Jennifer M. Granholm
GOVERNOR

STATE OF MICHIGAN
PUBLIC SERVICE COMMISSION
DEPARTMENT OF LABOR & ECONOMIC GROWTH
KEITH W. COOLEY
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CHAIRMAN

Monica Martinez
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COMMISSIONER

December 28, 2007

Honorable Jennifer M. Granholm
Governor of Michigan

Honorable Members of the Senate Energy Policy and Public Utilities Committee
Secretary of the Senate

Honorable Members of the House Energy and Technology Committee
Clerk of the House of Representatives

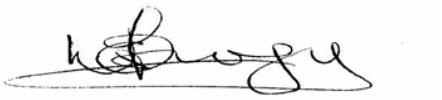
Pursuant to Section 315(13) of the Michigan Telecommunications Act (MTA), the Michigan Telecommunications Relay Center Advisory Board (MRC Board) submits the following report to the Governor and Legislature. This report includes information on the specific elements requested in the statute as well as other additional information that the MRC Board examined in order to provide a full and complete report. The report includes several attachments of relevant information referenced in this report.

The changing telecommunications industry presents unique challenges to Deaf/Hard of Hearing/Speech Impaired (D/HOH/SI) customers, whose service needs are specialized and can vary considerably even within similar sectors of the community. Different degrees of hearing loss and/or speech impairment may require very different technology solutions. This report has identified two main issues that face D/HOH/SI customers: equipment costs and a lack of information about available telecommunications services and equipment to assist the D/HOH/SI community.

While some members of the MRC Board would like to see changes to Michigan's equipment distribution program, the MRC Board is in agreement that it does not have any concrete evidence that changes are necessary and does not have any solid proposals before it to consider. While there are programs in other states that seem to have merit, the larger questions of what entity would administer any new program and where does the funding come from have not been answered. It is not within this Board's purview to make those types of decisions. What the MRC Board has done is compile a wealth of information on this issue to present to the Legislature for their consideration.

While all customers face what can be a confusing array of products and service providers, the specialized needs of D/HOH/SI customers and limitations that may exist in their ability to shop at retail outlets point to a need for a central source of focused information. Having a comprehensive list of products and services available from a trusted source, whether it's a state agency or non-profit organization, would help D/HOH/SI customers make informed choices. The MRC Board will work with the Michigan Public Service Commission (MPSC) to coordinate an effort that includes relevant state agencies (MPSC, Division of Deaf and Hard of Hearing, Department of Information Technology), representatives of the D/HOH/SI community and representatives of the telecommunications industry to designate a place where D/HOH/SI citizens can go to find information to assist them in purchasing telecommunications equipment and services. The MRC Board will continue to monitor these and other related issues on a going forward basis and bring to the attention of the Commission and Legislature any issues that may require legislative action.

Sincerely,



Orjiakor N. Isiogu, Chairman
Michigan Public Service Commission

Michigan Telecommunications Relay Center Advisory Board Report to the Legislature

January 2008

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Attachments:

Michigan Relay Center Advisory Board Members

- William Earl, representing Speech Impaired Consumers
- Richard Wolfe, Comcast, representing Telecommunications Providers
- Paul Fuglie, Verizon, representing Telecommunications Providers
- Diana McKittrick, representing Deaf Consumers
- Brenda Stimson Neubeck, representing Hard of Hearing Consumers
- Scott Stevenson, Telecommunications Association of Michigan, representing Telecommunications Providers
- David Piasecki, AT&T Michigan, representing Telecommunications Providers
- Orjiakor N. Isiogu, Chair and representing the Michigan Public Service Commission (part-year)
- Robin Ancona, Chair and representing the Michigan Public Service Commission (part-year)
- Vacancy - Director of the Division of Deaf and Hard of Hearing

Executive Summary

Pursuant to Section 315(13) of the Michigan Telecommunications Act (MTA), the Michigan Telecommunications Relay Center (MRC) Advisory Board (MRC Board) submits the following report to the Governor and Legislature. This report includes information on the specific elements requested in the statute as well as other additional information that the MRC Board examined in order to provide a full and complete report. The report includes several attachments of relevant information referenced in this report.

The number of citizens in Michigan with some amount of hearing loss appears to be significant. Although hard data is not available, based on the MRC Advisory Board's research it is reasonable to assume that there are approximately 90,000 Deaf and 800,000 Hard of Hearing citizens in Michigan. No estimates are available for the number of Deafblind or Speech Impaired. Since the elderly (65 years old or more) are eight times more likely to have hearing problems, it is also reasonable to expect that the Hard of Hearing segment of the population will grow as the baby boom generation ages.

There is no single definition of what it means to be Deaf, Deafblind, Hard of Hearing or Speech Impaired (D/HOH/SI) as there are various degrees of each condition. The result is that the telecommunications services and equipment best suited to an individual's specific degree of hearing loss can vary widely. An example is amplification equipment for the Hard of Hearing. There are so many different models because of the need to provide the specific frequency for which compensation is needed, and not just simply raise the volume.

In Michigan, there are resources available to the D/HOH/SI community to help with the purchase of equipment and services. The qualification requirements vary with each program.

The Federal Communications Commission (FCC) currently mandates and regulates Telecommunications Relay Service (TRS) and Video Relay Service (VRS) in all states. The

FCC has not mandated any type of equipment provisioning at the customer level nor made available any subsidization program for individual customer equipment. While the FCC requires carriers to provide access to Teletypewriter (TTY) services to all telephone customers, there is no provision for assisting customers in obtaining free or subsidized specialized equipment should their income be below a certain level. The FCC also does not currently mandate Captioned Telephone Service (CapTel).

In Case No. U-10210, the Michigan Public Service Commission (MPSC) approved the establishment of a discounted TTY equipment distribution program which is still in effect today. In Case No. U-14458 issued in March 2005, the MPSC approved the offering of CapTel service in Michigan. The service is free to the user and the equipment is available at a significant discount. CapTel is funded by all of Michigan's incumbent local exchange carriers and most of its competitive local exchange carriers.

It has been suggested that a significant impediment to access is the need for the D/HOH/SI to purchase additional specialized equipment to access telecommunications versus what the hearing population needs to purchase. There is clearly some equipment that is uniquely used by the D/HOH/SI to access telecommunications, *i.e.*, TTY's, specialized phones (Captel, Voice Carryover Calls (VCO), amplified, Braille, alerting devices, and large screen displays). In the past, these types of equipment represented the only way that the D/HOH/SI could access telecommunications. However, in the past decade, the evolution of the high-speed Internet and wireless networks, along with the use of PCs and wireless devices, have increased the options of how everyone communicates. It is not surprising that the D/HOH/SI communities are relying more and more on text messaging and video messaging telecommunications technologies. These new technologies provide many qualitative benefits to the D/HOH/SI. The equipment needed to use these new technologies is essentially the same for all users. In many cases the D/HOH/SI

can purchase the same PCs and wireless devices as the hearing, and benefit from the price competition in that marketplace.

The changing telecommunications industry presents unique challenges to D/HOH/SI customers, whose service needs are specialized and can vary considerably even within similar sectors of the community. Different degrees of hearing loss and/or speech impairment may require very different technology solutions. This report has identified two main issues that face D/HOH/SI customers: equipment costs and a lack of information about available telecommunications services and equipment to assist the D/HOH/SI community.

While some members of the MRC Board would like to see changes to Michigan's equipment distribution program, the MRC Board is in agreement that it does not have any concrete evidence that changes are necessary and does not have any solid proposals before it to consider. While there are programs in other states that seem to have merit, the larger questions of what entity would administer any new program and where does the funding come from have not been answered. It is not within this Board's purview to make those types of decisions. What the MRC Board has done is compile a wealth of information on this issue to present to the Legislature for their consideration.

While all customers face what can be a confusing array of products and service providers, the specialized needs of D/HOH/SI customers and limitations that may exist in their ability to shop at retail outlets point to a need for a central source of focused information. Having a comprehensive list of products and services available from a trusted source, whether it's a state agency or non-profit organization, would help D/HOH/SI customers make informed choices. The MRC Board will work with the MPSC to coordinate an effort that includes relevant state agencies (MPSC, DDHOH, DIT), representatives of the D/HOH/SI community and representatives of the telecommunications industry to designate a place where D/HOH/SI

citizens can go to find information to assist them in purchasing telecommunications equipment and services. The MRC Board will continue to monitor these and other related issues on a going forward basis and bring to the attention of the MPSC and legislature any issues that may require legislative action.

Introduction

The genesis of the Michigan Telecommunication Relay Center (MRC) Advisory Board (MRC Board) "Report to the Legislature" on the ability of Deaf, Hard of Hearing, and Speech Impaired (D/HOH/SI) customers to access telecommunications services can be found in Section 315(13) of the Michigan Telecommunications Act, which states:

> No later than January 1, 2008, the board shall conduct a study and report to the governor and the house and senate standing committees with oversight of telecommunication issues on the ability for deaf, hard of hearing, and speech-impaired customers to access telecommunication services. The report shall include, but is not limited to, activities by the commission to ensure reasonable access, impediments to access, identification of activities in other states to improve access, and recommendations for legislation, if any.

This statute enacted by the Michigan Legislature directs the MRC Board to assess not only activities undertaken by the Michigan Public Service Commission (MPSC) to ensure reasonable access to services but to examine impediments to access and to identify activities in other states to improve access. Further, the MRC Board is to provide recommendations, if any, to the legislature.

Although the statute identified certain specific areas to be addressed in the report, the legislature also noted that, "[T]he report shall include, but is not limited to, activities by the commission to ensure reasonable access…" Therefore, while all of the specific elements requested in the statute are addressed in this report, the MRC Board also considered other information that it determined should be examined in order to provide the legislature with a full and complete report.

As a result, the report includes additional sections that provide important information, about the D/HOH/SI communities, how they currently access telecommunications and what resources are currently available to them. The report also includes several attachments that contain detailed support for various information referenced in the report.

The section labeled “Description of the Deaf, Hard of Hearing and Speech Impaired in Michigan” includes information such as: the estimated population of the deaf and hard of hearing community, definitions of various levels of hearing loss, a description of the organizations that represent these groups and information regarding their culture.

The section labeled “Forms of Access,” along with the Attachment labeled “Forms of Access,” includes a significant amount of information regarding the various telecommunications services used by the D/HOH/SI communities. Included is information regarding how the services work, the availability of services, the cost of services, the equipment required, the cost of equipment, and some pros and cons for each. In addition the Attachment labeled “Descriptions & Prices of Various Equipment” is an extensive listing of equipment currently used by the D/HOH/SI community along with descriptions, prices and pictures.

The section on “Existing Resources” includes information regarding programs that are currently available in Michigan that provide financial or other assistance to members of the D/HOH/SI communities.

The section labeled “Other Activities” includes information about other events or technology changes that have recently occurred and that impact access.

The section labeled “Customer Survey” includes the findings of a survey of Michigan Deaf, Hard of Hearing and Speech Impaired customers conducted by the board for this report.

The report also includes an appendix. The descriptions are listed on the index. Included in the appendix is information that is referenced in the main body of the report.

Methodology Overview

This section provides a high level overview of the methodology and activities the board engaged in to complete this report. Additional detail regarding methodology is also contained in the specific sections of the report.

In approaching the task of completing the legislatively mandated report by January 1, 2008, the board initially drew upon the extensive experience and knowledge of its members. The MRC advisory board is comprised of nine members, four representing the Deaf, Hard of Hearing, and Speech Impaired communities, four from the telecommunications industry and one from the MPSC. The Board members are listed in the front of this report. In addition the board received extensive input and support from managers of the Michigan Relay Center, AT&T staff and MPSC staff.

The MRC advisory board sought out publicly available information such as reports, studies, surveys and descriptions of federal and state programs. In addition, the board also purchased Web access to information in a nationwide database (Telecommunications Equipment Distribution Program Association (TEDPA)) devoted to gathering information regarding state specific equipment distribution programs. The board also utilized the National Association of Regulatory Utility Commissioners (NARUC) as a vehicle to gather state specific information. The Telecommunications companies represented on the board that operate in other states were also used as a source of state specific information. The board also conducted a survey of the Michigan D/HOH/SI community as well as requesting input from the leaders of various organizations in Michigan that represent the D/HOH/SI communities.

A small working group was initially established and assigned the duty of gathering information. This group reported progress to the board at the first and second quarterly board meetings. After mid-year, the working group was expanded to include several board members as

well as additional MPSC staff. This group met regularly, reporting on the progress, identifying issues and additional information needs. The working group produced several drafts of the report, beginning in the fourth quarter, which were reviewed and revised by the board. The board approved the final version of the report at its December 10, 2007 board meeting. The result of all these efforts is reflected in this report.

Description of the Deaf, Deafblind, Hard of Hearing and Speech Impaired in Michigan

This section is intended to clarify what it means to be a member of the Deaf, Deafblind, Hard of Hearing and Speech Impaired communities. Included is information regarding population in Michigan, criteria used to define the different levels of hearing loss, culture and a listing of the formal advocacy organizations.

Deaf (D)

The term "Deaf" (with a capital 'D') refers to a group of people who share a language — American Sign Language (ASL) — and a culture.[1]

The deaf or hard-of-hearing population has been estimated by the National Center for Health Statistics (NCHS) of the U.S. Department of Health and Human Services (DOHHS). According to their 1990 and 1991 Health Interview Surveys, approximately 20 million persons, or 8.6 percent of the total U.S. population 3 years and older, were reported to have hearing problems. Of that amount 0.9% or 2.1 million persons were considered deaf.

A study entitled "Demographic Aspects of Hearing Impairment"[2] produced out of the Center for Assessment and Demographic Studies within Gallaudet University [3] includes the data from the DOHHS as well as data gathered from its student population. The information in the following two paragraphs is a summary of some of the information contained in this report.

Deaf need not be totally deaf. Since there is no legal definition of deafness comparable to the legal definition of blindness, 'deaf' and 'deafness' can have a variety of meanings. These

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[1] According to the author of Deaf in America: Voices from a Culture, "The members of this group have inherited their sign language, use it as a primary means of communication among themselves, and hold a set of beliefs about themselves and their connection to the larger society."

[2] http://gri.gallaudet.edu/Demographics/factsheet.html

[3] Gallaudet University is the world leader in liberal education and career development for deaf and hard-of-hearing undergraduate students. The University enjoys an international reputation for the outstanding graduate programs it provides deaf, hard-of-hearing, and hearing students, as well as for the quality of the research it conducts on the history, language, culture, and other topics related to deaf people.

can include: completely deaf in both ears, cannot hear or understand any speech, or at best, can hear & understand words shouted in the better ear. Note that the percentage of deaf people from the study quoted above of 0.9% includes all three of these definitions of deafness.

The elderly are more likely than any other age group to have hearing problems. Persons 65 years and older are eight times more likely to have some hearing loss than persons 18-34 years old. Specifically, 3.4 percent of the population ages 18-34 have hearing loss, compared to 29.1 percent of the population 65 and older.

More current national population estimates for the Deaf and Hard of Hearing than the 1991 NCHS study could not be found. No credible population estimates could be found for the Deafblind or the Speech Impaired.

No state specific or local estimates of the hearing impaired populations were available because the sample households in the NCHS national surveys were not selected to be representative of states and localities. This is unfortunate, since the allocation of resources and administration of services for this population are generally at the state and local level. In addition, it was found that the U.S. Bureau of the Census has not included a question on hearing impairment since 1930, and no plans have been announced to include a question in the future.

The Hearing Loss Association of Michigan Web site does report that 1.4M out of 9.3M Michigan residents have a hearing loss, or 15% of the Michigan population. The source of this estimate was not available. For purposes of this report, we believe it is reasonable to assume that somewhere between 9% and 15% of the Michigan population are affected by some degree of hearing loss.

Since actual state specific data was not available, the Division on Deaf and Hard of Hearing (DODHH) in the Michigan Department of Labor and Economic Growth developed an estimate. They used 2005 Michigan population data from the Census and the 1991 NCHS

estimates of the percent deaf and percent hard of hearing. The results of this analysis indicate that given Michigan's total population of 10.1 million, 8.6 percent or 867,000 people would be expected to have experienced some hearing loss. They further estimate that of these 867,000 people in Michigan approximately 1 per cent or 91,000 are Deaf. The 776,000 would be classified as Hard of Hearing. This analysis was repeated for each county in Michigan. A breakdown of the total population, and estimates of those with hearing loss by county is included as Attachment A.

The Deaf community is represented by the following organizations:

- Michigan Deaf Association (MDA)
- Michigan Deaf and Hard of Hearing Coalition
- Division on Deaf and Hard of Hearing
- EHDI (Early Hearing Detection and Intervention)

Deafblind (DB) [4]

Deafblindness is sometimes known as dual sensory impairment or multi-sensory impairment and is more than a combination of visual and hearing impairments. Deafblind people may not be totally deaf and totally blind. Some, though, have nearly complete loss of both senses. As with the word "Deaf," it can be capitalized to indicate that it is a culture; some prefer the spelling "Deafblind." Deafblind people have an experience quite distinct from people who are only deaf or only blind.

The Deafblind communicate in many different ways determined by the nature of their condition, the age of onset, and what resources are available to them. For example, someone who grew up deaf and experienced vision loss later in life is likely to use sign language (in a

[4] Information obtained from the following Web sites: http://www.deafblind.com/ and http://en.wikipedia.org/wiki/Deafblindness.

visually-modified or tactual form). Others who grew up blind and later became deaf are more likely to use a tactile mode of their spoken/written language. Methods of communication include:

- Use of residual hearing (speaking clearly, hearing aids) or sight (signing within a restricted visual field, writing with large print).
- Tactile signing – sign language or a manual Tactile signing — sign language or a manual alphabet such as the American Manual Alphabet, or Deafblind Alphabet (also known as "two-hand manual") with tactile or visual modifications.
- Interpreting services (such as sign language interpreters or communication aides)
- Communication devices such as Tellatouch.

No population estimates were found for the Deafblind.

The Deafblind are represented by the following organizations:

- Self Help for Independence Equals Deafblind (SHIM=DB)
- Michigan Deaf and Hard of Hearing Coalition
- Division on Deaf and Hard of Hearing

Hard of Hearing (HOH)

The term "hard of hearing" (HOH) refers to those who have a hearing loss but not so severe as to be classified as Deaf. The HOH have some hearing, are able to use it for communication purposes, and feel reasonably comfortable doing so.

As described above the number of people classified as Hard of Hearing are estimated to be seven times as large as the Deaf population. Obviously the degree of hearing loss can vary significantly for this group and thus the services and equipment used by this group to access telecommunications also varies significantly.

The Hard of Hearing are represented by the following organizations:

- Hearing Loss Association of Michigan (HLA)
- AGBell Michigan Chapter
- Michigan Deaf and Hard of Hearing Coalition
- Division on Deaf and Hard of Hearing
- EHDI (Early Hearing Detection and Intervention)

Speech Impaired (SI)

Speech Impaired. Speech and language impairments are defined as disorders of articulation, fluency, voice and language that interfere with communication, preacademic or academic learning, vocational training or social adjustment. People with cerebral palsy, multiple sclerosis, muscular dystrophy, Parkinson's disease, and those who are coping with limitations from a stroke or traumatic brain injury may have speech disabilities.

The American Speech-Language-Hearing Association (ASHA) notes the following:

> Effective communication skills are central to a successful life for all Americans. Communication disorders greatly affect education, employment, and the well-being of many Americans. Due to an apparent paucity of published data and peer-reviewed survey studies, it is difficult to assess the aggregate number of individuals in the U.S. who have speech, voice, and/or language disorders.[5]

According to the National Institute on Deafness and Other Communication Disorders, approximately one of every six Americans experiences some form of communication disorder. Some speech and communication problems may be genetic. Often, no one knows the causes. By first grade, about five (5) percent of children have noticeable speech disorders. Speech and language therapy can help.

In order to improve the quality of Telecommunication Relay Services, the FCC mandated that Speech-to-Speech (STS) Relay service be made available by March 2001. STS Relay provides access to telecommunications for some people who are speech impaired and would

[5] Source: http://www.asha.org/members/research/reports/speech_voice_language.htm.

otherwise not have an opportunity to make a phone call. ASHA notes that although STS is not heavily utilized, it is used and appreciated by the speech impaired.

There are many groups that have some affiliation with speech impaired. Some of these include:

- American Speech Language and Hearing Association
- Michigan Speech Language and Hearing Association
- United Cerebral Palsy
- American Parkinson's Disease Association
- National MS Society
- The ALS Association
- Spasmodic Dysphonia Association
- National Aphasia Association

Forms of Access

In the previous section we explored what it means to be Deaf, Deafblind, Hard of Hearing or Speech Impaired. Since the purpose of this report is to assess the ability of the D/HOH/SI to access telecommunications services, in this section we look at how access to telecommunications is currently accomplished.

This section of the report includes a brief description of the most common services in use today by people with hearing loss to access telecommunications. Attachment B includes other relevant information about each service, such as:

- The level of hearing loss for which it is appropriate.
- Any specialized equipment that is required.
- The estimated costs for the service and or equipment if any.
- A list of providers for each service in Michigan.
- A list of pros and cons regarding each service.

Also included, as a reference, is Attachment C, which is an extensive listing of various equipment used by people with hearing loss, including descriptions, prices and pictures.

The devices and services described in this section, and in the two attachments, range from the very basic Tele Typewriter (TTY) and Telephone Relay Service (TRS) to more recent innovations such as Video Relay, Internet Relay (IP Relay), Captioned Telephone Service (CapTel) and Instant Messaging (IM) services.

Telecommunications Relay Service (TRS)

With traditional TRS, a person with a hearing or speech disability uses a special text telephone, called a TTY (*see* Attachment C), to call a communications assistant (CA) at the relay center. TTYs have a keyboard and allow people to type their telephone conversations. The text is read on a display screen and/or a paper printout. A TTY user calls a TRS relay center and types the number of the person he or she wishes to call. The CA at the relay center then makes a

voice telephone call to the other party to the call, and relays the call back and forth between the parties by speaking what a text user types, and typing what a voice telephone user speaks.

Traditional relay service has significantly declined over the past five years. Per the MRC's most recent annual report, traditional relay calls have dropped almost 38%, from over 1.6M in 2001 to about 1.0M in 2006. This is consistent with a national trend and is due to the increased availability of alternative forms of access, which do not have some of the drawbacks of Traditional TRS. Some also believe that a wireline based TRS service is necessary to assure access to E911 in an emergency.

Voice Carryover Calls (VCO)

A voice carryover call (VCO) is a special type of relay call made by using the traditional TRS relay service. This is most appropriate for use by persons with a hearing loss who speak in a way that is easily understood. They use a special VCO phone (*see* Attachment C) when they call the relay center. In a VCO call the calling party's voice is heard by the called party but the called party's voice is translated to text by the relay center CA and shows up on the calling party's VCO phone.

Hearing Carryover Calls (HCO)

A hearing carryover call (HCO) is another special type of relay call made by using the traditional TRS. This service can be used by the speech impaired who have the ability to hear and also the ability to type. A special HCO phone (*see* Attachment C) is used to place a call to the relay center. This device allows the caller to type their message, which is translated by the CA and relayed to the called party by the CA's voice. The calling party then hears the called party's response through the HCO phone.

Video Relay Service (VRS)

Video Relay Service (VRS) is an Internet-based form of TRS which allows persons whose primary language is American Sign Language (ASL) to communicate with the CA in ASL. The VRS caller, using a television or a computer with a video camera device and a broadband (high speed) Internet connection, contacts a VRS CA, who is a qualified sign language interpreter. They communicate with each other in sign language through a video link. The VRS CA then places a telephone call to the party the VRS user wishes to call. The VRS CA relays the conversation back and forth between the parties — in sign language with the VRS user, and by voice with the called party. No typing or text is involved. A voice telephone user can also initiate a VRS call by calling a VRS center.

Internet Protocol (IP) Relay Service

Today TRS users are only a mouse click away from a new TRS option called Internet Protocol (IP) Relay. IP Relay is accessed using a computer and the Internet, rather than a TTY and a voice line. Individuals who use IP Relay do not need to invest in a TTY; they simply use the computer to communicate by text. When conversing over IP Relay, people who are Deaf, Hard of Hearing, or have difficulty speaking can participate in a conference call or go online while holding a conversation. The first leg of an IP Relay call goes from the caller's computer, or other Web-enabled device, to the IP Relay Center via the Internet. The IP Relay Center is usually accessed via a Web page. The caller types in the number they would like to call on the screen. After the connection is made, the caller types their conversation, which is read by a CA. The second leg of the call, as with traditional TRS, is from the CA to the receiving party via voice telephone, where the CA voices what the caller has typed. The CA then types the response of the receiving party, which is read by the caller on their screen.

Captioned Telephone Service (CapTel)

CapTel or captioned telephone service is used by persons with a hearing disability but who have some residual hearing. It is an excellent alternative for people who can hear most of a phone conversation but sometimes miss a word or a number. Research indicates this is a much desired service in many states. It targets the much larger and growing Hard of Hearing population. CapTel allows people to receive written word-for-word captions of their telephone conversations. The user can read the words for clarification while listening to the voice of the other party. CapTel phone users place a call in the same way as dialing a traditional phone. As they dial, the CapTel phone (*see* Attachment C) automatically connects to a captioning service. When the other party answers, the CapTel phone user hears everything that they say, just like a traditional call. Behind the scenes, a specially trained operator at the CapTel Captioning Service transcribes everything the called party says into written text, using the very latest in voice-recognition technology. The use of voice recognition software results in dramatically increasing the speed of captioning versus traditional CA translating, as is done on VCO calls. The written text appears on a bright, easy-to-read display window built into the CapTel phone. The captions appear almost simultaneously with the spoken word, allowing the CapTel phone users to understand everything that is said — either by hearing it or by reading it.

Instant Messaging Service (IM)

Instant Messaging (IM) is a form of real-time communication between two or more people based on typed text. This is a relatively new technology/service that has been very popular with teenagers for several years. The text is conveyed via computers connected over a network such as the Internet. Instant Messaging (IM-ing) requires an instant messaging client, (*i.e.*, Yahoo!, MSN, AOL etc.) that connects to an IM service. IM-ing differs from e-mail in that conversations happen in real-time. You can IM with anyone on your buddy list or contact list as

long as that person is online. Each person types messages to the other person into a small window that shows up on both parties' screens.

Text Messaging Service

Text Messaging or Short Message System (SMS), or **texting** is the common term for the sending of "short" (160 characters or fewer) text messages, using the Short Message Service, from mobile phones. It is available on most digital mobile phones and some personal digital assistants with onboard wireless telecommunications. The most common application of the service is person-to-person messaging, but text messages are also often used to interact with automated systems, such as ordering products and services for mobile phones, or participating in contests.

Speech to Speech Relay Service (STS)

Speech to Speech Relay (STS) enables persons with a speech disability to make telephone calls using their own voice (or an assistive voice device). STS CAs are specially trained in understanding a variety of speech disorders, which enables them to repeat what the caller says in a manner that makes the caller's words clear and understandable to the called party. Often people with speech disabilities cannot communicate by telephone because the parties they are calling cannot understand their speech. People who stutter or have had a laryngectomy may also have difficulty being understood. A STS user would call the traditional relay center by dialing 711 and indicate they wish to make an STS call. The user is then connected to an specially trained STS CA who will repeat the speech impaired persons spoken words, making the spoken words clear to the other party. Persons with speech disabilities may also receive STS calls.

SITRIS

SITRIS is a Web assisted technology designed to allow people who have a variety of speech impairments to make standard telephone calls without the need for an AAC

(Augmentative Assistive Communications) device or any specialized software. Using SITRIS, a SI person can make calls to any phone: fixed or mobile from any Internet access point. The Web interface uses a text-to-speech engine to speak into the telephone; the user clicks on their personal stored phrases or types what they want to say while on the call. SITRIS text-to-speech voices are based on real people and offer the user the option to add emotional content. Located on the SITRIS servers, there is no delay; the response while on a call is instant. SITRIS can be used at home, at work, and in any Wi-Fi zone. It can be used to leave voice mail messages, order products and services, arrange meetings at work, and take part in conference calls. SITRIS can also be used locally through PC speakers to chat one to one.

Existing Resources in Michigan

This section includes information about existing financial resources that are available to members of the D/HOH/SI communities in Michigan. Contact information for all organizations and resources cited in this report are included in Attachment D.

Michigan Assistive Technology Loan Fund (ATLF)

The Michigan Assistive Technology Loan Fund allows people with disabilities and seniors (or their family members) to purchase assistive technology devices or services, including modification of vehicles and homes. Loans may also cover cost of training to use the purchased equipment, warranties, and service agreements. Assistive technology is defined as any item, piece of equipment, or device that enables an individual with a disability to improve individual independence and quality of life.

The Michigan Assistive Technology Loan Fund was established by the Michigan Disability Rights Coalition (MDRC) through a grant from the National Institute on Disability and Rehabilitation Research (NIDRR). MDRC joined with United Cerebral Palsy of Michigan, the Option 1 Credit Union and disability organizations throughout the state to offer this innovative program. Applicants must meet credit requirements established by the ATLF.

Michigan Association for Deaf and Hard of Hearing (MADHH)

MADHH provides Equipment Demonstration/Rental and Sales of AudioLoop Systems, Personal FMs, Audiovisual FM system, Text Teletype (TTY), Amplified Telephones, Flashing Smoke Detectors, Telephone Amplifiers, Door Alerts and Baby Cry Alarms through its Rental and Sales Programs.

MADHH also provides Equipment Distribution with Lions, a collaborative program with Lions Clubs throughout Michigan to distribute telecommunication devices, alerting devices and hearing aids to individuals who demonstrate financial and physical needs. Lion's funding ability

varies by chapters throughout the state. Some have adequate funds to honor requests, while others do not.

Michigan Rehabilitation Services

Michigan Rehabilitation Services' mission is to assist persons with disabilities to achieve employment and self-sufficiency. They collaborate with the disability community, business, education and human service partners to create inclusive opportunities so that all persons with disabilities have the choice to engage in meaningful work and enjoy independence.

Accommodations are provided during the rehabilitation process as well as working with prospective employers to provide hearing assistive devices for Deaf, Hard of Hearing and Speech Impaired populations seeking and maintaining employment. Retirees and seniors are generally ineligible for this program.

Michigan TTY distribution program

All basic local exchange providers in Michigan are required to provide TTYs to eligible customers at cost. AT&T's vendor currently offers a basic TTY for less than $200 and an advanced TTY for about $400. A two-year payment plan is also available. In addition the vendor is also offering, at cost, two models of amplified corded phones, a Caller Identification Display (CID) with speaker phone, an amplified cordless phone with CID and an amplified phone with talking CID & keyboard.

Michigan CapTel

On July 1, 2006, AT&T began offering CapTel service in Michigan which is available to all its customers. CapTel phones are provided for a limited time only for just $99 (normally a retail value of $495). This offer comes with a 90-day trial period, which guarantees that if the customer is not entirely happy with CapTel, the phone can be returned within three months for a full refund. CapTel became available in Michigan as a result of a MPSC order issued in 2005

that approved an application by the MRC Board to offer CapTel service in Michigan for use by hard of hearing individuals. Michigan residents interested in the CapTel service or products can call toll-free 1-800-233-9130 (V/TTY) or visit: http://www.weitbrecht.com/statecaptel/MI.phtml.

Lifeline Service

Lifeline service is a telephone assistance program available to qualifying low-income Michigan residents. All local wireline telephone service providers in Michigan are required to provide Link-Up and Lifeline. Link-Up reduces the installation charge for phone service by 50%, up to $30. Lifeline provides a monthly discount toward basic local wireline telephone service. For eligible low-income customers under age 65, the average monthly discount is about $10. Additional discounts apply for those who are 65 or older or those on federally recognized Tribal Land. Customers may be eligible if their household income is equal to, or lower than 150% of the federal income poverty level or if they participate in any of the following programs: Food Stamps, Medicaid, Low-income Home Energy Assistance Program, Supplemental Security Income, National School Free Lunch Program, Federal Public Housing, Family Independence Program, Bureau of Indian Affairs General Assistance Program, Head Start (income-qualified only), or Tribally Administered Temporary Assistance for Needy Families. Currently, the 150% of the federal income poverty level equals $15,315 for a one-member household; $20,535 for a two-member household; and for each additional household member, add $5,220. Customers interested in qualifying for Lifeline should contact their local telephone company to apply.

Activities by the Michigan Public Service Commission to Ensure Reasonable Access

Section 315 of the MTA directs the MRC Board to report on activities previously taken by the MPSC to ensure reasonable access. The MRC Board reviewed all previous MPSC orders on this issue. In 1990, the Commission established a single state-wide relay system but rejected the idea of a free equipment distribution system for the deaf at that time. In 1992, the MPSC further ordered that all local carriers provide for the distribution of text-telecommunications devices at cost to eligible customers. The most recent action by the MPSC in 2005 allowed the use of Captioned Telephone Service to enhance access by hearing impaired and handicapped individuals to switched telecommunications networks.

In its March 13, 1990 order in Case No. U-9117, the MPSC required telephone companies to establish a single, statewide relay system that would permit reasonable access to the state's switched telecommunications network for persons who are hearing or speech impaired. The MPSC ordered Michigan Bell Telephone Company (now AT&T Michigan) to take the lead in instituting the relay system, and provided mechanisms to fund its operation. The relay system is funded by all of Michigan's incumbent local exchange carriers and most of its competitive local exchange carriers.

In the 1990 order, the MPSC rejected the idea of free distribution of text-telecommunications devices for the deaf. At that time, the MPSC stated that system users (Deaf/Hard of Hearing/Speech Impaired customers) should provide their own customer premises equipment, as do other users of the public switched network (telecommunications network).

At their October 9, 1992 meeting, the MRC Board recommended that the MPSC issue an order directing the implementation of a program to distribute Telecommunications Devices for the Deaf (TDDs). In addition, the board recommended that any options or additional features

above the cost of the minimum features be the purchaser's responsibility. The MRC Board also recommended that each Local Exchange Carrier have an alternative TDD model available at the lowest reasonable cost under the same payment plan to individuals who cannot afford the full-featured model.

In its November 6, 1992 order in Case No. U-10210, the MPSC ordered that the MRC Board recommendations regarding the implementation of a program to distribute text-telecommunications devices be adopted and that each provider of basic local exchange service implement a program to distribute text-telecommunications devices. This program is currently active.

At their March 17, 2005 meeting, the MRC Board submitted an application to allow the current telecommunications relay system (TRS) provider, AT&T Michigan, the ability to offer enhanced access to switched telecommunications networks through the use of Captioned Telephone Service (CapTel) for the hearing impaired.

On June 30, 2005, the MPSC issued an order in Case No. U-14458, which allows the use of Captioned Telephone Service to enhance access by hearing impaired and handicapped individuals to switched telecommunications networks.

A review of recent FCC orders related to TRS and similar services shows that the FCC primarily deals with the availability of services for the hearing impaired and not end user equipment. The FCC has not mandated any type of equipment provisioning at the customer level nor made available any subsidization program for individual customer equipment. For example, while the FCC requires carriers to provide access to TTY services to all telephone customers, there is no provision for assisting customers in obtaining free or subsidized specialized equipment should their income be below a certain level.

Attachment E is a description of past actions taken by the FCC regarding the assurance of access to telecommunications by the D/HOH/SI communities.

Activities in Other States to Improve Access

Overall Findings

The MRC Board's research indicated that two of the most actively discussed enhancements in other states with regard to improving access to telecommunications services for those with a hearing loss were Captioned Telephone Service (CapTel) and Equipment Distribution Programs (EDPs). Since Michigan has already implemented the CapTel service, the focus of the MRC Board's further research was on the EDPs in other states.

Methodology

The MRC Board availed itself of the resources of its Board member from the Michigan Commission on Disability Concerns and Division on Deaf and Hard of Hearing (MCDC/DODHH) as well as MPSC staff to obtain information from the Web site of Telecommunications Equipment Distribution Program Association (TEDPA),[6] an organization that specializes in telecommunication equipment distribution programs for persons with disabilities. TEDPA conducts national surveys, and maintains data from states that have telecommunications equipment distribution programs and that participate in providing the information to TEDPA. The TEDPA data base had Web links to information for 30 states. TEDPA also listed some information for 10 other states such as "No Distribution Program" or TTY program or a phone number contact. With TEDPA as a starting point, DODHH obtained information from the Web site links as well as from calls to the listed phone number contacts of states currently offering EDPs. The board also purchased a membership to TEDPA in order to gain access to additional information. DODHH then compiled the data in a matrix form and shared it with the board. In total, the DODHH analysis identified and was able to gather specific

[6] http://www.tedpa.org/

data on 16 states that have an EDP. The DODHH analysis also identified another 10 states that appear to have an EDP but were only able to obtain partial data from those states.

It appeared that the TEDPA data did not capture all the states that had EDP programs, because not all states provided data to TEDPA. As a result, a questionnaire was also sent to members of the NARUC, a non-profit organization that includes governmental agencies that are engaged in the regulation of utilities and carriers in the 50 states, requesting information regarding an equipment distribution program in their state. Twelve states submitted responses to the survey with two stating they had no EDP program. One additional state, New York, was identified as having an EDP program, although very few details were provided. It appeared to be a voluntary program set up by the ILEC for qualifying low income users.

Some additional research was done using contacts within the telecommunications industry which identified two more states, Virginia and Georgia that also have an EDP program.

Although the MRC Board was not able to find any single definitive source to determine exactly how many other states have an EDP, based on the research of the MRC Board, it was able to identify 29 states that appear to have some type of equipment distribution program (EDP).

Summary of State EDP Findings

A summary matrix showing key information for the 29 states referenced above is included as Attachment F. Below is a narrative summary of the major findings of the MRC Board's research of other states EDP programs. There are some commonalities among the state programs, but also many differences.

Establishment Dates – The EDPs identified in this analysis were primarily established during the 1980s and 1990s. The oldest was Connecticut in 1974 and the most recent was North Carolina in 2000.

How Established – In 94% of the 16 states that provided this information, EDPs were created as a result of legislative action. In some states, legislative action is required to make changes to the programs.

Administration and Oversight – In most programs, the state is very involved in both administration and oversight. State commissions are usually charged with the creation of a set of administrative rules governing the program. Public Utility Commissions are generally involved in the oversight of the program in the form of an annual audit or annual report. In some cases, there is also an advisory board of some kind involved in the process.

In some states, an outside, non-profit organization, chosen by the state and/or the advisory board, is designated as the administrator of the program. The administrator's responsibilities can include processing applications, distributing program benefits, and working with equipment vendors. Generally, the existing TRS provider is not the administrator. In some states, the state also acts as the administrator.

Types of Programs – Loan and vouchers are the two main types of programs. Some programs purchase equipment and then loan it out, with the state maintaining ownership. Others offer vouchers that qualified applicants can use to purchase equipment from approved vendors. Some programs offer both vouchers and loans. About half the states used loans and the other half had some form of program that results in customer ownership of the equipment.

Eligibility – Just about all states require proof of a hearing impairment and proof of residency. Having a landline phone is also a requirement in 50% of the states. Also 40% of states add a minimum age limit (*i.e.*, 3-6 years or more) and 40% set limits on income similar to lifeline requirements.

Benefit Limits – Program benefits are generally limited to only one piece of equipment every few years. In some cases, the applicant is responsible for a co-payment. Seventy-eight percent (78%) of the programs had some form of benefit limits.

Eligible Equipment – Some states offer a broad range of eligible equipment. Others offer a limited number of basic units. Wisconsin offers a voucher program with graduated benefit based on the degree of disability. Based on the survey, the most common (50% or more offered) categories of eligible equipment included: Amplified Phones, Cordless Phones, CapTel phones, In-Line Amplifiers, Speech Devices, TTYs, HCO phones, VCO Phones, Large Visual Displays, Braille Phones and Alerting Devices.

Training Available or Required – All states required or provided training regarding the proper use of the equipment.

Program Size – Information regarding program size, in terms of the annual budget, was not available in most cases. Data regarding program size was either provided or estimated based on public data for 10 of the states. Based on the MRC Board's research, the programs studied range in size from $200,000 in Indiana and Pennsylvania to $6 or $7 million in California and Illinois.

Funding – About half of the programs are funded with a surcharge on landline phones. The other half are funded either through a surcharge or tax on all telecommunications connections (*i.e.*, wireless, VOIP, cable). Three states funded their EDP through the states general fund. Although information regarding surcharge size was not explicitly available in many cases, based on the MRC Board's research it appears that the amount of the monthly surcharge necessary to fund these programs, if all connections were included, would generally range from about $.01 to $.03. If only wirelines were surcharged, than the range would be from $.02 to $.08. The surcharge amounts depend on the number of connections that are surcharged

as well as the program size, which is dependent on the scope of the EDP program, the eligibility requirements and the number of beneficiaries.

EDPs in Illinois, Indiana and Wisconsin

In the course of the research it was discovered that equipment distribution programs currently exist in Illinois, Indiana and Wisconsin, but not in Ohio. Since these are nearby Mid-west states, the MRC Board decided to take a closer look at the programs in these states. More in-depth information was gathered regarding these programs from MRC Board members who had personal experience with these programs or had contacts with telecommunications companies that operated in these states. These three states are good examples of three very different EDPs.

Illinois

The EDP in Illinois was established in 1988 through a legislative amendment to the Public Utilites Act. The act required that the Illinois Commerce Commission (ICC) amend the Illinois administrative code to define the rules of the program. Illinois has a total population of over 13 million with an estimated one million having some degree of hearing loss. The ICC appointed the Illinois Telecommunications Access Corp. (ITAC), a non-profit corporation, to administer the program. The program is governed by the ICC, the ITAC board of directors and an advisory council. An annual report to the ICC is required. Legislation is required to make a change to the program.

Funding and Program Size – The program is funded by a $0.06 per line surcharge on all basic landlines. A rate equal to one fifth of the basic rate or $0.012 is assessed on Centrex stations and five times the basic rate or $0.30 is assessed on all PBX trunks. The surcharge is subject to adjustment each year based on the annual filing with the ICC. Wireless, cable and VOIP providers are not currently subject to the surcharge. Based on Illinois ILEC and CLEC

line counts from public FCC reports (7.5 million), it is estimated that the annual program size is in the area of $7 million.

Eligibility – A customer must be an Illinois resident, have a working landline phone, and be certified as Deaf, Hard-of-Hearing, Speech-Disabled or Deafblind. There are no income or age restrictions.

Program Type and Eligible Equipment – The program allows for both vouchers and loans depending on the type of equipment. Vouchers are given for TTYs and amplified phones. Equipment available for loan is limited to CapTel phones, Braille Phones and TTYs with Large Video Display (LVD). For the ITAC Loan Program, ITAC owns and provides normal upkeep of the equipment. The Loan program covers repair and exchange services under circumstances of normal wear and tear. Any damage to equipment deemed to be "user abuse" is charged back to the user. The voucher program benefits are limited to one piece of equipment every four years.

Vendors and Selection Centers – Several vendors are approved by ITAC. There are also multiple section centers throughout the state that allow for testing and fitting equipment. These centers are generally the result of the state partnering with an existing social services center.

In addition to the Illinois EDP, financial assistance for the hearing impaired is available from the Illinois Assistive Technology Program (ITECH). It is a non-profit organization using grants from the Federal Department of Education as well as receiving dollars from a variety of state programs, such as the Department of Human Services and Rehabilitation services. This program is similar to the Michigan Assistive Technology Loan Fund.

Indiana

The Indiana EDP was enacted in 1996 through amended legislation to utilize the TRS surcharge at the sole discretion of Indiana Telephone Relay Access Corporation (InTRAC) to provide telecommunication devices to hearing impaired and speech-

impaired persons. The InTRAC is a not-for-profit corporation created by legislation and administered by the Board of Directors of the InTRAC. The Board of Directors of the InTRAC consists of seven (7) directors selected as follows: (A) Six (6) directors elected by the LEC members of the InTRAC; and (B) The director of the state office of deaf and hearing impaired services. An annual report to the Governor, General Assembly and IURC is required. Indiana has a total population of over 6 million and an estimated one-half million with hearing loss.

Funding and Program Size – The portion of total TRS funding that is directed to the EDP is estimated to equal about a $.002 per connection surcharge on all landlines and wireless phones. Based on Indiana's connection counts for ILECs, CLECs and wireless of about seven million, it is estimated that the annual program size is in the area of $200,000.

Eligibility – To qualify, an applicant must be a state resident and certified as Deaf, Hard of Hearing or Speech Impaired. Indiana also has an annual household income limit of $65,000, based on state median income, and a minimum age requirement of six years of age.

Program Type and Eligible Equipment – It is a 100% loan program. The eligible equipment to be distributed is limited to five items: a TTY (Ultratec 4425), an amplified phone (Uniphone 1140), a VCO phone (Dialogue VCO), a D-Link & router, and a CapTel phone. Also offered is training and instructions on the equipment through local agencies. Replacement is only available when equipment stops functioning.

Vendors and Selection Center – Several vendors are approved.

Wisconsin

In the early 1990s, Wisconsin Association of the Deaf supported a deaf advocate group to promote discussions with the state regarding the implementation of a distribution or voucher program. Persons with mobility or speech limitations were not represented at these

implementation meetings. This advocacy group presented data to the Public Service Commission of Wisconsin (PSCW) and the Universal Service Fund Council (USFC) that showed the costs of various types of specialized equipment necessary for these individuals to use the telephone system. The PSCW and the USFC approved the creation of the Telephone Equipment Purchase Program (TEPP). The 1993 Wisconsin Act 496 authorized the PSCW to start collecting funding for the Universal Service Fund in 1994. (Sec. 196.218, Wis. Stats.) The USF funds the TEPP as well as several other programs. The purpose of TEPP is to help people with disabilities buy specialized equipment they need in order to use basic telephone services.

The Universal Service Fund Council (USFC) advises the PSCW on matters related to the development and administration of the USF programs. They set the budget and the benefit levels. The USFC is required to have a majority of consumer representatives and the disabled community has always had at least one representative on the USFC. The PSCW staff keeps all the records and conducts audits of the programs. The PSCW hired an outside vendor to verify and process certifications and issue vouchers.

Wisconsin has a total population of about 5.5 million and an estimated one-half million with hearing loss.

Funding and Program Size – TEPP is funded by a portion of the USF funding assessments. Assessments to individual companies are calculated by multiplying the assessment rates times qualifying revenues. The amount to be collected may be adjusted to address over or under collection in the prior period. Mid-budget adjustments may be made to reallocate revenues between programs or program costs to correct for projected shortfalls and surpluses.

The most current budget for TEPP is estimated in the area of $2 million annually. Based on Wisconsin ILEC and CLEC line count of 3.3 million, it is estimated that the $2 million annual program cost translates to a cost of approximately $.05 per line per month.

Eligibility – The applicant must be a Wisconsin resident with a certified disability. There is no age or income limit for TEPP, but an individual can only get a voucher once every three years for the same disability.

Program Type and Eligible Equipment – Wisconsin's EDP is a 100% voucher program.[7] Wisconsin consumers own the equipment they purchase with a voucher. Voucher categories and Maximum Benefits amounts are listed in the table below. These amounts are set by the USFC and may be adjusted based on changes in the cost of equipment. For Hard of Hearing there is a maximum limit of $125 every three years. For all other levels of hearing loss, there is a $100 co-pay. If an eligible applicant cannot afford the $100 co-pay, then there is a supplemental program called the Telecommunications Assistance Program (TAP). TAP is a program of the Office for the Deaf and Hard of Hearing. TAP is limited to persons in the categories of Deaf or severely hard of hearing and must reside in a low income household.

Maximum Benefits:

H – Hard of Hearing (voucher maximum $125 and no co-payment required)
D – Severely Hard of Hearing or Deaf (voucher maximum $800; TAP eligible)
S – Speech Impaired (voucher maximum $1,600)
M – Mobility Impaired or Motion Impaired (voucher maximum $1,600)
L – Severely Hard of Hearing or Deaf **and** Low Vision (voucher maximum $2,500; TAP eligible)
B – Severely Hard of Hearing or Deaf **and** Blind (voucher maximum $7,200; TAP eligible)

Eligible Equipment –

Vouchers can be used to purchase the following types of equipment: [8]

- TY
- Amplified phone or handset
- TTY with Braille or large visual display
- Special modem
- VCO or HCo phone

[7] TEPP general information http://psc.wi.gov/thelibrary/publications/asstPgms/telecom17.pdf
[8] Equipment information http://psc.wi.gov/consumerinfo/assistancePgms/tepp/teppSpecEquip.htm

- Hands-free speaker phone
- Puff activator
- Phone signaling system
- Visual alert system
- Other specialized equipment as approved on an individual basis

Vendors – In Wisconsin, consumers can order equipment from local and out of state vendors, however, all vendors must meet TEPP vendor guideline.[9] Consumers choose the equipment with the guidance of the vendor. The consumer buys the equipment with a voucher and the TEPP reimburses the vendor.

[9] Wisconsin vendors http://psc.wi.gov/apps/tepp_vendors/default.aspx

Other Activities to Improve Access

On April 24, 2007, The Hearing Loss Association of America reached a consensus agreement with the wireless industry on increasing the accessibility of wireless telephones. Over the next few years, wireless providers will increase equipment options that offer more access to those with hearing loss by being hearing-aid-compatible (HAC), as well as working with cochlear implants and telecoils. This agreement is important as it was achieved without federal oversight. It is hoped that this cooperative effort will give consumers more choice in features, price and styles, keeping the technology fresh and new for consumers.

FCC Notice of Proposed Rulemaking: Hearing Aid Compatibility Requirements

On November 7, 2007, in its second Report and Order and Notice of Proposed Rulemaking, the FCC addressed two outstanding issues and requested input on several proposed changes to its hearing aid compatibility requirements. These rules are designed to ensure that persons with hearing disabilities have full access to digital wireless services.[10]

The FCC tentatively concluded that it should adopt a number of proposed rule changes set forth by representatives of the wireless industry and the Deaf and Hard of Hearing Communities in a "Joint Consensus Plan" submitted to the FCC in June 2007. The proposals in the Joint Consensus Plan include new requirements and deadlines for offering hearing aid-compatible handsets. This includes modifications to the current February 18, 2008 benchmark regarding the number of hearing aid compatible handsets that must be offered.

In addition, the Joint Consensus Plan recommends that the FCC: 1) require wireless operators and manufacturers to include in their portfolio of hearing aid-compatible handsets a certain number of new models and models with different levels of functionality, 2) adopt the

[10] WT Docket Nos. 01-309 and 07-250, FCC 07-192

2007 version of the ANSI (American National Standards Institute) technical standard, and 3) impose new reporting obligations. The FCC's intent is to issue a Report and Order in advance of the February 18, 2008 benchmark, but stayed enforcement of that benchmark until April 18, 2008 in order to provide advance notification to manufacturers and service providers of revised requirements.

In addition, the Notice sought comments on the following issues:

- If hearing aid compatibility requirements continue to be effective in the rapidly-evolving wireless marketplace with new technologies and services.
- Whether the FCC should require independent cell phone retailers, those not owned or operated by wireless carriers, to make hearing aid-compatible phones available to consumers for in-store testing.
- Whether the FCC should change the de minimis exception, which exempts wireless service providers and equipment manufacturers that offer two or fewer digital handset models (per air interface) from the hearing aid compatibility rules.

The last two issues are the topic of renewed comments as the FCC reviewed the record compiled since 2005 and had decided not to change those rules based on the record.

FCC Report and Declaratory Ruling: Compensation of TRS Providers

In this Report and Declaratory Ruling (CG Docket No. 03-123, FCC 07-186, adopted 10/26/07), the FCC adopted new rate recovery methods for a variety of services available to members of the Deaf, Hard of Hearing and Speech Impaired Communities. The Multi-state Average Rate Structure Plan will more fairly reimburse providers, offering a predictable, fair and reasonable rate structure for services such as Video Relay, speech-to-speech services and TRS. The FCC also directed additional funding for outreach efforts to this underserved community.

Customer Survey

The MRC Board decided that as part of its research for this report it should gather input directly from the public. In an attempt to do that, a survey was conducted. A 24-question survey was developed through a joint effort of the MRC Board members and their staff. The survey was made available on a Web site that is designed for this purpose. Through various outreach efforts, the members of the board and staff that represent the hearing impaired community made it known to the hearing impaired community that the survey was online and they encouraged participation. In addition to being available in written form online, a video was made of the survey questions in ASL (American Sign Language) which was also available online. Finally, the survey was made accessible for Deafblind computer equipment.

The survey was made available in an online version for two months, September and October. A total of 228 responses were received.[11] An equal number of responses were not received for all questions. The results of the survey questions are included as Attachment G, Sheet 1.

A summary of some of the general results regarding the respondents:

- 61% were 50 or older.
- 67% had some college or more.
- 67% were from either a one or two person households.
- About 42% were hard of hearing, 48% deaf, 8% speech impaired and 2% Deafblind.
- 25% used TTYs, 22% Video Relay, 19% an amplification device, and 9% CapTel.
- 70% used a mobile device.
- 87% used their communications two or more times per day.
- 63% believed they were familiar with their rights to accessible communications and 72% were familiar with the organizations that represent them in Michigan.
- 73% purchased their equipment.
- 47% purchased equipment online or through a catalog versus 41% at a retail store.
- 65% said it is important to have access to telecommunications everywhere.
- 59% said they were satisfied with their current access to telecommunications.

[11] During that period there were 341 visits to the Zoomerang Web site, with 113 completed surveys. In addition we received 115 written survey responses which have been added to the on-line results.

- 68% said that more equipment options and more showrooms to test equipment would increase their level of satisfaction.
- 53% said they spent $100 or less on specialized telecommunications equipment in the past 12 months.
- 26% said they spent $100 or less in the last 5 years while 31% said they spent more than $500 in the last 5 years.
- 67% were aware of agencies in their area that provide services to the D/HOH/SI.
- 74% said they were not familiar with any programs that are available to help finance specialized telecommunications equipment.
- However, 67% said they were familiar with the discounted payment plan through the phone company.
- 85% have never been a resident of a state that had an equipment distribution plan (EDP).
- For those that were residents of a state that had an EDP, 52% said it enhanced access and 48% felt it did not.

In addition to the survey responses, Attachment G, Sheets 2-4, also includes optional comments submitted by 34 of the online responsdents and 35 of the written respondents. A few of the more common themes were:

- Need for more information regarding what services or programs are available. (*i.e.*, CapTel, etc.)
- Need more information regarding available equipment and a convenient way to try it out. There are many equipment options but difficult to choose.
- Cost is an issue for low income users. (*i.e.*, equipment and high-speed Internet)
- Benefits should be based on ability to pay.
- Hearing aid compatible cell phone not available from all providers. Also need basic models without all the extra features.

Impediments to Access

The Board solicited input from Deaf, Deafblind, Hard of Hearing and Speech Impaired advocates in the form of letters explaining the challenges and needs within these Communities.

The Michigan Coalition for Deaf and Hard of Hearing People expressed concern over the cost of affordable access, with basic equipment such as amplified telephones costing three to five times the price of a non-amplified telephone.

The Michigan Commission for the Blind acknowledged the difficulty of addressing all the challenges facing their constituents in a letter, but also focused on the cost of communication devices. Additional costs for large print screens and Braille output equipment add an additional $150 over the cost of a traditional TTY.

The Michigan Deaf Association, Inc. highlighted the need for high-speed Internet for home use of video phones and that the cost of broadband service is more than many deaf individuals can afford. Another primary concern was that TTY telephone devices are not readily accessible in public areas such as libraries, malls, governmental offices and expressway emergency telephones. Also mentioned was the concern that 911 calls go unanswered because dispatch operators hang up when they hear TTY noise. The Michigan Deaf Association emphasized it is not asking for a "Cadillac" solution to telecommunication access, but does support any attempt to improve access.

The full text of all letters received by the Board may be found in Exhibit H.

Available Information and Customer Education

Shopping for and selecting telecommunications equipment and services is becoming increasingly challenging as competition and technology have transformed the industry. This is true for all customers, whether they are D/HOH/SI or not. Rather than a negative, however, more choices and new technologies are a very positive development for customers. The services

offered today provide affordable means of communication to the D/HOH/SI community that did not exist just a few years ago.

Still, the specialized needs of D/HOH/SI customers require a particularly high level of knowledge of available options. It is very often not possible or practical for D/HOH/SI customers to shop for telecommunications services the way other customers do. Walking into the local retail outlet and querying the sales staff about features, pricing, and service plans when the staff people are not able to communicate with D/HOH/SI customers represents a significant obstacle in the purchase process.

Based on the research conducted by the Board, there does not seem to be a centralized source of consumer information aimed at D/HOH/SI customers that highlights the pros and cons of various service and technology choices. If a state agency or one of the organizations that represent D/HOH/SI customers were to work with the industry to create a comprehensive source of customer information, available both online and through other means, it would allow D/HOH/SI to make informed choices about the many options that are available today and will become available in the future.

Current Services are not sufficient to meet the needs of the D/HOH/SI

Currently, traditional TRS and VRS and Hearing aid compatible (HAC) wireless phones are regulated by the FCC. TRS and VRS are free services available to Deaf, Deafblind, Hard of Hearing and Speech Impaired persons in Michigan. Hard of hearing persons have access to compatible phones and, in some cases, will have to purchase the phone as well as a monthly service package.

Additional telecommunications services available at the state level in Michigan are CapTel and an equipment distribution program available to AT&T customers. The CapTel service is free and the CapTel phone is currently offered in Michigan for $99. It is unknown

when the CapTel equipment vendor may return to the normal price of $500. AT&T has made available, at cost, several TTYs and amplified telephones. Customers make their choice and the item is billed to their phone service without any interest rate.

The above services are not sufficient to meet the needs of Deaf, Deafblind, Hard of Hearing, and Speech Impaired populations. As communications technology advances, it is important that people with hearing loss not be left behind. Telecommunications devices are critical for home, community, workplace, and especially for emergency situations. A good example is the struggle hard of hearing people have accessing wireless phones that will work with their hearing aids. Recently, the Hearing Loss Association of America achieved an agreement with the wireless industry to ensure that at least 50% of their wireless products be hearing aid compatible (http://www.hearingloss.org/advocacy/index.asp). It is a start, but still not equal access. TTYs are outdated technology and many Deaf people are using computers to have faster access to telecommunications. One would question if it is fair to limit them to TTYs. Deaf, Deafblind, Hard of Hearing and Speech Impaired populations want to have the same access to communicating, have several options to choose from a vendor and be able to make an informed choice. One size does not fit all.

Example of typical services and equipment used by the D/HOH/SI

It has been proposed that an impediment to access for the D/HOH/SI is that these individuals are required to purchase additional specialized equipment to have the same access to telecommunications as the hearing. The following is a listing of the types of services and equipment that would be used by a typical D/HOH/SI person at home, at work and on the road.

Deaf

At Home:

- Some (mostly older generation Deaf) would have a TTY and use TRS.
- Younger generation Deaf download TTY software on their PC through services like nextalk.com to use TRS.
- Deaf people utilize Instant Messenging for one on one conversations, group chat, as well as Internet relay.
- Many Deaf people today use VRS with a video phone or a PC equipped with a camera and high-speed Internet access. Some may use both.
- Handheld pagers such as Blackberry and Sidekicks are used at home. Internet Relay through handheld pagers and PC are used at home as well.
- Visual and tactile alerting devices.

On the Road:

- Typically would have a cell phone using text messaging, e-mail and Instant Messaging.
- Deaf people can also access Internet relay on their hand-held pagers.
- They can also access a TTY on their handheld pagers if they downloaded the software on their device.
- Some may use mobile TTY device.

At Work:

- Visual and tactile alerting devices.
- Depending on the job, Deaf people can request to have a videophone installed at their place of employment per the ADA.
- Some people do have access to a TTY at work.
- Most Deaf people have communication access at work through their handheld pagers.
- Computers where they can access Internet Relay or Video Relay through their PC.

Hard of Hearing

At home:

- Amplification device.
- CapTel (may require installation of second telephone line).
- VCO phone.
- TTY, Uniphone.
- Visual and tactile alerting devices.
- Computer for Instant Messaging and e-mail.
- Hand held pagers or cell phone for text messaging and e-mail.

On the road:

- Cell phone with amplification device (neckloop).
- Device for Text Messaging, e-mail, and Instant Messaging.

At work:

- TTY
- Uniphone
- Amplified telephone
- VCO phone
- CapTel (May require installation of second telephone line.)
- Wireless device.
- Visual and tactile alerting devices.

Deafblind

At home:

- CapTel with USB to use LVD (May require installation of second line.)
- Braille TTY, large print TTY
- Computers with large print
- FSTTY (Freedom Scientific TTY)
- Screen Braille Communicator
- VRS with LARGE monitor or large screen TV
- Computer with large print program (Zoomtext, MAGic, etc.)

On the road:

- FSTTY or Screen Braille Communicator;
- Braille TTY
- Large print TTY
- Computer with large print program (Zoomtext, MAGic, etc.)
- Some can use handheld pager/text messenger device with large print

At work:

- CapTel with USB for LVD (May require installation of second line.)
- Braille TTY, large print TTY
- Computers with large print
- FSTTY or Screen Braille Communicator; Braille TTY
- Large print TTY
- Computer with large print program (Zoomtext, MAGic, etc.)
- Some can use handheld pager/text messenger device with large print

Speech Impaired

At home:

- STS relay, SITRIS

On the road:

- STS relay, SITRIS

At work:

- STS relay, SITRIS

Findings and Conclusions

The D/HOH/SI community – The number of citizens in Michigan with some amount of hearing loss appears to be significant. Although exact data is not available, based on the MRC Board's research it is reasonable to assume that there are approximately 90,000 Deaf and 800,000 Hard of Hearing citizens in Michigan. No estimates are available for the number of Deafblind or Speech Impaired. Since the elderly (65 years old or more) are eight times more likely to have hearing problems, it is also reasonable to expect that the Hard of Hearing segment of the population will grow as the baby boom generation ages.

There is no single definition of what it means to be Deaf, Deafblind, Hard of Hearing or Speech Impaired, as there are various degrees of each condition. The result is that the telecommunications services and equipment best suited to an individual's specific degree of hearing loss can vary widely. An example is amplification equipment for the Hard of Hearing. The reason there are so many different models is the need to match the specific frequency to the compensation needed, and not just simply raising the volume.

Communications Options – The D/HOH/SI have many more communications options available to them today than they did just a decade ago. Fortunately, many of the services and equipment required for these new options are either provided at no charge to the D/HOH/SI user, are available at a discount, or are similar in cost to what is paid by a hearing user.

Traditional TTY based relay service (TRS) has historically been the primary means used by the Deaf to access telecommunications services. In the last decade however, the popularity of Video Relay Service (VRS) from a home computer or a unit provided by a vendor with a high-speed Internet connection has increased significantly and has resulted in the significant decline in usage of TRS. Both the Video Relay Service and the related equipment are provided to the VRS user at no charge. In addition, several other new technologies, such as IP relay and Instant

Messaging from a home computer and text messaging from a wireless mobile device, have provided the Deaf with additional options for accessing telecommunications. Instant Messaging and text messaging are services that are also extensively used by the hearing population and require essentially the same equipment.

For people who are moderately Hard of Hearing, TRS service using a Voice Carryover Phone (VCO) has historically been a practical telecommunications option. This service however, has the undesirable requirement of a third-party CA, as well as the delay in the manual transcription of one side of the conversation. Depending on the degree of hearing loss, other options for the Hard of Hearing, such as an amplification device, may be all that is needed to use telecommunications services. CapTel service is a very popular new service that is targeted to the moderately hard of hearing, *i.e.*, those only needing help understanding some parts of conversations. This service is preferred over VCO in that the person can both hear the response of the called party and, at the same time, can read it from a display to verify any part of the conversation that was unclear. Although a third-party CA is still required, their presence is far less noticeable than with tradition relay.

The Board had only limited success obtaining information regarding the Speech Impaired (SI) community. Although no specific population estimates were found, based on available data regarding the total number of Americans affected with some form of communications disorder, it is reasonable to expect that the size of the SI population in Michigan is roughly the same as the Deaf population, about 1% or 100,000 people.

According to the past president of the Michigan Speech-Language Association, although STS relay service is currently not heavily utilized, it is a valuable and appreciated resource for

the SI community. In a recent FCC order[12] regarding TRS and Speech-to-Speech Services one of the key findings was the need to increase consumer awareness of the critical but underutilized STS service.

Existing Resources – In Michigan, there are resources available to the D/HOH/SI community to help with the purchase of equipment and services. The qualification requirements vary with each program. The Michigan Assistive Technology Loan Fund provides assistive technology loans to financially qualified applicants. The Michigan Association for the Deaf and Hard of Hearing provides equipment demonstrations, rentals, sales and grants for equipment to qualified low income applicants. Funding for this program varies throughout the state. Michigan Rehabilitation Services provides hearing assistive devices for applicants seeking employment. The Michigan TTY equipment distribution plan provides TTYs and amplified phones to customers at cost with long term payment plans. Finally, the federal and state Lifeline program is available to all Michigan landline customers who meet the low income requirements. The benefits can range from a $10 to $12 per month reduction in their phone bill.

MPSC and FCC Activities – The FCC currently mandates and regulates TRS and VRS in all states. The FCC has not mandated any type of equipment provisioning at the customer level nor made available any subsidization program for individual customer equipment. While the FCC requires carriers to provide access to TTY services to all telephone customers, there is no provision for assisting customers in obtaining free or subsidized specialized equipment should their income be below a certain level. The FCC also does not currently mandate CapTel.

The MPSC issued an order in 1990 that established TRS in Michigan and as such currently regulates the service. The MPSC has ruled on the EDP issue on two prior occasions. In Case No. U-9117, the MPSC rejected the idea of a free TTY distribution, ruling that the

[12] CG Docket No. 03-123, Order Released November, 19, 2007.

D/HOH/SI should provide their own customer premises equipment, as do other users of the public switched network. In a subsequent proceeding, Case No. U-10210, the MPSC approved the establishment of a discounted TTY equipment distribution program which is still in effect today. In Case No. U-14458 issued in March 2005, the MPSC approved the offering of CapTel service in Michigan. The service is free to the user and the equipment is available at a significant discount. CapTel is funded by all of Michigan's incumbent local exchange carriers and most of its competitive local exchange carriers.

Activities in other states – The MRC Board could find no definitive source regarding how many states have established EDPs. However, the MRC Board was able to gather basic details about existing EDP programs in 16 states. For 13 other states, there appears to be EDP programs, however, not enough information was available to confirm. Based on the Board's research, it is reasonable to assume that about half the states have an EDP program and half do not. The existing programs vary widely in key areas such as: administration, eligibility requirements, funding, costs and benefits. Only one state, North Carolina, has implemented an EDP since 1998. The EDPs in the states that currently have them were primarily established in the 1980s and 1990s, prior to the emergence of significant competition in the telecommunications area.

Other activities – Due to the extensive use of wireless devices by those with hearing loss, cell phone compatibility with amplification and other devices has become a significant national issue. The customer survey identified concerns regarding cell phone compatibility as well as the lack of availability of basic cell phone models that were compatible with hearing aids. As discussed in the "Other Activities" section, the FCC has recently opened a docket to investigate hearing aid compatibility requirements. The wireless industry has also recently come to an agreement with the Hearing Loss Association on a similar issue regarding cell phone

compatibility with hearing amplification devices. This issue is clearly considered to be a significant impediment by the hearing loss community and is being reviewed on the national level.

Customer Survey – The respondents to the customer survey were primarily over 50 years old and college educated. There was roughly equal representation from the Deaf and the Hard of Hearing communities. Generally, they were from small households of two or less. Usage of TTYs, VRS and amplification devices ranged from 19% to 25%. By far the most used telecommunication device for this group, at 70%, was mobile wireless. Usage for this group was relatively normal with 87% making two or more calls per day. Three-quarters (73%) purchased their own equipment, split about equally between retail and catalog or online. Equipment for the other 27% was obtained through their employer, rehabilitation services or other programs. Although 59% said they were satisfied with their current access to telecommunications, the majority (87%) said that more equipment options, more training and more showrooms to test the equipment would increase their satisfaction. Most (74%) were not familiar with any of the currently available programs to help finance the purchase of equipment, with the exception of the discounted TTY equipment program offered through the local phone companies. Spending on specialized equipment was relatively low. About half (53%) spent less than $100 on specialized equipment in the last year and only 31% spent more than $500 over the past five years. Most (85%) had never lived in a state that had an EDP. For those that had, about half said it enhanced access and half felt that it did not.

The survey also allowed the respondents to add any additional comments. Confirmed in these comments was the significant need for more information about available programs, services, equipment and places to try them out. Hearing aid compatibility with cell phones also

surfaced as a concern. Finally, as expected, the cost of equipment and high-speed Internet access is a key issue for the low income segment of this group.

The MRC Board acknowledges that the survey results may not meet the tests of statistical significance. The survey was simply an attempt to get input directly from the D/HOH/SI communities in addition to the input that was provided by the members of these communities that are on the MRC Board and heading the various local organizations that represent these groups. The customer survey results do not indicate any consensus regarding a critical need for any change to Michigan's current EDP. As with any group, there are people in the low income category that are in general need of financial assistance. As described in the report there are some resources available to this group today for the specific purpose of purchasing communications equipment. If it was determined that the needs of this low income group were not being met by currently available programs, then it would be appropriate to explore a modest, and targeted expansion of Michigan's existing program.

Impediments – It has been suggested that a significant impediment to access is the need for the D/HOH/SI to purchase additional specialize equipment to access telecommunications versus what the hearing population needs to purchase. There is clearly some equipment that is uniquely used by the D/HOH/SI to access telecommunications, *i.e.*, TTYs, specialized phones (Captel, VCO, amplified, Braille, alerting devices, and large screen displays). In the past, these types of equipment represented the only way that the D/HOH/SI could access telecommunications. However, in the past decade, the evolution of the high-speed Internet and wireless networks, along with the use of PCs and wireless devices, has increased the options of how people communicate. It is not surprising that the D/HOH/SI communities are relying more and more on text messaging and video messaging telecommunications technologies. These new technologies provide many qualitative benefits to the D/HOH/SI. The equipment needed to use

these new technologies is essentially the same for all users. In many cases the D/HOH/SI can purchase the same PC's and wireless devices as the hearing, and benefit from the price competition in that marketplace.

Recommendations

D/HOH/SI customers in Michigan have expressed a variety of opinions regarding their telecommunications needs. As is the case for all telecommunications customers, there is no "one-size-fits-all" solution that would meet the personal needs and preferences of each and every D/HOH/SI customer. Fortunately, technological advances and vigorous competition in the telecommunications industry are providing innovative, affordable services that D/HOH/SI customers can take advantage of. The evidence provided in this report shows that many customers are choosing new technologies causing the number of users of Michigan's traditional TRS system to steadily decline.

The changing telecommunications industry presents unique challenges to D/HOH/SI customers, whose service needs are specialized and can vary considerably even within similar sectors of the community. Different degrees of hearing loss and/or speech impairment may require very different technology solutions. This report has identified two main issues that face D/HOH/SI customers: equipment costs and a lack of information about available telecommunications services and equipment to assist the D/HOH/SI community.

According to the results of both state-to-state surveys and surveys of Michigan customers, there is not a single equipment distribution program that is widely accepted as the model that D/HOH/SI customers support. About half of the states appear to have some form of a distribution program, but those programs vary considerably in their scope. Michigan's existing law that requires certain equipment to be made available at cost is a variation of an equipment distribution program, but it appears to be funding a technology that is of declining usefulness to the D/HOH/SI community. Michigan customers also have access to loan, grant and rental programs for certain equipment and all low-income customers can qualify for discounted telephone service plans through the federal and state Lifeline program. With currently popular

technologies like Instant Messaging (available for free with a high-speed Internet connection) and Text Messaging, many D/HOH/SI customers can take advantage of services that allow them to interact with other customers with no special equipment or intermediaries' necessary. Also, the availability of inexpensive "Webcams" allows for video communications that add an important new dimension to the telecommunications experience of D/HOH/SI customers.

While some members of the MRC Board would like to see changes to Michigan's equipment distribution program, the MRC Board is in agreement that it does not have any concrete evidence that changes are necessary and does not have any solid proposals before it to consider. While there are programs in other states that seem to have merit, the larger questions of what entity would administer any new program and where the funding would come from have not been answered. It is not within this Board's purview to make those types of decisions. What the MRC Board has done is compile a wealth of information on this issue to present to the legislature for their consideration.

The same surveys cited above, as well as recent activities of the FCC, do indicate a real need for improved access to information about telecommunications services and equipment, particularly features that are important to D/HOH/SI customers. While all customers face what can be a confusing array of products and service providers, the specialized needs of D/HOH/SI customers and limitations that may exist in their ability to shop at retail outlets point to a need for a central source of focused information. Having a comprehensive list of products and services available from a trusted source, whether it's a state agency or non-profit organization, would help D/HOH/SI customers make informed choices. The MRC Board will work with the MPSC to coordinate an effort that includes relevant state agencies (MPSC, DODHH, DIT), representatives of the D/HOH/SI community and representatives of the telecommunications industry to designate a place where D/HOH/SI citizens can go to find information to assist them

in purchasing telecommunications equipment and services. The MRC Board will continue to monitor these and other related issues on a going forward basis and bring to the attention of the Commission and legislature any issues that may require legislative action.

Attachment A

Estimated Deaf/Hard of Hearing Populations by Michigan Counties
February, 2005

This information was calculated based on information from the U.S. Department of Health and Human Services as well as the U.S. Census Bureau's annual population estimates for the year 2003. Deafness was calculated at .9% of the United States Population while Hard of Hearing was calculated at 7.7%. Hearing Loss is a total of Deafness and Hard of Hearing. These percentages were then applied to each county in the state of Michigan to give an estimate of how many individuals in each category could be expected in these populations based on the national percentages.

Location	Population	Hearing Loss	Deaf	Hard of Hearing
Michigan	10,079,985	866,879	90,720	776,159
County				
Alcona	11,572	995	104	891
Alger	9,767	840	88	752
Allegan	110,331	9,488	993	8,495
Alpena	30,781	2,647	277	2,370
Antrim	24,094	2,072	217	1,855
Arenac	17,309	1,489	156	1,333
Baraga	8,782	755	79	676
Barry	58,774	5,055	529	4,526
Bay	109,452	9,413	985	8,428
Benzie	17,078	1,469	154	1,315
Berrien	162,766	13,998	1,465	12,533
Branch	46,414	3,992	418	3,574
Calhoun	138,854	11,941	1,250	10,692
Cass	51,385	4,419	462	3,957
Charlevoix	26,712	2,297	240	2,057
Cheboygan	27,405	2,357	247	2,110
Chippewa	38,822	3,339	349	2,989
Clare	31,589	2,717	284	2,432
Clinton	67,609	5,814	608	5,206
Crawford	14,808	1,273	133	1,140
Delta	38,317	3,295	345	2,950
Dickinson	27,186	2,338	245	2,093
Eaton	106,197	9,133	956	8,177
Emmet	32,741	2,816	295	2,521
Genesee	442,250	38,034	3,980	34,053
Gladwin	26,939	2,317	242	2,074
Gogebic	17,329	1,490	156	1,334
Grand Traverse	82,011	7,053	738	6,315
Gratiot	42,501	3,655	383	3,273
Hillsdale	47,230	4,062	425	3,637
Houghton	36,249	3,117	326	2,791
Huron	35,216	3,029	317	2,712
Ingham	282,030	24,255	2,538	21,716
Ionia	63,573	5,467	572	4,895
Iosco	26,888	2,312	242	2,070
Iron	12,787	1,100	115	985
Isabella	64,663	5,561	582	4,979

Jackson	162,321	13,960	1,461	12,499
Kalamazoo	242,110	20,821	2,179	18,642
Kalkaska	17,177	1,477	155	1,323
Kent	590,417	50,776	5,314	45,462
Keweenaw	2,227	192	20	171
Lake	11,795	1,014	106	908
Lapeer	91,314	7,853	822	7,031
Leelanau	21,860	1,880	197	1,683
Lenawee	100,786	8,668	907	7,761
Livingston	172,881	14,868	1,556	13,312
Luce	6,919	595	62	533
Mackinac	11,470	986	103	883
Macomb	813,948	70,000	7,326	62,674
Manistee	25,317	2,177	228	1,949
Marquette	64,616	5,557	582	4,975
Mason	28,685	2,467	258	2,209
Mecosta	41,728	3,589	376	3,213
Menominee	25,084	2,157	226	1,931
Midland	84,492	7,266	760	6,506
Missaukee	15,189	1,306	137	1,170
Monroe	150,673	12,958	1,356	11,602
Montcalm	62,926	5,412	566	4,845
Montmorency	10,492	902	94	808
Muskegon	173,090	14,886	1,558	13,328
Newaygo	49,271	4,237	443	3,794
Oakland	1,207,869	103,877	10,871	93,006
Oceana	28,074	2,414	253	2,162
Ogemaw	21,792	1,874	196	1,678
Ontonagon	7,571	651	68	583
Osceola	23,509	2,022	212	1,810
Oscoda	9,461	814	85	728
Otsego	24,268	2,087	218	1,869
Ottawa	249,391	21,448	2,245	19,203
Presque Isle	14,286	1,229	129	1,100
Roscommon	26,230	2,256	236	2,020
Saginaw	209,327	18,002	1,884	16,118
St. Clair	169,063	14,539	1,522	13,018
St. Joseph	62,864	5,406	566	4,841
Sanilac	44,583	3,834	401	3,433
Schoolcraft	8,772	754	79	675
Shiawassee	72,543	6,239	653	5,586
Tuscola	58,382	5,021	525	4,495
Van Buren	78,210	6,726	704	6,022
Washtenaw	338,562	29,116	3,047	26,069
Wayne	2,028,778	174,475	18,259	156,216
Wexford	31,251	2,688	281	2,406

Division on Deaf and Hard of Hearing
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Attachment B

FORMS OF ACCESS

Telecommunications Relay Service (TRS)

TRS is a telephone service that allows persons with hearing or speech disabilities, to place and receive telephone calls by having a third party; Communications Assistants (CA), transmit and translate the call.

How it works – With traditional TRS, a person with a hearing or speech disability uses a special text telephone, called a TTY, to call a communications assistant (CA) at the relay center. TTYs have a keyboard and allow people to type their telephone conversations. The text is read on a display screen and/or a paper printout. A TTY user calls a TRS relay center and types the number of the person he or she wishes to call. The CA at the relay center then makes a voice telephone call to the other party to the call, and relays the call back and forth between the parties by speaking what a text user types, and typing what a voice telephone user speaks.

Most appropriate for – Deaf to severely Hard of Hearing. The user must have reasonably good typing and reading skills to benefit from this service.

Equipment needed – TTY or other text input device, such as a Personal Computer with the appropriate simulation software.

Availability – TRS is required by the Federal Communications Commission. AT&T has provided TRS service to all residents in Michigan through its Michigan Relay Center (MRC) since 1990.

Costs – Traditional relay service is free to the user. It is jointly funded by all landline carriers. The cost of a TTY device varies from $250 - $700 retail. Landline carriers are required by commission order to provide TTYs to their customers at cost.

Pros **–**

- Local calls are free to the user of TRS. Long Distance calls are rated at based on the customers Long Distance service carrier.
- TTY's are available at cost in Michigan per commission order from $200 - $400 and includes the option of a 24-month payment plan.
- TRS can be accessed from a personal computer with free TTY simulation software that is available online.
- TRS does not require access to the internet.
- TRS can be accessed remotely using a portable TTY device or Pocket Speak for cordless phones. This is mainly used by Voice Carryover call users**.**

Cons **–**

- A third party call assistant (CA) is needed to complete a TRS call. Although there are strict FCC requirements regarding the CA confidentiality and performance, some people are not comfortable with this arrangement.
- There is a slight delay in response time between both parties due to the difference in speaking speed versus the CA's transcription speed. Another cause for delay can be that some users do may forget that GA (which stands for "go ahead"), needs to be typed when they are finished speaking to alert the other party that they can now respond.

Traditional relay service has significantly declined over the past five years. Per the Michigan Relay Center's most recent annual report, traditional relay calls have dropped almost 38%, from over 1.6M in 2001 to about 1.0M in 2006. This is consistent with a national trend and is due to the increased availability of alternative forms of access, which do not have some of the drawbacks of Traditional TRS.

The following excerpt from an article on i711.com describes the decline in TTYs. (emphasis added)

> *I remember my first TTY. It looked more like a typewriter than a phone that would enable me to communicate with the outside world. Over the years, I upgraded to smaller versions, including a portable one that's been collecting dust in my closet for years. It's not alone; many of its counterparts are meeting similar fates.*
>
> *Stacey Carroll's TTY could start a self-help group with mine. The Holden, Massachusetts resident hasn't taken hers out of the closet in over a year. Her initial excitement at getting a TTY dissipated over the years as she found the TTY to be slow and cumbersome. And advanced phone systems like automated menu options have made using the relay service frustrating.*

*'This is why I began to use **email** and now the **online relay services**, which I find to be much faster and easier to navigate,' says Carroll. Internet relay also has **free long distance,** a feature that helps explain its popularity.*

Carroll's TTY might be called out of retirement in case of an emergency, she says, but only if the Internet wasn't available and she had to make a phone call. The odds of that happening are probably pretty slim.

*All the other existing technologies are also more portable and versatile. With the advent of **wireless text pagers, PDAs, internet relay websites, and even two-line VCO** (voice-carry over, or the ability to speak directly to the other party) calls, stand-alone TTYs have lost their luster. The general consensus is that TTYs are too slow and primitive. Indeed, **video phones and CapTel** (a captioned telephone currently undergoing consumer trials) are options that allow us to conduct conversations more normally; we can have two-way conversations, ourselves. What a concept!*

*The decline in TTY usage is confirmed by Judy Harkins, director of the Technology Access Program at Gallaudet University. 'TTY is an analog technology and most of them are fading, regardless of the type of media,' says Harkins.' And VoIP (voice over the Internet) may cause serious problems for the remaining TTYs. According to Harkins, the people who are stuck with the old analog technology seem to be those who haven't been able to take advantage of other technology, such as **rural, elderly, low-income and deaf-blind folks.***

So what will become of TTYs? Rachel Arfa, of Madison, Wisconsin, has a prediction: 'They're ancient history, destined to their place in history in museums all across the country.'

Voice Carryover Calls (VCO)

A voice carryover call (VCO) is a special type of relay call made through using the traditional TRS relay service. This is most appropriate for use by persons with a hearing loss that speak in a way that is easily understood. They use a special VCO phone (*see* Attachment C) when they call the relay center. In a VCO call the calling parties voice is heard by the called party but the called parties voice is translated to text by the relay center CA and shows up on the calling parties VCO phone.

Hearing Carryover Calls (HCO)

A hearing carryover call (HCO) is another special type of relay call made through using the traditional TRS. This service can be used by the speech impaired that has the ability to hear

and also the ability to type. A special HCO phone (*see* Attachment C) is used to place a call to the relay center. This device allows the caller to type their message, which is translated by the CA and related to the called party by the CA's voice. The calling party then hears the called party's response though the HCO phone.

Video Relay Service (VRS)

Video Relay Service (VRS) is an Internet-based form of TRS which allows persons whose primary language is American Sign Language (ASL) to communicate with the CA in ASL.

How it works – The VRS caller, using a television or a computer with a video camera device and a broadband (high speed) Internet connection, contacts a VRS CA, who is a qualified sign language interpreter. They communicate with each other in sign language through a video link. The VRS CA then places a telephone call to the party the VRS user wishes to call. The VRS CA relays the conversation back and forth between the parties -- in sign language with the VRS user, and by voice with the called party. No typing or text is involved. A voice telephone user can also initiate a VRS call by calling a VRS center.

Video relay services have only come into common use in the last three years or so, and usage is growing rapidly, having jumped from about 1 million minutes per month in August 2004 to about 6 million minutes in August of this year, according to the National Exchange Carrier Association.

Most appropriate for – Deaf to severely Hard of Hearing that are more comfortable communicating in sign language (ASL) than by typing and reading.

Equipment needed – PC, Internet, Video Conferencing Equipment.

Availability – VRS is not required by the FCC, but is offered by several TRS providers, including: Sorensen and Communication Access Center.

Costs – The service is free to the user. The service is funded by the FCC. VRS providers are compensated at an average national rate per minute that is set by the National Exchange Carrier Association (NECA). The needed equipment is currently provided by the service providers to the users free of charge in Michigan.

Pros –

- VRS allows conversations to flow in near real time and in a faster and more natural manner than text-based TRS.
- The Deaf can use Sign Language, which is often the primary language for most users.
- The service is free as is the equipment.
- VCO users can access VRS too if they are fluent in ASL.

Cons –

- Because the service uses a video signal it is necessary to have high speed internet service (DSL, cable)
- Like traditional TRS a third party (CA) is needed to complete a call.
- Currently, the service is not portable. However, there is a brand new technology already being used in Europe and Japan, but not yet in the United States, that allows deaf people to communicate with each other in sign language over cell phone cameras using real-time video. It's unclear when the necessary approvals and upgrades are needed for this technology. It is expected that once it gets here, it will have a very significant impact on communications among the deaf.

Internet Protocol (IP) Relay Service

Today TRS users are only a mouse click away from a new TRS option called Internet Protocol (IP) Relay. IP Relay is accessed using a computer and the Internet, rather than a TTY and a voice line. Individuals who use IP Relay do not need to invest in a TTY; they simply use the computer to communicate by text. When conversing over IP Relay, people who are deaf, hard of hearing, or have difficulty speaking can participate in a conference call or go online while holding a conversation.

How it works – The first leg of an IP Relay call goes from the caller's computer, or other Web-enabled device, to the IP Relay Center via the Internet. The IP Relay Center is usually accessed via a Web page. The caller types in the number they would like to call on the screen. After the connection is made the caller types their conversation which is read by a CA. The second leg of the call, as with traditional TRS, is from the CA to the receiving party via voice telephone, where the CA voices what the caller has typed. The CA then types the response of the receiving party which is read by the caller on their screen.

Most appropriate for – People who are deaf, hard of hearing, or have difficulty speaking. Requires good typing and reading skills.

Equipment needed – Computer or other Web-capable device, Internet Connection.

Availability – Several providers including AT&T offer IP relay.

Costs – The service is free to the user. The cost of personal computers range from about $400 to $2500. The cost of Internet access varies from approximately $15 per month on up depending on speed.

Pros –

- Service is free
- Customers can multitask while using IP Relay (individuals can check email, or type a paper while using IP Relay)
- Can be used on Hand held devices such as Blackberries and Sidekicks allowing calls to be placed away from home.

Cons –

- Third party is needed to complete a call
- Slight delay in response depending on which provider and internet speed
- Cannot make VCO Calls.

Captioned Telephone Service (CapTel)

CapTel or captioned telephone service is used by persons with a hearing disability but some residual hearing. It is an excellent alternative for people who can hear most of a phone

conversation but sometimes miss a word or a number. Research indicates this is a much desired service in many states. It targets the much larger and growing Hard of Hearing population. CapTel allows people to receive written word-for-word captions of their telephone conversations. The user can read the words for clarification while listening to the voice of the other party.

How it works[1] – CapTel phone users place a call in the same way as dialing a traditional phone. As they dial, the CapTel phone automatically connects to a captioning service. When the other party answers, the CapTel phone user hears everything that they say, just like a traditional call. Behind the scenes, a specially trained operator at the CapTel Captioning Service transcribes everything the called party says into written text, using the very latest in voice-recognition technology. The use of voice recognition software results in dramatically increasing the speed of captioning versus traditional CA translating, as is done on VCO calls. The written text appears

[1] http://www.captionedtelephone.com/how-it-works.phtml

on a bright, easy-to-read display window built into the CapTel phone. The captions appear almost simultaneously with the spoken word, allowing the CapTel phone users to understand everything that is said — either by hearing it or by reading it.

Equipment needed – This service requires special CPE (Customer Premise Equipment) to work. Both standard CapTel (1-line) and 2-line CapTel are offered. With 2-line CapTel, the conversation is carried on one telephone line and the captions are provided on a second line. This gives 2-line CapTel users the ability to caption any phone call – incoming or outgoing – at any point in the conversation. 2-line CapTel also supports enhancements that users have purchased on their telephone service, including, *e.g.,* Call Waiting. The CapTel phone is compatible with DSL Line Share service. Standard (1 line) service allows the CapTel customer to dial any phone number, the phone automatically dials the call center, the call is picked up by the captionist and the dialed party is called. For someone to call the CapTel customer, they must first dial an 800 number to pick up a captionist and then the CapTel customer is dialed. The single line service must have call waiting blocked during calls as it will disrupt the captioning feature of the phone.

Most appropriate for – Hard of Hearing with low to moderate levels of hearing loss. Not for the Deaf.

Availability – Not mandated by the FCC. The MPSC approved offering the service in Michigan based on an application from the MRC advisory board. AT&T offers the service in Michigan through a third party contract with Hamilton Relay. The service is available to customers of all BLES providers. Currently there are about 500 customers using the service and there is no waiting list.

Costs to customer – The service is free to the user. The CapTel phones normally cost $500, but currently users are benefiting from a special offer to Michigan residents of $99.

Pros –

- The user can hear and read the conversation when using CapTel.
- The service is free to user.
- The current price of the equipment deeply discounted.

Cons –

- A third party is needed to complete a call. Although it is rather transparent to user as compared to traditional relay.
- Voice recognition software is not 100% accurate, however the function of the CA is to monitor the automatic transcription and make changes as required.
- Need two telephone lines to access the full benefits of CapTel.

Instant Messaging Service (IM)

Internet Messaging (IM) is a form of real-time communication between two or more people based on typed text. This is a relatively new technology/service that has been very popular with teenagers for several years. They have even developed their own shorthand language where many phrases are reduced to a series of letters that parents have trouble understanding. For many teenagers this form of communication is more popular than e-mail or phone conversations because it allows groups to communicate with each other.

How it works – The text is conveyed via computers connected over a network such as the Internet. Instant Messaging (IM-ing) requires an instant messaging client, (*i.e.*, Yahoo!, MSN, AOL etc.) that connects to an IM service. IM-ing differs from e-mail in that conversations happen in real-time. You can IM with anyone on your buddy list or contact list as long as that person is online. You type messages to each other into a small window which shows up on both party's screens.

Most IM programs provide these features:

- Instant Messages – send notes back and forth with a friend who is online
- Chat – create a chat room with friends or co-workers
- Web Links – share links to your favorite Web sites
- Video – send and view videos, and chat face to face with friends
- Images – look at an image stored on your friend's computer

- Sounds – play sounds for your friends
- Files – share files by sending them directly to your friends
- Streaming content – real time or near real time stock quotes and news
- Mobile capabilities – send instant messages from your cell phone

Equipment Needed – Computer and internet, Mobile device with internet or Mobile Instant Messaging (MIM). MIM is a presence enabled messaging service that aims to transpose the desktop messaging experience to the usage scenario of being on the move.

Most appropriate for – Any level of hearing loss. Some typing skills are required but typing speed is not as essential as with TTY.

Costs to Customer – Free download, cost of computer equipment and internet service fee.

Availability – Widely available via free downloads from AIM, Yahoo, etc.

Pros –

- Instant messaging opens new methods of spontaneous communication for people that have an impairment in hearing, auditory processing, or speech. It is considered by many a powerful way to allow equal opportunities in communication, without the aid of special devices or services designed for users with hearing loss.
- In contrast to e-mail, the parties know whether the peer is available. Most systems allow the user to set an online status or away message so peers are notified when the user is available, busy, or away from the computer.
- Instant messaging allows instantaneous communication between a number of parties simultaneously, by transmitting information quickly and efficiently, featuring immediate receipt of acknowledgment or reply.
- Many instant messaging services have begun to offer video conferencing features, Voice Over IP (VoIP) and web conferencing services. Web conferencing services integrate both video conferencing and instant messaging capabilities. Some newer instant messaging companies are offering desktop sharing, IP radio, and IPTV to the voice and video features

Cons –

- It is important to note that instant messaging is not considered a secure way to communicate. Messages and connection information are maintained on servers controlled by the provider of your IM provider. Most providers do provide a certain level of encryption, but they are not so secure that you should send any confidential information through the system.

Text Messaging Service

Text Messaging or Short Message System (SMS), or **texting** is the common term for the sending of "short" (160 characters or fewer) text messages, using the Short Message Service, from mobile phones. It is available on most digital mobile phones and some personal digital assistants with onboard wireless telecommunications. The most common application of the service is person-to-person messaging, but text messages are also often used to interact with automated systems, such as ordering products and services for mobile phones, or participating in contests.

http://communication.howstuffworks.com/sms.htm

Equipment Needed – Cell phone or pager with text message capability.

Most appropriate for – Any level of hearing loss**.**

Availability – Widely available from all wireless providers.

Costs to Customer – The cost (unlimited or per message charges) varies based on service providers' plans.

Pros –

- This service is already used extensively by both the hearing and hearing impaired population**.**

Cons –

- Hearing family and friends must pay extra for text plans to communicate with relative with hearing loss.

http://communication.howstuffworks.com/sms.htm

Speech to Speech Relay Service (STS)

Speech to Speech Relay (STS) enables persons with a speech disability to make telephone calls using their own voice (or an assistive voice device). STS CAs are specially trained in understanding a variety of speech disorders, which enables them to repeat what the caller says in a manner that makes the caller's words clear and understandable to the called party. Often people with speech disabilities cannot communicate by telephone because the parties they are calling cannot understand their speech. People who stutter or have had a laryngectomy may also have difficulty being understood.

How it works – A STS user would call the traditional relay center by dialing 711 and indicate they wish to make an STS call. The user is then connected to a specially trained STS CA

who will repeat the speech impaired persons spoken words, making the spoken words clear to the other party. Persons with speech disabilities may also receive STS calls.

Equipment needed – A special phone is not needed for STS.

Most appropriate for – May not work for the more severe levels of speech impairment.

Costs to customer – None to the user.

Availability – It is mandated by the FCC**.** The MRC offers STS through contract with a 3rd party provider to all Michigan residents. Funded along with traditional TRS funding.

Pros –

- Free service and no special equipment is needed.

Cons –

- Third party (CA) is needed to complete a call. Although there are strict FCC requirements regarding CA confidentiality and performance some people are uncomfortable with this arrangement.
- Although available STS service is not heavily utilized (approximately 6,000 total calls in 2007). The user base for this service is not as active, vocal, or organized as the deaf or hard of hearing community. Per the third party vendor, this is a very difficult group to reach in that they don't have the same organizational structure as deaf and hard of hearing individuals.
- Also, in order to use this service, the STS caller needs to have enough understandable speech for the relay operator to voice. Those who do not have understandable speech, tend to use other types of communicative devices to make their calls. (*i.e.*, HCO)
- Although relay can make the process easier, relay also makes the process of making a call cumbersome especially for the first time relay user.
-

SITRIS

A new web based service for Speech Impaired is called SITRIS.[2] A demo of the service which is more transparent than relay and more natural than relay is available on its website. It is possible that services like SITRIS might also contribute to the lower STS call volume.

[2] http://www.mysitris.com/

Sitris is a unique web assistive technology designed for people who have a variety of speech impairments to make standard telephone calls without the need for an AAC (Augmentative Assistive Communications) device or any specialized software. Using SITRIS you can make calls to any phone: fixed or mobile from any Internet access point. The easy-to-use web interface uses a high quality text to speech engine to speak into the telephone call, you just click on your personal stored phrases or type what you want to say while on the call.

Sitris text to speech voices are based on real people and offer the user the option to add emotional content as never before. Located on the Sitris servers there is no delay, the response while on a call is instant. Sitris can be used at home, at work, in a WiFi zone or a cyber café! You can leave voice mail messages, order that pizza, arrange meetings at work, and take part in conference calls. Sitris can also be used locally through your PC speakers to chat one to one

Equipment needed – A PC and internet connection**.**.

Most appropriate for – Many people have speech difficulties, conditions such as; Cerebral Palsy (CP), Lou Gehrig´s Disease (ASL), Laryngectomy, Stroke, Brain Trauma, Multiple Sclerosis (MS), Spasmodic Dysphonia, Motor Neuron Disease (MND), cause varying degrees of impairment. Even severe stutterers can struggle to make themselves understood, particularly over the phone. Sitris is designed to augment or replace your vocal range on the phone allowing you to make your calls in a fluid natural way that gives you privacy, independence and reduces the frustration for both you and the person you called.

Costs to customer – $9.95 per month for 100 SITRIS call minutes. New accounts come with 50 free call minutes.

Availability – On web.

Cons – requires typing skill.

Attachment C

Available Equipment for Deaf/Hard of Hearing/Deafblind, and Speech Impaired – Images and Brief Descriptions

A) TTY
B) Portable TTYs
C) Braille TTY (new)
D) Amplified Phones (Corded & Cordless)
E) Specialized Phones with Amplification
   1) VCO Phones
   2) HCO Phone (Cochlear phones & adapters deleted)
   3) Emergency Phones
   4) CapTel Phones
   5) Uniphones (Portable Amplifiers deleted)
   6) Bone Conduction Phones
F) Portable Amplifiers (order change)
G) Amplified handsets (order change)
H) Headsets
I) Cochlear phones & adapters
J) Neckloops
K) Visual & Audible signalers
L) Wireless Devices (order change)
M) Deaf-Blind Telecommunication devices
N) Speech Devices (order change)
   1) Artificial Larynx
   2) TeliTalk
   3) Speech aid equipment
   4) Anti-stuttering device
   5) Dynavox
   6) Voice Amplifiers

A) **TTY** – This has been one of the most commonly used accommodations by people who are unable to understand speech on the telephone. TTY is an acronym for Tele Typewriter – a device that uses text instead of voice to communicate via telephone lines. Sometimes the acronym TDD (Telecommunications Device for the Deaf) is also used for the same device. This term is used less frequently since we prefer to describe the device, rather than those who use it (some people who use a TTY are not deaf).

The TTY enables people who are deaf, hard of hearing, or speech impaired to converse on the telephone by typing messages that are sent through the telephone network. A TTY works by converting text messages into a sound–based code (loud beeps) that are transmitted through the telephone line. The person on the other end of the line must also use a TTY to decode the sounds back into text. Each party in the conversation takes a turn typing a message and then reads the response of the other person.

When a person who uses a TTY wants to converse on the phone with someone who does not have a TTY a Relay service is used.

- $250.00-$700.00 (depending on features and accessories)

Source: http://www.michdhh.org/assistive_devices/text_telephone.html

B) **Portable TTYs** – Designed for individuals who are deaf or speech impaired. Full featured TDD designed to fit in purse, pocket or briefcase (8.8" x 3.9" x 1.2"), 32K memory stores memos, phone numbers, etc. 80-character, 2-line display, TDD announcer, 57-key, 4-row keyboard with easy touch keys, baudot code. Compatible with most cellular phones.

- $200.00-$300.00

Source: http://www.soundbytes.com/page/SB/CTGY/PortableTTYs

C) **Braille TTY** – To aid the Deaf-Blind in having a conversation over the telephone, this device allows the user to communicate with a Relay Operator, another TDD, or even a Braille-TTY user in the United States and all over the world.

- $6,000.00

Source: http://www.twacomm.com/catalog/search.htm?sid=8606EEE61244DA194DEC5980B32061C2&fs=braille+tty

D) **Amplified Phones (Corded & Cordless)** – There are several models of both corded and cordless phones for mild to severe hearing loss. Amplified phones increase decibel level of incoming sound from 30-50 db. Most are featured as hearing aid compatible.

- $50.00-$300.00 based on options listed below

Other features could include: Sound quality adjustment, Volume control, Compatible with neckloop and/or headset, Noise reduction, Loud ring signaler, Visual ring signaler, Adjustable ring volume, Ringer tone control

Source: http://www.weitbrecht.com/browse/telephones/amplified-phones/304.phtml

E) **Specialized Phones with Amplification** – These include VCO, HCO, Emergency phones, and Captioned telephones. These are explained below.

	1) **The VCO (Voice Carry-Over) Phone** looks like a standard phone and it has a display screen for reading text messages. This VCO phone allows the person with a hearing loss to "voice" their conversation directly to the called party through relay. The Operator (OPR) would then type the called party's message and it would show up on the VCO phone's display screen. This feature is called "Voice Carry-Over" (VCO). • $200.00 Source: http://www.mdrelay.org/what.html

2) **HCO Phones** were designed for people with speech disabilities who want to hear the people they were calling (or from whom they received a call), yet they need an RO (relay operator) to voice what they typed on their TTYs.

At the beginning of an HCO call, the RO will ask the standard voice user if they are familiar with Hearing Carry Over (unless instructed otherwise by the HCO user). If the called person is not familiar with HCO, the RO will provide an explanation of the service.

Source:
http://www.ddtp.org/california_relay_service/how_to_make_a_relay_call/#vco and http://globalrelay.mci.com/hco.htm

3) **Emergency Phones: Amplified Emergency Connect**
The **A**mplified **E**mergency **C**onnect (AEC) Phone acts as an automatic dialer in emergency situations. It comes with a small transmitter remote that can be worn on wrist like a watch, or attached to a lanyard around the neck. In the event of an emergency, the wearer presses the red emergency button on the transmitter or the emergency button on the phone. Once the emergency button is pressed, the phone numbers of up to six preprogrammed emergency contacts are dialed. These are normally family members, friends or neighbors who would be able to respond to the emergency call. If there is no response after 30 seconds or the line is busy, the phone automatically dials the next preprogrammed phone number. It will cycle through the emergency numbers twice. When the phone reaches a live person, it will play your pre-recorded emergency message. The other person will press a number (0-9) to confirm that the emergency message has been received and to deactivate the AEC from dialing the next emergency contact number. The AEC then turns on its speakerphone so that the other person is able to speak and listen to the other user (Remote Audio Monitoring).

- $250.00
- $30.00-$50.00 (Accessories not included)

Source: http://www.clearhearingtx.net/wst_page6.html

Captioned Telephone with USB

4) **Captioned Telephone** (or **CapTel** for short) is a new telephone technology that allows people to receive word-for-word captions of their telephone conversations. It is similar in concept to Captioned Television, where spoken words appear as written text for viewers to read. The **CapTel** phone looks and works like any traditional phone, with callers talking and listening to each other, but with one very significant difference: Captions are provided live for every phone call. The captions are displayed on the phone's built-in screen so the user can read the words while listening to the voice of the other party. If the **CapTel** phone user has difficulty hearing what the caller says, he can read the captions for clarification.

- $485.00 retail price

a) 2-Line CapTel: With 2-Line CapTel you can receive captions on all incoming and outgoing calls. Two analog telephone lines with separate telephone numbers are required in your home or office. The second line cannot merely be an extension line. The customer must have a second line installed and pay the monthly fee for a second line.

b) CapTel with USB: Allows text to be transmitted to the computer screen. The customer can enlarge font size or the change color of text or background. These features are beneficial for persons with both hearing and vision limitations. Must be ordered at the time of the CapTel purchase for an additional $45.00

Source: http://www.captionedtelephone.com/about-captel.phtml

5) **Uniphones**, combine a telephone, TTY and amplified phone - all in one. People who are deaf, hard of hearing, or hearing can all share one phone. A full-featured TTY, the Uniphone includes a bright display and a comfortable keyboard and an amplified handset.

It is perfect for making Voice Carry Over (VCO) calls. With VCO, you speak directly to the other person and read their typed responses on the display. VCO calls can be made through a toll-free relay service, or directly between Uniphone users for absolute privacy. In a similar way, people who can hear but cannot speak can make Hearing Carry Over (HCO) calls.

- Uniphone--- $280.00

Source: http://www.ultratec.com/ttys/uniphones.php

	6) **Bone Conduction Phones -** A phone for the hard of hearing that uses a device in the earpiece that uses bone conduction to deliver the sound vibrations directly to the brain's speech recognition center. • $150.00 retail price Source: http://harc.com/detail.aspx?ID=474





F) **Portable Amplifiers** – In-line plugs in between the curly cord and the base. Provides amplification and tone control.

- Strap-on attach directly to the earpiece of the handset
- $40.00-$140.00

Source: http://www.soundbytes.com/page/SB/CTGY/TelephoneAmplifiers
Source: http://www.michdhh.org/assistive_devices/htrs_presentation_gallery/gallery02.html

G) **Amplified handsets** – An Amplified Handset can increase volume levels up to 18db which makes reception 8 times louder. An Amplified Transmit Handset can increase volume levels up to 18db which makes your voice up to 8 times louder.

Source: http://www.choicehandset.com/

Single earpiece

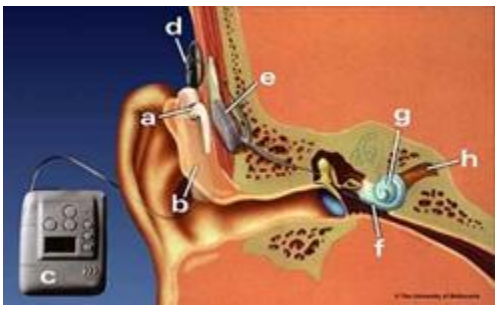
Dual earpiece

Office headset with amplifier

H) **Phone Headsets** –

- $25.00-$300.00

http://www.soundbytes.com/page/SB/CTGY/telephone-headsets



Cochlear Implant & Processor

I) **Cochlear phones:** Cochlear implants are implantable devices designed to provide sound detection and speech recognition for people who receive little or no benefit from hearing aids. All cochlear implants consist of two general components: the internal device (e) and the external hardware (a-d). The internal portion of the implant consists of two parts: the receiver/stimulator and the intracochlear electrode array. The external portion consists of three parts: a microphone, a speech processor, and a transmitting coil.

Source: http://www.boystownhospital.org/Cochlear/Information/works.asp.

Standard telephone adapter interfaces with any standard telephone by connecting the speech signal directly from the telephone to the Cochlear Implant Speech Processor, FM system, or hearing aid. The adapter eliminates any background sounds and may be left connected since it will not interfere with the operation of the phone by other users.

Cellular Phone Adapters are designed to interface any cellular phone to a Cochlear Implant Speech Processor, FM system, or Hearing Aid. A lapel microphone provides hands-free communication.

- $40.00-$85.00

Source: http://www.cihais.com/adapters.html

J) **Neckloops** – Neckloops are designed to magnetically couple audio output into a hearing aid equipped with a telephone coil (T-switch). Works well with tape recorders, television, and any device having a 6-18 ohm audio output through a monaural 3.5mm jack.

- $120.00-$150.00

Source: http://www.michdhh.org/assistive_devices/htrs_presentation_gallery/image016.html and http://harc.com/detail.aspx?ID=220

K) **Visual, Tactile, & Audible signalers** – Modern technology has provided a multitude of alerting devices for people with hearing loss. Standard alerting devices normally rely on sound to alert a person. But sound is of little value to a hard of hearing, late deafened, or oral deaf person. Alerting devices for people with hearing loss generally rely on either visual signals or vibration.

- $25.00-$200.00

Source: http://unitedtty.com/store/product43.html




L) **Wireless Devices for Deaf and Hard of Hearing**

- Available with text-only plans
- Include IM, E-mail, and other forms of text communication
- Purchase price: (Prices vary with rebates and service plans) $150 00-$500.00
- Service Plans: $30.00-$130.00/month

Source: http://www.deafpagers.com/index.html

Telebraille

VTouch TTY

M) **Deaf-Blind Telecommunication devices:** Braillephone, Telebraille, VTouch TTY

- $6,000.00-$7,000.00

Source: http://www.deafblind.com/telebrl.html
Source: http://www.computty.com/com/product/tty_tdd/vtouch_tty.html

N) **Speech Devices: Available Equipment for Speech Impaired.** These include Artificial Larynx, TeliTalk, Speech-aid equipment, Anti-stuttering device, Dynavox, Voice Amplifiers. These are explained below.

	1) **Artificial Larynx** is a medical device used to produce clearer speech by those who have lost their original voicebox, usually due to cancer of the larynx. It is also referred to as a 'throat back'. The most common device is the electrolarynx which is handheld, battery operated and placed under the mandible producing vibration to allow speech. Source: http://en.wikipedia.org/wiki/Mechanical_larynx

	2) **TeliTalk** is used by individuals who have had laryngectomy surgery or ALS patients who are speech impaired. Works as an artificial larynx while directly connected to the telephone. Source: http://www.kcdhh.ky.gov/oea/whatequip.html
	3) **Speech aid equipment** – 4) **Anti-stuttering device** a Basic Fluency System plugs into telephones. The user hears the caller´s voice and the auditory feedback in both ears. If a user leaves the device plugged into the telephone, they will be able to practice speech therapy on every call. Source: http://www.adaptiveabilities.com/adapt/Deaf-and-Hard-of-Hearing/SpeakinAids/Speech-Aid_and_-Accessories.html
	5) **Dynavox** equipment (made by Dynavox as well as other vendors) are considered Augmentative Communication Devices. Such devices are used by those who cannot communicate verbally. Essentially, this dedicated device becomes their voice and means of communicating at all times. It can be operated through direct selection, joystick, or through auditory and/or visual scanning with switches. The Dynavox has over 2,600 symbols with word and grammar prediction. The device also has built infrared capabilities that allow the user to operate televisions, VCR's, and other appliances. Source: http://www.dynavoxtech.com/
	6) **Voice Amplifiers** are a number of different devices have been created to assist people with disabilities that affect their speech volume. For example, the ChatterVox is a portable voice amplifier. It can boost your volume by as much as 18 decibels. It consists of a rechargeable "fanny pack" amplifier and speaker unit along with an extremely comfortable headset microphone. Even for someone who can barely speak or whisper, the ChatterVox or other voice amplifier device enables that person to be heard. Source: http://www.turningpointtechnology.com/Hearing/SpeechAids.htm

Attachment D

Resource Sheet

AGBell Michigan Chapter
http://www.agbell.org/MI/

Division on Deaf and Hard of Hearing (DODHH)
Michigan Department of Labor and Economic Growth
201 N. Washington Square
Suite 150
Lansing, MI 48909
Phone: 517-335-6004 Voice/TTY
Toll free: 877-499-6232 Voice/TTY
Fax: 517-335-7773
Dodhh@michigan.gov
Videophone IP: dodhh.net
Web Address: www.mcdc-dodhh.org

EHDI (Early Hearing Detection and Intervention)
Michigan Department of Community Health
FAX Number: 517/335-8036
Videophone: 517/335-8273
http://www.michigan.gov/mdch/0,1607,7-132-2942_4911_21429-55522--,00.html

Hearing Loss Association of Michigan (HLA)
P.O. Box 4808
Troy, MI 48099
http://www.mi-shhh.org/

Michigan Association for Deaf and Hard of Hearing (MADHH)
2929 Covington Court, Ste. 200
Lansing, MI 48912-4939
(517) 487-0066 V/TTY
(800) YOUR-EAR V/TTY
VIDEOPHONE: madhh.zapto.org
Sorensen VP users: (517) 487-0202
yourear@madhh.org
http://madhh.org/

Michigan Deaf and Hard of Hearing Coalition
http://www.michdhh.org/about_us/index.html

Michigan Deaf Association (MDA)
P.O. Box 71501
Madison Heights, Mi 48071-0501
http://www.mideaf.org/

MRS Executive Office
201 N. Washington Square
4th Floor, P.O. Box 30010
Lansing, MI 48909
(800) 605-7277
(888) 605-6722 TTY
www.michigan.gov/mdcd

Sitris
Service to aid the Speech Impaired in making telephone calls
http://www.mysitris.com/

Attachment E

Federal Communication Commission Activity on Telecommunications Relay Services and Speech to Speech Services for Individuals with Hearing and Speech Disabilities

The Telecommunications Relay Services (TRS) docket was established per the Federal Communication Commission's (FCC) obligations under title IV of the Americans with Disabilities Act of 1990. Title IV added a new Section 255 that mandated the Commission to establish regulations for TRS, for all interstate and intrastate carriers to permit a hearing or speech impaired person to communicate with a hearing person. The Commission was charged with establishing regulations within one year of the ADA. Carriers then had two years to provide relay services. Additionally, state relay programs were charged with certifying that TRS providers met the minimum FCC standards. Since 1991, the FCC has revisited the regulations concerning TRS on numerous occasions to make available to consumers new forms of TRS and continually amend mandatory minimum standards to improve TRS quality consistent with the goal of "fundamental equivalency."

Below describes some of the FCC TRS activity since its inception, but a more comprehensive list can be found at http://www.fcc.gov/cgb/dro/trs_history_docket.html.

47 USCS § 255: Access by persons with disabilities requires that manufacturers of telecommunications equipment and providers of telecommunications services to make their products and services accessible to people with disabilities. It applies only to products designed, developed, and fabricated after the law took effect in 1996.

47 USCS § 225: Telecommunications services for hearing impaired and speech impaired individuals.

1990 Notice of Proposed Rulemaking: In response to the ADA, the Commission set out to establish the regulatory framework for the provisioning of TRS. The Commission proposed minimum mandatory standards.

1991 Report and Order – First Report and Order and Request for Comments in the Telecommunications Relay Services and the Americans with Disabilities Act of 1990 docket. Specifically, this Order:

- Required that each common carrier providing "telephone voice transmission service" provide TRS individually, or through a designee, competitively selected vendor, or with other carriers no later than July 1993.
- Established mandatory minimum standards for operational, technical, and functional procedures for TRS.
- TRS providers are required to handle "any type of call normally provided by common carriers," (to include coin sent paid calls) and placed the burden of

proving the infeasibility on the relay provider. Providers filed petitions for reconsideration of the coin sent paid requirement.
- Sought comment on cost recovery and funding of TRS services.

Second Report and Order and Further Notice of Proposed Rulemaking (February 1993): The Commission declared that costs for TRS be recovered by shared funding and proposed that NECA be the fund administrator. TRS providers are to recover the costs of provisioning interstate TRS as part of the cost for interstate telephone services and not as a separate line item on the end user's lines.

Third Report and Order (July 1993): The Commission amended its rules to provide that TRS be recovered by a shared funding mechanism with NECA as the interim fund administrator. The order identified the interstate services subject to contribution by all carriers and recoverable by interstate TRS providers. Comments filed supported the shared funding mechanism and NECA as the fund administrator. The order also suspended the coin sent-paid rule for an additional two years, until July 26, 1995, to allow for the development of new technology to provide coin sent-paid service to TRS users.

Memorandum Opinion and Order (July 1995): The Commission concluded that TRS coin-sent paid service was technically infeasible and suspended the requirement for two years until providers update their technology (until August 1997), and adopted an Alternative Plan for the interim period. The Commission also directed carriers to file two reports on the effectiveness of the Alternative Plan, at 12 and 18 months after the issuance of the Order.

Telecommunications Act of 1996: Along with creating the framework that regulates the provisioning of telecommunications services in general since 1934, the '96 Act addressed relay services. Specifically, the Commission:

- Made provisions regarding access for persons with disabilities, specifically, Section 255 required that the Commission (1) exercise exclusive jurisdiction with any complaint regarding Section 255 and (2) develop guidelines for accessibility of telecommunications equipment and customer premises equipment, in coordination with the Access Board.
- Declared that Section 225 governs telecommunications relay services (TRS) for individuals with hearing and speech disabilities.
- Created Section 710 mandating that all wireline telephones are hearing aid compatible.
- Created Section 713 mandating close captioning accessibility.

1997 Suspension Order: The Commission gave additional requirements for the industry team to accomplish with regard to coin sent-paid calls. Specifically, the Commission directed the Industry Team to:

- Work with the hearing and speech disabled community to create and disseminate materials about TRS coin sent-paid calls, without advertising the services of individual carriers or relay providers.
- Send a consumer education letter to TRS centers, which could then use the letter to educate TRS callers about using payphones.
- Send one or more representatives to regional and national meetings sponsored by the hearing and speech disability community to disseminate information, and to demonstrate how to call TRS centers from payphones.
- Consult with representatives from organizations that represent the hearing and speech disability community to determine the feasibility of executing other proposals contained in the 18-Month Report.

The Commission continued to review all submission made by the Industry Team and continued to suspend the requirement in its 1998 Suspension Order, 1999 Suspension Order, and 2000 Suspension Order.

Report and Order Released in WT Docket 96-198 (September 1998): This Report and Order established rules to ensure that people with disabilities have access to telecommunications services and related equipment, if readily achievable. The rules adopted to implement Section 255 required manufacturers of telecommunications equipment to ensure that such equipment and providers of telecommunications services are accessible to and useable by persons with disabilities, if readily achievable. These rules were considered the most significant opportunity for the advancement of people with disabilities since the adoption of the ADA by allowing access to a broad range of products and services, such as telephones, cell phones, pagers, enhanced services (call waiting) and operator services.

Report and Order & Further Notice of Proposed Rulemaking (March 2000): This improved TRS Order changed many of the definitions and standards for traditional TRS to expand the kinds of relay services available to customers and to improve the quality of relay services. The FCC added speech-to-speech (STS) and interstate Spanish relay services as required forms of TRS. Video Relay Service (VRS) was concluded to be a form of TRS, but not a required form of TRS. However, all VRS calls would be eligible for cost recovery through the interstate TRS Fund. Specifically, the Commission:

- Redefined the statutory definition of TRS expanding it from relay services using a TTY to include STS, VRS and non-English language relay services.
- Required that common carriers provide STS and interstate Spanish relay services by March 2001.
- Did not require VRS but encouraged it by permitting carriers to be able to recover the costs associated with providing the service from the TRS fund.
- Required that all relay services, whether mandatory or voluntary, funded by the intrastate and interstate funds comply with the minimum service quality standards.
- Modified the speed of answer requirement so that customers reached a relay operator quickly.

- Imposed a minimum CA typing speed of 60 wpm.
- Amended the rules establishing a minimum time period a CA must remain on the call (traditional relay 10 minutes, STS 15 minutes).
- Amended the rules to allow the STS CA, at the request of the customer, to retain information beyond the duration of the call.
- Permitted the STS CA to facilitate a call for a user with a speech disability so long as the CA does not interfere with the independence of the user.
- Required that relay providers offer STS users the option to maintain at the relay center a list of frequently called names and telephone numbers.
- Established that information gathered by relay providers on individual caller preferences and used to complete TRS calls is not customer proprietary network information (CPNI) under section 222 of the Act.
- Required TRS providers to automatically and immediately transfer emergency calls to the appropriate 911 operator and relay information orally.
- Concluded that section 225 by its terms does not prohibit the Commission from requiring relay services to accommodate enhanced or information services.
- Required relay service to accommodate interactive menus and other recorded messages.
- Required relay service to include the ability to make pay-per-call calls.
- Required states to notify the Commission about substantive changes in their TRS programs within 60 days of when they occur.
- Required states and providers to submit to the Commission a contact person or office for filing consumer complaints, to be posted on the Commission's web site.
- Adopted the Commission's informal complaint process for TRS complaints.
- Required state programs and interstate TRS providers to maintain a log of consumer complaints that allege a violation of the minimum standards and annually report to the FCC the number of complaints received.

Second Notice of Proposed Rulemaking (March 2001): The Commission contended that because there was no imminent appearance of a technological solution to the coin sent-paid issue, it issued this Second Further Notice of Proposed Rulemaking (Notice) to determine the best plan to make the full range of payphone services available to TRS users. The Commission had to determine if the coin sent-paid rules are efficient and cost-effective for TRS users. In this Notice, the Commission sought comment on whether to modify the Commission's rules to permit TRS providers to treat coin sent-paid TRS calls in a manner different from all other calls, or to suspend permanently the enforcement of the requirement that TRS providers be capable of handling any type of call with respect to coin sent-paid calls. Additionally, the Commission sought comment on its proposed rules to provide functionally equivalent payphone service to TRS users in order to develop a sound policy on the obligations of TRS providers with respect to coin sent-paid calls. Specifically, the Commission proposed new rules that enabled TRS users to make relay calls from payphones without coins, that are functionally equivalent to non-TRS users and to provide education and outreach needed to ensure everyone is aware of this functionality; proposed that TRS providers not charge TRS users for making calls that would be otherwise local from payphones; proposed that TRS providers enable TRS users to use calling cards, credit or third party billing for toll calls; and proposed that TRS

providers conduct consumer education programs to teach the public of the payphone options.

Declaratory Ruling and Second Further Notice of Proposed Rulemaking (April 22, 2002): The Commission released this order further expanding the scope of TRS by including IP Relay within the statutory definition of TRS. The Commission did not require TRS providers to provide IP relay but cost recovery for intrastate and interstate IP Relay was authorized, on an interim basis, from the Interstate TRS Fund.

Fifth Report and Order (October 25, 2002): In response to the Second NPRM of March 2001, the Commission issued this order. Specifically, the Commission:

- Eliminated the requirement that TRS carriers and providers be capable of providing coin sent-paid TRS service from payphones.
- Mandated that local payphone calls made through TRS centers continue to be provided by carriers to TRS users on a cost-free basis.
- Made TRS users responsible for determining whether the call is local before providing a prepaid card access code to a communications assistant.
- Declined to require local TRS calls be rated differently.
- Found it to be not technically feasible to make toll coin sent-paid relay calls. So, the FCC required carriers to allow the use of calling cards, prepaid cards, collect or third party billing for toll calls from payphones.

Second Report and Order, Order on Reconsideration & NPRM (June 17, 2003): This Second Improved TRS Order took a further step toward fulfilling the goals of Title IV of the ADA by requiring additional TRS features and services to facilitate and expand the use of TRS by persons with hearing and speech disabilities. First, the Commission required that TRS providers offer certain LEC-based improved services and features where technologically feasible, several additional types of TRS calls, and other services and features through which consumers with varying needs can access and use TRS. It also revised the requirements for handling emergency calls. Finally, it provided guidance for public access to TRS-related information to improve the usability of TRS for all Americans. Specifically, the Commission required that TRS providers:

- Offer certain LEC-based improved services and features where technologically feasible.
- Offer new mandatory types of calls (two-line VCO, two-line HCO, VCO-to-TTY, VCO-to-VCO, HCO-to-TTY and HCO-to-HCO).
- Offer other services and features (answering machine retrieval, call release, and three-way or conference calling).

In the Order on Reconsideration, the Commission addressed the issues raised and granted in part and denied in part the Petitions for Reconsideration:

- By clarifying the term “hot key” as not related to any specific technology but refers to a one-stroke technology at the CA terminal.

- Declaring that its existing requirement for session logs for STS calls is reasonable and necessary for a minimum of 15 minutes for a STS CA to remain on the call (denying WorldCom's PFR).
- Declined to suspend the definition of a qualified interpreter.
- Denied petitions for amending the speed of answer requirement and CA minimum typing speed of 60 wpm.

Declaratory Ruling (August 2003): This Declaratory Ruling found that captioned telephone VCO service is a type of TRS and that eligible providers are able to recover costs in accordance to Section 225 of the Act. It also clarified that certain TRS mandatory minimum standards do not apply to captioned telephone VCO service and waived other mandatory minimum standards for existing and future providers of this service.

Order (February 2004): This order waived for one year the requirement that TRS providers offer three way calling functionality as mandated in the Second Improved TRS Order.

Report and Order, Order on Reconsideration & FNPRM (Released June 30, 2004): This order took an even further step toward fulfilling the goals of Title IV of the ADA by addressing cost recovery for various TRS services, such as IP relay and VRS, and further refining the rules governing the provision of TRS services. Specifically, the Commission:

- Declined to adopt its tentative conclusion in the NPRM to assign at least the same NSEP priority status to TRS that applies to telecommunications carriers or other telecommunication services available to the general public.
- Declined to adopt a national outreach program or to permit the Interstate TRS fund to fund such a campaign. The Commission also declined to adopt new rules related to a national outreach program and declined to adopt rules providing that the Commission certify providers that are eligible for compensation from the Interstate TRS Fund.
- Declined to adopt certain obligations of IP relay providers as it relates to technologies to ensure confidentiality of IP relay calls.
- Found it premature to implement guidelines for TRS centers for the routing of wireless emergency TRS calls. The Commission opted to defer consideration of issue until further implementation of the E911 requirements.
- Affirmed its conclusion that non-shared language TRS exceeds the functional equivalence mandate and finds that non-shared language TRS is equivalent to translation services.
- Declined to adopt a standard call set up time for all forms of TRS or call set up times for the various forms of TRS (VRS, IP Relay).
- Found it premature to require the use of CART.
- Declined to require interrupt functionality at this time.

- Found that TRS providers are capable of providing anonymous call rejection, call screening, and preferred call-forwarding as long as the TRS consumer subscribes to the service.
- Declined to require talking return call and busy line monitoring features at this time.
- Found it premature to require the use of SRT by TRS centers as well as any particular transmission speed technology.
- Declined to require the use of additional TTY protocols.
- Granted Sprints 711 Petition pertaining to the manner in which Sprint provides 900 pay-per-call services to users who dial 711 to access a relay center.
- Granted, in part, petition for reconsideration with respect to the requirement to route emergency calls to the appropriate PSAP and amended its rules accordingly. Adopted the definition of appropriate PSAP as "either a PSAP that the caller would have reached if he had dialed 911 directly, or a PSAP that is capable of enabling the dispatch of emergency services to the caller in an expeditious manner" and amended rule 64.404(a)(4) accordingly. Furthermore, since the Commission removed its requirement to route emergency TRS calls to the same PSAP as it would have if that caller dialed 911 directly, the Commission contends that all TRS providers should be able to satisfy the requirement per the new definition prior to August 24, 2004.
- Found it unnecessary for TRS providers to update its PSAP database at the same frequency as PSAP routing databases are updated for 911 and continue to require TRS providers to update their databases per the existing requirements.
- Found it still the obligation for TRS centers to handle emergency calls – if a caller dials 71l or the 10-digit number, the CA must handle the emergency call by routing the caller to the appropriate PSAP, per the new definition, and it is not permissible for the CA to tell the caller to hang up and dial 911 directly.
- Denied a joint petition for reconsideration of the Coin Sent Paid Fifth Report & Order, declining to impose cost parity for toll calls via payphone made by TRS users and made by non-TRS users.
- Declined to adopt a national outreach program with respect to coin-sent paid, or to impose specific outreach obligations on carrier relating to payphone calls.

The FNPRM addressed many outstanding issues related to the provisioning of Video Relay Services and IP Relay. The Commission attempted to take the first steps in the expansion of traditional relay services as we know them today by exploring the enhancement of the mandatory minimum standards to include VRS and IP relay. Generally, the Commission sought comment on the following key issues:

- The appropriate cost recovery methodology for VRS.
- The mechanism in which to determine whether IP relay calls and VRS calls are interstate or intrastate.
- VRS and IP relay becoming mandatory minimum standards.
- VRS and IP relay being available 24 hours / 7 days a week.
- Speed of answer requirement of VRS and if so, how should that be determined.

- Separate recovery rates for traditional relay services and IP relay.
- Certification and oversight of VRS providers and IP relay.
- The composition of and role of the TRS Advisory Council.
- Harassment of CAs, sometimes behind anonymity of an IP relay call.

Order (February 2005): This Order address the current waiver of the telecommunications relay services (TRS) requirement that TRS providers (including providers of captioned telephone service) offer three-way calling functionality as a TRS mandatory minimum standards. On February 24, 2005, the one-year waiver of this requirement will expire. This Order clarifies the manner in which TRS providers may comply with this rule; as a result, a waiver of this requirement is no longer necessary.

ASL-Spanish Translation Video Relay Service Eligible for Compensation from Interstate TRS Fund, (News Release), released July 14, 2005: The FCC concluded that Spanish translation Video Relay Service (VRS) - in which the communications assistant (CA) translate what is signed in American Sign Language (ASL) into spoken Spanish, and vice versa - is a form of telecommunications relay service (TS) from the Interstate TRS Fund. This decision will allow Spanish-speaking people who are deaf to communicate with others who speak only Spanish and allow them to integrate more fully into society.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Report and Order), FCC 05-140, adopted July 14, 2005, released July 19, 2005: In the Report and Order, the Commission addresses three issues related to the provision of Video Relay Service (VRS), a form of telecommunications relay service (TRS): (1) the adoption of a speed of answer rule for VRS; (2) whether VRS should be required to be offered 24 hours a day, 7 days a week (24/7); and (3) whether VRS providers may be compensated for providing VRS Mail. As set forth in the Report and Order, the Commission concludes that because speed of answer is central to the provision of "functionally equivalent" TRS, and VRS is now a widely used - if not the preferred - form of TRS, VRS providers must provide service in compliance with the speed of answer rule adopted herein to be eligible for compensation from the Interstate TRS Fund. The Report and Order also concludes that VRS must be offered 24/7 and that VRS providers may be compensated for providing VRS mail. The Report and Order also closes TRS Docket No. 98-67 which opened in 1998.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Order), FCC 05-141, adopted July 14, 2005, released July 19, 2005: In the Order, the Commission grants a request for clarification that two-line captioned telephone service is a type of telecommunications relay service (TRS) eligible for compensation from the Interstate TRS Fund. The Commission also grants the National Exchange Carrier Association, Inc. (NECA) proposed allocation methodology for determining the number of inbound two-line captioned telephone minutes that should be compensated from the Interstate TRS Fund.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Order), CG Docket No. 03-123, DA

05-3139, adopted December 2, 2005, released December 5, 2005: In this Order, the Commission extends the waiver for one year in view of continued technological challenges to determining the geographic location of TRS calls that originate via the Internet, and the November 30, 2005, VRS 911 NPRM addressing this issue. Accordingly, the waiver of the emergency call handling requirement for VRS providers will expire on January 1, 2007, or upon the release of an order addressing this issue, whichever comes first.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Order), CG Docket No. 03-123, FCC 06-81, adopted June 12, 2006, released June 16, 2006: This Order addresses two issues concerning the provision of Video Relay Service (VRS), a form the telecommunications relay services (TRS), raised in the Further Notice of Proposed Rulemaking in the 2004 TRS Report and Order & FNPRM. The Commission clarifies that if the calling party or the VRS communications assistant (CA) find that they are not communicating effectively given the nature of the call, the 10-minute in-call replacement rule does not apply and the VRS provider may have another CA handle the call. The Commission also clarifies that the VRS CA may ask the VRS user questions during call set-up when necessary to assist the CA in properly handling the call.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Order), CG Docket No. 03-123, DA 06-1627, adopted August 14, 2006, released August 14, 2006: In this Order, the Commission clarifies waivers of certain TRS mandatory minimum standards for captioned telephone relay service, a form of TRS. The Captioned Telephone Declaratory Ruling waived the following mandatory minimum standards for the provision of captioned telephone service: (1) CAs must be competent in interpreting typewritten American Sign Language (ASL); (2) TRS providers must give CAs oral-to-type tests; and (3) CAs may not refuse sequential calls. These waivers expired on August 1, 2006. The Commission clarifies that these requirements do not apply to captioned telephone services that use voice recognition technologies (instead of typing) to convey messages and that do not have the CA play a role in setting up the calls.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Order), CG Docket No. 03-123, DA 06-2532, adopted December 15, 2006, released December 15, 2006: TRS providers are required to handle emergency calls by immediately and automatically transferring the calls to an appropriate public safety answering point (PSAP). The Commission has waived this requirement for providers of Video Relay Service (VRS), a form of TRS, due to the technological challenges related to determining the geographic location of TRS calls that originate via the Internet. This waiver expires on January 1, 2007. As explained in the herein, the Commission extends the waiver for one year in view of these continued technological challenges. According, the waiver of the emergency call handling requirement for VRS providers will expire on January 1, 2008, or upon the release of an order addressing this issue, whichever comes first.

Internet Protocol Captioned Telephone Service Eligible for Compensation from the Interstate TRS Fund, (News Release), released December 20, 2006: The Commission adopted a Declaratory Ruling finding that Internet Protocol (IP) captioned telephone service (IP CTS) is a type of telecommunications relay service (TRS) eligible for compensation from the Interstate TRS Fund. The Commission acted in response to a petition by Ultratec, Inc., that was widely supported by the disability community.

In the Matter of Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities, (Declaratory Ruling), CG Docket No. 03-123, FCC 06-182, adopted December 20, 2006, released January 11, 2007: In the Declaratory Ruling, the Commission grants a request for clarification that Internet Protocol (IP) captioned telephone relay service (IP captioned telephone service or IP CTS) is a type of telecommunications relay service (TRS) eligible for compensation from the Interstate TRS Fund when offered in compliance with the applicable TRS mandatory minimum standards. The Commission also grants the request that all IP CTS calls be compensated from the Interstate TRS Fund until such time as the Commission adopts jurisdictional separation costs for this service. The Commission conditions its approval on Ultratec's representation that it will continue to license its captioned telephone technologies, including technologies relating to IP CTS, at reasonable rates.

Includes results of 113 on-line responses (341 visits) and 115 written responses: 228 total responses

Customer Survey Results

The survey was available both on-line and in written form.
The results of both methods have been compiled into this document.
Column A reports a count of raw responses.
Column B shows the relative percentage of responses

	A	B
1. What is your age?		
8-19	3	1%
20-29	21	10%
30-39	24	11%
40-49	36	**17%**
50-59	53	**24%**
60-69	39	18%
70+	42	19%
	218	100%
2. What is the highest level of education you have completed?		
Less than high school:	23	10%
High school/GED	51	23%
Some college	45	20%
2 year (associates)	17	8%
4 year (BA/BS)	41	**18%**
Master's degree	39	**17%**
Doctoral degree	9	4%
Professional degree	1	0%
	226	100%
3. How many people, including yourself, are in your household?		
Zero	4	2%
One	60	**25%**
Two	100	**42%**
Three	36	15%
Four	27	11%
Five	6	3%
Six	3	1%
Twenty-one	1	0%
	237	100%
4. Please indicate how many individuals in your household are Deaf, Deaf/Blind (DB), Hard of Hearing (HoH) or Speech Impaired?		
Deaf	125	**48%**
Deaf/Blind	6	2%
Hard of Hearing	110	**42%**
Speech Impaired	22	8%
	263	100%
5. Which of the following telecommunications tools do you currently use?		
TTY	91	25%
Video Phone	80	22%
CapTel	33	9%
Standard Telephone	53	15%
Telephone with amplifier	68	**19%**
None	11	3%
Other	24	7%
	360	100%

6. Which of the following mobile telecommunications devices to you currently use?

Tmobile Sidekick	39	17%
Blackberry	23	10%
Treo	4	2%
Cell phone	87	**38%**
None	69	**30%**
Other	9	4%
	231	100%

7. Which of the following accessories do you use with your telecommunications devises?

T-Coil on hearing	60	**20%**
Neckloop	20	7%
Printer	24	8%
Answering Machine	59	**19%**
Cochlear implant accessory	23	8%
Headset	7	2%
Large visual display	11	4%
None	87	**29%**
Other	13	4%
	304	100%

8. Which of the following alerting systems to you use with your telecommunications

Light	88	**30%**
Vibrating pager	67	22%
Loud ringer	75	**25%**
None	56	**19%**
Other	12	4%
	298	100%

9. How often do you use your communication devises?

Hardly at all (0-1/day)	28	13%
Several times (2-4/day)	76	**35%**
Many times (5-7/day)	60	**27%**
Never without it (8 or more)	55	**25%**
	219	100%

10. Which is the most important to you?

Having an accessible telephone in my home	72	33%
Having an accessible telephone at my work	4	2%
Having an accessible mobile device	22	10%
All of these	117	**54%**
	215	100%

11. Are you familiar with your rights to accessible communication as a Deaf, DB, HOH or SI individual?

Yes	137	**63%**
No	81	37%
	218	100%

12. Who purchased or provided the equipment you currently use?

Self	160	**73%**
Employer	14	6%
MI Rehab Services	15	7%
Other	31	14%
	220	100%

13. If you purchased the equipment yourself, where was it purchased?

Retail store	87	**41%**
Mall kiosk	8	4%

Catalog	53	25%
Online	47	**22%**
Other	17	8%
	212	100%

14. Are you satisfied with your current communication access?

Yes	122	59%
No	84	41%
	206	100%

15. If no, what would increase your level of satisfaction?

More equipment options to choose from	56	**35%**
More vendor showrooms to test before buying	53	**33%**
More training	31	19%
Other	21	13%
	161	100%

16. Please estimate how much money you have spent on specialized telephone equipment in the past 12 months.

$0 - 50	73	**35%**
$50-100	37	**18%**
$100-150	23	11%
$150-200	17	8%
More than $200	37	18%
More than $500	24	11%
	211	100%

17. Please estimate how much money you have spent on specialized telephone equipment in the past 5 years.

$0 - 100	57	**26%**
$100-200	25	11%
$200-300	33	15%
$300-400	18	8%
$400-500	17	8%
More than $500	37	**17%**
More than $2,500	31	14%
	218	100%

18. Are you familiar with agencies or organizations in your area that provide services for people who are Deaf, DB, HOH or SI?

Yes	146	**67%**
No	72	33%
	218	100%

19. Are you familiar with agencies or organizations elsewhere in Michigan that provide services for people who are Deaf, DB, HOH or SI?

Yes	116	**54%**
No	100	46%
	216	100%

20. Are you aware of any programs that can help with the financing of specialized telecommunications equipment?

Yes	57	26%
No	161	**74%**
	218	100%

21. If yes, please check the funding sources you are familiar with.

Payment plan through telephone company	44	67%
Assistive Technology Loan Fund	22	33%
	66	100%

22. Are you aware of any of these free or reduced cost technology distribution programs?

Free VP phone	93	**37%**
Free NexTalk for the compute	19	8%
Reduced cost CapTel for MI residents	41	**16%**
Not familiar with any of these	97	**39%**
	250	100%

23. Have you ever been a resident of a state that has a Telephone Equipment Distribution program?

Yes	32	15%
No	177	**85%**
	209	100%

24. If yes, did the program enhance your access to telecommunications systems?

Yes	34	52%
No	31	**48%**
	65	100%

"Other" responses from Zoomerang Survey (written survey responses below)

Attachment G Sheet 2

#	Question 5: Other devises used	Question 6: Mobile Tech Devices:	Question 7: Other Accessories	Question 8: Alert Systems	Question 12: Who purchased your equipment	Question 13: Where was it purchased?	Question 15: What would increase satisfaction?
1	sidekick2	Am not able to hear on them, so I do not use one	heavilly dependent on email	vibracall	MCB/DB Unit	called the phone company	equal cost text plans for hearing to contact DHH
2	texting on Cell phone	iPhone	speakerphone tool with CI's mic on.	Vibrating Cell phone	Self for home and mobile & employer for work	Did not purchase myself	to live in the city for convenient of vp usage
3	Uniphone	I use a cell phone only for text messages	Ausiologist want HA, but waiting for funds	vibrator on cell phone	TEDP program and Vocational rehabilitation from Wi	lions	considering buying a blackberry or equivalent.
4	text message and e-mail	Coupled with an audio neckloop	Hearing aids	Paws with a Cause service dog	work-employer home-self	Deaf Sprint rep for Blackberry	i need high-speed internet in my home to get vp
5	Instant Messaging	none	Speaker on telephone	flasher only for videophone	home-self; work-employer	Retail store & catalog & on line.	T-coil setup in classrooms and churches
6	If I call a deaf person, I use Michigan Relay serv	Two-way Radio	headset meaning "handsfree device" for tcoil user	Ameriphone Alertmaster 6000 notification system	Sorenson for vp, but TTY (self), Blackberry (self)	First Beltone; now Genesis (on-line)	Comparison chart of available options
7	speaker phone on one line and t coil on all	tmobile samsung flip phone	old michigan bell amplified hanc set	vibrating cellphone and cordless	a combo of self, employer, and MCB/DBU	sorenson bought it	Telephone Company more helpfull
8	Audio Neck loop coupled with amplified phone		speaker phone	shake awake to phone line used when c.i is off	Parents	pager from TMobile	Lower cost for text messages
9	captioned TV		Caller I.D.	smoke alarm w/light doorbell w/light	sorenson	Patial cost of hearing aids to suppliment MRS	better quality
10	Video Phone on computer		T-coil on cochlear implants	my cat goes to answer machine when message goes	Mac user, VP service	audiologist	Knowing what is available and +'s and -'s of each
11	IP Relay, Sprintrelayonline		T-coil on Cochlear implant	Hearing dog	Sorenson provided for free, IP Relay - internet	MULTIPLE RESPONSES! ALL ABV & SELF (dealer)	lower cost
12	aids, amplified stethoscope		hearing aid	Paws Dog	Sorenson but still pay high speed internet myself	hearing consultant	$ support; lower prices, more research
13	Hearing Aids				Spouse	not sure	Lower costs for equipment.
14	captel at other people's homes				Parents	Assistive listening device store for hearing impai	to sell the OLD handsets mich bell use to have
15	cell phone with neck loop				MULTIPLE RESPONSES: self for most; one HA: MRS	n/a	would like to have Captel as an assist....
16	induction loops in home TV room, church, etc.				purchased one self and one employer	FM from audiologist, HA compatible cell from Cingu	Compatibility problems: phone - DSL
17	FM assistive listening device				son, husband and me		have a trial period for 2 weeks before purchase
18	computer email....don't have TTY or TDD				MRS purchase one and I purchase one for home		demonstration and tax credits for less fortunate
19	telephone with silhouette telecoil adapter				Veteran's Association		Better person doing the captioning
20					Gift		looped public venues (theatre, ticket booths, etc)
21					retired		Need cell phone with operating T-coil

Additional final comments from online responders:

1	#21) Local Lions Clubs will sometimes purchase TTY/Amplified phones for those with limited incomes (100% or below poverty levels) But this is not universal state wide, depends on the individual lions clubs.
2	Michigan is one of only a few states that does not have this program. We need equal access to communication at home, at work, and also in emergency situations.
3	Any program should be tailored to the ability of those potential receivers of the program.
4	I am interested in a captioning service for my phone system at work, as I have been unable to find any compatible equipment to work.
5	No. I don't know enough to ask intelligent questions.
6	I have 3 phone installations but only two work well for HoH. the third usually fails me. I will probably by another phone with speaker for it.
7	Our area is fairly remote. We have to travel about 200 miles to access a showroom with devices to try out.
8	Since I fit in the HOH group, I feel many non-HOH just look irritated when I make the wrong (or no) response. Even my Pastor is not an advocate; I can go ballistic in such a situation. There is too much talk about "caring" and not enough actual caring.
9	Because I am married and husband has hearing, I don't use a lot of the equipment for deaf and/or hard of hearing. He hears phone or doorbell, etc. when I am not wearing hearing aid. If I was alone, I would have to utilize all of the devices to alert me to sound, i.e., phone, doorbell, smoke alarm, alarm clock.
10	In regard to #22, I'm not familiar with the latter two items. In regard to #23, I don't even know if Michigan is one of those states, hence I answered no. We dropped the landline because SBC was getting too expensive and was robbing us with such outrageously high fees that we didn't need. Talk America didn't live very long and we dropped that too. No more landlines for us. VP only although my being DB now, in future I will need something like a CF (Communications Facilitator) for me to make VP calls. I also want to continue making relay calls on my computer, but it will be too expensive for me to get a braille display and JAWS for my home computer.
11	There is hardly a mention in your SURVEY about the exorbitant price of hearing aids. Why ?
12	none
13	My 87 year old mother ask me to help her with this survey. We tried to find equipment for her through the Telephone Company. They indicated that she would have to drive 50 miles to come to the closest office where assistive devices could be obtained. Could you please write articles for local newspapers to inform persons who are deaf or have hearing impairment about services and assistive devices, since most seniors do not use computers.
14	where can I borrow video ASL program and also speechreading programs, as I work and need to lear on my own time. I am in Berkley, MI
15	Would like to learn more about what is available, its uses and costs, and how to obtain.
16	great survey but need to be able to answer more than ONE option for question #s 12 & 13 at least, and should we include "hearing aids" or CIs in answering question #12. Perhaps clarify this if you revise this survery. Also more space needed for accurate responses. THANK YOU AGAIN !!!!
17	I have my office phone a) tied to a loop, and also b) to a binaural headset with boom mic. Both provide excellent binaural (two-eared) listening, which is a huge advantage . . . much better even that what my Ultratec Crystal Tone phone provides for one-eared listening. I'd suggest enabling the availability of binaural phone reception devices.
18	It costs too much to purchase equipment that doesn't get used. I have so many phone gagets in my closet I could open a store myself.
19	the only hand set that works well enough for me to hear comfortably on a land line is the old mich bell handset. I purchase one last year that looked similar (I own 2 of the original ones michigan bell sold) but the quality was terrible. I prefer to use the analog phones to the digital ones. thank you
20	From my understanding,CapTel is not available to everyone unless you are in govt, military but really feel discriminated when rest of us do not fit special requirement enough nor afford such device. Others of us are already broke with the $60G cochlear and still like some assist from time to time. Also, blackberry, treo, etc are exorbant in cost and wouldn't mind keeping up with todays times text, talking, etc but simply not cost effective when dealing with large cochlear expense including batteries. Being part of both Hard-of-hearing, deaf and now hearing again with cochlear, should spearhead some cost effective rates for those who like to text, email, talk on cell.

21	I wish that cellphones with a T4 rating were more affordable so that I wouldn't need a specialized telecoil adapter that breaks down after awhile. Nextel's T4 rated phone has so many bells and whistles and at over $200 is too expensive. I would think that most hearing impaired are more interested in a clear sounding, good t rated phone than one that has lots of add-ons such as camera, mp3 player. Right now, I have no choice of a simple T4 rated cellphone to make communication easier for me.
22	Hearing aid compatible cell phones are not available from all providers (e.g. TracFone) and/or can not be tested.
23	I hope that the results of this survey increase the knowledge and options for the hard-of-hearing in our state!
24	brochure with what resources available to those that are not aware of what is free and what is the low cost of the captel and whom to contact with those all informations from. Also if there is website where to get informations too.
25	I would like to have a telephone that would have a read out feature that would be compatible with my analog phone line. This way it would not be such a chore to try to understand what people are saying. Is this possible ?? Virginia Hart hart963@sbcglobal.net Thank you
26	This was completed by a hearing supervisor who particiaptes in AT for employment purposes.
27	n/a
28	I keep a cell phone in my car with a HATIS device, but never really use it because attaching the HATIS to the phone and to my ears is so cumbersome. The phone might come in handy in a emergency, but it would take a few minutes to connect it. It has been so long since I used it that I am not sure how to turn the thing on when I would need it.
29	Is there a pamphlet/site listing the places in my area that are looped?
30	I am newly HOH and am in need of any information that would assist.
31	Was able to try my last cell phone before purchase, thus I got a phone that was satisfactory. Previously my cell phone was not satisfactory partly because I was unable to test it before purchase.
32	I do have a Cochlear Implant but am not able to understand over the phone thru the implant. I am wondering if there are any accessories available that might help me
33	since I am on very low income living, I could not have vp. I can not afford to have high speed. Hope sometime later there will be a way to be cheapen the high speed. thank you
34	I am able to use certain phones easily with my T-coil and some are difficult to hear. My phone at work is great and my cell is pretty good, but I can't find a phone to use at home. I tried the captel, but the captioning was too slow as I can hear nearly everything. Also, I didn't find it useful for others to have to call a special number. Most of my incoming calls are not from close friends, but businesses. Thank you for all your efforts to help us access communications that are taken for granted by most people. I have not taken advantage of reduced cost programs because my income is too high and those services should be for others who cannot afford the cost.

	Attachment G Sheet 4
	Additional final comments from written responders :
1	Yes please train the michigan realy since I don't use their service is bad I use maryland relay they service is best!
2	Need more communications, not enough
3	I would like VP for work and/ore deaf-blind relay
4	I would like to buy another captel telephone but they told me that it will be cost five hundreds. I was sad and can't afford it.
5	Strive for cheaper rate
6	
7	I think high speed internet service should be free for video phone use. I have AT&T but have to pay for high speed and I don't even have a computer.
8	I have and use a fax machine.
9	My phone is 5 years old I need a new one but cannot get one because my income is so low, $558 a month now.
10	I notice there are more ways of communications- I'm interested in free nextel for the computer also- the Captel
11	I'd like to see more standardized equipment for hearing aid recipients and cochlear implant users. There are many options available but it is quite difficult to know what to choose for one's level of hearing.
12	I just need and like my relay phone
13	I would appreciate that captioning was as instanteous on the telephone as it is on the TV
14	Why is it so hard for deaf people to get some help with paying for equipment. Whatever equipment deaf people need to buy should be given a lifetime warranty as long as they own the product and free repairs. Being deaf is a lifetime thing and usually cannot be made better.
15	I need to have video relay or I need free VP phone
16	I need access to inexpensive telephone communication on my job
17	No flasher from VP in basement, last July I ordered OJO video phone, but never heard from OJO video phone.
18	I am still waiting my work to supplie me with captell phone
19	I lived in South Carolina for 6 months while I was undergoing bilateral cochlear implantation and therapy. I was not considered a resident of SC because I was on a medical leave of absence from my job in Michigan. However, I discovered SC has a free dist
20	Thanks for preparing, circulating this survey and compiling responses. Your followup will be observed and helpful.
21	Telecommunications equipment does not appear to be my present problem, other than the rapidity of speech which does not come over clearly and the rapid, distracting background of cap. Television, with several lines running at a time. Hearing aids, their purchase and repair costs. Thankyou for your interest!
22	Help!
23	A TTY is cumbersome to haul around so it is a "dinosaur"! Text messaging and emails are awesome for a deaf person.
24	Wish I had an answering machine with a text message--hard time understanding voices.
25	Received cochlear implant in 2001- now able to use standard phone and function well in the hearing world!
26	Would like more info on these programs
27	Have no way of communicating outside of my home.
28	I wish I could find away to buy another hearing aid. I'm do to have 90% lost in one the other no hearing at all.

29	I am not deaf, deaf/blind, hard of hearing, speech impaired, at this time
30	I am not deaf blind HOH SI!
31	I have 5 diff. kinds of seizures, I would like a phone in my bedroom how would I get one put in my room
32	I feel this is geared more towards hearing and blind impairments, mine has more to do with speech.
33	Any help that I can get would be greately appreciated, in terms of anything other than just a regular speaker phone because people have a hard time understanding me and often get frustrated and hang up.
34	We currently are cavalier telephone having trouble getting monthly itemized bills for tax purposes for our business getting $700 bills with no recourse to check the calls we made-- this telephone company needs to be investigated
35	Yes, why isn't there someplace that can help w/ phone bills when your ph. Is a necessity due to your health? I only live on $600 per month and after having a ph. For 40 yrs. They turned me off even though they know my health, finances, I'd never been turn

Attachment H

INPUT FROM ORGANIZATIONS REPRESENTING THE DEAF, DEAF-BLIND, HARD OF HEARING AND SPEECH IMPAIRED COMMUNITIES.

Michigan Coalition for Deaf and Hard of Hearing People
2929 Covington Court
Suite 20
Lansing, MI 48912

Phone: V/TTY 517-487-0066
Fax: 517-487-2586

AT&T, Michigan Relay Center

Communication Access Center Deaf/Hard of Hearing

Connections for Deaf Citizens

Constance Brown Hearing Center

Deaf-Blind Central

DeafCAN

Deaf and Hard of Hearing Services

Deaf and hearing impaired Services

Deaf Options

Division on Deaf and Hard of Hearing

Early Hearing Detection and Intervention

Hearing Assistive Technologies, Inc.

Hearing Loss Association of Mlchlgan

Lamphear / LISN

L'n L interpreting Professionals

Michigan Association for Broadcasters

Michigan Association for Deaf and Hard of Hearing

Michigan Chapter of AG Bell

December 12, 2007

Dan Kearney, Supervisor
Operations& Tariff Section
Telecommunications Division
Michigan Public Service Commission
PO Box 30221
Lansing, MI 48909

We are a Coalition of *25* Agencies, office and business throughout the State of Michigan that serves, advocate or educate about the special needs of Deaf and/or hard of hearing populations via any numbers of avenues.

We are seeking to provide input on the limited access that Deaf and hard of hearing people have to telecommunications. While we are proud to have the distinct achievement of assisting in the creation of Michigan Relay Center in the past, so much more needs to be done.

Deaf and hard of hearing people continue to face hurdles in having full access to telecommunications. While the cost of relay is free, getting equipment to use telephones directly or even to access relay is still difficult, especially for those with limited incomes. Even with incomes over the poverty level, the burdens of comparable costs of getting equipment are worrisome and still out of reach for many. The

Michigan Registry of Interpreters for the Deaf

Michigan Supervisors of Public Programs for the HI

Muskegon Hearing and Speech Center

New Horizons Rehabilitation Services

ScreenLine

Sign Language Services of Michigan

William Beaumont Hospitals

average person can pick up a corded phone at any discount department or home improvement store for a few dollars. Install a needed amplifier on that phone, and the costs can be ten times that it would be otherwise. The cost of the captioned telephones is currently $100, plus shipping but at any time, that special introductory cost could escalate to $500-00. The cost of amplified cordless phones is generally three to five times the cost of a comparable non-amplified phone. While TTY's are slowly being phased out in favor of the Videophone for Deaf consumers, it's costs still remain high, in nearly all cases over $200 and up to $600.00, whereas the videophone phone equipment is free, with the consumer needing only to pay for the monthly service. However, TTY's still need to be affordable and accessible in emergencies, as new technology is not always available. This is especially true when the electricity is out, but the phone lines often still work. The Coalition strongly urges you to consider any way to assist these consumers in getting full access to telecommunications.

P1ease feel free to call if you have any questions.

Sincerely,

Nan Asher, Chairperson

JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
MICHIGAN COMMISSION FOR THE BLIND
PATRICK D. CANNON
STATE DIRECTOR

DEPARTMENT OF LABOR
& ECONOMIC GROWTH
KEITH W. COOLEY,
DIRECTOR

December 3, 2007

Dan Kearney, Supervisor
Operations & Tariff Section
Telecommunications Division
Michigan Public Service Commission
P.O. Box 30221
Lansing, Michigan 48909

Dear Mr. Kearney:

I recently received your letter requesting information regarding the telecommunication needs for persons with DeafBlindness. This is a very difficult question to answer, as there are so many variables among the individuals in the DeafBlind (DB) community.

The current definition of DeafBlindness, according to PA 23 and PA 24, is "DeafBlind person means a person who has a combination of hearing loss and vision loss, such that the combination necessitates specialized interpretation of spoken and written information in a manner appropriate to each individual's dual-sensory loss." As you can see from this definition, the term DeafBlind (DB) applies to a great many individuals who may or may not identify themselves as DeafBlind. The challenge in providing communication for these individuals is the large variety of needs, according to the level of hearing and vision that each person retains, plus the challenge of progressive conditions.

Telecommunications equipment currently utilized by the DeafBlind community includes the following:

Large print TTY (i.e. Ultratech Pro-80 LVD).
Standard TTY with external Large Visual Display.
Telebraille.

- Video-relay (VRS/VRI) with large screen TV/monitor.

- Computer with large screen or refreshable Braille output and internet relay system.
- Telephones with volume assist can be used by some DB individuals. There is a huge variety of telephones and adaptive equipment for them on the market.
- The "DeafBlind Communicator" is new telecommunication equipment under development by the HumanWare Company, which will enable a DeafBlind consumer to contact others by phone as well as communicate in person via Braille and QWERTY keyboard technology. It is estimated that it will be available early in 2008. Cost has not yet been determined.

Problems exist with all of the equipment listed above, but primary concern is the higher cost for all.

- Large print TTY's or standard TTY/TDD equipment with external Large Visual Display are typically $150 or more in cost over a standard TTY.

- A standard TTY with external LVD will not print out the information, so information that needs to be recorded by the DeafBlind individual must be repeated very slowly or several times, or both, for the person to be able to write down addresses, phone numbers, appointment dates and times, etc. Many people in public offices do not understand this need, become very frustrated with the time involved and hang up on the individual before all of the information is recorded.

- The Telebraille has not been produced since the early 1990's and is very difficult to obtain and keep in good repair. If located, the cost is also quite high.

- Video Relay (VRS or VRI) has become increasingly popular with the Deaf community instead of using TTY/TDD. However, many DB individuals either cannot see well enough to access the signing interpreter clearly, or need to have a very large high-definition TV/monitor to view the signed information. Even though the relay companies (i.e. Sorensen, etc) often provide their equipment free of charge to the consumer, the cost of a large TV/monitor is out of reach for many individuals. These services also require high-speed internet

connections, which are also often cost prohibitive for DeafBlind individuals.

Other considerations when discussing telecommunications for DeafBlind individuals include language used (English, American Sign Language, etc.) and proficiency of reading and writing for TTY/TDD usage. Many DeafBlind individuals, even those with college educations, do not read at the same levels as their hearing/sighted peers. Low vision or total blindness may add to this difficulty due to the struggle to decipher the actual letters, form them into words, then put them all together to get the meaning.

Please do not hesitate to contact me, either by phone or e-mail, if you have questions or need additional information.

Sincerely,

Dee Robertson, MA, CRC, QA II
Deafblind Specialist
Phone: 517-373-9416 (V) or 1-800-292-4200 (Voice -switchboard)
517-373-4025 (TTY) or 1-888-864-1212 (TTY)
E-Mail: robertsond2@michigan.gov
Fax: 517-335-5140

Cc: Pat Cannon, Director, Michigan Commission for the Blind
Leamon Jones, Director of Client Services, MCB

Dear Mr Daniel Kearney

On behalf of the members of the Michigan Deaf Association, I will list down some of the barriers that face deaf people when trying to access telecommunication services. I have contacted a few members via videophone which is our "telephone" equipment.

- Unable to afford high speed internet and the videophone equipment for home use. The cost of the monthly broadband services is more than most deaf individuals can afford.

- Unable to acquire information from banks, credit card service providers, medical providers and services because they will not accept the information provided through MRC relay calls.

- In public areas such as shopping malls, sporting arenas, school buildings, libraries TTY telephone devices are often not available. Either the deaf person has to ask a hearing person to call for them or have to search for a TTY phone. This is often the case in a big shopping mall, hospital or airports. There may be no accessible phones, or only one is available to service the entire facility while there are many telephone centers readily available throughout the facility for people who do not have hearing loss.

- In some public facilities, even governmental buildings there are no telecommunication devices available for deaf individuals that are readily available to hearing patrons.

- When dialing 911, often times the dispatch operator will hang up when they hear the TTY noise. It is nerve wracking to not know if your 911 call went through and if the right emergency personnel are being sent or even coming to your assistance. It costs more money for the county to send all the public responders (fire, paramedic, ambulance or police) because the 911

dispatcher was unable to get all the information. Deaf people will dial 911 and leave telephone off the hook. But there are no guarantees that the 911 call ever connected to the dispatcher.

- The need for telecommunication access through pager or text messages that is available for the deaf. The cost of the equipment and service plan can be expensive. Some have to choose to eat or pay the text message/pager (Sidekick, Blackberry, Ojo, etc…).

- Does not seem fair that a deaf person has to pay for a telecommunication system he/she cannot use without a TTY. The normal hearing person just has to buy a cheap phone or cordless phone to access the service. Purchasing the TTY device is not cheap and can cost the consumer several hundreds of dollars.

- To use a non-text relay system such as Video Relay Service, the deaf consumer is have to deal additional expenses such as web camera, monitor and broadband service of certain speed to receive clear video images.

- If the TTY malfunctions and is sent back to the TTY distributor for repair the deaf person is without access to telecommunication service even though they are paying for the line on a monthly basis.

- When there is a power outage, the TTY does not work if you do not have battery backup. Being able to contact someone if there is an emergency or to be able to contact the telephone service provider the let them know about the problem is not possible.

- When on the road, access to “deaf-friendly” telecommunication devices is almost non-existent. Some of the rest areas have TTY machines, but not all of them.

- Even the emergency phones on the expressway are useless for deaf /hh because it is not accessible for a profoundly deaf individual. This is why the text message pagers is necessary for effective and readily accessible when making calls to family members and hearing people.

- Video Relay Service (VRS) allows the deaf individual (adult and children) to be able to communicate with the hearing community. English text is not the preferred choice or most efficient communication mode for individuals who are not proficient in use of written or printed text which leads to misunderstanding. The use of VRS has been able to generate a sense of

empowerment and independence in using the telecommunication system to do the daily activities of life.

The need for improved telecommunication access for deaf and hard of hearing in Michigan through the Telecommunication Equipment Distribution program in Michigan will help in removing the many impediments in trying to access the telecommunication services.

We are not asking for a “Cadillac” telecommunication access but asking that we are able to have access to a telecommunication system that will be functionally equivalent of access that is available to the general population without hearing loss.

Our organization is in full support of any attempt that will improve telecommunication access for our community.

Sincerely yours,

Diana McKittrick, President

Michigan Deaf Association
Fay Hall 1505 West Court Suite 234
Flint, Michigan 48503

Hearing Loss Association of Michigan
PO Box 4808
Troy, MI 48099
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info@hearingloss-mi.org

A non-profit 501(c)(3) tax exempt organization.

December 13, 2007

Mr. Daniel Kearney
Telecommunications Division
Michigan Public Service Commission
PO Box 30221
Lansing, MI 48909

Dear Mr. Kearney:

I am writing to you today on behalf of the members of Hearing Loss Association of Michigan. With an estimated 1.4 million consumers in Michigan, most of which rely on remaining hearing to communicate with their non-hard of hearing peers, an equipment distribution program (EDP) is badly needed. An EDP would enable hard of hearing individuals have equal access to telecommunications in our state. Below are some comments our members wanted to share with the commission on this topic.

- An EDP would be a good way to provide a means of "troubleshooting" when people have problems setting up or using equipment. An example is CapTel where customers have to contact an out-of-state customer service center. With an EDP providing customer service, consumers could work directly with a local source that is knowledgeable about a variety of devices.
- Telephone service providers are not required to have amplified telephones for their hard of hearing customers but are required to have TTY's for their deaf customers. This is not equal access.
- Telecommunication equipment needs is widely varied from person to person because hearing loss is rarely the same for any two individuals. Because of this, we need to have a variety of models to choose from. An EDP which allows flexibility for equipment choices would help a more people achieve equal access.
- Many senior citizens on fixed income are hard of hearing. They would benefit greatly by having an EDP since assistive equipment is often higher priced than what is available to the average non-hard of hearing consumer.
- CapTel has provided many hard of hearing persons who are not familiar with the relay etiquette to have better access using a telephone. However, to get the most benefit from the CapTel service, a customer must pay for two phone lines which is not equal access since hearing people do not have to pay for two lines to receive calls directly from the caller.

Hearing Loss Association of Michigan commends the Public Service Commission for spearheading this effort and taking up the challenge to further help Michigan's one million consumers who have hearing loss achieve equal access to telecommunication services.

Sincerely,
Janet Haines
Janet Haines, President

jgh

MCDHHP

Michigan Coalition for Deaf and Hard of Hearing People
2929 Covington Court
Suite 200
Lansing, MI 48912

Phone: V/TTY 517-487-0066
Fax: 517-487-2586

December 12, 2007

Dan Kearney, Supervisor
Operations & Tariff Section
Telecommunications Division
Michigan Public Service Commission
PO Box 30221
Lansing, MI 48909

We are a Coalition of 25 Agencies, office and business throughout the State of Michigan that serves, advocate or educate about the special needs of Deaf and/or hard of hearing populations via any numbers of avenues.

We are seeking to provide input on the limited access that Deaf and hard of hearing people have to telecommunications. While we are proud to have the distinct achievement of assisting in the creation of Michigan Relay Center in the past, so much more needs to be done.

Deaf and hard of hearing people continue to face hurdles in having full access to telecommunications. While the cost of relay is free, getting equipment to use telephones directly or even to access relay is still difficult, especially for those with limited incomes. Even with incomes over the poverty level, the burdens of comparable costs of getting equipment are worrisome and still out of reach for many. The average person can pick up a corded phone at any discount department or home improvement store for a few dollars. Install a needed amplifier on that phone, and the costs can be ten times that it would be otherwise. The cost of the captioned telephones is currently $100, plus shipping but at any time, that special introductory cost could escalate to $500.00. The cost of amplified cordless phones is generally three to five times the cost of a comparable non-amplified phone. While TTY's are slowly being phased out in favor of the Videophone for Deaf consumers, it's costs still remain high, in nearly all cases over $200 and up to $600.00, whereas the videophone phone equipment is free, with the consumer needing only to pay for the monthly service. However, TTY's still need to be affordable and accessible in emergencies, as new technology is not always available. This is especially true when the electricity is out, but the phone lines often still work. The Coalition strongly urges you to consider any way to assist these consumers in getting full access to telecommunications.

Please feel free to call if you have any questions.

Sincerely,

Nan Asher, Chairperson