MOBILITY & ASSISTIVE DEVICE PAPER 2005

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1. PURPOSE OF PAPER

The purpose of this paper is to help clarify the various mobility and assistive device issues, which exist in catastrophic and non-catastrophic workers' compensation situations. The primary guideline for determining mobility needs is based on Georgia State Board of Worker's Compensation Rule 200.1, which states the understanding that the goal of Rehabilitation Services is to "provide items and services that are reasonable and necessary for Injured Worker to return to the least restrictive lifestyle possible." All parties are charged with the fulfillment of this goal.

2. GENERAL CONSIDERATIONS

The Rehabilitation Supplier needs to identify the mobility and assistive device needs of the Injured Worker, taking into consideration appropriate options as discussed in this paper. In the assessment and recommendation of mobility options, consider short-term vs. long-term intervention. Injured Worker considerations include: age, conditioning, strength, weight, height, disease progression, overall medical status, home and work environments, and transferability of device. Vendor considerations include knowledge, experience, reliability, availability for service and geographic location in relation to the client.

3. REHABILITATION SUPPLIER RESPONSIBILITY

It is expected that the Rehabilitation Supplier will make a home visit upon opening a case and when there are significant changes in the Injured Worker's functioning level and aging. Aging combines with disability to create greater needs and impacts function. These visits are to assess for possible needs regarding DME, assistive devices, accessibility and to determine if there are barriers to independence.

- Needs should be discussed with the authorized treating physician, obtaining prescriptions as necessary.
- Research all positive/negative factors for providing what is medically necessary, as well as appropriate, for the individual's specific needs.
- Consider safety, reliability, extent of mobility needs, terrain, individual usage, resources in the area and costs of each choice (short term and long term), with input from professional evaluations.
- Consider all aspects of the Injured Worker's life, including medical and rehabilitation appointments, personal business, social, recreational and health maintenance, pre-vocational and vocational activities, and maximum functioning in the home environment.
- Caregivers and Injured Workers need to have clear instructions and understanding as to the use, care, and storage of equipment.
- It is recommended that the Injured Worker/caregivers demonstrate the ability to use the equipment.
- All mobility assistive equipment should be included in a formal rehabilitation plan, including maintenance and repair.

4. WHEELCHAIRS AND ACCESSORIES

4.1 General Considerations

There are many different types of wheelchairs available to an Injured Worker today. Years of modifications to design have led to improved performance and functionality, including weight reduction, smaller turning radius, and enhanced durability.

Wheelchairs initially breakdown into two distinct categories: power or manual. Power and manual wheelchairs breakdown further into subcategories that specify weight, frame type, and drive-wheel position. Options and accessories such as lateral supports, customized seating, and specialty controls enable the supplier to customize a chair to an Injured Worker's specific needs. In fact, there is very little that cannot be done to accommodate the needs of an Injured Worker.

While wheelchairs and scooters provide the same basic function (motorized transportation), wheelchairs offer the advantages of greater customization and better maneuverability in small areas. The following is a list of things to consider when choosing a wheelchair, but ultimately, the decision is made through a Licensed Physical Therapist, specializing in seating evaluations.

4.2 Wheelchair Considerations

- Physical characteristics and cognitive abilities
- Environments in which the chair will be used (Indoors, Outside Terrain, Work Environment)
- Home environment (refer to home modification section)
- Power vs. Manual
- Length of need
- Purchase vs. Rental
- Transportability (refer to lift section and transportation paper)
- Vocational/Avocational activities of the Injured Worker
- Backup wheelchair

4.3 Power vs. Manual Wheelchair: Questions to Consider

Injury level: C1 – C5	Yes___No____
Injury level: C6 – S1	Yes___No____
Does Injured Worker have good upper body strength and balance?	Yes___No____
Does Injured Worker have good control of hands, arms, and shoulders?	Yes___No____
Are there co-morbid or pre-existing conditions that affect function?	Yes___No____
Has there been a change in functional mobility?	Yes___No____
Are there special considerations for vocational and avocational use?	Yes___No____
Will Injured Worker be using mobility device to cover long distances?	Yes___No____
Will Injured Worker have to navigate steep or rough terrain?	Yes___No____
Is Injured Worker an amputee?	Yes___No____

4.4 Power Wheelchair vs. Scooter: Questions to Consider

Can Injured worker operate/steer scooter?	Yes___No____
Can Injured Worker operate a joystick?	Yes___No____
Will Injured Worker drive while sitting in the equipment, now or in the near future?	Yes___No____
Does Injured Worker require specialty controls (i.e. sip & puff, head controls, chin control, etc.)?	Yes___No____
Does Injured Worker require specialty seating (i.e. tilt, recline, solid seat pan, etc.)?	Yes___No____
Where will the equipment be used?	Inside___ Outside ___
If outside, what type of terrain will the equipment have to transverse?	Rough____ Even _____
Does Injured Worker need mobility assistance inside the home?	Yes___No____

4.5 Types of Wheelchairs

	Manual	Power
Description	***Wheelchair propelled by the user or someone else. Non-powered***	***Wheelchair that uses a motor for propulsion***
Pros	• ***Lightweight*** • *Range of chair only limited by physical stamina of the person propelling it* • *Easier to transport than power wheelchairs* • *Minimal maintenance* • *More options for recreational activities and community activities*	• *Preserves and conserves user's energy* • *Handles slopes better than a manual chair* • *Frees one hand* • ***Allows mobility options for individuals who cannot use manual chairs*** • ***Less demand on upper extremities*** • ***Makes power tilt and recline an option***
Cons	• ***Dependent upon user's stamina*** • *Long-term use will cause wear on shoulder joints, wrists, and elbows* • *May require assistance overcoming steep angles or long inclines*	• ***Difficult to transport*** • *Range is dependant upon battery life* • *More responsibility for maintenance, upkeep, and use*

4.6 Types of Manual Wheelchairs

There are two main categories for manual wheelchairs: Folding and Rigid. Beyond this distinction, manual wheelchairs are classified by weight. The following is a brief description and comparison of the frame type

Types of Manual Wheelchairs cont'd

	Folding	***Rigid***
Description	***Standard wheelchair - Seat and back are made to fold "sling style." Folds in half by pulling straight up on the middle of the seat***	***Back typically folds down onto seat and wheels may have a quick release axle to remove the wheels and make the frame as small as possible***
Pros	• ***Chair becomes very narrow when folded and this makes it easy to transport***	• *Lightweight – eliminating the crossbars necessary in a folding chair helps reduce the weight* • ***Allows more options for specialized backs***
Cons	• *Heavier* • *Fewer customization options*	• *Can be difficult to transport*

4.7 Power Wheelchair Wheel Placement

Power wheelchairs fall into three main categories: Rear-Wheel Drive, Mid-Wheel Drive, and Front-Wheel Drive. Each main category can be subdivided into groups specifying weight capacity and ability to modify the seating system. The following is a brief description and comparison of the main categories for power wheelchairs:

	Rear-Wheel Drive	**Mid-Wheel Drive**	**Front-Wheel Drive**
Description	Drive wheels are located at rear of chair and push the occupant. Front casters swivel.	Wheels are located in center of chair. Chair usually has front and rear casters. Front casters may or may not touch ground.	Wheels are located at front of chair. Motors pull the occupant. Chair has rear casters that act as anti-tippers.
Pros	• Steering and handling performs most like a car with regards to steering and handling • Tends to be more stable at high speeds (offers the highest speeds available) • Best front stability though some chairs have a tendency to wheelie • Driving stability makes this the best choice for people with reduced coordination or specialty controls (i.e. sip-n- puff, etc.)	• The best turning radius available • Easy to maneuver in confined area • Does not tend to wheelie and has good rear stability • Models with front and rear casters on ground offer the best front and rear stability available • Performs better than rear-wheel drive chair when climbing obstacles	• Because the drive wheels are closest to occupant's feet, feels more natural and for many is easier to maneuver around corners or tables. • Excellent climbing capability • Handles well on soft ground • Best rear stability (will not wheelie)
Cons	• Next page		

	Rear-Wheel Drive	**Mid-Wheel Drive**	**Front-Wheel Drive**
Cons	• Poor turning radius • Front casters can sink in soft ground or become entrapped on obstacles while trying to climb over them	• Slower speeds than rear-wheel drive chair • Tends to fishtail at high speeds and starting off • Depending on how front anti-tippers are arranged, may tilt forward while descending a hill or stopping suddenly • Front and rear casters may have tendency to hang-up if driving off of a paved surface • Less adaptable for outdoor use	• Slowest maximum speed • Tends to fishtail, especially at higher speeds • Controls may have to be modified if steering presents a problem due to fishtailing • If front anti-tippers are present, may tend to tilt forward while descending a hill

4.8 Tires

Tire choice is important because it can determine the type of ride and handling the user will experience and the amount of maintenance necessary for proper upkeep of the chair

	Pneumatic	**Solid or Flat-Free**
Description	*Air filled*	*Tire with solid insert, foam filling, or one complete solid unit*
Pros	• *Softer ride* • *Better traction*	• *No flats* • *Last longer* • *Less maintenance*
Cons	• *Flats* • *Does not last as long* • *Pressure must be monitored.*	• *Heavier* • *Depending on tread, less traction.* • *Rougher ride*

4.9 Seating Evaluation

Seating and positioning can be very complicated and involved. Only a Licensed Therapist should evaluate a particular Injured Worker for his/her mobility needs through a formal seating evaluation. Wheelchairs, scooters, cushions, backs, supports, shower chairs, and specialty options will be based on an Injured Worker's physical condition and injury level.

Seating may have to be readdressed periodically due to pressure areas and changes in function or physical condition (i.e. amputation, weight, age, strength, activity level, etc.). A physician's order is needed for the seating evaluation. Once the specifications are determined for the mobility device, a physician's order is needed, specifying that piece of equipment. The equipment must be reflected in the rehabilitation plan.

4.10 Seat Cushions

Cushions can be very complicated and involved. For this reason, only a Licensed Therapist should prescribe a cushion for an Injured Worker. Cushions are typically prescribed at the initial seating evaluation. Often a second cover and/or cushion, for back up, are requested as a precautionary measure.

On a basic level, cushions serve two purposes: pressure relief and postural support. When choosing a cushion, it is important that the physical needs of the Injured Worker are met, but comfort has to be considered as well. Despite the fact that a cushion meets the physical requirements of relieving pressure and providing support, the Injured Worker may not feel comfortable sitting on it. Because there are so many options available today, there is usually more than one type of cushion that will meet the necessary physical requirements and comfort requirements of the Injured Worker.

4.10.1 Types of Cushions

	Foam	**Gel/Solution**	**Air**
Description	*Foam cushions can be made of a single density or layers of different densities.*	*Can be made as a bladder of gel or solution, or typically it is used in combination with a forming material such as foam.*	*Often uses balloon-like cells or air-foam flotation to provide additional support.*
Pros	• *Lightweight* • *Easy to modify in the field to the Injured Worker's needs.* • *No risk of leakage.* • *Selection of densities makes it easy to customize.*	• *Weight is distributed evenly over gel due to its ability to conform to the shape of the body – better pressure relieving properties.* • *Helps maintain a comfortable temperature.*	• *Lightweight* • *Depending on design, air offers better weight distribution by contouring to the body and dispersing weight.*
Cons	• *Not as durable; may need changing once a year or less.* • *If it becomes compressed, it can impair skin integrity.* • *Can insulate skin, increase temperature, adding moisture and increasing the chance of skin breakdown.*	• *Will leak when punctured.* • *Heavier* • *Does not offer maximum stability for users without good postural control.* • *Chance of bottoming-out as gel is dispersed.*	• *May leak* • *High maintenance. Must frequently check air pressure to ensure proper inflation.* • *Depending on design, offers less postural support than other types of cushions (Although, the introduction of chambers and new designs offer better support).*

4.10.2 Combinations

Over time, several companies have combined different materials to enhance their efficiencies. Examples include: cushions that utilize air with gel or foam. This combination provides a cushion with more stability that retains the pressure relieving benefits of gel and air. Some cushions utilize the combination of air and foam in a way that allows the user to mold the cushion to their body through the use of a valve.

4.10.3 Custom Cushions

Several companies have gone so far as to provide a way to perform on-site cushion customization. Using different materials in combination with an adhesive, the seating technician can create a customized mold, and with certain products the actual cushion can be developed while the Injured Worker waits. These cushions are expensive and require someone who is well trained. In some cases a customized cushion will best meet the specialized needs of the Injured Worker.

4.11 Tilt & Recline

Tilt, recline, and tilt & recline, are options available for some power and manual chairs. These features are used by themselves, or in combination, to provide help with weight shifts, comfort, and transfers.

4.11.1 Tilt

Typically used for weight shifting, this feature helps reduce the risk of pressure sores by allowing the user to adjust his/her center of gravity and therefore the point at which most pressure is exerted. It can also be used to help control spasms and provide better seating by creating a proper fit and stability in the chair that might be useful on steep ramps.

4.11.2 Recline

The recline feature is commonly offered, in a limited form, on most chairs as an added comfort feature. This feature can also provide better support and when full recline is available, help with weight dispersion and transfers.

4.12 Wheelchair Backs

The back of a wheelchair is an important component because it provides comfort, support, and helps maintain correct posture. The following is a brief description and summary of use:

Types of Backs	***Description***	***General Use***
Sling	*Standard back on a folding wheelchair. Typically made of vinyl or nylon.*	*Manual wheelchairs and power wheelchairs. Mostly for people with posture control.*
Tension Adjustable Sling	*Similar to standard sling back, but has straps that allow the user to adjust the tension for better support.*	*Manual wheelchairs and power wheelchairs. User needs to have good posture. Adjustability adds comfort and allows user to remain in chair for longer periods of time*
Rigid	*Made of non-flexible material, such as plastic or metal, with some type of cushion for comfort. Many are slightly concave to "cradle" user and provide some lateral support. Depending on style, may allow for attachments such as lateral supports or headrests, to be mounted to them.*	. *Manual and power wheelchairs. Provides a high level of support. Typically prescribed for users who need additional support to someone who needs a high level of postural support.*
Deep Contour Rigid	*Made of non-flexible material, such as plastic or metal, with some type of cushion for comfort. Back has a very aggressive concave shape that "hugs" the user and offers greater lateral support. Depending on style, may allow for attachments such as a headrest to be mounted to it.*	*Manual and power wheelchairs. Provides a high level of support. Typically prescribed for users who need a high level of postural support, especially lateral support.*
Custom Specialized	*Custom backs are made specifically for the user. Many use a solution with an activator to mold the cushion in the exact shape of the user's back.*	*This type of back offers the highest level of support and is typically prescribed for users with special needs.*

4.13 Specialty Options

The vast selection of accessories and options available today allow for various combinations to meet the needs of the Injured Worker. Through standard options and accessories, it has become easier to customize chairs. The following is a brief listing of some options available today:

- Lateral Supports – Using a combination of such supports reduces the risk of scoliosis. Additionally, improper seating positioning can be avoided. This helps reduce the risk of further injury, including skin breakdown.

4.13 Specialty Options (cont'd)

- Headrest – Headrests are needed for proper posture, comfort, and can help the Injured Worker breath and swallow. There are a wide variety of designs available and it should be easy to find one that best meets the Injured Worker's needs.
- Drive Controls – Buttons, used on the side, head, or even the footrest, are just a few of the many ways to provide alternate means of controlling different mechanisms of a power chair. Chin controls, attendant controls, and sip-n-puff are others. With today's technology, if an Injured Worker has control over even the smallest muscle, it is highly likely that a device is available, or can be modified, to allow the Injured Worker independent use of his/her power wheelchair.
- Environmental Controls – Fairly new to the market, allows the Injured Worker even more independence by allowing him/her to control different environmental functions from his/her wheelchair, such as lighting, remote control doors, computers, phone, and TV.

4.14 Backup Wheelchair

A backup wheelchair is necessary for various reasons, such as necessary repairs that require the primary chair to be out of commission for an extended amount of time. The backup wheelchair does not have to be an exact replica of the primary wheelchair. It needs to meet the basic functions of the primary chair, keeping in mind that it is not intended to be used for long periods of time. A manual wheelchair that can be operated with the assistance of an aide may suffice for an Injured Worker with a power wheelchair, but it may be necessary to provide a power wheelchair.

4.15 Wheelchair Repair & Maintenance

There are a number of ways to estimate repair and maintenance, but keep in mind all of them are guesses. The truth about repair and maintenance is that it mostly depends on the user. Just like a car, the amount of maintenance required depends on how it is driven and the environment in which it is driven.

On wheelchairs the most common items replaced are:

- Tires and Tubes – typically last from 6 months to 1.5 years
- Arms and Arm pads – typically last from 1 – 2.5 years
- Batteries – typically last from 1 – 2 years
- Footrest – typically last from 1 – 2 years
- Batter chargers off board and onboard-replacement times vary

Items such as joysticks, motors, gears, etc. are usually warranted for 18 months to 2 years, but depending on use and whether the damage was caused by user error, they may or may not be under warranty.

5. SCOOTERS

5.1 General Considerations

Scooters provide the benefit of being more discreet than wheelchairs and many people feel like they do not project the image of being disabled in the same manner that a wheelchair might. They come in two distinct forms: three-wheel and four-wheel.

5.2 Types of Scooters

	Three-Wheel Scooter	**Four-Wheel Scooter**
Description	*Scooter with two wheels in the back and a single wheel in the front, controlled by a tiller.*	*Scooter with two wheels in the back and two in the front, controlled by a tiller.*
Pros	• *Better turning radius* • *Weighs less than four-wheel model.* • *Easier to transport than four-wheel model.*	• *Better performance outside the home and on uneven terrain.* • *More stable* • *Maximum possible weight capacity is usually higher.*
Cons	• *Tips easier than four-wheel model.* • *On the higher end of the spectrum, the maximum weight capacity is usually less.*	• *Poor turning radius. Does not perform well indoors.* • *Heavier*

5.3 Scooter Repair & Maintenance

Repair and maintenance are very similar to a power wheelchair. Again, the amount of maintenance required depends on how the scooter is driven and the environment in which it is driven. Just like chairs, the most common items replaced are:

- Tires and Tubes – typically last from 6 months to 1.5 years
- Arms and Arm pads – typically last from 1 – 2.5 years
- Batteries – typically last from 1 – 2 years
- Battery chargers off board and onboard-replacement times vary
- Throttle and speed potentiometer

Items such as motors, potentiometers, control boxes, etc. are usually warranted for 18 months to 2 years. However, depending on use and whether the damage was caused by user error, they may or may not be under warranty.

6. PROSTHESES – UPPER AND LOWER EXTREMITY

6.1 General Considerations

The purpose of prosthetics is to maximize function, independence, and mobility, to promote quality of life, and to maintain physiological health while minimizing complications.

6.2 Referral Process

The Rehabilitation Supplier should:

- Secure referral for prosthetic evaluation from the authorized treating physician
- Coordinate assessment by a Certified Prosthetist
- Counsel with Injured Worker in selection of prosthesis throughout the decision making process
- Work with Prosthetist to identify option(s) dependent upon the Injured Worker's level of amputation, joint function, weight bearing mechanics, medical status, and level of activity and physiological integrity of residual limb.

6.3 Interdisciplinary Team (may include)

- Injured Worker, family member(s) and/or caregiver
- Physician (i.e. PMR, Plastic Surgeon, Orthopedic Surgeon, Vascular Surgeon)
- Rehabilitation Supplier
- Certified Prosthetist/Orthotist (CPO)
- Physical/Occupational therapist

6.4 Prosthetic Issues/Concerns

The Rehabilitation Supplier should consider the following issues:

6.4.1 Function versus Cosmetic/Aesthetic

- Dependent in large part upon primary functional objective for prosthesis use. For example, a prosthesis for a wheelchair user would be both cosmetic and functional, decreasing medical complications, increasing balance in wheelchair and supporting the amputated limb, while improving overall appearance.
- The Prosthetist should educate the Injured Worker on possible trade-offs between a functional and cosmetic prosthesis, as applicable.
- At times, both functional and cosmetic prosthesis may be appropriate, but this issue should also be determined by the treating physician and Prosthetist.
- The Rehabilitation Supplier should be aware that at times the only prosthetic option may be a cosmetic device, secondary to nature of the amputation injury. But, this issue should ultimately be assessed and determined by the Prosthetist and treating physician.

6.4.2 Basic versus High Tech

- The Prosthetist needs to create a prosthesis that will work best for the Injured Worker based on his/her specific needs and current/future prosthetic technology.
- The Rehabilitation Supplier, in conjunction with the Prosthetist, needs to identify the Injured Worker's employment demands and home and recreational environments.

6.4.3 Component Options

- Rehabilitation Supplier needs to be aware that prosthetic options can range from basic body powered to myoelectric and other future technologies.

6.4.3 Component Options (cont'd)

- The Rehabilitation Supplier should ensure the Prosthetist identifies component options as related to the Injured Worker's employment demands and home and recreational lifestyle.

6.4.4 Weight of Prosthesis

- The weight of the prosthesis may be an issue for the Injured Worker and should be evaluated by the Prosthetist as part the assessment.

6.5 Psychosocial Factors

The Rehabilitation Supplier should be aware of the possible interplay of psychosocial factors such as body image, gender issues, and cultural factors that may impact the Injured Worker's desire to use the prosthesis.

6.6 Back-up Prosthesis

A back-up prosthesis may be required if daily prosthesis is in need of repair and/or maintenance, so as not to impede work and lifestyle.

6.7 Replacement and Repair Schedule

The Rehabilitation Supplier should secure, from the Prosthetist, a projected schedule of repair and replacement of the prosthesis and disseminate said information to the Injured Worker.

6.8 Driving Equipment Needs (refer to Transportation Paper for additional details)

The Rehabilitation Supplier should be aware that the Injured Worker may require adaptive driving equipment, and/or instructional training, to operate a motor vehicle. This is dependent upon the type of prosthetic device and residual functional level.

6.9 Need for Assistive Aids with Prosthesis (refer to canes/walker section)

- Address with the Prosthetist and/or treating physician the need for possible assistive aids, that when used with the prosthesis, would promote the Injured Worker 's ADLs, quality of life and work potential
- Coordinate a formal occupational therapy evaluation to identify specific needs

6.10 Return to Work Considerations

The Rehabilitation Supplier, in conjunction with the Injured Worker and employer, should complete a comprehensive job analysis and provide same to the Prosthetist for consideration of return to work in the assessment process.

6.11 Housing/Home Modification Needs

The Rehabilitation Supplier should conduct a home visit to the Injured Worker's home pursuant to State Board Rules (Refer to Home Evaluation Section) consult with the Prosthetist, treating physician and accessible housing experts to discuss and identify home modification needs.

6.12 Supply Needs as Related to Prosthesis

- The Injured Worker may require supplies to maintain and use the prosthesis, including socks and shrinkers for reduced limbs, body powder/ointments, small tool kit, skin dressings, and medications for skin breakdowns.
- The Rehabilitation Supplier should obtain said recommendations from the Prosthetist and/or treating physician and coordinate provision of supplies, as needed, including these items in the rehabilitation plan

6.13 Physical Rehabilitation/Training for Amputee

The following are issues the Rehabilitation Supplier should address in coordination therapy for the amputee, once a referral is obtained from the authorized treating physician:

- Identify Certified/Experienced OT and/or PT program
- Maintain communication between OT/PT, Prosthetist, Physician, and Injured Worker to address concerns and proceed with agreed upon goals
- Physical rehabilitation may need to include training in use/care for prosthesis
- Cardiovascular training and strength/endurance training
- Development of a home exercise program for long-term health maintenance

6.14 Potential Complications/Challenges

The Rehabilitation Supplier should be aware of and/or identify potential complications as related to the amputation injury and address same with the Treating Physician, Prosthetist, Injured Worker, and other treatment provider(s). Complications /challenges may include, but are not limited to:

- Weight changes
- Co-morbid medical diseases/factors (i.e. Diabetes, Peripheral Vascular Disease)
- Limb volume changes (weight, atrophy, edema)
- Skin ulcerations/break down
- Phantom limb pain/sensation
- Contractures
- Scoliosis
- Compromised integrity of sound limb
- Bony overgrowth/spurs
- Neuromas
- Matching skin tones, when applicable

7. VISION IMPAIRMENT (Appendix for additional information)

7.1 General Considerations

The purposes of vision impairment equipment are multifaceted, but usually perform one of the following general functions: improve sight, increase mobility, and/or enhance communication. Rehabilitation Suppliers assist vision-impaired workers who have experienced a work-related injury. Vision Impairment may result from a variety of work injuries, including, but not limited to, physical trauma to the eye, optical nerve damage, and/or traumatic brain injury. It is important that the Injured Worker participates in an evaluation by a Visual-Impairment Professional. Assistance for the Visually Impaired is available through many local sources (Refer to the Appendix).

7.2 Vision Products For Visually Impaired

There are many products for the visually impaired, which can be classified as Computer Software/Accessories, Personal Mobility, Wayfinding, or Recreational. Examples of each would include, but are not limited to:

- Computer Software/Accessories – including voice activation/recognition, screen magnifiers, talking computer screens, Braille displays/printers, speech technology for Windows and Internet accessibility, etc., (refer to the appendix for specific examples of available equipment).
- Personal Mobility - aids which include guide dogs, (Refer to Service Animals Section) a variety of canes, flashlights, reflective tape, wheelchair/scooter accessories, raised strip patterns, directional bar mats, etc
- Wayfinding – talking map and global positioning system (GPS), Braille/tactile directional signage, MotionPAD messages, STEP-SAFE(R) warning system, rubber tactile warning strip, etc.
- Recreational – Tandem tricycle, swimming goggles with panoramic vision, etc. (Refer to the Recreational Section.

8. HOME MODIFICATIONS TO ACCOMMODATE MOBILITY NEEDS

(Refer to Housing Paper for more details)

8.1 General Considerations

The planning of appropriate housing and/or home modifications to match the specific accessibility needs of the Injured Worker is one of the most important parts of the mobility process. Immediately upon determination of the appropriate mobility device, the Rehabilitation Supplier should identify potential barriers to use and storage of equipment.

Rehabilitation Suppliers are not housing experts, but with planning and appropriate consultations, housing plans can be developed. Determining if the existing home is accessible and functional for the Injured Worker's needs may require a formal home evaluation (see home evaluation section). The Rehabilitation Supplier should be aware that there are a variety of home evaluations, ranging from preliminary, informal assessments by the Rehabilitation Supplier to a specialized assessment by a qualified Occupational Therapist, Physical Therapist, or other Accessibility Housing Professional.

8.1 General Considerations (cont'd)

Decisions should be based on an individual's functional abilities, his/her needs, as well as those of others in the home, and the design of the home. The goal is to increase function and safety for the Injured Worker, allowing as much independence as possible.

8.2 Home Evaluations

The Injured Worker's return to independent living requires planning and intervention. To ease this transition, a home evaluation may ensure a successful, safe return and future. The goal is to facilitate the highest level of independence, resulting in a purposeful and meaningful life. Each Injured Worker's home is unique, so there is not a set formula for solutions. Therefore, the home evaluation is specific to each individual.

An assessment is made of the function and accessibility of everything in, or around, the home from the Injured Worker's new perspective. The general approach of the home evaluation is to work from outside to inside, concentrating on areas and rooms that are used most often. After identifying the structural barriers at the home and physical limitations of the Injured Worker, structural changes, adaptive equipment, and adaptive techniques to enhance the Injured Worker's self-sufficiency and safety are recommended.

8.2.1 Areas Typically Addressed

- Are there structural barriers or physical limitations which challenge the Injured Worker's independence at home?
- What are the Injured Worker's strengths and weaknesses?
- Assessment of the Injured Worker's ADL including grooming, hygiene, dressing, bathing, cooking, cleaning, child care, work, hobbies, etc.

8.2.2 Information Necessary May Include, But, Is Not Limited To

- Injured Worker's specific goals and primary needs for evaluation. (ex. bathroom renovations)
- Prescription from physician for specialized home evaluation.
- Injured Worker's medical information, including diagnosis, restrictions, special needs, etc.
- Discharge summaries from OT and PT, if applicable. If Injured Worker's physical restrictions and functional capabilities are unclear, schedule OT/PT evaluation(s) prior to home evaluation.
- Is it rental or owned property?
- Immediately upon determination of the appropriate mobility device, the Rehabilitation Supplier should identify potential barriers to use and storage of equipment.
- Have there been any major structural modifications made to the home as a result of the Injured Worker's recent change in health status? If so, furnish the name and phone number of the contractor who completed the home modifications.
- Indicate any large Durable Medical Equipment such as a shower chair, Hoyer lift, etc. that the Injured Worker already owns. Furnish the name and number of the vendors that provided the DME.
- Time parameters, should be determined, and documented if applicable, in scheduling and completing the home modifications.

8.3 Exterior Considerations

- Climate conditions in the region, need for outdoor protection against adverse weather conditions
- Terrain and exterior approach (rocky, grassy, hilly)
- Paving, concrete, rock, or paving stone
- Parking availability
- Accessible route from parking to the home
- Garage or carport - Measurements, including clearance, of garage door when open
- Garage door opening automatic or manual
- Porch, patio, balcony size, entrances, surfaces
- Steps – number, height, and width
- Access aisles should measure a minimum of 32 inches at any point.
- Need to reconfigure outside furniture
- Entrance doorways (allow clearance of 32" wide or more), direction of door swing, in or out
- Thresholds up to ½" should be beveled, and over ½" should be ramped.

8.4 Accessible Covered Area

Mobility problems may restrict the speed at which an Injured Worker may enter and exit from a vehicle. Exposure to the elements may be particularly hazardous to an Injured Worker's health and the preservation of the mobility device. For example, people with spinal cord injuries have a hard time regulating their body temperature, so exposure to rain/cold, etc., could have medical consequences, in such cases, the Board will require a covered parking area.

Where feasible, it is preferred that the covered parking area be attached to the home. Parking requirements will vary on a case-by-case basis. The parties should take a common sense approach as to what each Injured Worker will need, based upon his/her individual factors. A two-car garage might need to be used as a single-car garage with unloading area

8.5 Ramps for Homes

- Ramps can be made from various materials
- Ramps – standard ratio is 1 foot of ramping for each 1 inch in height.
- Recommended width is 36 inches
- Landings should be 5 feet square
- For every 20 feet of ramp a landing is required
- Landing should be in front of any exterior doorway

8.6 Interior Considerations (refer to Housing Paper for more details)

Include assessment of bathrooms, kitchen, turning space, doors, secondary exits, steps and walkways, bedroom, laundry room, flooring, environmental controls, etc.

8.6.1 Bathrooms Considerations

- Storage for supplies
- Faucet controls
- Appropriate grab bars, including consideration of pole from floor to ceiling with swing arm, etc.
- Shower chairs, transfer tub benches and built in shower seats/benches need to be considered for safety
- Handicapped toilet – raised threshold lift toilet
- Roll in showers, with rolling shower chair
- Scald guard shower heads and faucets
- Flooring (see below)
- Work spaces compatible height for wheelchair access
- Roll under spaces in areas Injured Worker needs access(sink, countertops)
- All exposed water pipes need to be insulated to prevent burns

8.6.2 Kitchen Considerations

- Faucet controls
- Work spaces compatible height for wheelchair
- Roll under spaces in areas to which the Injured Worker needs access(sink, countertop)
- Stove, cook top, dishwasher, microwave and refrigerator need to be accessible
- All exposed water pipes need to be insulated to prevent burns
- Accessible cabinets and storage
- Flooring (see below)

8.6.3 Turning Space Considerations

- Consider turning space needed for particular mobility device
- Appropriate turning space should be considered in all rooms, especially kitchen and bath.

8.6.4 Door Considerations

- All doors should be wide enough to accommodate the mobility device in areas which Injured Worker needs easy access
- Levered handles for easy opening, when appropriate
- Thresholds are recommended to be ½ inch high or less (bevel up to ½", ramp over ½")
- Automatic doors, when appropriate

8.6.5 Secondary exit

- Safe, easy exit, preferably from the bedroom area, or close proximity**,** which does not require going through kitchen or utility closet, avoiding main sources of fire
- All exits should provide a safe, expedient surface for access to a safe area outside of the home

8.6.6. Steps and Walkway Considerations

- Hand rails for steps, walkways**,** hallways and interior walls, when appropriate
- Walkway should be wide enough to accommodate mobility device
- Stair lifts and elevators are appropriate in some situations

8.6.7 Bedroom Considerations

- Adjustable bed to facilitate care and transferring
- Accessibility to clothes closet, drawers and storage
- Armoire is option if structure does not allow closet access

8.6.8 Laundry Room Considerations

- If Injured Worker wants to participate in the laundry process
- Folding table/ironing board that is accessible height
- Determine front loading washer/dryer versus standard washer/dryer
- Accessibility of supplies
- Easily accessible switches, faucets, etc.

8.6.9 Flooring Considerations

Injured Worker's who have difficulty walking or maintaining balance and/or who use crutches, canes, or walker, are particularly sensitive to slipping and tripping hazards. For these individuals, a stable and regular surface is necessary for safe walking, particularly on stairs.

- Wheelchairs can be propelled most easily on surfaces that are hard, stable, and regular
- The best surfaces are hardwood flooring, laminate flooring, and ceramic tile
- Linoleum tile does not hold up well under wheelchair use
- Tighter weaves and shorter piles (i.e. commercial, Berber the most appropriate when carpet is used, due to wear and tear and maneuverability
- Carpet designed with weave that causes a zig zag effect is strongly discouraged
- When both carpet and padding are used, it is desirable to have minimum movement (preferably none) between the floor and the pad and the pad and the carpet (prevents carpet from buckling or stretching)
- A thick, plush pad, particularly in combination with long carpet pile, makes it difficult for individuals in wheelchairs and those with other ambulatory disabilities to get about
- Firm carpeting can be achieved through proper selection and combination of pad and carpet
- With proper installation, the pad can sometimes be eliminated
- Polished floors are not acceptable for external areas, bathrooms, toilets, indoor pool areas, industrial plants and other spaces where water or other similar materials are likely to give rise to danger

8.7 Environmental Control Units- ECU (refer to resource section)

When the Rehabilitation Supplier evaluates the needs of the disabled individual they need to take into account their physical and cognitive capabilities. ECU's are essential to enable an individual with limited uses of upper extremities (e.g. high injury spinal cord injuries/amputees), to maintain some degree of independence in their home and work environment.

- ECU can be either voice or switch activated
- The Injured Worker should be evaluated to be certain that he/she has the cognitive and physical capabilities to operate the unit.
- ECU's can range from a simple remote control to operate a light and control room temperature, to the more sophisticated, voice-activated computer-based systems, which can control fax machines, answering machines, telephones, radio, televisions, lock and unlock doors, and operate elevator doors.

9. WORKSITE CONSIDERATIONS FOR MOBILITY

9.1 General Considerations

When considering worksite accommodations for Injured Workers with mobility limitations, the process must be conducted on a case-by-case basis, with input from the person with the disability. When necessary a detailed job analysis should be provided by qualified professionals (i.e. OT's, PT's, Ergonomic Specialist, etc). Each individual has different abilities and limitations that should be considered. Also, essential job functions may vary from office to office, so they need to be defined and problematic job tasks identified.

It is difficult to generalize possible accommodation needs because each individual has unique abilities and limitations. However, this section should serve as a general starting point by giving useful questions to ask and accommodation possibilities to consider.

9.2 Worksite Evaluation

Before conducting a worksite assessment, it is important for the rehabilitation professional to become familiar with the industry, e.g., its terminology, processes, work methods, materials, products, machines, equipment, and key occupations. This provides the basis for conducting a worksite assessment and makes it possible to communicate effectively with workers and supervisors. Such information is most easily obtained by touring the plant or office.

When performing a work site evaluation, observe the entire work cycle. Ensure that all required tasks are understood and described, even those tasks performed infrequently. Interviewing incumbent employees is probably one of the best ways to obtain reliable information about a job. Front-line supervisors are also important sources of information about job expectations. Taking photographs and/or videotapes to record the job being performed can aid understanding and provides documentation of the job's requirements.

The Injured Worker with mobility limitations is most likely to require accommodations in the form of modifying the physical environment of the workplace to ensure that he/she can access the work area. Keep in mind that this area includes not only the individual's workstation, but also the

9.2 Worksite Evaluation (cont'd)

washroom facility, cafeteria, conference rooms, and the areas where he/she is expected to go in order to do the assigned work tasks effectively.

If the Injured Worker has ever performed the job being evaluated, he/she should review the work site evaluation report and any other documentation for accuracy. If there are any issues, they need to be addressed with all parties.

9.2.1 Worksite Accessibility Guidelines (Refer to Appendix for "Checklist for Worksite Accommodations")

In relation to mobility/accessibility issues, the basis for making decisions regarding worksite accessibility comes from the ADA Accessibility Guidelines (ADAAG) http://www.access-board.gov/indexes/accessindex.htm. These guidelines were established to set standards for assuring that adequate access and safety is created and maintained in commercial facilities. These guidelines cover all areas of the physical environment and guide both new construction as well as modifications. Generally, the following areas should be considered:

- "Handicapped Parking" spaces should be available and located at the shortest distance possible to the entrance of the facility. These spaces should comply with the ADAAG requirements regarding the number available, dimensions of the space, signage, and passenger access out of the vehicle and to the entrance. Where possible, there should be a space reserved for the Injured Worker.
- Adequate space should be provided at the entrance to allow for safe access into the facility. Door clearance should be at least 32 inches to allow for easy access for wheelchair users. Railing should be provided where steps are installed. If ramping is required for wheelchair access, it should comply with ADAAG regulations (see Ramps). It is sometimes preferable to install a vertical lift at the main entrance versus a ramp (see Porch/Vertical Lift).
- For individuals with limited upper extremity function, an automatic door opener should be considered. Opening systems can be activated either by a strike plate mounted in front of the door or the individual can use an activator that can be mounted to the wheelchair or worn on the body.
- Adequate space should be provided throughout the workplace.
- Obstacles blocking access should be removed.
- Proper lighting should be provided.
- There should be a well marked emergency/secondary exit available.
- Bathroom access should be suitable for individuals with special needs and meet the guidelines for wheelchair access. (Refer to Checklist for Worksite Accommodations)
- Workstation features should be ergonomically sound. Proper seating must be provided using task chairs and/or wheelchairs that meet specifications for adequate adjustments.
- Accessible shelving and material storage will help to reduce unnecessary strain for the worker with limited upper mobility. In addition, all office equipment should be placed in the proper arrangement to promote good body posture.
- If computer technology is used, provide hardware and software modifications to maximize the functional capacities for the individual. (Refer to Appendix for Checklist for Worksite Accommodations and Computer Equipment for Visually Impaired)

9.2.1 Worksite Accessibility Guidelines (cont'd)

In some cases, the most effective way to accommodate the workplace is to consider strategies that might include accommodations that preclude the need for structural change to the environment. These strategies can include restructuring the work tasks, eliminating non-essential duties and using telework/telecommuting as an alternative to utilizing the primary worksite. However, when considering home-based employment, aspects of socialization needs of the Injured Worker must be addressed.

10. EMERGENCY ISSUES (refer to addendum for websites for checklist and escape plan)

10.1 General Considerations

There are a large number of potential solutions for emergency issues that may face Injured Workers and other individuals with mobility problems. Rehabilitation Suppliers should encourage Injured Workers with mobility problems to plan carefully for emergencies, both at home and at the work place, and assist as necessary. The Rehabilitation Supplier needs to ensure that the Injured Worker and caregivers understand the use of emergency equipment and the emergency plans.

An emergency plan should include a written plan for emergency escape. The Rehabilitation Supplier should encourage the Injured Worker to register with the local fire department or emergency management office.

10.2 Other Responsibilities of the Rehabilitation Supplier

- Check with the personal care agency or caregiver to identify special provisions/protocols for emergencies
- Develop a plan for each type of emergency possible in the community and plan for alternative shelter, which should be wheelchair accessible, if necessary
- Make sure there is more than one exit available for a wheelchair (see Secondary Exit)
- Recommend practice of emergency plan by Injured Worker and caregivers
- Recommend a list of models and serial numbers of all specialized medical equipment be kept in a watertight, fire proof container
- Evaluate power supply and need for back up power supply, based on Injured Worker's needs, medical equipment and physician recommendations
- Assess need for a medical alert system
- Assess need for evacuation chair if Injured Worker lives or works in a building with more than one story
- Assess need for wireless intercom for the home (see Environmental Controls)
- Review emergency procedures and equipment condition periodically and make provisions for any repairs, upgrades or replacement
- Cell phone service, as medically prescribed, is essential for persons with the potential to develop a medical or vehicle emergency.
- Monitored systems such as On Star provide numerous services: information, directions, roadside assistance, remote door unlocking, and stolen vehicle tracking.
- GPS (Global Positioning Systems) can keep track of an individual's position via satellite. These devices can be configured as telephones or watches and can be very helpful for individuals who might have some confusion due to brain injury or dementia.

11. TRANSFER DEVICES

11.1 General Considerations

There are many types of transfer devices both portable and permanently installed. Prior to selecting a transfer device one should consider the following: immediate needs versus the long term needs of the Injured Worker based upon diagnosis, prognosis, age and housing (permanent vs. transitional) to allow the Injured Worker maximum independence in safe transfers. The weight of the individual should also be considered, especially if one is totally dependent for care.

11.2 Overhead Lifts

- Ceiling track lifts can be used to transfer an individual from bed to wheelchair or into the bathroom from bedroom.
- Wall to Wall Lift Systems can be used in areas with small space: (i.e., toilet to bathtub, or bed to wheelchair), if the ceiling will not accommodate a ceiling lift. This type of lift can also be used as a portable lift system, thereby allowing it to have multiple functions.

11.3 Hoyer Lifts

- Mobile and Stand Up Lifts are available and are operated as hydraulic, battery or electric powered
- Types of seating available for Hoyer lifts vary to include slings designed to meet the individual needs of the injured worker: (i.e., slings w/headrests, openings for toileting, full body, as well as size)-(Bariatric)
- Sling free sit/stand lifters
- Trapeze Bar with or without bases
- Stand Assist Lifts to enhance circulation, for supported walking and weight bearing exercise

11.4 Personal lifts

- These lifts are similar to Hoyer seats or can actually be a swiveling car seat which swings out of the vehicle and then back in again, after the inured worker is seated in it.
- Allows an Injured Worker to be lifted from a chair or to transfer into a vehicle when not able to transfer, and does not require other stabilizing devices to sit in standard car seat.

11.5 Pool Lifts

- Automatic and/or water-powered lifts are available and can be used in pools or in-ground spas with built in benches
- Water hose powered lifts with built in seats
- Portable aquatic lifts that are battery charged
- Pool lifts can be used to lower individuals into a pool or whirlpool

11.6 Miscellaneous Transfer Aids

- Lift vests to assist an individual with transfers from wheelchair or to assist with ambulating using a mobility device

12. MOBILITY AIDES

12.1 General Considerations

The Rehabilitation Supplier should consult with the Authorized Treating Physician, Prosthetist, and/or Physical/Occupational Therapist to secure medical opinion as to whether or not the Injured Worker requires a walker, cane, crutches, or other mobility device.

12.2 Canes, Walkers, and Crutches

- The Rehabilitation Supplier should consult with the Authorized Treating Physician, and/or Physical/Occupational Therapist to secure medical opinion as to what type of devices would be most appropriate.

Canes

- Straight canes
- Adjustable height straight canes
- Adjustable height quad base canes
- Ortho-grip adjustable height quad canes
- Wood versus metal versus Lucite

Walkers

- Standard walker
- Standard walker with wheels
- Rollite walker with wheels, seat, & brakes
- 4-wheel Rollator walker
- 3 wheel Rollator walker (no seat)

Crutches

- Fixed, standard crutches
- Wooden or aluminum adjustable height walkers
- Forearm crutches with adjustable height

12.3 Power Lift Chairs/Recliners

- Designed for individuals who have difficulty rising from a seated position
- Available in various fabric and styles to blend easily with any décor
- Raise up and tilt forward to assist an individual in getting out of chair

12.3 Power Lift Chairs/Recliners (cont'd)

- Can recline into a nap position, allowing for weight shifts when they are used for long periods of time
- The weight, height, and grip/grasp of the individual need to be taken into consideration
- Arm rests, varying chair back heights and seat heights are available\
- Eating trays can be attached and stored in enclosed compartments when not in use.

12.4 Shower Chairs (stationary and rolling) and Shower Benches

- Available for users who can either transfer onto a shower seat or who need to shower in a chair rather than being able to sit or stand to shower
- Shower chairs and benches are assessed according to the size and weight of the individual user
- Turning radius of the shower chair in a bathroom should be considered
- Shower benches should be stable enough to support the user as he/she moves to bath.
- Benches can be built into shower surrounds, be freestanding or attached to a bathtub.

12.5 Porch/Vertical Lifts, Pool and Chair Lifts

- Porch/Vertical lifts may be used when a ramp is not feasible due to space or as a personal preference. They lift individuals and their mobility devices level with porches, etc., when feasible, they should be covered.
- Stair chair lifts require a stairway wide enough for the lift and should have additional clearance for other individuals in the residence to use the stairway also. These lifts generally require space at the bottom and/or the top of the staircase to swivel to get onto or off the lift.

13. SERVICE ANIMALS

13.1 General Considerations

Service animals are animals that perform tasks for individuals with disabilities. Although service animals and their owners develop strong relationships, service animals are considered working animals, not pets. While other animals may function as service animals, the most prevalent are service dogs. A dog meets the definition of a "service dog" if it has been "individually trained to do work or perform tasks for the benefit of a person with a disability."

Service Animals are legally defined within the ADA. Federal laws protect the rights of people with disabilities to be accompanied by their service animals in public places. While therapy animals and companion animals work with the disabled, they are not included in the ADA definition. These animals are considered pets.

13.2 ADA Guidelines

- Businesses may ask if an animal is a service animal or ask what tasks the animal has been trained to perform, but cannot require special ID cards for the animal or ask about the person's disability.

13.2 ADA Guidelines (cont'd)

- People with disabilities who use service animals cannot be charged extra fees, be isolated from other patrons, or treated less favorably than other patrons. However, if a business, such as a hotel, normally charges guests for damage that they cause, a customer with a disability may be charged for damage caused by his or her service animal.
- A person with a disability cannot be asked to remove his service animal from the premises unless: (1) the animal is out of control and the animal's owner does not take effective action to control it (for example, a dog that barks repeatedly during a movie) or (2) the animal poses a direct threat to the health or safety of others.
- In these cases, the business should give the person with the disability the option to obtain goods and services without having the animal on the premises.
- Businesses that sell or prepare food must allow service animals in public areas even if state or local health codes prohibit animals on the premises.
- A business is not required to provide care or food for a service animal or provide a special location for it to relieve itself.
- Allergies and fear of animals are generally not valid reasons for denying access or refusing service to people with service animals.
- Violators of the ADA can be required to pay money damages and penalties.

13.3 Service Dog Recipients

Service dogs are trained to provide various services for people with disabilities associated with many diagnoses, including, but not limited to:

- Arthritis
- Cardio/Pulmonary Disease
- Cerebral Palsy
- Disabilities
- Hearing Deficits
- Multiple Sclerosis
- Muscular Dystrophy
- Psychiatric
- Seizure Disorders
- Spinal Bifida
- Spinal Cord (paraplegia, quadriplegia, and others)
- Traumatic Brain Injury
- Visual Deficits

13.4 Service Dog Functions

Service dogs can be trained to perform many tasks, depending upon the recipient's needs, including, but not limited to:

- Leading a person who has a visual impairment
- Sound discrimination to alert a person with a hearing impairment to the presence of telephone, alarms, timers, knocks at the door, etc.

13.4 Service Dog Functions (cont'd)

- General assistance with balance and manual chair propulsion
- Aid in retrieval of objects otherwise out of reach
- Opening/closing doors
- Operating light switches
- Carrying items
- Acting as a buffer in a crowd
- Barking to alert for help
- Seizure alert
- Going to retrieve help
- Interprets and aids in environmental awareness
- Acting as an "icebreaker" in social functions
- Companionship with recipient

13.5 Training & Location of Service Dogs

An extensive training period is required to train the service dogs. Service dogs can be located through many sources. In Georgia, there are several programs that provide service dogs, including, but not limited to:

- Canine Assistants, Inc.
- Canine Vision, Inc.
- Comprehensive Pet Therapy, Inc.
- Cosby's Therapy Animals, Inc.
- Georgia Dog Institute
- Lifeline Assistance Dogs

13.6 Obtaining Service Dogs

- Obtaining a service dog from a program requires an application process. In addition to the medical diagnoses, other factors are considered when assessing a person's candidacy for a service dog.
- A person's stamina, safety, social interaction, level of functioning with activities of daily living (ADLs), and other general benefits may be evaluated when determining the appropriateness of using a service dog.
- The ultimate goal is to make sure that the service dog is a nearly perfect fit or match for the person with disabilities who is requesting the service dog
- Simultaneously, the program will want to assure that the service dog will be placed in a safe, caring environment and treated appropriately.

14. TRANSPORTATION (Refer to the Transportation Paper for more detail)

14.1 General Considerations

A plan should always be in place that allows the Injured Worker to be as mobile ***as possible, including transported safely as a passenger, even if he is the primary driver. Educate all parties (claimant, adjuster, attorneys, etc.) concerning recommendations to be made in the rehabilitation plan. This can include options, costs analysis, and medical necessity.***

If the Injured Worker will be driving a vehicle, a driving evaluation will assess physical, visual, perceptual, and cognitive skills, as well as identifying safe/unsafe-driving techniques. It will also help identify adaptive equipment needs. Referral for a driving evaluation with a Certified Driver Rehabilitation Specialist (CDRS) is strongly recommended and should be performed by a provider that has both clinical and on-the-road evaluation capabilities available. Specific adaptive equipment should be listed as a result of the evaluation, in order to obtain physician orders and clear and cost effective bids.

14.2 Alternatives

- Contract taxi or medical transport
- Public transit
- Rental
- Auto vs. van vs. truck (refer to Transportation Paper, Section D)
- Modification of vehicle (refer to Transportation Paper, Section II, B, d)

15. CARRIERS, LIFTS, AND RAMPS

15.1 General Considerations

Safety, security, exposure to weather, handling, and maneuverability of the vehicle, possible damage to mobility equipment, cargo space, Injured Worker's functioning level, vehicle modifications, and cost are all factors to consider in determining the appropriate system. If the Injured Worker is going to operate the rear lifts/trailers independently, the Injured Worker must be able to position and lock down the scooter/wheelchair and be able to ambulate from the back or side and enter the vehicle. For the overhead lift/carrier, the Injured Worker must be able to transfer into the vehicle from the mobility device and operate the controls for the system to automatically lift and stow the chair. Not all of these devices are covered. An appropriate evaluation of the exposure of the mobility device to the elements must be considered.

15.2 External Trailers/Lifts/Carriers

The wheelchair/scooter is transported on a lift or trailer on the rear of the vehicle, in the bed of a truck or on the top of the vehicle (wheelchair lift/carrier). These systems allow for easy access to equipment and no cargo space is required.

15.2 External Trailers/Lifts/Carriers (cont'd)

- Lifts fitting on top of a vehicle are only suitable for manual chairs and have strict weight restriction
- Vehicle must be retrofitted with an approved hitch and platform for rear end carriers
- Size of engine and type of vehicle determines what type of carrier can be considered.

15.3 Inside Lift

An unoccupied hoist lift positions the wheelchair/scooter into the bed of a truck, trunk of a car, or through the rear or side door of the vehicle. The Injured Worker must be able to attach the wheelchair/scooter to the lift and be able to ambulate or transfer into the vehicle, if no one is available to assist. Fully automated lifts allow the Injured Worker to be lifted inside the vehicle while occupying his/her mobility device and can be operated independently or with assistance.

- These lifts are usually found on modified full-sized vans
- The type of lift is determined by total combined weight of the Injured Worker and the mobility device
- Raised roof and/or lowered floors may be necessary (This information should be provided through the driving evaluation or dependent passenger evaluation).

15.4 Vehicle Ramps

- Generally, ramps are used on mini vans only, due to the safety concerns and degree of incline
- Even with lowered floor availability, there are height restrictions
- Automated Ramps allow an Injured Worker to enter/exit while occupying a mobility device and can be operated independently or with assistance
- Manual Ramps are available for occupied mobility devices if *attached* to a vehicle, assuming the ramp angle is safe and that the mobility device has adequate traction and power (Manual ramps require assistance).

15.5 Portable Ramps

Portable ramps are available for wheelchair/scooter users to carry in their vehicles to allow access to areas not handicapped accessible.

- These ramps are lightweight and available in varying lengths
- It is recommended that this equipment be considered for wheelchair dependent Injured Worker

16. EXERCISE EQUIPMENT

16.1 General Considerations

Rehabilitation Suppliers should coordinate with an Authorized Treating Physician and Physical or Occupational Therapist regarding the needs for the Injured Worker. Specific exercise/conditioning needs and equipment can be addressed in formal therapy, local gym, and home environments. Mobility impaired Injured Worker benefit from strength, cardiovascular, balance, flexibility, and

16.1 General Considerations (cont'd)

proprioceptive training. Additional benefits may include: range of motion, physical and cardiovascular endurance, improving and maintaining physical functions, avoiding complications of immobility (i.e. obesity, diabetes, hypertension, skin problems, contractures, muscle weakness, decreased function, etc.)

A prescription should be obtained from the physician and the equipment should be included in the Rehabilitation Plan. Specify in the Plan that the Injured Worker is to use the equipment. The Rehabilitation Supplier needs to ensure that the Injured Worker and the caregivers understand and can demonstrate the use of the equipment. The Rehabilitation Supplier should address the repair and maintenance of any and all equipment purchased. Ample storage for exercise equipment in a home setting is often problematic and the storage requirements need to be considered in equipment and housing decisions.

16.2 Tricycles, Lower and Upper Extremity Equipment, and Total Body Conditioning Equipment

- Tricycles are available as hand propelled and with recumbent seats
- Some total body conditioners are wheelchair accessible and may have variable length hand cranks that can be configured to simulate rowing motions. The user can passively work the lower body while actively working the upper body.
- Numerous hand cycle table models allow the Injured Worker to remain in the wheelchair or seated.
- Some have optional foot pedals to exercise the lower extremities
- Multi-station weight training can be provided with some models
- Equipment designed for C4-C5 quadriplegics allow performing all necessary upper body exercises without assistance, models can be developed with slings or seats
- Some equipment provides swivel seats, which allows transfers directly from wheelchairs.
- Recumbent equipment offers a safe and challenging workout for exercisers of all ages and abilities, because it provides back support and a more comfortable positioning.

16.3 Standing Frames

Standing frames are utilized in facilities and homes to facilitate bowel and bladder function, muscle tone, prevention of osteoporosis, improved circulation, etc.

- Allows the Injured Worker to go from a sitting to standing position
- Some provide dynamic leg motion
- Can be used for work accommodations

16.4 Additional Equipment

- Elliptical
- Functional Electronic Stimulator (FES)
- Hand Putty
- Treadmill
- Theraband

16.4 Additional Equipment (cont'd)

- Water resistant equipment for Aquatic Therapy
- Weights

17. RECREATIONAL MOBILITY ISSUES

17.1 General Considerations

Therapeutic recreation focuses on improving self confidence, as well as physical, cognitive, emotional, and/or social functioning and returning the Injured Worker to as independent, active, and healthy of a lifestyle as possible. Attitude and activity strongly affect a person's health and well being. Meaningful recreational activities and socialization help decrease dependence and medical complications. The goal is to help overcome barriers that prevent or limit a person from enjoying leisure activities.

The National Center on Accessibility provides resources, consultations, and referrals to professionals seeking the most current information on accessibility standards, recreation rule making, program modifications, equipment, vendors, and requirements of the Americans with Disability Act and Section 504 of the Rehabilitation Act.

17.2 Assessment

An assessment of an Injured Worker's current mobility status and his/her ability to re-enter the community at the current functional level can be done through a Recreational Therapist. The Recreational Therapist may utilize information from other disciplines, (i.e. OT, PT, and Speech,) including physical and cognitive functioning. This assessment should determine realistic goals and interventions to maximize functioning and independence at home and in the community, taking into account pre-injury interests.

17.3 Areas of Therapeutic Intervention

Counseling and education should focus on issues relevant to having a disability:

- Assertiveness
- Available resources
- Barrier awareness
- Disability rights and ADA laws
- How to handle discrimination
- Individual limitations
- Problem solving techniques
- Safety Awareness
- Self advocacy
- Self help groups
- Societal attitudes/stereotypes
- Stigma management
- Transportation options

17.3 Areas of Therapeutic Intervention (cont'd)

The Injured Worker needs to learn how to fulfill past or new recreational interests through the use of:

- Adaptive equipment
- Adaptive techniques
- Compensatory strategies
- Transferable skills
- Activity modification through various resources

17.4 Adaptive Equipment & Recreational Opportunities

The advent of technology has opened up almost every area of recreation through modified and adaptive equipment. In addition, most recreational activities have developed specialty groups that focus on disabled inclusion.

17.5 Recreational Opportunity

There are numerous recreational opportunities available in such areas as:

Art	Gardening	Para Olympics
Basketball	Golf	Performing Arts
Bicycling	Horseback riding	Scuba Diving
Dancing	Hunting	Tennis
Fishing	Music	Water Skiing

17.6 Travel

For travel, there are accessible motor homes, cruise tours; disability coordinators at airports and many other opportunities open to the disabled. (Refer to resource page for article on travel/disabled)

It may be worthwhile to carry an emergency medical kit and a bag of small parts for equipment repair when traveling. Also, it may be beneficial to purchase SOS medical coverage when traveling abroad. SOS provides an English speaking MD and air ambulance transport back to the USA if needed.

18. FINANCIAL CONSIDERATIONS

- Consider purchase versus rental, long term needs versus short term needs, and maintenance costs for equipment. This must be documented in an Independent Living Rehabilitation Plan.
- Traditionally, mobility devices are considered an ongoing rehabilitation expense due to scheduled replacement and ongoing maintenance and repairs related to prescribed adaptive equipment.
- Maintenance costs for the prescribed adaptive equipment is the responsibility of the employer/insurer.
- Extended warranties on some adaptive equipment are strongly recommended to protect all parties, increasing the life of the adaptive equipment and reducing replacement time.
- Cell phone service, as medically prescribed, is essential for persons with the potential to develop a medical or vehicle emergency.

19. ETHICAL CONSIDERATIONS

Rehabilitation Suppliers have an ethical obligation in working with the Injured Worker to ensure that adaptive mobility equipment is available for independent living and avocational activities. The Rehabilitation Supplier has a vital role in the process of obtaining appropriate mobility equipment. Each Injured Worker has individual physical needs and life-style requirements. The independence offered by the appropriate mobility equipment can be life changing.

20. DISCLAIMER

This mobility and assistive devices information is being provided as general information and to assist with identifying appropriate solutions for various mobility and assistive device issues that may arise while working with an Injured Worker during the rehabilitation process. It is not all-inclusive or specific to an individual Injured Worker's needs. It is to be used as a guide to explore mobility and assistive device issues with all parties.

21. ACKNOWLEDGEMENT

The Board's Managed Care and Rehabilitation Division wish to thank the following people for dedicating hours of voluntary time, providing valuable input and research towards the development of this document:

Carilyn Arkin, Chair

Pat Bell	**Jody Loper**
Lynn Carpenter	**Valerie Martin**
Susan Caston	**Carroll Putzell**
John Chapman	**Hunter Ramseur**
Nan DeColaines	**Vicki Sadler**
Nancy Green	**Thomas Schratwieser**
Paullin Judin	**Lloyd Summer**
Deborah Krotenberg	**Butch Syfert**

22. RESOURCES

Extensive information can be researched through the Internet by logging into Google, Yahoo or other search engines

22.1 Accessibility

National Center on Accessibility

22.2 Emergency Plans/Information

http://www.fema.gov and www.redcross.org

22.3 Service Animals

http://www.deltasociety.org/nsdc/sdbasic.htm

Canine Assist, Inc.	770.664.7178
Canine Vision, Inc.	770.459.4872
Comprehensive Pet Therapy, Inc.	770.396.6433
Cosby's Therapy Animals, Inc.	770.735.3828
GA Dog Institute	770.926.0003
Lifetime Assistance Dogs	706.273.Dogs (3647)

22.4 Useful Miscellaneous References

www.alimed.com (wide variety of mobility aids as well as a catalog of specially designed equipment for over-sized patients)
www.amerivans.com (Chevrolet/Pontiac luxury conversions)
www.bmedical.com (wide variety of mobility aids)
www.braunlift.com (lifts)
www.bruno.com (lifts and independent living aids)
www.eclipseconversions.com (Ford luxury conversions)
www.emc-digi.com (digital control pads for driving)
www.ezlock.net (wheelchair restraint systems)
www.harmarmobility.com (scooter lifts)
www.kinedyne.com (securement systems)
www.mobilityproductsdesign.com (hand, foot controls, and extensions)
www.norcalmobility.com (out of sight lift system)
www.silverstarmobility.com (scooters, lifts, carriers)
www.specialneedsvehicles.com (transfer seat bases)
www.riconcorp.com (lifts)
www.viewpointmobility.com (wheelchair accessible minivans)

22.5 Resources for Housing Information

- Housing Checklist – Considerations for Catastrophic Rehabilitation Suppliers – GA SBWC procedure manual
- Local County Fire Department
- Rehabilitation Division GA SBWC
- Architectural specialist
- Occupational and Physical Therapist
- Equipment Specialist
- Accessibility Experts
- Universal Design

22.6 Resources for Environmental Control Units

http://opensesamedoor.com/
www.qtiusa.com
http://www.guldmann.com/
http://www.makoa.org/ecu.htm
http://www.1stvoice.com/quartet.html
http://www.barrierfreedoorautomation.com/
http://www.interactplus.com/oyw_ecu.htm
http://www.abledata.com/text2/icg_spin.htm
http://www.web-helps.net/loan/step1.asp

22.7 Assistance for the visually impaired is available through many local sources, including, but not limited to:

- Center for the Visually Impaired, 763 Peachtree Street NE, Atlanta, GA 30308 (404) 875-9011.
- DOL/Rehabilitation Services, 1700 Century Circle, Suite 300, Atlanta, GA 30345, and (404) 657-3000.
- Georgia Industries for the Blind, 1080 Sylvan Road, Atlanta, GA 30310, (404) 756-4485.
- Georgia Lions Lighthouse Foundation, Inc., 1775 Clairmont Road, Decatur, GA 30033-4005, (404) 325-3630.
- Georgia Regional Library for the Blind & Physically Handicapped, 1150 Murphy Ave., SW, Atlanta, GA 30310 (404) 756-4619.
- Georgia Tech Center for Assistive Technology & Environmental Access, 490 Tenth Street NW, Atlanta, GA 30318, (800) 726-9119.
- Prevent Blindness Georgia, 455 East Paces Ferry Road, Suite 222, Atlanta, GA 30305, (404) 266-0071

22.8 Computer Equipment for the Visually Impaired

The selection of computer equipment and software to assist the visually impaired and blind is growing. For example, the following provides a partial list of adaptable equipment available:

- JAWS for Windows provides speech technology that works with your Windows 95/98/Me or Windows NT/2000 operating system to provide access to today's popular software applications and the Internet. JAWS uses an integrated voice synthesizer and your computer's sound card to output the contents of your computer screen to speakers. JAWS also outputs to refreshable Braille displays.
- ZoomText combines a screen magnifier with a screen reader and includes support for all Windows platforms.
- MAGic combines magnification features with low vision screen reading when purchased with the speech option. It gives a person the ability to choose the information you want read from the screen as you navigate applications MAGic is easy to use with its talking large print installation, new color-coded user interface and hot keys that avoid conflicts with Windows and popular software applications.
- Aladdin Genie Pro can be used with most computer monitors or televisions to create a color magnification system that best suits an individual's unique viewing needs. Other features include split screen viewing and shadow mask to help track text and reduce glare.
- Clarity AF Travelmate is a video magnifier which allows students with low vision to read, write, view pictures and work with three-dimensional objects by enlarging images on a monitor. It can be stationary or used as a portable system in the classroom.
- OPENBook is software developed to read, edit, and manage scanned images from books, magazines, manuals, bills, newspapers, and other printed documents.
- Merlin Desktop System is an auto focus desktop magnifier, which allows images or text to be viewed in color, black and white, or high contrast positive or negative. Voice activation is available.

22.8 Computer Equipment for the Visually Impaired (cont'd)

- JORDY System is a head worn device that looks like a pair of glasses and magnifies objects up to 30 times. An optional desktop stand increases flexibility.
- The Max Family of digital magnifiers connects directly to a TV or monitor for easy viewing on any surface.
- The Braille Note is a note taker for people with blindness. The ergonomically designed portable system includes a built-in modem and e-mail package to provide worldwide connectivity, high-quality, and low-power Braille cell technology with highly intelligible, responsive speech and integration with Word files that maintain original formatting. The Braille Note features a unique calendar and scheduler, address list manager and scientific calculator with the ability to merge data between different applications.
- INDEX Basic-D Braille Printer can be used with a PC or as an independent copier.

22.9 Recreational Resources

Wheelchair bowling: BOWLAWBA@JUNCO.COM
Wheelin' Sportsmen program: www.nwtf.org or 800-THE NWTF
Wheelchair Fencing: http//sites.netscape.net/wheelchairfencer/homepage
American College of Sports Medicine (tips on finding a trainer & free exercises): www.acsm.org
American Council on Exercise: www.acefitness.org
USA Boxing (trainer certified): www.usaboxing.org
US Masters Swim Club: www.USMS.org
Road Runners Club of America: www.rrca.org
United Spinal Association & it's programs: www.unitedspinal.org
Amputee Resource Center: www.usinter.net/wasa/index.html

*Local rehabilitation facilities may be an excellent resource for recreation & fitness programs.

22.10 Travel

Department of Transportation Aviation Consumer Protection Division (To assist with consumer complaints): 800.778.4838. (voice); 800.455.9880 (TTY)
Air Carrier Access (Rules & regulations): www.dlrp.org/html/guide_to/acaa.html
How to get around a city- local Center for Independent Living: www.virtualcil.net/cils
Society for Accessible Travel & Hospitality (SATH): www.sath.org
Open Doors Organization: www.opendoorshfp.org
Frommer's: hHp:www.frommers.com/destinations/usa/024802008.html
Rent an Accessible Van:
Wheelchair Getaways @ 800.642.2042 & www.wheelchairgetaways.com
Wheelers @ 800.456.1371 & www.wheelersvanrentals.com
Accessible Vans of America @ 888.282.8267 & www.accessiblevans.com

22.11 CHECKLIST FOR WORKSITE ACCOMMODATIONS

1. Physical Environment

A. Entering/exiting facility - Mobility from parking lot through exterior entrance

___ Is there adequate "handicapped" parking available?
___ Is there an accessible route to the facility?
___ Will ramp construction / vertical lift system be required?
___ Are handrails needed on exterior steps?
___ Is a door threshold modification needed?
___ Is a door width modification needed?
___ Is a door handles/hardware modification needed?
___ Is an automatic door installation required?

B. Traversing through Work Environment - Mobility in the destination areas, e.g. office space, bathroom, community space, path to gain access to specified destinations

___ Will obstacles need to be relocated?
___ Will structural change be required to improve maneuvering space?
___ Are emergency egresses available and well marked?
___ Are hallway and/or door width modifications needed?
___ Is proper lighting available?
___ Is there adequate temperature control?

C. Accessing Bathroom Features - Components used within the public bathroom space including sink, stall, commode

___ Are proper door width modifications needed?
___ Are door handles/hardware modifications needed?
___ Are door swing side changes needed?
___ Is the door closer timing adequate to allow time for exiting?
___ Are structural changes needed for improved maneuvering / turning radius requirements?
___ Is the sink height / depth / clear space / controls adequate?
___ Is the sink hot water pipe insulation adequate?
___ Is the mirror height adequate?
___ Is the stall width / clear space / hardware adequate?
___ Is the toilet seat height adequate?
___ Are grab bars available and do they conform to ADAAG guidelines?

D. Accessing Workstation Features - Creating a functionally appropriate space where the individual resides to complete primary job duties

___ Are door threshold and width modifications required?
___ Are structural changes needed to improve maneuverability?
___ Will obstacles need to be relocated: furniture, shelving, equipment?
___ Will proper seating need to be provided?
___ Will workstation modifications be required to improve proper postural positioning, (i.e. raising the surface for wheelchair access?

2. Assistive Technology and Equipment

A. Using work tools and furnishings - Devices/equipment necessary to complete job tasks to include communication and computer equipment modifications

___ Will tool and equipment placement and/or modifications be required?
___ Will writing aids be necessary to improve upper extremity mobility?
___ Is telephone headset needed?
___ Is telephone placement and/or mounting needed?
___ Are telephone alternatives required?
- ___ Speaker phone
- ___ Voice activated phones
- ___ Computer software/onscreen dialing
- ___ Telephone amplifiers

___ Is alternate computer placement needed?
___ Is replacement or upgrading of computer equipment needed?
___ Are adapted controls and switches needed?
___ Is improved interface capacity required?
- ___Accessibility feature within word processor
- ___Trackball
- ___Head mouse
- ___Joystick mouse
- ___Touch screen
- ___Keyboard alternative

___ Are software alternatives required?
- ___ Speech recognition
- ___ Speech synthesizer
- ___ Word prediction
- ___ Screen reader
- ___ Optical character recognition (OCR)
- ___ Screen magnification
- ___ Memory and attention aids
- ___ On screen keyboards

3. Adaptive Strategies

A. Environmental Access - Access to facilities without structural modifications

___ Can alternative routes be used?
___ Is Telework/Telecommuting an alternative?
___ Can the work schedule be adjusted?
___ Can the job tasks be restructured?
___ Can non-essential duties be eliminated or re-assigned?
___ Can work materials be arranged more consistently?

Resources:

- The Access Board http://www.access-board.gov/indexes/accessindex.htm
- AbleData http://www.abledata.com/text2/ramps.htm
- The Center for Assistive Technology & Environmental Access http://www.catea.org/index.html
- The Job Accommodation Network http://janweb.icdi.wvu.edu/