



Telecommunications Access Minnesota

2018 Annual Report to the Public Utilities Commission
Docket Number P999/PR-19-5

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Executive Summary

In accordance with Minnesota Statute section 237.55, “The commissioner of commerce must prepare a report for presentation to the Public Utilities Commission by January 31 of each year. Each report must review the accessibility of telecommunications services to persons who have communication disabilities, describe services provided, account for annual revenues and expenditures for each aspect of the fund to date, and include predicted program future operation.” The Minnesota Department of Commerce created this report to comply with this requirement.

In order to provide equal access to the telecommunications network for people who are deaf, hard of hearing, speech disabled, or physically disabled, the Minnesota Legislature created what is currently known as the Telecommunications Access Minnesota (TAM) program. Minnesota Relay and the Telephone Equipment Distribution (TED) Program were established to achieve this objective. The programs are funded by a surcharge on all wired and wireless telephone access lines in Minnesota, and by a fee on each Minnesota retail transaction for prepaid wireless telecommunications services.

The current TAM surcharge is \$0.05 per access line. By statute, the surcharge may not exceed \$0.20 per access line.

The State procedures and requirements regulating Minnesota Relay, the TED Program, and the Telecommunications Access Minnesota fund are outlined in Minnesota Statutes 237.50 to 237.56 and Minnesota Rules chapter 8775.

The State of Minnesota contracts with Sprint Communications Company, L.P. for the provision of Telecommunications Relay Services (TRS) in Minnesota. The contract is effective from July 1, 2014, through June 30, 2019. In 2018, Minnesotans placed 307,707 relay calls for a total of 811,264 conversation minutes of use. Overall, Minnesota Relay experienced the following changes in call volume from 2017 to 2018:

- 8% decrease in text telephone (TTY) based relay calls
- 57% decrease in Speech-to-Speech relay calls
- 11% decrease in CapTel relay calls

The migration to internet-based relay services, which are under the Federal Communications Commission’s jurisdiction and paid for through a federal fund, continues to grow as consumers gain access to high-speed internet. Internet-based relay services tend to be easier to use, have additional features, and provide a more natural conversation flow than analog-based relay services. In addition, free relay apps can be downloaded to wireless devices, such as smartphones and tablets, allowing relay users to make calls from anywhere.

The use of Speech-to-Speech relay service has remained relatively steady over the years, possibly because there is no internet-based form of this type of relay service to which users can migrate. However, Minnesota Relay experienced a sharp decline in Speech-to-Speech use in 2018. The decline is due to a high-use consumer of this service passing away in April 2018.

Although there is a notable shift to internet-based relay services, until all consumers have access to high-speed internet at an affordable price, there will still be many Minnesotans who rely on TTY-based relay services.

The TED Program is administered through an interagency agreement between the Department of Human Services (Deaf and Hard of Hearing Services Division) and the Department of Commerce (TAM program). In 2018, the TED Program served 448 new participants, 1,062 repeat participants, and distributed 2,591 telecommunications and auxiliary devices.

TED Program staff provide outreach for both the TED Program and Minnesota Relay from Deaf and Hard of Hearing Services Division offices located in Duluth, Mankato, Moorhead, St. Cloud, and St. Paul. In 2018, TED Program staff performed 143 outreach activities reaching 6,219 Minnesotans.

In addition to Minnesota Relay and the TED Program, TAM funds six additional programs:

- The Department of Human Services – Rural Real-time Captioning program has a maximum annual budget of \$300,000.
- The Department of Employment and Economic Development – Accessible News for the Blind program has a maximum annual budget of \$100,000.
- The Minnesota Commission of the Deaf, DeafBlind and Hard of Hearing (MNCDHH) receives \$1,170,000 annually.
- Minnesota IT Services (MN.IT) receives \$290,000 annually for coordinating technology accessibility and usability.
- MN.IT receives \$50,000 annually for a consolidated access fund for other state agencies related to accessibility of their web-based services.
- The Legislative Coordinating Commission (LCC) receives \$100,000 annually to provide captioning of live legislative activity streaming on the LCC's website.

TAM Fund Activity in Fiscal Year 2018

Revenues

Total Revenue: \$4,216,086

- Wired and Post-Paid Wireless Surcharge Revenue: \$3,495,225
- Prepaid Wireless Retail Transaction Revenue: \$696,375
- TAM Fund Interest: \$24,486.84

Expenditures

Total Expenditures: \$4,904,303

- | | |
|-------------------------------------------|------------------------|
| • TAM Administration: \$115,528 | • MNCDHH: \$1,170,000 |
| • Minnesota Relay Services: \$1,469,109 | • MN.IT (1): \$290,000 |
| • TED Program: \$1,314,956 | • MN.IT (2): \$50,000 |
| • Rural Real-time Captioning: \$297,638 | • LCC: \$100,000 |
| • Accessible News for the Blind: \$97,073 | |

Program History

In 1987, the Minnesota Legislature passed legislation creating the Telecommunications Access for Communication Impaired Persons (TACIP) Board, which was tasked with ensuring that people who have difficulty hearing or speaking on the telephone have access to telephone service. Two programs were established to accomplish this goal: the Minnesota Relay, which began service on March 1, 1989; and the Telephone Equipment Distribution (TED) Program, which began as a pilot program on October 1, 1988.

Minnesota Relay is a federally mandated Telecommunications Relay Services (TRS) program that allows an individual who is deaf, hard of hearing, deafblind, or speech disabled to communicate over the telephone in a manner that is functionally equivalent to the ability of an individual who does not have hearing loss or a speech disability. Minnesota Relay must be in full compliance with the requirements and intent of Title IV of the Americans with Disabilities Act of 1990, United States Code, title 47, section 225, Code of Federal Regulations, title 47, sections 64.601 to 64.606, and Minnesota Statutes section 237.50 to 237.56.

The TED Program provides specialized telecommunications equipment to enable persons who are deaf, hard of hearing, deafblind, speech disabled, or physically disabled to access telecommunications services. Program participants must meet eligibility requirements, including income, disability, and residency.

There have been significant changes and improvements to Minnesota Relay since it began operations. When Minnesota Relay began providing services in 1989, the state owned and maintained all of the relay equipment, and contracted with the Deafness, Education and Advocacy Foundation for the operation of the call center.

Program Highlights

- In 1995, the Minnesota Legislature eliminated the TACIP board and transferred the responsibilities for administering the TACIP fund and Minnesota Relay to the Department of Public Service.¹ The Department of Human Services (DHS), through an interagency agreement with the Department of Commerce (Commerce), administers the TED Program (Minnesota Statute 237.51, subd. 1).
- In 1996, the Minnesota Relay facility and its equipment had become severely outdated and beyond the point of overhaul. TACIP decided to provide comprehensive and cost effective relay services in Minnesota using a qualified TRS vendor to furnish continually upgraded equipment and software, as well as specially trained call center staff.

¹ The Departments of Public Service and Commerce merged on September 15, 1999.

- On July 1, 1996, the TACIP program contracted with Communication Service for the Deaf (CSD) and Sprint Communications Company, L.P. (Sprint) for TRS. CSD's contract was for the provision of management, human resources, and outreach components for Minnesota Relay. Sprint's contract was for the provision of the call center facility, equipment and maintenance, and access to Sprint's fiber optic telecommunications network. Initially, Minnesota Relay traffic was forwarded to relay centers operated jointly by CSD and Sprint. The Minnesota Relay center, located in Moorhead, began processing calls on December 16, 1996.
- Effective August 1, 2002, the name of the Telecommunications Access for Communication Impaired Persons program changed to Telecommunications Access Minnesota (TAM). Commerce sought the name change at the request of consumers, who objected to the word "impaired" in the program name.
- In 2005, the Minnesota Legislature created two new state programs, Accessible News for the Blind and Rural Real-time Captioning, both of which are funded via the TAM surcharge.

The Accessible News for the Blind program provides an electronic information service (access to daily newspapers and magazines) for individuals who cannot read print materials due to vision loss, dyslexia, or a physical disability. This program is administered by the commissioner of the Department of Employment and Economic Development (DEED), and has a maximum annual budget of \$100,000.

The Rural Real-time Captioning program provides real-time captioning of certain live local television news programs in rural areas so that they are accessible to people who are deaf, hard of hearing, or deafblind. This program is administered by the commissioner of DHS, and has a maximum annual budget of \$300,000.

- On October 17, 2005, TAM issued a Request for Proposal for the provision of TRS and associated outreach. The TRS contract was awarded to CSD, with Sprint as a subcontractor, and was effective from July 1, 2006, through June 30, 2011, with the option to renew up to an additional 60 months. TAM extended the basic relay and captioned telephone relay services components of the TRS contract with CSD through June 30, 2014. The Minnesota Relay outreach component was not included in the contract extension.
- In 2006, the Minnesota Legislature appropriated \$200,000 annually from the TAM fund to the Minnesota Commission of the Deaf, DeafBlind and Hard of Hearing (MNCDHH) for operational expenses. MNCDHH is a governor-appointed commission that advocates for equality of opportunity for Minnesotans who are deaf, deafblind, and hard of hearing. In 2007, the Minnesota Legislature appropriated an additional \$100,000 annually from the TAM fund to MNCDHH, for a total direct appropriation of \$300,000 annually.

- In 2008, the Minnesota Legislature provided for two direct appropriations from the TAM fund in FY 2009: \$85,000 for a State Video Franchising study and \$175,000 for a Broadband Mapping project.
- In 2009, the Minnesota Legislature provided for three one-time direct appropriations from the TAM fund in FYs 2010 and 2011. MN.IT (formerly the Office of Enterprise Technology) was appropriated \$100,000 each year for technology accessibility and usability. The Legislative Coordinating Commission (LCC) was appropriated \$100,000 each year for captioning of live streaming of legislative sessions. MNCDHH was appropriated \$100,000 each year for American Sign Language website content.
- In 2010, the Minnesota Legislature approved transfers of \$246,000 in FY 2010, and \$270,000 in FY 2011, from the TAM fund to the General Fund.
- In 2011, the Legislature provided for one-time direct appropriations from the TAM fund to MN.IT, LCC, and MNCDHH in FYs 2012 and 2013. MN.IT received \$230,000 each year for coordinating technology accessibility and usability. LCC received \$150,000 each year in to provide captioning of live streaming of legislative activity on the LCC's website and for a consolidated access fund for other state agencies. MNCDHH received \$20,000 each year to provide information in American Sign Language on their website and to provide technical assistance to state agencies.
- In 2011, the Minnesota Legislature approved a transfer of \$1,100,000 from the TAM fund to the General Fund. The transfer was processed in FY 2012.
- In July 2011, Commerce began contracting with DHS for the provision of Minnesota Relay outreach services. With this transition, outreach is provided from five regional Deaf and Hard of Hearing Services offices (in the past, Minnesota Relay outreach was provided from one office located in St. Paul). The contract saves the TAM fund thousands of dollars annually.
- In 2013, the Minnesota Legislature modified the direct appropriations from the TAM fund to MN.IT, LCC, and MNCDHH. In FY 2014, MN.IT's funding increased to \$290,000 and became a permanent annual allocation. The LCC's \$150,000 appropriation also became a permanent annual allocation. MNCDHH's appropriation increased to \$500,000 in FY 2014 and to \$800,000 in FY 2015. Its FY 2015 funding level became a permanent annual allocation.
- Also in 2013, new legislation imposed a TAM fee on each retail transaction for prepaid wireless telecommunications services, in the amount of the monthly charge provided for by Minnesota Statutes section 237.52, subdivision 2. The prepaid wireless fee became effective on January 1, 2014.

- On March 5, 2014, Commerce issued a Request for Proposal for the provision of TRS. The TRS contract was awarded to Sprint Communications Company L.P. and is effective from July 1, 2014, through June 30, 2019.
- In 2015, the Minnesota Legislature modified the direct appropriations from the TAM fund to MN.IT and the LCC. In FY 2016, the \$50,000 funding for a consolidated access fund to provide grants to other state agencies related to accessibility of their web-based services was moved from the LCC to MN.IT.
- In 2017, the Minnesota Legislature increased the direct appropriation for MNCDHH to \$1,170,000.

Telecommunications Access Minnesota (TAM)

TAM Administration

The Department of Commerce administers the TAM fund and manages vendor contracts and interagency agreements. Minnesota Relay services are provided to the State of Minnesota under contract with Sprint Communications Company L.P. The TED Program (including Minnesota Relay outreach services) and the Rural Real-time Captioning program are provided through interagency agreements with the Department of Human Services. The Accessible News for the Blind program is provided by an interagency agreement with the Department of Employment and Economic Development.

TAM Funding

TAM Funding Sources

- Monthly surcharge on all wired and wireless telephone access lines in the state of Minnesota, including managed/fixed voice over internet protocol (VoIP) service.²
- Fee on each Minnesota retail transaction for prepaid wireless telecommunications services.

TAM surcharge revenue is deposited into a dedicated account. The surcharge is capped at \$0.20 per access line per month, or per retail transaction.

² Cable companies that offer telecommunications services provide a managed VoIP service offering. The service is fixed, as it is only available to the customer's premise. Managed VoIP services are not transported over the public internet.

Current Surcharge

In July 2018, the Minnesota Public Utilities Commission (PUC) approved TAM's fiscal year 2019 Budget and Surcharge Recommendations and accepted TAM's recommendation to retain the surcharge of \$0.05 per wired and post-paid wireless access line, and prepaid wireless retail transaction.

Telecommunications Relay Services (TRS) Jurisdictional Separation of Costs

Minnesota's TRS program observes all jurisdictional separation of costs as required by Code of Federal Regulations, title 47, section 64.604 (c)(5), section 410 of the Communications Act of 1934, Minnesota Statutes section 237.10, and Minnesota Rules chapter 7810.6400. All Minnesota Relay intrastate and interstate minutes are reported separately and distinctly to the State and are included in monthly invoices from the TRS vendor.

Minnesota Relay local and intrastate minutes of service (including 49 percent of toll-free and 900 minutes, and 89 percent of two-line CapTel minutes) are reimbursed through the TAM fund. The Interstate TRS Fund reimburses Minnesota Relay interstate and international minutes of service (including 51 percent of toll-free and 900 minutes, and 11 percent of two-line CapTel minutes).³

Programs Funded

- Telecommunications Access Minnesota Program Administrative Expenses
- Minnesota Relay Services
- Minnesota Relay Outreach
- Telephone Equipment Distribution Program
- Accessible News for the Blind
- Rural Real-time Captioning
- The Minnesota Commission of the Deaf, DeafBlind and Hard of Hearing
- MN.IT (for coordinating technology accessibility and usability)
- MN.IT (for a consolidated access fund for other State agencies)
- Legislative Coordinating Commission (for captioning of live streaming of legislative activity)

³ Interstate TRS is funded by contributions from every carrier providing interstate telecommunications services (including interconnected and non-interconnected VoIP service providers) based on interstate end-user revenues. The fund administrator is currently Rolka Loube.

Population Served

The Minnesota Relay and TED Program serve Minnesotans who have a hearing, speech, vision, or physical disability that makes it difficult or impossible to use standard telecommunications services and equipment. They also serve people who communicate by phone with these individuals.

Role of the Public Utilities Commission (PUC)

Under Minnesota Statute 237.55, Commerce “must prepare a report for presentation to the Public Utilities Commission by January 31 of each year. Each report must review the accessibility of telecommunications services to persons who have communication disabilities, describe services provided, account for annual revenues and expenditures for each aspect of the fund to date, and include predicted program future operation.”

Commerce must also submit an annual budget and surcharge recommendation to the PUC for approval. The PUC reviews the recommendation for reasonableness, may modify the budget to the extent it is determined unreasonable, and sets the annual TAM surcharge amount (Minnesota Statutes 237.52, subd. 2).

Minnesota Relay Progress in 2018

Minnesota’s Telecommunications Relay Services (TRS) Certification

Minnesota’s TRS certification by the Federal Communications Commission expired on July 25, 2018. On November 27, 2017, Commerce filed an application for renewal of the certification. The application is required to establish, under 47 C.F.R. § 64.606 (b)(1), that Minnesota’s TRS program (1) “meets or exceeds all operational, technical, and functional minimum standards contained in § 64.604”; (2) “makes available adequate procedures and remedies for enforcing the requirements of the state program, including that it makes available to TRS users informational materials on state and Commission complaint procedures sufficient for users to know the proper procedures for filing complaints”; and (3) where the program “exceeds the mandatory minimum standards contained in § 64.604, the state establishes that its program in no way conflicts with federal law.”

On July 16, 2018, the Federal Communications Commission granted Minnesota’s TRS certification, which is effective for a five-year period, beginning July 26, 2018, and ending July 25, 2023.

Relay Misdial Transfer Program

Relay centers across the United States experience a high number of misdialed calls. This is due, in large part, to businesses publishing relay telephone numbers (711 and toll-free) on their customer bills, letters, websites, and on television, without the proper identification or explanation of relay services. This has resulted in a high number of callers unintentionally connecting to state relay centers, causing confusion for these individuals as to why their call was answered by a relay service instead of the business they intended to call. It also ties up relay communications assistants, as they must spend time explaining to the caller the purpose of relay services and why the caller may have reached a relay service, instead of processing legitimate relay calls.

In January 2018, Sprint implemented a process where communications assistants initially greet all inbound Minnesota Relay voice callers with the state's relay greeting and ask "May I have the number you are calling?" If the communications assistant is able to determine from the caller's response that the caller did not intend to connect to Minnesota Relay, the communications assistant will inform the caller that she has reached Minnesota Relay and will transfer the caller to a voice recording that explains relay services. This allows communications assistants to focus on legitimate relay calls.

TAM requested that Sprint provide the state with a report on any consumer inquiries regarding the new process for the first 60 days after implementation. Sprint reported that there were no customer concerns or negative comments regarding the transfer or the voice message.

Migration of the Sprint Relay Network to an Internet Protocol-Based Solution

As part of Sprint's company-wide migration from circuit-switched to packet-switched digital networks, Sprint's relay services (including Minnesota Relay) were migrated to digital. Prior to the migration, Sprint's relay services were connected to the public switched telephone network using time division multiplexing circuits that consisted of SS7 and Integrated Services Digital Network lines.

In April 2018, Sprint moved all inbound and outbound relay calling to data networks using session initiated protocol. The upgrade provides the following benefits:

- All call paths are geographically redundant and monitored.
- Allows sustainability and longevity for the TRS platform.
- Is the first step to enable additional services, such as Real-Time Text.

CapTel Call Center Added

In 2018, Sprint relay expanded operations by adding a Sprint-operated CapTel call center in Columbia, South Carolina, to continue to provide staffing and network diversity for consumers. Sprint is able to provide diverse call-routing options and can guarantee greater redundancy since their call centers are geographically separated. All CapTel call centers use the same technology and follow the same training and procedures, so CapTel users receive the same high-quality service, regardless of the center location handling the call.

Transition from Text Telephone (TTY) to Real-Time Text (RTT)

In December 2016, the Federal Communications Commission released a *Report and Order and Further Notice of Proposed Rulemaking*⁴ regarding the transition from legacy TTY technology to RTT for communications using wireless internet protocol technologies. TTY use has been declining for quite some time, mainly because the technology is cumbersome and slow, is difficult to use, requires costly equipment, and requires an analog telephone line. The Federal Communications Commission's goal is for RTT to replace TTYs. Wireless service providers can choose to offer RTT as an alternative to TTY calling.

RTT sends and receives each text character in near real time and does not require the user to press send or to take turns, which provides a more conversational communication flow. In addition, RTT does not require specialized equipment, and allows for simultaneous voice and text on the same line. RTT users will be able to communicate directly (i.e. without a communications assistant's involvement) with other RTT users, and with TTY users, including 911 centers. RTT users will also be able to connect with relay services.

RTT technology could prove to be popular with all consumers, not just people with hearing or speech disabilities, and could become a new standard for text-messaging services.

Timeline for RTT Compliance

- By December 31, 2017, each Tier I Commercial Mobile Radio Service (CMRS) provider and, by June 30, 2020, each non-Tier I CMRS provider (except resellers) choosing to support RTT shall support RTT either:
 - (1) through a downloadable RTT application or plug-in that supports RTT; or
 - (2) by implementing native RTT functionality into its core network, offering at least one handset model that supports RTT, and including support for RTT in future design specifications.

⁴ See *Transition from TTY to Real-Time Text Technology*, CG Docket No. 16-145; *Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology*, and *Petition for Waiver of Rules Requiring Support of TTY Technology*, GN Docket No. 15-178, *Report and Order and Further Notice of Proposed Rulemaking*, released December 16, 2016.

- By December 31, 2019, each Tier I CMRS provider and, by June 30, 2021, each non-Tier I CMRS provider (including resellers) choosing to support RTT shall support RTT for all new authorized user devices.
- Covered manufacturers that *choose* to support RTT, instead of TTYs, shall implement RTT in newly manufactured equipment by December 31, 2018, if readily achievable or unless not achievable.

RTT Launch

On December 11, 2017, AT&T became the first wireless provider to launch RTT. AT&T has an RTT app for download on iPhone and Android devices and has RTT natively available on its iPhone handsets running iOS 12. AT&T states that their RTT app performs best on 4G enabled devices; 3G network functionality is limited.

T-Mobile has RTT natively available on its iPhones, LG G6, and Samsung Galaxy Note8 handsets. T-Mobile customers must be using VoLTE or Wi-Fi calling.

Verizon has RTT natively available on its iPhones, LG G6 and LGV40ThinQ, Samsung Galaxy Note9, and moto z³ handsets.

Sprint is the only Tier 1 CMRS provider not currently providing RTT access. Because Sprint has not transitioned to VoLTE, Sprint has chosen to continue supporting TTY over its CDMA network for the foreseeable future.

Limitations of RTT

- Currently not available through all wireless providers and on all devices.
- Not integrated into TRS operations.
- Not able to text to wireline phones.
- Wireless phone service is not available in some rural areas.
- Wireless phone service is not affordable for all consumers.
- Incompatible with Braille and other assistive technologies.

Because RTT is only available on select devices, and only works on VoLTE, 4G, and 5G networks, its use is very limited at this time.

Anticipated Telecommunications Relay Services (TRS) Enhancements in 2019

Deafblind Focus Group

While internet-based relay services are not under state jurisdiction, Minnesota consumers use these services in increasing numbers. In February 2019, Sprint will conduct an internet protocol (IP) focus group in Austin, Texas, to gather information on enhancements and improvements to support Sprint IP Relay users who are deafblind.

Minnesota Relay Services

Minnesota Relay is a free service that provides telephone accessibility to persons who are deaf, deafblind, hard of hearing, or speech disabled. A specially trained communications assistant (CA) facilitates the telephone conversation between a person who has hearing loss or a speech disability and other individuals. Calls can be made to anywhere in the world, 24 hours a day, 365 days a year, with no restrictions on the number, length, or type of calls. All calls are strictly confidential and records of conversations are not kept.

TAM and the TED Program aim to be proactive in monitoring trends and rapid advances in telecommunications technology. The program strives to provide services and equipment that allow people with disabilities to independently access telecommunications services to stay connected with family, friends, businesses, and services.

Minnesota Relay Features

- *800/877/888 Numbers:* Minnesota Relay users are able to reach regionally-directed and regionally-restricted 800, 877, and 888 toll-free numbers and business offices of local telephone companies that have special prefixes, all of which would normally be accessible to consumers in their calling area.
- *Answering Machine Retrieval:* Text telephone (TTY) users can request the relay CA to retrieve messages from the user's voice answering machine or voicemail.
- *ASCII Split Screen:* Allows high-speed ASCII computer users and CAs to type and communicate more clearly and quickly. Similar to voice-to-voice conversation, ASCII Split Screen provides the relay user and the voice party the ability to interrupt when appropriate.
- *CA Gender Request:* The relay user can request the CA gender that they would prefer to handle their call (either on a call-by-call basis or permanently through their Customer Profile). Every effort is made by the relay service to fulfill this request.

- *Caller ID:* Calls placed through Minnesota Relay will provide the originating calling party number (ANI), or Caller ID information, through the local exchange carrier for all local and most long-distance calls. The relay provides the calling parties 10-digit telephone number to the called party (if not blocked by the calling party).
- *Customer Profile Database:* Offers relay users numerous automatic ways to expedite the initiation of custom calls. These pre-selected customer calling features include, but are not limited to, communication modes (TTY, voice, and ASCII), frequently dialed numbers, emergency numbers, and customer notes for call processing.
- *Directory Assistance:* A CA will relay directory assistance calls between a relay user and the Local Exchange Carrier directory assistance operator. Once the caller makes a request for directory assistance, the CA will contact a Local Exchange Carrier directory assistance operator. After obtaining the requested phone number, the caller may choose to place the call through the relay or dial it directly (i.e. TTY to TTY).
- *DeafBlind Transmission Speed:* This is a modification of the default transmission speed for Telebraille users. Relay users who are deafblind can set their transmission speeds anywhere from 15 through 60 words-per-minute.
- *Emergency Assistance:* Although relay users are discouraged from placing 911 calls through the relay, calls to 911 are placed at the caller's request. Through Sprint's E911 database, the CA uses a "hot button" to automatically place a call to the most appropriate Public Safety Answering Point.
- *Enhanced Turbo Code (E-Turbo™):* Allows a TTY user to automatically submit dialing and call set-up instructions when they call into Minnesota Relay. This significantly reduces the amount of time necessary for the CA to set up and process the outbound call. The result is that the TTY user is connected to their desired party at a speed that is more functionally equivalent to that of a non-relay call.
- *Error Correction:* This feature automatically corrects many typographical errors and spells out non-TTY abbreviations that may be used by the CA in voice-to-text transliteration.
- *Intelligent Call Router:* This technology automatically and seamlessly routes relay calls to the first available CA in the network.
- *Last Number Redial:* Allows the relay user to call the last person that he or she dialed through the relay, without having to provide the telephone number to the CA.
- *Recording Machine Capabilities:* Allows the CA to record and play back audio-text interaction messages to reduce numerous callbacks to convey entire messages to calling parties.
- *Three-Way Calling Feature:* Allows more than two parties to be on the telephone line at the same time with the CA.
- *Transfer Capabilities:* Allows the CA to transfer a caller to another form of relay service (i.e. CapTel, Hearing Carry-Over, Speech-to-Speech, etc.), to customer service, or to a relay center manager.

- *TTY to TTY Call Release:* Allows the CA to be "released" from the telephone line after the CA has set up a telephone call between an originating TTY caller and a called TTY party, such as when a TTY user must go through the relay to contact another TTY user because the other TTY party can only be reached through a voice-only interface, such as a switchboard.
- *Turbo Code Capability:* Allows users to send information at the same speed it is typed, resulting in a more natural conversational flow and the ability to interrupt one another.
- *Variable Time Stamp Macro:* This macro enables the relay caller to know when their called party has disconnected from the call.
- *Voice Carry-Over (VCO) Gated Calling:* Dedicated VCO and two-line VCO toll-free phone numbers, which provide significant improvements in service by directing VCO users to specifically trained VCO and two-line VCO CAs.
- *VCO-With-Privacy:* Allows a VCO caller to use the standard VCO feature without needing to say "Go ahead" or "GA". Additionally, the CA does not listen to the VCO user's spoken words. Ordinarily, VCO users need to say "GA" so that the CA knows that it is the other party's turn to speak. The responsibility for taking turns when speaking rests entirely upon the calling and called parties because the CA does not hear what the VCO user says.
- *Voice Call Progression:* Allows voice or Hearing Carry-Over callers to listen during call set-up (i.e. ringing or busy).

Speech-to-Speech (STS) Features

- *Called Numbers:* STS users are able to store up to 30 frequently called telephone numbers in their Customer Profile. When the STS user calls into the relay center, he or she can provide the CA the name of the person he or she wishes to call.
- *Contact Information:* Communicating telephone numbers may be difficult for some STS users. This feature allows STS users to advise friends, family, and others to dial 711 to reach them. Once connected, the person can provide the STS user's name to the STS CA. The STS CA will use the STS user's profile information provided for this purpose to connect to the STS user based on the registered STS user's hours and days of availability.
- *Customer Service:* A dedicated customer support for STS users. Staff is available to assist STS users or organizations serving STS users with basic information about STS, filling out Customer Profiles, and other features designed to support STS customers and their callers. The Sprint STS *My Support* number is 1-877-787-1989 (available 24 hours a day, 7 days a week).
- *Email Set-Up:* STS users can email call instructions or information to the relay center 2 to 24 hours prior to the call. The email can include information such as the number to be dialed, the name of the person being called, the subject of the call, any special instructions, or anything that makes it easier for the STS user to complete the call.
- *Privacy Option:* STS users have the ability to communicate without the CA hearing the voice party. If this option is selected, the CA simply listens to the voice of the STS user and repeats messages according to the STS user's preference.

- *Saved Messages:* If the STS user dictates a message to the CA to be used for a call, and the STS user is not able to complete the call due to a busy signal, or the called party is not available, the STS user can request that the STS CA copy the message onto the STS user's Customer Profile. When the STS user wants to place the call again, he or she simply redials STS and asks the CA to retrieve the saved message. After 24-hours, the message copied into the profile is automatically deleted from the system.
- *Wireless Access – STS (*787):* While the 711 dialing shortcut is available nationwide, it is often difficult or time consuming for consumers to reach STS when not at home. Sprint wireless customers are able to dial *STS (i.e., *787) to reach an STS CA quickly and easily from anywhere in the nation (this includes voice callers needing to place a call to an STS user).

Call Volumes

In 2018, Minnesota Relay processed 307,707 calls.

Service	Total Calls
Text Telephone (TTY) Based TRS ⁵	90,642
Speech-to-Speech	7,781
CapTel	209,284

Overall, Minnesota Relay experienced the following changes in call volume from 2017 to 2018:

- 8% decrease in TTY-based relay calls.
- 57% decrease in Speech-to-Speech relay calls.
- 11% decrease in CapTel relay calls.

Telecommunications Relay Services (TRS) are currently split into two categories:

1. Those administered and funded on a state level, which include local and intrastate minutes of service for TTY-based, Speech-to-Speech, and CapTel relay services.
2. Those under the Federal Communications Commission's jurisdiction and paid for by the Interstate TRS Fund, which include *all minutes* for internet-based relay services, which are composed of Video Relay Service, Internet Protocol Relay, and Internet Protocol Captioned Telephone Relay Service. The Federal Communications Commission authorized the recovery of the cost of interstate and intrastate minute of use for internet-based relay services from the federal Interstate TRS Fund, but stated that the special funding arrangement is temporary.

This category also includes interstate and international minutes of service for TTY-based, Speech-to-Speech, and CapTel relay services.

⁵ Includes TTY, Voice Carry-Over, and Hearing Carry-Over relay services.

The migration to internet-based relay services, which are under the Federal Communications Commission’s jurisdiction and paid for through a federal fund, continues to grow as more and more consumers gain access to high-speed internet. Internet-based relay services tend to be easier to use, have additional features, and provide a more natural conversation flow than analog-based relay services. In addition, free relay apps that can be downloaded to wireless devices, such as smartphones and tablets, allow relay users to make calls from anywhere.

The use of Speech-to-Speech relay services has remained relatively steady over the past five years, possibly because there is no internet-based form of this type of relay service to which users can migrate. However, Minnesota Relay experienced a sharp decline in Speech-to-Speech use in 2018. The decline is due to a high-use consumer of this service passing away in April 2018.

The following Minnesota Relay call charts can be found in [Appendix A](#):

- 2018 Minnesota Relay Conversation Minutes by Type
- 2009 – 2018 Minnesota Relay Call Volume
- TTY-Based⁶ Call Volumes
- Speech-to-Speech Call Volumes
- CapTel Call Volumes

Accessibility of the Telecommunications Network – Minnesota Relay Services

Uninterruptible Power System

Sprint utilizes both an Uninterrupted Power Supply (UPS) and backup power generator to ensure that all Data Centers and Sprint Relay Centers have uninterrupted power, even in the event of a power outage. UPS is used only long enough for the backup power generator to come on line – a matter of minutes. Backup power generators are supplied with sufficient fuel to maintain operations for at least 24 hours. Generators can stay in service for longer periods, as fuel availability permits.

In the event of a power outage, the UPS and backup power generator ensure seamless power transition until normal power is restored. While this transition is in progress, power to all basic equipment and facilities essential to the center’s operation is maintained. This includes:

- Switch system and peripherals
- Switch room environmental factors
- Communication Assistant positions (consoles/terminals and emergency lights)

⁶ Includes TTY, Voice Carry-Over, and Hearing Carry-Over relay services.

- Emergency lights (self-contained batteries)
- System alarms
- Call Detail Record recording

As a safety precaution (in the event of a fire during a power failure), the fire suppression system is not electric powered. Once the back-up generator is on line, stable power is established and maintained to all TRS system equipment and facility environmental control units until commercial power is restored.

Switching System Configuration

All Sprint Relay call centers use a digital switching system that is an integral part of the Relay platform. The system offers availability in excess of 99.99%, redundancy of all major system components (including the Central Processing Unit) and catastrophic fault recovery that provides for call continuity in the event of a switch failure. Sprint's Intelligent Call Manager ensures that required levels of service are maintained in the event of a processor failure. If a center shuts down for any reason, all calls are automatically re-routed around the affected center to the remaining operating centers in the Sprint Network.

Sprint's switch is fully redundant to provide a non-stop environment for the relay call center. The switch is designed to allow maintenance without interrupting service and incorporates a back-up processor, memory, and disk subsystems. All Sprint Relay call centers also include fully redundant power systems incorporating a combination of battery and generator Uninterrupted Power Supply systems to condition and maintain electrical power in case of a power outage from the local electrical provider.

If a failure of the switch or supporting systems occurs, the Sprint Telecommunications Relay Services (TRS) dynamic call routing will, within seconds of detecting the outage, route all new Minnesota Relay calls to another call center until the failing system is repaired and the TRS call center is returned to service. Sprint's call center and Relay system design permits the maximum availability with minimal loss of service to users.

All of the system preventive maintenance functions can be performed online, with no effect on call processing. In addition, online and off-line diagnostic routines will identify system faults or failures at the individual board level. Diagnostic procedures are continually processed by the switching system software to detect defective components before they are used.

Manual online diagnostics can be launched at any time from the maintenance and administrative terminal located within the unit, without affecting call processing, calls in progress, or calls waiting in queue. The maintenance and administrative terminal includes a keyboard, screen, and printer capabilities.

Each Sprint relay call center and data center maintains a complete system's spare inventory to meet any malfunction or emergency situation. In addition to spares for switch components, spare units include communications assistant position units, computer desktop spares, and Local Area Network and modem equipment.

CapTel Switching System

Minnesota Relay's CapTel switching system, provided by CapTel, Inc., includes a redundant Central Processing Unit on "hot standby." This ensures that no calls are dropped due to processor failure.

CapTel, Inc. also provides a full maintenance and administrative terminal with keyboard, screen, and printer capabilities, on-line monitoring, real-time programming capabilities that do not take the system offline, the ability to perform preventative maintenance without taking the system off-line, and an inventory of spare critical components which are maintained on-site to ensure that the required levels of service are met.

Alternate Facilities

Sprint's network of Telecommunications Relay Services (TRS) call centers use three centralized Avaya Automatic Call Distributors. If the TRS platform experience an outage situation with one of the Avaya Automatic Call Distributors, the Peripheral Gateways connected to the Avaya experiencing the issue would go offline notifying Intelligent Call Management to stop routing traffic to that Avaya Automatic Call Distributors. The traffic that was once being routed to that Avaya Automatic Call Distributor would be alternately routed to all other functioning Avaya Automatic Call Distributors.

Simultaneously, the Traffic Management Control Center contacts all other Sprint TRS centers notifying them of technical issues affecting other centers, and requests additional staffing at all other functioning centers. Any center employees who are conducting ongoing training or other meetings will be requested to return to the call center floor to assist in handling calls.

The Traffic Management Control Center will also notify the Program Management team so that all states impacted receive appropriate updates. The Call Center Service Assurance group manages the coordination of technical resolutions. The Call Center Service Assurance group will be notified via the Call Center Services alarming platform, which monitors the Avaya Automatic Call Distributors, and the Intelligent Call Manager platform.

Sprint TRS services are supported by six geographically dispersed centers, including the center in Moorhead, Minnesota. The TRS centers are managed by a 24/7 control center that dynamically monitors and manages the centers for all operational issues. If an event occurs which impacts a center's ability to handle TRS calls, the Control Center re-routes incoming traffic to other TRS centers. All re-routing is transparent to relay users.

In addition, Sprint provides a redundant CapTel solution with seven CapTel-dedicated call centers and four co-located CapTel centers with Business Continuity programs to ensure that any issues are resolved quickly with minimal customer impact.

Transmission Circuits

Sprint is a certified interexchange carrier in all 50 states. Using Sprint's nationwide all-digital fiber-optic network, transmission circuits meet or exceed, Federal Communications Commission and TAM intraexchange performance standards and ANSI T1.506-1990 Network Performance – Transmission Specifications for Switched Exchange Access Network standards for circuit loss and noise.

Sprint's Synchronous Optical Network (SONET), using four-fiber bi-directional line switched ring capability, allows automatic switching to alternate paths to provide for traffic rerouting in the event of a route failure. The SONET fiber optic backbone topology is currently designed with more than 100 overlapping rings to ensure sufficient alternate paths for total network survivability. As such, Minnesota Relay is linked to a coast-to-coast telecommunications route, which ensures voice, data, and video services without interrupting the call. This guarantees that Minnesota Relay calls are safeguarded by automatically rerouting service around disruptions in approximately 60 milliseconds.

711 Dialing Access

On August 9, 2000, the Federal Communications Commission released a *Second Report and Order*⁷ concerning nationwide 711 dialing access to TRS. The Order required all common carriers, wireless providers, payphone vendors, and Private Branch Exchange (PBX) vendors to provide 711 dialing access to relay services on or before October 1, 2001.

In 2018, an average of 45 percent of Minnesota Relay calls were placed using this dialing shortcut. Relay users are also able to access Minnesota Relay by dialing the 10 digit toll-free access numbers.

Handling of Emergency Calls

Minnesota Relay encourages users to dial 911 or other existing emergency numbers directly in an emergency as using relay may result in a delay in getting their call through. However, some consumers are more comfortable using relay to access emergency services.

⁷ *In the Matter of the Use of N11 Codes and Other Abbreviated Dialing Arrangements*, Second Report and Order, CC Docket No. 92-105, released August 9, 2000.

Minnesota Relay automatically and immediately transfers emergency relay calls to the appropriate Public Safety Answering Point (PSAP) that the caller would have reached by dialing 911 directly, or to a PSAP that is capable of dispatching emergency services in an expeditious manner. An emergency call is considered to be one in which the relay user indicates the need for police, fire department, paramedics, or ambulance. Minnesota Relay utilizes a standard E911 database that serves all of the United States.

Speed of Answer

Minnesota Relay meets the Federal Communications Commission's mandatory minimum standard for Telecommunications Relay Services (TRS) speed of answer (47 C.F.R. § 64.604), which states "TRS facilities shall, except during network failure, answer 85% of all calls within 10 seconds by any method which results in the caller's call immediately being placed, not put in a queue or on hold."

The chart below demonstrates the average speed of answer (in seconds), and the percentage of calls answered within 10 seconds (service level), for each type of Minnesota Relay call.

	Speed of Answer	Service Level
TTY-Based	0.93	98%
Speech-to-Speech	6.73	88%
CapTel	0.84	99%

Minnesota Relay is equipped with sufficient facilities to provide a Grade of Service (GOS) of P.1 or better for calls entering the relay call center(s) switch equipment.

Consumer Complaints

In 2018, Minnesota Relay received complaints on 0.00002 percent of relay calls, with a total of 307,707 calls relayed and six complaints filed.

Minnesota Relay users have many options for filing a complaint or commendation. The relay communications assistant has the capability to transfer the caller directly to the Sprint or CapTel 24-hour Customer Service departments, or the relay user may request to speak to a relay supervisor during or immediately after a call. Relay users may also file a complaint with the TAM administrator, Minnesota Relay outreach staff, or the Federal Communications Commission.

All complaints and commendations are recorded electronically by Sprint on a Customer Contact form. Sprint provides copies of each Customer Contact form to the TAM administrator monthly. In the event that TAM and the relay provider fail to resolve a Minnesota Relay complaint within 180 days after the complaint was filed, the Federal Communications Commission exercises

jurisdiction over the complaint. Failure to meet the deadlines for complaint resolution may adversely affect the continued certification of Minnesota Relay (47 C.F.R. § 64.606).

TAM submits an annual Complaint Log Summary to the Federal Communications Commission in accordance with Code of Federal Regulations, title 47, section 64.604 (c)(1).

Telephone Equipment Distribution Program

Telephone Equipment Distribution (TED) Program Administration

The TED Program is responsible for:

- Distributing specialized telecommunications devices to income eligible Minnesotans.
- Informing the public of services available through the program.
- Providing training for the use of distributed equipment.

The TED Program is administered through an interagency agreement between the Department of Human Services (DHS) and Commerce. The DHS Deaf and Hard of Hearing Services Division (DHHSD) has six regional offices around the state staffed with professionals experienced in working with people who are deaf, hard of hearing, deafblind, speech disabled, or physically disabled. TED Program services are provided through five of the DHHSD regional offices: Duluth, Mankato, Moorhead, St. Cloud, and St. Paul.

Authority to Provide Equipment

Minnesota Statutes section 237.51, subdivision 5(a)(3) provides DHS with the authority to establish specifications for telecommunications devices to be provided under section 237.53, subdivision 3.

The types of equipment distributed include:

- Amplified Telephones (both hearing and voice)
- Bluetooth Cordless Amplified Phones
- Captioned Telephones
- Remote Control Speaker Phones
- Amplified Cell Phones
- Basic Smartphone
- Wireless Accessories (Bluetooth neckloop, cell phone amplifier, and visual signaler)
- Ring Signaling Devices (auditory, visual, and tactile)
- Text Telephones (TTYs)

- Braille Phones
- Hearing Carry Over Phones
- Voice Carry Over Phones
- Special Needs Devices (for multiple disabilities)
- iOS Tablets and Smartphones (for pilot program)

Population Served

The TED Program serves a wide range of individuals with a variety of communication needs. Currently, the oldest TED Program participant is 103 years of age, and the youngest is age 10. The average consumer served is female, 82 years old, and hard of hearing. In 2018, 67 percent of TED Program participants were female and 77 percent lived outside of the seven-county metropolitan area. Ninety percent of TED Program participants are hard of hearing, 22 percent are hard of hearing with vision loss, 2 percent are deaf, 4 percent are physically disabled, and 2 percent have other disabilities (i.e. deafblind and speech disabled).

Many clients with multiple disabilities utilize the TED Program. In 2018, 11 percent of TED Program participants had two or more disabilities, such as a speech and physical disability or hearing loss and physical disability.

A large portion of Minnesotans with hearing loss (33 percent) are 65 years of age or older. It is expected that by age 65, one out of three people will have a hearing loss, and the number is expected to rise as the Baby Boomer generation matures.

Statistical Information

The chart below lists the number of new program participants served by the TED Program, as well as the number of devices distributed to new program participants for calendar years 1998-2018.

Year	Number of New Program Participants Served	Number of Devices Distributed to New Program Participants
1998	2,069	2,120
1999	2,141	2,340
2000	2,105	2,695
2001	1,882	2,431
2002	1,913	2,584
2003	1,906	2,337
2004	1,988	2,485
2005	1,872	2,405
2006	1,976	2,081
2007	1,771	2,073

2008	1,566	1,820
2009	1,638	2,728
2010	1,381	2,319
2011	1,317	2,529
2012	1,055	989
2013	935	1,027
2014	763	764
2015	642	764
2016	547	700
2017	439	553
2018	448	499

The TED Program provides repeat service to equipment recipients who need further assistance after equipment is initially provided to them. Program participants often contact the TED Program to receive additional training, repair/replacement of equipment, or to exchange equipment because their communication needs have changed (e.g. a person's hearing deteriorates and the equipment they initially received no longer meets their needs).

This past year the TED Program served 1,062 repeat participants in addition to the 448 new participants. TED Program specialists also provided information and referrals to 205 consumers and agencies, for a total of 1,715 Minnesotans receiving service in 2018.

A report of TED Program activities is submitted quarterly to the Telecommunications Access Minnesota (TAM) administrator. The report documents outreach activity, the number of individuals served, and the types of equipment distributed. The charts provided in [Appendix B](#) demonstrate TED Program activities in 2018.

TED Program Progress

In July 2018, the Minnesota Public Utilities Commission approved the *TAM FY 2019 Proposed Budget and Surcharge Recommendations*. In this Order⁸, the Public Utilities Commission asked the TED Program to address the following information in the 2018 TAM Annual Report.

TED Program's New Outreach Metrics and What is Being Learned From Them

In January 2018, the TED Program implemented new outreach performance measures. The outreach activities that were measured were Presentations, Booths, Drop-Ins/Cold Calls, Mass Mailings, Advertisements, and In-Home Training on TRS equipment. Each TED Program

⁸ Order Accepting Report, Approving Budget, Maintaining Surcharge, and Requiring Filings, Docket Nos. P-999-PR-18-5 and P999-/PR-18-194, released July 3, 2018.

application distributed had a specific code to track the effectiveness of the outreach effort. Here is what the TED Program learned in 2018.

Presentations

TED Program staff participate in presentations to inform service providers and potential clients about the services the TED Program offers. The new performance measures for presentations implemented a short survey to participants. In calendar year 2018, there were 1,398 total participants at presentations. The TED Program collected 595 surveys from participants (43 percent).

The survey questions included:

1. Is the application process clear?
 - Of the 595 surveys collected, 546 people responded 'yes', that the application process was explained clearly (92 percent).
2. Was the information provided helpful?
 - Out of 595 surveys collected, 562 participants responded 'yes', that the information provided during the presentation was helpful (94 percent)
3. Do you plan on applying or referring people?
 - Out of 595 surveys collected, 447 participants responded 'yes', that they would apply or refer others to the TED Program (75 percent).

There were 1,538 TED Program applications distributed at presentations during the year. The number of applications returned was 27 that staff could track (2 percent). Even though this appears a low response rate, it is the highest response rate compared to other promotional efforts.

Booths

TED Program staff participate at booths to network with other service providers and interact with potential clients. The TED Program created "Contact Me" cards to pass out at booths to have more one-on-one time with potential clients at a later date. Forty-six 'Contact me' cards were collected out of the 4,852 booth participants (1 percent).

Questions included on the card were:

1. Do you want to be contacted to learn more about the TED Program?
 - From the 46 "Contact me" cards received, 24 people wanted to be contacted later (52 percent).
2. Was the information helpful at the booth?
 - Out of 46 "Contact me" cards received, 43 people responded 'yes', that the booth information was helpful (93 percent).

3. Do you plan on applying or referring the TED Program to others?
 - Out of 46 “Contact me” cards received, 37 people responded ‘yes’, to applying or referring people to the TED Program (80 percent).

There were 775 TED Program applications distributed at booths. Out of that, three applications were received (0.4 percent). Booths may not be as effective as other outreach activities. A more effective outreach activity at booth events is networking with other service providers.

Drop-Ins/Cold Calls

Drop-ins refer to TED Program staff stopping into a service agency and informing them about the program. The same occurs with a cold calls when a service agency is contacted with no pre-scheduled meeting.

- There was a total of 600 participants for drop-ins and cold calls.
- 1,134 applications were distributed.
- The TED Program counted how many additional applications were requested after the initial contact. Thirty agencies requested more applications, which was a .05 percent rate.

The total number of applicants distributed during drop-ins and cold calls was 1,135. The program collected three applications from that (0.3 percent). This outreach activity results in good dialogue with service providers. Many times the outcome of a drop-in or cold call is a request for presentations.

Mass Mailings/Email Blasts

Mass mailings are used when letters and program brochures are mailed out to service providers. The performance measure that was established was how many additional persons requested additional TED applications after receiving the original mailing.

- Number of participants receiving the mailings were 4,741
- Number of applications distributed were 794
- Number of applications returned was 4

There is a very low response rate (0.5 percent) with this outreach and high effort.

In-Home Training (Telecommunications Relay Services Equipment)

In-home trainings occur when non-TED Program clients request a demonstration or training of equipment that is used with relay services. These trainings are not requested that often. There were only 20 participants who received in-home training in 2018. Five out of the 20 participants completed a short survey.

The survey asked the following questions:

1. Was the process explained clear? One hundred percent of the five clients responded ‘yes’.

2. Was the information provided helpful? One hundred percent of the five clients responded 'yes'.
3. I plan to refer another person to the TED Program. Zero clients responded to this.

The survey questions may not be very effective since there is a low response rate.

Advertisements

Advertisements are placed in various publications throughout the state. The TED Program tracks the referrals when someone calls for a TED Program application. Staff have to rely on the memory of the person calling to determine if the referral was from an advertisement. This is not always reliable because most of the clients are senior citizens and cannot recall accurately the publication.

- 25 calls were received with the an advertisement as the referral
- 21 applications were mailed out
- 10 applications were returned

The response rate for advertisements are higher than other promotions but the cost is higher.

In 2019, the TED Program plans on conducting further analysis of these performance measures to determine how they can be modified for a higher response rate.

Lessons Learned from the Client Contact Surveys and the Resulting Program Changes

To comply with findings from the TAM audit in 2015, the TED Program continued following up with program clients to determine if they are still using their equipment. In 2017, the TED Program followed-up with clients who received equipment three years prior. Many clients did not recall receiving services and equipment from the TED Program. The program thought client's recollection may be better going back two years. In calendar year 2018, the TED Program decided to survey clients who received equipment two years ago instead of three.

Three hundred and ninety seven clients were contacted. The results of those contacts are:

- 38 percent of clients are using the equipment and it is still in working condition
- 13 percent of the clients have passed away
- 10 percent of clients needed some kind of follow-up service, i.e., needed a reassessment, additional training, or the device was broken
- 32 percent of clients were unable to be reach
- 3 percent of clients no longer needed the device

In 2019, the TED Program will follow-up with clients receiving assistance two years ago with modified procedures based on what was learned in 2018.

The Numbers of Each Type of Equipment Purchased, Deployed, Returned, and Retired During That Year

Annually, the TED Program purchases new equipment, distributes (new and refurbished), equipment is returned, and equipment becomes retired (recycled or disposed). This is a standard circulation cycle for equipment. Below are charts that summarize the number of purchased, distributed, returned and retired devices per equipment type.

Purchase of New Equipment

Equipment Type	Pieces of Equipment
Amplified Telephones	525
Captioned Telephones	177
Auxiliary Equipment (ringers, neckloops, switches)	235
Speaker Phones	9
iPads	0
iPhones	0
Cell Phones	57
TTYs	4
Other (Telitalk Emote, VCO, Braille)	11
TOTAL	1,018

Total Distributed Equipment (New and Refurbished)

Equipment Type	Pieces of Equipment
Amplified Telephones	1523
Captioned Telephones	505
Auxiliary Equipment (ringers, neckloops, switches)	349
Speaker Phones	81
iPads	2
iPhones	7
Cell Phones	89
TTYs	23
Other (Telitalk Emote, VCO, Braille)	12
TOTAL	2,591

Returned Equipment

Equipment Type	Pieces of Equipment
Amplified Telephones	394
Captioned Telephones	135
Auxiliary Equipment (ringers, neckloops, switches)	61
Speaker Phones	12
iPads	3
iPhones	0
Cell Phones	2
TTYs	7
Other (Telitalk Emote, VCO, Braille)	15
TOTAL	629

Disposed/Recycled Equipment

Equipment Type	Pieces of Equipment
Amplified Telephones	349
Captioned Telephones	154
Auxiliary Equipment (ringers, neckloops, switches)	83
Speaker Phones	17
iPads	0
iPhones	0
Cell Phones	3
TTYs	22
Other (Telitalk Emote, VCO, Braille)	14
TOTAL	642

Wireless iPad/iPhone Pilot Phase Two

The iPad/iPhone pilot program ended on February 27, 2017. A report was written explaining the results of the pilot and the TED Program's recommendations. The TED Program met with Commerce to discuss feedback about the pilot report findings. Commerce's feedback was that the TED Program did not collect adequate and reliable data to prove that consumers with disabilities experience greater independence and increased access to telecommunications by using advanced wireless devices. In addition, Commerce recommended that stronger controls needed to be implemented to ensure that clients fulfilled their role in the pilot. It was recommended that the TED Program consider creating a revised pilot program with a smaller sample size of participants, stronger controls, and more measureable outcomes.

A revised proposal for phase two was submitted to Commerce in November 2018, and approved. The phase two pilot is limited to 30 participants for a duration of 3 months. There are increased controls in the pilot. To participate in the pilot there are stricter criteria to ensure comprehensive data is collected. Questions that will be answered during the pilot will be through monthly surveys. The goal of the pilot is to answer the following questions:

1. What are the needs for deaf, hard of hearing, deafblind, speech and physically disabled persons to use advanced wireless devices?
2. How do tablets and smartphones impact telecommunication access for people who are deaf, hard of hearing, deafblind, speech and physically disabled?
3. Which applications do deaf, hard of hearing, deafblind, speech and physically disabled person prefer to access telecommunication services?
4. Do advanced wireless devices provide a better functional equivalent experience to people with disabilities?
5. What benefits and disadvantages does advanced wireless devices have accessing telecommunication services?
6. Should the TED Program add tablets and smartphones to their wireless program?

The devices that participants will evaluate are iPads and iPhones limited to pre-installed telecommunication applications. The iPads and iPhones will be “locked” so participants cannot download non-telecommunication applications during the duration of the pilot. The TED Program wants participants to evaluate their access to telecommunication apps only.

A report on the results of the revised pilot will be developed and shared with Commerce and DHS. Depending on the results of the report, a discussion about whether the TED Program should create a full distribution program for enhanced wireless devices will take place to determine future service delivery of the device(s).

Deaf and Hard of Hearing Services Division Redesign

DHHSD recently went through a redesign and restructured its long-standing regional service model to the division-wide programs organized by functions. The objective of this approach was to realign division resources to focus more on direct client services. Staff are now organized by program units: DHHSD Specialists Services, Mental Health Services, Operations, and Telephone Equipment Distribution.

All TED Program specialists now report to the TED Program administrator. In the previous division model, the TED Program administrator would directly supervise the central office members: assistant TED Program coordinator, repair specialists, and an office administrative specialist. In the current model, the TED Program administrator now supervises all of the TED Program regional specialists who are based in five regions statewide, and the TED Program central office staff.

Following the 2017 statutory mandate to explore co-locating staff with other entities, some division staff will instead work in other locations, such as county or nonprofit buildings. By reducing the number of offices, DHHSD can instead locate staff in more communities around the state. Work is still in progress on this initiative. The objective is to improve the division's coverage of rural areas, and reduce the amount of time some staff spend traveling to and from clients. The division will develop communication strategies for keeping staff connected based on similar teams in DHS and on staff input. In line with this change, clients will now be served by whichever staff person is closest or most convenient for them to access.

In addition, as a result of the Division's organizational redesign, there will be up to two dedicated information and referral (I&R) specialist positions providing information and referral services to individuals with inquiries that are general and straightforward client requests i.e. customers asking for resource suggestions, information on telephone equipment devices for people with hearing loss, and the like. I&R specialists will be the first staff members to review emails and take calls, and directly help customers to identify the resources they seek. The objective of these positions is to ensure consistency of responses and allow TED Program specialists to focus on more complex and longer-term work.

I&R specialists will rely on the division's internal databases including TED's Agile Apps that contain information about resources for clients around the state which will be developed with assistance from current TED Program staff. For more complex needs and other complicated inquiries pertaining to the TED Program, I&R specialists will refer the client to the DHHSD TED Program staff members most conveniently located to them, and most appropriate in the need.

The TED Program employs one office administrative specialist – intermediate (OASI) position which is tasked with specifically providing clerical assistance to the TED Program and Minnesota Relay statewide, provides entry-level data into TED's Agile Apps, monitors and records all budget orders, produces reports, documents Minnesota Relay complaints, and consumer preferences and lastly provides backup clerical support for the DHHSD's Metro office.

The TED Program OASI and I&R specialists will work closely in coordinating program correspondence, referrals and submitting TED Program applications and information brochures. The TED Program OASI position will continue to be 100% tailored to TED's program objectives and operations.

The communications coordinator is also one of the new DHHSD positions as a result of the division's organizational redesign. The new model will have a dedicated position for internal and external communications. This position will manage the division's new website, social media, brochures, and other documents, and promote the division's services including the TED Program. The communication coordinator will help the division, including the TED Program, to expand its outreach services to make it easier for individuals to contact TED Program staff.

The incumbent will be tasked to work closely with the TED Program assistant coordinator in expanding its advertising and marketing materials and resources for individuals with hearing loss statewide, provide TED Program updates through the website and provide new brochures and any graphic-design related materials promoting TED Program services to individuals, organizations and communities statewide.

As for internal communications, the communications coordinator will work with TED Program staff on communication-related materials for DHS' monthly Newswire and Assistant Commissioners' updates and reports. The TED Program assistant coordinator's primary duties lies in the project management areas. This role assists the program administrator in special projects and program development, and serves as a liaison between the TED Program administrator and the program specialists statewide; and also, as the TED Program expert regarding database issues and data analytics in identifying and assessing outreach initiatives and outcomes throughout Minnesota.

Outreach

Minnesota Relay Outreach

Minnesota Relay outreach is provided under an interagency agreement with the DHS – TED Program. Outreach staff is responsible for providing a comprehensive statewide outreach program to educate people about Minnesota Relay services. Outreach personnel distribute informational pamphlets, train consumers and businesses, make presentations, staff exhibitions, and perform other similar forms of consumer contacts.

Outreach staff and the TAM administrator serve as points of contact for Minnesota consumers who have questions, concerns, complaints, or commendations. Outreach efforts are tailored to target appropriate demographics, including consumers who are deaf, deafblind, hard of hearing, late deafened, or speech disabled, as well as hearing consumers and businesses.

Outreach activities primarily include:

- Staffing a booth at exhibitions, seminars, and fairs.
- Presenting at senior centers, health care facilities, and social service agencies.
- Providing brochures and instruction sheets.

TED Program Outreach

DHSD is responsible for the promotion and education of TED Program services. While websites, emails, and telephone calls can be an efficient, effective, and convenient way of providing information, TED Program specialists find that many clients are more receptive if services are provided in person. As such, TED Program specialists often travel to client homes to conduct equipment needs assessments, set up equipment, and provide training on the complexity of the device. In-home visits help eliminate apprehension and result in a more personal, relaxed, and productive experience for the client.

In addition to in-home client visits, 2018 outreach efforts included:

- Staffing a booth at senior exhibitions, health fairs, and conferences.
- Presenting at senior apartments, health care facilities, and social services agencies.
- Advertising in publications for seniors, newspapers, conference books, and on Facebook.
- TV Advertising.
- Mass Mailings (Postal and Email).
- Drop-In Visits and Cold-Calls to Social Services, Businesses, Senior Housing, and Health Care Professionals.

2018 Minnesota Relay and TED Program Outreach

In 2018, staff performed 143 Minnesota Relay and TED Program outreach activities reaching 6,219 Minnesotans. Reports containing outreach efforts are compiled monthly by the TED Program and sent to the TAM administrator.

Date	Type of Outreach	Name or Location of Event	City	Attendees
1/18	Booth	Assistive Technology Carnival	North Mankato	55
1/18	One-on-One Training	Person's Work	Faribault	2
1/24	Presentation	Des Moines Valley Health & Human Services	Jackson	7
1/25	Presentation	Jordan Towers - Residents Meeting	Red Wing	52
2/6	Presentation	Northshore Community Partners	Silver Bay	20
2/7	Booth	Ability Event 2018	St. Cloud	8
2/7	Presentation	Area Agency on Aging - AAA Meeting	Thief River Falls	14
2/8	Presentation	Pine County Human Services	Pine City	65
2/9	Presentation	MN Veterans Administration	Spicer	18
2/9	Presentation	Lighthouse Center for Vision Loss	Duluth	2
2/13	Booth	Special Needs Expo	Alexandria	50
2/15	Presentation	Parkview East Retirement Community	Northfield	16
2/15	Presentation	Northfield Manor Retirement Community	Northfield	8
2/15	Presentation	Ackerberg Family Shalom West Campus	St. Louis Park	12

Date	Type of Outreach	Name or Location of Event	City	Attendees
2/21	Presentation	Senior Network Providers	Big Lake	21
2/22	Presentation	Annandale Care Center	Annandale	3
2/22	Presentation	Presbyterian Homes	Minnetonka	13
2/27	Presentation	Area Agency on Aging - Land of the Dancing Sky	Warren	22
2/28	One-on-One Training	Person's Home	Rochester	1
3/1	Presentation	CentraCare - Heath Care	Sauk Centre	4
3/1	Presentation	CentraCare - Nursing Home	Sauk Centre	22
3/3	Booth	Messiah Church Info Fair	Plymouth	79
3/6	Presentation	Beacon Hill Assisted Living	Minnetonka	13
3/8	Presentation	Summerwood of Plymouth	Plymouth	2
3/13	Presentation	Stonecrest	Woodbury	10
3/14	Presentation	Area Agency on Aging - Land of the Dancing Sky	Fergus Falls	10
3/16	Presentation	Johanna Shores - The Gables	Arden Hills	12
3/21	Presentation	Morris Public Library	Morris	10
3/26	Booth	Minnesota Telecom Alliance Convention	Minneapolis	1000
3/27	Presentation	Southwest Center for Independent Living	Marshall	8
3/30	Presentation	Des Moines Valley Health & Human Services	Windom	10
4/4	Booth	Community Health & Wellness Fair	Springfield	200
4/5	One-on-One Training	Person's Home	Kasson	3
4/5	Presentation	Olmsted County Human Services	Rochester	22
4/5	Presentation	Good Samaritan	Waconia	13
4/6	Presentation	Detroit Lakes Middle School	Detroit Lakes	5
4/6	Presentation	Detroit Lakes High School	Detroit Lakes	3
4/10	Booth	Perham Health Men's Night	Perham	99
4/11	Presentation	Oak Crest Senior Housing	Roseau	22
4/17	Presentation	LeSueur Public Health	Le Center	9
4/18	Presentation	Alternative Care Coordinators	Mankato	19
4/19	Booth	What's Next Fair	Fairmont	15
4/19	Presentation	Senior Network Providers	Big Lake	24
4/19	Presentation	St Paul Public Schools	St. Paul	10
4/23	Presentation	Life Enrichment	Milaca	16
4/23	Presentation	St. James Manor	Perham	9
4/23	Presentation	Briarwood	Perham	6
4/26	Presentation	Area Agency on Aging	Redwood Falls	33
4/27	Booth	MN Gerontological Society Conference	Brooklyn Center	500
5/1	Booth	Red Lake Elder Conference	Red Lake	200
5/1	Presentation	Health Partners	St. Paul	3
5/3	Presentation	St. Mark's Independent Living	Austin	22

Date	Type of Outreach	Name or Location of Event	City	Attendees
5/8	Presentation	West Central Dementia Awareness Network	Willmar	13
5/8	Presentation	Montevideo Area Memory Loss Network	Montevideo	14
5/8	Presentation	Brookside Senior Living	Montevideo	16
5/8	Presentation	Mayo Clinic	Rochester	12
5/9	Presentation	Sibley County Human Services	Gaylord	20
5/10	Presentation	Old Main Village	Mankato	12
5/12	Booth	Assistive Technology Fair	Roseville	100
5/15	Presentation	Canvas Health	Stillwater	17
5/16	Booth	Active Life Fair	Shoreview	35
5/17	Presentation	Senior Network Providers	Sauk Centre	12
5/17	Presentation	Canvas Health	Mahtomedi	16
5/17	Presentation	Area Agency on Aging	Bemidji	12
5/23	Presentation	Edgewood Vista	Sartell	14
6/4	Presentation	Guardian Angels Senior Housing	Elk River	4
6/6	Booth	Hawley Senior Fair	Hawley	55
6/13	Presentation	Laurentian Manor Apartments	Virginia	29
6/21	Booth	Hearing Loss Association of America Expo	Minneapolis	850
6/27	Presentation	Washington Manor	Virginia	18
7/12	Presentation	Garnette Gardens	Redwood Falls	14
7/16	One-on-One Training	Person's Home	Northfield	2
7/17	One-on-One Training	Person's Work	Fairmont	3
7/20	Booth	West Otter Tail Senior Resource Fair	Fergus Falls	115
7/20	Presentation	CommonBond	St. Paul	5
7/25	Presentation	Good Samaritan Center	East Grand Forks	8
7/26	Booth	Take Me Out to the Ebenezer MN Campus	Minneapolis	35
7/30	Presentation	St. Cloud Ear, Nose and Throat	St. Cloud	7
8/6	Presentation	Faith Based Nursing	Rochester	12
8/6	Presentation	Faith Based Nursing	Kasson	6
8/9	Presentation	Interfaith Care Givers	Blue Earth	33
8/13	Presentation	Volunteer Services of Carlton County	Carlton	45
8/20	Presentation	Senior Network Providers	St. Cloud	6
8/21	Presentation	St. Barnabas Lutheran Church	Plymouth	23
8/27	Booth	VA Medical Center Assistive Technology Fair	St. Paul	25
8/28	Presentation	Community Action Partnership of Ramsey & Washington Counties	St. Paul	19
9/4	Presentation	B's Homecare Inc.	Cambridge	2
9/4	Presentation	Hearing Loss Association of America	St. Cloud	7
9/5	Booth	Telecommunications Equipment Distribution Program Association Conference	Bloomington	120
9/11	Presentation	Benson County Health Services	Benson	7

Date	Type of Outreach	Name or Location of Event	City	Attendees
9/11	Presentation	Swift County Health Services	Benson	9
9/11	Presentation	Canvas Health	Forest Lake	10
9/11	Presentation	Vocational Rehabilitation (DEED)	Mankato	9
9/12	Presentation	Canvas Health	Oakdale	0
9/13	Presentation	Canvas Health	Stillwater	10
9/17	Presentation	Canvas Health	Oak Park Heights	12
9/18	Booth	Health Fair	Atwater	17
9/18	Presentation	Canvas Health	Woodbury	13
9/19	Presentation	VA Medical Center, Audiology	St. Cloud	13
9/20	One-on-One Training	Person's Home	Fairmont	2
9/25	Booth	Hubbard County Senior Fair	Park Rapids	108
9/25	Presentation	Public Health	St. Paul	10
9/26	One-on-One Training	Person's Home	Red Wing	3
9/28	Booth	Fall Prevention	Walker	58
10/4	Presentation	Benet Place South	St. Cloud	9
10/4	Presentation	White Bear Area Senior Program	White Bear Lake	6
10/5	Booth	St. Cloud Hospital Care Management Vendor Fair	St. Cloud	27
10/9	Booth	Meeker Council on Aging	Litchfield	19
10/10	Presentation	Riverview Heights	Fergus Falls	5
10/15	Booth	Health Fair and Immunization Clinic	Minneapolis	35
10/15	Presentation	Good Samaritan	Nisswa	9
10/16	Booth	Wisdom Steps	Bena	24
10/16	Booth	Just for Women	Perham	250
10/17	One-on-One Training	Person's Home	Crookston	2
10/18	Booth	Operation Community Connect	Milaca	35
10/18	Booth	Operation Community Connect	Mora	52
10/18	Presentation	Health Partners Assistive Technology Fair	St. Paul	3
10/19	Booth	Operation Community Connect	Rush City	100
10/23	Booth	Project Connect	St. Cloud	22
10/23	Presentation	Woodside Manor	Menahga	9
10/23	Presentation	Pine Villa Apartments	Menahga	3
10/25	Booth	Fall Aging Conference	Brooklyn Center	421
10/25	One-on-One Training	Person's Home	Lanesboro	2
10/26	Booth	StandDown	St. Cloud	27
10/29	Presentation	Community Education	St. Paul	7
11/3	Booth	Technology Expo	Rochester	47
11/6	Booth	Laq Qui Parle Human Services	Madison	7
11/7	Booth	Vendor Fair	Milaca	23
11/7	Presentation	MnCHOICES	Crookston	26

Date	Type of Outreach	Name or Location of Event	City	Attendees
11/8	Presentation	Good Samaritan - Woodland	Brainerd	5
11/13	Presentation	Pillsbury United Communities	Minneapolis	1
11/15	Presentation	CommonBond, Spruce Place Apartments	Farmington	3
11/16	Presentation	CommonBond, East Shore Apts	Mahtomedi	13
11/16	Presentation	SOAR Steel Workers of America Retirees	Aurora	30
11/17	Booth	HLAA Twin Cities Conference	St. Louis Park	39
11/19	Presentation	Ebenezer Park Apartments	Minneapolis	13
11/27	Presentation	North Park Plaza	New Hope	7
11/29	Presentation	Riverfront on Main	Pelican Rapids	1
11/29	Presentation	Riverfront Manor	Pelican Rapids	16
11/29	Presentation	Jordan Towers I & II	Red Wing	45
12/3	Presentation	Sholom Home	St. Paul	27
12/5	Presentation	CREST/Temperance Ridge Senior Center	Sherburn	16
12/11	Presentation	DHHSD Metro Advisory Committee Meeting	St. Paul	14

DHHSD Regional Advisory Committee Meetings

DHHSD has established six advisory committees throughout Minnesota. Each advisory committee meets quarterly and serves as a venue to provide information to, and gather information from, the community. Advisory committee meeting minutes are provided to the TAM administrator and TED Program administrator so that issues, questions, and concerns regarding Minnesota Relay and the TED Program may be addressed.

The TAM administrator attends the Metro advisory committee meetings, and TED Program staff attend one advisory committee meeting per region, per year.

TAM Fund Budget Summary

REVENUE	FY 2018 Actual	FY 2019 Budgeted
Per Wired/Post-Paid Wireless Customer Access Line (FY 2018 = \$0.05; FY 2019 = \$0.05)	\$ 3,495,224.73	\$ 3,571,887.00
Prepaid Wireless Retail Transactions	\$ 696,374.54	\$ 744,316.00
TAM Fund Interest	\$ 24,486.84	\$ 24,705.00
Total TAM Fund Revenue	\$ 4,216,086.11	\$ 4,545,202.00

EXPENDITURES		
TAM Program Administration	\$ (115,527.67)	\$ (142,500.00)
Sprint (TRS)	\$ (1,469,109.13)	\$ (1,449,500.00)
DHS-TED Program	\$ (1,314,955.96)	\$ (1,479,765.00)
DHS-Rural Real-time Captioning	\$ (297,638.12)	\$ (297,032.00)
DEED-Accessible News for the Blind	\$ (97,072.50)	\$ (100,000.00)
Minnesota Commission of the Deaf, DeafBlind and Hard of Hearing	\$ (1,170,000.00)	\$ (1,170,000.00)
MN.IT Services (1)	\$ (290,000.00)	\$ (290,000.00)
MN.IT Services (2)	\$ (50,000.00)	\$ (50,000.00)
Legislative Coordinating Commission	\$ (100,000.00)	\$ (100,000.00)
Total TAM Fund Expenditures	\$ (4,904,303.38)	\$ (5,078,797.00)

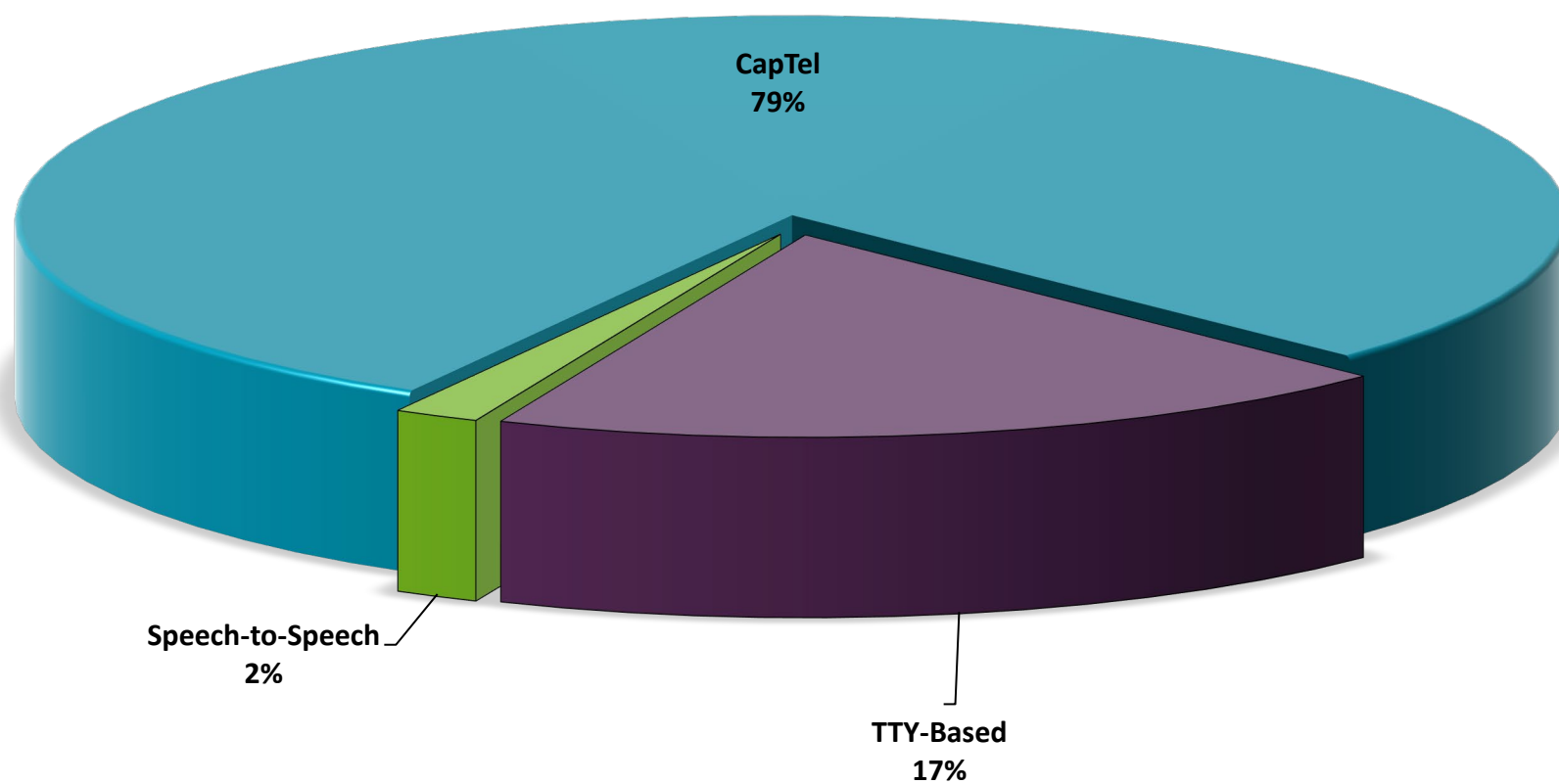
REVENUE VS. EXPENDITURES	\$ (688,217.27)	\$ (737,889.00)
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STATEMENT OF TAM FUND BALANCE		
TAM Fund Balance at Beginning of Fiscal Year	\$ 2,598,203.16	\$ 1,913,001.69
TAM Fund Revenue & Interest	\$ 4,216,086.11	\$ 4,340,908.00
TAM Fund Expenditures	\$ (4,904,303.38)	\$ (5,078,797.00)
TAM Fund Balance at Close of Fiscal Year	\$ 1,909,985.89	\$ 1,175,112.69

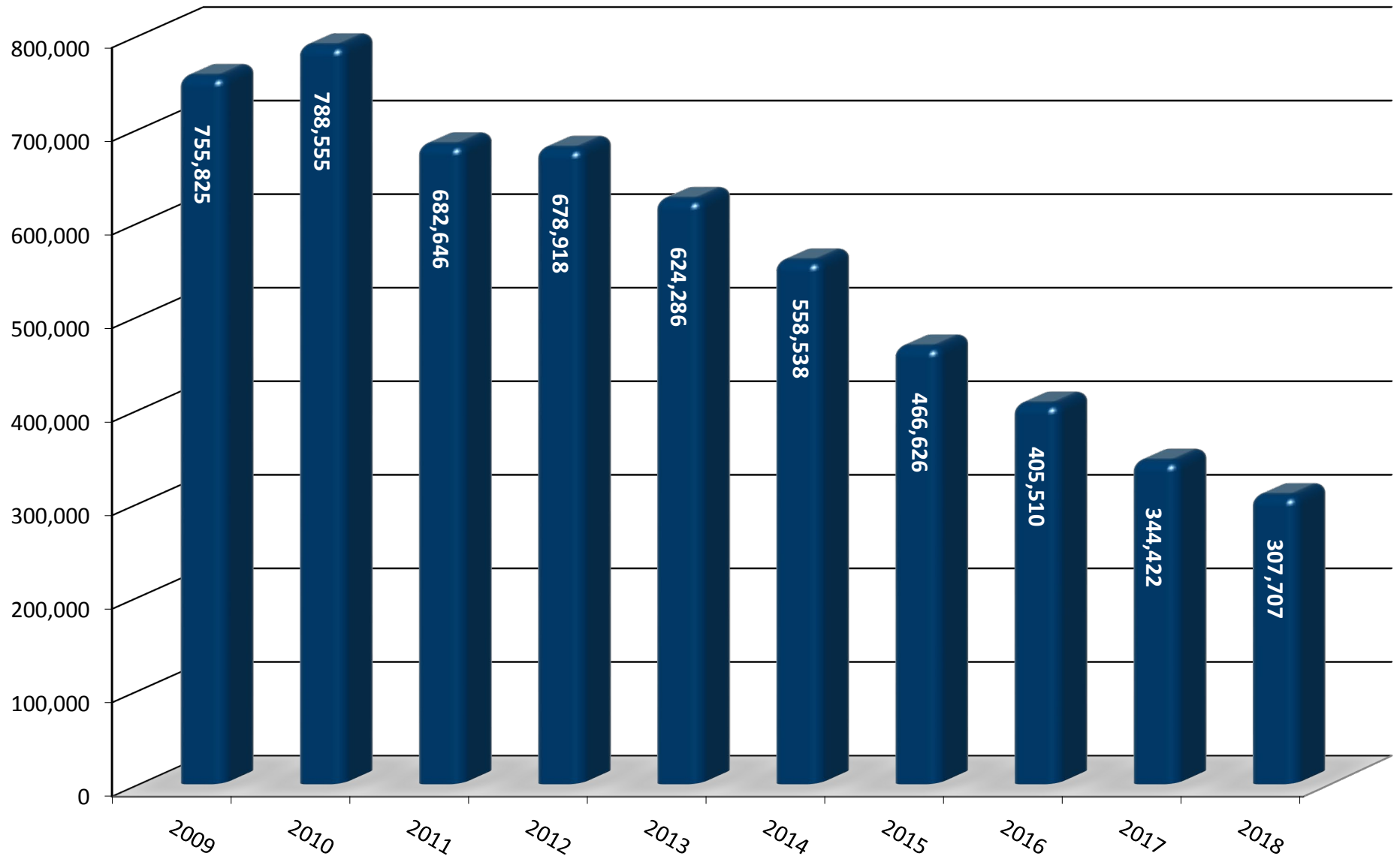
Appendices

Appendix A - Minnesota Relay Call Charts

2018 Minnesota Relay Conversation Minutes by Type

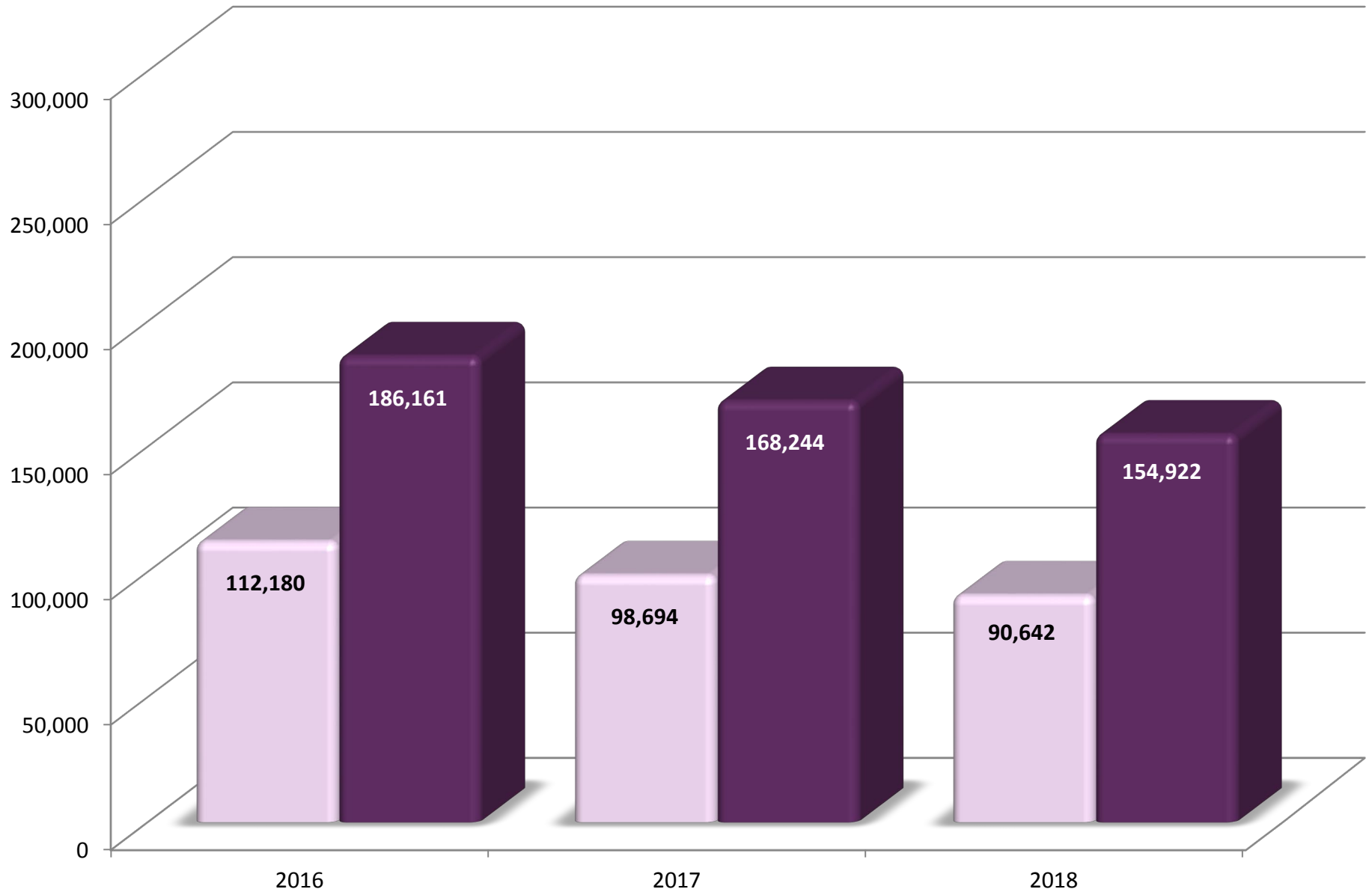


2009 - 2018 Minnesota Relay Call Volume (total number of TTY-Based, STS, and CapTel calls)

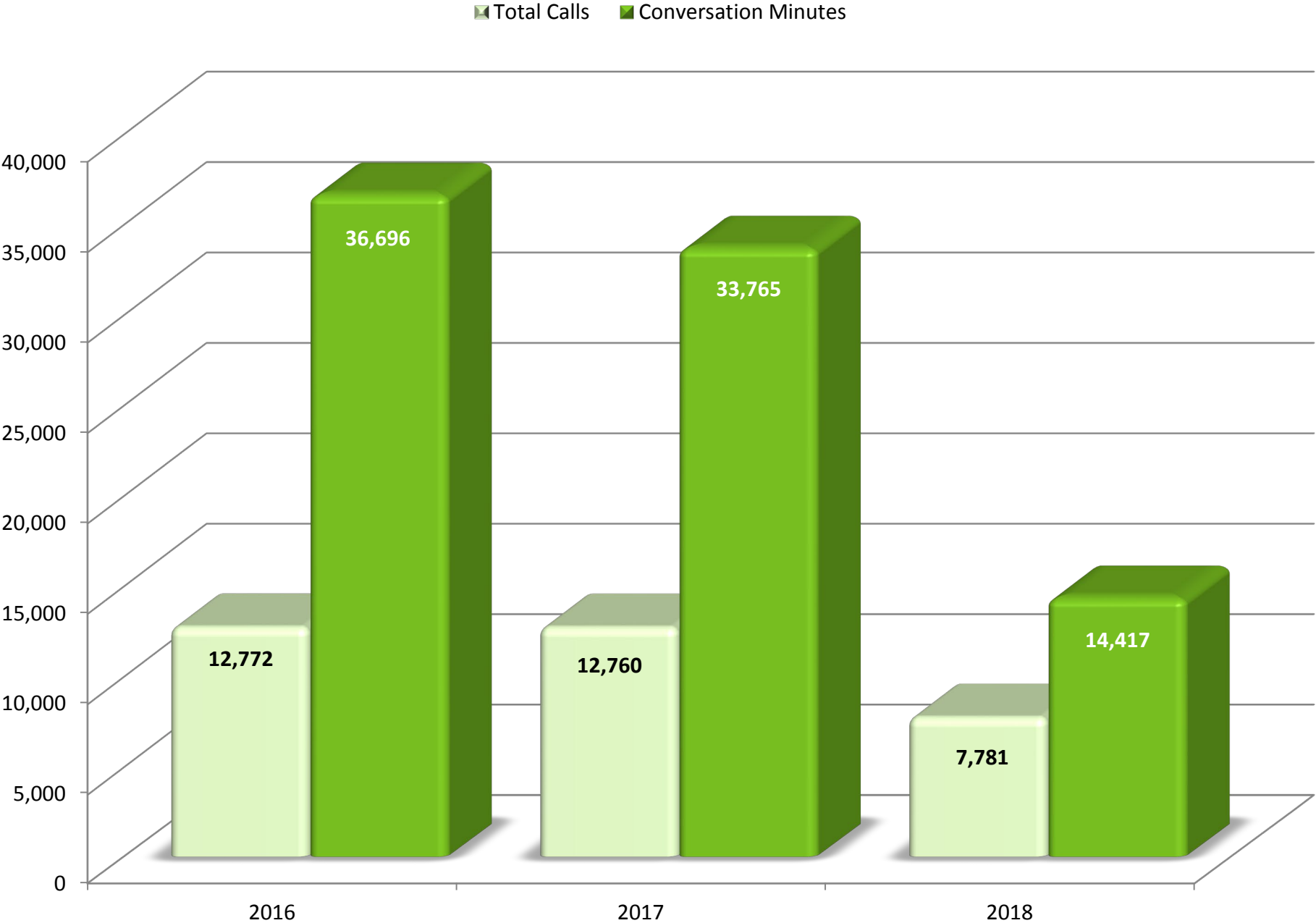


TTY-Based TRS Call Volumes

■ Total Calls ■ Conversation Minutes

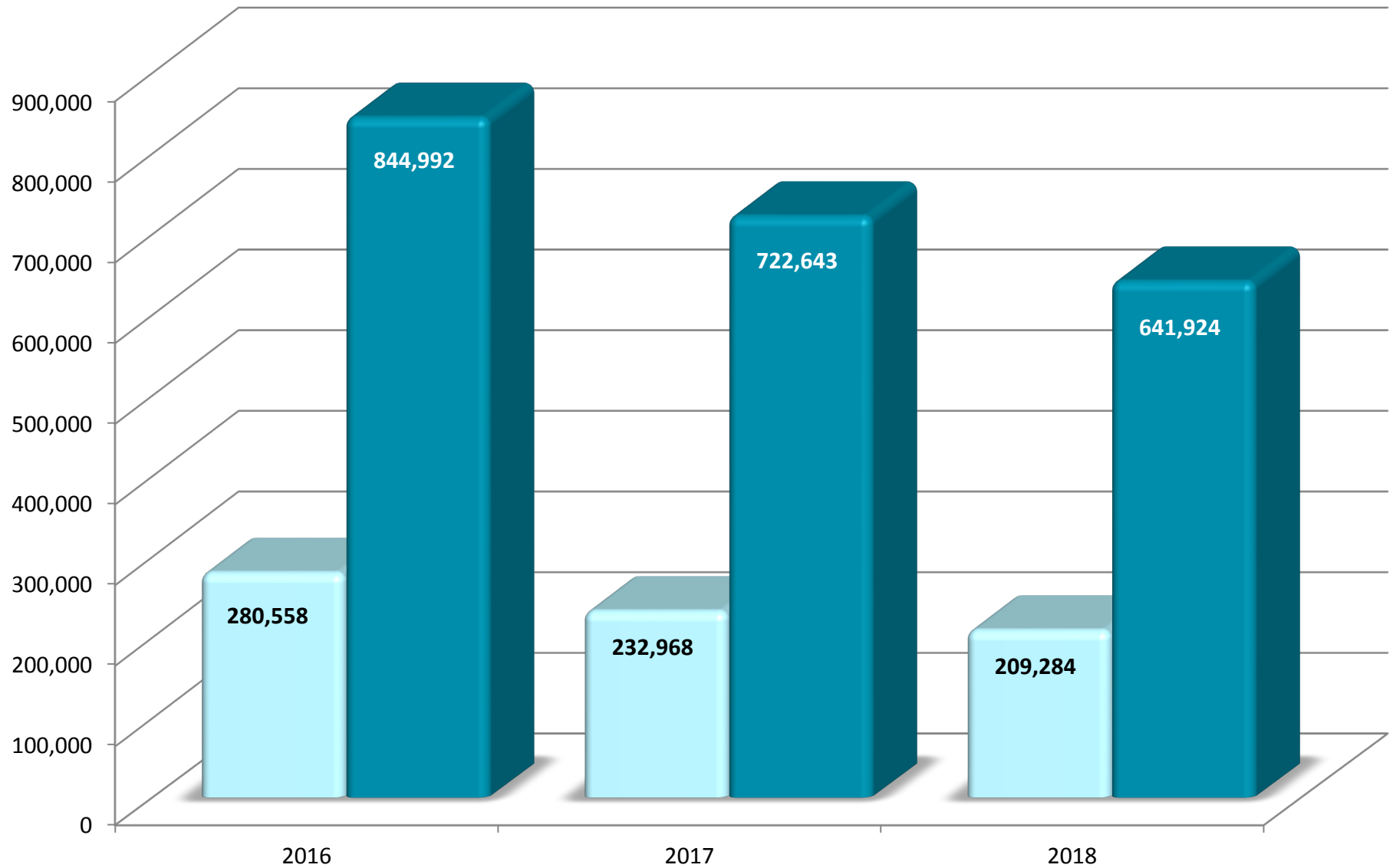


Speech-to-Speech Call Volumes



CapTel Call Volumes

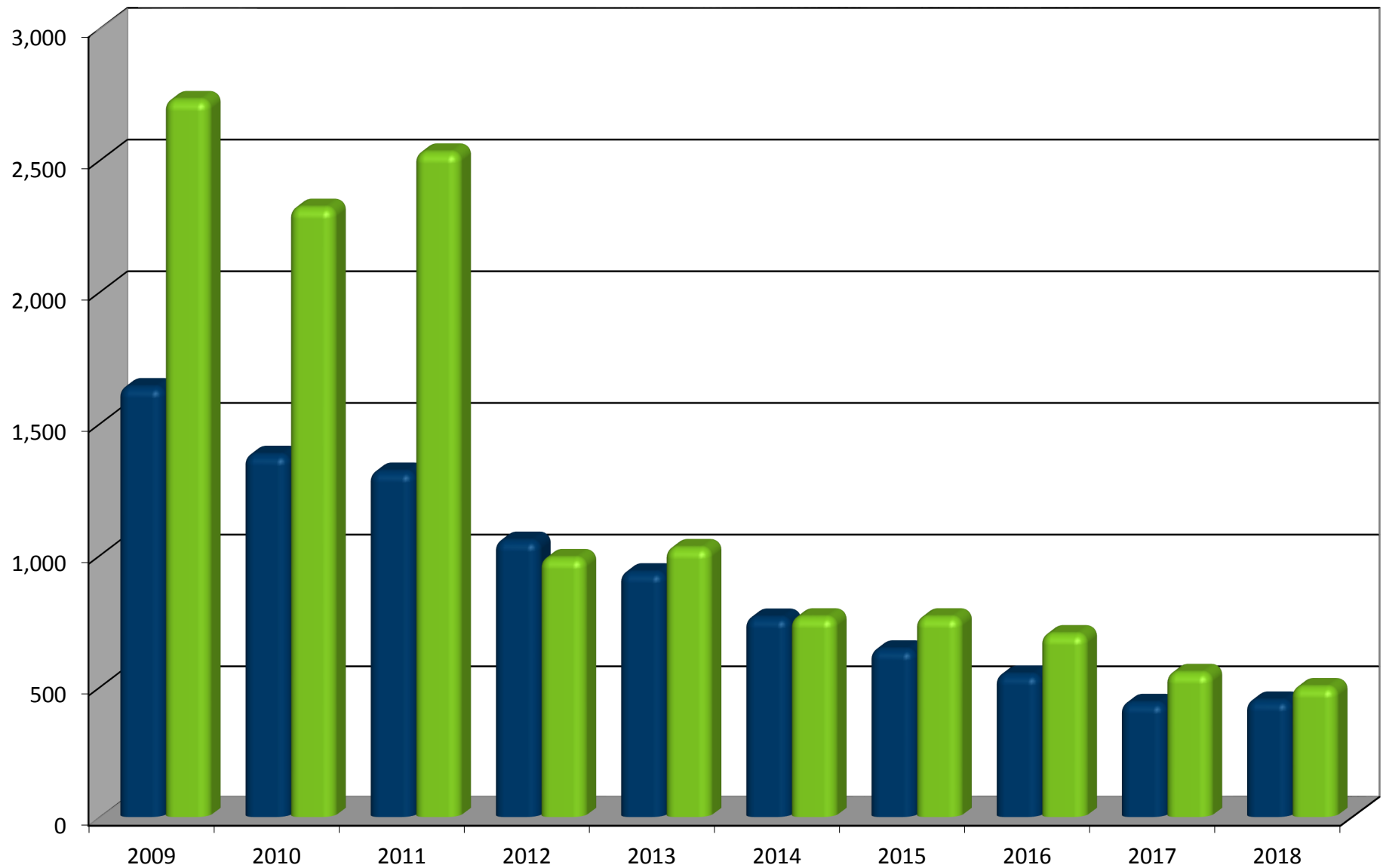
■ Total Calls ■ Conversation Minutes



Appendix B - TED Program Activities

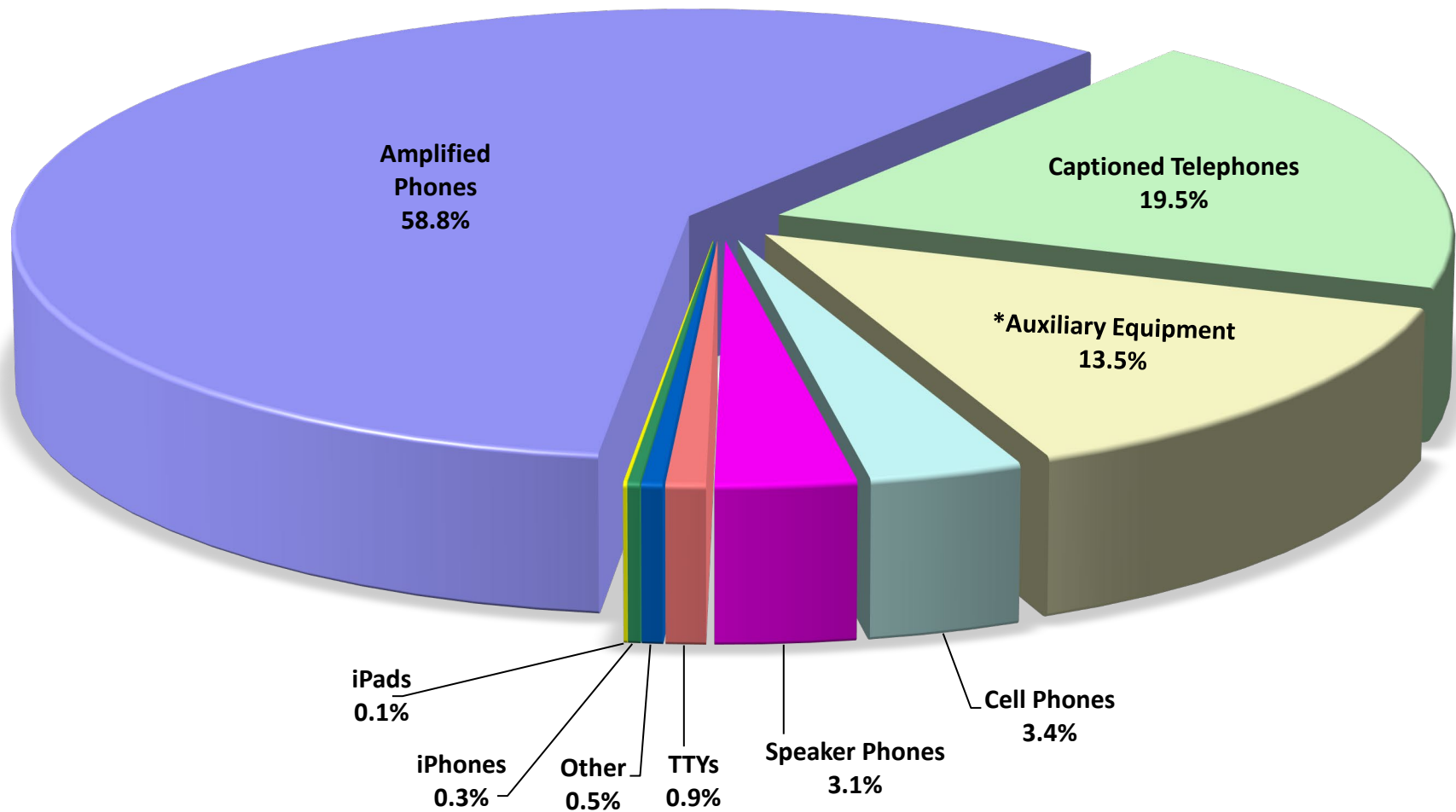
2009 - 2018 New TED Program Participants

■ New Program Participants Served ■ Devices Distributed to New Program Participants



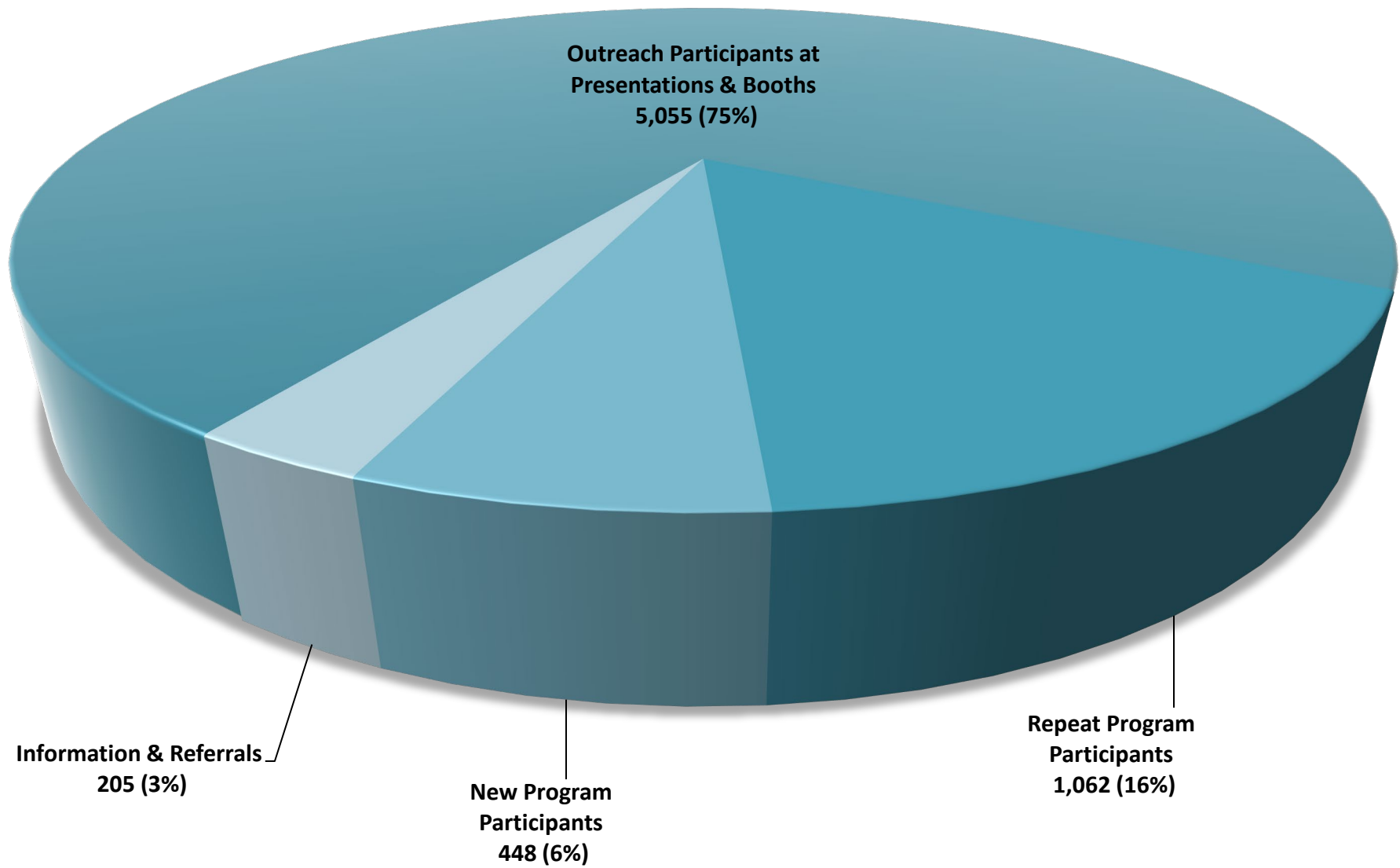
TED Program

Types of Equipment Distributed in 2018



*Auxillary equipment includes ring signalers, neck loops, headsets, pendants, switches, etc.

Minnesotans Being Served by the TED Program in 2018



CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Department of Commerce
2018 Annual Report to the Public Utilities Commission**

Docket No. P999/PR-19-5

Dated this 4th day of February 2019

/s/Sharon Ferguson

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Linda	Chavez	linda.chavez@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 55101-2198	Electronic Service	No	OFF_SL_19-5_PR-19-5
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	Yes	OFF_SL_19-5_PR-19-5
Emory David	Dively	emory.david.dively@state.mn.us	Commission of Deaf, DeafBlind & Hard of Hearing Minnesotans	Golden Rule Building 85 E 7th Place, Ste 105 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_19-5_PR-19-5
Ian	Dobson	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	Yes	OFF_SL_19-5_PR-19-5
Greg	Doyle	greg.doyle@state.mn.us	Department of Commerce	Suite 50085 Seventh Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_19-5_PR-19-5
Beth	Fraser	Beth.Fraser@state.mn.us	Commission of Deaf, DeafBlind & Hard of Hearing Minnesotans	Golden Rule Building 85 E 7th Place Ste 105 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_19-5_PR-19-5
Rochelle	Garrow	rochelle.garrow@state.mn.us	Department of Commerce	85 7th Place East, Suite 280 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_19-5_PR-19-5
Mary	Hartnett	Mary.Hartnett@state.mn.us	Commission of Deaf, DeafBlind & Hard of Hearing Minnesotans	Golden Rule Bulding 85 7th Place Ste 106 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_19-5_PR-19-5
Sarah	Maheswaran	sarah.maheswaran@state.mn.us	Telephone Equipment Dist. Program	Dept. of Human Services 444 Lafayette Road North St. Paul, MN 551553814	Electronic Service	No	OFF_SL_19-5_PR-19-5
Amy	McQuaid Swanson	Amy.mcquaid-swanson@state.mn.us	Department of Human Services	PO Box 64969 St. Paul, MN 55164-0969	Electronic Service	No	OFF_SL_19-5_PR-19-5

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carol	Pankow	carol.pankow@state.mn.us	Services for the Blind	Suite 240 2200 University Avenue W St. Paul, MN 55104	Electronic Service	No	OFF_SL_19-5_PR-19-5
Dana	Wahlberg	dana.wahlberg@state.mn.us	Department of Public Safety	Town Square Ste 137 444 Cedar St St. Paul, MN 551015126	Electronic Service	No	OFF_SL_19-5_PR-19-5
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_19-5_PR-19-5