BEN HILL COUNTY RURAL PUBLIC TRANSPORATION

VEHICLE PREVENTIVE MAINTENANCE

POLICY AND PROCEDURES

DATE 3/02/2020

BEN HILL COUNTY

VEHICLE PREVENTIVE MAINTENANCE POLICY AND PROCEDURES

POLICY STATEMENT

It is the policy of Ben Hill County that all vehicles be maintained to ensure safe, reliable, comfortable, accessible and cost-effective public transportation services to meet all service commitments. The following preventive maintenance policies and procedures are adopted and issued to ensure that appropriate, necessary, and required vehicle maintenance takes place.

PURPOSE

The plan establishes policies and procedures, assigns responsibilities, provides guidance and defines requirements for routine maintenance inspections and services of all 5311 vehicles.

APPLICABILITY

This plan is applicable to all FTA Federally funded vehicles and equipment.

GENERAL PROGRAM OBJECTIVES

- A. To achieve maximum efficiency in the operation and use of transit vehicles throughout their life cycle five (5) years or 150,000 miles.
- B. Ensure use and maintenance of equipment is in compliance with this plan and FTA requirements.
- C. Ensure maintenance personnel and equipment operators are familiar with and adhere to the procedures as outlined in this plan.
- D. Ensure maintenance of equipment is sustained at the highest level practical and in state of good repair to enable positive response to all transportation needs.
- E. Ensure early detection of equipment faults by operators performing pre-trip inspections which will assist in ensuring timely repairs

RESPONSIBLE PARTIES

MAINTENANCE DIRECTOR

The Maintenance Director is responsible to ensure that all maintenance is performed as prescribed in the attached appendices of this policy. The Maintenance Director is also responsible for maintaining accurate maintenance records and maintaining a separate maintenance folder for each

vehicle. The Director should ensure that any repairs that can be covered under the vehicle warranty are taken to the appropriate vender. The Maintenance Director is also responsible in ensuring that the out of service form (Appendix E) is kept up to date on all vehicles and that vehicles with a lift problem, if not fixed in the prescribed time, is taken out of service in accordance with FTA Regulation.

VEHICLE OPERATORS

Vehicle operators (drivers) will be required to perform a daily pre- and post-trip and lift inspection of their vehicles (see Appendix A for inspection forms).

Pre- and Post-Trip Inspections (Vehicle)

Vehicle operators will perform a daily pre-trip inspection, including cycling the wheelchair lift (if so equipped). This pre-trip inspection will be recorded on the Pre-Trip form (Appendix A) daily – dated and signed, and these forms will be provided to the local office (daily, if possible, but no less often than weekly for vehicles that are garaged away from the office) to be scanned and filed.

At the end of the service day, the operator will also perform the post-trip inspection noting any vehicle deficiency or damage to the vehicle. The post-trip inspection, if it notes any condition that could affect the safety of operation or a reason that would render the vehicle inoperable for service the following morning, should be immediately provided to the Maintenance Director.

If the pre- or post-trip inspection identifies problems that potentially affect the immediate usability of the vehicle (failure to start and operate normally, brake problems, critical levels of fluids, tire problems, damage to glass or doors, lift failure, etc.), the Maintenance Director will be notified immediately, a work order developed and signed, and the vehicle taken to the shop for diagnosis and repair. If repair cannot be made to allow the vehicle to meet its schedule, the Maintenance Director will take steps as needed to reschedule trips in the immediate short term, and then obtain a GDOT lease replacement vehicle. Items that can wait for scheduled maintenance should be noted on the inspection form as well and added to the developing work order for future repair.

Preventive Maintenance

Chassis: All vehicles will have scheduled preventive maintenance performed as called for by FTA, GDOT, and County policy. Ben Hill County will follow the recommended maintenance schedule, which is based on the manufacturer's recommended schedule, to ensure meeting the warranty requirements. These maintenance recommendations are attached in Appendix B. There are three levels of checks. The "A" check is performed most frequently 5,000 miles for gasoline engines and 5,000 for diesel engine vehicles.

Level A – Conducted at 5,000 miles (+ or -10%) intervals. Change engine oil and filter, rotate tires as needed, lubricate all fittings, check all fluid levels, check lights, check wipers, check tires and tire pressure, check belt/hoses, brakes, fire extinguishers, replace wiper blades, tires, brakes and air filter as needed, etc.

Level B – Conducted at 30,000-mile intervals. All items in Level A, plus inspection and repack of wheel bearings, except front hubs with sealed bearings, change transmission fluid, and extensive inspection of braking system.

Treventative Maintenance Devels				
PM Level	Cumulative Mileage	PM Description		
А	5,000	А		
А	10,000	А		
А	15,000	А		
А	20,000	А		
А	25,000	А		
В	30,000	A + B		
А	35,000	А		
А	40,000	А		
В	45,000	А		
А	50,000	А		
А	55,000	А		
D	60,000	A+B		

Preventative Maintenance Levels

Repeat the schedule

Note: Replace spark plugs and service transmission every 100,000 miles.

Lift Maintenance: All vehicles with a wheelchair lift will have the lift checked daily by cycling the lift as part of the pre-& post-trip inspection. Lift function will also be checked at each chassis maintenance inspection (A, B, and C). Lift maintenance schedules will follow the manufacturer's schedule, which is presented in Appendix C. Lift maintenance is performed based on the number of cycles of the lift (not miles or time). The lift post trip inspection forms have a block where you are to record the total number of cycles done each day. New lifts have a counter that shows the number of cycles. The vehicles that do not have counters, the driver will have to keep track of the total cycles and record it at the end of the day on the post trip inspection form. The Maintenance Director will keep track of the total cycles to ensure maintenance of the lift is performed on time.

Body Maintenance: All vehicles will be kept clean and sanitary, through regular interior cleaning and washing. Vehicles should be swept, and trash disposed of at the end of each service day or driver shift. Each vehicle should be completely washed at least once a month. A general inspection of the body should be conducted at this time, and any defects or issue identified and reported. These could include body damage, cracked glass, window and door operation, functioning of escape hatches, heating and air conditioning, seat tears or vandalism, seat-belts (if available), mirrors/brackets, steps/treads, fire extinguisher mounting and charge, and handholds and racks (loose or broken). Vehicles with Goshen bodies have additional body-related maintenance performed at the "A" check, at 12,000 miles, and at the "C" check. Appendix D presents the body maintenance check items. Of particular importance is the 3,000-mile check of exterior caulk and seams for damage. If cracking, separation, or leaks are noted, the affected areas should be re-caulked to maintain the warranty. If the inspection by the driver or the shop

finds any of these conditions, the Maintenance Director should be notified to initiate a work order for body-related repairs.

Scheduling and Priority of Repairs

The Maintenance Director will maintain accurate vehicle maintenance records. He/she will be responsible for notifying the drivers of upcoming scheduled preventive maintenance based on the mileages/cycles of the vehicles as compared to the schedule of required maintenance activities. To further ensure that maintenance takes place as scheduled, the shop will place mileage/time reminder sticker on the vehicle's windshield, and it is responsibility of the driver to note approaching scheduled maintenance and contact the Transit supervisor/director to schedule it, if the Maintenance Director has not already notified the driver.

Priority should first be focused on making any repairs needed to keep the vehicles in service, address safety issues, and provide for complete safe operation of wheelchair lifts. The second priority is scheduled preventive maintenance. It should be noted that the fleet has no spare vehicles, and work may have to take place evenings or weekends.

Warranty Work

It is the policy of Ben Hill County, to have all repairs that are covered by vehicle and equipment warranties paid under the warranty coverage provided. (See Appendix F) The Maintenance Director will ensure that all work potentially covered by warranty, and that it follows procedures to obtain repairs under the warranties. GDOT's vendors are the first contact regarding any potential warranty work. Warranty claims always require documentation of the vehicle history, including preventive maintenance, which is another incentive for performing all the recommended maintenance functions on schedule. If the repair is a potential warranty claim, the Maintenance Director will obtain copies of the vehicle maintenance and repair history and contact the manufacturer's representative. Once the manufacturer's representative has directed the Maintenance Director to the appropriate repair site, that vendor (often a local dealer) will call the manufacturer's representative with their diagnosis and an estimate. This call is made to the manufacturer's Warranty Administrator, who must authorize the repair, designating which warranty will cover the repair, and how much they will pay. *FTA Rolling stock must be maintained exactly as specified by the vehicle owner's manual/warranty conditions while under warranty period.*

Record-Keeping

The Maintenance Director will maintain all vehicle records. Currently these include an electronic file containing all work orders and other documentation of maintenance, previous repairs, and all warranty work. In the future computerized maintenance records program will be adopted for use by the Maintenance Director and Dispatcher.

ROAD CALLS/INCIDENTS

Should a vehicle fail while in service, the vehicle operator should ensure that the vehicle and passengers are safely situated and attempt to contact the Maintenance Director who will contact the repair facility. Depending on the situation and the possible causes, the repair facility may send a service vehicle and technician to make repairs on site or may send a tow vehicle. The dispatcher must be contacted to make arrangements to pickup the passengers and transport them to their destinations. Generally, the driver should not leave the vehicle and/or passengers unattended, unless it is required as the only way to summon assistance.

MAINTENANCE ANALYSIS

The Maintenance Director will perform an annual analysis of maintenance costs, repairs, and road calls/breakdowns by vehicle and for the system in order to identify problem areas, determine trends, support replacement or overhaul decisions, or identify any opportunities for cost savings. This analysis will include development of maintenance costs per mile, repair cost per mile, and mileage between road calls/breakdowns.

APPROVED AND ADOPTED this _____ day of _____, 2020

Steve Taylor, BOC Chairman Ben Hill County

APPENDIX

- APPENDIX- A PRE & POST-TRIP INSPECTION FORM
- APPENDIX B CHASSIS MAINTENANCE
- APPENDIX C WHEELCHAIR LIFT MAINTENANCE
- APPENDIX D BODY MAINTENANCE
- APPENDIX E OUT OF SERVICE FORM
- APPENDIX F WARRANTY

APPENDIX A:

PRE- & POST- TRIP INSPECTION FORM

Pre-Trip Inspection Form	Post-Trip Inspection Form			
Date: Vehicle No. _Mileage:	Date: Vehicle NoMileage:			
Inspect and \checkmark OK or PROBLEM	Inspect and ✔ OK or PROBLEM			
Use Note to clarify Problem OK Problem UNDERHOOD: Oil Level Radiator Level Radiator Level Windshield Washer Level Battery Battery Hoses/Belts Coolant Lea Motes Coolant Lea Notes Coolant Lea Notes Fries Turn Signals Fries Head Lights Fries Marker Lights Fries Marker Lights Fries Marker Lights Fries Mirrors Fries Mirrors Fries Doors Fries Cleanliness Pace an X to indicate	Use Note to clarify Problem OK Problem UNDERHOOD: Oil Level Radiator Level Radiator Level Battery Battery Hoses/Belts Coolant Lea Coolant Lea Notes Coolant Lea Notes Fires Turn Signals Fires Head Lights Fires Marker Lights Fires Mintrors Fires Mintrors Fires Mintrors Fires Mirrors Fires Notes Fires			
OK Problem INTERIOR: Image: Image of the system Brakes & Parking Brake Image: Image of the system Steering Image of the system Transmission Image of the system Mirrors Image of the system Mirrors Image of the system Gauges (incl. Fuel) Image of the system Cleanliness Image of the system Heater/AC Image of the system Horn Image of the system Step-well & Dome Lights Image of the system Wheel Chair Restraint System Notes_ Image of the system	OK Problem INTERIOR: Image: Image			
OK Problem SAFETY EQUIPEMENT: Accident Kit Accident Kit Fire Ext. Charged Fire Ext. Charged Flares/Triangle First Aid/Bloodborne Kit Back-Up Alarm Back-Up Alarm Seat Belt Cutter Seat Belt Cutter	OK Problem SAFETY EQUIPEMENT: Accident Kit Accident Kit Fire Ext. Charged Fire Ext. Charged Flares/Triangle First Aid/Bloodborne Kit Back-Up Alarm Back-Up Alarm Rear Door Buzzer Seat Belt Cutter Notes			

Driver Signature	
	Transit/Maintenance Supervisors Initials when repairs are
Transit/Maintenance Supervisors Initials when repairs are	completed
completed	
LIFT INSPECTION SHEET	

For BUS#

Number of lift cycles from the previous day:

Before each scheduled day of service, operate lift a minimum of one complete cycle and inspection each of the following:

PRE	POST	ITEMS TO BE CHECKED TWICE A DAY	PROBLEMS?
		Does the lift interlock (if equipped) function as intended?	
		Does the lift cargo light (if equipped) function as intended?	
		Does the lift deploy when the lift interlock is activated as intended?	
		Does the lift safely clear the cargo door as the lift is deployed and stowed?	
		Does the lift operate smoothly (no jerking or abnormal movements)?	
		Does the lift operate at normal speed?	
		Does the roll stop(s) operate properly?	
		Does the outboard roll stop latch operate properly?	
		Does the hand rail operate properly?	
		Is the platform angle normal?	
		Is the lift quite (no rattles, abnormal sounds, etc.)?	
		Has the hand-held switch box cable been damaged?	
		Do the lift control switches function properly?	
		Does the lift cargo door Securement devices function as intended?	
		Is the manual back-up pump handle in place?	
		Is the hand pump valve closed securely (tight)?	
		Are the lift-posted and door-posted decals worn, missing, or illegible?	
		Is the protective padding (if equipped) in place, worn, or damaged?	
		Can you visually detect any lift damage, misalignment?	
		Hydraulic leaks, loose, bolts	
		Broken wields or any abnormal conditions	
Post-Trip: 1	Number	of Lift Cycles for the day Running total of cycles:	

Signature: _____ Date: _____

APPENDIX B:

VEHICLE CHASSIS MAINTENANCE SCHEDULES

A-CHECK: 5,000 MILES FORD CHASSIS INSPECTION/LUBRICATION

Service: Gasoline Fueled Vehicles-Every 5000, 10000, 15000, 20000, 25000 Miles (including multi-point inspection listed below)

- Change engine oil and filter
- Inspect tires:
 - Measure tire tread
 - Check tire pressure against manufacturer's recommendations
 - Rotate tires if vehicle has same wheels front and rear ____
 - Torque lug nuts
- Check Battery Electrolyte level
- Lubricate front lower control arm and steering linkage ball joints

Multi-point Inspection:

- Road Test vehicle for performance and handling
- Review driver's reports (pre-trip inspection, post-trip repair recommendations) and maintenance history
- Check first aid kit, flares, fire extinguisher, and safety triangles
 - Check and top up fluid levels:
 - Brake fluid
 - Coolant recovery reservoir
 - Manual and automatic transmission (if equipped with a dipstick) ____
 - Power steering fluid
 - Window washer
- Inspect tires for wear and check air pressure, including spare
- Check exhaust system for leaks, damage, loose parts and foreign material

- Check battery performance, level of electrolyte (if not a sealed battery design)
- Check operation of horn, exterior lamps, turn signals and hazard warning lights ____
- Check radiator, coolers, heater and air conditioning hoses
- ____ Inspect windshield washer spray and wiper operation
- Check windshield for cracks, chips, and pitting
- ____ ____ Inspect for oil and fluid leaks
- Inspect engine air filter
- Inspect half shaft dust boots, if equipped.
- Check shocks and struts and other suspension components for leaks and damage ____
- Inspect steering and linkage ____
- Inspect accessory drive belt(s) ____
- Inspect clutch operation, if so equipped.

Service: Gasoline Fueled Vehicles—Every 30000, 60000, 90000 Miles (including multi-point inspection listed below)

- Change engine oil and filter
- Inspect tires: ____
 - Measure tire tread
 - Check tire pressure against manufacturer's recommendations ____
 - Rotate tires if vehicle has same wheels front and rear ____
 - Torque lug nuts
- Check Battery Electrolyte level
- Lubricate front lower control arm and steering linkage ball joints

Multi-point Inspection:

- Road Test vehicle for performance and handling
- Review driver's reports (pre-trip inspection, post-trip repair recommendations) and ____ maintenance history
- Check first aid kit, flares, fire extinguisher, and safety triangles
- Check and top up fluid levels: ____
 - Brake fluid
 - Coolant recovery reservoir ____
 - Manual and automatic transmission (if equipped with a dipstick)
 - Power steering fluid
 - Window washer ____
- Inspect tires for wear and check air pressure, including spare
- Check exhaust system for leaks, damage, loose parts and foreign material
- Check battery performance, level of electrolyte (if not a sealed battery design)
- Check operation of horn, exterior lamps, turn signals and hazard warning lights

- Check radiator, coolers, heater and air conditioning hoses
- Inspect windshield washer spray and wiper operation ____
- Check windshield for cracks, chips, and pitting
- Inspect for oil and fluid leaks
- Inspect engine air filter
- Inspect half shaft dust boots, if equipped.
- Check shocks and struts and other suspension components for leaks and damage
- Inspect steering and linkage
- Inspect accessory drive belt(s) ____
- Inspect clutch operation, if so equipped ____
- Inspection and repack of wheel bearings, except front hubs with sealed bearings, change transmission fluid, and extensive inspection of braking system.

APPENDIX C:

WHEELCHAIR LIFT MAINTENANCE SCHEDULE

Inspect and Service Wheelchair Lift (Braun Recommendation-750 Cycles)

- ____ Lubricate (apply light oil) outer barrier hinge pivot points (2)
- _____ Lubricate (apply light oil) outer barrier latch (pivot/slide points)
- ____ Lubricate (apply light oil) outer barrier latch level pivot points
- ____ Lubricate (apply light oil) to Lift-Tite latches (tower pivot points-2)
- ____ Lubricate (apply light oil) to Lift-Tite latch gas (dampening) spring pivot points (2 springs, 4 points)
- Inspect Lift-Tite latches and gas springs for wear or damage (bent, deformed or misaligned), positive securement (external snap rings) and proper operation—resecure, replace defective parts or otherwise correct as needed.
- Inspect outer barrier for proper operation—correct or replace defective parts.
- ____ Inspect outer barrier latch for proper operation, positive securement, and detached or missing spring—correct or replace defective parts and/or relubricate.
- ____ Inspect lift for wear, damage, or any abnormal condition—correct as needed.
- ____ Inspect lift for rattles—correct as needed.

Inspect and Service Wheelchair Lift (Braun Recommendation-1500 Cycles)

- ____ Lubricate (apply light oil) outer barrier hinge pivot points (2)
- ____ Lubricate (apply light oil) outer barrier latch (pivot/slide points)
- ____ Lubricate (apply light oil) outer barrier latch level pivot points
- ____ Lubricate (apply light oil) to Lift-Tite latches (tower pivot points-2)

- Lubricate (apply light oil) to Lift-Tite latch gas (dampening) spring pivot points (2 springs, 4 points)
- Inspect Lift-Tite latches and gas springs for wear or damage (bent, deformed or misaligned),
- positive securement (external snap rings) and proper operation—resecure, replace defective parts or otherwise correct as needed.
- Inspect outer barrier for proper operation—correct or replace defective parts.
- Inspect outer barrier latch for proper operation, positive securement, and detached or missing ____ spring—correct or replace defective parts and/or relubricate.
- Inspect lift for wear, damage, or any abnormal condition—correct as needed.
- Inspect lift for rattles—correct as needed. ____
- Lubricate (apply light oil) platform pivot pin bearings (2) ____
- Lubricate (apply light oil) platform fold axles (2) ____
- Lubricate (apply light oil) inner roll stop (IB) lever bearings (2)
- ____ Lubricate (apply light oil) inner roll stop (IB) lever slot (2)
- Lubricate (apply light oil) rotating pivot slide arm pivot pins (2)
- Lubricate (apply light oil) parallel arm pivot bearings (16)
- Lubricate (apply light oil) handrail pivot pin bearings (4)
- ____ Lubricate (apply light oil) hydraulic cylinder bushings (8)
- Inspect Lift-Tite latch rollers for wear or damage, positive securement and proper operation (2)
- Inspect inner roll stop (IB) for:
- ____ Wear or damage
- Proper operation Roll stop should just rest on top surface of the base plate. ____
- Positive securement (both ends) Resecure, replace or correct as needed (see instructions) ____
- Inspect handrail components for wear or damage, and for proper operation-replace any ____ defective parts
- Inspect micro switches for securement and proper adjustment—resecure, replace or adjust as ____ needed (see instructions)
- Make sure lift operates smoothly—realigns towers and vertical arms, lubricate or correct as ____ needed
- Inspect external snap rings: ____
- Handrail pivot pins (2 per pin) ____
- Platform slide/rotate pivot pins (2 per pin) ____
- Platform fold axles (1 per axle)
- ____ Inner roll stop (IB) lever bracket pins (1 per pin)
- Lift-tite latch gas (dampening) spring (2 per spring) Resecure or replace as needed. ____
- Inspect platform fold axles and bearings for wear or damage and positive securement—resecure ____ or replace defective parts as needed.
- Remove pump module cover and inspect
- Hydraulic hoses, fittings and connections for wear or leaks
- Harness cables, wires, terminals and connections for securement or damage ____
- Control board, circuit breaker, power switch and lights for securement or damage Resecure, replace or correct as needed.

APPENDIX D:

BODY MAINTENANCE SCHEDULE

5,000 Miles (Goshen Body Inspection/Lubrication)

- ____ Check all exterior caulk seams on body for weather induced damage. Cracks are typical and must be properly maintained to prevent water damage. If cracking or separation appears, cut out affected area and re-caulk with a good quality, all-weather caulk.¹
- ____ Check door panel alignment on all doors
- ____ Check all door seals for war and damage.
- ____ Check exit door lower pins for damage and binding (first 3,000 miles, every 9,000 thereafter)
- ____ Lubricate windshield wiper arm pivot points
- ____ Lubricate windshield wiper post pivot points.
- ____ Wash vehicle, hose off underbody, fender wells where dirt, mud, etc. accumulate.
- ____ Check all exterior caulk seams on body for weather induced damage. Cracks are typical and must be properly maintained to prevent water damage. If cracking or separation appears, cut out affected area and re-caulk with a good quality, all-weather caulk.²
- ____ Check door panel alignment on all doors
- ____ Check all door seals for war and damage.
- ____ Check exit door lower pins for damage and binding (first 3,000 miles, every 9,000 thereafter)
- ____ Lubricate **windshield** wiper arm pivot points
- ____ Lubricate windshield wiper post pivot points.

¹ Goshen warranty does not cover water damage entering the vehicle through seams where the caulk has not been properly maintained.

App E Vehicle Out of Service Record.dc

APPENDIX F

WARRANY

The vehicle warranty is as follows:

Body (coach) 12 Months or 12,000 miles

Rear Air Conditioner 2 years limited

Chaise and power train 3 years/ 36,000 miles

Lift:

3 years parts

24 months labor

Company	y Name		County		-		
Date		3/2/20			-		
County	Veh #	Make	Model	Year	VIN #	AMB CAP	WC CAP
Ben Hill	3594	Ford	Ford/Goshen SV/w lift	2016	1FDEE3FS6GDC11008	11	2
Ben Hill	3595	Ford	Ford/Goshen SV/w lift	2016	1FDEE3FS6GDC11009	11	2
Ben Hill	3596	Ford	Ford/Goshen SV/w lift	2016	1FDEE3FS4GDC11010	11	2
Ben Hill	3778	Ford	Ford/Startrans SV/w lift	2017	1FDEE3FS5HDC35463	11	2
Ben Hill	3779	Ford	Ford/Goshen SV/w lift	2017	1FDEE3FSXHDC35474	11	2
Ben Hill	3780	Ford	Ford/Startrans SV/w lift	2017	1FDEE3FS9HDC35479	11	2