RECOMMENDED PRACTICES FOR DRIVER REHABILITATION & VEHICLE MODIFICATIONS

Guidelines for Vocational Rehabilitation

NMEDA
NATIONAL MOBILITY EQUIPMENT DEALERS ASSOCIATION

ADED
The Association for Driver Rehabilitation Specialists

ASSOCIATION FOR DRIVER REHABILITATION SPECIALISTS (ADED)

NATIONAL MOBILITY EQUIPMENT DEALERS ASSOCIATION (NMEDA)

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TABLE OF CONTENTS

INTRODUCTION

The recommended practices contained in this document are being provided to state Vocational Rehabilitation Agencies (VR) to assist in promoting safety, quality, consistency, and fiscal responsibility in the provision of driver rehabilitation and vehicle modification services to individuals with disabilities. This document offers information that can be used to develop new driver rehabilitation and vehicle modification procedures or refine existing VR policy.

The need for qualified, informed service providers, and best practices for delivering services, is underscored by the following:

- VRs spend millions of dollars annually to fund driver rehabilitation and vehicle modification services. It is important to ensure that VR funds are appropriately and efficiently spent.
- Vehicle Modifications, including driver evaluation and training, costs associated with purchasing a vehicle and ownership of the vehicle, specialized equipment, and equipment installation can be very expensive. It is important to ensure that the VR and client investments result in safe and positive outcomes for the VR client.
- The technology used in the automotive mobility industry is increasingly sophisticated and requires the skills of (1) a driver rehabilitation specialist to guide equipment selection and provide appropriate driver training, and (2) qualified mobility equipment dealers to ensure safe, reliable equipment installation.
- Optional vehicle technologies, such as advanced driver assistance systems (ADAS) and crash avoidance systems (CAS), are expected to become more standard as safety is demonstrated. While these advances in vehicle technology will increase opportunities for people with disabilities to drive, they also underscore the importance and value of qualified automotive mobility industry professionals who understand the technology, including its compatibilities and limitations.
- Medical and technological advancements have increased life expectancies and improved automotive mobility options for individuals with disabilities resulting in an increasing number of individuals seeking driver rehabilitation and automotive independence. Determining which equipment and vehicle modifications are suitable for individuals with physical disabilities (e.g., spinal cord injury, amputation, visual impairment) requires a specific set of skills and expertise, while determining which equipment and vehicle modifications are suitable for individuals with cognitive conditions (e.g., stroke, autism spectrum, traumatic brain injury) requires a different set of skills and expertise. Driver rehabilitation specialists are educated to provide multidisciplinary driver evaluations and training and are critical to ensuring medically-appropriate outcomes for VR clients.
- The National Highway Traffic Safety Administration (NHTSA), as part of its Federal Motor Vehicle Safety Standards (FMVSS), regulates specialty vehicle modifications for people with disabilities. Any individual or business performing such modifications should have a thorough understanding of, and commitment to complying with NHTSA's "Make Inoperative Exemptions" and associated requirements (49 CFR Part 595).

This document was developed by a coalition of automotive mobility industry professionals, including members of ADED: The Association for Driver Rehabilitation Specialists (ADED), members of the National Mobility Equipment Dealers Association (NMEDA), and representatives from various VRs (see Acknowledgments).

The National Mobility Equipment Dealers Association (NMEDA) was established in 1989 as a non-profit trade association dedicated to expanding opportunities for people with disabilities to safely drive, or be transported in motor vehicles, modified with mobility equipment to fit their specific needs. NMEDA's nationwide membership consists of mobility equipment dealers, mobility equipment manufacturers, vehicle manufacturers, vehicle converters/alterers, automotive engineers, healthcare professionals (driver rehabilitation specialists, occupational therapists, physical therapists, assistive technology professionals, case managers, etc.), and other individuals and companies that manufacture, prescribe, sell, install, maintain, and otherwise service automotive mobility equipment. NMEDA's Quality Assurance Program (QAP) is the only nationally-recognized accreditation program for the automotive mobility industry, and all NMEDA dealer members are required to maintain QAP accreditation (though NMEDA membership is not required to obtain QAP accreditation). NMEDA has worked extensively with various VRs, NHTSA, the U.S. Department of Veterans Affairs, and other state and federal agencies to improve the quality and safety of government-funded vehicle modification policies and programs. NMEDA can be reached at (800) 833-0427, info@nmeda.org, or www.nmeda.org .

The Association for Driver Rehabilitation Specialists (ADED) is a professional network that promotes excellence in the field of driver rehabilitation, thought leadership and advocacy in support of safe, independent community mobility. ADED's members work with persons with disabilities and the aging to ensure driving independence and, when necessary, a graceful retirement from driving. The organization provides education, research, and support to professionals working in the fields of driver education, driver training, and transportation equipment modifications. The organization has established guiding documents for best practice: *Code of Ethics and Best Practice Guidelines for the Delivery of Driver Rehabilitation Services*. ADED promotes the development of those identifying with the driver rehabilitation specialist (DRS) designation and is the only organization in North America to offer the Certified Driver Rehabilitation Specialist (CDRS) credential. The organization provides rigid guidelines for driver rehabilitation specialists to gain experience, pass an exam, and use the designation Certified Driver Rehabilitation Specialist (CDRS). In 2017, ADED members numbered nearly 1,000 worldwide, with over 360 active CDRS professionals in the U.S. and Canada. ADED can be reached at (866) 672-9466, info@aded.net, or www.aded.net.

RECOMMENDED REQUIREMENTS FOR DRIVER REHABILITATION SPECIALISTS PROVIDING SERVICES FOR VOCATIONAL REHABILITATION AGENCIES

The facility providing driver rehabilitation services for VR client must have a qualified driver rehabilitation specialist (CDRS/DRS) meeting the following credential and experience requirements:

1. Credentials

a. Certified Driver Rehabilitation Specialist (CDRS) from ADED **OR**
b. In the absence of a CDRS, the recommended professional should:
    i. Be eligible for taking the CDRS examination with the goal of obtaining the credential within one-year **OR**
    ii. Actively working toward CDRS eligibility, under the mentorship of an active CDRS **OR**
    iii. Possess a medically licensed degree (i.e., occupational therapy, physical therapy, speech language pathologist, etc.)
c. And: Possess additional licenses as required by the state agencies (i.e., certified driving instructor, licensed driving instructor, etc.).

2. Experience

a. At least one-year experience in driver rehabilitation.
b. For clinical assessments of clients where cognition is a concern, the medically licensed provider should have experience evaluating and treating cognitive medical conditions.
c. For evaluations in which mobility equipment is indicated, the CDRS/DRS must be proficient in the application and operation of mobility equipment. CDRS/DRS's should be selected based on their proficiency with the specific type(s) of equipment as defined in the *Spectrum of Driver Services* (basic, low tech, high tech).
d. Professional development is expected through appropriate continuing education as well as adherence to the code of ethics of their professional organization and *Best Practice Guidelines for the Delivery of Driver Rehabilitation Services* (Association for Driver Rehabilitation Specialists, 2016).

RECOMMENDED REQUIREMENTS FOR MOBILITY EQUIPMENT DEALERS PROVIDING SERVICES FOR VOCATIONAL REHABILITATION AGENCIES

Any mobility equipment dealer providing automotive mobility equipment and/or vehicle modifications for VR clients should be required to possess NMEDA Quality Assurance Program (QAP) accreditation. The only nationally-recognized accreditation program for the automotive mobility industry, NMEDA QAP supports and validates excellence in providing safe and reliable vehicle modification outcomes. This systematic and documented approach to quality and safety requires dealers to follow guidelines developed in accordance with FMVSS and proven quality control practices that elevate dealer performance; ensure vehicle modifications and equipment installations are consistent with the highest industry standards; and meet clients' transportation needs consistently and in the safest manner possible.

1. NMEDA QAP-accredited dealers must:

a. Undergo an annual inspection/audit process by an independent third-party auditing firm to ensure compliance with QAP Rules, NMEDA Guidelines, applicable aspects of the Americans with Disabilities Act (ADA), NHTSA FMVSS, and NHTSA "Make Inoperative" mandates;
b. Maintain detailed records of all adaptive work for at least seven years for traceability/future reference;
c. Affix a unique identifying label on all vehicles to signify that all vehicle modifications were performed in accordance with NMEDA's QAP Rules and Guidelines;
d. Have only American Welding Society (AWS)-certified welders perform structural modifications to vehicles;
e. Have only manufacturer-certified technicians sell, install, and service automotive mobility equipment;
f. Provide 24/7/365 emergency service or support assistance to customers at home or on the road;
g. Meet shop facility requirements to ensure ADA guidelines are being met or exceeded, and that customers are comfortable during fittings and/or on-site inspections;
h. Perform weight analysis using calibrated four-corner scales to confirm that load carrying capacity requirements are maintained, and to verify that Gross Vehicle Weight Ratings (GVWR) and Gross Axle Weight Ratings have not been exceeded;
i. Maintain calibration on measurement equipment and tools to assure data accuracy and confirm compliance with manufacturer installation instructions;
j. Maintain Product, Completed Operations, and Garage Keepers insurance for liability purposes and to protect the client and dealer;
k. Maintain a NMEDA-approved Quality Control Manual that defines processes affecting quality, focuses on customer satisfaction, and fosters continuous improvement opportunities for products and services offered;
l. Abide by the NMEDA Mediation Committee's decisions whenever a client complaint is lodged.

2. Categories of QAP Accreditation:

a. Mobility Equipment Installer – This is a dealer that is QAP-accredited to install mobility equipment not considered "Structural" or "High-Tech" (e.g., trunk lifts for wheelchairs and scooters, portable ramps, wheelchair tie-downs, non-driver devices, manual hand controls, steering devices, left foot accelerators, pedal extensions, roof-top carriers, driver and passenger transfer seats (power and manual), wheelchair lifts, secondary driving aids (non-electrical), driver trainer brakes, and power seat bases).
b. Structural Vehicle Modifier – Also known as a "Modifier," this is a dealer that is QAP-accredited to install structural modifications (e.g., lowered floors, power pans, raised roofs, raised doors, and support cages).
c. High-Tech Driving System Installer – Also known as a "High-Tech Installer," this is a dealer that is QAP-accredited to install high-tech primary driving systems (e.g., low and zero effort steering systems with backup; low and zero effort braking systems with backup; electronic and pneumatic gas/brake; horizontal, joystick, hydraulic, and electronic steering systems; and touch pads/secondary controls (requiring electrical)).
d. Off-Site Installer – Also known as a "Mobile Installer," this is a dealer that is QAP-accredited to perform certain equipment installations and to service certain equipment (e.g., hitch-mounted equipment) off-site (i.e., at a client's home or at a non-shop location where ambient environmental and working conditions allow for safe and proper installations). Note that QAP-accredited Off-Site Installers must still have a permanent shop location, must have a vehicle dedicated to off-site installations, and may be required to obtain additional insurance coverage.

SERVICE DEFINITIONS

To ensure best outcomes for VR clients, all services identified below must be performed by a qualified driver rehabilitation professional as defined above (unless otherwise noted) or a NMEDA QAP-accredited dealer, [and must be in accordance with the state's vocational rehabilitation policies and procedures and state licensing regulatory body].

Driver Rehabilitation Specialist (DRS)

Provides clinical driving evaluations and driving mobility equipment evaluations and intervention to develop or restore driving skills and abilities. [Note: A DRS may or may not have a health professional background. With a health professional background, a DRS can provide the comprehensive driving evaluation.] (TRB, July 2016).

Certified Driver Rehabilitation Specialist (CDRS)

CDRS (Certified Driver Rehabilitation Specialist) is a credential offered by ADED, representing advanced experience and expertise in diverse areas within the field. A CDRS is an experienced practitioner in the field of driver rehabilitation who, through successful completion of a formal certification examination, has proven their capacity to provide services within the full spectrum of driver rehabilitation services. The CDRS is considered, by ADED, to be the gold-standard in terms of driver rehabilitation service provision. A CDRS is obligated to follow ADED's Best Practice Guidelines to keep driver evaluations standardized, formalized and objective, and attests they will adhere to the ADED's Code of Ethics. The CDRS credential requires 30-hours of continuing education per 3-year cycle and is renewed via application and subject to audit (ADED, 2018).

NMEDA-Certified Technician (NCT)

A service department technician trained in essential electrical concepts, NMEDA QAP, and the NMEDA Guidelines. Every QAP-accredited dealer must have at least one NCT at each location. The NCT designation does not replace manufacturer-required training, and NCT certificates are valid for two years after completion of the NCT Certification Exam.

QAP-Accredited Dealer

A dealer possessing current QAP accreditation. NMEDA's QAP is the only nationally-recognized accreditation for dealers operating in the mobility equipment industry.

Rehabilitation Engineer

Rehabilitation Engineering is the use of engineering principles to (1) develop technological solutions and devices to assist individuals with disabilities and (2) aid the recovery of physical and cognitive functions lost due to disease or injury. Rehabilitation engineers design and build devices and systems to meet a wide range of needs that can assist individuals with mobility, communication, hearing, vision and cognition. These tools help people with day-to-day activities related to employment, independent living and education.

Inspection Team

The Inspection Team works together to verify that the specified equipment is installed and meets or exceeds manufacturer's specifications.

The Inspection Team should consist of the following:

» CDRS/DRS – The accredited individual that evaluated, trained, and prescribed the equipment.
» QAP-Accredited Dealer – This includes the technician of record.
» VR or Funding Agency Representative – At the discretion of the individual program, the Inspection Team may include a third-party inspector, a Rehabilitation Engineer, or a VR representative/staff member.

Behind the Wheel

Performing driving maneuvers using typical equipment in a motor vehicle (not a driving simulator) and for purposes of evaluation or instruction–training on public roads, off-road settings, or closed course (TRB, July 2016). Behind the wheel evaluation and training is completed by the CDRS/DRS to determine driver and passenger adaptive equipment needs.

Road Test

An examination of driving maneuvers and knowledge of rules of the road performed in a motor vehicle on a public highway or street (TRB, July 2016). A road test is generally completed by department of motor vehicle licensed examiners or other parties authorized to do so.

Fitness to Drive

A driver characteristic or a description of a driver, defined by the absence of any functional (sensory–perceptual, cognitive, or psychomotor) deficit or medical condition that significantly impairs an individual's ability to fully control the vehicle while conforming to the rules of the road and obeying traffic laws, or that significantly increases crash risk (TRB, July 2016).

SERVICE PROCESS

1. Driver Evaluation (experienced and novice drivers)

Driver Evaluation is a comprehensive assessment of an individual's abilities and/or potential to become a safe and independent driver. Performed by the CDRS/DRS, the driver evaluation is the preparatory phase for all other services within the field of driver rehabilitation. The call for a driver evaluation poses the question of whether a person with a disability can operate a motor vehicle and what vehicle and/or modifications, if any, are needed for safe driving. A driver evaluation is also indicated for previously served drivers replacing equipment, or where changes in function have occurred. The driver evaluation is used to assess an individual's current level of ability and, if appropriate, to predict the effectiveness of future intervention (driver training) or classroom education (with or without adaptive driving devices).

The driver evaluation includes:

- Screening (medical history, driving history, driver license status, etc.), **and**
- Clinical Assessment (assessment of physical functioning, vision, visual perception, and cognition, etc.), **and**
- Pre-Drive Vehicle Assessment (entering/exiting vehicle, wheelchair seating & transfers, mobility device stowage), where applicable, as it pertains to the functional skills necessary to safely operate a motor vehicle, **and**
- Behind the Wheel assessment of the individual, in a driver rehabilitation vehicle, in an actual driving environment, using equipment like that which will be recommended.

A preliminary vehicle consultation with a VR professional may be necessary to determine the financial capabilities of the client to procure, insure, and maintain the most appropriate vehicle for their needs. A driver evaluation report will present recommendations for next steps and/or a driver training plan. Refer to *Flowchart 1*.

2. Driver Training (experienced and novice drivers)

Driver training may be indicated with or without adaptive equipment. Provided by the CDRS/DRS following successful completion of a driver evaluation and prior to prescription of client-specific adaptive equipment, driver training occurs in the driver rehabilitation program's vehicle that is matched to the client's individual needs. Driver training includes continued assessment of driving performance and/or adaptive equipment needs to promote optimal driving performance. The driver training plan must assist the client with developing behind-the-wheel competency in a full range of roadway environments, helping with obtaining or maintaining a properly restricted driver's license, and achieving vehicle equipment mastery. Some clients may need additional training with a CDRS/DRS, in their own vehicle, after modifications are completed. Refer to *Flowchart 2*.

3. Vehicle Consultation

Vehicle Consultation determines whether an existing vehicle is suitable for the modifications recommended for a driver, or to recommend the appropriate vehicle(s) and factory options to be purchased. The CDRS/DRS completes the vehicle consultation as part of the initial evaluation in consultation with a NMEDA QAP-accredited dealer. If the client-owned used vehicle can be modified for their needs, then that vehicle should be inspected to determine that it is mechanically and structurally sound and can accept the modifications being considered for the individual's transportation needs. If a new vehicle is recommended, the client should refrain from purchasing the new vehicle until after the prescribed vehicle modifications have been approved by the VR. When possible, it is ideal to have the client demonstrate the ability to enter, exit, and position themselves in the recommended type of vehicle. *Refer to Flowchart 3.*

4. Vehicle Modification Prescription

The Vehicle Modification Prescription is a complete plan for all modifications and adaptive equipment necessary to meet the individual's automotive mobility needs. In cases where the VR client will be the driver, vehicle modification prescriptions should be provided by the CDRS/DRS and should be written for a specific make, model and year vehicle. The vehicle modification prescription should include an expiration date not to exceed one (1) year, after which time a review and possible re-evaluation may be necessary. Unless specified by the CDRS/DRS, vehicle modification prescriptions should not be implemented if they are more than twelve (12) months old and should only be provided after successful training sessions.

It is best practice that the CDRS/DRS collaborate with a NMEDA QAP-accredited dealer, review vehicle literature, and confer with other vendors, dealers, manufacturers and/or automotive or rehabilitation engineers as appropriate. *Refer to Flowchart 4.*

5. Vehicle Mechanical Inspection

A Vehicle Mechanical Inspection should be conducted by a NMEDA QAP specialist and a VR-designated professional who is well-versed in vehicle modifications and conversions (e.g. Rehabilitation, Industrial, Mechanical and/or Automotive Engineer). This inspection should follow the installation of all prescribed adaptive equipment. The function of the vehicle mechanical inspection is to assure that the equipment follows the CDRS/DRS's prescription and that the equipment installation meets or exceeds manufacturer's specifications. VR payment for vehicle modification services should be contingent upon successful completion of the Vehicle Mechanical Inspection. *Examples A, B, C. Refer to Flowchart 5*.

6. Functional Inspection, Final Fitting, and Test Drive

A Functional Inspection (aka Final Fitting) with the client, CDRS/DRS, and the NMEDA QAP-accredited dealer should be required for all vehicle modifications and should accompany or follow the Vehicle Mechanical Inspection. The purpose of the functional inspection is to verify that all adaptive equipment and vehicle modifications comply with the CDRS/DRS's prescription. The functional inspection also ensures that the modifications are fitted in a way that meets the individual's functional needs and are consistent with the client's abilities. This inspection should occur while the VR client is driving the vehicle, should be performed by a CDRS/DRS, and should

include a demonstration of the driver's ability to use the assistive devices while the vehicle is in motion. Upon completion of the functional inspection with the driver, the CDRS/DRS may recommend additional training to ensure proficiency with vehicle modifications. The NMEDA QAP-accredited dealer will cover: care and use of equipment, warranties, use of manual override systems, lock out devices, and any other pertinent information for the driver or other drivers of the vehicle. The functional inspection should be completed prior to discharge of the vehicle. *Examples D1, D2, D3. Refer to Flowchart 6.*

RESOURCES AND REFERENCES

ADED: The Association for Driver Rehabilitation Services
200 First Ave NW, Suite 505
Hickory, NC 28601
866.672.9466
https://www.aded.net/?

Publications:
- Best Practices for the Delivery of Driver Rehabilitation Services
- ADED Code of Ethics
- Spectrum of Driver Services
- Client Resources: Disabilities and Driving Fact Sheets

NMEDA: The National Mobility Equipment Dealers Association
3327 West Bearss Avenue
Tampa, Florida 33618
800.833.0427
www.nmeda.org

Publications:
- NMEDA QAP Guidelines
- Adaptive Equipment Industry Terminology

Transportation Research Board/The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street, NW
Washington, DC 20001
202-334-2934
https://www.TRB.org

Publication:
- Taxonomy and Terms for Stakeholders in Senior Mobility http://www.trb.org/main/blurbs/174681.aspx

National Highway Traffic Safety Administration
www.nhtsa.gov

Publications:
- Clinician's Guide to Assessing and Counseling Older Drivers https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/812228_cliniciansguidetoolderdrivers.pdf
- Fact Sheets: Driving with Medical Conditions https://www.nhtsa.gov/road-safety/older-drivers#resources
- You Tube Playlist (USDOTNHTSA): Driving with Medical Conditions https://www.youtube.com/playlist?list=PL2GlXO1j4M71ygzAhIXGkmKcYEzn_BBCt
- Older Drivers: https://www.nhtsa.gov/road-safety/older-drivers

Regulations:
- Federal Motor Vehicle Safety Standards (FMVSS) https://www.nhtsa.gov/laws-regulations/fmvss
- Exemption from the Make Inoperative Prohibition. https://www.nhtsa.gov/fmvss/exemption-make-inoperative-prohibition

American Occupational Therapy Association
4720 Montgomery Lane, Suite 200
Bethesda, MD 20814
301-652-6661
www.aota.org

Publications:
- Driving & Community Mobility: Occupational Therapy Strategies Across the Lifespan https://myaota.aota.org/shop_aota/prodview.aspx?TYPE=D&PID=113554442&SKU=1264
- Driving & Community Mobility https://www.aota.org/Practice/Productive-Aging/Driving.aspx
- Practice Guidelines: Driving And Community Mobility https://www.aota.org/Practice/Productive-Aging/Evidence-based.aspx
- Fact Sheet: Driving & Community Mobility Across the Lifespan https://www.aota.org/Practice/Productive-Aging/Evidence-based.aspx

Resources:
- Older Driver Safety Week https://www.aota.org/Conference-Events/Older-Driver-Safety-Awareness-Week.aspx
- Car Fit Programs https://www.car-fit.org/

Citation: Driver Rehabilitation Programs: Defining Program Models, Services, and Expertise. Occupational Therapy in Health Care, 28(2):177–187, 2014 https://www.ncbi.nlm.nih.gov/pubmed/24754768

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2018 Advisory Committee

Please note that the document's name has been changed from **Model Practices** to **Recommended Practices for Driver Rehabilitation & Vehicle Modifications: *Guidelines for Vocational Rehabilitation*.**

- Cassy Churchill, *Clock Mobility, Co-chair*
- Elizabeth Green, *ADED, Co-chair*
- Anne Dickerson, *East Carolina University*
- Susan Touchinsky, *Adaptive Mobility Services*
- Ted Kahn, *Northeast Rehabilitation Hospital*
- Pam Winpigler, *Division of Rehabilitation Services, Maryland*
- Roberta Milliken, *Vocational Rehabilitation, Indiana*
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- Wendy S. Cohen, *VESID, New York*
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- Linda McQuistion, *Ohio Rehabilitation Services Commission*
- Norm Simones, *Mobility Evaluation Program, California*
- Philip Protz, *Vocational Rehabilitation Services, North Carolina*
- Stephen Sundarro, *Rehabilitation Engineering & Technology, Florida*

E X A M P L E A

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
	Wheelchair Lifts / Platforms:			
1.	Platform angle is adjusted as specified by manufacturer			
2.	Lift location in entryway (clears door, operators and door posts)			
3.	All switches move in anticipated direction			
4.	All switches are labeled			
5.	All exposed switches have weather caps			
6.	All connecting links locked in place (snap rings, cotter pins, hitch pins, lock nuts)			
7.	Lift operation is smooth; no binding, unfolds completely			
8.	Pressure is set correctly			
9.	Latching mechanism for safety flap locks and unlocks correctly			
10.	All safety flaps and roll stops operate correctly			
11.	All safety flap hardware has been checked for tightness			
12.	All lift hardware has been checked for proper tightness			
13.	Main power cable is protected by correct size circuit breaker/fuse (as specified by mfr.)			
14.	Power cable to all switches is protected by correct size circuit breaker/fuse (as spec. by mfr.)			
15.	All wires under van are secured with ties at intervals of 12” or less			
16.	Lift power cable and control wires are properly protected			
17.	All wires under van are minimum of 3” away from heat source and are clear of any moving parts			
18.	Platform switches operate properly			
19.	Lift has been lubricated			
20.	Lift cover is correctly installed and does not rattle when vehicle is moving			
21.	Auxiliary ground strap is added to negative post of battery			
22.	Anti-slip material is in place			
23.	Lift clears step well when tested under load			
24.	Lift clears running boards when tested under load			
25.	Lift does not rattle when test driven			
26.	Battery cables are tight			
27.	Manual override is accessible and operates properly			
28.	Door open safety switch is properly installed and adjusted			
29.	All manufacturer’s decals and warning stickers in place			
30.	Owner’s manual and override devices in van			

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
31.	All parts, seats, bases, etc. removed in installation are in van			
32.	Van is cleaned and vacuumed			
Wheelchair Securement: Seat Belts				
1.	Mounting hardware must be minimum of 7/16" Grade 5 bolts with 2" diameter backing washer			
2.	Anchor bolt on wall or roof header must be through bolted to a D-ring securement plate; no sheet metal screws, pop rivets, riv-nuts, etc. allowed			
3.	All seat belts much be securely attached and usable			
4.	Length of seat belts must be adequate for user, i.e. long enough for seat or wheelchair occupant			
5.	Header to riser floor hook is securely attached to floor with specified mounting hardware			
6.	Mounting bolts through factory floor must have backing washers			
7.	Shoulder harness crosses client's shoulder and doesn't cut into neck			
8.	All retractor mechanisms are functioning properly			
Wheelchair Securement: Wheelchair Tie-Down — Driver				
1.	Tie down does not interfere with wheels when chair is turned completely to the Right or Left			
2.	Tie down operates smoothly and engages into floor mount without binding			
3.	Floor mount is secured to floor with bolts supplied by lock down manufacturer			
4.	All electrical wires are neatly secured out of harm's way			
5.	Battery box is safely secured to wheelchair			
6.	No sharp corners on any tie down equipment			
7.	Warning devices and alarms are working properly			
Wheelchair Securement: Wheelchair Tie-Down — Driver Who Transfers				
1.	Tie down is secured with at least four (4) Grade 5 3/8" bolts			
2.	Client can operate tie down with no assistance			
3.	Client informed not to use this tie down when he is a passenger			
4.	"For Occupied Wheelchair" sticker has been installed			

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
Wheelchair Securement: Wheelchair Tie-Down — Passenger				
1.	Mounting hardware is as specified by the manufacturer of tie down system			
2.	Tie down has seat belt			
3.	Tie down has shoulder harness for outboard position			
4.	Tie downs anchor the wheelchair so it can only move 1/2" in any direction			
5.	Client has been instructed on the use of the system			
Operation Controls: Hand Controls				
1.	All mount bolts, set screws and fasteners tight and secure			
2.	Lock nuts for accelerator rods tight and pedal returns correctly			
3.	Accelerator rod mounting bracket is clear of accelerator			
4.	Lock nuts for brake rod are tight and pedal returns correctly			
5.	Brake pedal return spring installed			
6.	Tail lights do not stay on when brake is depressed and released			
7.	Horn button can be operated by client and functions correctly			
8.	Dimmer switch can be operated by client and functions correctly			
9.	Main control handle of hand control has no interference through full range of brake and gas			
10.	Handle or client's hand will not shut off headlights in panic stop			
11.	Brake operates smoothly; effort required is within client's capability			
12.	Throttle operates smoothly; effort required is within client's capability			
13.	No interference with turn signal lever or steering wheel in any direction			
14.	Vehicle has been road tested using hand controls			
15.	All wiring is securely fastened out of harm's way			
16.	Manufacturer's decals and warning stickers installed			
Operation Controls: Gas Pedal and Left Foot Accelerator				
1.	All mounting hardware is tight			
2.	Extension does not interfere with brake pedal			
3.	Non-skid material on operating surface			
4.	Quick disconnect, if applicable operates freely and smoothly			
5.	Manufacturer's decals and warning stickers installed			

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
Operation Controls : Steering Devices				
1.	Base is securely clamped to steering wheel with no movement of base			
2.	Release pin for removal of device from base operates freely and smoothly			
3.	Steering device does not hit client's hand or hand control			
4.	All fasteners on steering device are tight			
5.	Client has been instructed on use and removal of steering device			
6.	Manufacturer's decals and warning stickers installed			
Door/Roof Equipment: Power Door Operators				
1.	12-Volt power supply has properly sized circuit breaker/fuse			
2.	Door seals all the way around in fully closed position			
3.	On sliding door, chain dubs on rub plate and does not drag on van body			
4.	All wires to door opener are securely fastened out of harm's way			
5.	All roller tracks are cleaned and lubricated			
6.	Door rubber is lubricated			
7.	Interior light pin switch operates correctly			
8.	Light in which magnetic switches are mounted is dimpled at each switch			
9.	Magnetic switches are temporarily marked with grease pencil			
10.	Specified lock out is installed – key switch, keyless entry or remote			
11.	Diagram of magnetic switch locations is included with owner's manual			
12.	All switches operate as labeled			
13.	Third station switches installed if specified			
14.	Manufacturer's decals and warning stickers installed			
Door/Roof Equipment: Raised Doors				
1.	Door seals when in fully closed position			
2.	Door passes water test			
3.	On sliding door, chain dubs on rub plate and does not drag on van body			
4.	Door rubber seals properly and have been lubricated			
5.	Trim around lintel has been sealed with body sealant			
6.	Door jambs ground and smooth			
7.	Door jambs filled with body sealer where not welded			
8.	Exterior paint matches and blends with body			
9.	Exterior paint has no runs or scratches			

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
Door/Roof Equipment: Raised Top				
1.	Top installed square and level			
2.	Trim and molding on straight			
3.	Corners filled with putty and silicone			
4.	Inside of top has putty depressed for sealing purposes			
5.	No sharp corners or edges inside or out			
6.	Wiring was not damaged from installation of top			
7.	Top was water tested for leaks			
8.	Exterior paint matches or blends with van			
9.	Exterior paint matches and blends with body			
10.	Headliner and interior panels all match interior			
11.	Reinforcing steel installed in top			
Door/Roof Equipment: Transfer Seats: Driver Side				
1.	Wires routed/protected from entanglement of seat movement			
2.	Wires covered with loom			
3.	Ensure ground wire properly secured			
4.	Mounting bolts to use OEM backing plates or washers			
5.	Wheelchair securement system used in the transfer position			
6.	Base wiring protected by circuit breaker/fuse device at source			
7.	Grade 5 or 8 bolts (designated by manufacturer) used for seat base			
8.	Ensure control switches operate properly			
Transfer Seats: Driver Side				
1.	Wires routed/protected from entanglement of seat movement			
2.	Wires covered with loom			
3.	Ensure ground wire properly secured			
4.	Mounting bolts to use OEM backing plates or washers			
5.	Wheelchair securement system used in the transfer position			
6.	Base wiring protected by circuit breaker/fuse device at source			
7.	Grade 5 or 8 bolts (designated by manufacturer) used for seat base			
8.	Ensure control switches operate properly			

VEHICLE FINAL INSPECTION CHECKLIST FORM

Customer _____

NMEDA Label # _____

#	Inspection Item	Check if N/A	Inst.	QAI
Miscellaneous Equipment:				

Comments:

[DEALER NAME] certifies that the vehicle meets and/or exceeds all requirements of the QC Manual, work order, QAP Rules, and Guidelines. A completed copy of this form shall be placed in the customer file for future reference.

Final Inspection Completed By:	Title:	Date:

EXAMPLE B

VEHICLE MANUAL INSPECTION

Consumer:
Address:
Date of Aftercheck: Apri1 27, 2018
Referral Source:
Location of check:

Upon the authorization of the Indiana Division of Disability, Aging, and Rehabilitation Service. Vocational Rehabilitation Division, a vehicle aftercheck was performed for XXXXXXX. The purpose of this aftercheck was to determine if the adaptive equipment specified in the Vehicle Modification Evaluation had been installed and if there are any obvious problems with the installation.

This report is separated into three sections. The first section is a list of the equipment detailed in the report from XXXXXXX CDRS/OTR dated 2-5-18. The second section is a list of any applicable serial/model #s, and the third is a list of any issues or variances.

Equipment specified for installation

- Lowered floor mini-van package, domestic 10", side entry
- Non-skid rubber flooring
- Auto docking system for wheelchair and occupant
- Wheelchair Occupant Protection System (WOPS), retractor style
- Shoulder belt positioning device (Luppo)
- Upper torso support
- Reduced effort steering and back-up
- Hand controls, left side mount, push rock style
- Acc./brake block, firewall mount
- Power parking brake and switching
- Steering device mounted Mini-secondary console, with custom switch location and relays:
  - » Turn signals
  - » Horn
  - » Wiper/washer
  - » High beam/dimmer
- Add-on outside blind spot mirrors
- Add-on inside panoramic rear view mirror
- Safety brake rental, installation and removal

Model/Serial numbers

Vehicle	2017 Dodge Grand Caravan SXT	2C4RDGCG6HR718327
Conversion	Braun	
NMEDA	N-463660	
Mileage	690	
Hand controls	SureGrip	UN11010557
Secondary	SureGrip RF-mini	35436
Low effort steering	DriveMaster	LESR11823
Back-up steering	DriveMaster	BS13665
Power park brake	EMC	1609501756
Acc./brake guard	MPD	2018000553
Auto dock system	QStraint QLK-150	00137521-0157
WOPS	QStraint QRT	00137643-0136

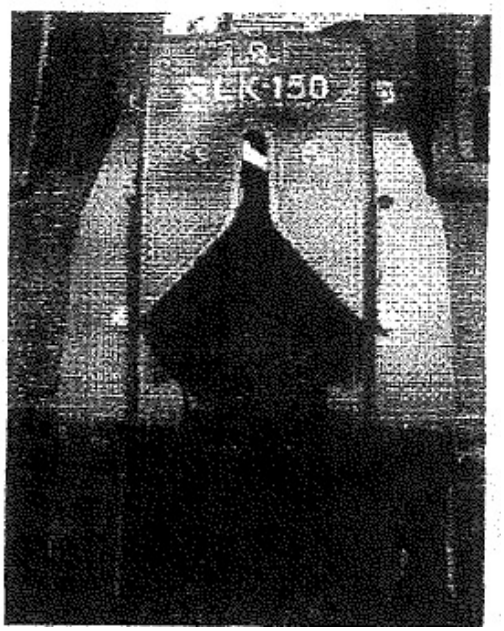
Issues or Variances

- The secondary console, RF-mini from SureGrip, was suppJied, but the spinner knob was not the correct size. It should have been the *RF-Mini S* model. The custom switches were also not installed as specified. The vendor is to re-order this device with the correct knob size and switch orientation.
- XXXXXXXX experienced some difficulty engaging his wheelchair into the auto lockdown system. Some of this difficulty will decrease with practice, but it was found that the space between the front pin dock and rear stabilizer components could cause XXXXXXXX to become stuck when attempting to un-dock. It has been suggested that this space be filled in with an extension on both sides that bridges from the dock to the stabilizer. This would be a custom adaptation and require additional funding.
- Other issues were identified and were corrected during the inspection process.

Summary

All of the equipment specified in the Vehicle Modification Evaluation has been provided and **this vehicle passes inspection with the understanding that the secondary control console be changed to a Mini-S style and that the switching be oriented as directed.** This will be a simple change and should not require any re-wiring.

The auto docking system should be adapted to help prevent possible difficulties un-docking. This would be the addition of a bridge plate on both sides that extends from the pin dock to the stabilizer component. This is additional work and the functional evaluator will be supplying the documentation/ recommendation. The vendor will need to provide a quote for this work.



Red lines denote suggested location for "bridge"

EXAMPLE C

VEHICLE MANUAL INSPECTION

Ingenium Engineering Services — *Engineering & Science Consultants*
Phone: 734/279-9345 4345 Teal Road ✪ Petersburg, Michigan 49270-9304 Fax: 734/279-1788
www.ingeniumservices.com

_____ REHABILITATION VEHICLE MODIFICATION
AFTER-CHECK REPORT
Ingenium Engineering Services No. 26019-1
JANUARY 31, 2018

BACKGROUND INFORMATION

AUTHORIZATION NUMBER: 2107322
CLIENTS NAME:
COUNSELOR: _____ (Ohio Bureau of Vocational Rehabilitation)
EVALUATOR(S):
INSPECTION DATE: JANUARY 31 2018
INSPECTED BY: George W. Hicks, P.E.
LOCATION:
VEHICLE TYPE: 2017 CHEVROLET EXPRESS VAN
VENDOR:
MODIFICATION(s):

✓1. WHEELCHAIR LIFT -- SIDE CARGO DOOR(S)
✓2. POWER DOOR OPERATORS (W/REMOTE CONTROL)
✓3. Q'STRAINT WHEELCHAIR TIE DOWN - TRANSFER SITE
✓4. B&D INDEPENDENCE TRANSFER SEAT BASE - DRIVER
✓5. HOWELL VENTURES PUSH/RIGHT ANGLE HAND CONTROL - LEFT HAND
✓6. HOWELL VENTURES STEERING SPINNER KNOB - RIGHT HAND
✓7. HOWELL VENTURES ACCELERATOR & BRAKE PEDAL GUARD
✓8. HOWELL VENTURES PARK BRAKE EXTENSION
✓9. REPOSITION REAR BENCH SEAT
✓10. HOWELL VENTURES TURN SIGNAL EXTENSION
✓11. WHEELCHAIR FLOORING

The power door opening system was manufactured by BRAUN, dual / [redacted] door model (_____ modified). Operation of the door's were checked and found to be ([redacted]) an acceptable operating condition. The Installation of the power door openers appears to satisfy the composition of Ohio standard 3304-6-07 (D), "Access Devices / Powered Door Operators".

Problems / Concerns / Comments:
1. _____
2. _____

BODY MODIFICATIONS

The floor was lowered approximately ___ inches. A steel plate (___ gage) is used for the floor surface. The floor appears to be of (Inadequate) equal integrity compared with the original floor. Cross members were attached by (Spot Weld / Continuous Weld / Welding & Fasteners / Fasteners) to the longitudinal frame. The original body mounts were (removed) retained in the area of the floor lowering and (replaced) supplemented with ____ inch tall body mounts. The Installation of the Lowered Floor appears to satisfy the composition of Ohio standard 3304-6-10, "Vehicle Modifications / Dropped Floor".

Minivan: The lowered floor was attached to the unibody of the original minivan. The Conversion of the lowered floor minivan appears to satisfy the composition of Ohio standard 3304-6-15, "Vehicle Modifications / Dropped Floor".

The floor leveling consisting of PLYWOOD covered with VINYL appears to be ([redacted]) an acceptable condition. The Installation of the Floor Leveling appears to satisfy the composition of Ohio standard 3304-6-10 (A), "Vehicle Structural Modifications / Wheelchair Flooring".

The top was raised _____ inches. The finish of the top appears to be (Not Acceptable) an acceptable condition. Supplemental roof support was (Was Not) installed. Appearance and/or description of roof support appears to be (Needing Work) an acceptable. The Installation of the raised top appears to satisfy the composition of Ohio standard 3304-6-10 (D), "Vehicle Structural Modifications / Raised Roofs".

The doors were raised / lowered ____ inches. The fit & finish of the doors appears to be (Not Acceptable) an acceptable condition. Weather sealing appears to be (Not Acceptable) an acceptable condition. The Installation of the raised / lowered doors appears to satisfy the composition of Ohio standard 3304-6-10 (E), "Vehicle Structural Modifications / Modified Doors".

Problems / Concerns / Comments:
1. _____

CLIENT SEATING

The automatic wheelchair tie down was manufactured by _____, model _____ (#_____). Operation of the automatic tie down, driver (center / right front) position, was checked and found to be (Needing Work) an acceptable condition. The installation of the Wheelchair Tie Down appears to satisfy the composition of Ohio standard 3304-6-09, "Occupant Protection & Restraint System".

The power door opening system was manufactured by BRAUN, dual / [redacted] door model (_____ modified). Operation of the door's were checked and found to be ([redacted]) an acceptable operating condition. The Installation of the power door openers appears to satisfy the composition of Ohio standard 3304-6-07 (D), "Access Devices / Powered Door Operators".

Problems / Concerns / Comments:
1. _____
2. _____

BODY MODIFICATIONS

The floor was lowered approximately ___ inches. A steel plate (___ gage) is used for the floor surface. The floor appears to be of (Inadequate) equal integrity compared with the original floor. Cross members were attached by (Spot Weld / Continuous Weld / Welding & Fasteners / Fasteners) to the longitudinal frame. The original body mounts were (removed) retained in the area of the floor lowering and (replaced) supplemented with ____ inch tall body mounts. The Installation of the Lowered Floor appears to satisfy the composition of Ohio standard 3304-6-10, "Vehicle Modifications / Dropped Floor".

Minivan: The lowered floor was attached to the unibody of the original minivan. The Conversion of the lowered floor minivan appears to satisfy the composition of Ohio standard 3304-6-15, "Vehicle Modifications / Dropped Floor".

The floor leveling consisting of PLYWOOD covered with VINYL appears to be ([redacted]) an acceptable condition. The Installation of the Floor Leveling appears to satisfy the composition of Ohio standard 3304-6-10 (A), "Vehicle Structural Modifications / Wheelchair Flooring".

The top was raised ____ inches. The finish of the top appears to be (Not Acceptable) an acceptable condition. Supplemental roof support was (Was Not) installed. Appearance and/or description of roof support appears to be (Needing Work) an acceptable. The Installation of the raised top appears to satisfy the composition of Ohio standard 3304-6-10 (D), "Vehicle Structural Modifications / Raised Roofs".

The doors were raised / lowered ____ inches. The fit & finish of the doors appears to be (Not Acceptable) an acceptable condition. Weather sealing appears to be (Not Acceptable) an acceptable condition. The Installation of the raised / lowered doors appears to satisfy the composition of Ohio standard 3304-6-10 (E), "Vehicle Structural Modifications / Modified Doors".

Problems / Concerns / Comments:
1. _____

CLIENT SEATING

The automatic wheelchair tie down was manufactured by _____, model _____ (#_____). Operation of the automatic tie down, driver (center / right front) position, was checked and found to be (Needing Work) an acceptable condition. The installation of the Wheelchair Tie Down appears to satisfy the composition of Ohio standard 3304-6-09, "Occupant Protection & Restraint System".

The manual wheelchair tie down & occupant restraint system (WTORS) used a ~~belt~~ RETRACTABLE manufactured by Q'STRAINT _____, model QB-6200 (#0025931). Operation of the WTORS was checked and found to be ~~(Needing Work)~~ an acceptable condition. The installation of the WTORS appears to satisfy the composition of Ohio standard 3304-6-09, "Occupant Protection & Restraint System".

The unoccupied SEMI automatic / manual wheelchair tie-down was manufactured by Q'STRAINT, model QB-6200 RETRACTABLE (#0025931). The installation of the Unoccupied Wheelchair Tie Down appears to satisfy the composition of Ohio standard 3304-6-09, "Occupant Protection & Restraint System".

The power seat base was manufactured by B&D INDEPENDENCE, model GMC LAID- (#111576A). Operation of the power seat base was checked and found to be ~~(Needing Work)~~ an acceptable condition. The installation of the Power Seat Base appears to satisfy the composition of Ohio standard 3304-6-07 (B), "Access Devices / Seat Lifts".

The upper chest restraint was manufactured by ____, model ____ (#____). The installation of the upper chest restraint appears to satisfy the composition of Ohio standard 3304-6-09, "Occupant Protection & Restraint System".

Problems / Concerns / Comments:
1. THE GM BENCH SEAT WAS RELOCATED TO THE REAR AREA.

PRIMARY CONTROLS

The push/right angle, ~~push/pull, push/twist, push/pull~~ hand control was manufactured by HOWELL VENTURES, model W/GAS SURESLIP LOCK OUT (#UNL #200-2213). Operation of the hand control, mounted left / ~~right~~ side, was checked and found to be ~~(Needing Work)~~ an acceptable condition. The installation of the Manual Hand Control appears to satisfy the composition of Ohio standard 3304-6-05 (B), "Primary Controls/ Mechanical Hand Controls".

A ~~MPD~~ Wedgel, model FLAT PLATE / ~~Drive Master~~ / Howell Ventures / ~~MPS~~ / accelerator (& brake) pedal guard (#A-206) was installed.

The steering device was a HOWELL VENTURES, model A-600 STANDARD KNOB (@2:00). Installation and operation of the hand control was checked and found to be ~~(Needing Work)~~ an acceptable condition.

A left foot accelerator pedal, manufactured by ____, model ____ (#_____) was installed. Installation and operation of the foot control was checked and found to be (Needing Work) an acceptable condition.

The servo gas & brake (EGB / PGB / vacuum / pneumatic) control is manufactured by _____, model _____ (#_____). Operation of the control was checked and found to be (Needing Work) an acceptable condition. The installation of the Servo control appears to satisfy Ohio standard 3304-6-05 (C), "Primary Controls / Servo Hand Controls".

The multi-axis steering system (electronic/hydraulic combination) is a (joy stick/ horizontal steering/ Scott) and is manufactured by _____ model _____ (#_____). Operation of the steering device was checked and found to be (Needing Work) an acceptable condition. The installation of the steering appears to satisfy the composition of Ohio standard 3304-6-05 (H), "Primary Controls / Steering Modification".

Problems / Concerns / Comments:
1. _____

SECONDARY CONTROLS

The Secondary Control Console was manufactured by _____, model _____ (#_____). Installation and operation was checked and found to be (Needing Work) an acceptable operating condition. The installation of the secondary control consoles appears to satisfy the Ohio standard 3304-6-06 (B), "Secondary Control Consoles".

The scanning control system was manufactured by _____, model Voice Scan / Digitone / Digi-Voice (#_____). The switch control is located on the _____. Installation and operation was checked and found to be (Needing Work) an acceptable operating condition. The installation of the secondary control consoles appears to satisfy Ohio standard 3304-6-06 (B), "Secondary Control Consoles".

The power transmission gear selector was manufactured by _____, model _____ (#_____). Installation and operation was checked and found to be (Needing Work) an acceptable operating condition. The installation of the power transmission gear selector appears to satisfy the Ohio standard 3304-6-06 (C), "Secondary Controls / Transmission".

The ~~power~~ parking brake / mechanical extension handle was manufactured by HOWARD VENTURES, model _____ (# 5" HANDLE CONTROL). Installation and operation of the parking brake was checked and found to be (~~Needing Work~~) an acceptable condition. The installation of the ~~power~~ / mechanical parking brake appears to satisfy the Ohio standard 3304-6-06 (D), "Secondary Controls / Parking Brake".

The modified switches (Elbow Controls / 2nd Console) installation and operation was checked and found to be (Needing Work) an acceptable operating condition. The installation of the secondary control appears to satisfy the Ohio standard 3304-6-06, "Secondary Controls".

~~A Fire Extinguisher, and/or interior & exterior rear view mirrors were installed.~~

Problems / Concerns / Comments:
1. A HOWARD VENTURES TURN SIGNAL CROSSOVER LEVER WAS INSTALLED

VEHICLE SYSTEMS

The Reduced Effort steering was manufactured by _____ (#_____). Installation and operation of the steering was checked and found to be (Needing Work) an acceptable condition. The installation of the Reduced Effort steering appears to satisfy the Ohio standard 3304-6-05 (H), "Primary Controls / Steering Modifications"

The Reduced Effort brakes were manufactured by _____ (#_____). Installation and operation of the brakes was checked and found to be (Needing Work) an acceptable condition. The installation of the Reduced Effort brake system appears to satisfy the Ohio standard 3304-6-05 (E), "Primary Controls / Braking Modifications"

WHEELCHAIR LIFT & TRANSFER SEAT CIRCUITS

The Electrical System installation and operation, ~~including a Secondary Battery~~, was checked and found to be (~~Needing Work~~) an acceptable condition. The installation of the electrical system appears to satisfy the Ohio standard 3304-6-12, "Vehicle Electrical Modifications"

The OEM throttle operation was checked and found to be ~~(Needing Work)~~ an acceptable condition.

The OEM / modified Exhaust System installation and operation was checked and found to be ~~(Needing Work)~~ an acceptable condition.

The Fuel System installation and operation was checked and found to be (Needing Work) an acceptable operating condition. The modified _____ (full size) minivan utilizes an OEM (Transfer Flow / _____) fuel tank _____ mounted aft (In Front) of the rear axle. The installation of the Fuel System appears to satisfy the composition of Ohio standard 3304-6-11, "Fuel Delivery System Modifications".

The steering column was extended ___ inches by_____. Installation and operation of the steering column was checked and found to be an (Needing Work) an acceptable condition. The installation of the steering column appears to satisfy the Ohio standard 3304-6-05 (G), "Steering Column Extension"

The wheelchair / scooter hoist was manufactured by _____, model _____(#_____). Hoist controls were located on the _____ and operated (Improperly) correctly. The docking device was a _____. Operation of the hoist was checked and found to be (Needing Work) an acceptable condition. The Installation of the hoist appears to satisfy the composition of Ohio standard 3304-6-08, "Wheelchair / Scooter Handling Devices".

CLOSING

To the best of the engineer's professional opinion knowledge and belief the above findings have been offered. The opinions are based on the inspection of the ___ _ vehicle and an engineering analysis of the facts as presented. Should any additional facts or information be discovered subsequent to this report, the writer reserves the opportunity to evaluate the new facts and access how they may affect the opinions stated.

Submitted By,
Ingenium Engineering Services

George W. Hicks, P.E.
(Ohio Professional Engineer #E-64710)

HIGHLIGHTS OF EXAMPLE C TEXT

Ingenium Engineering Services

Engineering & Science Consultants

REHABILITATION VEHICLE MODIFICATION AFTER-CHECK REPORT

VEHICLE TYPE: 2017 CHEVROLET EXPRESS VAN

MODIFICATIONS:

1. WHEELCHAIR LIFT — SIDE CARGO DOOR(S)
2. POWER DOOR OPERATORS (W/ REMOTE CONTROL)
3. Q'STRAINT WHEELCHAIR TIE DOWN — TRANSFER SITE
4. B&D INDEPENDENCE TRANSFER SEAT BASE — DRIVER
5. HOWELL VENTURES PUSH/RIGHT ANGLE HAND CONTROL — LEFT HAND
6. HOWELL VENTURES STEERING SPINNER KNOB — RIGHT HAND
7. HOWELL VENTURES ACCELERATOR & BRAKE PEDAL GUARD
8. HOWELL VENTURES PARK BRAKE EXTENSION
9. REPOSITION REAR BENCH SEAT
10. HOWELL VENTURES TURN SIGNAL EXTENSION
11. WHEELCHAIR FLOORING

GENERAL CONSIDERATIONS:

Overall the vehicle appeared to be in an acceptable condition. However, the following were items that needed attention:

1. THE BRAUN DOOR OPENER TIE ROD LOCK NUTS WERE TIGHTENED
2. THE ELECTRICAL POWER CONNECTION AT THE BATTERY WAS TIGHTENED
3. THE TURN SIGNAL CROSSOVER LEVER WAS ADJUSTED TO ELIMINATE AN INTERFERENCE

The client demonstrated her capability to operate the equipment installed. Any problems or added training that may be required is listed below.
NONE SEEN, HS ROBERTS USE EQUIPMENT STATICALLY GOOD. SHE DROVE WITH CONTROLS GOOD. SHE DOES NEED TO PRACTICE DRIVING TO LEARN THE FEEL OF THE NEW VAN & CONTROLS.

RECHECK:

NONE REQUIRED — EQUIPMENT PRESENT AND FUNCTIONAL

CLOSING:

To the best of the engineer's professional opinion, knowledge and belief, the above findings have been offered. The opinions are based on the inspection of the vehicle and an engineering analysis of the facts as presented. Should any additional facts or information be discovered subsequent to this report, the writer reserves the opportunity to evaluate the new facts and assess how they may affect the opinions stated.

Submitted by,

Ingenium Engineering Services
George W. Hicks, P.E.
(Ohio Professional Engineer #E-64710)

EXAMPLE D1

FUNCTIONAL INSPECTION / FOLLOW-UP TRAINING REPORT

Client Name: Jane Doe
Diagnosis: SCI Incomplete C3-C4
Soundex:
D.O.B.:
Dates of Assessment:
Referral: DORS-

Summary and Recommendation: This client is a 37 y.o. VR consumer known to this evaluator for >6 years at this point. I have seen the consumer in her initial Toyota Sienna minivan with primary drive equipment failure back in 2012 in addition to a reassessment in 2015. Changes were made to keep her driving in 2015 without the need for high tech driving controls. The consumer's driving reassessment in 2015 and 2016 recommended a new wheelchair for the consumer to drive from for safety and ease of ingress/egress. She has been working on this since 2015 per report and continues to drive daily and sits in a rear drive wheelchair without proper armrests on the chair, seatback height, or headrest support. Jane Doe has never been in an appropriate power chair for driving based on the dual post armrest setup, current back support, and lack of a head rest for cervical support or protection in an accident. She has been working with Medicaid over the last three years and has in fact been evaluated at the NRH seating clinic for a mid-drive hair with canter lever armrests, elevating seat features, contoured back support, and headrest. She has not received the chair and continues to face barriers to this day.

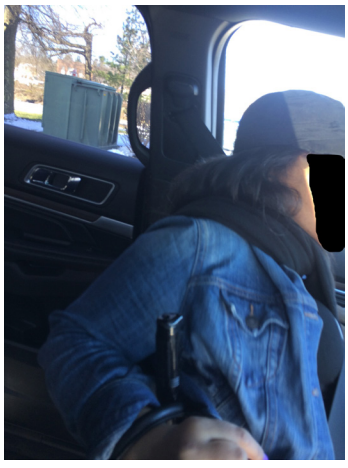
I was asked to evaluate her ability to drive a Ford Explorer SVM conversion which was completed on 12/15/2016. This was after the fact she had been evaluated at NRH seating clinic and was "supposed" to be receiving her new power chair for the future. The vehicle and conversion suited her needs barely for ingress based on the turning radius of a rear drive wheelchair and the way she sits in the chair. The premise of moving forward on this vehicle was up in the air based on her funding situation and the fact that Braun would not convert a consumer purchased chassis. I was asked to submit a VEAPA in April of 2017 knowing that the process can take upwards of a full year for van conversion or VR modifications for a wheelchair driver. I have not had any communication with the consumer since our visit on 12/15/2016. Her "wheelchair specification" page of her VEAPA was not completed because we did not have a new wheelchair to measure at that time.

Jane Doe's vehicle was completed with all primary, secondary, and auxiliary control functions and inspections were requested. I did evaluate the vehicle, adaptive equipment, and consumer today and was shocked that she is still sitting in her old Invacare Torque SP wheelchair. The chair has not changed and the condition of the chair has not improved to say the least. Jane Doe drove to her appointment today in her old Sienna and required assistance for us to let her out considering her door will not open and her ramp will not deploy without assistance from the outside.

The vehicle is lovely and the vendor did a fantastic job with following the prescription for primary, secondary, and aux. functions in the vehicle. The problem with the vehicle is Jane Doe is still sitting in a wheelchair that places her too far back without proper armrests, back support, and head support. My hope was she would obtain a proper wheelchair that sits her up better and much safer to drive from. Dual posts armrests do not permit the OEM shoulder lap belt to secure the occupation over the waist, but instead bridges over the armrests (see photo below). Canter lever armrests are a must so that the lap portion of the belt secures the consumer from "submarining" under the belt if ever in an accident. The alternative of this is a lap belt that is crash tested that is anchored to the chair and a drive in 2 point. Jane Doe's seatback is too low in my opinion and she does not have any contour or lateral built in for lateral support to drive from. There is no headrest attached to this chair which would be a significant risk if she were to be struck from behind. Jane Doe can enter and drive the van as intended with primary drive modifications to the hand controls, secondary controls activated with voice scan using a jellybean switch on the door, electric PB, electric shift, etc. Adjustments to the drive controls were completed by a XXXXX NMEDA QAP-accredited dealer technician to correct the resting handle position of the V-grip and acceleration pivot point. Jane Doe drove around the Mobility Works complex, Route 1, and surrounding areas with this evaluator. The consumer's steering is adequate for left/right turns using a Tripin with counter-weight for balance. The consumer can secure her wheelchair into an EZ lock wheelchair docking station with independence.

The vehicle itself is lovely and will suit her needs, however her wheelchair will not protect her in an accident. I am recommending she either switch to canter lever armrests on this chair, change the seatback for upper thoracic height, and add a headrest for safety. Changes to this chair are needed for safety if ever in an accident. It is not ok to drive in a manner that one has always driven in, unless they are to accept the risk that they would not be protected if ever in an accident. I would like to see Jane Doe follow through with getting a new mid-drive grade III rehab seating chair with proper back support, head support, and canter lever armrests. Below are the comparison photos of a recent WV VR case who was able to procure a proper wheelchair to drive from with a van modification. Please feel free to contact me with any questions.

“Grade III with proper back, head, and canter lever armrests”



“Improper seatback, head support, dual post armrests”

Thank you, **3/26/2018**

EXAMPLE D2

FUNCTIONAL INSPECTION / FOLLOW-UP TRAINING REPORT

Client Name: Jane Doe
Diagnosis: SCI Incomplete C3-C4
Soundex:
D.O.B.:
Dates of Assessment:
Referral:

Summary and Recommendation: This client is a 37 y.o. who received a follow up consultation to her new lowered floor SUV conversion today. The consumer has driven the vehicle for approximately two weeks now and had some initial complaints of fatigue and discomfort while driving. The consumer returned to XXXXXXX NMEDA QAP-accredited dealer last week and had her telescoping wheel brought all the way out and lowered some with the hand controls adjusted. The consumer has been driving the vehicle all week with the new adjustments and reports no more pain or discomfort. The consumer had a list of issues that were addressed that fall under the category of "adjustments" for better ease of operation and endurance when driving.

- The consumer needs a custom rigid seatbelt extension increased in height by 6" based on the current chair she is driving from and the armrest style that is on the chair. This will need to be a custom application as she is currently using the standard rigid seatbelt extension from Braun.
- The Consumer's Jellybean switch to activate voice scan needs to be mounted on a bracket affixed to the door approximately 3" up from armrest and 3" out from the door. This was measured with the consumer indicating placement for the Jellybean switch.
- The consumer would like the Crescent voice scan doubled with regards to speed. She would also the like the order changed to the following: dimmer, horn, left turn, right turn, wipe, wash, driver window.
- The consumer would like the audible EZ lock alarm turned off and utilize the green light–red light as the only indicator. (Consumer is willing to sign any waiver).
- EMC power headrest to be mounted and positioned to consumer. The consumer would like the headrest mounted with a ceiling bracket in lieu of a "B" pillar bracket per email from consumer on 04/23/2018.
- Cruise control is no longer an issue as the vendor has mounted raised tabs and is able to use her left hand to set cruise as demonstrated on 04/13/2018.

The consumer was met at XXXXXXX NMEDA QAP-accredited dealer by this evaluator. XXXXXXX was involved with the adjustment requests from the consumer. The consumer is driving the vehicle daily and reports increased comfort and tolerance with the adjustments that have already been made. The SUV will need to be dropped off at the dealer and the consumer will need to follow up with Mobility Works for their work schedule and time frames for adjustments. Please feel free to contact me with any questions.

EXAMPLE D3

FUNCTIONAL INSPECTION / FOLLOW-UP TRAINING REPORT

DRIVABILITIES
A Division of Innovative Therapy Services Inc.

224 North Hite Ave.
Louisville, KY 40206
Phone (502)893-0050 / Toll free Fax 866-903-0049
Email-briani@drivabilities.net

Client Name: XXXXXXX Date: 12/13/17

Client # XXXXXX

Ms. X is a 43-yr. old female client of the Indiana Office of Vocational Rehabilitation. She will use a power wheelchair for mobility with her van and will transfer to a 6-way power transfer seat in the Driver position. Her wheelchair will be secured via an Ez-Lock Tie-down located in the midsection of the van. The client's new vehicle is a 2017 Chrysler Pacifica Touring L +, minivan. The equipment and vehicle modifications are detailed in the Vehicle Modification Evaluation/Prescription with the driving/operator components consisting of Gas/Brake via a Sure-Grip-Featherlite Push/Right Angle Hand Control operated by Left hand and Steering via an MPD Spinner Knob Steering device @ 2 o'clock position for Right hand with factory effort steering. Ms. X participated in driver training, equipment selection and vehicle modification evaluation fittings at the vehicle modifier's location (XXXX) on August 10th and September 7th. On December 13th the client also participated in a vehicle fitting, orientation, driver training and functional inspection at the vehicle modifier location (XXXX) with the following results. The client was oriented and instructed on entering/exiting her vehicle and the proper operation of her modified van. The client then independently returned demonstration of the proper operation including securing her wheelchair. There were several adjustments required throughout the session to obtain the proper positioning of the client with regard to the operator controls. This was achieved through adjustments to the controls, control mounts and transfer seat base platforms. The client also participated in behind the wheel driver training on December 13th in her new van. The client drove on 2 lane, 4 lane, multilane road-ways and expressways (Lake Shore, Timber wood, Florian, Moser, Watterson, Shelbyville, I-265, I-64, Hurstbourne & Linn station) with speed limits range of 25 to 65 mph and traffic varying from moderate to heavy due to the location and the time of day. Ms. X continued to display good visual checks at intersections and use of mirrors for blind spot checks safely. Ms. X displayed good reaction times and the ability to search, identify, predict, decide, and execute to avoid potential hazards on the road way. She demonstrated good speed adjustment and proper following distances throughout using the Sure-Grip FeatherLite Hand controls. At the completion of driver

training on December 13th, 2017 the client demonstrated the required skills to operate the vehicle independently in a safe and responsible manner. Note: These results should be viewed as an indication of the client's functional driving ability at the time of the training/evaluation session.

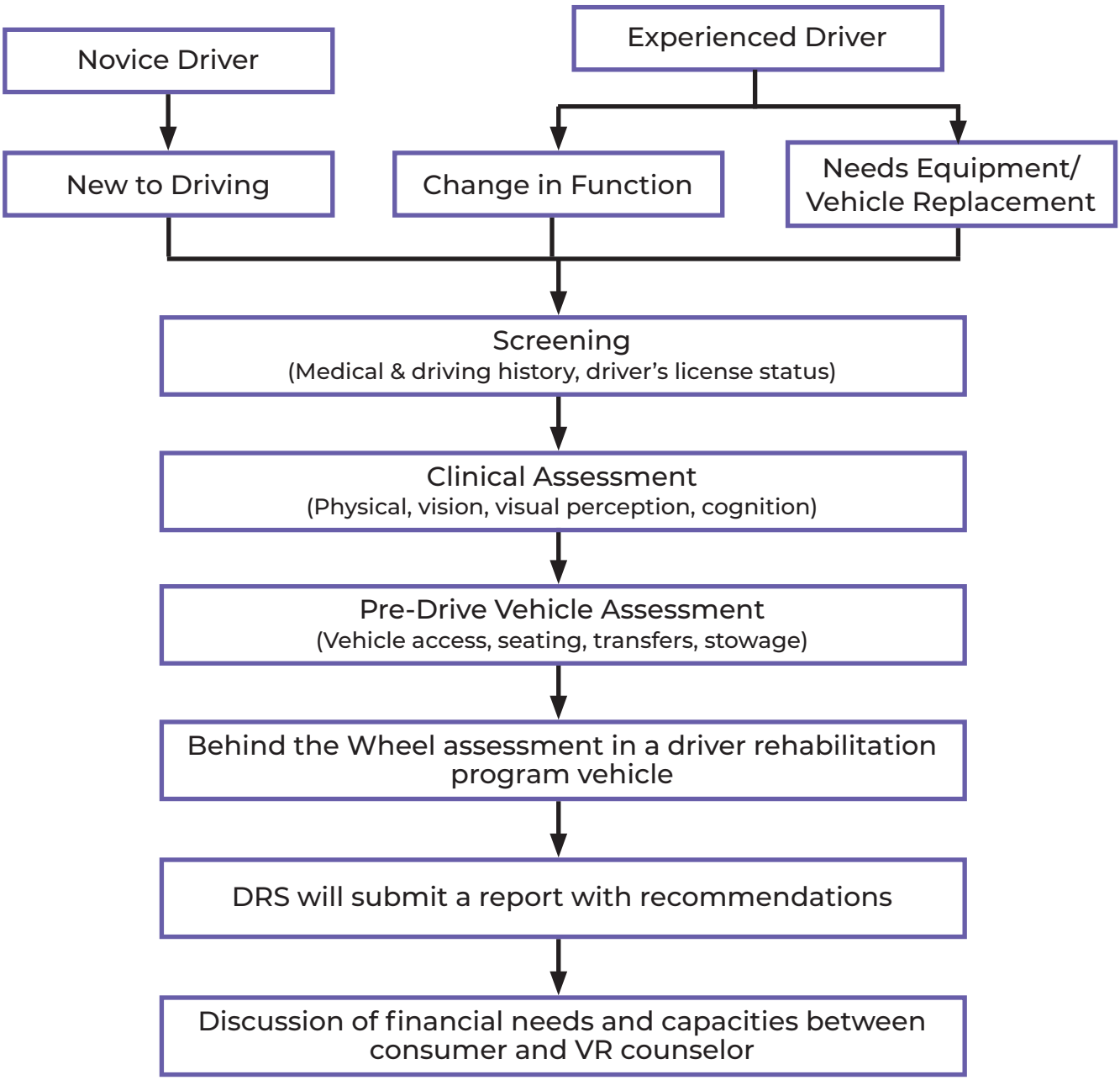
Recommendations:

- License Restrictions; Continue with current Restrictions= A) Glasses/Contacts, D) Automatic Transmission, U) Power Steering, 4) Special Restriction.

Brian A. Iadarola OTR/L, CDRS, 12/13/17
Occupational Therapist
Certified Driver Rehabilitation Specialist

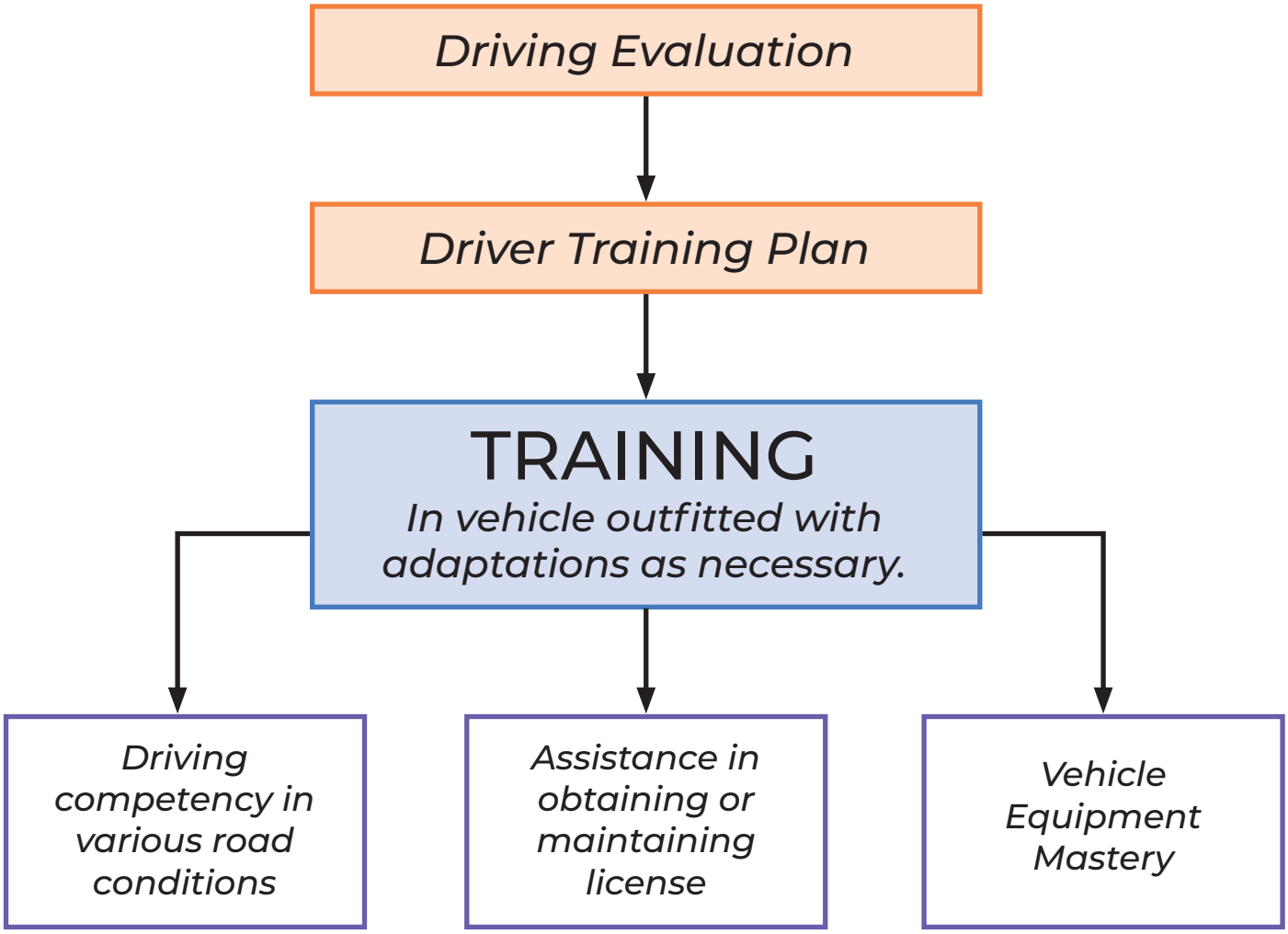
FLOWCHART 1

Driving Evaluation By Driver Rehabilitation Specialist (DRS)



FLOWCHART 2

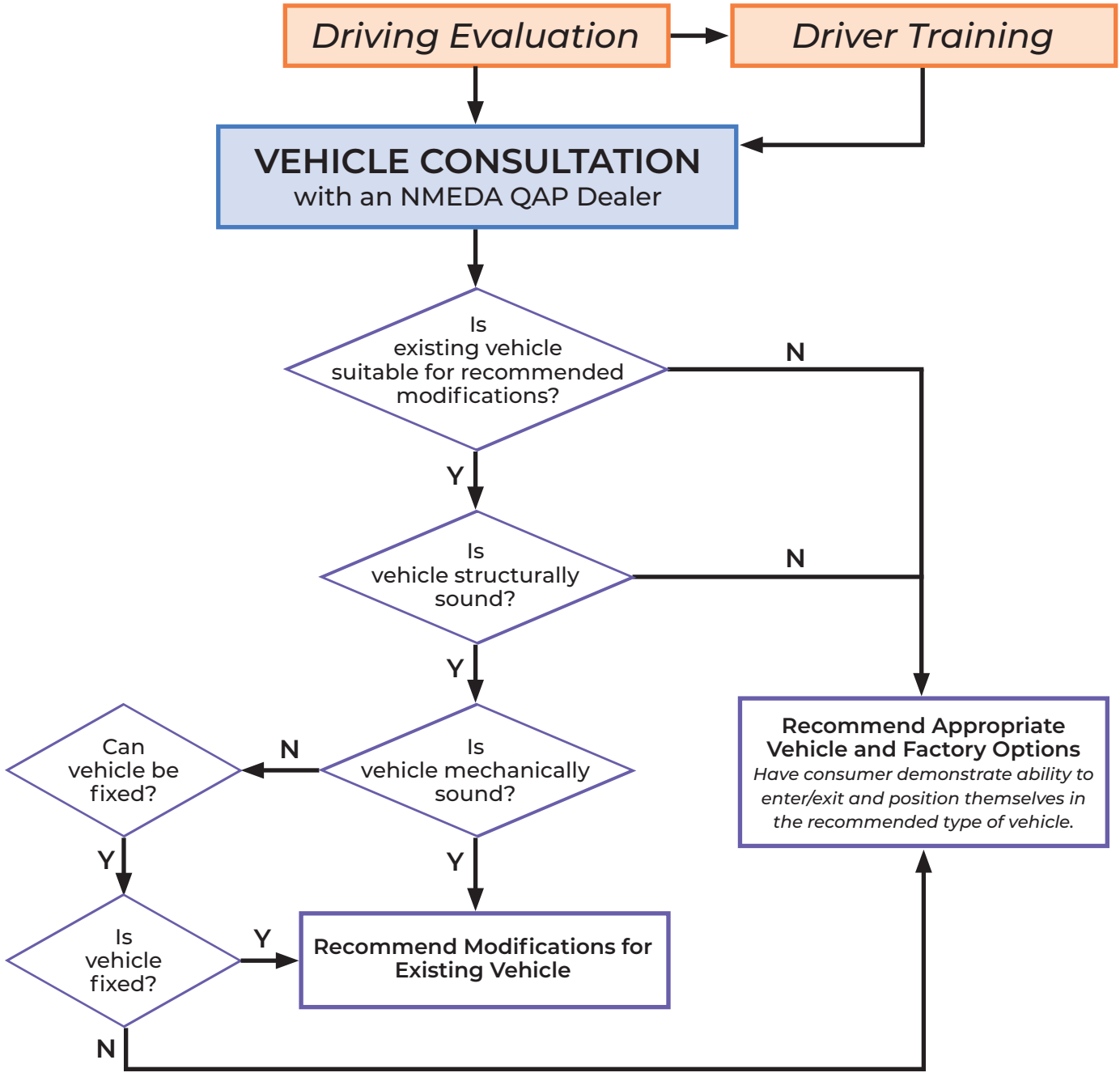
Driver Training



Orange boxes are previous steps | *Blue boxes are current steps*

FLOWCHART 3

Vehicle Consultation with Driver Rehabilitation Specialist, Consumer and NMEDA QAP-Accredited Dealer



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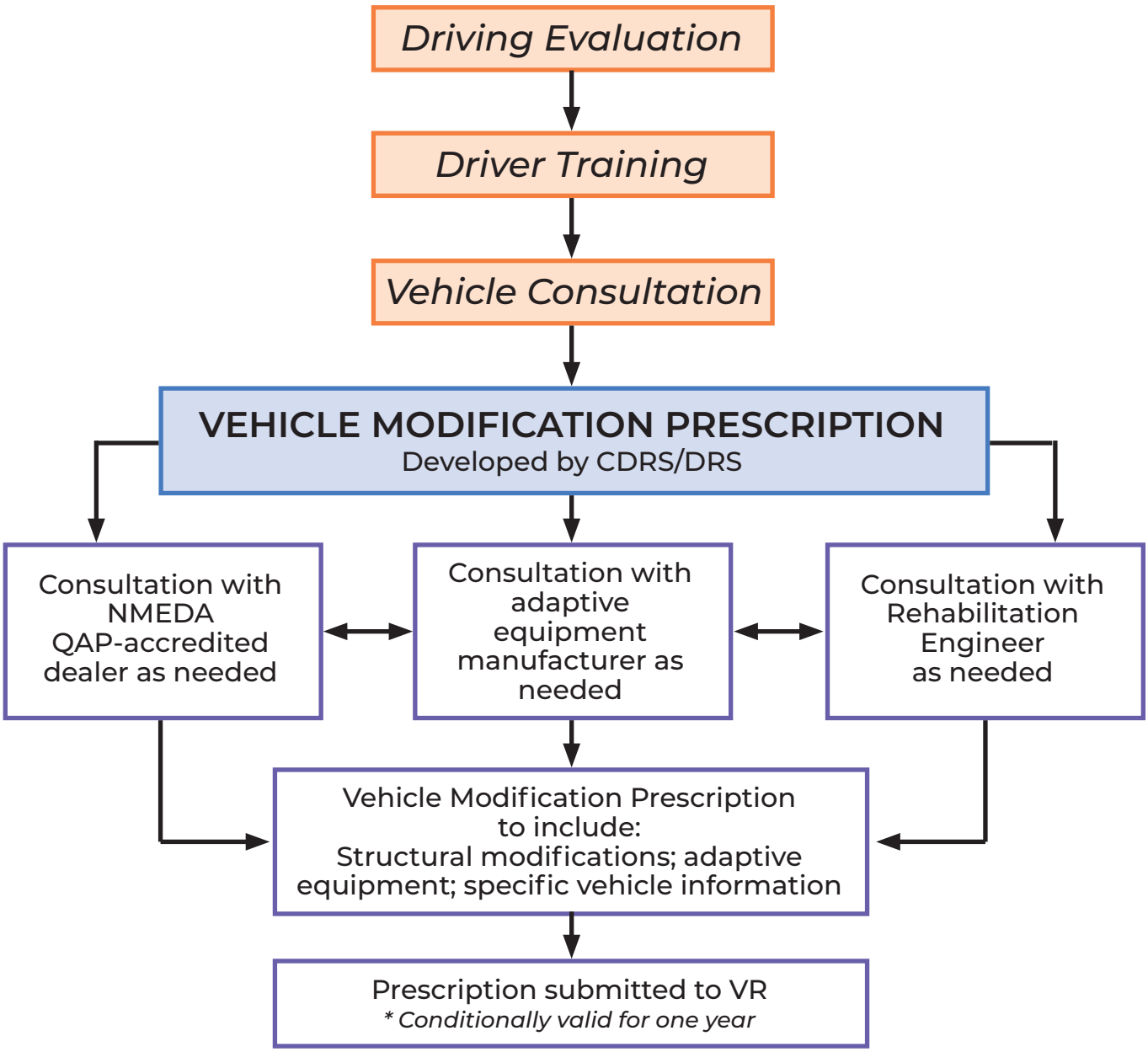
FLOWCHART 4

Vehicle Modification Prescription



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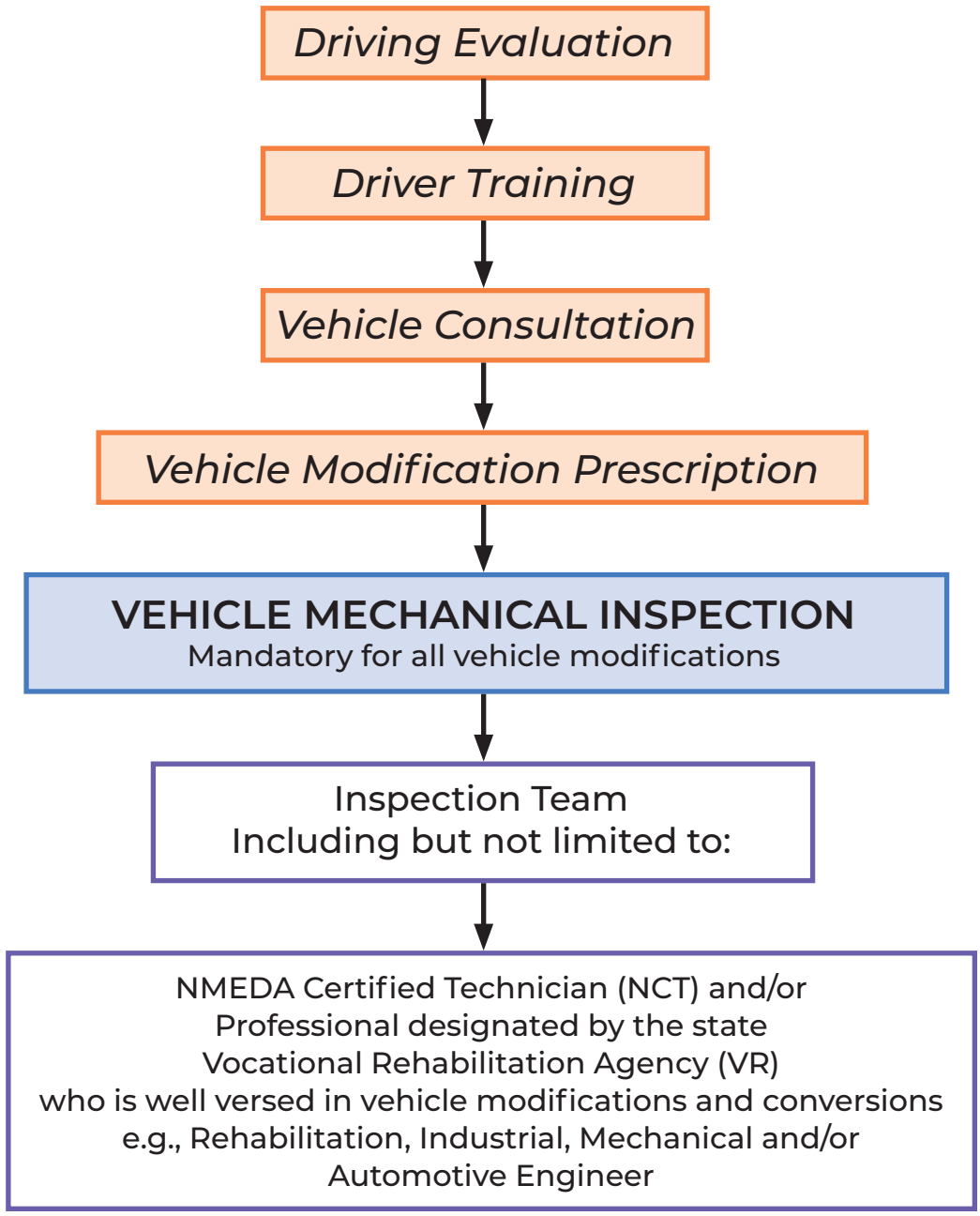
FLOWCHART 5

Vehicle Mechanical Inspection



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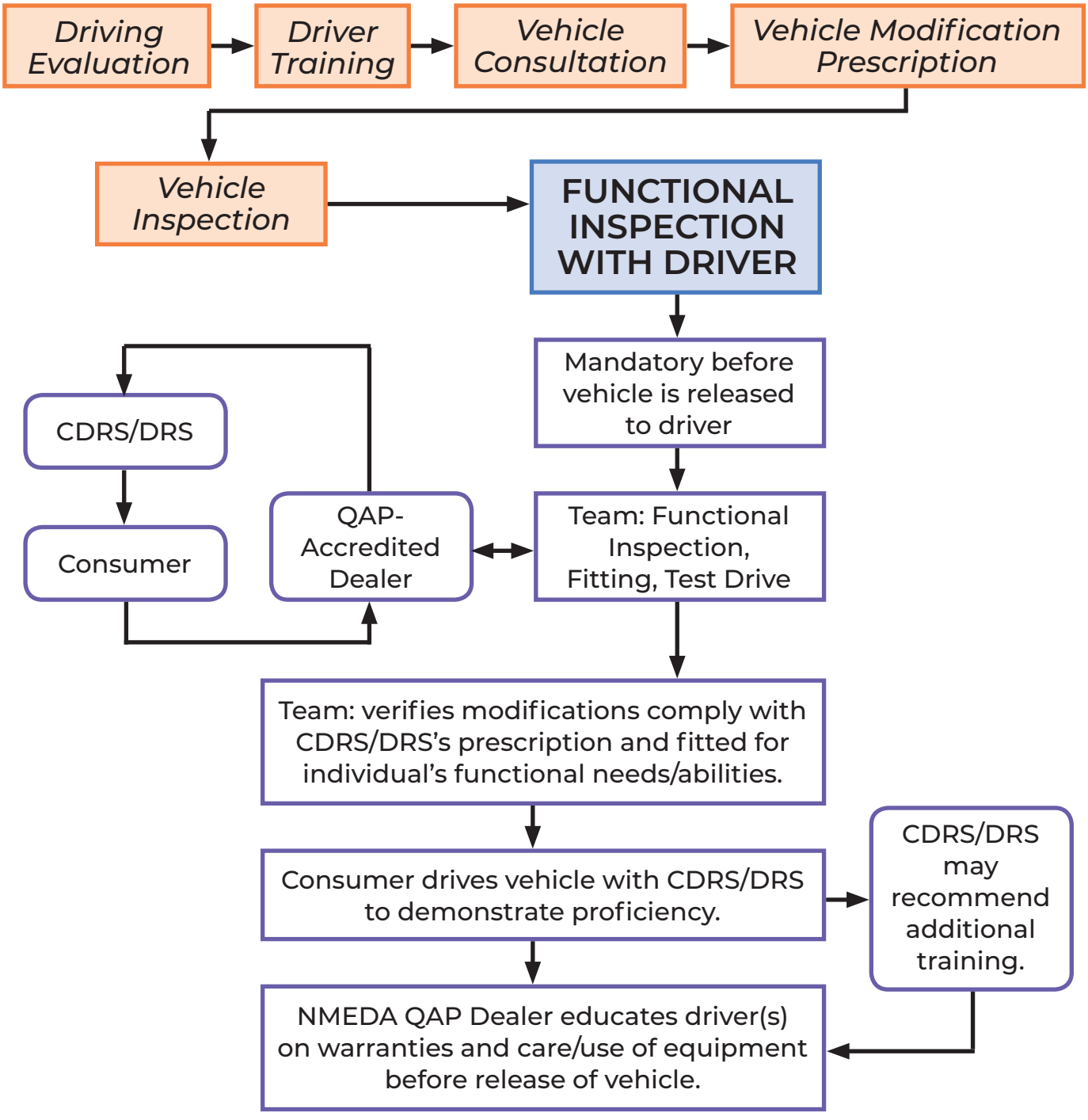
FLOWCHART 6

Functional Inspection, Fitting, and Test Drive



Orange boxes are previous steps | *Blue boxes are current steps*