a final draft of the website pages was produced for staff review. The upgrades and redesigns were accomplished in such a manner that the hosting and integrity of CATA's home page on its existing site was retained.

***Incorporate the video segments into the enhanced website:*** After a few minor changes to the final draft of the video segments, work began in July on formatting it as Streaming Video. During that time CATA staff finalized the structure and content of the website pages used to announce and host the video clips. In early August the pages and the Streaming Video clips were posted on CATA's website for viewing. After a few weeks of testing the videos were unveiled for public use with our updated website announcing the details of our annual service changes. (The videos were available just in time to be used by the many new potential riders arriving to the area for the beginning of the new Penn State school year.) The videos were then also provided to CATA on CD format so that they could be displayed locally on a PC without internet access.

***Market the video's availability as a means to learn more about CATA and how to use CATA services:*** In September CATA staff began evaluating options on how to most effectively market the Streaming Video option now available on our website and how to best utilize the available video footage that was created as part of the process. Starting in September staff also began integrating references to the Streaming Video in all CATA radio and print advertising. An article announcing the new feature was developed for the *CATA Log*, CATA's quarterly newsletter, which was distributed throughout our service area in mid-September.

In December CATA staff began working with Resource to develop an effective animated web graphic that can be used on websites to advertise the availability of our new Streaming Video clips. By the end of 2000 we finalized size and general content of an animated graphic suitable for posting not only on our site, but as a paid ad on other sites promoting the usefulness and effectiveness of these video clips.

The graphic was finished and posted on our site in late February 2001. By the end of February we had added several other versions of that graphic throughout our site as both advertisements and quick links to the videos.

In April staff developed a summary of the Demonstration Project to date. Then in May, working with Resource Communications, formal presentation materials were developed from that summary. The materials were then distributed in May at the Spring PPTA meeting in Grantville.

**4. RELATED ACTIVITIES:** While the development of the presentation materials in April and May exhausted the Demonstration Grant funding, two subsequent related activities were funded through CATA's marketing budget.

In June staff took the first steps towards enhancing the value of the captured video footage by making it available in a wider array of useful formats. That's when work began to reformat the existing seven Streaming Videos into "downloadable files." The Streaming Video section of CATA's website is

currently formatted solely for video streaming using the software plug-in Real Media Player. Offering the same video in a downloadable format will offer users another alternative should their internet connection not be stable enough for streaming media by offering the user the option of saving the file to their own PC and watching the video at their convenience. The new downloadable files will also be formatted so they can be viewed in either of the three readily available media player software-Real Media Player, Quick Time and Windows Media Player.

While the downloadable format expands the versatility of the existing video footage the actual size of the video picture displayed on your computer screen is still limited due to the fact that picture size is directly related to file size-the bigger the picture the bigger the file. While file size is less of an issue while streaming, it is a limiting factor on downloads. While each of these formats could be played at full screen, the quality of the video would be exponentially reduced. Therefore a "full screen" video is not practical in either of those formats. Currently CATA's only full screen format of the videos is the VHS tapes that were produced as part of the process. These are great for marketing outreach to a small group through a VCR and television. DVD-ROM has quickly become a cost-effective solution for offering multimedia for educational and outreach presentations. A DVD drive in a laptop or DVD player is capable of full-screen playback with tremendous quality. Another benefit to DVD is that it can be coded in a way where it can be presenter-controlled (customizing a presentation depending on the audience); user controlled (at kiosk or training event); or as a stand alone piece (looping each or all of the videos at a particular event). Therefore in June CATA also contracted with Resource to produce a DVD from the existing videos.

At the time of this final report the Downloadable files have been provided to CATA and could be available via CATA's website by the end of 2001. Progress on the DVD project has temporarily stalled and it is not known at this time whether we be able to complete that project.

## **5. EVALUATION:**

The project goal was two part:

- **Determine the feasibility of conveying transit information over the internet;**

Clearly it can be done. In this case the streaming media format is a valid format which is accepted and has been used by the majority of the internet community for some time now. At the time this project was started there were three limiting factors that needed to be considered-the budget, the actual size of the video within the user's monitor and the user's bandwidth.

The larger the size of the picture, the larger the file. While streaming the video makes file size a non-issue for the users, the file has to be stored or hosted somewhere. Unless you are hosting your own website and media files (not likely) then you are paying for storage by file size. We addressed this issue by keeping the picture size small, and therefore total file size to a minimum. This kept the total file size of our 7 videos below 30MB and our cost to store the videos at about \$60/month. By keeping the picture size small we also minimized potential problems by users with limited bandwidth connections, like modems. Smaller pictures also require less data to be transmitted through your connection and thereby fewer problems with lower bandwidth users.

The available budget allowed for about 15 total minutes of professionally designed and produced video. CATA staff drafted much of the script and provided "actors" for the video

shoots which allowed the grant resources to leverage as much professional design and production as possible. About 75% of the \$30,000 grant was used by Resource to design, produce and then format the video. Also, CATA was very careful selecting topics and then content, so that the final video product could be accurate and useful as long as possible. For example, the videos show where you can go on the bus but do not mention specific routes. The video also shows how to pay the fare but not how much the fare is.

Aside from the actual final video segments, the greatest value to CATA in that process was learning how the technologies work and then come together to make the whole thing happen. Since the project started two years ago, technology has advanced to the stage where someone with a digital camera/camcorder, a few hardware accessories and the right software can produce streaming video. Therefore, since the streaming format is operationally a clearly feasible method of conveying transit information, cost of production and then distribution become the issues. In CATA's case initial production cost were minimized by using CATA staff wherever possible and subsequent production cost were hopefully minimized by keeping the content as generic as possible while still useful. The value of the investment in the original video production was further enhanced by making sure the content was not internet specific making it flexible enough to be subsequently reformatted into outreach materials like VHS tapes and CD-ROM and/or DVD ROMs. In any case, with some training and the hardware and software noted above, the option now exists to dramatically reduce those production costs for future videos by bring the process in house.

- **Determine the degree to which the general public accepts this medium as a means to learn about, and then use, CATA;**

As noted earlier, the general public has already accepted streaming video as a medium to receive information. Due in some degree to the fact that CATA already had a well developed web presence and State College was already an on-line community, the use of streaming video via CATA's website to convey transit information has been a success. CATA has no data other than increased website visits to document it's video's usefulness. Use of CATA's website has increased dramatically over the last two years but so has ridership. Some of the videos are being viewed on CATA's website over 300 times a month. Although we receive comments via email and telephone, we have received few on the videos. Those few comments though, have all been very complimentary of both the concept and the content of the videos.

An overview of this project will be available in brochure format from CATA and PennDOT in January 2002. That overview along with this report is currently available on CATA's website at [www.catabus.com](http://www.catabus.com). Questions about the project or additional information is available by contacting:

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