

ADDENDUM A

Water & Food: Zero to Full Competency

Why This Addendum Exists

Chapter 1 tells you what to have and do at each tier of a disruption. It does not tell you how to actually get good at water treatment, food preservation, or growing your own food if you're starting from zero. This addendum is a skill-building curriculum for exactly that: a structured path from no relevant knowledge to genuine, tested competency in Water & Food, built from real Utah programs, certifications, and hands-on practice, not just reading lists.

It's organized by skill stage, not by disaster duration, because building competency isn't duration-bound the way disaster response is. You can be at Stage 3 in food preservation and Stage 1 in foraging at the same time; that's normal and expected. Move through each stage at whatever pace your life allows, and treat the self-check at the end of each stage as the actual gate, not the time spent.

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 three sub-skill tracks that run in parallel: water, food preservation and storage, and food production.

Stage 1: Foundations (Awareness)

Goal: know the core safety facts well enough to not hurt yourself or your household, and understand the landscape of what's ahead. This stage is readable in a weekend; it's meant to be the floor everyone in the household clears quickly, not a deep skill.

Water: Core Knowledge

The two things that actually matter at this stage: knowing which water treatment method fits which situation, and knowing how much water a household actually needs. Chapter 1's Tier 1 section already covers the practical dosing (bleach, chlorine dioxide tablets); this stage is about understanding why those methods work and where they fail. Boiling kills essentially all pathogens but does nothing for chemical contamination. Chlorination (bleach or tablets) is effective against bacteria and most viruses but doesn't reliably kill some protozoan cysts like *Cryptosporidium* at typical household dosing. Filtration mechanically removes particles and many pathogens

depending on pore size, but a filter rated for bacteria isn’t automatically rated for viruses, which are smaller. No single household method handles every contamination type; that’s why the CDC and EPA recommend combining methods (filter, then disinfect) when the water source or contamination type is unknown. See the Water Purification skill guide for the full method-by-method comparison.

Food: Core Knowledge

The core food-safety concept at this stage is the “danger zone”: bacteria multiply fastest between 40°F and 140°F, which is why the 2-hour rule (4-hour rule above 90°F ambient) for perishable food exists. The second core concept is basic nutrition math: roughly 2,000 kcal per person per day as a baseline (more for children, nursing mothers, larger adults, or anyone doing physical labor), covered in Chapter 1’s Tier 1. At this stage, you don’t need to know how to preserve food yet; you need to know how to keep what you already have safe, and roughly how much you’ll actually need to store or produce.

Stage 1 Learning Path

Resource	Cost / Format	Notes
CDC Emergency Water Treatment guidance	Free, online	cdc.gov. Read this first; it's the source for Chapter 1's dosing guidance and explains the reasoning, not just the numbers.
EPA Emergency Disinfection of Drinking Water	Free, online	epa.gov. Complements the CDC guidance with the regulatory/technical side of water treatment method effectiveness.
National Center for Home Food Preservation (NCHFP)	Free, online, nchfp.uga.edu	University of Georgia's USDA-funded research center; the authoritative, science-based source for every home preservation method (canning, freezing, drying, fermenting, curing). Read the “Guide Part 1: Principles of Home Canning” section first.
So Easy to Preserve (UGA Cooperative Extension book)	Free PDF or ~\$25 print, 6th edition	The NCHFP's companion book; 388 pages covering canning, pickling, jams, freezing, and drying in one reference. Worth owning in print per Chapter 9's archival-library guidance.

Stage 1 Practice Exercises

- **Do the water math:** Calculate your household’s actual daily water need (1 gal/person/day minimum, more for pets, cooking, and hygiene) and compare it against Chapter 1’s stored quantity. Most people are surprised how much a 4-person household actually needs for 14 days.

- **Practice the treatment decision:** Given three scenarios (cloudy stream water, tap water during a boil-water notice, water from a compromised municipal line after an earthquake), decide which treatment method or combination you'd use for each, and explain why.
- **Read one full NCHFP guide section:** Pick one preservation method you don't currently use (canning, dehydrating, or freezing) and read its full NCHFP guide section, not just a summary.

Self-Check: Ready for Stage 2?

You should be able to explain, without looking it up, why boiling and chlorination aren't interchangeable, state your household's actual daily water requirement in gallons, and describe the 2-hour/4-hour perishable food rule. If any of those requires a lookup, stay in Stage 1 a little longer; the applied practice in Stage 2 assumes this is automatic.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually done it, under real (if low-stakes) conditions. This stage is hands-on by design; reading about canning is not the same skill as having canned. Expect this stage to take a few months, mostly gated by class schedules and growing/harvest seasons rather than effort.

Water: Applied Practice

- **Practice treatment methods for real:** Actually treat a batch of water with household bleach at the correct dose, and separately with a filter you own. Taste the difference, time the process, and confirm you can do it without instructions in front of you.
- **Build and test a rotation system:** Set up whatever water storage Chapter 1 calls for, and actually run the 6-month rotation cycle once, including relabeling and treating on the way back into storage if using a treatment additive.
- **Practice a boil-water response:** The next time your area issues a boil-water notice (or simulate one), follow it for real: boil for the recommended time, let it cool, and use it, rather than defaulting to bottled water.

Food: Applied Practice

- **Take a hands-on preservation class:** USU Extension's Home Food Preservation Series (canning and dehydrating, roughly \$6/class) is specifically designed as a low-cost, low-commitment entry point. Attend at least two sessions covering different methods. See the Food Preservation skill guide for tested processing times and methods to practice against.

- **Can or dehydrate a real batch:** Complete one full preservation run start to finish, following a tested NCHFP recipe exactly (not an heirloom family recipe with unverified processing times), and record what you'd do differently next time.
- **Build a real FIFO rotation:** Set up and actually use a first-in-first-out rotation system for your stored food for at least one full month, not just as a one-time organizing exercise.
- **Build a bulk long-term supply hands-on:** The Church of Jesus Christ of Latter-day Saints operates Home Storage Centers open to the public (not just members) along the Wasatch Front, selling bulk long-term staples (wheat, rice, beans, oats, powdered milk) at low cost; several locations let you actually operate the canning/sealing equipment yourself to package your own #10 cans. This is genuinely hands-on bulk storage practice, not just an online order. See the Sealing Bulk Food for Long-Term Storage skill guide for how to package and seal what you buy.

Stage 2 Learning Path

Resource	Cost / Format	Notes
USU Extension Home Food Preservation Series	~\$6/class, in-person, Cache County and other counties	extension.usu.edu/preserve-the-harvest . Short, specific classes (canning beef, canning vegetables, dehydrating jerky, etc.); check your county's extension office for local scheduling, since offerings vary by county.
USU Extension Food Safety resources	Free, online	extension.usu.edu/foodsafety . Complements the preservation classes with the food-safety reasoning behind each processing time and method.
A tested pressure canner or dehydrator	\$80–\$250 depending on equipment	Buy once, good quality; an under-processed low-acid canned good is a real botulism risk, so this isn't a place to cut corners on equipment reliability.
LDS Home Storage Centers	Low-cost bulk goods; open to the public	churchofjesuschrist.org/life/home-storage-centers . Find your nearest Wasatch Front location; some offer self-service canning stations for packaging your own bulk purchase.

Self-Check: Ready for Stage 3?

You should have physically completed at least one full water treatment cycle and one full food preservation run, not just read about them, and you should be able to do both again without referring back to instructions for the core steps. If you've only read the material so far, that's still Stage 1 competency regardless of how much you've read.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independence from the supply chain for meaningful stretches of time, the actual skill level Chapter 1's Tier 3 assumes a household has. This stage is a real commitment, typically a full growing season plus a multi-week course sequence, and produces skills that don't degrade quickly once built.

Water: Self-Sufficiency

- **Understand your legal water sourcing options:** Work through Utah's actual rainwater harvesting rules (up to 200 gallons in up to 2 containers registered for free at waterrights.utah.gov; larger systems need a water right) and, if relevant to your property, research well water rights and permitting through the Utah Division of Water Rights. See the Legal Rainwater Harvesting in Utah skill guide for the full registration process and system sizing.
- **Build redundant treatment capability:** Own and know how to use at least two independent water treatment methods (e.g., a quality filter plus chemical disinfection) so a single point of failure doesn't leave you without safe water. The Building a Biosand Water Filter skill guide covers one low-cost, durable option worth adding to that redundancy.
- **Understand your local watershed:** Know where your area's water actually comes from (Wasatch Front municipal supplies are largely snowpack-fed surface water and groundwater) and what could plausibly contaminate or disrupt it; this shapes which Tier 3 water sourcing options are realistic for your specific property.
- **Build real skill sourcing and testing water outside your stored supply:** Know how to actually haul water from an outside source, test water of unknown quality before relying on it, and collect water from snow, dew, or condensation when nothing else is available, the practical skills behind Chapter 1's Tier 3 self-sufficiency assumption. See the Sourcing & Hauling Water, Water Testing, and Collecting Water From Snow, Dew & Condensation skill guides.

Food: Self-Sufficiency

- **Complete a real preservation certification:** USU Extension's Master Food Preserver course (hands-on workshops, based in Salt Lake City) goes well beyond the Stage 2 classes into a genuine, in-depth certification covering the full range of preservation science.
- **Complete a real production certification:** USU Extension's Master Gardener Program is 13–14 weeks of college-level lecture and hands-on training (botany, soils, irrigation, pest management, and more), offered at 13 locations across Utah, plus a 40-hour volunteer service requirement to receive the certificate.

- **Learn regional wild foods:** Utah-specific foraging instruction (for example, Edible Wilds LLC's classes and book, or Wild Utah Edibles' guided tours) teaches identification of genuinely local wild edible plants; this is a real skill with real poisoning risk if self-taught from a generic national guide that doesn't account for regional look-alikes. See the Foraging Wild Edibles Basics skill guide for the specific deadly look-alikes worth knowing before any class, not as a substitute for one.
- **Run a real growing season:** Grow, harvest, and preserve at least one meaningful crop from your own property through a complete season; this is the step that actually tests whether the Master Gardener and Master Food Preserver knowledge holds up under real conditions.
- **Build real no-fuel cooking capability:** A genuinely independent food system includes a way to cook that doesn't draw down your fuel or power reserves; the Solar Cooking skill guide covers box, panel, and parabolic designs and the real conditions each one needs.
- **Build real no-power cold storage capability:** Canning and dehydrating aren't the only preservation methods; root cellaring and evaporative cooling extend produce life without processing it at all, and without power. See the Improvised Cold Storage skill guide for real crop-by-crop targets and four buildable methods.

Additional Food Production Tracks (Situational)

The three tracks below are genuinely valuable Stage 3 skills, but unlike gardening and preservation, they're not universal: legal restrictions, property size, dietary preference, and local ordinance all determine whether they're realistic for a given household. Treat them as worth pursuing if they fit your situation, not as a gate everyone needs to clear.

- **Animal protein through hunting and fishing:** Utah's Division of Wildlife Resources (DWR) requires a hunter education course to obtain a hunting license if you were born after December 31, 1965; the course (about \$12, roughly 4–6 hours online plus a required field day with a written test and live-fire exercise) covers firearm safety, wildlife management, and survival skills directly relevant to food production self-sufficiency. A fishing license is required at age 12+ (free under 12), and Utah DWR's "Fishing for Beginners" resources are a genuine, low-barrier entry point if hunting isn't the right fit. Build this skill assuming it gets harder to rely on the longer a disruption lasts, not easier: real famines and wartime shortages consistently show wild game and fish near population centers depleted by competing demand within months, so a household planning on hunting or fishing as a real Stage 3 food source should also have Chapter 4's Tier 4 community-governance skills, the same ones that cover shared resource disputes generally, not just security. See the Hunting, Trapping & Field Dressing Basics skill guide for the field-dressing side of this.
- **Small livestock: backyard poultry:** Chapter 1's Tier 3 explicitly names small livestock as part of self-sufficient food production; backyard chickens are the most accessible version for most Wasatch Front properties. Before acquiring birds, check your specific city or county ordinance: flock size limits, rooster restrictions, and whether poultry is permitted at all vary significantly by jurisdiction (Utah Code § 10-8-59 leaves this to local

land-use codes, so there's no statewide default). USU Extension maintains a dedicated poultry specialist and fact sheets specifically for science-based backyard flock guidance. See the Backyard Poultry & Small Livestock Basics skill guide for real coop space and predator-proofing specs.

- **Seed saving and seed libraries:** Buying starts or seed packets every season is a real dependency on the supply chain; saving your own seed from a successful harvest closes that gap. Utah has a genuine, free seed library network (Salt Lake City Public Library, Provo Library, University of Utah, and others), and USU Extension runs seed-saving classes and publishes a seed-saving guide. Note that open-pollinated varieties save true to type; hybrid varieties generally don't, so which seed you save matters as much as whether you save it. The What to Grow skill guide covers the actual technique: which crops are easy versus hard to save true seed from, real isolation distances, and how to store what you save so it's still viable years later.

Stage 3 Learning Path

Resource	Cost / Format	Notes
USU Master Food Preserver Course	Fees vary by cohort; contact USU Extension	In-depth, hands-on workshops in Salt Lake City. Contact USU Extension (e.g., Melanie Jewkes, 385-468-4838) to get on the list for the next cohort, since it doesn't run continuously.
USU Master Gardener Program	Fees vary by county (each county sets its own price)	extension.usu.edu/mastergardener . 13–14 weeks of training plus 40 hours of required volunteer service; offered in 13 Utah locations. Find your county's program through the USU Extension site.
Edible Wilds LLC / “Practical Guide to Utah's Wild Edible Plants”	Course fees vary; book ~\$20	Steven C. Golieb's Utah-specific foraging instruction and reference book; a genuinely regional resource rather than a generic national foraging guide.
Wild Utah Edibles guided tours	Course fees vary	wildutahedibles.com . Utah County-area guided foraging tours pairing identification with hands-on tasting and habitat context.
Utah Division of Water Rights	Free registration for small systems	waterrights.utah.gov . The authoritative source for rainwater harvesting registration and well/water-right permitting specific to your property.
Utah DWR Hunter Education	~\$12 resident, online + field day	wildlife.utah.gov/huntereducation . Required for anyone born after 12/31/1965 to obtain a Utah hunting license; the online course covers firearm safety and wildlife ID.
Utah DWR Fishing for Beginners / licensing	License required at 12+; free under 12	wildlife.utah.gov/fishing/beginners . A lower-barrier entry point into animal protein self-sufficiency than hunting.
USU Extension Poultry Resources	Free fact sheets, online	extension.usu.edu/poultry . Science-based backyard flock guidance; check your city/county ordinance before acquiring birds, since permitted flock sizes vary by jurisdiction.
Utah seed libraries (SLC Public Library, Provo Library, University of Utah, and others)	Free	Search “[your city] seed library”; most Wasatch Front library systems now run one. Pair with USU Extension's seed-saving classes and guide.

Northern Utah Note

Both the Master Gardener and Master Food Preserver programs are run county-by-county, so availability, price, and schedule differ across the Wasatch Front. Start with your own county's USU Extension office; if your county doesn't currently offer a cohort, most programs allow enrolling through a neighboring county.

Self-Check: Ready for Stage 4?

You should hold (or be actively enrolled in) at least one real certification (Master Food Preserver or Master Gardener), have completed a full growing season with real output, and be comfortable making an on-the-spot call about water safety or food safety without consulting a reference. This is the stage where you become the person your household or neighbors would actually ask. If any of the situational tracks above (hunting/fishing, backyard poultry, seed saving) fit your household, completing them is a genuine bonus toward Stage 3 readiness, not a requirement for it.

Stage 4: Mastery & Teaching (Expert)

Goal: the ability to teach others reliably, operate at a scale beyond your own household, and hold professional-level credentials where they exist. This is the stage Chapter 1's Tier 4 (community-scale, shared resources) actually depends on: someone has to be capable enough to lead it. This stage is ongoing rather than something you finish.

Teaching & Certification

- **Volunteer as an instructor:** Both the Master Gardener and Master Food Preserver programs are built around graduates teaching the next cohort or the public; this volunteer-teaching requirement is itself the mechanism that turns personal competency into community capability.
- **Pursue a professional food safety credential:** USU Extension's Food Safety Managers Certificate Program is a real, professional-level credential (the kind required of commercial food service managers) and is a legitimate path if you want to run community-scale food operations (a shared kitchen, a food pantry, a community canning program) credibly and safely.
- **Understand (don't necessarily pursue) water system operator certification:** Utah's Division of Drinking Water certifies water system operators under Administrative Rule R309-300; a "Small System" (SS) license covers distribution systems serving 25–500 people. Actually pursuing this certification is a serious undertaking (a 100-question exam covering math, operations, pumps, chemical feed, rules, and safety), appropriate only if your community's Tier 4 plan genuinely involves operating a shared water system; know that this pathway exists even if you don't pursue the full license.

Community-Scale Practice

- **Design for a group, not a household:** Take what you've built at Stage 3 (a garden, a preservation routine, a treatment setup) and scope out what it would take to run the same thing at 5x or 10x the household scale;

the constraints are different (labor coordination, equipment sharing, storage logistics), not just “more of the same.”

- **Build the roster and cache described in Chapter 1’s Tier 4:** Chapter 1 calls for a community seed bank, shared production tools, and a skills roster; Stage 4 is where you’re the person capable of stocking, maintaining, or teaching from that roster rather than just listing it as a goal.
- **Mentor, don’t just instruct:** A one-time class teaches a technique; ongoing mentorship (checking in on someone’s first canning batch, walking a neighbor’s garden with them mid-season) is what actually transfers competency reliably. Build at least one real mentoring relationship, not just a teaching credential.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Master Gardener / Master Food Preserver volunteer-instructor track	Time commitment (40+ hrs), not a course fee	The built-in progression path within programs you've already completed in Stage 3; ask your county coordinator how to move from graduate to instructor.
USU Food Safety Managers Certificate Program	Fee-based, exam required	extension.usu.edu/foodsafety/certificate-program . A genuine professional credential; check current FAQ and requirements directly, since certificate programs are periodically updated.
Utah Division of Drinking Water operator certification info	Free to research; exam fees apply if pursued	deq.utah.gov , Administrative Rule R309-300. Worth understanding the framework even if community-scale water operation isn't your specific Tier 4 plan.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn’t a credential; it’s whether someone else has successfully learned a skill from you and can now do it independently. If you’ve taught at least one person to safely can food or treat water and they’ve since done it again without you, that’s the actual signal, more than any certificate on its own.

A Suggested Learning Sequence

The three tracks (water, preservation, production) don’t have to move at the same pace, and most households will naturally be further along in one than another. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1 across all three tracks: read the core references, do the water math, pick a preservation method to focus on first.
- **Months 1–4:** Stage 2: take a first hands-on class, run one full preservation cycle, complete one water treatment cycle.
- **One growing season plus a course cycle (roughly 6–14 months):** Stage 3: enroll in Master Food Preserver and/or Master Gardener, register any rainwater catchment, run a full season of production and preservation.
- **Ongoing:** Stage 4: move into a volunteer-instructor role, consider a professional credential if your household's Tier 4 plan calls for it, and start mentoring specific people rather than just taking more classes.

At a Glance: Water & Food 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 1'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	Core safety knowledge, no hands-on requirement yet	Can explain water treatment method limits and the food danger zone from memory	CDC/EPA guidance, NCHFP guide
Stage 2: Applied Practice	Hands-on, low-stakes repetition	Completed one full water treatment cycle and one full preservation run	USU Home Food Preservation Series
Stage 3: Self-Sufficiency	Independent, certified skill over a full season	Holds or is enrolled in a real certification; completed a full growing season	USU Master Gardener / Master Food Preserver
Stage 4: Mastery & Teaching	Teaching others, community/professional scale	Has taught someone who has since succeeded independently	Volunteer-instructor tracks, professional certificates

ADDENDUM B

Sanitation & Hygiene: Zero to Full Competency

Why This Addendum Exists

Chapter 2 tells you what to stock and do at each tier of a disruption. It does not tell you how to actually become competent at disease prevention and waste management when professional services are delayed, unavailable, or gone entirely. This addendum is a skill-building curriculum for exactly that: a structured path from no relevant sanitation knowledge to genuine, tested competency, built from real practice, reference material, and hands-on repetition.

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

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). This addendum's companion, Addendum C: Medical Care, runs the same four-stage structure for treating injury and illness; the two are meant to be worked through side by side.

Stage 1: Foundations (Awareness)

Goal: know the core safety facts well enough to not make a sanitation situation worse, and understand the landscape of what's ahead. This stage is readable in a weekend.

Core Knowledge

The core concept at this stage is the fecal-oral transmission route: most disaster-related disease outbreaks (cholera, dysentery, hepatitis A, norovirus) spread because human waste contaminates water or food, not through the air. This is why Chapter 2's Tier 1 guidance on toilet alternatives and handwashing matters more than it might seem; proper waste containment and consistent handwashing (soap and water, or hand sanitizer when water is scarce) break this transmission route more effectively than almost any other single intervention. Understand the difference between greywater (from washing, generally lower-risk) and blackwater (toilet waste, genuinely hazardous) and why they need separate handling.

Stage 1 Learning Path

Resource	Cost / Format	Notes
CDC Emergency Wound Care and Disease Prevention guidance	Free, online	cdc.gov. Covers the reasoning behind Chapter 2's Tier 1 sanitation guidance.
Where There Is No Doctor (Hesperian Health Guides)	Free PDF, or ~\$30 print	hesperian.org. The standard lay-accessible reference already cited in Chapter 2; read the sanitation and water sections first.

Stage 1 Practice Exercises

- **Map your household's waste plan:** Walk through exactly what your household would do for toilet needs if water and sewer were both down for a week, start to finish, including where waste would actually go.
- **Read the Hesperian sanitation chapter:** Read Where There Is No Doctor's sanitation and water sections in full, not a summary.

Self-Check: Ready for Stage 2?

You should be able to explain why handwashing and waste containment matter more than almost any single medical intervention for preventing disaster-related illness, and describe the difference between greywater and blackwater without looking it up.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually built and run a no-power sanitation setup under real, if low-stakes, conditions.

Applied Practice

- **Build and test a no-power sanitation setup:** Actually assemble and use Chapter 2's Tier 1 toilet-alternative setup (bucket toilet, kitty litter/sawdust cover material, doubled heavy-duty bags) for a full weekend as a dry run, not just as stored supplies. See the Bathroom & Hygiene Without Running Water skill guide for the full setup and hygiene routine.
- **Practice actual lime-treatment dosing:** Chapter 2's Tier 2 alkaline treatment (roughly 1-2 cups hydrated lime per 5-gallon bucket, held 2+ hours) is a real, fast pathogen-kill method, not just odor control, but the dose

matters. Practice measuring and mixing it correctly, with real PPE (gloves, mask, eye protection), before you’re doing it for the first time under pressure.

- **Practice water disinfection alongside general hygiene:** Cross-reference Addendum A’s water treatment practice; the same treated water needs to be used correctly for hand hygiene and cleaning, not just drinking.
- **Set up a real greywater plan:** Identify specifically where greywater from dishwashing or bathing would be disposed of on your property without contaminating a garden bed or water source.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Bathroom & Hygiene / Composting Toilets skill guides (this site)	Free	The practical how-to behind the Tier 1-2 sanitation setup this stage requires.
A stocked, tested bucket-toilet kit	\$40–\$100 depending on scope	5-gallon buckets, sealing lids, cover material, and treatment-grade hydrated lime, actually assembled and run for a full weekend, not just purchased.

Self-Check: Ready for Stage 3?

You should have run at least one full weekend on your no-power sanitation setup, correctly measured and mixed a hydrated-lime treatment dose with real PPE, and identified a real greywater disposal plan on your own property. Reading the material without actually running the setup is still Stage 1 competency.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independence from municipal sanitation infrastructure for extended stretches, the actual skill level Chapter 2’s Tier 2 and Tier 3 assume a household has. This stage produces skills that hold up when there’s no sewer service to fall back on.

Self-Sufficiency

- **Design a real long-term sanitation system:** Move beyond the bucket-toilet dry run to understanding and building toward Chapter 2’s Tier 3 humanure composting system: proper carbon-material layering, the extended aging period required before safe use, and why it must stay separate from any food-crop soil

system until fully processed. If pyrolysis-based treatment (heating waste to destroy pathogens in hours instead of a year) is part of your plan, research actual equipment, a sealed retort with verified sustained temperature, not an improvised burn setup, before trusting the output near food crops. See the Composting Toilets: Humanure, Vermicomposting & Incineration skill guide for the real pathogen die-off science and the actual carbon-to-nitrogen ratio behind that layering.

- **Evaluate vermicomposting and incinerating toilets:** Two more real, validated options beyond passive aging: a worm-assisted (vermicomposting) system cuts disease-indicator organisms dramatically and speeds up processing, though it's a pretreatment step that still needs final disposal or aging, not a standalone finish line; an incinerating toilet burns waste to sterile ash after each use, the most hands-off option, but depends on a steady fuel or power supply, a real cost to weigh against Addendum D's energy planning. The same skill guide covers current incinerating-toilet costs and the specific worm species vermicomposting actually uses.
- **Understand outbreak recognition and response:** Learn to recognize the early signs of the specific diseases that actually spread in disaster sanitation failures (cholera, dysentery, hepatitis A) and know the household-level response (aggressive rehydration, isolation, disinfection) versus when it's a true emergency requiring evacuation to care regardless of tier. The Isolating a Sick Household Member skill guide covers the actual isolation setup once someone in the household is infected, and is shared with this addendum's companion, Medical Care.
- **Cross-train with the Water & Food addendum:** Sanitation failure and water contamination are the same underlying problem from two directions; Addendum A's Stage 3 water sourcing and treatment skills directly support this stage.
- **Build real soap-making skill, not just a stocked-supplies plan:** Chapter 2's Tier 3 already calls for soap-making as the skill behind a self-sustaining hygiene supply; Stage 3 is where you actually run a real recipe through a lye calculator, practice lye safety hands-on, and make at least one full, properly cured batch, rather than treating lye and fats as materials sitting on a shelf. See the Soap Making: Lye & Oils skill guide for the real chemistry, lye-safety practice, and the wood-ash lye method for when buying lye isn't an option.

Stage 3 Learning Path

Resource	Cost / Format	Notes
The Humanure Handbook (Joseph Jenkins)	Free PDF or ~\$25 print	humanurehandbook.com. The actual source text behind Chapter 2's Tier 3 composting method; read in full at this stage, not just the summary.
Where There Is No Doctor (full study, sanitation chapters)	Free PDF or ~\$30 print	hesperian.org. By Stage 3, read the sanitation and disease-prevention material cover to cover rather than as a reference lookup.

Self-Check: Ready for Stage 4?

You should understand your household's full long-term sanitation system (humanure composting, greywater, disease response) well enough to build and maintain it without a reference, and be able to explain the actual carbon-to-nitrogen ratio and aging period behind the composting method you're using.

Stage 4: Mastery & Teaching (Expert)

Goal: the ability to teach others reliably, coordinate waste-management response at a community scale, and hold professional-level credentials where they exist. This is the stage Chapter 2's Tier 4 (neighborhood waste infrastructure) actually depends on.

Teaching & Certification

- **Complete CERT (Community Emergency Response Team) training:** CERT is free, offered by nearly every Wasatch Front city (Salt Lake City, South Salt Lake, West Valley City, American Fork, and more, usually through the local fire department), and trains civilians in fire safety, light search and rescue, team organization, and disaster medical operations. This is the single best community-scale on-ramp in this entire addendum, and it's free.
- **Pursue a professional environmental health credential if sanitation work is becoming a real vocation:** The National Environmental Health Association's Registered Environmental Health Specialist / Registered Sanitarian (REHS/RS) credential is the real, recognized professional credential for environmental health and sanitation work nationally, requiring a relevant degree, supervised experience, and a certification exam; appropriate if this is becoming a genuine vocation, not a general expectation.

Community-Scale Practice

- **Become a CERT team lead or instructor:** CERT programs are built to be taught by graduates; moving into a team-lead or instructor role is the direct mechanism for turning personal training into neighborhood-level capability.
- **Build the neighborhood waste-siting plan described in Chapter 2's Tier 4:** Chapter 2 calls for neighborhood-scale waste and composting sites, sited well away from any shared water source, and more than one trained steward who understands the system. Stage 4 is where you're capable of siting, building, or teaching that system rather than just listing it as a goal.
- **Prepare the community for death without a funeral home available:** Chapter 2's Tier 4 community sanitation response also has to account for death itself when professional services are gone; the Death, Burial & Body Disposition skill guide covers the death-certificate process, body preservation without embalming, and the real, state- and county-dependent rules around burial on private land.

Stage 4 Learning Path

Resource	Cost / Format	Notes
CERT (Community Emergency Response Team)	Free	Search "[your city] CERT training"; Salt Lake City, South Salt Lake, West Valley City, and most Wasatch Front cities run their own free programs through local fire departments.
NEHA Registered Environmental Health Specialist / Sanitarian (REHS/RS)	Course/exam fees vary	neha.org. The professional credential for environmental health and sanitation work, if pursued as a vocation.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't a certification stack; it's whether you've actually run or assisted a CERT drill, and whether your neighborhood has an actual sited, agreed-upon waste plan with more than one person who knows how to run it, because you helped build it. If the environmental health credential above fits your interests, completing it is a genuine bonus toward Stage 4 readiness, not a requirement for it.

A Suggested Learning Sequence

As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: read the core references and map your household's waste plan.

- **1–3 months:** Stage 2: run a full weekend on your no-power sanitation setup, and practice hydrated-lime treatment dosing.
- **6–12 months:** Stage 3: design and begin building your long-term humanure composting system, and read The Humanure Handbook cover to cover.
- **Ongoing:** Stage 4: complete free CERT training, help site or maintain your neighborhood’s waste plan, and consider a professional environmental health credential if this is becoming a real vocation.

At a Glance: Sanitation & Hygiene 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 2’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	Core sanitation logic, no hands-on requirement yet	Can explain the fecal-oral route and greywater/blackwater distinction from memory	CDC guidance, Hesperian's Where There Is No Doctor
Stage 2: Applied Practice	Hands-on setup and low-stakes repetition	Ran a full no-power sanitation weekend; practiced hydrated-lime dosing	Bathroom & Hygiene skill guide
Stage 3: Self-Sufficiency	Independent, self-sustaining waste management	Long-term humanure composting system designed and understood without a reference	The Humanure Handbook
Stage 4: Mastery & Teaching	Teaching others, community/professional scale	Completed CERT; helped site or maintain a neighborhood waste plan	CERT, NEHA REHS/RS

ADDENDUM C

Medical Care: Zero to Full Competency

Why This Addendum Exists

Chapter 3 tells you what to stock and do at each tier of a disruption. It does not tell you how to actually become competent at first aid and medical care when professional help is delayed, unavailable, or gone entirely. This addendum is a skill-building curriculum for exactly that: a structured path from no relevant medical knowledge to genuine, tested competency, built from real certifications, courses, and hands-on practice.

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

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). This addendum's companion, Addendum B: Sanitation & Hygiene, runs the same four-stage structure for disease prevention and waste management; the two are meant to be worked through side by side, since most of what actually kills people after a disaster is a sanitation failure that becomes a medical one.

Stage 1: Foundations (Awareness)

Goal: know the core safety facts well enough to not make a medical situation worse, and understand the landscape of what's ahead. This stage is readable in a weekend.

Core Knowledge

The core concept at this stage is triage logic: in a mass-casualty or resource-scarce situation, care isn't given first-come-first-served, it's given by severity and survivability. The standard START (Simple Triage and Rapid Treatment) framework sorts patients into four categories (immediate, delayed, minor, deceased/expectant) based on whether they can walk, whether they're breathing, and basic circulation and mental status checks. At this stage you don't need to be able to run triage yourself; you need to understand why a first responder might walk past someone who's screaming to treat someone who's silent, since screaming means an open airway and minor injuries are rarely silent. See the Understanding START Triage skill guide for the full four-category framework and decision flow.

Stage 1 Learning Path

Resource	Cost / Format	Notes
START Triage overview (various EMS training sites)	Free, online	Search “START triage algorithm”; multiple state EMS agencies publish the same standardized one-page reference.
Where There Is No Doctor (Hesperian Health Guides)	Free PDF, or ~\$30 print	hesperian.org. The standard lay-accessible medical reference already cited in Chapter 3; read the basic first aid chapters first.

Stage 1 Practice Exercises

- **Practice the triage question set:** Given three hypothetical injured people, practice sorting them by START logic (walking wounded, breathing/not breathing, pulse/no pulse) before reading how a trained responder would actually categorize them.

Self-Check: Ready for Stage 2?

You should be able to describe the basic logic of START triage (why silence can be worse than screaming) without looking it up.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually practiced the physical skills under instruction. This stage is hands-on by design and centers on a real, standard certification most households should hold regardless of any other prep.

Applied Practice

- **Get certified in First Aid/CPR/AED:** The American Red Cross First Aid/CPR/AED course is the standard entry-level certification: available in-person, blended (online + in-person skills check), or fully online formats, valid for two years, and OSHA/workplace-compliant. Every adult in the household should hold this, not just one designated “medical person.” See the First Aid Basics skill guide for the core skills to practice between certification renewals.
- **Practice wound care hands-on:** Under instruction (the Red Cross course covers this), practice cleaning and dressing a wound, applying a tourniquet correctly, and recognizing when a wound needs more than a bandage.

- **Practice CPR and AED use on a manikin:** Book-knowledge of CPR compression rate and depth doesn't transfer to muscle memory; the hands-on skills session is the part that actually matters if you're ever the only person present.

Stage 2 Learning Path

Resource	Cost / Format	Notes
American Red Cross First Aid/CPR/AED course	\$50–\$110 depending on format	redcross.org/local/utah. In-person, blended, or online formats; 2-year certification.
Red Cross BLS (Basic Life Support) course	For anyone wanting the professional-grade version	redcross.org. Slightly more rigorous than standard CPR/AED, standard for healthcare workers; optional but worth it for a household's designated medical lead.
A stocked, tested first aid kit	\$50–\$150 depending on scope	Practice actually using what's in your kit (not just owning it); a kit you've never opened under pressure is a kit with unknown gaps.

Self-Check: Ready for Stage 3?

You should hold a current Red Cross First Aid/CPR/AED certification (or equivalent), and have physically practiced wound dressing and CPR on a manikin under instruction. Reading the material without the certification and hands-on practice is still Stage 1 competency.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independence from professional medical care for extended stretches, the actual skill level Chapter 3's Tier 2 and Tier 3 assume a household has. This stage is a real commitment (multi-day intensive courses), and produces skills that hold up when there's no hospital to fall back on.

Self-Sufficiency

- **Complete a Wilderness First Responder (WFR) course:** This is the single highest-leverage certification in this addendum for a genuine no-hospital scenario. NOLS's WFR is an 8-to-10-day, 72+ hour course covering patient assessment, musculoskeletal injuries, environmental emergencies, soft tissue injuries, and medical emergencies specifically in contexts without rapid evacuation to a hospital; it's the industry standard for outdoor professionals for exactly this reason. The University of Utah's Emergency Programs (UUCEP) hosts

NOLS Wilderness Medicine courses on campus, and a hybrid option (30–40 hours online plus 5 in-person days) is also available if a full 10-day block isn't feasible.

- **Learn basic herbal and home remedies with real limits understood:** Chapter 3's Tier 3 already covers herbal medicine as a real but limited option; treat this stage as building the actual plant-identification and dosing knowledge behind that guidance, not just stocking dried herbs. The Herbal Medicine & the Home Apothecary skill guide covers real plant identification and dosing limits.
- **Build a real triage and stabilization plan for your household:** Beyond the Stage 1 conceptual understanding, practice actually running START triage on simulated patients (a CERT class, covered below, does exactly this) until the categorization logic is fast and automatic. Re-run the scenarios in the Understanding START Triage skill guide until sorting is automatic.
- **Understand illness isolation and quarantine:** A household member's illness can take down the whole household if not isolated correctly; the Isolating a Sick Household Member skill guide covers the actual isolation setup, shared with this addendum's companion, Sanitation & Hygiene.
- **Prepare for medical events with no professional care available:** Two situations deserve deliberate preparation beyond general first aid: a birth that happens without a hospital or midwife reachable, and a dental emergency, which is common, genuinely painful, and rarely covered in general medical prep. See the Pregnancy, Childbirth & Newborn Care and Dental Emergencies & Basic Care skill guides for what to actually do in each.

Stage 3 Learning Path

Resource	Cost / Format	Notes
NOLS Wilderness First Responder (WFR)	~\$1,000–\$1,300, 8–10 days or hybrid	nols.edu. Check University of Utah Emergency Programs (health.utah.edu/health-kinesiology/uucep) for on-campus course hosting.
School of Natural Healing / HomeGrown Herbalist / The Green Arte	Course fees vary; some offer Utah/Idaho mountain herb walks	Utah-connected herbalism programs pairing plant identification with hands-on harvesting; verify current offerings directly since schedules change.
Where There Is No Doctor / Where There Is No Dentist (full study, not just reference)	Free PDF or ~\$30–\$45 print each	hesperian.org. By Stage 3, read cover to cover rather than as a reference lookup.

Northern Utah Note

The University of Utah's Emergency Programs office is a genuinely strong regional hub for exactly this kind of advanced training (WFR, EMT, and related wilderness/emergency medicine courses), often held on campus rather than requiring travel out of state. Check health.utah.edu/health-kinesiology/uucep for current course scheduling before looking elsewhere.

Self-Check: Ready for Stage 4?

You should hold a current Wilderness First Responder certification (or be actively enrolled), and be able to run START triage on simulated patients without hesitation. This is the stage where you're the person capable of stabilizing a genuine medical emergency with no hospital available.

Stage 4: Mastery & Teaching (Expert)

Goal: the ability to teach others reliably, coordinate medical response at a community scale, and hold professional-level credentials where they exist. This is the stage Chapter 3's Tier 4 (community medical responder network) actually depends on.

Teaching & Certification

- **Complete CERT (Community Emergency Response Team) training:** CERT is free, offered by nearly every Wasatch Front city (Salt Lake City, South Salt Lake, West Valley City, American Fork, and more, usually through the local fire department), and trains civilians in fire safety, light search and rescue, team organization, and disaster medical operations, including hands-on triage practice. This is the single best community-scale on-ramp in this entire addendum, and it's free.
- **Pursue EMT certification:** Utah's EMT course is 120–160 hours (about 150 instruction hours plus 10 clinical hours), offered through the University of Utah, BYU, Davis Technical College, Salt Lake Community College, EMT Utah, and Unified Fire Authority, among others. It requires BLS CPR certification first, and licensing runs through the Utah Bureau of EMS after passing the National Registry exam. This is a serious commitment, appropriate if your household's Tier 4 plan genuinely involves being a trained community medical responder.
- **Pursue a Master Herbalist credential if you've built real plant knowledge:** Programs like the School of Natural Healing's Advanced Herbalist track culminate in a Master Herbalist Certification; registering with the American Herbalists Guild (AHG) is voluntary but adds credibility if you intend to advise others.

Community-Scale Practice

- **Become a CERT team lead or instructor:** CERT programs are built to be taught by graduates; moving into a team-lead or instructor role is the direct mechanism for turning personal training into neighborhood-level capability.
- **Build the medical responder roster described in Chapter 3's Tier 4:** Chapter 3 calls for a neighborhood roster of trained responders and a community medical cache; Stage 4 is where you're capable of organizing, stocking, or teaching from that roster rather than just listing it as a goal.
- **Design for mass-casualty logic, not single-patient care:** The skills that work for treating one household member (Stage 2/3) don't automatically scale; community-scale response means practicing actual triage under simulated multiple-casualty conditions, which CERT and EMT training both specifically cover.

Stage 4 Learning Path

Resource	Cost / Format	Notes
CERT (Community Emergency Response Team)	Free	Search "[your city] CERT training"; Salt Lake City, South Salt Lake, West Valley City, and most Wasatch Front cities run their own free programs through local fire departments.
Utah EMT certification	Course fees vary by provider (\$800–\$1,500+)	emslcense.utah.gov lists current approved course providers statewide.
American Herbalists Guild (AHG) registration	Membership/registration fee	americanherbalistsguild.com. Voluntary professional registry that adds credibility once you've built real herbal medicine competency.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't a certification stack; it's whether you've actually run or assisted a CERT drill involving multiple simulated patients, and whether at least one other person in your household or neighborhood now holds First Aid/CPR certification because you helped them get there. If any of the herbalism or advanced credential tracks above fit your interests, completing them is a genuine bonus toward Stage 4 readiness, not a requirement for it.

A Suggested Learning Sequence

As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: read the core references and practice the triage question set conceptually.
- **1–3 months:** Stage 2: complete Red Cross First Aid/CPR/AED.
- **6–12 months:** Stage 3: complete or enroll in a Wilderness First Responder course, and begin herbal medicine study if of interest.
- **Ongoing:** Stage 4: complete free CERT training, consider EMT certification if your household’s Tier 4 plan calls for it, and start teaching First Aid/CPR to specific people rather than just taking more classes.

At a Glance: Medical Care 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 3’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	Core triage logic, no hands-on requirement yet	Can explain basic START triage logic from memory	EMS START triage references, Hesperian's Where There Is No Doctor
Stage 2: Applied Practice	Hands-on certification and low-stakes repetition	Holds current Red Cross First Aid/CPR/AED certification	American Red Cross
Stage 3: Self-Sufficiency	Independent, certified skill for a no-hospital scenario	Holds or is enrolled in Wilderness First Responder	NOLS Wilderness First Responder
Stage 4: Mastery & Teaching	Teaching others, community/professional scale	Completed CERT; has taught someone First Aid/CPR who has since certified independently	CERT, Utah EMT certification

ADDENDUM D

Energy & Heat: Zero to Full Competency

Why This Addendum Exists

Chapter 4 tells you what to have and do at each tier of a disruption. It does not teach you the underlying electrical and heating competency that makes those choices safe rather than dangerous. Backup power and wood heat are two of the most common sources of preventable injury and death in a power outage (carbon monoxide poisoning, electrocution, house fires); this addendum is a skill-building curriculum to close that competency gap, built from real trade programs and certifications, not just product manuals.

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: electrical/backup power, and heating/fuel.

Stage 1: Foundations (Awareness)

Goal: know the core safety facts well enough to not kill yourself or your household with the equipment Chapter 4 tells you to own. This stage is readable in a weekend and is non-negotiable before touching a generator or wood stove for the first time.

Electrical: Core Knowledge

The core concept at this stage is backfeeding: a generator connected to your home's wiring without a transfer switch or interlock can send power backward through the grid, which can electrocute utility line workers restoring power miles away and is illegal in most jurisdictions for exactly that reason. Understand basic load math (watts = volts × amps) well enough to know whether a generator can actually run what you're plugging into it, and know that a motor-driven appliance's starting (surge) watts, commonly 2–6x its running watts for a second or two at startup, is where an undersized generator actually fails, not the rated running wattage on the label. Understand why running a generator or any fuel-burning device indoors, in a garage even with the door open, or near an air intake is a carbon monoxide risk with no margin for error; CO is colorless, odorless, and the symptoms (headache,

dizziness) are easy to mistake for something else until it’s too late. Know the basic fuel and generator-type tradeoffs before buying anything: gasoline is cheap and available but degrades within about 30 days without a stabilizer, propane has an effectively indefinite shelf life but burns roughly 20–25% more by volume, and an inverter generator’s cleaner power (under 3% total harmonic distortion, versus 5%+ for a conventional unit) matters concretely for a CPAP or any other device with a precision power supply.

Heating: Core Knowledge

The core concept at this stage is combustion safety and heat-source appropriateness: not every heat source is safe indoors (unvented propane or kerosene heaters need specific ventilation and CO detection; charcoal and camp stoves are never safe indoors under any circumstances), and space heaters are a leading cause of home fires when placed near flammable material or left unattended. Understand basic insulation logic (heat loss happens fastest through air leaks and uninsulated surfaces, not just windows) since retaining heat is often cheaper and safer than generating more of it.

Stage 1 Learning Path

Resource	Cost / Format	Notes
CPSC generator and carbon monoxide safety guidance	Free, online	cpsc.gov. Already cited in Chapter 4; read the full guidance, not just the summary.
U.S. Fire Administration space heater safety guidance	Free, online	usfa.fema.gov. Covers placement, unattended-use risk, and the “3-foot rule” for anything flammable.
Basic electrical safety overview (OSHA or a utility provider's consumer guide)	Free, online	Rocky Mountain Power and other Utah utilities publish consumer electrical safety guides specifically covering backfeeding and generator interconnection.

Stage 1 Practice Exercises

- **Do the load math:** List every device you’d actually want to run on backup power during an outage, add up its running watts, add your single largest device’s starting watts on top (not every device’s surge together), and compare the total against your specific generator or power station’s rated output before you need it for real. See the Sizing a Fuel-Powered Generator skill guide for the actual sizing math, including starting-watts margin.
- **Locate your home’s main breaker and any transfer switch:** Physically find and understand how to operate your electrical panel’s main breaker and, if installed, a generator transfer switch or interlock kit, before an

outage. See the Fire-Starting & Generator Safety skill guide for why backfeeding without one is illegal and deadly.

- **Walk through your CO detector coverage:** Confirm you have a working carbon monoxide detector on every level of your home, not just near obvious combustion sources.

Self-Check: Ready for Stage 2?

You should be able to explain what backfeeding is and why it's dangerous, do basic watt/amp/volt load math for your own equipment, and state which heat sources are never safe indoors without hesitation.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the safety rules to having actually operated the equipment correctly under real conditions. Expect this stage to take a season or two, gated by weather (you genuinely need a cold day to test heating capacity) more than effort.

Electrical: Applied Practice

- **Run a real generator test under load:** Start your generator, connect it through a proper transfer switch or interlock (never a direct backfeed), and run your actual planned Tier 1 load list for at least a few hours; confirm what it can and can't handle. See the Fire-Starting & Generator Safety skill guide for the backfeeding and carbon-monoxide risks to check before that first real run.
- **Practice safe extension cord and connection use:** Learn to identify a generator-rated (not just any) heavy-gauge outdoor extension cord, and practice safe cable routing that doesn't create a trip or water-exposure hazard.
- **Build and test a small solar setup:** Assemble a portable solar panel plus power station or battery bank, and actually charge and run a real device from it, including on a cloudy day, to understand real-world output versus rated output.

Heating: Applied Practice

- **Operate your wood stove or heater through a full burn cycle:** If your household has a wood stove, practice a full cycle (building the fire, managing airflow/damper, safely reloading, and a clean shutdown) under normal conditions before you need it in an emergency.

- **Practice CO and fire-safety response:** Physically test your CO detectors (most have a test button) and walk through your household’s actual fire-extinguisher location and use, since a heating-related fire is a real and specific risk this addendum is meant to reduce.
- **Insulate one real weak point:** Identify and actually fix one real heat-loss point in your home (weatherstripping a door, sealing an attic hatch) rather than just reading about insulation theory. The Staying Warm Without Power skill guide covers the rest of the heat-retention hierarchy beyond your primary heat source.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Generator interlock kit or manual transfer switch	\$50–\$500 depending on setup	The single highest-leverage safety purchase in this stage; consult a licensed electrician for installation if wiring into your panel directly.
A basic multimeter	\$20–\$50	Lets you actually verify voltage/continuity rather than guessing; a genuinely useful, low-cost tool for this entire track.
Working CO and smoke detectors on every level	\$20–\$60 each	Test and replace batteries on the same schedule as your other emergency equipment checks.

Self-Check: Ready for Stage 3?

You should have physically run your generator through a full load test using a proper transfer method, operated your primary heat source through at least one complete cycle, and fixed at least one real insulation weak point in your home. Owning the equipment without having run it under real conditions is still Stage 1 competency.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independence from grid power for extended stretches, the actual skill level Chapter 4’s Tier 2 and Tier 3 assume a household has. This stage involves real coursework, not just more careful DIY practice.

Electrical: Self-Sufficiency

- **Take an entry-level electrical or electronics course:** Bridgerland Technical College (Brigham City) offers both a full Electrical Apprenticeship track and a shorter Electronics Technology program; Davis Technical College

(Kaysville) offers a comparable maintenance-and-construction electrical program. Either is a genuine, structured entry point well beyond DIY YouTube-level knowledge, and both are open-entry (you can start most months).

- **Design a real off-grid or hybrid solar system for your home:** Move beyond the Stage 2 portable setup to actually sizing a system against your household's real Tier 2/3 power needs, using NABCEP's associate-level training material as a reference even if you don't sit the full exam. The real formula: $\text{panel wattage} = \text{daily Wh needed} \div (\text{your worst month's peak sun hours} \times 0.75) \times 1.1\text{--}1.2$ for margin. Size against your worst month, not the annual average; Salt Lake City averages 5.1 peak sun hours a day across the year, but that swings from roughly 8.3 in June to about 1.8 in December, a system sized off the annual figure does almost nothing in the exact winter outage this addendum is built around. Battery capacity = $\text{daily load} \times \text{days of autonomy} \div \text{usable depth of discharge}$, and depth of discharge depends on chemistry: roughly 85% for lithium (LiFePO4), only about 50% for lead-acid or AGM, meaning a lead-acid bank needs nearly double the rated capacity for the same usable power. The Sizing a Solar Array & Battery System skill guide walks through this exact calculation with your own numbers.
- **Understand your utility's actual restoration priorities and programs:** Know how your specific utility (Rocky Mountain Power or your municipal provider) prioritizes outage restoration and whether they offer a medical-equipment priority program, cross-referencing Chapter 8's guidance for any household member on powered medical equipment.
- **Build genuinely off-grid generation and storage capacity:** Beyond a grid-tied or portable solar setup, two options extend real self-sufficiency further: human-powered generation for charging small devices when the sun isn't cooperating, and a Stirling engine, which can turn stored heat (including waste heat from a wood stove) back into usable electricity. See the Pedal Power: Bicycle Generators and Stirling Engines skill guides for what each can and can't realistically supply.

Heating: Self-Sufficiency

- **Understand wood-burning science, not just operation:** Learn the actual physics and chemistry behind efficient, low-creosote wood burning (moisture content, air supply, burn temperature) that a CSIA-certified sweep would know, even before pursuing certification yourself. The Building a Rocket Mass Heater skill guide applies that same combustion science to a genuinely different, far more fuel-efficient design.
- **Build a real wood fuel supply chain:** If using wood heat as a real Tier 2/3 plan, understand seasoning time (properly seasoned wood typically needs 6–12+ months of covered, ventilated drying) and build a rotating supply rather than assuming green wood will burn safely and efficiently.
- **Get a professional chimney inspection:** Have your chimney or flue professionally inspected before relying on wood heat for a real Tier 2/3 scenario; creosote buildup is a genuine, common house fire cause and isn't something to assess yourself without training.

- **Build supplemental, non-electric heat and hot water capacity:** Two real, situational options extend heating self-sufficiency beyond a single wood stove: a compost heat mound that generates usable heat from decomposing organic matter over months, and a solar water heater that cuts the energy load of heating water at all. See the Building a Jean Pain Compost Heat Mound and DIY Solar Water Heater skill guides for what each actually requires and delivers.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Bridgerland Technical College Electronics Technology / Electrical Apprenticeship	Program fees vary; open-entry most months	btech.edu. Brigham City campus; a genuine structured entry point into electrical competency.
Davis Technical College electrical program	Program fees vary	davistech.edu. Kaysville campus; covers electrical theory, blueprint reading, code, and safety.
NABCEP PV Associate exam prep material	Free/low-cost study guides available; exam fee if pursued	nabcep.org. The entry-level credential in the NABCEP solar certification track; useful reference material even without sitting the exam.
A local CSIA-certified chimney sweep	Inspection cost varies, typically \$150–\$300	csia.org has a certified-sweep locator; get a real professional inspection before depending on wood heat.

Northern Utah Note

Utah's technical college system (Bridgerland, Davis Tech, Salt Lake Community College, and others) is a genuinely strong, low-cost regional resource for real trade competency, deliberately structured to be more accessible than a 4-year degree. Most programs are open-entry, meaning you don't have to wait for a fall semester to start.

Self-Check: Ready for Stage 4?

You should have completed or be actively enrolled in real electrical coursework beyond DIY level, have a properly sized off-grid or hybrid solar system designed (even if not fully built), and have had your primary heat source's venting professionally inspected. This is the stage where your household's Tier 3 energy independence is real, not aspirational.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others safely, and the capacity to help design or maintain shared energy systems at community scale. This is the stage Chapter 4's Tier 4 (linked household energy systems) actually depends on.

Teaching & Certification

- **Pursue a Utah electrician license:** Utah's DOPL licenses electricians at several levels: a Residential Journeyman Electrician (2-year, 288-classroom-hour apprenticeship plus 4,000 supervised hours, or 8,000 hours without formal classroom education) or a full Journeyman Electrician (4-year, 576-classroom-hour apprenticeship plus 8,000 supervised hours, or 16,000 hours without formal education), each followed by written and practical exams. This is a serious, multi-year commitment, appropriate if energy work is becoming a real vocation, not just a prep skill.
- **Pursue NABCEP PV Installation Professional certification:** The full credential requires at least 10 hours of OSHA Outreach Training and 58+ hours of advanced PV training beyond the associate level; this is the recognized professional standard for solar installation and design.
- **Pursue CSIA Certified Chimney Sweep certification:** A nationally recognized credential covering chimney physics, fire codes, and solid-fuel appliance installation, with required recertification every three years; appropriate if wood heat is a serious, ongoing part of your household's or community's energy plan.

Community-Scale Practice

- **Design for a shared or microgrid system, not just one household:** Take what you've built at Stage 3 and scope what it would take to link multiple households' solar/battery systems or share a wood fuel supply chain, per Chapter 4's Tier 4 goal; the coordination and safety questions (shared transfer switching, fair fuel allocation) are genuinely different from single-household design.
- **Build the skills roster described in Chapter 4's Tier 4:** Chapter 4 calls for shared energy infrastructure and a skills roster; Stage 4 is where you're the person capable of safely inspecting, repairing, or teaching from that roster.
- **Teach generator and wood-stove safety specifically:** These are the two most common sources of Chapter 4-relevant injury; a short, repeatable safety walkthrough (backfeeding, CO risk, safe wood-stove operation) taught to neighbors prevents more harm than almost any other single teaching investment in this addendum.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Utah DOPL Residential or full Journeyman Electrician licensing	Multi-year program; exam fees apply	commerce.utah.gov/dopl/electrical . Recognized Utah apprentice program list available from DOPL directly.
NABCEP PV Installation Professional certification	58+ hours advanced training plus exam fee	nabcep.org . The full professional solar credential.
CSIA Certified Chimney Sweep	Coursework plus two exams; recertify every 3 years	csia.org . The recognized professional wood-heat safety credential.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the credential; it's whether you've safely walked at least one other household through generator or wood-stove setup and they've since operated it correctly without you present. If you're pursuing a full professional license, treat that as a genuine bonus toward Stage 4, not a requirement most households need to clear.

A Suggested Learning Sequence

The two tracks (electrical, heating) don't have to move at the same pace. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1 across both tracks: read the core safety references, do the load math, confirm CO detector coverage.
- **A season or two:** Stage 2: run a full generator load test with a proper transfer method, complete a full wood-stove burn cycle, fix one real insulation weak point.
- **6–18 months:** Stage 3: begin an electrical/electronics course, design a properly sized off-grid solar system, get a professional chimney inspection.
- **Ongoing:** Stage 4: pursue a professional electrical or solar credential if energy work is becoming a real vocation, and start teaching generator/wood-stove safety to specific neighbors.

At a Glance: Energy & Heat 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 4’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	Core electrical and combustion safety, no hands-on requirement yet	Can explain backfeeding risk and CO danger from memory	CPSC guidance, USFA space heater guidance
Stage 2: Applied Practice	Hands-on equipment operation and low-stakes repetition	Ran a full generator load test and a full wood-stove burn cycle	Transfer switch/interlock kit, multimeter
Stage 3: Self-Sufficiency	Structured coursework and properly sized systems	Enrolled in electrical coursework; off-grid solar system designed; chimney professionally inspected	Bridgerland/Davis Technical College
Stage 4: Mastery & Teaching	Professional credentials, community-scale design	Has taught safe generator/wood-stove operation to another household	Utah DOPL electrician license, NABCEP, CSIA

ADDENDUM E

Shelter & Structural Safety: Zero to Full Competency

Why This Addendum Exists

Chapter 5 tells you what to have and do at each tier of a disruption. It does not teach the underlying competency behind either half of that: structural safety judgment, and building shelter when your home isn't an option. This addendum is a skill-building curriculum for both, built from real Utah programs and certifications.

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). This addendum's companion, Addendum F: Security & Self-Defense, runs the same four-stage structure for entry security and personal defense; the two are meant to be worked through side by side.

Stage 1: Foundations (Awareness)

Goal: know the core structural-safety facts well enough to make sound decisions and not create new risk. This stage is readable in a weekend.

Core Knowledge

The core concept at this stage is the ATC-20 tagging logic already covered in Chapter 15: a building can look intact and still be structurally unsafe, and the reverse is also true. Understand the basic red flags (foundation cracks, out-of-plumb walls, a sagging roofline) covered in Chapter 15's Tier 1 guidance, and understand basic shelter physics: insulation from the ground and wind matters as much as a roof overhead, which is why an uninsulated lean-to in cold weather can be more dangerous than no shelter with a fire. See the Emergency Shelter Basics skill guide for the actual heat-retention priorities behind that logic.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Great Utah ShakeOut	Free, annual, online registration	shakeout.org/utah. The statewide earthquake drill; participating is the single easiest Stage 1 shelter action available.
University of Utah Outdoor Survival Skills (Lifelong Learning)	Low-cost, single-session	continue.utah.edu. An accessible, low-commitment intro to shelter building, fire starting, and water filtration basics.

Stage 1 Practice Exercises

- **Identify your home's real structural red flags:** Walk your own property looking specifically for the red flags Chapter 15 describes, before you ever need to assess damage under stress. See the Safely Re-Entering a Damaged Home skill guide for the full walkaround and what to do once you find one.
- **Assess and reduce your home's actual earthquake vulnerability:** Beyond spotting red flags after the fact, the Securing Your Home Against Earthquake Damage skill guide covers what to check and fix beforehand, water heater strapping, cripple wall bracing, unsecured heavy furniture, so there's less structural damage to assess in the first place.

Self-Check: Ready for Stage 2?

You should be able to describe the ATC-20 red flags from memory and name at least one structural vulnerability you've already found and fixed on your own property.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually built and slept in a shelter, and practiced a real structural walkaround.

Applied Practice

- **Practice the ShakeOut drop-cover-hold drill for real:** Actually perform the physical drill during the annual Great Utah ShakeOut, not just acknowledge the reminder email.
- **Build a real improvised shelter:** Using only a tarp and cordage (the University of Utah course's format), build a functional shelter in your own backyard or a local canyon and sleep a night in it under supervision or

- 9/8/26, 5:15 PMShelter & Structural Safety: Zero to Full Competency · Household Emergency Preparedness Manual
- with a buddy. Cross-reference the Emergency Shelter Basics skill guide for site selection and insulation priorities before you build.
- **Practice a basic exterior structural walkaround:** On a building you have permission to assess (your own home, a friend’s), practice the Chapter 15 red-flag walkaround as a timed, real exercise rather than a mental checklist.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Tarp and cordage shelter-building materials	\$30–\$80	A ridgeline tarp and paracord, enough to actually build and sleep in a shelter per the practice exercise above.
University of Utah Outdoor Survival Skills (hands-on session)	Low-cost, single-session	continue.utah.edu. The same course as Stage 1, now for actual hands-on shelter-building practice rather than the intro overview.

Self-Check: Ready for Stage 3?

You should have completed the ShakeOut drill for real, and built and slept in an improvised tarp shelter at least once.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent competency, the actual skill level Chapter 5’s Tier 2 and Tier 3 assume a household has. This stage involves real multi-day coursework.

Self-Sufficiency

- **Complete a multi-day wilderness survival course:** Boulder Outdoor Survival School (BOSS), operating in southern Utah since 1968, offers 7, 14, and 28-day field courses teaching shelter site selection, natural-material shelter construction, friction fire, and primitive water filtration; the 7-day Primitive Skills course is a genuine, in-depth entry point.
- **Build a real natural-material shelter, not just a tarp shelter:** Move beyond Stage 2’s tarp-and-cordage shelter to constructing a shelter from natural materials alone, the core BOSS skill; this is a meaningfully harder and more valuable skill for a true no-gear scenario. See the Emergency Shelter Basics skill guide’s debris-hut section for the starting technique.

- **Deepen structural assessment knowledge:** Study the actual ATC-20 field manual (not just the summary), and if feasible, connect with a structural engineer or contractor willing to walk through real damage-assessment logic beyond the basic red flags.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Boulder Outdoor Survival School (BOSS), 7-Day Primitive Skills	~\$1,500–\$2,000 depending on program	boss-inc.com. Southern Utah, Aquarius Plateau; a nationally respected, Utah-based program.
ATC-20 Field Manual (Applied Technology Council)	Free/low-cost PDF	atcouncil.org/atc-20. The actual professional reference behind the green/yellow/red tagging system.

Northern Utah Note

BOSS is a genuinely notable regional resource: over 60 years of continuous operation in the exact terrain (southern Utah’s high desert and canyon country) most relevant to a Wasatch Front household’s realistic wilderness scenario, rather than a generic national survival program.

Self-Check: Ready for Stage 4?

You should be comfortable building a shelter from natural materials with minimal gear, and be able to explain structural damage assessment beyond the basic red-flag checklist.

Stage 4: Mastery & Teaching (Expert)

Goal: the ability to teach others reliably and coordinate shelter capacity at a community scale. This is the stage Chapter 5’s Tier 4 (shared shelter for displaced members) actually depends on.

Teaching & Certification

- **Pursue longer BOSS field courses or a primitive-skills teaching track:** BOSS’s 14- and 28-day field expeditions go well beyond the 7-day introduction into genuine wilderness self-sufficiency, and some programs offer instructor or apprentice pathways for those wanting to teach.

Community-Scale Practice

- **Coordinate shared shelter, not just personal shelter:** Cross-reference Chapter 5’s Tier 4 guest/shelter capacity guidance; Stage 4 is where you help design or run an actual shared community shelter space, including the accessibility guidance from the Access & Functional Needs chapter.
- **Teach structural assessment triage to a group:** A short, practiced group walkthrough of the ATC-20 red-flag system, taught to several neighbors at once, is what actually lets a neighborhood self-triage after a major earthquake instead of waiting for scarce professional inspectors.

Stage 4 Learning Path

Resource	Cost / Format	Notes
BOSS 14-Day or 28-Day Field Expedition	\$2,500–\$4,000+ depending on program length	boss-inc.com. The genuine mastery-level version of the Stage 3 introduction.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn’t a title or a longer course; it’s whether you’ve actually run a shared-shelter drill or taught at least one neighbor structural red-flag assessment they’ve since used independently.

A Suggested Learning Sequence

As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: identify your home’s structural red flags and register for the next ShakeOut.
- **1–4 months:** Stage 2: fix identified structural vulnerabilities and build and sleep in a tarp shelter.
- **6–18 months:** Stage 3: complete a multi-day BOSS or equivalent survival course, deepen structural assessment knowledge.
- **Ongoing:** Stage 4: consider an instructor credential if teaching is a real goal, and help run at least one real community shelter drill.

At a Glance: Shelter & Structural Safety 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 5’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	Core structural-safety knowledge, no hands-on requirement yet	Can describe ATC-20 red flags from memory	Great Utah ShakeOut
Stage 2: Applied Practice	Hands-on shelter-building and structural walkaround practice	ShakeOut drill completed; built and slept in a tarp shelter	University of Utah Outdoor Survival Skills
Stage 3: Self-Sufficiency	Independent skill over multi-day coursework	Built a natural-material shelter; deepened structural assessment knowledge	Boulder Outdoor Survival School
Stage 4: Mastery & Teaching	Teaching others, community/professional scale	Ran a real community shelter drill; taught a neighbor structural assessment	BOSS field expeditions

ADDENDUM F

Security & Self-Defense: Zero to Full Competency

Why This Addendum Exists

Chapter 6 tells you what to have and do at each tier of a disruption. It does not teach the underlying competency behind it: genuine physical security skill, including the legal and safety framework around firearms, if your household chooses that path. This addendum is a skill-building curriculum for that, built from real Utah programs and certifications.

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). This addendum's companion, Addendum E: Shelter & Structural Safety, runs the same four-stage structure for structural safety and shelter building; the two are meant to be worked through side by side.

A Note on Firearms Content

Some of this addendum covers firearm training resources, since Chapter 5 already treats firearms as one legitimate option among several for home security. This is not a recommendation that every household own or carry a firearm; it's coverage for households that have already made that choice and want real training rather than assumption. Owning a firearm is not the same skill as being proficient with one; if you intend to use one for defense, practical courses and consistent training are required, not a book. If firearms aren't part of your household's plan, the non-firearm security items below still apply in full. Always cross-reference Chapter 6's existing "Firearms Safe Storage" and "Legal Note: Use of Force" guidance alongside anything in this addendum.

Stage 1: Foundations (Awareness)

Goal: know the core safety and legal facts well enough to make sound decisions and not create new risk. This stage is readable in a weekend.

Core Knowledge

The core concept at this stage is layered security: locks, lighting, and visibility deter opportunistic threats long before any active response is needed, and most home security failures are failures of the basics (an unlocked door, a dark entry, an obviously empty house) rather than a sophisticated breach. Understand your state’s actual self-defense and use-of-force law (Chapter 6’s Legal Note covers this) before assuming you know it from general cultural osmosis; the legal threshold for justified force is more specific and more restrictive than most people assume.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Chapter 6's Legal Note: Use of Force (this manual)	Free, already included	Read this in full before any firearms training; it's the legal foundation everything else in this addendum sits on.

Stage 1 Practice Exercises

- **Do a home security walkthrough:** Walk your property at night as if you were a stranger; note every dark entry point, unlocked access, and sightline gap, and fix the cheapest ones first.
- **Read your actual state self-defense statute:** Don’t rely on secondhand summaries; read Utah’s actual use-of-force law text alongside Chapter 6’s Legal Note. See the Firearm Safety, Storage & Self-Defense Basics skill guide for the specific statutes: use of force, stand your ground, and castle doctrine.

Self-Check: Ready for Stage 2?

You should be able to describe Utah’s actual legal threshold for justified force without guessing, and name your home’s specific security weak points from your own walkthrough.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the rules to having actually practiced the physical and legal skills under real instruction.

Applied Practice

- **Harden your home’s actual weak points:** Act on your Stage 1 walkthrough: fix the locks, add the lighting, close the sightline gaps you identified, rather than leaving it as a list.

- **If pursuing firearms, get a Utah Concealed Firearm Permit (CFP):** The Utah CFP requires a 4-hour, BCI-certified classroom course covering safety, storage, Utah law, and justification of force; it does not include a shooting qualification or range time. Treat the CFP as the legal/knowledge layer, not a substitute for actual shooting proficiency. See the Firearm Safety, Storage & Self-Defense Basics skill guide for the universal safety rules and real storage options to have in place before this course, not after.
- **If pursuing firearms, separately get real range instruction:** NRA’s Basics of Pistol Shooting course (available through multiple certified Utah instructors) provides the actual hands-on shooting fundamentals the CFP course doesn’t cover: safe handling, marksmanship basics, and range discipline. Do this regardless of whether you also take the CFP course.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Utah Concealed Firearm Permit (CFP) course	\$45–\$65 course fee + \$52 state application fee	bci.utah.gov. BCI-certified instructors statewide; verify certification before booking.
NRA Basics of Pistol Shooting	Course fees vary by provider	nrainstructors.org has a searchable instructor locator for Utah.
Home security hardware (deadbolts, motion lighting, cameras)	\$100–\$500 depending on scope	Prioritize by what your Stage 1 walkthrough actually found, not a generic list.

Self-Check: Ready for Stage 3?

You should have physically fixed your home’s identified security weak points. If pursuing firearms, you should hold a CFP and have completed real range instruction, not just one or the other.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent competency, the actual skill level Chapter 6’s Tier 2 and Tier 3 assume a household has. This stage involves real multi-day coursework.

Self-Sufficiency

- **If pursuing firearms, take a defensive pistol course:** The NRA Defensive Pistol course (and similar Utah-based defensive courses) moves beyond basic marksmanship into the decision-making, mindset, and

technique needed to use a firearm responsibly under real stress; this is a meaningfully different skill than range accuracy alone.

- **Learn non-firearm self-defense fundamentals:** A basic self-defense or de-escalation course is valuable regardless of your household’s firearms decision, and is the only realistic security skill for household members who can’t or won’t carry a firearm. See the Firearm Safety, Storage & Self-Defense Basics skill guide for the difference between traditional martial arts, combat sports, and reality-based self-defense training, and why pepper spray specifically is a poor choice for indoor defense, despite its real effectiveness outdoors.
- **Understand sustained security posture:** Chapter 6’s Tier 2/3 assumes sustained watch rotations and perimeter awareness over weeks, not a single incident response; study what actually causes watch-rotation fatigue and error, since sustained vigilance is a different skill than a single alert moment.

Stage 3 Learning Path

Resource	Cost / Format	Notes
NRA Defensive Pistol course	Course fees vary by provider	Available through the same certified-instructor network as Basics of Pistol Shooting; search nrainstructors.org.

Self-Check: Ready for Stage 4?

If pursuing firearms, you should hold a defensive pistol credential, not just a basic one. Either way, you should have completed a non-firearm self-defense course and understand what sustained watch duty actually costs a household over weeks, not just a single night.

Stage 4: Mastery & Teaching (Expert)

Goal: the ability to teach others reliably and coordinate security at a community scale. This is the stage Chapter 6’s Tier 4 (formalized community watch) actually depends on.

Teaching & Certification

- **Become a Neighborhood Watch Area Leader:** Nearly every Wasatch Front police department (Salt Lake City, Sandy, West Valley City, South Jordan, American Fork, North Salt Lake, and more) runs a free Neighborhood Watch program; becoming the Area Leader for your block requires a background check and department

training, and is the direct, official mechanism for formalizing the community watch Chapter 6’s Tier 4 describes.

- **If pursuing firearms, consider NRA Instructor certification:** Becoming an NRA-certified instructor lets you teach Basics of Pistol Shooting to others safely and correctly, rather than informally passing on techniques without a structured safety framework.

Community-Scale Practice

- **Run a real watch rotation:** Organize and run an actual multi-household watch rotation as a drill, not just a plan on paper, to surface the coordination problems (fatigue, communication gaps, unclear authority) that only show up under real conditions.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Neighborhood Watch Area Leader program	Free; background check required	Contact your city's police department Crime Prevention Specialist or Neighborhood Watch Coordinator directly.
NRA Instructor certification (Pistol)	Course fees vary; prerequisite courses required	nrainstructors.org. A real teaching credential, not just a shooting one.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn’t a title or a longer course; it’s whether you’ve actually run a multi-household watch rotation and whether you’ve taught at least one neighbor a real security skill they’ve since used independently.

A Suggested Learning Sequence

The firearms sub-track within this addendum is entirely optional depending on your household’s choices. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: do the home security walkthrough and read Utah’s actual use-of-force law.
- **1–4 months:** Stage 2: harden your home’s weak points, and complete CFP and/or basic range instruction if pursuing firearms.

- **6–18 months:** Stage 3: complete a defensive pistol course if applicable, and a non-firearm self-defense course either way.
- **Ongoing:** Stage 4: become a Neighborhood Watch Area Leader, consider an instructor credential if teaching is a real goal, and run at least one real multi-household watch drill.

At a Glance: Security & Self-Defense 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 6’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	Core legal and security knowledge, no hands-on requirement yet	Can describe Utah's use-of-force law from memory	Chapter 6 Legal Note
Stage 2: Applied Practice	Hands-on hardening and instructed practice	Home weak points fixed; CFP/range instruction if applicable	Utah CFP, NRA Basics of Pistol Shooting
Stage 3: Self-Sufficiency	Independent skill over multi-day coursework	Completed defensive pistol course if applicable; non-firearm self-defense course completed	NRA Defensive Pistol
Stage 4: Mastery & Teaching	Teaching others, community/professional scale	Ran a real multi-household watch drill; taught a neighbor a real skill	Neighborhood Watch Area Leader, NRA Instructor

ADDENDUM G

Communication: Zero to Full Competency

Why This Addendum Exists

Chapter 7 tells you what to have and do at each tier of a disruption. It does not walk you through the actual licensing and skill progression behind amateur radio, which is the single most capability-dense skill in that chapter and the one most households have never touched. This addendum is a skill-building curriculum for radio communication specifically, built from the real FCC licensing structure and Utah's amateur radio community, not just equipment lists.

It's organized by skill stage, not by disaster duration, following the same structure as the other addenda. Conveniently, amateur radio already has a real, standardized 3-tier license progression (Technician, General, Extra) that maps almost directly onto this addendum's stages.

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: radio operation and licensing, and emergency communication protocol.

Stage 1: Foundations (Awareness)

Goal: understand the actual landscape of emergency communication options and terminology well enough to make an informed choice about which to pursue. This stage is readable in a weekend.

Radio: Core Knowledge

The core concept at this stage is understanding what each radio service actually does and doesn't do. FRS (Family Radio Service) requires no license but is short-range and low-power. GMRS (General Mobile Radio Service) requires a simple, no-exam \$35 FCC license (already covered in Chapter 7) and allows higher power and repeater use. Amateur (ham) radio requires passing an actual exam but opens vastly more frequency access, power, and range, including the ability to relay messages across the state or country via repeaters and the National Traffic System. None of these substitutes for the others; a household's real Tier 2/3 plan likely uses more than one.

Emergency Communication: Core Knowledge

The core concept at this stage is understanding IPAWS (already covered in Chapter 7): Wireless Emergency Alerts, the Emergency Alert System, and NOAA Weather Radio are all downstream of the same federal system, and none require you to sign up for anything, unlike your county’s separate opt-in notification system (Everbridge for most northern Utah counties). Understand that emergency communication has structure and discipline (who talks when, how messages get relayed accurately) that casual conversation doesn’t, which is why formal training exists for it.

Stage 1 Learning Path

Resource	Cost / Format	Notes
ARRL “Getting Licensed” overview	Free, online	arrl.org/getting-licensed. Explains the three license classes and what privileges each unlocks before you commit to studying.
FCC GMRS licensing information	Free to review; \$35 to license	fcc.gov. Already cited in Chapter 7; a genuinely low-barrier entry point.
Your county's Everbridge/emergency notification sign-up page	Free	Already covered in Chapter 7's Tier 1; confirm you're actually registered, not just aware it exists.

Stage 1 Practice Exercises

- **Inventory your household’s actual radio gear and range:** List every radio-capable device you own (FRS walkies, a GMRS radio, a scanner) and test its real range in your actual neighborhood, not its rated range. See the Family Communication Plan & Emergency Radio skill guide for how this fits into a full household communication plan, not just a gear list.
- **Confirm your county notification registration:** Verify you’re actually signed up for your county’s opt-in emergency notification system, not just assuming a past registration is still active.
- **Listen to a real net or repeater for an hour:** Even without a license, you can legally listen to amateur radio traffic; find a local repeater frequency and listen to a scheduled net to understand real on-air discipline before you’re the one transmitting.

Self-Check: Ready for Stage 2?

You should be able to explain the practical difference between FRS, GMRS, and amateur radio without looking it up, and confirm your household is actually registered for local emergency notifications, not just theoretically aware of them.

Stage 2: Applied Practice (Competent)

Goal: hold a real license and have actually operated on the air under real conditions, not just studied the material.

Radio: Applied Practice

- **Get your GMRS license:** No exam required; a straightforward FCC application and \$35 fee covers your entire immediate family (GMRS licenses cover the licensee's immediate family members). Do this even if you're also pursuing amateur radio, since GMRS repeater access is genuinely useful and doesn't require ongoing study. The Family Communication Plan & Emergency Radio skill guide covers how to actually build the household plan around it.
- **Study for and pass the Technician-class amateur radio exam:** 35 questions on radio theory, regulations, and operating practices; Technician class unlocks all privileges above 30 MHz, including the popular 2-meter band most local repeaters use. Free question pools and practice exams are widely available online (ARRL's question pools page is the authoritative source). See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for a walkthrough of the licensing process itself.
- **Actually get on the air:** Passing the exam without ever transmitting is incomplete; make your first real contact on a local 2-meter repeater within your first month of licensing.

Emergency Communication: Applied Practice

- **Attend a real net:** Most local ham clubs run a weekly practice net specifically to give new operators low-stakes airtime; check in on one as your actual first transmission.
- **Practice message relay accuracy:** Practice passing a written message verbatim through two or three people by radio, then compare the received version to the original; this is the exact skill that breaks down under real stress if never practiced.
- **Build your household's radio go-bag:** Cross-reference Chapter 7's Tier 1 equipment list; confirm your actual radios, spare batteries, and frequency list are packed and current, not just purchased. See the Go-Bags & 72-Hour Kits skill guide for what belongs in the rest of that bag.

Stage 2 Learning Path

Resource	Cost / Format	Notes
FCC GMRS license	\$35 (covers immediate family)	fcc.gov/wireless/bureau-divisions/mobility-division/general-mobile-radio-service-gmrs . No exam required.
ARRL Technician license study guide / free question pools	Free online pools; ~\$25–\$30 study book	arrl.org/question-pools . Multiple free practice-exam sites use the same official pool.
Local ARRL-affiliated exam session	Typical exam fee ~\$15	arrl.org/find-an-amateur-radio-license-exam-session . Search for Salt Lake City, Provo, or your local area.

Self-Check: Ready for Stage 3?

You should hold a current GMRS license and a Technician-class amateur radio license, and have made at least one real, unscripted contact on the air. Passing the exam without ever transmitting is still Stage 1 competency in practice, even with a license in hand.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent communication capability across a wider range and under real emergency-management structure, the actual skill level Chapter 7's Tier 2 and Tier 3 assume a household has.

Radio: Self-Sufficiency

- **Pass the General-class amateur radio exam:** Another 35-question exam (requiring a passed Technician exam first) that unlocks most HF (high frequency) privileges, meaning genuine long-distance communication independent of local repeater infrastructure, which is exactly what Tier 3's "no cell or internet infrastructure expected" scenario requires. The Ham Radio Licensing & Off-Grid Mesh Networking skill guide covers what General-class privileges actually unlock.
- **Get real HF experience, not just VHF/UHF:** Local 2-meter repeater use (Technician-level) depends on that repeater staying powered and functional; HF skills (General-level) let you reach other operators directly across long distances without any local infrastructure at all. Practice this distinction hands-on, not just conceptually.
- **Learn to build or troubleshoot a basic antenna:** A genuinely practical, low-cost skill (a simple dipole or end-fed wire antenna) that meaningfully extends range and doesn't require expensive commercial equipment.

Emergency Communication: Self-Sufficiency

- **Complete FEMA's ICS-100 and IS-700:** These free, online, self-paced FEMA courses (Introduction to the Incident Command System, and an introduction to the National Incident Management System) are the actual prerequisite for ARRL's own emergency communication coursework and for most ARES deployment.
- **Complete ARRL's EC-001: Introduction to Emergency Communications:** The standard course for amateur radio operators specifically supporting emergency management, building directly on the ICS-100/IS-700 foundation.
- **Join a local ARES or RACES group as an active (not just registered) member:** Chapter 7 already references Salt Lake, Davis, and Weber County ARES groups; Stage 3 is where you actually participate in drills and nets rather than just holding a license.

Stage 3 Learning Path

Resource	Cost / Format	Notes
ARRL General license study guide / free question pools	Free online pools; ~\$25–\$30 study book	arrl.org/question-pools. Requires a passed Technician exam.
FEMA ICS-100 and IS-700 (independent study)	Free	training.fema.gov. Self-paced, online, no cost.
ARRL EC-001: Introduction to Emergency Communications	Course fee applies	arrl.org/train-courses-for-amateur-radio-public-service. Requires ICS-100/IS-700 completion first.
Utah County ARES Groups	Free to join	slcoares.org (Salt Lake), dcarc.net (Davis), webercountyutah.gov/emergency-management (Weber). Already cited in Chapter 7's references.

Self-Check: Ready for Stage 4?

You should hold a current General-class amateur radio license, have made real HF contact independent of local repeater infrastructure, and have completed ICS-100, IS-700, and EC-001. Active ARES/RACES participation (drills, nets), not just membership, should be underway.

Stage 4: Mastery & Teaching (Expert)

Goal: the highest license class, the ability to teach and license others, and real leadership capacity within emergency communication structure. This is the stage Chapter 7's Tier 4 (shared community network) actually depends on.

Teaching & Certification

- **Pass the Amateur Extra exam:** A more demanding 50-question exam requiring all previous license classes passed first; Extra class unlocks the full amateur radio frequency allocation with no remaining restrictions.
- **Become an accredited Volunteer Examiner (VE):** Requires holding a General class license or higher; becoming a VE lets you personally administer FCC license exams to others, directly removing the biggest practical barrier (finding a local exam session) for the next person trying to get licensed. The ARRL VE accreditation process is a short application plus a 40-question open-book review.
- **Complete deeper FEMA/ICS coursework if pursuing an emergency management leadership role:** IS-200 and IS-800 go beyond the ICS-100/IS-700 basics for anyone likely to serve in an Emergency Operations Center or command-post role, not just as a field radio operator.

Community-Scale Practice

- **Build the shared community network described in Chapter 7's Tier 4:** Chapter 7 calls for a shared community communication network; Stage 4 is where you're capable of actually designing repeater coverage, mesh networking (Meshtastic, already referenced in Chapter 7), or a structured net schedule rather than just listing it as a goal. See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for how Meshtastic actually pairs with licensed radio in a community network.
- **Run drills that stress-test message accuracy at scale:** A community-wide communication drill involving relayed messages through multiple operators surfaces real failure points (garbled relays, unclear priority) that a single household's practice can't.
- **Mentor new licensees through their first exam and first contact:** Being a VE gets someone licensed; actually helping them make their first real on-air contact and their first net check-in is what turns a license into genuine capability.

Stage 4 Learning Path

Resource	Cost / Format	Notes
ARRL Amateur Extra license study guide / free question pools	Free online pools; ~\$30–\$35 study book	arrl.org/question-pools. Requires passed Technician and General exams.
ARRL Volunteer Examiner (VE) accreditation	Free application	arrl.org/become-an-arrrl-ve. Requires General class license or higher.
FEMA IS-200 and IS-800	Free	training.fema.gov. For emergency management leadership roles beyond field radio operation.
Meshtastic (open-source LoRa mesh networking)	Hardware cost (~\$30–\$60/node)	meshtastic.org. Already cited in Chapter 7's Tier 3 equipment; a genuinely modern community-mesh option.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the Extra-class license alone; it's whether you've personally administered an exam session as a VE or helped license someone new, and whether your household or neighborhood's communication plan has actually been drilled with multiple operators, not just designed on paper.

A Suggested Learning Sequence

The two tracks (radio, emergency communication protocol) build on each other more tightly here than in other addenda, since ARES participation genuinely requires both a license and ICS coursework. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: understand the radio service landscape, confirm your county notification registration, listen to a local net.
- **1–3 months:** Stage 2: get licensed for GMRS and Technician-class amateur radio, make your first real on-air contact.
- **6–12 months:** Stage 3: pass the General exam, get real HF experience, complete ICS-100/IS-700/EC-001, join ARES actively.
- **Ongoing:** Stage 4: pursue Extra class and VE accreditation, and start mentoring new licensees through their first exam and first contact.

At a Glance: Communication 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 7’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	Radio service landscape, no license requirement yet	Can explain FRS vs. GMRS vs. amateur radio from memory	ARRL Getting Licensed overview
Stage 2: Applied Practice	Entry-level licensing and first real airtime	Holds GMRS and Technician-class licenses; made a real contact	ARRL Technician question pool
Stage 3: Self-Sufficiency	Long-range capability and formal emergency-comm training	Holds General-class license; completed ICS-100/IS-700/EC-001; active in ARES	ARRL General license, FEMA ICS courses
Stage 4: Mastery & Teaching	Highest license class, teaching, community network design	Holds Extra-class license or VE accreditation; has licensed or mentored someone new	ARRL Extra license, VE accreditation

ADDENDUM H

Access & Functional Needs: Zero to Full Competency

Why This Addendum Exists

Chapter 8 tells you what to have and do at each tier of a disruption for a household member with access or functional needs. It does not build the actual caregiving and equipment-management competency that makes those plans real rather than aspirational, especially the “named backup caregiver” Chapter 8’s Tier 1 calls for. This addendum is a skill-building curriculum for exactly that, built from real certifications and training, not just planning checklists.

It’s organized by skill stage, not by disaster duration, following the same structure as the other addenda. As with Addendum A, treat this as general skill-building guidance: the specific care needs of any household member should still come from their own doctor, DME supplier, or care team, not from this addendum.

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: caregiving, and medical equipment/device management.

Stage 1: Foundations (Awareness)

Goal: know the core safety facts well enough to help without causing injury (to the person you’re helping or yourself), and understand your household’s specific equipment landscape. This stage is readable in a weekend.

Caregiving: Core Knowledge

The core concept at this stage is body mechanics: most caregiver back injuries happen from lifting or transferring someone incorrectly, using the back instead of the legs, twisting while lifting, or attempting a transfer alone that genuinely needs two people. Understand the CMIST framework already covered in Chapter 8 (Communication, Medical care, Independence, Supervision, Transportation), since it’s the actual planning model Utah’s public health system uses, and it gives structure to what “access and functional needs” actually covers beyond mobility alone.

Medical Equipment: Core Knowledge

The core concept at this stage is knowing your household’s specific devices well enough to answer basic questions without searching: exact power draw in watts, battery backup duration, and the manufacturer’s own emergency guidance (not generic advice). Chapter 8’s equipment-specific notes on CPAP, oxygen, and dialysis are the floor, not the ceiling, of what you should know if your household actually depends on one of these.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Be Ready Utah: Access & Functional Needs	Free, online	beready.utah.gov/family-preparedness/access-and-functional-needs. Already cited in Chapter 8; the CMIST framework's official source.
Your specific device manufacturers' emergency/backup power guidance	Free, from manufacturer	Call or check the manufacturer's site directly for your exact model, not a generic device category.
National Kidney Foundation emergency planning guidance	Free, online	kidney.org. Already cited in Chapter 8, for any household managing dialysis.

Stage 1 Practice Exercises

- **Document your household’s exact device specs:** Write down the exact power draw, battery backup time, and manufacturer emergency contact for every powered medical device in your household.
- **Learn the CMIST framework well enough to apply it:** Walk through your own household’s plan against all five CMIST categories, not just mobility, since Communication and Supervision needs are easy to overlook.
- **Watch (don’t yet perform) a proper transfer technique:** Find manufacturer or PT-produced video guidance on proper transfer technique for your household’s specific equipment (wheelchair, hospital bed) before attempting it yourself.

Self-Check: Ready for Stage 2?

You should be able to recite your household’s specific device power/battery specs from memory, explain all five CMIST categories, and describe correct lifting body mechanics without looking it up.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually practiced caregiving physical skills under real instruction, and have a real, willing backup caregiver in place, not just a name on paper.

Caregiving: Applied Practice

- **Take the Red Cross Family Caregiving course:** Covers home safety, infection control, medication safety, reading and recording vital signs, and general elder/dependent-care skills; available in classroom and self-study formats through local Red Cross chapters.
- **Practice a real transfer with instruction:** Under supervision (a home health aide, PT, or the care recipient's own care team), physically practice the specific transfer technique your household actually needs, not a generic one.
- **Formalize your named backup caregiver:** Chapter 8's Tier 1 calls for a named backup caregiver; Stage 2 is where that person actually sits down with you, learns the specific care routine hands-on, and confirms in writing they're willing and able.

Medical Equipment: Applied Practice

- **Run a real backup-power test for every device:** Actually run each powered medical device on its backup power source (battery, power station) for its full rated duration at least once, not just assume the rating is accurate. See the Backup Power for Medical Equipment & Caregiving skill guide for device-specific sizing and runtime planning.
- **Practice basic troubleshooting for your specific devices:** Learn your device's common failure points and basic fixes (a clogged CPAP filter, a low-battery warning sequence) directly from the manufacturer's manual.
- **Confirm utility priority reconnection registration:** If not already done from Chapter 8's Tier 1, actually complete your electric utility's medical equipment priority reconnection registration rather than just knowing it exists.

Stage 2 Learning Path

Resource	Cost / Format	Notes
American Red Cross Family Caregiving course	Course fees vary by chapter; some self-study free	redcross.org. Covers home safety, medication safety, and general caregiver skills.
Your device manufacturers' owner/service manuals	Free, from manufacturer	Read in full, not just the quick-start guide, for basic troubleshooting.
A backup power source sized to your specific devices	Cost varies by device wattage	Cross-reference Addendum D's (Energy & Heat) load-math practice for correct sizing.

Self-Check: Ready for Stage 3?

You should have completed the Red Cross Family Caregiving course, have a backup caregiver who has physically practiced your household's specific care routine, and have run a real backup-power test on every critical device. A caregiver named on paper who has never practiced the actual routine is still Stage 1 in practice.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent caregiving and equipment-management competency, the actual skill level Chapter 8's Tier 2 and Tier 3 assume a household has. This stage involves real, substantial coursework.

Caregiving: Self-Sufficiency

- **Complete Certified Nursing Assistant (CNA) training:** Utah CNA programs run roughly 76–100 hours combining classroom, online, and hands-on clinical instruction, offered through Utah Tech University and multiple other providers statewide, leading to registration on the Utah Nursing Assistant Registry. This is a genuinely professional-level caregiving credential, not just an awareness course.
- **Train a second backup caregiver:** One backup caregiver is a single point of failure; Stage 3 is where a second person also learns the specific care routine, so illness or unavailability of the first backup doesn't leave the household without support.
- **Understand your household's specific condition in real depth:** Beyond general caregiving skill, build real working knowledge of the specific condition(s) in your household (from the person's own care team), since generic caregiving competency and condition-specific competency are different skills.

Medical Equipment: Self-Sufficiency

- **Build real device-repair competency for your specific equipment:** Go beyond basic troubleshooting to understanding your device’s actual internals (filters, tubing, connectors, common failure points) well enough to keep it running longer without professional service.
- **Understand DME supply chain alternatives:** Research and identify at least one backup DME supplier or equivalent device model, since Chapter 8’s Tier 3 assumes the normal supply chain may not be available.
- **Cross-train with Addendum D (Energy & Heat):** A household’s device backup-power plan is only as good as the underlying electrical competency behind it; Addendum D’s Self-Sufficiency stage is directly relevant here.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Utah CNA certification program	Program fees vary; some facility reimbursement available	utahcnaregistry.com lists approved training programs statewide, including Utah Tech University.
Utah Division of Services for People with Disabilities (DSPD)	Free resources; program eligibility varies	dspd.utah.gov. Already cited in Chapter 8; a real state resource for deeper condition-specific and caregiving support.
Utah Parent Center	Free family resources	utahparentcenter.org. Already cited in Chapter 8; Utah-specific family disability resources.

Northern Utah Note

DSPD and the Utah Parent Center are both real, Utah-specific resources worth engaging with directly rather than relying only on this manual; they’re updated more frequently and reflect current state programs and eligibility that a static document can’t track.

Self-Check: Ready for Stage 4?

You should hold (or be actively enrolled in) CNA certification or an equivalent professional-level caregiving credential, have a second trained backup caregiver in place, and be able to perform real troubleshooting and basic repair on your household’s specific medical equipment without a manual in hand.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to train others, and real community-scale capability. This is the stage Chapter 8's Tier 4 (distributed caregiving, community wellness checks) actually depends on.

Teaching & Certification

- **Pursue Certified DME Specialist (CDME) credential:** A national certification (via the Board of Certification/Accreditation) for durable medical equipment repair, troubleshooting, and home inspection, covering oxygen equipment, transfer systems, enteral feeding supplies, and wound care equipment; requires a high school diploma or equivalent plus a minimum of 500 hours of relevant experience. This is the genuine professional ceiling for the equipment track in this addendum.
- **Train additional caregivers beyond your own household:** Chapter 8's Tier 4 explicitly calls for distributed caregiving across the community, not just within one household; Stage 4 is where you teach the transfer techniques and care routines you've mastered to neighbors, not just your own backup caregivers.
- **Volunteer with DSPD or a related organization:** Beyond personal certification, active volunteer involvement with Utah DSPD or a similar organization builds real community-scale caregiving capacity and connects you to people who may need a trained backup caregiver.

Community-Scale Practice

- **Build the wellness-check system described in Chapter 8's Tier 4:** Chapter 8 calls for a structured, regular wellness-check system for isolated or high-need community members; Stage 4 is where you help design and run it, not just list it as a goal.
- **Build a shared adaptive equipment cache:** Chapter 8's Tier 4 calls for a community-level stock of spare mobility aids and adaptive tools; your Stage 3/4 device competency is exactly what makes a shared cache actually usable rather than a pile of unmaintained equipment. The DIY Assistive Equipment Fabrication skill guide covers building or modifying adaptive equipment when a replacement isn't available at all.
- **Ensure community planning is genuinely inclusive from the start:** Chapter 8's guidance on accessible community shelter design and inclusive planning depends on people with real AFN caregiving competency being involved in community-level disaster planning directly, not consulted after the fact.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Certified DME Specialist (CDME)	Exam and application fees apply	bocusa.org/certification/apply/cdme. Requires 500+ hours of relevant experience.
DSPD volunteer opportunities	Free to volunteer	dspd.utah.gov. Contact directly for current volunteer programs.
CMIST-based community planning frameworks	Free, via Be Ready Utah	beready.utah.gov. Use the same official framework at neighborhood scale rather than inventing a new one.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't a credential stack; it's whether someone outside your own household now has a trained backup caregiver or working adaptive equipment because of something you taught or organized, and whether your neighborhood's wellness-check system has actually caught a real gap at least once.

A Suggested Learning Sequence

The two tracks (caregiving, medical equipment) don't have to move at the same pace, and the relevant depth depends heavily on your household's actual needs. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: document your household's exact device specs, learn the CMIST framework, watch proper transfer technique guidance.
- **1–4 months:** Stage 2: complete Red Cross Family Caregiving, practice real transfers with instruction, formalize and train your named backup caregiver.
- **6–12 months:** Stage 3: complete or enroll in CNA certification, train a second backup caregiver, build real device troubleshooting competency.
- **Ongoing:** Stage 4: pursue CDME certification if equipment work is becoming a real focus, train caregivers beyond your household, and help build your neighborhood's wellness-check system.

At a Glance: Access & Functional Needs 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 8'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	Device knowledge and body mechanics, no hands-on requirement yet	Can recite exact device specs and the CMIST framework from memory	Be Ready Utah AFN guidance
Stage 2: Applied Practice	Hands-on caregiving skill and a real backup caregiver	Completed Red Cross Family Caregiving; backup caregiver trained and confirmed	American Red Cross Family Caregiving
Stage 3: Self-Sufficiency	Professional-level caregiving and device competency	Holds or enrolled in CNA certification; second backup caregiver trained	Utah CNA certification
Stage 4: Mastery & Teaching	Professional device credential, community-scale capability	Trained a caregiver outside your household; helped run a wellness-check system	CDME certification, DSPD volunteering

ADDENDUM I

Mental Health: Zero to Full Competency

Why This Addendum Exists

Chapter 9 tells you what to have and do at each tier of a disruption. It does not build the actual crisis-response and peer-support competency that makes a household or community capable of helping someone in real psychological distress, rather than just meaning well. This addendum is a skill-building curriculum for exactly that, built from real, standardized certifications, not just awareness reading.

It's organized by skill stage, not by disaster duration, following the same structure as the other addenda. As with Chapter 9 itself: this addendum is general skill-building guidance, not a substitute for professional mental health care, and none of it changes the advice to call or text 988 for an active crisis regardless of what stage you're at.

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: individual crisis response, and peer support and community mental health.

Stage 1: Foundations (Awareness)

Goal: know the core crisis-response facts well enough to not make a bad situation worse, and understand the real resources available. This stage is readable in a weekend.

Individual Crisis Response: Core Knowledge

The core concept at this stage is the PFA framework already covered in Chapter 9 (Listen, Protect, Connect, Model, Teach), and knowing the actual difference between 988, 211, and 911 well enough to route correctly under stress. Understand that acute stress reactions (hypervigilance, insomnia, irritability) are normal short-term responses to an abnormal event, not evidence something has gone permanently wrong; that framing itself is protective. See the Psychological First Aid skill guide for a complementary framework, the WHO/Red Cross's Look, Listen, Link, covering much of the same ground as FEMA's model above under different terminology.

Peer Support: Core Knowledge

The core concept at this stage is understanding what peer support actually is and isn't: it's support from someone with lived experience, structured and bounded, not informal advice-giving or trying to fix someone. Understand SAMHSA's six-phase disaster behavioral health model (already covered in Chapter 9) well enough to recognize which phase a community is actually in, since the right kind of support is different in the Heroic phase than in Disillusionment.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Listen, Protect, Connect: Family to Family, Neighbor to Neighbor (FEMA/Dr. Merritt Schreiber)	Free, online	The original PFA handbook already cited in Chapter 9; read the source document, not just the summary.
988 Suicide & Crisis Lifeline (Utah)	Free	988.utah.gov. Already cited in Chapter 9; understand exactly what happens when you call or text.
SAMHSA disaster behavioral health model overview	Free, online	samhsa.gov. The six-phase model's official source.

Stage 1 Practice Exercises

- **Practice the PFA framework in a low-stakes conversation:** Deliberately use Listen, Protect, Connect, Model, Teach in an ordinary difficult conversation (not a crisis) to build the muscle memory before you need it under real stress.
- **Memorize the 988/211/911 routing logic:** Practice explaining out loud, without notes, which number to call for a mental health crisis, a non-emergency resource need, and immediate danger to life.
- **Identify which SAMHSA phase your own community experienced most recently:** Reflect on a real local event (even a smaller one) and identify which of the six phases it moved through, to make the model concrete rather than abstract.

Self-Check: Ready for Stage 2?

You should be able to recite the PFA framework and the 988/211/911 routing logic without looking it up, and explain the SAMHSA six-phase model well enough to identify which phase a real situation is in.

Stage 2: Applied Practice (Competent)

Goal: hold a real, standardized certification and have practiced the actual skills under instruction, not just read about them. Both certifications in this stage are short, low-cost, and widely available in Utah.

Individual Crisis Response: Applied Practice

- **Get QPR certified:** QPR (Question, Persuade, Refer) is a 60–90 minute training teaching suicide warning-sign recognition and how to guide someone to help, modeled deliberately on how CPR training works for physical emergencies. NAMI Utah runs free QPR workshops on the second Wednesday of most months.
- **Practice the actual QPR conversation, not just the acronym:** The hardest part of QPR is asking the direct question (“are you thinking about suicide?”) without flinching; practice saying it out loud in a training or role-play context before you need it for real.
- **Know your specific local crisis resources beyond 988:** Identify your county’s specific mobile crisis outreach team or crisis receiving center, if one exists, since some situations benefit from an in-person response beyond a phone line.

Peer Support: Applied Practice

- **Get Mental Health First Aid certified:** The standard 6–8 hour certification (already cited in Chapter 9) teaches recognition and response to mental health and substance use crises; in Utah, classes are taught through NUHOPE, Weber-Morgan Health Department, Weber Human Services, Davis Behavioral Health, and other community partners, and can be found through utahsuicideprevention.org.
- **Practice active listening deliberately:** Active listening (reflecting back, not interrupting, not immediately problem-solving) is a specific, practicable skill; practice it deliberately in low-stakes conversations, not just during a crisis.
- **Build your household’s crisis resource card:** Cross-reference Appendix B’s contact list; make sure 988, 211, your county’s crisis resources, and SAMHSA’s National Helpline are all somewhere your whole household can find without a phone.

Stage 2 Learning Path

Resource	Cost / Format	Notes
NAMI Utah QPR training	Free	namiut.org/support-and-education/qpr-suicide-prevention-education. Free monthly online workshops.
Mental Health First Aid (Utah providers)	Course fees vary by provider; some free/subsidized	utahsuicideprevention.org lists current Utah trainers and providers, including NUHOPE and county behavioral health agencies.
SAMHSA National Helpline	Free	1-800-662-4357. Already cited in Chapter 9; confirm your household actually knows this exists alongside 988.

Self-Check: Ready for Stage 3?

You should hold current QPR and Mental Health First Aid certifications, and have practiced the actual direct-question conversation QPR requires, not just learned the acronym. Certification without practicing the specific hard conversation is still Stage 1 competency in practice.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent capability to support someone through a real, sustained mental health crisis, the actual skill level Chapter 9's Tier 2 and Tier 3 assume a household or community has.

Individual Crisis Response: Self-Sufficiency

- **Deepen means-restriction competency:** Chapter 9's Tier 3 already covers removing access to lethal means during acute suicide risk; Stage 3 is building genuine comfort and practiced skill at having that specific conversation and taking that specific action, since hesitation in the moment undermines its effectiveness.
- **Understand co-occurring substance use response:** Build real understanding of the Tier 2 substance-use-awareness guidance already in Chapter 9: recognizing escalating use as a coping mechanism, and how to address it directly without shame. The Substance Withdrawal: What's Actually Dangerous skill guide covers a related but distinct risk worth knowing alongside this: recognizing when withdrawal itself, not just escalating use, becomes a medical emergency.
- **Practice sustained support, not just single-crisis response:** A one-time PFA or QPR conversation is different from supporting someone through the weeks of a real disillusionment-phase crisis; build the endurance and boundary-setting skill that sustained support actually requires.

Peer Support: Self-Sufficiency

- **Volunteer as a support-group participant or co-facilitator:** Real facilitation skill (running a group check-in, managing a difficult group dynamic) is built through actual practice in a real group setting, not from reading about it.
- **Understand trauma-informed communication:** Build real working knowledge of trauma-informed principles (safety, trustworthiness, choice, collaboration, empowerment) that shape how peer support is actually delivered well versus poorly.
- **Cross-train with Addendum C (Medical Care):** CERT training's disaster medical operations component and Mental Health First Aid overlap meaningfully in a real mass-casualty or disaster context; cross-training strengthens both.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Utah Suicide Prevention training network	Course fees vary	utahsuicideprevention.org. Central Utah hub for QPR, Mental Health First Aid, Creating Safety, and related advanced trainings.
NUHOPE course offerings	Course fees vary	nuhopeutah.org/courses-offered. A Utah community mental health training provider offering a range of courses beyond the basics.
Local support group facilitation opportunities	Often free to volunteer	Contact NAMI Utah or your county behavioral health agency directly for co-facilitation opportunities.

Self-Check: Ready for Stage 4?

You should be comfortable having a direct means-restriction conversation without hesitation, have real experience supporting someone through a sustained (not single-incident) crisis, and have practiced group facilitation in a real setting, not just individual conversation.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level or professional-adjacent credentials, the ability to teach others, and real community-scale mental health infrastructure capability. This is the stage Chapter 9's Tier 4 (distributed community mental health network) actually depends on.

Teaching & Certification

- **Pursue Utah Certified Peer Support Specialist (CPSS) certification:** A genuine, state-run professional-adjacent credential specifically for people with lived experience: requires at least one year of successful recovery from mental illness or substance use challenges, 40 hours of training over five days, and a certification exam (70%+ to pass), renewed every two years with 20 hours of continuing education. Administered through Utah's Office of Substance Use and Mental Health (SUMH); this is the credential Chapter 9's Tier 4 "distributed peer support" goal is actually built around.
- **Become a Mental Health First Aid Instructor:** Requires having completed the standard course within the past 3 years, then completing instructor certification training (commonly a multi-day program through the National Council for Mental Wellbeing); certified instructors must teach the course at least three times a year to maintain certification, which is itself the mechanism for spreading this skill through a community.
- **Understand (don't necessarily pursue) professional licensure:** Full clinical licensure (LCSW, CMHC, psychologist) is a multi-year graduate-level path well beyond this addendum's scope; know that it exists as the real ceiling, and that Stage 4 competency here is peer-level, not a substitute for professional treatment.

Community-Scale Practice

- **Build the distributed peer support network described in Chapter 9's Tier 4:** Chapter 9 calls for multiple trained peer supporters so crisis capability doesn't depend on one person; Stage 4 is where you help recruit and train others toward CPSS or Mental Health First Aid, not just hold the credential yourself.
- **Extend wellness checks to cover psychological isolation:** Cross-reference Addendum H's (Access & Functional Needs) community wellness-check system; Stage 4 mental health competency is what makes that system actually catch psychological, not just physical, struggle.
- **Watch for and address supporter burnout:** Chapter 9's Tier 4 explicitly names caregiver/responder burnout as a real risk; a genuinely mature community mental health network includes support for the supporters, not just more training for more people.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Utah Certified Peer Support Specialist (CPSS) program	Training program; exam fee applies	sumh.utah.gov/education/certification/peersupportspecialists . Requires 1+ year of documented recovery.
Mental Health First Aid Instructor certification	Program and travel costs vary	mentalhealthfirstaid.org/individuals/certification-process . Requires a completed MHFA course within the past 3 years.
NAMI Utah and county behavioral health agencies	Free to engage with	Direct contact for community-scale program design, volunteer coordination, and current local resources.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the credential; it's whether your community now has more than one trained peer supporter because of your direct effort, and whether your household or neighborhood's wellness-check system has actually identified and connected someone in psychological distress to real support.

A Suggested Learning Sequence

The two tracks (individual crisis response, peer support) build on each other closely here. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: practice the PFA framework, memorize crisis routing logic, understand the SAMHSA six-phase model.
- **1–3 months:** Stage 2: get QPR and Mental Health First Aid certified, practice the direct suicide-risk question out loud.
- **6–12 months:** Stage 3: build sustained-support and means-restriction comfort, volunteer as a support-group co-facilitator.
- **Ongoing:** Stage 4: pursue CPSS certification if lived experience and interest align, consider becoming a Mental Health First Aid Instructor, and start recruiting and training others.

At a Glance: Mental Health Deep Dive

A single-page reference for planning purposes. This does not replace the detailed guidance above, and it does not replace professional mental health care; use it to see how the four stages scale, and cross-reference against Chapter 9’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	PFA framework and crisis-resource routing, no certification yet	Can recite PFA and 988/211/911 routing from memory	Listen, Protect, Connect handbook
Stage 2: Applied Practice	Standardized short certification and practiced conversation	Holds current QPR and Mental Health First Aid certification	NAMI Utah QPR, Mental Health First Aid
Stage 3: Self-Sufficiency	Sustained support and group facilitation experience	Comfortable with means-restriction conversation; real group facilitation experience	Utah Suicide Prevention training network
Stage 4: Mastery & Teaching	Professional-adjacent credential, community network building	Recruited/trained another peer supporter; helped run a real wellness-check catch	Utah CPSS certification, MHFA Instructor

ADDENDUM J

Pet Evacuation & Shelter: Zero to Full Competency

Why This Addendum Exists

Chapter 10 tells you what to have and do at each tier of a disruption for your pets. It does not build the actual medical and handling competency that makes those plans work when a vet isn't available, an animal is injured, or a household is coordinating fostering for someone else's pets. This addendum is a skill-building curriculum for exactly that, built from real certifications and Utah 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: pet medical care, and animal handling and behavior.

Stage 1: Foundations (Awareness)

Goal: know the core pet safety facts well enough to not make an emergency worse, and understand what real resources exist. This stage is readable in a weekend.

Pet Medical: Core Knowledge

The core concept at this stage is recognizing that pets can't self-report symptoms, so distress signs (lethargy, excessive panting, hiding, changes in appetite) are the actual signal, not a verbal complaint. Review Chapter 10's human-medication poisoning warning and flea/tick species-warning notes until they're automatic, since these are common, preventable, and genuinely dangerous mistakes.

Animal Handling: Core Knowledge

The core concept at this stage is stress recognition: an otherwise calm pet is measurably more likely to bite, scratch, or bolt when frightened or injured, which is exactly why Chapter 10's first aid kit includes a muzzle even

for calm pets. Understand basic body language (a dog's stiff body and whale-eye versus loose wagging, a cat's flattened ears and tail position) well enough to recognize escalating stress before it becomes a bite.

Stage 1 Learning Path

Resource	Cost / Format	Notes
ASPCA Animal Poison Control Center resources	Free to review; consultation fee may apply	aspca.org/pet-care/animal-poison-control . Already cited in Chapter 10; review common household toxins before an emergency.
AVMA PETS Act FAQ	Free, online	avma.org/pets-act-faq . Already cited in Chapter 10; understand what legal protection actually exists and its limits.
Basic canine/feline body language guides (ASPCA or Fear Free)	Free, online	fearfreepets.com and aspca.org both publish accessible stress-signal guides.

Stage 1 Practice Exercises

- **Pet-proof your medication storage:** Physically verify your Medical Care chapter's medication supplies are stored where pets genuinely cannot access them, not just assumed to be safe.
- **Practice reading your own pet's stress signals:** Watch your own pet in a mildly stressful situation (a vet visit, a loud noise) and consciously identify the body language before, during, and after.
- **Confirm your pet's ID is current:** Verify microchip registration and collar tags are current and correct today, not on the Chapter 10 checklist's annual schedule.

Self-Check: Ready for Stage 2?

You should be able to name the specific human medications and products that are toxic to pets from memory, and describe your own pet's specific stress-escalation signals without having to actively watch for them.

Stage 2: Applied Practice (Competent)

Goal: hold a real certification and have practiced actual handling and first aid skills, not just read about them.

Pet Medical: Applied Practice

- **Get Red Cross Cat and Dog First Aid certified:** A 35-minute online course covering vital signs, preventative care, and emergency response for breathing/cardiac emergencies, wounds, bleeding, and seizures; digital certification on completion. Low-barrier and worth every household member completing, not just one designated pet caretaker. See the Pet Evacuation & First Aid Basics skill guide for the same core skills alongside evacuation-specific planning.
- **Practice actual wound care and bandaging on a real (calm) animal:** Under safe, low-stakes conditions, practice applying a bandage and checking vital signs on your own pet, so the first time isn't during a real injury.
- **Build and test your pet first aid kit:** Confirm every item in Chapter 10's kit is actually present and that you know how to use each one, particularly the muzzle and styptic powder. The Pet Evacuation & First Aid Basics skill guide covers what belongs in that kit and why.

Animal Handling: Applied Practice

- **Practice carrier loading under time pressure:** Time yourself loading your pet into its carrier as if evacuating; if it takes longer than a couple of minutes or requires a struggle, that's a real gap to close before an emergency, not after.
- **Volunteer a shift at a local animal shelter:** Salt Lake County Animal Services and the Humane Society of Utah (both already cited in Chapter 10) rely on volunteers and are a genuinely good, low-commitment way to practice handling unfamiliar animals safely under supervision.
- **Practice de-escalation with a stressed animal:** Under supervision (a shelter volunteer shift is ideal for this), practice recognizing and responding to an animal's escalating stress signals before it reaches a bite or scratch.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Red Cross Cat and Dog First Aid Online	~\$25	redcross.org/take-a-class/first-aid/cat-dog-first-aid . Self-paced, desktop/tablet compatible.
Salt Lake County Animal Services volunteer program	Free to volunteer	Already cited in Chapter 10's Northern Utah Note; contact directly for current volunteer opportunities.
Humane Society of Utah volunteer program	Free to volunteer	Already cited in Chapter 10's Northern Utah Note; a genuine hands-on handling practice opportunity.

Self-Check: Ready for Stage 3?

You should hold Red Cross Cat and Dog First Aid certification, have practiced real bandaging and vital-sign checks on your own pet, and have handled at least one unfamiliar animal safely under supervision (a shelter shift is the easiest way to get this).

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent capability to manage a pet medical situation or unfamiliar animal without a vet or professional trainer present, the actual skill level Chapter 10's Tier 2 and Tier 3 assume a household has.

Pet Medical: Self-Sufficiency

- **Take an in-person, deeper pet first aid course if available:** Some Utah veterinary clinics and training organizations offer in-person pet first aid/CPR courses beyond the Red Cross online format; the hands-on manikin practice (similar to human CPR training) builds muscle memory the online course can't.
- **Learn basic triage logic for pets:** Cross-reference Chapter 10's Tier 2 triage guidance; practice actually applying the "emergency vs. wait-and-monitor" decision framework to hypothetical scenarios until it's fast.
- **Understand species-specific dosing and drug-interaction basics:** Chapter 10's Tier 2 already flags that non-veterinary-labeled antibiotics are an unregulated last resort with real species-specific risk; build enough real pharmacology literacy to understand why, not just accept the caution.

Animal Handling: Self-Sufficiency

- **Pursue foundational dog training knowledge:** Programs like Animal Behavior College or Karen Pryor Academy teach science-based, positive-reinforcement training methods that build genuinely reliable handling skill, well beyond casual pet ownership experience.
- **Build real experience with a range of animal temperaments:** Continued, regular shelter volunteering (beyond the single Stage 2 shift) builds pattern recognition across many different animals' stress responses that a single household's pets can't provide.
- **Understand basic livestock/large-animal handling if relevant:** If your household's Tier 3 plan includes small livestock (cross-reference Addendum A's poultry guidance), large-animal handling is a genuinely different skill set from companion-animal handling; don't assume it transfers automatically.

Stage 3 Learning Path

Resource	Cost / Format	Notes
In-person pet first aid/CPR course (local vet clinics, PetTech, ProPetHero)	Course fees vary, typically \$75–\$150	Search for current in-person providers in your area; hands-on manikin practice is the key differentiator from the online course.
Animal Behavior College dog training program	Program fees vary, multi-month	animalbehaviorcollege.com. Prepares students for CCPDT national certification.
Karen Pryor Academy Certified Training Partner program	Program fees vary	karenpryoracademy.com. A well-regarded positive-reinforcement training program.

Self-Check: Ready for Stage 4?

You should have completed in-person hands-on pet first aid training, be comfortable applying triage logic to a hypothetical pet emergency without hesitation, and have real, repeated experience handling animals beyond your own pets.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others, and real capacity to lead community-scale pet response. This is the stage Chapter 10's Tier 4 (distributed pet first aid, fostering network, reunification coordination) actually depends on.

Teaching & Certification

- **Pursue veterinary technician training:** Utah State University's Veterinary Technology A.S. degree (Logan) is the only AVMA-accredited program in the state; Broadview University (Layton) and Bridgerland Technical College (Logan) offer additional program options. Utah itself doesn't license vet techs, but national certification through the AAVSB's Veterinary Technician National Exam (VTNE) is the recognized professional credential. This is a serious, multi-year commitment, appropriate if pet/animal care is becoming a real vocation.
- **Pursue CPDT-KA (Certified Professional Dog Trainer) certification:** Requires 300 hours of documented training experience plus a knowledge-based exam through the Certification Council for Professional Dog Trainers (CCPDT); the recognized professional standard for dog training specifically.
- **Teach pet first aid to your neighborhood:** A short, repeatable pet first aid and evacuation-kit walkthrough, taught to several neighbors at once, is what actually builds Chapter 10's Tier 4 distributed capability rather

than leaving it concentrated in one household.

Community-Scale Practice

- **Build the emergency fostering network described in Chapter 10's Tier 4:** Chapter 10 calls for a rostered network of households willing to foster pets if their owners are incapacitated or displaced; Stage 4 is where you help organize and formalize that roster, not just list it as a goal.
- **Extend the household photo-ID reunification system to community scale:** Chapter 10's Tier 4 calls for a shared reunification system beyond one household; Stage 4 competency includes actually helping design how lost-pet information gets shared and matched across a wider area.
- **Connect formally with local shelters' existing disaster protocols:** Chapter 10's Northern Utah Note already points to Salt Lake County Animal Services and the Humane Society of Utah's existing coordination; Stage 4 is where you have an actual working relationship with these organizations before a disaster, not a cold contact during one.

Stage 4 Learning Path

Resource	Cost / Format	Notes
USU Veterinary Technology A.S. degree	2-year program; tuition applies	usu.edu/degrees-majors/veterinary-technology_as . The only AVMA-accredited program in Utah, based in Logan.
AAVSB Veterinary Technician National Exam (VTNE)	Exam fee applies	aavsb.org . The recognized national credential for veterinary technicians.
CCPDT CPDT-KA certification	300 hours experience required; exam fee applies	ccpdt.org/certification . The recognized professional dog-training credential.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the credential; it's whether your neighborhood has an actual rostered fostering network because you helped build it, and whether you've taught pet first aid to at least one other household that has since used it independently.

A Suggested Learning Sequence

The two tracks (medical, handling) don’t have to move at the same pace. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: pet-proof medication storage, learn your pet’s stress signals, confirm ID is current.
- **1–3 months:** Stage 2: get Red Cross Cat and Dog First Aid certified, practice carrier loading, volunteer a first shelter shift.
- **6–12 months:** Stage 3: complete in-person pet first aid training, begin foundational dog training coursework, build repeated shelter volunteer experience.
- **Ongoing:** Stage 4: pursue vet tech or CPDT-KA certification if animal care is becoming a real vocation, and start teaching pet first aid to neighbors while helping formalize a local fostering network.

At a Glance: Pet Evacuation & Shelter 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 10’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	Toxin awareness and stress-signal recognition, no certification yet	Can name pet-toxic medications and read your own pet's stress signals from memory	ASPCA Animal Poison Control resources
Stage 2: Applied Practice	Standardized certification and low-stakes handling practice	Holds Red Cross Cat and Dog First Aid certification; handled an unfamiliar animal safely	Red Cross Cat and Dog First Aid
Stage 3: Self-Sufficiency	Hands-on medical training and broad handling experience	Completed in-person pet first aid training; comfortable applying triage logic	In-person pet first aid, positive-reinforcement training programs
Stage 4: Mastery & Teaching	Professional credential, community fostering network	Helped formalize a local fostering roster; taught pet first aid to a neighbor	USU Vet Tech program, CPDT-KA certification

ADDENDUM K

Digital Data & Documents: Zero to Full Competency

Why This Addendum Exists

Chapter 11 tells you what to have and do at each tier of a disruption. It does not build the actual digital security and archival competency behind “encrypt it” or “store it acid-free,” the kind of understanding that lets you evaluate new tools and situations rather than just follow a fixed checklist. This addendum is a skill-building curriculum for exactly that, built from real, recognized certifications.

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: digital security, and physical/archival records.

Stage 1: Foundations (Awareness)

Goal: understand the core digital security and archival concepts well enough to make sound decisions and evaluate whether a given tool or practice actually solves your problem. This stage is readable in a weekend.

Digital Security: Core Knowledge

The core concept at this stage is understanding what encryption actually protects against (a lost or stolen device) versus what it doesn’t (a compromised password, malware already on the unlocked device), and the 3-2-1 backup principle already covered in Chapter 11 well enough to explain why a second copy on the same physical device doesn’t count as real redundancy.

Archival: Core Knowledge

The core concept at this stage is understanding why digital and physical archival methods have opposite failure modes: digital media is convenient but fails suddenly and needs active migration, while acid-free paper degrades

slowly and predictably and needs no power at all. Chapter 11's Tier 3 guidance already covers this trade-off; Stage 1 is building genuine understanding of why, not just following the recommendation.

Stage 1 Learning Path

Resource	Cost / Format	Notes
FamilySearch Learning Center	Free, online, 140+ courses	familysearch.org/wiki/en/Classes_in_the_Learning_Center . Free video courses on genealogy and records research, taught by professional genealogists.
EFF (Electronic Frontier Foundation) Surveillance Self-Defense guide	Free, online	ssd.eff.org . A well-regarded, plain-language introduction to real digital security concepts, not just product recommendations.
CompTIA A+ Cyber overview	Free overview material available	comptia.org/en-us/certifications/a-cyber . A fast-track foundational overview if cybersecurity is a genuinely new subject.

Stage 1 Practice Exercises

- **Verify your actual 3-2-1 backup is real:** Physically confirm your 3 copies live on genuinely different media types and that the off-site copy is somewhere that wouldn't be destroyed in the same event as the other two. See the Document Go-Bag & Digital Backup skill guide for what actually belongs in that backup and how to keep a portable copy current.
- **Test your password manager's emergency access feature:** Actually walk through what a trusted person would need to do to access your accounts in an emergency, using the feature itself, not just assuming it would work.
- **Identify your household's most fragile physical document:** Find the single most damage-prone original document you own and decide, concretely, whether it needs archival-grade storage now.

Self-Check: Ready for Stage 2?

You should be able to explain what encryption does and doesn't protect against, why a true 3-2-1 backup requires genuinely different media and locations, and why digital and physical archives have opposite failure modes, all without looking it up.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the concepts to having actually implemented and tested the real systems Chapter 11 describes.

Digital Security: Applied Practice

- **Actually implement full-disk encryption and test it:** Turn on BitLocker, FileVault, or VeraCrypt on your real devices (already covered in Chapter 11) and confirm you can still access your data afterward, including from a fresh reboot.
- **Set up and test a password manager properly:** Migrate your actual passwords into a real password manager, generate the official emergency kit, and store it per Chapter 11's guidance, rather than continuing to use browser-saved or reused passwords.
- **Practice offline data recovery under simulated pressure:** Time yourself actually retrieving a specific file from your encrypted backup without internet access, since Chapter 11's Tier 2 already flags that this behaves differently than people expect.

Archival: Applied Practice

- **Digitize a real batch of documents to spec:** Actually scan a meaningful batch of vital documents at 300+ DPI with consistent, searchable file names, not just the one or two documents used to test the process. The Document Go-Bag & Digital Backup skill guide covers which documents actually belong in that batch.
- **Move your most fragile document into archival storage:** Act on your Stage 1 assessment: actually rehouse your most damage-prone document in an acid-free folder or box.
- **Take a genealogy research course:** Complete at least one full FamilySearch Learning Center course relevant to your own family history research, applying real research methodology rather than casual searching.
- **Put your household's actual legal documents in place:** A will, financial power of attorney, healthcare power of attorney, and a guardianship designation for any minor children are the specific legal documents Chapter 11's archival guidance exists to protect once they're created; if your household doesn't have them yet, creating them is a real Stage 2 task, not a someday item. See the Wills, Power of Attorney & Guardianship skill guide for what each document actually does, DIY versus an attorney, and the witnessing rules that most often invalidate a DIY attempt.

Stage 2 Learning Path

Resource	Cost / Format	Notes
A password manager with an emergency-access feature (1Password, Bitwarden)	\$0–\$60/year depending on tier	Already cited in Chapter 11; actually implement it, not just know it exists.
Archival-grade folders and boxes	\$20–\$60 for a starter set	The single highest-leverage, lowest-cost archival upgrade, per Chapter 11's Tier 3 guidance.
A flatbed or portable scanner	\$80–\$250	Already cited in Chapter 11; a phone camera works in a pinch but produces meaningfully lower quality.

Self-Check: Ready for Stage 3?

You should have actually implemented full-disk encryption and a real password manager with tested emergency access, digitized a real batch of documents to spec, and rehoused at least one fragile document in archival storage. Owning the tools without having configured and tested them is still Stage 1 competency.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent digital security judgment and real archival/research skill, the actual level Chapter 11’s Tier 2 and Tier 3 assume a household has.

Digital Security: Self-Sufficiency

- **Begin CompTIA Security+ study:** Security+ is the recognized entry-level professional cybersecurity credential, covering network security fundamentals, cryptography basics, threat detection, and risk management; even partial study builds real judgment beyond following a checklist. CompTIA’s own A+ Cyber track is a genuine on-ramp if Network+ (Security+’s formal prerequisite) feels like too large a first step.
- **Understand real threat modeling for your own household:** Move beyond generic advice to actually reasoning through your specific household’s realistic threats (device theft, a compromised account, a lost backup drive) and whether your current setup actually addresses each one.
- **Practice a real data-recovery scenario:** Simulate a failed or lost primary device and actually walk through full recovery from your backups, timing how long real restoration takes versus how long you assumed it would.

Archival: Self-Sufficiency

- **Build real genealogical research skill:** Move beyond a single FamilySearch course to sustained, real research on your own family history, applying proper source citation and evidence-evaluation practices, the actual skill professional genealogists are certified on.
- **Understand notarization and its practical role:** Learn how notarization actually works and why it matters for certain documents (property, legal agreements), since Utah's own notary process is a real, accessible credential covered in Stage 4.
- **Build a genuinely resilient community-relevant archive:** Begin identifying which of your records (property boundaries, community agreements, if applicable) might matter beyond your own household, laying groundwork for Chapter 11's Tier 4 community records concept.

Stage 3 Learning Path

Resource	Cost / Format	Notes
CompTIA Security+ study material / exam voucher	Study material varies; exam ~\$400	comptia.org/en-us/certifications/security . The recognized entry-level professional cybersecurity credential.
FamilySearch Learning Center (sustained research)	Free	Continue building on Stage 2's introductory course into real, sustained research practice.
Salt Lake City Family History Library	Free to visit and use	The world's largest genealogical library, operated by FamilySearch; a genuinely major regional resource worth visiting in person.

Northern Utah Note

The Family History Library in downtown Salt Lake City is free, open to the public regardless of religious affiliation, and staffed by knowledgeable volunteers; it's a substantially deeper resource than the online FamilySearch platform alone, and worth an in-person visit while building real Stage 3 research skill.

Self-Check: Ready for Stage 4?

You should be actively studying toward or have completed Security+, be able to reason through your household's real threat model rather than following a generic checklist, and have conducted sustained, properly sourced genealogical research rather than casual searching.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others, and real capacity to build or maintain community-scale records infrastructure. This is the stage Chapter 11's Tier 4 (distributed community archive, records registry) actually depends on.

Teaching & Certification

- **Complete CompTIA Security+ certification:** The full credential (exam fee approximately \$400) is a genuine, globally recognized professional standard, and is one of the certifications the U.S. Department of Defense accepts as an information assurance baseline; appropriate if digital security work is becoming a real vocation.
- **Become a commissioned Utah Notary Public:** A real, accessible state credential: pass Utah's notary exam (\$95 fee), pass a background check, secure a \$5,000 surety bond, and file an Oath of Office through the Office of the Lieutenant Governor; the 4-year commission is a genuinely useful community skill for legal document authentication, especially valuable during Chapter 15's post-disaster recovery period when professional services may be scarce.
- **Pursue Board for Certification of Genealogists credentialing if research has become a real skill:** The Certified Genealogist (CG) credential requires a portfolio-based evaluation by multiple independent reviewers against professional research, analysis, and writing standards; a serious, multi-year pursuit appropriate only if genealogical research has become genuinely important to you, not a general expectation.

Community-Scale Practice

- **Build the distributed community archive described in Chapter 11's Tier 4:** Chapter 11 calls for multiple physical archive locations and a maintained records registry so no single fire or flood erases community records; Stage 4 is where you help design and maintain that system, not just list it as a goal.
- **Teach digital security basics to your neighborhood:** A short, practiced walkthrough of encryption, password managers, and real 3-2-1 backups, taught to several households at once, meaningfully raises a whole neighborhood's baseline security.
- **Offer notarization as a real community service:** If commissioned as a notary, actually make that service known and available to neighbors, particularly useful during Chapter 15's post-disaster insurance and legal document period.

Stage 4 Learning Path

Resource	Cost / Format	Notes
CompTIA Security+ certification exam	~\$400 exam fee	comptia.org. The full, globally recognized credential.
Utah Notary Public commission	\$100–\$225 total (exam, bond, supplies)	notary.utah.gov. A 4-year commission through the Office of the Lieutenant Governor.
Board for Certification of Genealogists (BCG)	Application and portfolio fees apply	bcgcertification.org. A serious, multi-year professional credential for genealogical research.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn’t the certification stack; it’s whether you’ve actually taught digital security basics to another household that has since implemented real encryption and backups because of you, and whether your community has an actual distributed archive or records registry you helped build, not just a plan on paper.

A Suggested Learning Sequence

The two tracks (digital security, archival) don’t have to move at the same pace. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: verify your real 3-2-1 backup, test password manager emergency access, identify your most fragile document.
- **1–3 months:** Stage 2: implement and test full-disk encryption, digitize a real document batch, rehouse your most fragile document in archival storage.
- **6–18 months:** Stage 3: begin Security+ study, build real household threat-modeling judgment, conduct sustained genealogical research.
- **Ongoing:** Stage 4: complete Security+ certification if digital security is becoming a real vocation, consider becoming a notary, and start teaching digital security basics to neighbors.

At a Glance: Digital Data & Documents 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 11’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	Encryption and archival trade-off concepts, no implementation yet	Can explain 3-2-1 backup logic and digital vs. physical archive failure modes	EFF Surveillance Self-Defense guide
Stage 2: Applied Practice	Real, tested implementation of Chapter 11's systems	Full-disk encryption and password manager implemented and tested; a fragile document archived	Password manager, archival supplies
Stage 3: Self-Sufficiency	Real threat-modeling judgment and sustained research skill	Studying toward Security+; conducting sourced genealogical research	CompTIA Security+ study material
Stage 4: Mastery & Teaching	Professional credentials, community records infrastructure	Taught digital security to a neighbor; helped build a community archive	CompTIA Security+, Utah Notary Public

ADDENDUM L

Economic & Financial: Zero to Full Competency

Why This Addendum Exists

Chapter 12 tells you what to have and do at each tier of a disruption. It does not build the actual financial literacy and negotiation competency that make cash reserves, insurance claims, and barter actually work under stress rather than in theory. This addendum is a skill-building curriculum for exactly that, built from real, recognized courses and credentials.

It's organized by skill stage, not by disaster duration, following the same structure as the other addenda. As with Chapter 12 itself: this is general financial-literacy guidance, not personalized investment or financial planning advice; for actual investment decisions, talk to a licensed financial advisor.

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: personal financial management, and barter/trade economics.

Stage 1: Foundations (Awareness)

Goal: know the core financial facts well enough to make sound decisions under stress, and understand your actual legal protections. This stage is readable in a weekend.

Personal Finance: Core Knowledge

The core concept at this stage is understanding your own insurance policy's Additional Living Expenses (ALE) provision (already covered in Chapter 12) well enough to know your specific percentage cap and documentation requirements before you ever need to file a claim, not while you're filing one. Understand basic budgeting math (fixed versus variable expenses, a real emergency fund target) as the foundation everything else in this track builds on.

Barter/Trade: Core Knowledge

The core concept at this stage is understanding Utah's actual price-gouging protection (already covered in Chapter 12's Title 13, Chapter 41) well enough to recognize a real violation versus normal price fluctuation, and understanding that informal barter economics run on reputation and trust rather than legal enforcement, which is a fundamentally different negotiating environment than a regulated retail transaction. The Barter & Local Trade Systems skill guide covers that reputation-based negotiating environment in more depth, though how central barter becomes to your household's plan is a genuinely optional choice, not a universal requirement.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Your own homeowner's/renter's insurance policy documents	Free, already owned	Read your actual ALE provision in full, not a generic explanation; find your specific percentage cap.
Utah Code Title 13, Chapter 41 (Price Controls During Emergencies Act)	Free, online	le.utah.gov. Already cited in Chapter 12; read the actual statute text.
A basic budgeting framework (50/30/20 rule or zero-based budgeting overview)	Free, widely available online	Any reputable personal finance resource; the specific framework matters less than actually using one.

Stage 1 Practice Exercises

- **Find your specific ALE cap:** Call your insurance agent if needed and confirm the exact percentage and dollar cap on your policy's ALE coverage, in writing.
- **Build a real household budget:** Create an actual, current budget for your household, not a rough mental estimate, and compare it against your Chapter 12 cash reserve target. See the Financial Preparedness Basics skill guide for the specific emergency-fund and documentation targets to budget toward.
- **Practice recognizing price gouging:** Given three hypothetical post-disaster pricing scenarios, practice identifying which would actually qualify as illegal gouging under Utah's 10%-above-average threshold versus which are legitimate cost increases.

Self-Check: Ready for Stage 2?

You should be able to state your insurance policy's exact ALE cap from memory, describe Utah's price-gouging threshold without looking it up, and have a real, current household budget rather than a mental estimate.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually practiced budgeting discipline and a real trade negotiation, not just understood the concepts.

Personal Finance: Applied Practice

- **Complete a structured personal finance course:** Financial Peace University (a 9-lesson course covering budgeting, debt payoff, and saving) is widely available through Utah credit unions like Beehive Federal Credit Union and many local churches, often free or low-cost; the structured weekly format builds real budgeting discipline better than self-study alone for most people.
- **Actually build and stress-test your emergency cash reserve:** Move beyond Chapter 12's Tier 1 target to actually assembling it in the small-denomination format specified, and physically confirm it's split correctly between the home safe and portable reserve.
- **Track every expense for one full month:** A real, disciplined expense-tracking month (not an estimate) is the single most common turning point in actually understanding where a household's money goes.

Barter/Trade: Applied Practice

- **Conduct a real, low-stakes trade negotiation:** Chapter 12's Tier 2 already recommends this as a checklist item; actually do it, trading something genuinely valuable to you for something else, and pay attention to how the negotiation actually unfolds.
- **Build your barter inventory to spec:** Actually stock Chapter 12's Tier 2 barter goods (alcohol, tobacco, coffee, sugar, salt, batteries, hygiene products, OTC meds) rather than treating the list as aspirational.
- **Practice manual ledger record-keeping:** Keep a real, physical ledger of even ordinary household transactions for a few weeks to build the habit before you need it for barter specifically.

Stage 2 Learning Path

Resource	Cost / Format	Notes
Financial Peace University	Free–\$130 depending on host/church/credit union	ramseysolutions.com/money/financial-peace. Available through Beehive Federal Credit Union and many Utah churches.
A dedicated budgeting app or simple spreadsheet	Free–\$15/month depending on tool	The specific tool matters less than actually using it consistently for the tracking exercise.
A bound ledger notebook	\$5–\$15	Already cited in Chapter 12's Tier 2 equipment; bound pages resist disputed after-the-fact edits.

Self-Check: Ready for Stage 3?

You should have completed a structured budgeting course, tracked a full month of real expenses, assembled your actual barter inventory to spec, and conducted at least one real trade negotiation. Reading about budgeting without a tracked month behind it is still Stage 1 competency.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent financial judgment and real trade skill, the actual level Chapter 12's Tier 2 and Tier 3 assume a household has.

Personal Finance: Self-Sufficiency

- **Begin AFC (Accredited Financial Counselor) coursework:** AFC is a nationally recognized, NCCA-accredited credential (through AFCPE) covering budgeting, debt management, retirement, and more; even partial coursework builds genuinely deeper financial judgment than a single 9-week course.
- **Build a real, tested income-continuity plan:** Cross-reference Chapter 12's Tier 1 income continuity guidance; actually test your remote-work contingency (power and connectivity, per the Energy & Heat and Communication addenda) or your self-employment continuity plan under simulated conditions.
- **Understand real business continuity if self-employed:** If self-employed, build a genuinely tested backup client-contact system and confirm your actual runway (how long the business survives with reduced income) with real numbers, not an estimate.

Barter/Trade: Self-Sufficiency

- **Trade a genuine skill, not just goods:** Chapter 12’s Tier 3 already emphasizes that a practiced, credentialed skill is a renewable asset a stockpile isn’t; actually trade a real skill (cross-reference any other addendum’s Stage 3 skill) for goods or help at least once.
- **Build real community trade relationships:** Move beyond single transactions to repeated trade with the same few neighbors, since Chapter 12’s Tier 2 guidance already notes that a reputation for fair dealing compounds in value over repeated interactions.
- **Understand production economics in practice:** If producing tradeable goods (cross-reference Addendum A’s food production tracks), actually observe how your local trade network’s demand shifts as supply changes, the practical version of the production-economics guidance already in Chapter 12.

Stage 3 Learning Path

Resource	Cost / Format	Notes
AFC (Accredited Financial Counselor) coursework	Program fees vary by AFCPE-approved provider	afcpe.org/certification/afc. Even incomplete coursework builds real financial counseling-level knowledge.
An AFCPE-approved course provider	Costs vary	findanafc.org lists current approved programs and providers.
Continued barter practice with a consistent trade network	No direct cost beyond goods/skills traded	The relationship-building itself is the resource at this stage, not a class.

Self-Check: Ready for Stage 4?

You should be actively pursuing AFC coursework or have completed it, have a genuinely tested income-continuity or business-continuity plan (not just a written one), and have real, repeated trade relationships with more than one neighbor, not a single one-off negotiation.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others, and real capacity to help design community-scale economic systems. This is the stage Chapter 12’s Tier 4 (formal local currency/credit system) actually depends on.

Teaching & Certification

- **Complete AFC certification:** The full credential requires AFCPE-approved coursework, passing the AFC exam, 1,000 hours of financial counseling experience, three letters of reference, and adherence to a professional code of ethics; a serious, multi-year commitment appropriate if financial counseling is becoming a real vocation.
- **Become a Financial Peace University Coordinator:** A genuine, free volunteer role: coordinators don't teach the video content (Dave Ramsey does), but guide group discussion and accountability, hosting at a church, home, or community space; the direct mechanism for spreading Stage 2's budgeting skill through a neighborhood.
- **Understand (don't necessarily pursue) full financial planning licensure:** A Certified Financial Planner (CFP) credential is a genuinely separate, multi-year professional path focused on investment and retirement planning specifically; know it exists as the real ceiling beyond AFC's counseling focus, and pursue it only if that's a genuine vocational goal.

Community-Scale Practice

- **Help design the local currency/credit system described in Chapter 12's Tier 4:** Chapter 12 calls for a formally designed scrip or credit system with anti-counterfeiting basics and a backing standard; Stage 4 is where your financial counseling and community trade experience directly inform that design.
- **Organize a recurring community market or trade event:** Chapter 12's Tier 4 already calls for scheduled, predictable trade; Stage 4 is where you help organize and run it, drawing on your Stage 3 trade-network relationships.
- **Mentor others through real financial hardship, not just teach concepts:** AFC's own required 1,000 hours are built around real client counseling; the equivalent community-scale skill is actually helping a specific neighbor through a real budgeting crisis, not just running a class.

Stage 4 Learning Path

Resource	Cost / Format	Notes
AFC (Accredited Financial Counselor) full certification	Coursework, exam, and 1,000 supervised hours	afcpe.org/certification/afc . NCCA-accredited; the recognized professional standard.
Financial Peace University Coordinator program	Free (volunteer role)	ramseysolutions.com/ramseyplus/coordinator . A genuine, low-barrier teaching mechanism.
CFP Board information (if pursuing full financial planning licensure)	Multi-year program; significant cost	cfp.net . The real professional ceiling beyond AFC's counseling scope.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the credential; it's whether you've actually helped a specific neighbor through a real financial decision or hardship, and whether your community has an actual functioning trade event or credit system you helped design, not just a plan on paper.

A Suggested Learning Sequence

The two tracks (personal finance, barter/trade) don't have to move at the same pace. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: find your exact ALE cap, read Utah's price-gouging statute, build a real household budget.
- **1–3 months:** Stage 2: complete Financial Peace University or equivalent, track a full month of expenses, conduct a real trade negotiation.
- **6–18 months:** Stage 3: begin AFC coursework, build and test a real income-continuity plan, develop repeated trade relationships.
- **Ongoing:** Stage 4: complete AFC certification if financial counseling is becoming a real vocation, become an FPU Coordinator, and start mentoring neighbors through real financial decisions.

At a Glance: Economic & Financial Deep Dive

A single-page reference for planning purposes. This does not replace the detailed guidance above, and it is not financial or investment advice; use it to see how the four stages scale, and cross-reference against Chapter 12'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	Insurance and legal knowledge, no course requirement yet	Can state your exact ALE cap and Utah's price-gouging threshold from memory	Your own policy documents, Utah Code Title 13 Ch. 41
Stage 2: Applied Practice	Structured budgeting course and a real trade	Completed Financial Peace University; tracked a full month; conducted a real trade	Financial Peace University
Stage 3: Self-Sufficiency	Deeper financial coursework and repeated trade relationships	Pursuing AFC coursework; tested income-continuity plan; repeated trade relationships	AFC coursework
Stage 4: Mastery & Teaching	Professional credential, community economic system design	Holds AFC certification or FPU Coordinator role; helped design a community trade system	AFC certification, FPU Coordinator

ADDENDUM M

Fitness: Zero to Full Competency

Why This Addendum Exists

Chapter 13 tells you what to do at each tier of a disruption to stay physically capable of the tasks every other chapter assumes you can perform. It does not build the actual training and injury-management competency behind “lift correctly” and “manage overuse injuries,” the kind of understanding that adapts to a new situation rather than following a fixed routine. This addendum is a skill-building curriculum for exactly that, built from real, recognized certifications.

It’s organized by skill stage, not by disaster duration, following the same structure as the other addenda. As with Chapter 13 itself: anyone with an existing medical condition, injury, or mobility limitation should adapt this with input from a doctor or physical therapist rather than follow it as written.

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: strength and conditioning, and injury management.

Stage 1: Foundations (Awareness)

Goal: know the core movement-safety facts well enough to not injure yourself doing the physical tasks every other chapter requires. This stage is readable in a weekend, though the physical practice itself takes longer.

Strength & Conditioning: Core Knowledge

The core concept at this stage is that most exercise-related injuries during an actual emergency come from bad technique under pressure, not from insufficient strength, which is exactly why Chapter 13’s Tier 1 emphasizes lifting technique over conditioning volume. Understand the four movement patterns that transfer directly to survival tasks: squats (lifting), hip hinges (lifting from the ground), pushing/pressing, and loaded carries. See the Physical Readiness for Emergencies skill guide for how these patterns connect to the specific physical demands a real disruption places on a household.

Injury Management: Core Knowledge

The core concept at this stage is the PEACE & LOVE protocol already covered in Chapter 13, replacing the outdated RICE approach: Protect, Elevate, Avoid anti-inflammatories, Compress, and Educate yourself on realistic recovery time in the first 48 hours; then Load, Optimism, Vascularization, and Exercise afterward. Understand why complete rest and ice alone are no longer considered best practice for most soft-tissue injuries.

Stage 1 Learning Path

Resource	Cost / Format	Notes
Dubois & Esculier, British Journal of Sports Medicine (2020), PEACE & LOVE protocol	Free abstract; full text may require access	Already cited in Chapter 13's Appendix C; the peer-reviewed origin of the protocol.
CDC Physical Activity Basics	Free, online	cdc.gov. Already cited in Chapter 13; general, medically reviewed guidance on safe exercise progression.
A reputable video series on squat/hinge/push/carry technique	Free, from a certified trainer or physical therapist	Prioritize sources credentialed through NASM, ACE, or a licensed PT, not an uncredentialed influencer.

Stage 1 Practice Exercises

- **Demonstrate correct lifting form:** Practice a proper hip-hinge lift (legs and hips, not lower back) with a light, safe object until it's automatic, not something you have to consciously think through.
- **Learn PEACE & LOVE well enough to teach it back:** Explain the full protocol out loud from memory, including which phase applies in the first 48 hours versus after.
- **Do the effort-pacing math:** Cross-reference Chapter 13's Tier 1 guidance on caloric restriction and effort pacing; understand concretely how your own output should adjust under a real reduced-calorie scenario.

Self-Check: Ready for Stage 2?

You should be able to demonstrate correct hip-hinge lifting technique without correction, and explain the full PEACE & LOVE protocol from memory well enough to teach it to someone else.

Stage 2: Applied Practice (Competent)

Goal: move from correct technique in isolation to real functional capacity under load, built through consistent practice rather than a single session.

Strength & Conditioning: Applied Practice

- **Build a real functional bodyweight routine:** Actually establish and follow Chapter 13's Tier 2 routine (squat, hinge, push, carry) on a consistent schedule for at least two months, not as a one-time trial.
- **Practice rucking with real progressive load:** Start at roughly 10% of body weight (already cited in Chapter 13) and progressively increase over weeks; log the actual distances and weights rather than estimating.
- **Keep a real training log:** Chapter 13's Tier 2 already recommends this; actually track load and frequency to catch the two common training mistakes (doing too much too soon, or not progressing at all) before they cause an injury or plateau.

Injury Management: Applied Practice

- **Assemble and understand your injury supplies in context:** Build the compression wraps and elevation-friendly setup Chapter 13 recommends, and actually know how each piece maps to a specific PEACE & LOVE phase.
- **Get CPR/First Aid certified if not already:** Cross-reference Addendum C (Medical Care); basic first aid certification is directly relevant to on-the-spot injury response during physical training or real labor. See the First Aid Basics skill guide for the core skills to practice between certification renewals.
- **Practice recognizing overexertion in real time:** During actual rucking or loaded-carry practice, deliberately notice and log the early physical signs of overexertion rather than pushing through them, building the pattern-recognition Chapter 13's Tier 3 depends on.

Stage 2 Learning Path

Resource	Cost / Format	Notes
A weighted pack/rucksack (or a normal pack loaded with water jugs)	Low-cost if repurposing existing gear	Already cited in Chapter 13's Tier 2 equipment.
A simple training log (notebook or app)	Free–\$10	Consistency of use matters more than the specific tool.
Basic compression wraps and injury-management supplies	\$20–\$50	Cross-reference Addendum C's first aid kit for overlap rather than duplicating supplies.

Self-Check: Ready for Stage 3?

You should have followed a consistent functional training routine for at least two months with a real training log, progressively increased rucking load safely, and hold a current CPR/First Aid certification. A single good workout doesn't establish the pattern this stage requires.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent physical capacity sustained through real daily labor, the actual level Chapter 13's Tier 2 and Tier 3 assume a household has, plus enough injury-management judgment to keep training through minor setbacks correctly.

Strength & Conditioning: Self-Sufficiency

- **Begin personal training certification study:** NASM or ACE's Certified Personal Trainer program (both NCCA-accredited, requiring current CPR/AED certification) builds genuinely deeper programming knowledge than following a template routine; even partial study meaningfully improves your ability to adapt training to your household's real needs.
- **Rotate labor tasks deliberately:** Cross-reference Chapter 13's Tier 3 guidance on varying daily labor to avoid repetitive strain; actually build and follow a rotation across different physical tasks rather than repeating the same motion for months.
- **Build DIY strength equipment and use it consistently:** Filled sandbags, water jugs, or weighted containers (already cited in Chapter 13's Tier 3) at zero ongoing cost; the equipment matters less than the consistency of real use.

Injury Management: Self-Sufficiency

- **Build real self-assessment skill for overuse injury:** Practice distinguishing normal training soreness from the early signs of a genuine overuse injury, the specific judgment Chapter 13’s Tier 3 depends on to prevent chronic injury.
- **Cross-train with Addendum C’s Wilderness First Responder track:** WFR training (Addendum C, Stage 3) covers musculoskeletal injury assessment in real depth; this is directly, meaningfully relevant to advanced injury management for physical training and labor.
- **Teach correct form to at least one other person:** Chapter 13’s Tier 3 already calls for teaching correct lifting/movement technique to others; actually do this with at least one household or community member, not just yourself.

Stage 3 Learning Path

Resource	Cost / Format	Notes
NASM or ACE Certified Personal Trainer coursework	\$799–\$3,499 depending on package	nasm.org or acefitness.org. NCCA-accredited; requires current CPR/AED certification.
Wilderness First Responder (cross-reference Addendum C, Stage 3)	~\$1,000–\$1,300	Directly relevant musculoskeletal injury assessment training.
DIY strength equipment (sandbags, weighted containers)	Near-zero cost beyond containers on hand	Already cited in Chapter 13's Tier 3.

Self-Check: Ready for Stage 4?

You should be actively studying toward a personal trainer certification or have completed it, be able to distinguish normal soreness from a genuine overuse injury without hesitation, and have taught correct lifting form to at least one other person.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach and program for others, and real community-scale physical capacity coordination. This is the stage Chapter 13’s Tier 4 (distributed community labor capacity) actually depends on.

Teaching & Certification

- **Complete NASM or ACE Certified Personal Trainer certification:** The full credential (a 100-question, open-book exam with a 70% passing threshold for NASM, similarly structured for ACE) is a genuine, NCCA-accredited professional standard; appropriate if training and programming for others is becoming a real skill you use regularly.
- **Understand (don't necessarily pursue) athletic trainer certification:** The BOC's Certified Athletic Trainer (ATC) credential requires a master's degree from a CAATE-accredited program and extensive supervised clinical experience; a genuinely graduate-level professional path well beyond this addendum's scope, worth knowing exists as the real ceiling for injury-management expertise.
- **Run group training sessions regularly:** Cross-reference Chapter 13's Tier 4 guidance; actually organize and lead recurring group physical training, not a one-time session, since consistency is what builds real community capability.

Community-Scale Practice

- **Build the labor rotation described in Chapter 13's Tier 4:** Chapter 13 calls for a documented, regularly updated community labor rotation schedule; Stage 4 is where you help design and run it, drawing on your Stage 3 rotation experience at household scale.
- **Match tasks to the full range of physical abilities:** Cross-reference Chapter 13's Tier 4 and Addendum H's (Access & Functional Needs) inclusive-planning guidance; genuine community-scale physical capacity coordination means real task-matching, not an all-or-nothing standard.
- **Plan for physical role succession:** Chapter 13's Tier 4 already names this; Stage 4 is where you actually identify and begin training who takes over labor-intensive community roles as current people age, are injured, or are lost.

Stage 4 Learning Path

Resource	Cost / Format	Notes
NASM or ACE Certified Personal Trainer full certification	\$799–\$3,499	The full, NCCA-accredited professional credential.
BOC Athletic Trainer (ATC) program information	Multi-year graduate program if pursued	bocatc.org. Know the pathway exists even if not personally pursuing it.
A shared community training space and equipment	Cost varies by community resources	Already cited in Chapter 13's Tier 4 equipment guidance.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the certification; it's whether you've actually run recurring group training sessions that other people show up to consistently, and whether your community has a real, documented labor rotation you helped design, not just a plan on paper.

A Suggested Learning Sequence

The two tracks (strength/conditioning, injury management) build on each other closely here. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: perfect basic lifting technique, memorize the PEACE & LOVE protocol, understand effort pacing.
- **2–4 months:** Stage 2: build and follow a consistent functional training routine with a real log, progressively increase rucking load, get CPR/First Aid certified.
- **6–18 months:** Stage 3: begin personal trainer certification study, rotate labor tasks deliberately, teach correct form to another person.
- **Ongoing:** Stage 4: complete a personal trainer certification if programming for others is becoming a real skill, and start running recurring group training and community labor rotation.

At a Glance: Fitness Deep Dive

A single-page reference for planning purposes. This does not replace the detailed guidance above, and anyone with an existing medical condition or injury should adapt this plan with a doctor or physical therapist's input; use it to see how the four stages scale, and cross-reference against Chapter 13's tiers, which describe what a household needs to do rather than how skilled it needs to be.

Stage	Focus	Key Milestone	Primary Resource
Stage 1: Foundations	Correct technique and injury-protocol knowledge, no routine yet	Can demonstrate correct hip-hinge lifting and explain PEACE & LOVE from memory	PEACE & LOVE protocol, CDC guidance
Stage 2: Applied Practice	Consistent functional routine and progressive load	2+ months of logged functional training; CPR/First Aid certified	Training log, rucking practice
Stage 3: Self-Sufficiency	Personal training study and real injury self-assessment	Studying toward NASM/ACE certification; taught correct form to another person	NASM/ACE coursework
Stage 4: Mastery & Teaching	Professional credential, community labor coordination	Runs recurring group training; helped design a real community labor rotation	NASM/ACE certification

ADDENDUM N

Transportation: Zero to Full Competency

Why This Addendum Exists

Chapter 14 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 14'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 14) 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 14; 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 14.
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 14’s Tier 2 guidance, rather than always outsourcing it.
- **Practice safe fuel transfer:** Using a manual siphon pump (never mouth-siphoning, per Chapter 14’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 14’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 14’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 14'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 14; 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 14'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 14'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 14'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 14'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.

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 14'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 14'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 14's Tier 4:** Chapter 14 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 14'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 14'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 14’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

ADDENDUM O

Post-Disaster Recovery & Rebuilding: Zero to Full Competency

Why This Addendum Exists

Chapter 15 tells you what to have and do at each tier of recovery, from safe re-entry through a full rebuild. It does not build the actual construction, insurance-claims, and contractor-vetting competency that separates a household that navigates recovery well from one that gets defrauded or makes a costly rebuild mistake. This addendum is a skill-building curriculum for exactly that, built from real Utah licensing paths and certifications.

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: structural/construction knowledge, and insurance and claims navigation.

Stage 1: Foundations (Awareness)

Goal: know the core safety and legal facts well enough to not make a bad situation worse during the highest-fraud-risk period a household is likely to face. This stage is readable in a weekend.

Structural: Core Knowledge

The core concept at this stage is the ATC-20 tagging system already covered in Chapter 15: green means inspected and safe, yellow means restricted/limited use, red means no entry, and access is controlled by the local jurisdiction, not the property owner. Understand the basic red flags (foundation cracks, out-of-plumb walls, a sagging roofline) well enough to do a real exterior assessment before ever entering a damaged structure.

Insurance & Claims: Core Knowledge

The core concept at this stage is understanding that post-disaster contractor fraud specifically targets stressed, time-pressured households, which is exactly why Chapter 15’s red flags (no verifiable license, demanding full payment upfront, door-to-door solicitation) matter more here than in ordinary contractor hiring. Understand your insurance policy’s actual claim-filing deadlines and documentation requirements before you’re filing a real claim under stress.

Stage 1 Learning Path

Resource	Cost / Format	Notes
ATC-20 (Applied Technology Council)	Free/low-cost PDF	atcouncil.org/atc-20. Already cited in Chapter 15; the actual professional reference behind the tagging system.
Utah DOPL contractor license lookup	Free, online	dopl.utah.gov. Already cited in Chapter 15; practice using it before you need it under pressure.
Your own insurance policy's claim-filing deadline and documentation requirements	Free, already owned	Read the actual policy language, not a generic summary.

Stage 1 Practice Exercises

- **Practice an exterior structural red-flag walkaround:** On your own home (or a building you have permission to assess), practice the Chapter 15 red-flag walkaround as a timed exercise. See the Safely Re-Entering a Damaged Home skill guide for the full walkaround and what to do once you find a red flag.
- **Look up a real contractor on dopl.utah.gov:** Chapter 15’s Tier 2 already recommends this as a checklist item; actually do it once, before it’s urgent, so the process is familiar.
- **Confirm your specific ALE and claim-filing deadlines:** Cross-reference Addendum L’s (Economic & Financial) ALE guidance; know your policy’s specific numbers, not a general estimate. The Filing Claims After a Disaster skill guide covers the documentation and deadlines to have ready before you file.

Self-Check: Ready for Stage 2?

You should be able to explain the ATC-20 green/yellow/red system and the structural red flags from memory, and have actually used the DOPL license lookup tool at least once before needing it for real.

Stage 2: Applied Practice (Competent)

Goal: move from knowing the theory to having actually documented damage and evaluated a real contractor scenario under practiced conditions.

Structural: Applied Practice

- **Practice full damage documentation:** Chapter 15's Tier 1 already covers this; actually do a full photo/video walkthrough of your own home as a practice run, following the same standard you'd use for a real claim.
- **Compare your home against Addendum A's Water & Food storage documentation habits:** The same "document before touching" discipline covered elsewhere in this manual applies directly here; treat this as reinforcing a single cross-cutting skill, not a separate one.
- **Understand permit basics for common repairs:** Look up your specific jurisdiction's permitting requirements for common repair types (roofing, electrical, plumbing) before you need to navigate them under pressure.

Insurance & Claims: Applied Practice

- **Practice comparing contractor bids:** Build and actually use Chapter 15's Tier 2 bid-comparison sheet (price, scope, timeline, license verification) on a real, low-stakes home project, not just a hypothetical.
- **Run a real expense-logging exercise:** Cross-reference Addendum L's budgeting practice; keep a real, dated expense log for a home project as practice for the ALE documentation Chapter 15's Tier 2 requires.
- **Understand FEMA Individual Assistance eligibility:** Chapter 15's Tier 2 already covers this; know your household's actual eligibility factors (citizenship/qualified alien status, insurance-first sequencing) before a real federal disaster declaration. See the Filing Claims After a Disaster skill guide for how insurance and FEMA claims actually sequence together.

Stage 2 Learning Path

Resource	Cost / Format	Notes
FEMA DisasterAssistance.gov	Free, online	Already cited in Chapter 15; review the actual application process before needing it.
A documentation phone/camera setup with backup power	Cost varies by existing equipment	Cross-reference Addendum D's (Energy & Heat) power bank guidance.
A contractor bid-comparison template	Free to create	Build your own based on Chapter 15's Tier 2 guidance; use it on a real project.

Self-Check: Ready for Stage 3?

You should have completed a full practice damage-documentation walkthrough, actually used a bid-comparison sheet on a real project, and know your household's FEMA Individual Assistance eligibility factors without looking them up.

Stage 3: Self-Sufficiency (Proficient)

Goal: genuine independent competency to navigate a full rebuild or relocation decision, the actual level Chapter 15's Tier 3 assumes a household has. This stage involves real, substantial commitment if pursued toward licensing.

Structural: Self-Sufficiency

- **Begin construction trade coursework or apprenticeship:** Apprenticeship Utah (a Department of Workforce Services program) is a real pathway into construction trades, and directly counts toward Utah contractor licensing experience requirements; even without pursuing a full license, real trade coursework builds genuinely deeper judgment about what a quality rebuild actually requires.
- **Understand permit navigation in real depth:** Move beyond Stage 2's basic lookup to actually understanding your jurisdiction's full permitting process for a real project, including inspection sequencing and common rejection reasons.
- **Practice the rebuild-vs-relocate decision framework for real:** Cross-reference Chapter 15's Tier 3 guidance and Chapter 5's Regional Hazards section; actually run the decision framework against your own property's real flood zone and wildfire risk status, not a hypothetical.

Insurance & Claims: Self-Sufficiency

- **Understand public adjuster licensing and role:** Utah licenses public adjusters, who advocate for the policyholder (not the insurance company) during a claim; understanding how this role works, even without pursuing the license yourself, builds real insight into claims leverage and negotiation.
- **Build real long-term financial recovery planning skill:** Cross-reference Addendum L's (Economic & Financial) AFC coursework; apply that financial counseling skill specifically to the deliberate, non-crisis-mode financial recovery planning Chapter 15's Tier 3 calls for.
- **Get all major agreements in writing, practiced as a habit:** Chapter 15's Tier 3 already requires this; build the actual habit and vocabulary for reviewing a written contractor agreement critically, not just signing what's presented.

Stage 3 Learning Path

Resource	Cost / Format	Notes
Apprenticeship Utah (Department of Workforce Services)	Often paid, earn-while-you-learn structure	jobs.utah.gov/apprenticeship . Counts toward Utah contractor licensing experience requirements.
Utah insurance adjuster pre-licensing course	Course fees vary by provider	Multiple approved providers (Kaplan Financial Education and others); useful even without pursuing the full license.
Your specific jurisdiction's building permit office	Free to consult directly	Contact directly for real, current permitting requirements rather than relying on general guidance.

Self-Check: Ready for Stage 4?

You should be enrolled in or have completed relevant trade coursework, understand how a public adjuster's role and leverage actually work, and have real, practiced comfort reviewing and negotiating a written contractor agreement critically.

Stage 4: Mastery & Teaching (Expert)

Goal: professional-level credentials, the ability to teach others, and real capacity to coordinate community-scale recovery. This is the stage Chapter 15's Tier 4 (shared contractor vetting, community damage assessment, mutual aid rebuilding labor) actually depends on.

Teaching & Certification

- **Pursue a Utah contractor license:** A B100 General Building Contractor license (or a relevant trade-specific classification) requires 2 years/4,000 hours of construction experience (or an equivalent path through apprenticeship, a construction management degree, or the NASCLA exam), a 25-hour DOPL pre-license course, passing the Prometric trade and business/law exams, and a \$50,000 surety bond plus liability insurance. A serious, multi-year commitment, appropriate if construction work is becoming a real vocation, not a general expectation.
- **Pursue a Utah public adjuster license:** A genuinely useful credential for someone who wants to formally advocate for policyholders (including neighbors) during insurance claims, requiring Utah's licensing exam and ongoing continuing education.
- **Train community members in basic damage-assessment triage:** Chapter 15's Tier 4 already calls for this; teach the ATC-20 rapid visual screening approach at a lay level to several neighbors, so a community can self-triage which homes most urgently need a professional inspector.

Community-Scale Practice

- **Build the shared contractor vetting system described in Chapter 15's Tier 4:** Chapter 15 calls for pooling verified contractor information across a neighborhood; Stage 4 is where you help build and maintain that shared referral list, not just list it as a goal.
- **Coordinate mutual aid rebuilding labor:** Cross-reference Addendum M's (Fitness) community labor rotation and Chapter 6's community governance framework; Stage 4 competency includes actually organizing shared rebuilding labor, not just having the individual skill.
- **Support recovery for households less equipped to navigate it alone:** Chapter 15's Tier 4 exists specifically because a single household relearns every recovery lesson from scratch; Stage 4 is where your accumulated competency directly helps a specific neighbor avoid a real, costly mistake.

Stage 4 Learning Path

Resource	Cost / Format	Notes
Utah DOPL B100 General Building Contractor license	Multi-year path; \$50,000 surety bond plus insurance required	commerce.utah.gov/dopl/contracting/apply-for-a-license/general-contractor . The recognized professional credential.
Utah public adjuster license	Licensing exam and continuing education	Multiple approved course providers; contact the Utah Insurance Department for current requirements.
Community contractor referral list and damage-assessment training materials	No direct cost	Model after the community pacts described in other chapters' Tier 4 guidance.

Self-Check: Have You Actually Arrived?

The real test of Stage 4 isn't the license; it's whether at least one neighbor's actual rebuild or claim went better because of your direct help, and whether your community has a real, shared, verified contractor list you helped build, not just individual households each starting from zero.

A Suggested Learning Sequence

The two tracks (structural, insurance/claims) don't have to move at the same pace, and much of this addendum is only fully exercised during an actual recovery event. As a rough guide, not a requirement:

- **Weeks 1–2:** Stage 1: learn the ATC-20 system, practice the DOPL license lookup, confirm your policy's specific claim deadlines.
- **1–4 months:** Stage 2: complete a full practice damage-documentation walkthrough, use a real bid-comparison sheet, confirm FEMA eligibility factors.
- **6–18 months:** Stage 3: begin trade coursework or apprenticeship if relevant, understand public adjuster leverage, build real contract-review habits.
- **Ongoing:** Stage 4: pursue a contractor or public adjuster license if recovery work is becoming a real vocation, and start training neighbors in damage-assessment triage while helping build a shared contractor list.

At a Glance: Post-Disaster Recovery & Rebuilding 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 15'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	ATC-20 and policy knowledge, no hands-on requirement yet	Can explain the ATC-20 tagging system and knows exact policy claim deadlines	ATC-20 field manual, DOPL license lookup
Stage 2: Applied Practice	Practiced documentation and bid comparison	Completed a full practice damage-documentation walkthrough; used a real bid-comparison sheet	FEMA DisasterAssistance.gov
Stage 3: Self-Sufficiency	Trade coursework and real contract-review habits	Enrolled in trade coursework or apprenticeship; understands public adjuster leverage	Apprenticeship Utah, adjuster pre-licensing course
Stage 4: Mastery & Teaching	Professional credential, community recovery coordination	Helped a neighbor's real rebuild/claim; built a shared community contractor list	Utah DOPL contractor license, public adjuster license