

# Wheelchair vehicle buyer's guide

*This guide presumes you are just starting your search for a wheelchair-accessible vehicle.*

*When buying a new car, many will offer advice but when it comes to wheelchair-accessible vehicles, your well-meaning friends may tell you what they think you need but if they are not experienced in disability issues, their advice may lead to wrong decisions.*

*The vehicle you purchase will have to meet your needs for many years to come, so don't rush into buying until you understand the issues. We see a surprising number of people 'encouraged' to buy an inappropriate vehicle by a helpful sales person, only to find to their cost that the vehicle won't do the job.*

*Car companies do not build wheelchair accessible cars on their assembly lines, therefore standard vehicles must be modified (converted) to load and accommodate a wheelchair easily and safely, give a comfortable ride and provide adequate visibility for the wheelchair passenger and others.*

*The Freewheeler range of vehicles was developed after extensive engineering and testing to ensure they meet Australian design rules and regulations. You should be wary of a converter who tells you they can do a "one-off" major conversion on a car. It is not commercially feasible to do so and may indicate they have not carried out the required engineering procedures. A poor conversion could lead to ongoing problems and a dramatic drop in the value of your vehicle..*

*We do not use in-house engineers, as this is like auditing your own books. Instead, all engineering and testing is supervised by one of Australia's leading automotive engineering groups, who are in tune with federal and state requirements to ensure our products comply with regulations in all states.*

*We hope the following will be of assistance to you. While it is not intended to be the definitive specification for a wheelchair vehicle's selection, it has been prepared to inform prospective buyers of some of the many issues they need to consider when making a decision that will impact their lifestyle for many years to come.*

## **What do I need to consider?**

- *The wheelchair itself*
- *Size of vehicle*
- *Holiday equipment needs*
- *Floor space*
- *Headroom*
- *Door openings*
- *Windows*
- *Ride, comfort & communication*
- *Vehicle drivability*
- *Impact of modifications on vehicle*
- *Parking*
- *Wheelchair loading/unloading*
- *Loading with portable ramps*
- *Restraints and fittings*
- *User-friendly*
- *Test drive in a wheelchair & driving hints*

## **First things first – what about the wheelchair itself?**

*Vehicle manufacturers have collectively spent millions of dollars in developing vehicle passenger seating, taking into account body shape, seat springing, vehicle suspension characteristics, support when cornering, headrests, back support and seat belt design and many other features, including seat performance in an accident.*

*Many wheelchairs are quite appropriate for daily home use but fall far short of providing safety and comfort when used in a vehicle.*

*While the able-bodied driver and other passengers are being cosseted in their highly developed, form-fitting car seats, the wheelchair passenger may well be sitting in a vinyl sling-type wheelchair with poor back or lateral support, no headrest and often with hard tyres. This uncomfortable package is then often secured to the solid floor of a large van with hard springs. Even with an expensive seat cushion, you cannot compensate for the extra support and cushioning built into seating in modern cars.*

*Obviously, a wheelchair passenger has far greater need for correct seating than able-bodied passengers and for those with poor circulation and nerve damage, bouncing around in an inappropriate wheelchair can have disastrous effects. It is therefore imperative that the wheelchair is appropriate for use in a vehicle. We recommend you involve your occupational therapist to assess your wheelchair for vehicle travel, or to assist in selection of your next wheelchair. Most people who require wheelchairs would benefit from having a properly fitted wheelchair tailored to their specific needs, rather than an off-the-shelf generic chair. Your new wheelchair will play a vital part in your lifestyle and general comfort and must meet your personal needs.*

*Features such as ‘tilt-in-space’ are most desirable but unless carefully designed, can result in an elevated seating position, raising the wheelchair passenger’s eye line. This can reduce visibility from inside a vehicle, make the seated position too high to fit in some vehicles, or too high to fit under a table. Ask your wheelchair supplier to make every effort to keep the seated height as low as possible.*

## **What size of vehicle would be appropriate?**

*Some buyers become fixated on purchasing a vehicle with enough room to fit all of the equipment needed when going on an annual (or even less frequent) holiday. As a result, they drive a large van all year with perhaps only one or two people on board. For the sake of a few days of occasional holiday use, they drive a large unwieldy, more expensive vehicle with the added disadvantages of more difficult parking and much higher fuel costs for everyday use.*

*Over time, the inconvenience of accessing a large vehicle and the extra effort required loading and securing the wheelchair can be a deterrent to going out. A compact vehicle, such as one of our Freewheeler range can be used by a wider range of drivers, meaning friends, relatives or other carers can take part in outings, providing welcome respite for the wheelchair user as well as their permanent carers. Often a large van-type vehicle can be daunting – particularly to older drivers.*

## **What about holiday equipment and luggage?**

*For that occasional use, we recommend you consider the purchase (or rental) of one of the modern weatherproof, lockable, streamlined roof racks for the convenience of having your equipment with you while travelling, or rent the larger items of equipment you may need for use at your destination. Health equipment companies, which rent out equipment can often arrange for its delivery to & pick up from your holiday destination. These expenses are relatively small compared to the on-going costs and inconvenience of buying and operating a larger vehicle for the whole year - particularly as high fuel prices look like they are here to stay.*

## **Floor space**

A space 1300mm long x 800mm wide would cater for most wheelchairs, however the actual size needed will depend on the wheelchair and its fittings, e.g. respirator, extended footplates, arm rests and travelling posture. When you take this much space out of a vehicle, then allow room for a ramp or hoist and wheelchair restraints, you may be surprised at how little useable space is left for other passenger seats. When designing our models, every effort is made to maximize the usable space. As a result, our compact Freewheeler models compare favourably with larger vehicles due to the efficient use of available space.

## **Headroom**

Headroom required depends on the seated height of the wheelchair passenger. While somewhere between 1400 mm and 1500mm will suit most passengers, very few vehicles – even quite large vans, offer this much headroom without major modification. Check the seated height from the floor to the top of the wheelchair occupant's head or headrest - whichever is the higher. To allow for some movement during travel, an additional 50mm or so is usually adequate. Some vehicles can achieve additional headroom by lowering the floor and/or raising the roof. Either way there are big costs involved.

## **Door openings**

Many large vans, may have adequate interior headroom but have lower door opening heights, making it difficult for adult passengers to enter – even if they can bend their neck. Winding down the backrest of a wheelchair every time to enter or leave a vehicle can be difficult for both passenger and carer. Low door openings can present OH&S issue for carers straining to load a wheelchair. Modifying door openings and doors is an extremely expensive process. The high door opening on our rear entry Freewheeler models are designed to facilitate loading and securing the wheelchair passenger

## **Windows**

The windows of many vehicles, although quite large in area, often provide poor visibility for adult wheelchair occupants, as the top edge of the window is below the wheelchair passenger's eye line. As a result, they get a great view of footpaths and roof headlining but very little else.

Ideally, the top edge of the window opening should at least be level with the wheelchair passenger's eye line. Shallow, high-set windows in van roofs can often be of questionable benefit, as unless you have eyes on the top of your head like a frog, you can't see out of them.

Buyers should be aware that the vision provided in many vans is restricted, as even with a raised roof height, an adult's eye line may still conflict with the window frame, or often be above it. Windows frames are not usually altered due to the high costs involved, therefore taller people may gain extra headroom but do not gain improved forward or side vision.

## **Ride comfort, convenience & communication**

For some, the answer may be a large van due to their wheelchair type, equipment needed when travelling, family size or budget. Most larger vans are based on one tonne (or larger) commercial vehicles. Their ride can be firm to rough with a light load, as the wheelchair can be directly over the rear axle in a typical seating layout. Due to the van's height, a wheelchair passenger can feel unstable during cornering and on windy days, strong crosswinds can affect high vans. Our focus has therefore been to develop well-sprung mobility vehicles with a

lowered centre of gravity for the superior ride qualities they offer.

As the wheelchair passenger usually sits towards the rear in a large van, they are out of reach of the driver, making communication or observation difficult. For wheelchair passengers who need to travel in a reclined position, close attention should be given to the ride characteristics of any vehicle considered. Driving in a reclined position will exaggerate bumps.

### **Vehicle drivability**

Most people desire a vehicle, which can double as a family runabout and a wheelchair transport vehicle. Most of the older van type vehicles did not have automatic transmission when built and conversion to automatic is very expensive. Climbing up into a high van can also become onerous, particularly for people of short stature, the elderly, or those with back problems, so often experienced by carers.

Driving a large van is a different experience too. You often see vans damaged where an inexperienced driver has forgotten how long or high the vehicle was when cornering or when driving into an underground car park.

### **Impact of vehicle modifications on the vehicle**

Different approaches to providing wheelchair access into a vehicle are:

1. Lowering the vehicle floor
2. And /or raising the roof line
3. Raising the door entry height
4. Power lifter (under floor, rear internal, rear external)
5. Extending the vehicle overhang

If not properly engineered, some of these alterations can affect the ability of the vehicle to negotiate speed humps and driveways, and may compromise vehicle handling in an emergency.

Being exposed to the elements, externally mounted hoists can be messy to handle in wet weather, as they require some assembly before (and after) use.

### **Integrity of design**

It is absolutely essential that any changes be carried out to an approved design and are certified by an automotive engineer before passengers are carried.

Major body modifications can involve the redesign and manufacture of major items such as fuel tank, suspension, exhaust system and many other components. Such large conversions require engineering design and testing to prove the changes have not compromised the integrity and safety of the vehicle.

As engineering design, R & D and testing can run into tens of thousands of dollars, be wary of anyone who advises they can do a major redesign cheaply on a one-off basis. It's just not possible to be done cost-effectively and you may finish up with your vehicle structurally damaged or unsafe to drive.

A well-designed mobility vehicle will retain a very competitive value when compared with a conventional motor vehicle, all things being equal, whereas a badly converted vehicle will be greatly devalued.

## **Insurance**

*You should be aware that vehicle modifications not fully supported by an engineer's certificate may deter insurance companies from providing cover for that vehicle*

## **Parking**

*Side-loading vehicles require a wide space to load and unload. This can restrict you to using disabled parking spaces only, whereas rear-loading vehicles can use a conventional car space. Look at the top of a high van and you'll often see the result of damage when accessing an underground car park or from overhanging trees. Car park height limit at many shopping centres is only 2 metres.*

## **Wheelchair loading/unloading**

*Loading requirements depend on the type of wheelchair (manual or electric), the size and weight of the chair and passenger, as well as the height of the vehicle floor above ground. As carers with many years' experience, we have found roll-on-roll-off ramps to a lowered floor vehicle to be the most user-friendly and for this reason have equipped Freewheeler models with this quick loading feature. Power lifters are suitable for some applications, while a lowered floor is the answer for others. With power lifters, bear in mind that the size of the hoist platform needs to be matched to the wheelchair too. Our power loading option enables heavy manual wheelchairs to be loaded with ease and saves carer's backs.*

## **Loading using portable ramps**

*In the interest of cost savings, many use loose ramps for loading and unloading wheelchairs. The maximum desirable ramp angle is about 1:4, which means that a 2 metre long ramp is needed to load to the typical van floor height of approximately 500 mm.*

*Use of ramps is extremely cumbersome, requires a huge amount of space and, where you have the combination of a heavy electric chair and a frail carer can be extremely dangerous. Apart from these issues, safe storage of the ramps in the vehicle during travel must be considered.*

*Remember – the easier the vehicle is to use – the more you will use it.*

## **Restraints and fittings**

*Wheelchairs and occupants must be secured properly for travel. Look at the method of securing the chair and occupant and practice it a few times. Standing on your head to reach restraints or getting down on your hands and knees to secure a chair and occupant can be hard on your body and your clothes. Remember you will have to do this every time you load and unload a wheelchair, whether it is late at night after a function, simply going to the corner shop and whether it is raining or not. If you are assisting another person to purchase a wheelchair accessible vehicle, please ask yourself if you would want to go through such a major exercise every single time you went out. There is an easier way. The Freewheeler restraint system lets carers load and secure wheelchairs while dressed in their party clothes or suits without a ruffle or a crease. It certainly takes the curse off going out.*

## **If it's not user friendly -- it won't be used**

*If a car is hard to use, you may look for reasons NOT to go out. We've seen it happen and this defeats the whole purpose of having an accessible vehicle. Often the wheelchair user is reluctant to ask their partner/carers to take them out if the vehicle is difficult to use, as they know how hard it is on the carer. Everyone loses out and the car stays in the garage.*

**Our aim is to make going out a pleasure - not a hassle.**

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**mobility**

## **Have a test drive seated in a wheelchair**

*If you are making decisions regarding a mobility vehicle for another person who is a wheelchair user, put yourself in their place and take a ride in a wheelchair in the vehicle you are contemplating. This will help to understand some of the issues mentioned above. While taking a test-drive, try to imagine how you would feel on a long trip travelling as a wheelchair passenger, as a quick trip around the block won't give you a full appreciation. You will certainly appreciate the importance of driving smoothly when a wheelchair passenger is in your vehicle.*

## **Driving a mobility (wheelchair accessible) vehicle**

*A well-designed mobility vehicle will allow you to access normal driving obstacles such as speed humps, driveways and culverts, however vehicles with poor ground clearance or long rear overhang may restrict access to some driveways.*

*You should take care driving over speed humps and crossing driveways or culverts. Drivers should approach such obstacles slowly, so that both front wheels drive over or through the obstacle at the same time to avoid the vehicle rocking from side to side to the extreme discomfort of the wheelchair passenger. Once again, it would be helpful for you to try being a wheelchair passenger to appreciate how much influence a driver can have on the comfort of a wheelchair passenger.*

## **Let Fleetworks Mobility help**

*The vehicle you choose will play a very important part in your lifestyle for a long time to come. We have seen some amazing lifestyle-changing results where the right vehicle choice was made. We have been pleased and proud to play a part in those decisions and to see the impact it has had.*

*The right choice can often provide new respite opportunities for all by providing a wider range of prospective carers, or travelling companions who are able to operate a user-friendly vehicle.*

*Fleetworks Mobility handles a wide range of vehicles and models - new and used. We try to find the best solution to a client's needs in conjunction with their family, OT or carers. We do not push any one vehicle or product regardless, as we know from personal experience, getting it 'right' can be very liberating.*

*Consider your alternatives carefully before making a final decision. We would welcome a call from you to discuss your requirements or fill in our questionnaire form with your details and we will make contact with you.*

*We may even know of a vehicle already converted to suit your needs. If you have a vehicle to trade, we may be able to assist with that too, as Fleetworks Mobility is a Licensed Motor Car Trader.*

## **After sales support**

*We take the responsibility of providing support and keeping our clients mobile very seriously. We have a FREECALL service for the convenience of clients and welcome calls to discuss their transport issues.*

Other queries? Please call David Syer **1800 ACCESS** 1800 222 377.

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