ADDENDUM O

Transportation: Zero to Full Competency

Curious how Tier, Stage, and Phase relate? See the Glossary.

Why This Addendum Exists

Chapter 16 tells you what to have and do at each tier of a disruption to keep your household mobile. It does not build the actual vehicle repair and driving competency that makes those plans work when a mechanic or tow truck isn't available. This addendum is a skill-building curriculum for exactly that, built from real certifications and Utah training programs.

It's organized by skill stage, not by disaster duration, following the same structure as the other addenda. Treat the self-check at the end of each stage as the actual gate.

Four stages: Foundations (basic safe practice), Applied Practice (hands-on competence), Self-Sufficiency (independent, resilient skill), and Mastery & Teaching (able to teach others and operate at community scale). Each stage covers two sub-skill tracks that run in parallel: vehicle maintenance and repair, and driving and navigation skill.

Stage 1: Foundations (Awareness)

Goal: know the core vehicle safety facts well enough to not create a dangerous situation, and understand Utah's actual legal requirements. This stage is readable in a weekend.

Vehicle Maintenance: Core Knowledge

The core concept at this stage is understanding what actually causes most roadside breakdowns: a handful of preventable causes (dead battery, low fluids, worn belts) already covered in Chapter 16's Tier 2 guidance, not exotic mechanical failure. Understand basic engine bay layout well enough to locate and check oil, coolant, and battery terminals without a manual in hand.

Driving & Navigation: Core Knowledge

The core concept at this stage is Utah's actual Traction Law (Administrative Rule R920-6, already covered in Chapter 16) and the "Turn Around, Don't Drown" logic behind flooded-road danger, both of which are frequently misunderstood well enough to cause real, avoidable incidents. Understand basic paper-map reading (grid references, scale, contour basics) as a genuinely different skill from GPS-following.

Stage 1 Learning Path

Resource	Cost / Format	Notes
UDOT Traffic / Traction Law	Free, online	udottraffic.utah.gov. Already cited in Chapter 16; real-time conditions and the actual rule text.
National Weather Service: Turn Around Don't Drown	Free, online	weather.gov/safety/flood-turn-around-dont-drown. Already cited in Chapter 16.
Your vehicle's owner's manual	Free, already owned	Read the maintenance schedule and basic systems sections in full, not just the warning-light glossary.

Stage 1 Practice Exercises

- **Locate and check your vehicle's basics:** Physically locate your oil dipstick, coolant reservoir, and battery, and check each without referring to the manual. See the Vehicle Emergency Kit & Roadside Basics skill guide for what to actually carry once you know where everything is.
- **Practice reading a paper map without GPS:** Navigate a genuinely unfamiliar route using only a paper map, timing yourself and noting where you got confused.
- **Confirm your traction devices actually fit:** If you own tire chains or snow socks, test-fit them in your driveway in daylight, not for the first time on a canyon road in a storm.

Self-Check: Ready for Stage 2?

You should be able to locate your vehicle's basic maintenance points without a manual, explain Utah's Traction Law requirements from memory, and navigate a short unfamiliar route using only a paper map.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the basics to having actually performed real maintenance and driven under real, if controlled, challenging conditions.

Vehicle Maintenance: Applied Practice

- **Perform real basic maintenance yourself:** Actually check and top off fluids, inspect belts and hoses, and clean battery terminals on your own vehicle, per Chapter 16's Tier 2 guidance, rather than always outsourcing it.
- **Practice safe fuel transfer:** Using a manual siphon pump (never mouth-siphoning, per Chapter 16's explicit warning), practice safely transferring fuel between containers.
- **Build real bike maintenance competency:** Practice basic bicycle maintenance (tire repair, chain lubrication) on your own bike using Chapter 16's Tier 2 repair kit, not just owning the kit unused.

Driving & Navigation: Applied Practice

- **Complete a Utah-specific defensive driving course:** The Utah Safety Council offers both online and in-person defensive driving courses, and some providers cover Utah-specific hazards directly (canyon driving, black ice on I-15/I-80); many insurers offer a rate discount for completion, making this a low-cost, practical Stage 2 investment.
- **Drive an alternate evacuation route for real:** Chapter 16's Tier 1 already calls for this; actually do it, at a time of day and season different from your usual commute, to see real conditions.
- **Practice traction-device installation in realistic conditions:** Beyond the Stage 1 driveway fit-check, actually install tire chains or snow socks in cold weather, ideally with gloves on, to build real speed and competence.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Utah Safety Council Defensive Driving course	~$25–$50, online or in-person	utahsafetycouncil.org. Often qualifies for an insurance discount.
A basic mechanic tool kit sized to your vehicle	$50–$150	Already cited in Chapter 16's Tier 2 equipment; many auto parts retailers sell kits matched to common vehicle models.
A manual fuel transfer pump	$10–$20	Already cited in Chapter 16; never mouth-siphon fuel.

Self-Check: Ready for Stage 3?

You should have performed real basic maintenance on your own vehicle, completed a Utah-specific defensive driving course, and installed traction devices in real cold-weather conditions, not just in a driveway on a mild day.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent vehicle repair and navigation capability, the actual level Chapter 16's Tier 2 and Tier 3 assume a household has. This stage involves real, structured coursework.

Vehicle Maintenance: Self-Sufficiency

- **Begin automotive technology coursework:** Utah Valley University, Salt Lake Community College, Southwest Technical College, MTECH, and Utah State University all offer NATEF-accredited or ASE-aligned automotive technology programs; even foundational coursework builds real diagnostic and repair skill well beyond DIY-level competence.
- **Pursue bicycle mechanic training:** United Bicycle Institute and Barnett Bicycle Institute both offer structured mechanic courses and certification (UBI requires a passed course or a year of shop experience; Barnett requires at least three months of full-time repair experience); a genuinely deeper skill than Stage 2's basic tire/chain maintenance.
- **Build a real spare-parts stockpile matched to your actual vehicle:** Cross-reference Chapter 16's Tier 3 guidance; base your stockpile on your specific vehicle's actual documented failure history, not a generic parts list.

Driving & Navigation: Self-Sufficiency

- **Practice land navigation without GPS or maintained roads:** A genuinely different skill than following a paper map on existing roads (already distinguished in Chapter 16's Tier 3); practice dead-reckoning and terrain-reading in a real off-road or backcountry context. The Land Navigation Without GPS skill guide covers exactly this skill in depth.
- **Understand EV cold-weather range planning if applicable:** Cross-reference Chapter 16's Tier 2 EV guidance; if your household has an electric vehicle, build real, tested knowledge of your specific vehicle's actual cold-weather range loss rather than relying on manufacturer estimates.
- **Cross-train animal-powered transport basics if relevant:** If your household's Tier 3 plan includes draft animals (cross-reference Addendum A's livestock guidance), basic handling, harnessing, and tack maintenance is a real, separate skill set worth deliberate practice.
- **Consider watercraft for a flood-prone area:** A canoe or kayak is human-powered, needs no fuel, and is light enough to car-top, real advantages when roads are underwater and the goal is reaching or leaving a specific spot, not distance. A small jon boat, 10 to 12 feet, roughly $800 to $2,500, holds more (300 to 450 lbs of people and gear) and can take a small outboard, at the cost of needing a trailer and somewhere to store it. Either way, this doesn't remove floodwater's real danger: the CDC flags it as commonly contaminated with sewage and chemicals, and downed power lines can electrify standing water, so a boat gets you past water you shouldn't wade through, it doesn't make that water safe to be in.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Utah automotive technology programs (UVU, SLCC, Southwest Tech, MTECH, USU)	Program fees vary by institution	NATEF-accredited programs preparing students for ASE certification exams.
United Bicycle Institute / Barnett Bicycle Institute	Course fees vary, typically $1,000–$3,000 for full programs	bikeschool.com or barnettbicycleinstitute.com. Structured mechanic training and certification.
A detailed regional paper map set	$20–$50	Already cited in Chapter 16's Tier 3; covering beyond the immediate county for real land navigation practice.

Self-Check: Ready for Stage 4?

You should be actively enrolled in automotive or bicycle mechanic coursework, be comfortable navigating without GPS or maintained roads, and have a spare-parts stockpile genuinely matched to your vehicle's real failure history.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others, and real capacity to coordinate transportation at a community scale. This is the stage Chapter 16's Tier 4 (shared/pooled community transport) actually depends on.

Teaching & Certification

- **Pursue ASE certification:** Automotive Service Excellence (ASE) certification is the recognized national standard for automotive technicians; Utah's NATEF-accredited programs (UVU's Master Automotive Service Technician track, Southwest Tech, SLCC, MTECH) are specifically designed to prepare students for it, typically combined with a year of industry experience for the Master-level credential.
- **Pursue full bicycle mechanic certification:** Completing UBI's or Barnett's full certification track (written and hands-on performance testing covering wheel building, cable/housing sizing, brake adjustment, and fit) is the recognized professional standard for bike mechanics.
- **Teach vehicle and winter-driving safety to your neighborhood:** A short, practiced walkthrough of basic maintenance checks and traction-device installation, taught to several neighbors before winter each year, is a genuinely high-leverage, low-cost teaching investment.

Community-Scale Practice

- **Build the community transport roster described in Chapter 16's Tier 4:** Chapter 16 calls for a roster of who has what vehicle, capability, and skill; Stage 4 is where you help organize and maintain that roster, not just list it as a goal. The Mutual Aid Agreement template's household skill/equipment table is a real starting point for this.
- **Coordinate shared fuel and heavy equipment access fairly:** Cross-reference Chapter 16's Tier 4 and Addendum L's (Economic & Financial) barter/trade framework for how fuel and shared equipment access actually gets allocated fairly across a community.

- **Distribute mechanic skill, not concentrate it:** Chapter 16's Tier 4 explicitly calls for training more than one community member in vehicle repair; Stage 4 is where you actively teach, not just personally hold the skill.

Stage 4 Learning Path

Resource	Cost / Format	Notes
ASE certification exams	Exam fees apply per certification area	ase.com. Pursued after completing a NATEF-accredited program and/or relevant industry experience.
UBI/Barnett full bicycle mechanic certification	Program fees as in Stage 3; certification testing included	Written and hands-on performance testing for the recognized professional credential.
Community transport roster template and coordination	No direct cost	Use the Mutual Aid Agreement template's household skill/equipment table, filled out with vehicle capability specifically.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the certification; it's whether you've actually taught vehicle maintenance or traction-device installation to a neighbor who has since done it independently, and whether your community has a real, current transport roster you helped build.

A Suggested Learning Sequence

The two tracks (vehicle maintenance, driving/navigation) don't have to move at the same pace. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: locate your vehicle's basic maintenance points, learn Utah's Traction Law, practice paper-map navigation.
- **1–4 months:** Stage 2: perform real basic maintenance yourself, complete a defensive driving course, practice traction-device installation in real cold weather.
- **6–18 months:** Stage 3: begin automotive or bicycle mechanic coursework, practice land navigation without GPS, build a real vehicle-specific spare-parts stockpile.

- **Ongoing:** Stage 4: pursue ASE or full bicycle mechanic certification if vehicle work is becoming a real vocation, and start teaching maintenance and winter-driving safety to neighbors.

At a Glance: Transportation Deep Dive

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the four stages scale, and cross-reference against Chapter 16's tiers, which describe what a household needs to have and do rather than how skilled it needs to be.

Stage	Focus	Key Milestone	Primary Resource
Stage 1: Foundations	Basic vehicle knowledge and Traction Law, no hands-on requirement yet	Can locate vehicle maintenance points and explain the Traction Law from memory	UDOT Traffic / Traction Law
Stage 2: Applied Practice	Hands-on maintenance and real-condition driving practice	Performed real basic maintenance; completed defensive driving course	Utah Safety Council Defensive Driving
Stage 3: Self-Sufficiency	Structured coursework and independent navigation	Enrolled in automotive/bicycle mechanic coursework; navigates without GPS	Utah automotive technology programs
Stage 4: Mastery & Teaching	Professional credential, community transport coordination	Taught maintenance/traction skills to a neighbor; helped build a transport roster	ASE certification