Assistive Technology in Minnesota
2008 Status Report

Submitted by The Minnesota State Council on Disability
to the Minnesota Legislature
Senate Health, Housing and Family Security Committee
House Health and Human Services Committee

As Required by Minnesota Law 2007, Ch.147, Art.7, Sec.70

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MSCOD
Minnesota State Council On Disability
Your technical assistance & training resource

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Assistive Technology in Minnesota

Summary

The 2007 Legislature directed the Minnesota State Council on Disability (MSCOD) to conduct a statewide review of assistive technology needs.

For over thirty years, the Minnesota State Council on Disability, an independent state agency, has been serving Minnesotans with disabilities. The MSCOD collaborates with other agencies and organizations that serve people with specific disabilities and advises the governor, the legislature, and state agencies on general disability related public policy. The MSCOD serves to expand opportunities, improve the quality of life, and empower all persons living with disabilities.

The Minnesota State Council on Disability (MSCOD) convened an Assistive Technology Steering Committee comprised of a broad group of invited state agency representatives, community-based service providers and assistive technology consumers. A list of all participating agencies and their representatives is provided in Appendix One. Although Minnesota managed care organizations were invited to participate, none chose to do so. Therefore, the following report does not include information reflecting the substantial role of managed care organizations as providers and funders of assistive technology for people with disabilities.

The committee's task was to review, gather, distribute and discuss data regarding the current demographic statistics, level of state agency expenditures for assistive technology (AT) services, and proposed recommendations to the legislature for consideration. The committee held fourteen meetings, and a subcommittee on recommendations conducted five additional meetings.

The state of Minnesota continues to substantially invest in AT as a resource for people with disabilities and seniors. Public funds provide

AT services, equipment, and modifications. The following committee findings reaffirm Minnesota's commitment to supporting people with disabilities of all ages through ensuring their access to assistive technologies.

Finding: Assistive technology is an investment that enables Minnesotans with disabilities of all ages to live, learn and work in their communities.

Finding: There is a need for an ongoing facilitated approach to encourage participation by all relevant state agencies, consumer groups and interested nonprofit and private sector representatives to enhance statewide coordination.

Finding: Assistive technology can increase and improve citizen participation during the next biennium and beyond.

Introduction

Assistive technologies are so woven into the fabric of everyday life that we tend not to recognize them as such. We aren't usually aware, for instance, that curb cuts, hearing aids and railings are assistive technologies. For people with disabilities of all ages, such assistive technologies such as wheelchairs, walkers and computer software and hardware are essential for participation in daily life as they work, learn and participate in their communities.

The 2007 Legislature directed the Minnesota State Council on Disability (MSCOD) to conduct a statewide review of assistive technology needs. No funds were appropriated in service of this legislation. Specifically, Minnesota Law 2007, Ch.147, Art.7, Sec.70 directs:

> *Assistive Technology Recommendations.*
>
> *Subdivision 1. Review. During the biennium ending June 30, 2009, the Council on Disability shall facilitate a statewide review*

of the assistive technology needs of people with disabling conditions, and seniors. The council shall identify community-based service providers, state agencies, and other entities involved in providing assistive technology supports.

Subd. 2. Recommendations. The council shall present to the chairs of the house and senate committees having jurisdiction over human services, by January 1, 2009, recommendations, including proposed legislation creating a statewide comprehensive plan to meet the assistive technology needs of people with disabling conditions and seniors. The statewide plan must include steps to coordinate and streamline assistive technology services.

- This report is written to fulfill the directive of the Minnesota legislature. The report has three major sections. The first is an overview that includes the definition of assistive technology, Minnesota demographic information, employment data regarding people with disabilities and their use of assistive technology, and a review of some community-based assistive technology providers in Minnesota.
- The second section presents information gathered by the multi-departmental, community and agency committee that examined where some people learn about assistive technology and the relationship of current state funding to assistive technology.
- The final section lists the major findings, conclusion and resolutions resulting from this review.

The MSCOD is a small, independent state agency that advises, provides technical assistance, and collaborates and advocates to expand opportunities, improve the quality of life and empower all persons with disabilities. In response to the legislative direction, the MSCOD convened an Assistive Technology Steering Committee (Committee), comprised of a broad group of state agency representatives, community-based service providers and assistive technology consumers to review, gather, distribute and discuss data regarding the current demographic statistics, level of state agency

expenditures for assistive technology (AT) services and proposed recommendations to the legislature for consideration (see Appendix 1 for Committee membership listing). The Committee held fourteen meetings, and a subcommittee on recommendations conducted five additional meetings. Although Minnesota managed care organizations were invited to participate, none chose to do so. Therefore, the following report does not include information reflecting the substantial role of managed care organizations as providers and funders of assistive technology for people with disabilities.

The MSCOD contracted with Management Analysis & Development (MAD), Minnesota Department of Administration, to assist with the start-up phase of the project. The MSCOD then contracted with Aurora Consulting Inc., to work with the Committee to continue research and data gathering, facilitate meetings, examine gaps in current service and systems, generate a slate of recommendations and write the final legislative report.

The following report incorporates findings from the MAD report, the Committee work and additional data analysis and recommendations. The System of Technology to Achieve Results (STAR) created a section on its website with national and state literature on the topic of AT. This information remains available on the STAR website.

OVERVIEW

What is Assistive Technology?

Every day we encounter assistive technology. Wheelchairs, walkers, sidewalk curb cuts, voice recognition software, and hearing aids are all assistive technologies.

The Individuals with Disabilities Education Act (IDEA) defines an assistive technology device as "*…any item, piece of equipment, or product, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain or improve functional capabilities of individuals with disabilities"* [U.S. Code, Title 20, Chapter 33, Section 1401 (25)]. It further defines assistive technology services as "*… any service that directly assists an*

individual with a disability in the selection, acquisition, or use of assistive technology device [U.S. Code, Title 20, Chapter 33, Section 1401 (26)]. This federal definition of AT appears in the Developmental Disabilities Act, the Assistive Technology Act, the Rehabilitation Act and the Individuals with Disabilities Education Act. These broad definitions encompass devices, technologies and accommodations that enable people with disabilities of all ages to more fully to live, work and contribute to their communities. The Department of Human Services defines assistive technology for people with disabilities more narrowly. For example, DHS would not include computer hardware or virtual reality devices as items eligible for Minnesota Medicaid Funding.

The National Classification System for Assistive Technology Devices and Services[1] uses the following organizational method to classify the varieties of available technologies:

- Architectural elements
    - Support devices
    - Opening/closing devices
    - Home construction elements
    - Lifts/elevators/hoists/ramps
    - Safety equipment
    - Flooring
- Sensory elements
    - Optical aids
    - Auditory devices
    - Cognitive aids
    - Devices for multiple disabilities
    - Augmentative communication aids
- Computers
    - Computer hardware
    - Computer software
    - Computer accessories
    - Specialized calculators

[1] *National Classification System for Assistive Technology Devices and Services*, 2000. National Institute on Disability and Rehabilitation Research, Office of Special Education Programs, U.S. Department of Education.

    - Virtual reality devices
- Controls
    - Environmental control systems
    - Timer switches (controls)
    - Remote controls
    - Operating controls/devices
- Independent Living
    - Apparel
    - Hygiene aids
    - Body protection aids/devices
    - Aids for toileting
    - Aids for dressing/undressing
    - Aids for washing/bathing/showering
    - Manicure/pedicure aids
    - Aids for hair care
    - Dental care aids
    - Facial care/skin care aids
    - Housekeeping/ household aids
    - Aids for handling/manipulating products
    - Orientation aids
    - All other durable medical equipment
- Mobility
    - Transportation (motor vehicle, bike)
    - Walking/standing aids
    - Wheelchair
    - All other types of mobility
- Orthotics/Prosthetics
    - Spinal orthotic systems
    - Upper limb orthotic systems
    - Lower limb orthotic systems
    - Functional electrical stimulators
    - Hybrid orthotic systems
    - Upper limb prosthetic systems
    - Upper limb prostheses
    - Lower limb prostheses
    - Lower limb prosthetic systems
    - Cosmetic/non-functional lower limb prostheses
    - Non-limb prostheses

- Recreation/ Leisure/ Sports
    - Toys
    - Indoor games
    - Arts and crafts
    - Photography
    - Physical fitness
    - Gardening/horticultural
    - Camping
    - Hiking
    - Fishing/hunting/shooting
    - Sports
    - Musical instruments
- Modified Furniture/ Furnishings
    - Tables
    - Light fixtures
    - Chairs/sitting furniture
    - Beds/bedding
    - Height adjustment of furniture
    - Work furniture
- Services
    - Individual evaluation
    - Support to acquire devices/services
    - Device and service selection and utilization services
    - Coordination/linkage with other therapies or services
    - Training/technical assistance
    - Miscellaneous support services

An example of a checklist of AT solutions provided by the Minnesota Deaf and Hard of Hearing Services Division is included in Appendix 5. This and other checklists help people who are deaf or hard of hearing navigate through the many available options to determine the kind of AT devices they need.

Which populations are most likely to use assistive technology?

A Demographic Overview

In 2006, there were approximately 600,000 Minnesotans with disabilities who were five years of age and older.[2] That number is expected to grow as the population ages and injured veterans return from combat in Iraq, Afghanistan and other areas of the world. Additionally, there are an estimated 178,000 children with special health care needs in Minnesota.[3] Data from the Minnesota Department of Health on Minnesota children with special health care needs indicate that 12.9% of children with disabilities continue to have unmet needs for specialty care, 18.3% of families experience financial problems due the child's condition and that 21% of families with children with special health needs caused family members to cut back or stop working.[4]

As shown in Table 1, Minnesota's estimated overall population increased by nearly 200,000, or 4% from 2000 to 2005. The population of residents older than 65 has increased at an even higher rate.

Table 1: Minnesota Population by Age, 2000 and 2005 [5]

Age Range (in years)	2000 Estimate	2005 Estimate	Percent Change
B to 4	328,889	335,577	2.0
5 to 9	353,518	322,236	-8.8
10 to 14	374,490	347,759	-7.1
15 to 19	375,930	375,222	-0.2
20 to 24	326,139	382,106	17.2
25 to 29	318,923	344,087	7.9
30 to 34	354,024	339,869	-4.0
35 to 39	411,119	366,127	-10.9

[2] U.S. Census Bureau, 2006 American Community Survey, Data Profile Highlights. http://factfinder.census.gov

[3] Minnesota Children With Special Health Care Needs, www.health.state.mn.us/divs/fh/mcshn/nschcnmn05.htm

[4] Ibid

[5] Minnesota State Demographic Center, Minnesota Department of Administration, Population Notes, August 2006, OSD-06-120, http://www.demography.state.mn.us/documents/Minnesota%20Age%20Trends%202000%20to%202005%20Popnote.pdf.

40 to 44	414,271	414,913	0.2
45 to 49	367,244	411,980	12.2
50 to 54	306,041	359,991	17.6
55 to 59	228,402	294,630	29.0
60 to 64	179,409	215,061	19.9
65 to 69	152,925	164,903	7.8
70 to 74	142,539	138,084	-3.1
75 to 79	122,943	124,157	1.0
80 to 84	90,287	93,085	3.1
85 plus	86,663	103,012	18.9
Total	4,933,756	5,132,799	4.0

Note: 2000 population is the July 1, 2000, Census Bureau Estimate

As people age, they are increasingly likely to develop disabling conditions. Additionally, there is a correlation between aging and use of assistive technology. Simply put, as we grow older, we are more likely to need assistive technology to remain active as we live, work and learn. This fact is illustrated in Table 2. The prevalence of disability in Minnesota for people over the age of five is 12.3 percent. However, when the data is broken down by age bracket that percentage almost doubles to 23.9 percent for persons ages 65 to 74 and almost quadruples for persons ages 75 and older.[6]

Table 2: The 2006 prevalence of disability by age group in MN

Age (years old)	Percentage of persons with a disability
5-15	6.2
16-20	6.3
21-64	10.2
65-74	23.9
75 and older	47.1

[6] U.S. Census Bureau, 2006 American Community Survey, Data Profile Highlights. http://factfinder.census.gov

There is not a significant difference between the percentage of men (12.4%) and women (12.2%) who report having a disability.[7] However, there is a significant disparity by race, as shown in the table below. Native Americans and African Americans have a much higher prevalence of disability than Whites and Asian Americans.

Table 3: The 2006 prevalence of disability by racial group in MN [8]

Racial Group	Percentage of persons with a disability
Native Americans	16.9
Black/African Americans	14.2
Persons of "some other race"	13.3
Whites	9.9
Asians/Asian Americans	8.1

In summary, there is a direct correlation between age and disability and race and disability. As we get older we are more likely to develop a disabling condition that limits us in one or more major life functions. Assistive technology and modifications can mitigate the effects of disability, allowing people to thrive and live productively after the onset of a disability. Additionally, Native Americans and Black/African Americans are significantly more likely to have a disabling condition than Whites or Asians/Asian Americans.

Employment Statistical Overview

Assistive technologies enable people with disabilities and seniors to be employed, stay employed, advance in careers and participate in the workforce after retirement. In 2006, the percentage of working-age people with disabilities working full-time/full-year in MN was 24.8 percent. The percentage of working-age people without disabilities working full-time/full-year in MN was more than twice as much, 58.1 percent.[9]

[7] Ibid.
[8] Ibid.
[9] U.S. Census Bureau, 2006 American Community Survey, Data Profile Highlights.

Among the six types of disabilities identified in the 2006 American Community Survey (ACS), the highest full-time/full-year employment rate of 36.9 percent was for people with sensory disability, those who are blind, deaf or have a severe vision or hearing impairment. The lowest full-time/full-year employment rate was 7.5 percent for people with self-care disability, those with difficulty dressing, bathing or getting around inside the home. See Table 4 below for the complete breakout.[10] Appendix 2 contains a glossary of terms related to these statistics.

Table 4: Full-Time/Full-Year Employment of Non-Institutionalized Working-age People (ages 21 to 64) by Disability Status in Minnesota in 2006

Disability Type	Percent	Std. Error	Number	Std. Error	Base Pop.	Sample Size
No Disability	58.1	0.42	1,588,00	14,600	2,735,000	26,543
Any Disability	24.8	1.08	77,000	3,800	309,000	3,083
Sensory	36.9	2.54	26,000	2,200	70,000	728
Physical	21.7	1.40	37,000	2,700	169,000	1,761
Mental	15.2	1.43	18,000	1,900	121,000	1,070
Self-Care	7.5	1.70	3,000	800	47,000	486
Go-Outside-Home	8.7	1.47	6,000	1,100	72,000	679
Employment	8.4	0.93	15,000	1,700	174,000	1,706

In 2006, the percentage of people with disabilities who were not working in MN but were actively looking for work was 14.4 percent. The percentage of people without disabilities who were not working in MN but were actively looking for work was 21.1 percent. Among the six types of disabilities identified in the ACS, the highest percentage (16.2) was for mental disability and the lowest (1.7) was for self care disability. See Table 5 below for details.[11]

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http://factfinder.census.gov

[10] Ibid.

[11] U.S. Census Bureau, 2006 American Community Survey, Data Profile Highlights. http://factfinder.census.gov

Table 5: Not Working but Actively Looking for Work among Non-Institutionalized Working-age People (ages 21 to 64) in Minnesota in 2006

Disability Type	Percent	Std. Error	Number	Std. Error	Base Pop.	Sample Size
No Disability	21.1	0.81	91,000	3,900	430,000	4,139
Any Disability	14.4	1.12	24,000	2,000	163,000	1,604
Sensory	14.2	2.64	4,000	800	29,000	296
Physical	9.6	1.21	10,000	1,300	100,000	1,031
Mental	16.2	1.77	12,000	1,400	72,000	653
Self-Care	1.7	2.00	500	300	31,000	330
Go-Outside-Home	6.1	1.41	3,000	700	48,000	471
Employment	11.0	1.15	14,000	1,500	123,000	1,223

There is a $30,000 disparity between median household income of working-age people with disabilities in MN ($41,100) and the median household income of working-age people without disabilities in MN ($71,100). Among the six types of disabilities identified in the ACS, the highest median household income of $49,800 was for people with sensory disability. The lowest median household income of $32,000 was for people with mental disability. See Table 6 for details.[12]

[12] U.S. Census Bureau, 2006 American Community Survey, Data Profile Highlights. http://factfinder.census.gov

Table 6: Median Annual Household Income of Non-Institutionalized Working-age People (ages 21 to 64) by Disability Status in Minnesota in 2006

Disability Type	Median Earnings	Standard Error	Base Population	Sample Size
No Disability	$71,100	$470	2,735,000	26,543
Any Disability	$41,100	$1,190	309,000	3,083
Sensory	$49,800	$2,500	70,000	728
Physical	$36,600	$1,630	169,000	1,761
Mental	$32,200	$2,200	121,000	1,070
Self-Care	$33,700	$3,900	47,000	486
Go-Outside-Home	$33,000	$2,850	72,000	679
Employment	$34,400	$1,460	174,000	1,706

(Household income is not available for persons living in non-institutional group quarters; therefore, total personal income is substituted for household income.)

Barriers to employment may be observed in these income disparities. Those people with disabilities who are employed have a household income significantly lower than people without disabilities. This data helps us to understand the role and need for government to continue as a key provider in the funding of assistive technologies for people with disabilities as they live, work, learn and contribute to their communities.

Who Provides Assistive Technology Services in the State of Minnesota?

The three primary sources of funding for AT services are: the private sector, the nonprofit sector and the public sector. A myriad of vendors create, distribute and assess for AT devices.

- Health insurance coverage of assistive technology varies. For example, a person using a mobility device, such as a scooter or power wheelchair, may be able to have the device itself funded but private health insurance companies will not fund necessary adaptations of the car or van. Consequently, the person may

incur out-of-pocket expenses to adapt their vehicle, or they must qualify for DEED or DHS public funding for adaptations. The only other alternative is to rely on public transportation systems, such as Metro Mobility, to get to work or to obtain such necessities as food and clothing. Currently, Metro Mobility counts rides that are two hours late as 'on time' yet employers who agree are rare. Such gaps in access to assistive technology are substantial barriers to employment.

- Nonprofit organizations who provide access to AT devices and services are funded variety of sources such as foundation contributions, government grants, contracts for services with state / county agencies, donor and corporate sponsorship as well as other resources based upon services provided. Non government organizations are influenced by the same economic factors as state government and are more likely to require additional support and funding to continue the provision of AT related services because of the nature of their funding sources. Establishing partnerships and collaboration with state agencies and other providers of AT will help strengthen nonprofits ability to assist in reducing the barriers of access to AT.

- For persons who are financially and functionally eligible for public programs, Minnesota provides publicly funded reimbursement through the Department of Education, the Department of Employment and Economic Development, and the Department of Human Services as the Medicaid and Medicare agency so that people with disabilities can live, work, learn and contribute to their communities.

The providers of AT, (through various state agency programs) who participated in this Steering Committee are:

- Department of Human Services
    - Disability Services Division
    - Deaf and Hard of Hearing Services Division
    - Minnesota Board on Aging
    - Senior Linkage Line

    - Disability Linkage Line
- Department of Employment and Economic Development
    - State Service for the Blind
    - Vocational Rehabilitation Services
- Department of Veterans Affairs
    - Veterans Linkage Line
- Department of Education
- Minnesota State Council on Disability
- Minnesota State Colleges and Universities
- Department of Administration
    - System of Technology to Achieve Results (STAR)
    - Developmental Disability Council

Agencies not participating in the Steering Committee but impacted by AT services and resources:

- Department of Health
- Department of Transportation
- Department of Corrections
- Department of Natural Resources

Community Based Service Providers of Assistive Technology in Minnesota

Assistive technology services and devices are provided through a variety of sources such as:

- Education – assistive technology and vision specialists, special education teachers, therapists and other specialists.
- Medical – doctors or rehabilitative medicine, doctors of physical medicine, neurologists, neurosurgeons, orthopedists, oncologists, otorhinolaringolists, , ophthalmologists, audiologists, assistive technology practitioners, occupational therapists, orthotists, physical therapists, prosthetists, recreational therapists, rehabilitation engineering technologists, speech and language pathologists, vision specialists and others.
- Vocational – assistive technology practitioners, rehabilitation counselors, vision specialists and others.
- Nonprofits – Community advocates serving people with disabilities, seniors and children

- Employers

ATMn

ATMn is one of numerous community-based nonprofits that work with people with disabilities, their families, friends and professionals. As the only statewide nonprofit organization to focus exclusively on providing assistive technology devices and services its programs fill an important need. As a lifeline to financial assistance, education, information and resources throughout Minnesota, ATMn is one example of the how public and private programs can work together toward the common goal of ensuring access to devices and services.

ATMn Consumer Tracking 2006-2007

ATMn Consumer Tracking	2006 Total	2007 Total
Contact Type		
Telephone	889	2308
Email	57	131
In- Person	16	6
Other	9	1
Total	971	2246
Gender		
Female	564	1312
Male	407	1134
Personal Descriptor		
Consumer	308	883
Family	109	321
Professional	478	1170
Advocate/Friend	65	72
Area of Concern		
Devices	203	207
Services	31	70
Advocacy/Law	58	0
Funding	331	1443
Other	348	726
Services Performed		
Information and	905	2400

Referral		
Clinic	3	0
Training	28	11
Education/Awareness	31	35

ATMn has had a 40% increase in the number of people they have served from 2006 to 2007. ATMn's service statistics document the increase in requests for financial assistance. In just two years the number of requests for financial aid ATMn has received specifically to purchase AT devices and services has increased over 150%.

Additionally, ATMn has created Access to Telework, a federally funded demonstration project designed to support employment initiatives for individuals with disabilities including start-up, expansion or maintenance of self-owned business primarily operated from home or a remote location. Telework assists individuals in need of support to modify their home environment for telecommuting, part-time employment and as noted above to create, expand or maintain self-owned employment. ATMn provides low-interest loans, support in the development of business plans, expansion and referrals to specialists to establish viable business entities. The program was 90% funded by federal funds and 10% by matching dollars from the State of Minnesota with expansion funds raised through private foundations, trusts and corporate and individual contributions.

DATA ON PUBLIC FUNDING FOR AT IN MINNESOTA

This section reviews the data regarding state of Minnesota spending, including direct provision of services, third party payments and information and referral. While every attempt was made to provide information, using similar definitions of AT and covering the same time period, it is clear that:

1. There is no uniform method of data collection for public funding of AT. Diverse federal revenue streams each have their individual reporting requirements, and it is not possible to create a satisfactorily uniform methodology.

2. There are many access points for receiving AT, each a reflection of funding from the various federal agencies that fund AT. Creating one access point would block Minnesota's ability to capture federal funding from multiple agencies.

What are the major types of public expenditure?

The largest state agency that provides assistive technologies is the Department of Human Services (DHS) as the administrator of Medicaid and Medicare.

During state fiscal year 2007, DHS expended more than $71 million federal and state dollars serving 159,177 people in its fee-for-service state plan and home and community-based waiver programs on durable medical equipment and supply payments and modifications. This includes crossovers, third party liability and spend-down claims. This does not include assistive technology provided to Minnesotans who are served by managed care organizations.
Of that $71 million:

- $5 million was for prosthetic and orthotic devices;
- $11 million was for mobility devices, such as canes, walkers and wheelchairs;
- $326 thousand was for lifts;
- $185 thousand was for bath and toilet aids;
- $13.5 million was for the home and community-based waiver payments for AT and modifications such as wheelchair ramps;
- $833 thousand was for hearing aids;
- $310 thousand was for augmentative communication devices making it possible for people who cannot speak to be heard
- $52 million was for durable medical equipment and disposable supplies such as gauze, bandages and adult diapers.

Information Dissemination

The State of Minnesota provides information about assistive technology to the public and to other agencies. These access points, both virtual and in person, include the MN DHS Disability Linkage Line, the MN Board on Aging Senior Linkage Line, the STAR program, MN DHS Deaf and Hard of Hearing Services Division, the MN DHS

website for durable medical equipment and supplies and the MN DEED State Services for the Blind and www.minnestotadisability.gov (a collaboration of small disability agencies providing information, with approximately 4000 visitors to its website per month) are all publicly funded information sources.

Deaf and Hard of Hearing Services Division/Department of Human Services

Deaf and Hard of Hearing Services Division provides information and resources to assist deaf, deafblind and hard of hearing Minnesotans and their families to effectively access services in their communities.

Services statistics DHHSD/DHS

Fiscal Year	Total number of consumers and agency staff served	Agency/professional staff served whose primary request was for information related to Assistive Technology/Access	Consumers or family members served whose primary request was for information related to Assistive Technology	Individuals who were reached with information about Assistive Technology via presentation of training	Seniors agencies
2005	46,045	2258	4488	10,191	346
2006	45,416	2745	5111	10,603	289
2007	58,455	2083	5121	7,035	345

Hearing Aid Banks Direct Services Statistics DHHSD/DHS

Fiscal Year	Number of people served	Funds collected/used
2005	5	$250.00
2006	7	$1,111.00
2007	10	$3,990.00
2008	2	$748.60

Department of Human Services
Deaf and Hard of Hearing Services Division
DeafBlind Consumer Directed Services Program
Total Spent on Goods[13]

	Total amt spent on goods	# people served	Avg. spent on goods per person	Total grant amt available per person	Greatest amt spent on goods by one person	Least amt spent on goods by one person
FY05	$16,465	14	$1,176	$5,100	5,100	0
FY06	$13,936	16	$871	$5,100	3,926	0
FY07	$17,102	18	$950	$5,100	4,597	0
FY08	(est.) $18,702	19	(est.) $984[14]	$7,000	TBD	0

Training Related to Assistive Technology Use

	Total amt spent on AT training
FY05	$1,400
FY06	$1,714
FY07	$144
FY08 estimated	0

The Department of Human Services Disability Services Division Disability Linkage Line is another source of referral and information. In calendar year 2007, more than 27% of the calls concerned assistive technology. See Table 7 below.

[13] "Goods" includes assistive technology, devices, software such as Zoom text, and consumable supplies.
[14] This amount is likely to be higher by the end of FY08 due to the amount of grant money expected to be unspent by regular program participants; the unspent money of regular participants is used by individuals on the program waiting list to allow them to purchase goods (but not services) within the current fiscal year and then return to the list to wait for an opportunity to fill a permanent slot in the program.

Table 7: Department of Human Services Disability Services Division Disability Linkage Line

Type of AT-related request	Number	Percent of total calls
Accessibility	631	7.1
Assistive devices/equipment	831	9.1
Financial assistance for AT	223	2.5
Accessible housing	275	3.1
Chore service	229	2.6
Transportation (accessible, vehicle adaptations)	276	3.1
Total Disability Linkage Line Sessions 2007	8,929	27.5

The MN Department of Human Services MN Board on Aging's Senior Linkage Line is another source for AT information and referral. The percentage of calls to the Senior Linkage Line in relation to total calls received requesting AT information and services are lower than the Disability Linkage Line; however, the overall number of inquiries is significantly higher. This could be due to the number of seniors who are less likely to identify themselves as disabled even though they have a disabling condition see Table 8.

Table 8: MN Department of Human Services MN Board on Aging's Senior Linkage Line

Type of AT related request	Number	Percentage
Accessible housing	7,580	7.2
Handyman	3,330	3.2
Home safety and security	3,290	3.1
Personal emergency	5,500	5.2

response		
Transportation (medical/accessible)	14,740	10.4
Durable medical equipment	6,480	6.1
Medical supplies	2,360	2.2
Total Senior Linkage Line	105,486	100

System of Technology to Achieve Results (STAR) is a major access point for AT information. Located within the Minnesota Department of Administration, STAR's mission is to help all Minnesotans with disabilities gain access to and acquire the assistive technology they need to live, work, learn and contribute to their communities. The Minnesota STAR Program is federally funded by the Rehabilitation Services Administration in accordance with the Assistive Technology Act of 1998, as amended (P.L. 108-364). STAR's website has had tens of thousands of contacts since it was made available in FY 07, as shown in Table 10. It serves consumers, family members and professionals providing AT services.

Table 9: Star Program Database Information

STAR EVENTS	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	TOTALS
# of Events	26	22	20	68
Consumers	2,797	7,403	**	
Family	186	140		
Professionals	2,817	5,462		
Advocates	63	0		
TOTALS	5,863	13,005	5,355	24,223

** The database information was reconfigured during this time to comply with new federal requirements.

Table 10: STAR Contact Information

Contact Type	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	TOTALS
Telephone	284	233	237	754
E-Mail	105	54	121	280
In Person	10	13	10	33
Web Site	N/A	N/A	43,007	43,007
Other	3	4	23	30
Blank	1	-	15	16
FD Card	-	161	20	181
TOTALS	403	465	44,301	44,301

Fifty-five percent of those seeking information (non website) were professionals, 19 percent were consumers and 15 percent were family members. The remaining 11 percent were either advocates or unknown. The core services and areas of concern provided by STAR are shown in Tables 11 and 12. Consistently, information and referral is the most sought service. Funding has been and remains the overwhelming area of concern for those contacting STAR.

Table 11: STAR Core Services

Core Services	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	TOTALS
Information and Referral	346	439	247	720
Education/Awareness	19	4	1	24
Training	5	1	-	6
Clinic	1	-	-	1
Technical Assistance	-	1	2	3
Other	32	20	7	59
TOTALS	403	465	257**	1,125

Table 12: STAR Areas of Concern

Areas of Concern	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	TOTALS
STAR Grants	38	3	-	41
Funding	158	362	330	850
Devices	40	37	44	121
Services	51	18	-	69
Advocacy	4	3	-	7
Transportation	1	1	-	2
Other	87	28	37	152
Blank	24	13	5	42
TOTALS	403	465	416**	1,284

**STAR increased to 6,855 the number of funding directories it distributed from June 2006 to June 2007. Forty-one percent of those were distributed between July 1, 2006 and June 30, 2007. STAR also distributes brochures, newsletters and other items. STAR newsletters are mailed out quarterly to a mailing list of 6,500 to 7,200 recipients. Additionally, STAR has funded up-to-date assistive technology equipment to provide to groups and individuals with temporary equipment loans to assist in their decision-making. Those costs are outlined below in Table 13.

Table 13: Dollars Spent on AT Devices

$ Spent on AT Devices	7/1/04 – 6/30/05	7/1/05 – 6/30/06	7/1/06 – 6/30/07	TOTALS
STAR	$375.00	$25,455.96	$65,467.74	$91,298.70
Contract partners	$64,005.08	$4417.38	-	$68,422.46
TOTALS	$64,380.08	$29,873.34	$65,467.74	$159,721.16

Department of Employment and Economic Development Vocational Rehabilitation Services

As mentioned earlier, there is a significant percentage of people employed or seeking employment that have been identified as having

a disability. The Department of Employee Relations and the Vocational Rehabilitation Services within the Department of Employment and Economic Development provided key expenditure information, which is listed in Table 14 (information as of March 6, 2008).

Table 14: The Department of Employment Employee Relations and Economic Development / the Vocational Rehabilitation Service Technology Expenditures 2004-Present

RSVR	Technology expenditures 2004-present	2004 $	2005 $	2006 $	2007 $	2008 $
25	Hearing aids	74,873	47,644	73,009	83,391	39,299
622	Materials and equipment to accommodate disability				154,495	80,765
45	Materials and equipment to accommodate disability	103,264	122,346	131,057	30,078	
21	Prosthetic and orthotic devices	3,762	17,866	33,535	49,823	943
18	Rehabilitation technology assessment/consult	28,397	19,218	19,857	19,364	8,558
22	Sensory aids (rehab tech)	13,062	6,552	3,402	12,137	8,828
47	Vehicle adaptation	644,175	639,614	605,101	324,641	302,512
46	Work site/home modification	21,525	25,169	12,003	41,170	1,080

There was a decline of nearly 50 percent in the number of vehicle adaptations in fiscal year 2007 and a significant increase in work site/home modifications from the previous three fiscal years. Also,

there was a significant increase (29 percent) in materials and equipment to accommodate disabilities.

Table 15: RSIL Technology Expenditures 2004 to Present

RSIL	Technology expenditures 2004 to Present	2004 $	2005 $	2006 $	2007 $	2008 $
85	Adaptive driving equipment	4,866	863	3,070	3,340	733
84	All other home modifications	6,259	10,399	20,791	29,551	20,988
82	Computers, switches and controls	895		559	1,846	1,330
75	Mobility aids	1,872	300	824		232
83	Ramps	96,091	96,379	78,280	50,791	23,466
625	Ramps- labor only				11,968	14,808
74	Sensory aids	278				

MN State Council on Disability (MSCOD)

Although not a direct service provider of AT, the MSCOD does receive numerous AT-related requests. The most common inquiry concerns van adaptation and how to acquire funding and services for it.

MN Dept of Education – AT Program Information

The Minnesota Department of Education (MDE) supports a variety of AT initiatives designed to help ensure that students with disabilities have access to appropriate assistive technology and receive a free, appropriate public education. Assistive technology can be as simple as a pencil grip or as complex as a voice-activated computer. AT initiatives include promoting professional development, information dissemination and technical assistance. AT resources include the assistive technology listserv, an assistive technology manual, monthly articles about new assistive technology, information on the Statewide Assistive Technology Leadership Team and a current research synopsis. Educators must consider assistive technology for all

children with an Individualized Education Program (IEP) (§34 C.F.R 300.346.2.(v)) and provide assistive technology for students who require it (§34 C.F.R. 300.6 (b)).[15]

Table 16 shows a breakdown of state and federal expenditures as provided by the Department of Education. Appendix 4 contains a detailed description of expenditures, the constraints and flexibility of monies and a description of services provided and populations served.

Table 16: Bottom Line Expenditures, Both Federal and State Dollars For AT
FY 05-06 STATE FUNDS
Personnel type code 34 Assistive Technology Specialist

Funding Source Code	Descriptions	Expenditure
A	Program Aid	$732,015.99
Total		$732,015.99

FY 05-06 FEDERAL FUNDS
Personnel type code 34 Assistive Technology Specialist

Funding Source Code	Descriptions	Expenditure
B	Section 611 Flow-Thru 3-21	$ 601,657.72
G	Regional Low Incidence Discretionary	$ 37,226.33
H	Part C Infants & Toddlers Birth-2	$ 1,625.00
Total		$ 640,509.05

[15] From the MN Department of Education website: http://education.state.mn.us/MDE/Learning_Support/Special_Education/Evaluation_Program_Planning_Supports/Assistive_Technology/index.html.

FY 06-07 STATE FUNDS
Personnel type code 34 Assistive Technology Specialist

Funding Source Code	Descriptions	Expenditure
A	Program Aid	$ 569,739.36
Total		$ 569,739.36

FY 06-07 FEDERAL FUNDS
Personnel type code 34 Assistive Technology Specialist

Funding Source Code	Descriptions	Expenditure
B	Section 611 Flow-Thru 3-21	$ 291,491.08
G	Regional Low Incidence Discretionary	$ 40,836.82
H	Part C Infants & Toddlers Birth-2	$ 79,864.78
Total		$ 412,192.68

Department of Employment and Economic Development
State Services for the Blind

The State Services for the Blind (SSB) provides direct AT services to individuals, including hardware, adaptive software and training on adaptive equipment. SSB's breakdown is by fiscal year of services and program costs. In FY 2005, a total of $313,956.61 was spent on adaptive goods and adaptive computer hardware and software. In FY 2006, $372,434.00 was expended on those items as well as training on non-adaptive equipment. In FY 2007, $466,891.71 was expended on the above-mentioned items, computer training and adaptive equipment.

Telephone Equipment Distribution Program

The Telephone Equipment Program (TED) distributes assistive telephone equipment at no cost to eligible Minnesotans who have difficulty using a standard telephone due to hearing loss, speech or physical disability. The TED program is administered by the Department of Commerce- Telecommunication Access Minnesota (TAM) and funded by a telephone surcharge.

Table 17: TED Program

	Primary Disability					Secondary Disability	
	Hard of Hearing	Deafblind	Deaf	Speech Impaired	Mobility impaired	Visual Impairment	Locomotion
2005	1311	5	56	21	178	248	0
2006	1140	1	43	14	42	134	220
2007	1163	2	31	23	45	135	159

Age of population	65 years of age and older	64 years of age and younger
2005	1243	216
2006	1070	162
2007	1099	153

Types of equipment distributed	Amplified phones	Deafblind phones	VCO's	Other equip.	TTY's	Speaker phones	Captels	Ring Signalers
2005	1252	1	0	24	46	83	72	511
2006	1100	5	4	33	27	65	61	432
2007	1123	1	0	43	15	86	64	364

Minnesota State Colleges and Universities

With its 32 institutions, including 25 two-year colleges and seven state universities, the Minnesota State Colleges and Universities System is the largest single provider of higher education in the state of Minnesota. The colleges and universities operate 54 campuses in 47 Minnesota communities and serve about 250,000 students in credit-based courses. Overall, the system produces about 34,000 graduates each year. In addition to credit-based courses, the system offers customized training programs that serve about 151,000 employees from 6,000 Minnesota businesses each year. The law creating the system was passed by the Minnesota Legislature in 1991 and went into effect July 1, 1995. The law merged the state's community colleges, technical colleges and state universities into one system.

Minnesota State Colleges and Universities system does not collect data on the cost of assistive technology offerings but does keep data, by campus, on the number and types of requests for assistive technology. See tables 18 and 19 for detail. Additionally, there is a fund for interpreters to be provided on request for students.

Table 18: Students With Disabilities- Full Year Unduplicated Credit Headcount
Minnesota State Colleges and Universities
Fiscal Year 2007: End of Year Data
Summary

Institution	Total	Students with Disabilities	
		Number	Percent
Colleges	164,344	4,197	2.6%
Universities	78,043	1,714	2.2%
Institution Location			
Greater Minnesota	145,749	3,699	2.5%
Twin Cities Metropolitan Area	96,638	2,212	2.3%
Total: Colleges and Universities	242,387	5,911	2.4%

Table 19: Requested Accommodations for All Reported Disability Types
Students Enrolled in Credit Courses
Minnesota State Colleges and Universities
Fiscal Year 2007: End of Year Data

Requested Accommodation	Number of Requests
Adaptive Furniture	125
Alternative Test Site	3,497
Assistive Technology	1,047
Audio Tape	854
Braille	14
Captioned Video	74
Enlarged Copy	61
Extended Class Assignment	61
Extended Test Time	3,827
Interpreter	93
Lab Assistant	101
Note taking	2,313
Print Magnifier / CCTV	50
Priority Registration	2,032
Readers	212
Reading / Taped	323
Scribe	205
Special Advising	1,808
Special Seat Location	784
Taped Text	458
Other	1,470
TOTAL	**19,409**

Findings

The state of Minnesota does substantially fund AT services, training, equipment and information. Not all agencies chose to participate in this self-study, but additional information can be gathered at a future date, if desired and funding is available. Based on current information, the Committee recommends the following findings and accompanying resolutions.

Finding: Assistive technology is an investment that enables Minnesotans with disabilities of all ages to live, learn and work in their communities.

Therefore be it resolved:
A. *MN state agencies will make it a priority to employ people with disabilities of all ages using appropriate assistive technology.*

B. MN state agencies will continue to promote, support and develop programs that make it possible for people with disabilities of all ages to live in their own homes and pursue lifelong learning using appropriate assistive technology.

C. MN state agencies will continue to promote, support and develop programs - so people with disabilities and seniors can pursue lifelong learning using appropriate assistive technology.

In the past year, some state agency representatives have met monthly or more often to gather and exchange data, some of which is used in this report and to discuss the legislative directive to create a comprehensive statewide plan for assistive technology. What was discovered in the process of reviewing the myriad of data is that different state plans are required to capture the federal share of funding from the various federal agencies involved in providing AT to people with disabilities. Each federal agency, such as the U.S. Department of Labor, the U.S. Department of Health and Human Services and the U.S. Department of Education Rehabilitative Services all mandate different reporting modalities. Therefore, a singular statewide plan is not feasible if state agencies are to continue to capture federal funds which accounted for more than half of publicly funded AT for Minnesotans less than 65 years of age in 2007.

Indeed, one extremely helpful outcome of the Committee's discussions was the sharing of data and learning the many ways in which assistive technology and related services are provided throughout state agencies. However, one of the limitations of the process and of the report is that not all state agencies and no

insurance companies participated in it. Therefore, the final finding of this report addresses this concern and suggests resolutions to further the work of the committee.

Finding: There is a need for an ongoing facilitated approach to encourage participation by all relevant state agencies, consumer groups and interested nonprofit and private sector representatives to enhance statewide coordination.

Therefore be it resolved:

A. *Support an ongoing task force to be coordinated and facilitated by STAR and include representation from state agencies, consumer groups, insurers and interested nonprofit and private sector parties.*

B. *Continue to promote the coordination of assistive technology statewide.*

Some Minnesota Barriers to Full Participation by People with Disabilities

Barriers fall into three areas in which assistive technology can and should be used: buildings, e-government and emergency preparedness.

Buildings

The State of Minnesota has been working to create access in all of its buildings, but the one building–our capitol–that is the most symbolic of our state and government is not barrier free. In the current considerations of our state capital renovation, the following recommendations have been made:

- Work with a disability access specialist to ensure the state is in compliance with federal accessibility requirements;
- Provide overall compliance across disabilities on access issues.

These recommendations would assist the state in assuring that the capitol and state office building comply with the 1990 Americans With Disabilities Act (42 U.S.C. 1281).

E-government

An interagency working group on accessibility and usability of Minnesota e-government services has developed an unpublished report titled, "Business Case for Accessibility and Usability." It states:

> *The Internet is dramatically changing the way that Minnesota state government serves the public. Taking advantage of ever changing advances in new technology, state government is increasing its use of the web to offer citizens a host of services. These services may include corresponding online with elected officials, providing information about government services, renewing licenses, providing tax information and filing tax returns, and applying for jobs or benefits.*
>
> *State government websites are becoming increasingly important because they allow programs and services to be offered in a more dynamic and interactive way. This approach increases citizen participation, is more convenient and faster in obtaining information or services, reduces costs in providing programs and information about government services, reduces the amount of paperwork, and expands the possibilities of reaching new sectors of the community or offering new programs.*
>
> *As government is constantly being asked to do more with less, the Internet is playing a vital role in allowing government to better serve all of its citizens. Government also needs to be proactive, preparing now for how it can best provide information and deliver services to an aging population whose numbers are increasing significantly.*

The Americans with Disabilities Act (ADA) and, if the government entities receive Federal funding, the Rehabilitation Act of 1973, require that state and local governments provide qualified individuals with disabilities equal access to their programs, services, or activities unless doing so would fundamentally alter the nature of their programs, services, or activities or would impose an undue burden. One way to help meet ADA requirements is to ensure that government websites have accessible features for people with disabilities.

A governmental agency with an inaccessible website may be able to meet its legal obligations by providing an alternative, but accessible way for citizens to obtain programs or services, such as a staffed telephone information line. These alternatives, however, are unlikely to provide an equal degree of access in terms of hours of operation, and the range of options and programs available. For example, job announcements and application forms, if posted on an accessible website, would be available to people with disabilities 24 hours a day, 7 days a week. The alternative would be available but on a much more limited basis.

Further, the draft states that "a study conducted by Brown University showed that only 41% of Minnesota websites are accessible, a rating that has not improved in four years." As the State of Minnesota moves toward e-government, it must be mindful of who is and who is not currently using the Internet.

- 18% of people 65+ have access to the Internet
- 29% of adults with disabilities are online

These numbers can and will continue to change.[16]

[16]Unpublished draft "Business Case for Accessibility and Usability Interagency Working Group on Accessibility and Usability of Minnesota e-government Services" .

Emergency Preparedness

Minnesotans with disabilities and seniors must be safe in their homes and communities; Minnesotans with disabilities and seniors must be included in emergency and disaster plans. The needs of all citizens must be considered when preparing community and statewide emergency plans to ensure that everyone will receive quality services. If the needs of all citizens are not addressed when emergencies and disasters strike, those whose needs were not considered will endure unjust hardships. Access to and availability of AT will play a critical role.

A 2005 National Council on Disability report entitled, "Saving Lives: Including People with Disabilities in Emergency Planning" analyzed the current state of emergency preparedness and disaster relief for people with disabilities. Listed here are five of the findings:

- *People with disabilities frequently encounter many barriers to physical plants, communication, and programs in shelters and recovery centers and in other facilities or devices used in connection with disaster operations such as first aid stations, mass feeding areas, portable payphone stations, portable toilets, and temporary housing.*
- *People with disabilities and activity limitations are left out of preparedness and planning activities. These activities include analyzing and documenting the possibility of an emergency or disaster and the potential consequences or impacts on life, property, and the environment.*
- *Disaster preparedness and emergency response systems are typically designed for people without disabilities, for whom escape or rescue involves walking, running, driving, seeing, hearing, and quickly responding to instructions, alerts, and evacuation announcements.*
- *Access to emergency public warnings, as well as preparedness and mitigation information and materials, does not adequately include people who*

cannot depend on sight and hearing to receive their information.

- *FEMA has developed one course with disability-specific content. Information related to the emergency needs of people with disabilities, however, is not widely integrated into a number of general emergency management courses.*[17]

During a fire, a smoke alarm with flashing strobe lights and a vibrating pad alerts a deaf or hard of hearing person that smoke is present. The use of backup generators allows people with electrical medical equipment to continue using it during power outages. This becomes critical when natural disasters damage power lines and citizens do not have power for days at a time.[18]

To ensure that people with disabilities and seniors are adequately prepared for emergency situations, they must be included in community, statewide and regional planning efforts. Accommodations for the needs of citizens with disabilities and seniors must be made when setting up relief stations and fully implemented in the event of an emergency or disaster. Warnings and alert systems must be readily accessible to those with hearing and visual impairments. Informational materials on how to prepare for emergencies and what to do in the event of an emergency or disaster must be made readily available.[19] Employers must include people with disabilities in their emergency plans and make readily achievable accommodations so people with disabilities can participate in the plan.[20]

The pressing need for building accessibility, e-government and emergency preparedness became of particular interest to the

[17] "Saving Lives: Including People with Disabilities in Emergency Planning". (2005). National Council on Disability. http://www.ncd.gov/newsroom/publications/2005/saving_lives.htm.
[18] "Preparing for Disaster for people with disabilities and other special needs." (August, 2004). American Red Cross, FEMA.. www.redcross.org.
[19] "Saving Lives: Including People with Disabilities in Emergency Planning". (2005). National Council on Disability. http://www.ncd.gov/newsroom/publications/2005/saving_lives.htm.
[20] "Accommodation and Compliance Series: Employers' Guide to Including Employees with Disabilities in Evacuation Plans." (2007). Loy, Beth, Carter Batiste, Linda, Job Accommodation Network. www.jan.wvc.edu.

Committee. AT is a significant factor in each of the areas and provides opportunities for Minnesota to continue to provide leadership. Therefore, the following finding and resolutions are suggested.

Finding: Assistive technology can increase and improve citizen participation during the next biennium and beyond.

Therefore be it resolved:

A. All current and future state building and capitol renovations and constructions will be accessible and barrier free to assure full participation by people with disabilities of all ages and come into full compliance with the 1990 Americans with Disabilities Act (42 U.S.C. 12181).

B. All Minnesota e-government initiatives will be accessible and usable by people with disabilities, including hardware, software, application forms and websites and come into full compliance with Section 508 (29 U.S.C. 749d).

C. As of 2010 no public funds will be used to purchase, lease or pay for any public goods or services that are inaccessible to Minnesotans with disabilities of all ages. No grants or contracts shall be paid with public funds for any public goods that are inaccessible to Minnesotans with disabilities of all ages. This includes but is not limited to all design, development, creation, construction, retrofitting and remodeling of any and all state property and/or property leased by public entities.

This includes but is not limited to all state agency investment in information technology, which shall be accessible to Minnesotans with disabilities and seniors. Public parks, schools, transportation, health care services and all pertinent information shall be accessible to people with disabilities of all ages.

D. All public regional and statewide emergency planning shall assume the presence of people with disabilities of all ages and provide equal access to services for all. Shelters, evacuation plans, decontamination efforts, temporary housing, all services, all planning and all pertinent

information shall be accessible to all Minnesotans, including those with disabilities of all ages.

The Committee worked with the budget constraints that are anticipated in the forthcoming biennium and chose to recommend resolutions that are not anticipated to have any expenses attached.

Conclusion

This report was written to fulfill the directive of the Minnesota legislature. The report has three major sections. The first section is an overview that includes the definition of assistive technology, MN demographic information employment data and a review of assistive technology providers in Minnesota. The second section presents a report on the information gathered by the multi-departmental, community and agency Committee that examined the relationships of current state funding and assistive technology. The final section is a listing of the major findings and resolutions of this review.
These findings are:

- **Assistive technology is an investment that enables Minnesotans with disabilities and seniors to live, learn and work in their communities.**
- **There is a need for an ongoing facilitated approach to encourage participation by all related state agencies, consumer groups and interested nonprofit and private sector representatives to enhance statewide coordination.**
- **Assistive technology can increase and improve citizen participation during the next biennium and beyond.**

Assistive technologies are so woven into the fabric of everyday life that we tend not to recognize them as such. We aren't usually aware, for instance, that curb cuts, hearing aids and railings are assistive technologies. For people with disabilities of all ages, such assistive technologies as wheelchairs, walkers and computer software and hardware are essential for participation in daily life as they work, learn and participate in their communities.

Assistive technologies are an integral aspect of democracy in Minnesota; as such, they need the state's continued investment of time and resources. As John H. Hager has said, "Finding ways to make AT more available is something with which few could argue. Our task is clear: We must strive to remove barriers for every American with or without a disability."[21]

[21] John H. Hager, former Assistant Secretary, Office of Special Education and Rehabilitative Services of the US Department of Education (2004 – 2007). Correspondence via email sent from Office of Special Education and Rehabilitation Services January 4, 2007.

APPENDIX

Appendix 1: List of Committee Members (Technical Advisors)

David Andrews
MN DEED State Services for the Blind

Patricia Bahr
Gillette Children's Specialty Healthcare

Paul Bridges
MN DEED Rehabilitation Services Administration

Rich Diedrichsen
MN Department of Human Services Deaf and Hard of Hearing Services

Jo Erbes
MN Department of Administration STAR Program

Hal Freshley
MN Board on Aging

Melanie Fry
MN Department of Human Services
Disability Services Division

Carol Fury
ATMn

Sharie Hawkins
MN DHS Deaf and Hard of Hearing Services

Karen Lamecker
MN Department of Veterans Affairs
Minnesota Veterans Home

Lynda Milne
MN State Colleges and Universities

Ken Rogers
MN State Council on Disability

Colleen Wieck
MN Department of Administration Governor's Council on Developmental Disabilities and STAR Program

Joan Willshire
MN State Council on Disability

Interns:
Tanya Bellanger
Ashley Harder

Appendix 2: Glossary of Demographic Terms

Actively Looking for Work A person is defined as actively looking for work if he or she reports looking for work during the previous four weeks.

Base Population (Base Pop.) The estimated number of individuals upon which the calculation is based. (For percentages, this is the denominator.)

Disability and Disability Types The ACS definition of disability is based on three questions. (1) Does this person have any of the following long-lasting conditions: blindness, deafness or a severe vision or hearing impairment? [Sensory Disability]; (b) a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting or carrying [Physical Disability]; (2) Because of a physical, mental or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: (a) learning, remembering, or concentrating? [Mental Disability]; (b) dressing, bathing, or getting around inside the home? [Self-Care Disability] (3) Because of a physical, mental, or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: (a) going outside the home alone to shop or visit a doctor's office? [Go-Outside-Home Disability]; (b) working at a job or business? [Employment Disability]. A person is coded as having a disability if he or she or a proxy respondent answers affirmatively to one or more of these six categories.

Education Our definition is based on the responses to the question: "What is the highest level of schooling this person has completed? If currently enrolled, mark the previous grade or highest degree received." Our category "high school diploma/equivalent" includes those marking the ACS option "HIGH SCHOOL GRADUATE , high school DIPLOMA or the equivalent (for example: GED)." Our category "some college or an Associate's degree" includes those marking the ACS options: some college credit, but less than one year; one or more years of college but no degree or "Associate's degree (for example: AA, AS)." Our category "a Bachelor's or more" includes those marking the ACS options: "Bachelor's degree (for example: BA, AB, BS)"; "Master's degree (for example: MA, MS, MEng, Med, MSW,

MBA)"; "Professional degree (for example: MD, DDS, DVM, LLB, JD)"; or "Doctorate degree (for example: PhD, EdD)."

Employment A person is considered employed if he or she (a) worked as a paid employee, worked in his or her own business or profession, worked on his or her own farm or worked 15 or more hours as an unpaid worker on a family farm or business, or (b) had a job but temporarily did not work at that job during the reference period due to illness, bad weather, industrial dispute, vacation or other personal reasons. The reference period is defined as the week proceeding the date the questionnaire was completed.

Employment Disability This disability type is based on the question; Because of a physical, mental or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: working at a job or business?

Full-Time/Full-Year Employment A person is considered employed full-time/full-year if he or she worked 35 hours or more per week (full-time) and 50 or more weeks per year (full-year). The reference period is defined as the year preceding the date the questionnaire was completed. Note: this does not signify whether a person is eligible for fringe benefits.

Go-Outside-Home Disability This disability type is based on the question; Because of a physical, mental or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: going outside the home alone to shop or visit a doctor's office?

Group Quarters (GQ) A GQ is a place where people live or stay that is usually owned or managed by an entity or organization providing housing and/or services for the residents. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to people receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities and workers' dormitories. In addition, a description of the types of group quarters included in the 2006 ACS is located on the U.S. Census Bureau's Web site at www.census.gov/acs/www/UseData/GQ/def.htm.

Household Income Household income is defined as the total income of a household, including: wages, salary, commissions, bonuses or tips from all jobs; self-employment income from own non-farm businesses or farm businesses, including proprietorships and partnerships; interest, dividends, net rental income, royalty income or income from real estates and trusts; Social Security or Railroad Retirement; Supplemental Security Income; any public assistance or welfare payments from the state or local welfare office; retirement, survivor or disability pensions; and any other regularly received income (e.g., Veterans' payments, unemployment compensation, child support or alimony).

Institutional Group Quarters (GQs) Includes facilities for people under formally authorized, supervised care or custody at the time of enumeration; such as correctional facilities, nursing facilities/skilled nursing facilities, in-patient hospice facilities, mental (psychiatric hospitals), group homes for juveniles, and residential treatment centers for juveniles.

Labor Earnings: Labor earnings are defined as wages, salary, commissions, bonuses, or tips from all jobs; not including self-employment income from own non-farm businesses or farm businesses.

Mental Disability: This disability type is based on the question: Because of a physical, mental, or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: (a) learning, remembering, or concentrating?

Non-Institutional Group Quarters (GQs) Includes facilities that are not classified as institutional group quarters, such as college/university housing, group homes intended for adults, residential treatment facilities for adults, workers' group living quarters and Job Corps centers and religious group quarters.

Not Working but Actively Looking for Work A person is defined as not working but actively looking for work if he or she reports not being employed but has been looking for work during the previous four weeks.

Number This term appears in the tables; it refers to estimated number of people in the category. (For percentages, this is the numerator.)

Physical Disability This disability type is based on the question: Does this person have any of the following long-lasting conditions: a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting or carrying?
Poverty The computation of the poverty measure is computed based on the standards defined in Directive 14 from the Office of Management and Budget. These standards use poverty thresholds created in 1982 and index these thresholds to 2006 dollars using poverty factors based upon the Consumer Price Index. They use the family as the income-sharing unit, and family income is the sum of total income from each family member living in the household. The poverty threshold depends upon the size of the family, the age of the householder and the number of related children under the age of 18.
Race Our race categories are based on the question, "[w]hat is this person's race? Mark (X) one or more races to indicate what this person considers himself/herself to be." Responses include the following: White; Black or African-American; American Indian or Alaska Native (print name of enrolled or principal tribe); Asian Indian; Chinese; Filipino; Japanese; Korean; Vietnamese; Other Asian (Print Race); Native Hawaiian; Guamanian or Chamarro; Samoan; Other Pacific Islander (Print Race Below); Some other race (print race below). Other race also contains people who report more than one race.
Sample Size The number of survey participants used to calculate the statistic.
Self-Care Disability This disability type is based on the question; Because of a physical, mental or emotional condition lasting six months or more, does this person have any difficulty in doing any of the following activities: dressing, bathing, or getting around inside the home?
Sensory Disability This disability type is based on the question: Does this person have any of the following long-lasting conditions: blindness, deafness or a severe vision or hearing impairment?
Standard Error (StdErr) Data, such as data from the American Community Survey (ACS), is based on a sample, and therefore statistics derived from this data are subject to sampling variability. The standard error (StdErr) represents the degree of sampling variability. In a random sample, the degree of sampling variation will

be determined by the underlying variability of the phenomena being estimated (e.g., income) and the size of the sample (e.g., the number of survey participants used to calculate the statistic). When the standard error is smaller so is, the sampling variability; therefore, the estimate is considered more precise.

Appendix 3: Start Up Phase Informational Interview Survey

Interviews and committee communications[22]

Most of the effort in the startup phase of this project was directed to identifying critical information from Steering Committee members and others, and assisting the committee process in meetings MAD interviewed the following people.

Interviewees

The MSCOD Executive Director, Joan Willshire, provided the list of interview subjects, and updates. She invited people from other state agencies and nongovernmental organizations to participate in the review. Interview subjects included the persons listed below. The names of Steering Committee members are shown with an asterisk.

Interviewee	Title	Organization
Scott Ahlgren	Director	Multiple Sclerosis Society, Minnesota Chapter
Dave Andrews*	Chief Technology Officer	Employment and Economic Development State Services for the Blind
Patti Bahr*	Rehab Engineer Technologist	Gillette Specialty Healthcare Mobile Outreach
Alex Bartolic*	Director	Human Services Disability Services Division
Mary Bettlach*	Assistive Technology and UDL Specialist	Education Student Support Services, Special Education

[22] Information in this section has been provided by the MAD report

Interviewee	Title	Organization
Paul Bridges*	Program Admin Manager	Employment and Economic Development Rehabilitation Services
Rich Diedrichsen*	Rehabilitation Counselor Supervisor	Human Services Deaf and Hard of Hearing Services
Jo Ann Erbes	Coordinator Formerly Exec. Dir.	Administration STAR Program (effective 3/3/08) United Cerebral Palsy of Minnesota
Hal Freshley*	Planning Director	Human Services Board on Aging
Melanie Fry*	Policy Consultant	Human Services Disability Services Division
Carol Fury*	Executive Director	Assistive Technology of Minnesota
Ray Griffin	AT Program Specialist	Employment and Economic Development
Dave Hancox	Director	Metropolitan Center for Independent Living
Mary Hartnett*	Executive Director	MN Commission Serving Deaf and Hard of Hearing Persons
Shelley Madore	Representative District 37A	Minnesota House of Representatives
Lynda Milne*	System Director for Faculty Development	Minnesota State Colleges and Universities

Interviewee	Title	Organization
Kim Moccia	Analyst	Administration STAR Program
Kim Peck*	Director	Employment and Economic Development Rehabilitation Services
Ken Rodgers*	President	American Council of the Blind of Minnesota
Steve Thovson	Executive Director	Southwestern Center for Independent Living
Jean Wood*	Director	Human Services Minnesota Board on Aging
Colleen Wieck*	Executive Director	Minnesota Governor's Council on Developmental Disabilities
Joan Willshire*	Executive Director	Minnesota State Council on Disabilities
Michael Wirth-Davis	President/CEO	Goodwill/Easter Seals Minnesota

Appendix 4: Minnesota Department of Education Supplement

MN Department of Education Explanation of the Funding Sources
Federal Funds:
http://www.pde.state.pa.us/special_edu/cwp/view.asp?A=177&Q=61400
Section 6111 Flow-Through: Part B of the Individuals with Disabilities Education Act –Grants to States Program (IDEA-B) provides funding to local education agencies (LEAs) to supplement and/or increase the level of special education and related services provided to eligible students with disabilities ages 3 through 21 who are enrolled in special education programs.

Part B Funds may be used to supplement programs of special education for students with disabilities in areas which include, but are not limited to, assistive technology, extended school year services, personnel training and parent training.

The following is taken from Special Education Funding and Data Manual:http://education.state.mn.us/MDE/Accountability_Programs/Program_Finance/Special_Education/Funding___Data_Manual/index.html

Regional Low Incidence Projects: Federal low Incidence Discretionary funds may be used to pay remaining 32 percent of the salary of personnel whose salary generates 68 percent state base revenue (and their benefits) for low incidence staff working for the low incidence projects.

MDE retains approximately 10 percent of P.L. 105.17 Federal Part B Funds, generated by Minnesota's annual federal child count for discretionary projects. These funds are awarded in the form of grants to school districts, regional education agencies, colleges and universities, non-profit advocacy organizations and other agencies concerned with the education of children with disabilities. Priorities are set each year for discretionary projects based upon input form the Special Education Advisory Council (SEAC), etc.

Part of the total available discretionary funds is targeted for Regional Low Incidence Projects (RLIP). The purpose of the RLIP is to plan and coordinate services to students with low incidence disabilities. Low incidence disabilities include the following:

- Blind/Visually Impaired
- Physically Impaired
- Deaf and hard of hearing
- Traumatic Brain Injury
- Deaf/Blind
- Autism Spectrum Disorders
- Other Health Disability
- Developmental Cognitive Disabilities
- Severe Multiple Impairments

Part C Infants and Toddlers:
Overview to the Part C Program Under IDEA
http://www.nectac.org/partc/partc.asp#overview
Congress established this program in 1986 in recognition of "an urgent and substantial need" to:

- Enhance the development of infants and toddlers with disabilities
- Reduce educational costs by minimizing the need for special education through early intervention
- Minimize the likelihood of institutionalization, and maximize independent living
- Enhance the capacity of families to meet their child's needs

The Program for Infants and Toddlers with Disabilities (Part C of IDEA) is a federal grant program that assists states in operating a comprehensive statewide program of early intervention services for infants and toddlers with disabilities, ages birth through age 2 years, and their families. In order for a state to participate in the program it must assure that early intervention will be available to every eligible child and its family. Also, the governor must designate a lead agency to receive the grant and administer the program, and appoint an Interagency Coordinating Council (ICC), including parents of young children with disabilities, to advise and assist the lead agency. Currently, all states and eligible territories are participating in the Part

C program. Annual funding to each state is based upon census figures of the number of children, birth through 2, in the general population.

More on part C:
http://www.health.state.mn.us/divs/cfh/meccss/descpartc.html

Eligible Population

Eligible for special education
Every child who has a hearing impairment, visual disability, speech or language impairment, physical handicap, other health impairment, mental handicap, emotional/behavioral disorder, specific learning disability, autism, traumatic brain injury multiple disabilities, or deaf/ blind disability and needs special instruction and services, as determined by the standards of the commissioner, is a child with a disability. In addition, every child under age three, and at local district discretion from age three to age seven, who needs special instructions and services, as determined by the standards of the commissioner, because the child has a substantial delay or has an identifiable physical or mental condition known to hinder normal development is a child with a disability. (MS 125A.02)

Funding Sources for Screening
Individual with Disabilities Act (IDEA) provides funding to assure an early intervention system. It is infrastructure money that helps the state and local agencies coordinate all child find efforts (screening).

Setting / Periodicity / Provider Type
Varies by which screening program local agencies use.
Follow-Along Program is a program funded with Part C dollars. See FAP definitions.

Agency Responsible / Legislative Mandate or Authority and Partnerships /Coordination
The lead agency in Minnesota is the Department of Education. They have interagency agreements with DHS and MDH to help fulfill the responsibilities. (34CFR§§ 303.320), MS 125A. 26-48 4

Key Element(s) Addressed
√ Medical Home
√ Social Emotional/MH
√ Early Care & Ed/Child Care
√ Parenting Education
√ Family Support

More from the Special Education Funding and Data Manual: http://education.state.mn.us/MDE/Accountability_Programs/Program_Finance/Special_Education/Funding___Data_Manual/index.html

Federal special education funds are intended to supplement – not to replace (supplant) – such local funds (34 C.F.R § 300.230). This partnership of funding is reflected in both state and federal legislation. Minnesota legislation provides base revenue and an excess cost funding formula to aid districts in paying for costs incurred in providing special education, and assumes that the balance of those costs will be met by local funds. Federal legislation is intended to expand and improve services to children and youth with disabilities.

All children who participate in public education in Minnesota, including children and youth with disabilities, generate general education revenue. In addition to the general education revenue, Minnesota provides state special education aid to partially fund school districts for the specialized instruction and related services provided to children and youth with disabilities. In general, state special education aid partially pays for special education teachers, paraprofessionals, and related service providers. It also pays for a percentage of contracted services, student placements, supplies and equipment to meet the instructional needs of children and youth with disabilities. There is also state special education aid for other special services such as "special transportation."

The special education revenue paid to school districts each year is actually based on expenditures from two years before. That is why the aid is called "base revenue" and why the funding formula is called

a "base year formula." These amounts are then modified by the districts' change in student population and are limited by or increased to a specified "cap." The percentages used in the base revenue are as follows:

Supplies and equipment: - 47% of the cost of supplies and equipment not to exceed an average of $47 per student with a disability.

Federal Funds - Part B, Part C and Sections 611 and 619
The U.S. Congress determines the total amount of federal funding available for special education each year. Federal grants to states for special education are based on a formula that takes into account the number of students with disabilities in a state during a base 5 year (1998 for Section 611 and 1996 for Section 619), the poverty index of a state, and the total K-12 enrollment (ages 3-21 for Section 611 and ages 3-5 for Section 619). Funds are allocated by the state to local education agencies using the same three-part formula. Minnesota also receives federal special education funds for children ages Birth-2.

Federal Excess Cost Aid Requirement – C.F.R. § 300.184
Federal regulations require that the LEA (districts) must spend a certain minimum amount for the education of its children with disabilities before part B Funds are used. This ensures that children served with part B Funds have at least the same average amount spent on them from sources other than Part B, as do children in the school district taken as a whole.

Uses of Federal Special Education Funds
There are less federal funds than state aid, but those funds are more flexible. Federal funds can be used for almost any special education expenditure a district determines to be necessary in their obligations to provide a free appropriate public education (FAPE) to children and youth with disabilities.

Regional Low Incidence Projects: Federal low Incidence Discretionary funds may be used to pay remaining 32 percent of the salary of

personnel whose salary generates 68 percent state base revenue (and their benefits) for low incidence staff working for the low incidence projects.

MDE retains approximately 10 percent of P.L. 105.17 Federal Part B Funds, generated by Minnesota's annual federal child count for discretionary projects. These funds are awarded in the form of grants to school districts, regional education agencies, colleges and universities, non-profit advocacy organizations and other agencies concerned with the education of children with disabilities. Priorities are set each year for discretionary projects based upon input form the Special Education Advisory Council (SEAC), etc.

Part of the total available discretionary funds is targeted for Regional Low Incidence Projects (RLIP). The purpose of the RLIP is to plan and coordinate services to students with low incidence disabilities.

Low incidence disabilities include the following:
- Blind/Visually Impaired
- Physically Impaired
- Deaf and hard of hearing
- Traumatic Brain Injury
- Deaf/Blind
- Autism Spectrum Disorders
- Other Health Disability
- Developmental Cognitive Disabilities
- Severe Multiple Impairments

Personnel Type Code 34 AT Specialist is just a code given to people with that role.

Appendix 5

Hearing loss – Home modification checklist

The goal of the *Home Modification Checklist* is to provide those with a hearing loss, their caregivers, family members or other interested persons an easy way to assess the home environment for problem areas. Once the problem areas are identified, solutions are suggested to help the person with a hearing loss feel safe and independent in their home.

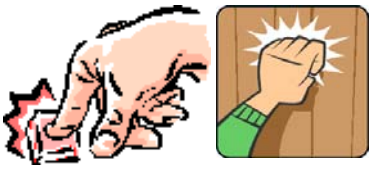
For more information or further assistance, contact the Deaf and Hard of Hearing Services (DHHS) office.

Does the person with hearing loss have	**Circle one**	
Difficulty hearing the doorbell or knocking at the door?	Yes	No
Difficulty hearing the smoke detector?	Yes	No
Difficulty hearing the carbon monoxide detector?	Yes	No
Difficulty hearing weather-warning sirens?	Yes	No
Difficulty hearing the existing security system alarm?	Yes	No
Difficulty hearing appliance buzzer/timer?	Yes	No
Difficulty hearing the alarm clock?	Yes	No
Difficulty hearing the telephone ring?	Yes	No
Difficulty hearing bell on telephone?	Yes	No
Difficulty hearing the television, radio or stereo? Or, is the television, radio or stereo too loud for other members of the household?	Yes	No

Difficulty hearing people trying to get his/her attention?	Yes	No
Difficulty hearing running water?	Yes	No
Difficulty hearing well in certain rooms?	Yes	No

Solutions

The Door



One solution is to purchase a special doorbell from vendors who specialize in products for people who are deaf or hard of hearing. These specialized products are NOT available at local hardware or lumber stores. There are doorbells that flash a light or activate a vibrating pager. Other devices are specifically designed to work with the intercom type of doorbell found in many apartment buildings.

A second solution is to purchase an alerting system that uses the existing doorbell system. These alerting systems can include transmitters that alert the user to various environmental sounds such as a doorbell, smoke detector, telephone, crying baby, etc.

A third solution is to purchase a wireless doorbell system from a hardware store (larger hardware stores or regional/national chains are usually best bets). *It is very important to check that the system provides a volume control.* The ability to increase the volume of the doorbell is an important feature for most hard of hearing people. Many of these wireless doorbell systems allow the use of additional receivers as needed, providing the option of placing them throughout the house. It is recommended that one of these receivers is set near the place the hard of hearing person prefers to sit. **Note**: Some stores carry wireless doorbells that also have a flashing light.

For those who rely on hearing someone knocking on the door, there are devices that activate a flashing light when someone knocks at the door (they are sensitive to the vibration). The limitation of this device is that the resident must be able to see the door from where they are sitting.

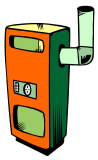
Smoke Detector

There are smoke detectors that use a flashing strobe light, an extra loud audible alarm or a pillow vibrator to alert the deaf or hard of hearing person that the detector has been activated. Most of these smoke detectors are hard wired and need to be checked by an electrician (or the manufacturer) to assure they will work with existing smoke detectors. This is especially important when they are used in condominiums or apartment buildings.

There are some smoke detectors designed for people with a hearing loss that plug into a standard electrical outlet so no hardwiring is necessary. When smoke is detected, a strobe light and loud alarm are activated.

To use existing fire and smoke alarms, an alerting system may be an option. Transmitters may be purchased with these systems that alert the user to various environmental sounds such as a smoke detector, telephone, doorbell, crying baby, etc.

Carbon Monoxide Detector



There are specially modified carbon monoxide detectors that activate a strobe light when carbon monoxide is detected.

Weather Warnings

Some weather radios are designed to allow the user to connect attention-getting devices like strobe lights and bed-shakers.

Many pager companies offer alerting pagers that provide the latest weather information. The pager should be one that vibrates when activated so when placed under the pillow at night, the user would be notified of possible dangerous weather conditions. Contact local pager companies to find out more about weather-related information products.

Security System Alarm

It is best to contact the company that installed the existing security system. Most major companies are able to augment the existing system with strobe lights in one of two ways:

hardwiring strobe lights in specified areas or using a plug-in unit that you can add a strobe light (or a bed-shaker) and then plug the unit into an electrical outlet.

It may be possible to use the existing security system with an alerting system. Alerting systems allow the purchase of transmitters that will alert the user to environmental sounds such as an alarm, carbon monoxide detector, smoke detector, telephone, etc.

These alerting systems can only be purchased from vendors who specialize in products for people who are deaf or hard of hearing.

Appliance Buzzer/Timer

There are not a lot of options with appliance buzzers and timers. There are vibrating wristwatches and portable alarm clocks that also function as timers. These can be used when you set the microwave or oven.

Alarm Clock

Alarm clocks designed for people with a hearing loss come in a wide variety of styles, sizes, and various features. These clocks are available only through vendors who specialize in products for people who are deaf or hard of hearing.

Telephone

The Telephone Equipment Distribution (TED) Program is available to Minnesota residents. The TED Program loans specialized telephone equipment to people who are hard of hearing, deaf or who have a speech or mobility impairment. The telephone equipment is provided on a long-term basis at no cost. To qualify for the TED Program, the person must: 1) be a Minnesota resident; 2) have a hearing loss, speech or mobility impairment that limits the use of a standard phone (which includes being able to hear it ring); 3) have phone service in the home or have applied for phone service; and 4) have a family income equal to or below the guidelines. To find out the current income guidelines and to receive an application, call 1-800-657-3663 (Voice) or 1-888-206-6513 (TTY). The website for the TED Program is: www.tedprogram.org.

For those who do not meet the income guidelines, there are several phones, amplifiers, phone signalers, and phone ringers

available through vendors who specialize in products for people who are deaf or hard of hearing. Note: Many phones available through local stores have volume controls, but they are rarely strong enough for those with a significant hearing loss.

Makers of cell phones provide accommodations for people with a hearing loss. Contact a local store that sells cell phones and ask about features specifically for people who are deaf or hard of hearing.

There are voice-carry-over (VCO) phones available for those who cannot hear on a phone but have understandable speech. To use the VCO phone, all calls must go through the Minnesota Relay – a free service for all Minnesota residents.

Television, Radio or Stereo

One way to address this problem is through the use of assistive listening devices. Assistive listening devices can often be used with hearing aids. For more information about how to use assistive listening devices with hearing aids, contact your local DHHS office.

There are different types of assistive listening devices. The most commonly used are the personal amplifier, FM system, and infrared system. For most assistive listening devices there are a variety of earphone and headphone styles to chose from– it all depends on the preference of the listener.

Personal amplifiers are portable and easily moved from one area to another. For easier listening the microphone of the personal amplifier can be attached to an extension cord and placed near the television, radio or stereo speaker. Caution: if the extension cord is used, there is a danger of tripping over the cord. It is possible to go to an electronic store and purchase a long audio extension cord and run it along the baseboard from the preferred seating place to the television, radio or stereo. A personal amplifier is also useful for one-on-one conversations, especially in noisy environments such as inside a vehicle or restaurant.

FM systems transmit sound via a radio signal from the transmitter (which includes the microphone) to the receiver. FM systems can transmit sound from as far away as 100-200 feet. The transmitter portion of the FM system can be placed near the television, radio or stereo speaker for easier listening. FM systems are portable and easily moved from one area to another. This portability and the fact that there is no wire connecting the microphone to the receiver, allows the FM system to be used in classroom situations, at workshops, in the car, and many other places and situations.

Infrared systems transmit sound from a transmitter to a receiver via light waves. The transmitter portion of the infrared system can be placed near the television, radio or stereo speaker for easier listening. Often the infrared system can be directly plugged into the audio-visual system and provide a clear signal with little or no interference from background noises.

Another option is to run headphones or an auxiliary speaker from the television, radio or stereo to the preferred seating place of the person with a hearing loss. If at all possible, place the speaker at ear level and have a volume control on the speaker.

Closed captions can be accessed on most TVs by simply using the menu function of the television and turning on the captioning feature (all televisions manufactured after July 1993 have a built-in decoder chip). On some televisions, the captioning feature is simply turned "on" or "off". On other televisions, there may be a list of options given – select "CC1". Currently, very little is being done with "CC2" but that may change in the future. Note: Closed captioning is a free service and you do not have to call anyone to activate it for you – just turn on the captioning feature as described above. Most VHS tapes and DVDs are captioned, but just like television programs not everything is closed-captioned at this time.

Getting Attention

There are a few personal or private pagers available from vendors who specialize in products for people who are deaf or hard of hearing. These pagers are not activated

through a paging service or company, so there are no monthly fees associated with these pagers. The personal pager has been useful in situations where a member of the household has an illness or physical disability and needs to get the attention of the hard of hearing or deaf person. This has also been useful for outdoor activities such as hiking or biking to get the attention of the deaf or hard of hearing person.

Running Water

One solution to this problem is to visually check and double-check to make sure the water has been turned off. Making little reminder signs to check the faucets before leaving the room or house may also be helpful.

Another solution is to contact a local plumbing supply company for information about spring-loaded handles or electronic eye activated faucets or foot/knee controlled faucets (developed for those with physical disabilities).

Room Acoustics

Most people with a hearing loss discover that they are able to hear and understand speech much better in particular rooms of their home. This is because of room acoustics. The less distance sound has to travel and the less hitting and bouncing off hard surfaces the better the acoustics. Often acoustical treatment to the walls or furniture fixtures works best in absorbing sound.

Acoustical tiles (12”x12”x1”) can be installed on the wall with double-sided tape or hook-and-loop fasteners. With creative use of paint, these acoustical tiles could be an artistic addition to the room! Tapestries and other wall hangings also help in absorbing sound.

Windows and doors should be examined, especially if the home is located on a busy street. Weather gaskets on the windows may need replacing. Foam gasketing around the frame and/or a drop seal at the bottom of the door may be needed.

Large, plush sofas and chairs will absorb some sound in the room. While carpeting does not provide a lot of acoustical absorption, every little bit helps.

In addition to making changes to improve room acoustics, using a personal amplifier or FM system may be extremely beneficial to the person with a hearing loss.