

PREFACE

Preface: How to Use This Manual

This manual covers 15 categories of household preparedness, each broken into four tiers of increasing duration and self-sufficiency: Tier 1 (Hours – 14 Days), Tier 2 (2 Weeks – 3 Months), Tier 3 (Permanent/Indefinite), and Tier 4 (Sustainable Community). It’s organized this way deliberately: most guides organize by disaster type (earthquake, flood, pandemic) or by a single timeline, but the actual skills, gear, and decisions a household needs are much more a function of how long the disruption lasts than what caused it.

The Preparedness Matrix at a Glance

The table below shows all 60 cells of this manual’s matrix (15 categories across 4 tiers) with the trigger condition that signals it’s time to activate that tier for that category. These triggers are guidelines, not hard rules; use judgment about your household’s actual situation rather than a strict duration count.

Category	Tier 1	Tier 2	Tier 3	Tier 4
Water & Food	Utilities disrupted; help expected within ~2 weeks	Disruption exceeds 2 weeks; stored buffer exhausted	No return to normal supply chain in sight	Household self-sufficient; ready to formalize shared resources
Sanitation & Hygiene	Water/sewer disrupted; still using stored hygiene supplies	Toilets unreliable 2+ weeks; bucket-toilet system running	No return to sewer service; humanure composting required	Ready to build shared neighborhood waste infrastructure
Medical Care	Injuries are self-treatable; hospital access still exists	Hospital access unavailable 2+ weeks	No pharmacies, hospitals, or dentists available	Ready to distribute medical care across neighbors
Energy & Heat	Grid down; restoration expected within days	Grid down 2+ weeks; must self-generate heat/power	No return to grid power expected	Ready to link household energy systems with neighbors
Shelter & Structural Safety	Structure damaged; safety and habitability uncertain	Sheltering in a hardened or improvised space 2+ weeks	No return to a fully repaired or original structure	Ready to formalize shared shelter and rebuild capacity
Security & Self-Defense	Immediately post-event; normal security degraded	Police response delayed or unavailable 2+ weeks	Sustained instability; no return to normal policing	Ready to formalize a community watch
Communication	Cell towers standing but congested	Cell towers down or unreliable 2+ weeks	No cell or internet infrastructure expected	Ready to build a shared community network
Access & Functional Needs	A household member has ongoing medical/mobility needs now	DME suppliers or home health unavailable 2+ weeks	No modern medical supply chain expected	Ready to build a community support network
Mental Health	Immediately following the event (acute stress)	2+ weeks in; hope fading (disillusionment phase)	Indefinite disruption; need long-term resilience	Ready to distribute support across the community
Pet Evacuation & Shelter	Evacuating or sheltering in place with pets	Sheltering 2+ weeks; vet services unavailable	No commercial pet food/vet supply chain	Ready to build a fostering/support network
Digital Data &	Always: protect originals before disaster	Cloud/physical infrastructure	No digital infrastructure	Ready to build a distributed community

Documents	strikes	unreachable 2+ weeks	expected	archive
Economic & Financial	ATMs/banks offline or card networks down	Banking unreliable 2+ weeks; cash losing utility	Conventional currency has lost practical value	Ready to formalize a local currency/credit system
Fitness	Immediate physical demands of evacuation, under stress	Daily life now requires sustained manual labor	Conditioning now comes from daily survival labor	Ready to distribute labor capacity community-wide
Transportation	Roads/conditions may make a route or method unreliable	Fuel scarce; normal vehicle service unavailable 2+ weeks	No commercial fuel supply chain or mechanics available	Ready to pool vehicles, fuel, and skill community-wide
Post-Disaster Recovery & Rebuilding	Safe to consider re-entry; damage exists	Insurance claim active; rebuilding/repairs underway	Full rebuild or relocation decision being executed	Ready to pool contractor vetting and rebuild labor

Reading the Matrix

Each row is a category; each column is a tier. The shading darkens left to right, light for Tier 1's immediate response and dark for Tier 4's community-scale endpoint, so the table itself shows the same escalation the manual is built around. Find your current situation in a row, activate every category at that column or earlier, and use Appendix A to track the specific checklist items once a tier is active.

Read Wide Before You Read Deep

The single most important piece of advice in this preface: build Tier 1 across every category before building Tier 2 in any single one. A household with a complete Tier 1 in Water & Food, Medical Care, Energy & Heat, and Security & Self-Defense is safer than a household with a complete Tier 3 in Water & Food alone and nothing else. Breadth at the early tiers matters more than depth in any one category: a household is only as prepared as its weakest fully-unaddressed category. Work across the matrix horizontally first (all 15 categories at Tier 1), then work down.

How Each Chapter Is Organized

- **Goal:** A one-sentence statement of what that tier is actually trying to accomplish. Read this first when skimming, since it frames everything below it.
- **Skills to Build:** The knowledge and practiced abilities that tier depends on. Across this entire manual, skills matter more than gear: equipment without the skill to use it is dead weight, and several chapters say so explicitly.

- **Tech & Equipment:** The physical tools and technology that tier's skills depend on.
- **Materials & Supplies:** Consumables and stored goods, usually presented as a table with realistic quantities and specific notes on storage or use.
- **Notes & Callouts:** Colored boxes covering Northern Utah-specific context, safety corrections, legal cautions, or cross-references to other chapters. Don't skip these; several contain corrections to common misconceptions that matter for safety or legal compliance.
- **Quick Checklist:** A condensed, checkbox-style summary of that tier: the fastest way to audit where a household actually stands, and the source material for Appendix A's consolidated view.

What This Manual Is Not

This is a planning and organizing framework, not a substitute for professional guidance in the areas where professional guidance exists and matters: medical care (Chapter 3, Chapter 8), mental health crises (Chapter 9; call or text 988 if you or someone else is in crisis, regardless of what tier you're working on), veterinary care (Chapter 10), and financial or investment decisions (Chapter 12). Several chapters say this explicitly at the point where it matters most; this preface says it once, up front, because it applies throughout.

Adapting This Manual to Your Household

No generic manual fits a specific household exactly. Quantities, especially in the Materials & Supplies tables, are calculated per person: multiply for household size, and adjust upward for anyone doing physical labor, anyone pregnant or nursing, children, and anyone elderly. If any household member has a disability, chronic medical condition, or relies on power-dependent medical equipment, start with Chapter 8 (Access & Functional Needs) and let it inform every other chapter, rather than treating it as an optional add-on read at the end.

A Living Document

Treat this manual as a first edition, not a finished one. Prices, product names, regulations, and even the Northern Utah-specific resources cited throughout will drift over time. Revisit and update it periodically, the same way the Quick Checklists themselves recommend periodically rehearsing rather than just stocking gear once and assuming it still works.

CHAPTER 1

Water & Food

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Comes First

Water and food have the shortest failure clocks of any preparedness category. A healthy adult can become severely, dangerously dehydrated in as little as three days without water; caloric and nutritional deficits begin degrading judgment, immune function, and physical capacity within the first week without food. Every other category in this manual (sanitation, security, communication) assumes the people executing those plans are hydrated, fed, and thinking clearly. This chapter is deliberately the most detailed in the manual for that reason.

The chapter is organized into four tiers of increasing duration and self-sufficiency. Each tier builds on the one before it: Tier 1 gear does not become obsolete in Tier 2, and Tier 2 skills remain essential in Tier 3. Read each tier as “what we add,” not “what replaces the last section.”

Two Phases: Stored vs. Produced

Underneath the four tiers is a simpler two-phase shift worth naming directly. Tier 1 is Phase 1: living entirely off what’s already stored, nothing new is produced or generated. Tier 3 is Phase 2: stored and purchased supplies are gone, and the household shifts to producing its own food and managing a renewable water source instead. Tier 2 sits between the two, a transition where filtration and bulk cooking extend what’s available, but propane, filter elements, and Mylar-stored grain are still finite; nothing in Tier 2 renews itself the way a garden or a well does. Tier 4 is Phase 2 at community scale. Knowing which phase a given piece of gear or a given skill belongs to is the difference between a plan that runs out and one that doesn’t.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: Phase 1, using what’s already stored. Immediate survival using stored buffers. Aligns with the Be Ready Utah 2-week household recommendation.

Tier 1 assumes normal supply chains, utilities, or safe outside movement are disrupted, but help or recovery is coming within roughly two weeks. Nothing in this tier requires producing anything new: it is entirely about correctly using and rationing what is already stored in the home. The two-week target gives margin beyond most utility outages, regional storms, and short-notice evacuations, and matches the state of Utah's own household guidance.

Skills to Build

- **First-In, First-Out (FIFO) Rotation:** Expiration dates creep up faster than most households notice. Mark every case and container with its purchase date in permanent marker, store newest purchases behind older ones, and consume/replace stored food twice a year (tie it to daylight saving time changes so it's easy to remember). A stockpile you never rotate is a stockpile you can't trust in an actual emergency.
- **Rationing:** Plan around roughly 2,000 kcal and 1 gallon of water per person per day (more for children, nursing mothers, larger adults, and anyone doing physical labor in the response). Practice doing this math on paper before you need it. Under stress, simple arithmetic gets harder, not easier.
- **Safe Manual Opening:** Practice opening canned goods with a manual can opener before you need to do it one-handed in the dark. Keep a spare opener; they're cheap and they do fail.
- **Emergency Water Treatment:** If stored water is compromised or you're using a backup source, know the dosing: for 6% unscented household bleach, use 8 drops (about 1/8 tsp) per gallon of clear water; for 8.25% (the more common strength on shelves today), use 6 drops per gallon. Check the label every time; concentration varies by brand and changes over a bottle's shelf life. Stir and let stand 30 minutes; double the dose for cloudy water. Chlorine dioxide tablets are a simpler, more shelf-stable alternative; follow the package ratio.

Go deeper: the Water & Food Addendum builds these into real, tested competency. For the hands-on how-to, see Water Purification, Storing Water Correctly, Auditing Your Food Supply, Calorie Planning for Your Food Supply, Sourcing & Hauling Water, Sealing Bulk Food for Long-Term Storage, Legal Rainwater Harvesting in Utah, Food Preservation: Canning, Dehydrating & Smoking, Building a Biosand Water Filter, What to Grow: Crop Selection & Seed Saving, Food Safety After a Power Outage, Solar Cooking: Box, Panel & Parabolic, Collecting Water From Snow, Dew & Condensation, Water Testing: Strips, Labs & Field Methods, Building a Walipini: The Underground Greenhouse, Building a Food Forest, Improvised Cold Storage: Root Cellars & Evaporative Cooling, Hunting, Trapping & Field Dressing Basics, Foraging Wild Edibles Basics, Backyard Poultry & Small Livestock Basics, Row Crop & Raised Bed Gardening, Growing in a Food Forest, Growing in a Walipini, Hydroponics & Aquaponics Basics, Perennial Vegetables, Regenerative Agriculture: Cover Crops, No-Till & Composting, and Microgreens.

Tech & Equipment

- **Manual Can Openers:** Heavy-duty, non-electric. Keep at least one per household kit plus a spare; this is a \$10 item that a whole 14-day food plan depends on.
- **Food Thermometer:** Used to check the safety of refrigerated/frozen perishables in the early hours of a power outage before deciding whether to eat, cook, or discard them (40°F/4°C is the safety line).
- **Water Containers:** Food-grade 55-gallon barrels for whole-household storage, or stackable 5–7 gallon jugs for portability and easier rotation. Mix formats: barrels for bulk, smaller jugs for grab-and-go.
- **Dispensing Hardware:** Barrel spigots or a siphon pump: a full 55-gallon barrel weighs over 450 lbs and cannot be tipped to pour.

Materials & Supplies

Item	Quantity / Spec	Notes
Drinking & sanitation water	14 gal / person	1 gal/person/day × 14 days. Store in food-grade containers only.
Water treatment	Bleach or ClO ₂ tablets	Unscented 6% bleach or chlorine dioxide tablets, for backup/compromised sources.
Non-perishable food	14-day supply / person	MREs, canned meats/vegetables, dry cereals, peanut butter; no cooking required.
Morale & comfort items	Small stock	Hard candy, chocolate, electrolyte mixes (cheap morale and sodium/electrolyte support).
Pet food	14-day supply	Store in waterproof containers alongside human food stores.

Northern Utah Note

Unheated garages and sheds along the Wasatch Front regularly drop below freezing in winter. Water expands roughly 9% when it freezes; rigid barrels stored outside the conditioned envelope of the house can crack. Store water in a heated space, or leave 10% headspace in every container and expect a freeze/thaw cycle.

Special Diets & Portability

The 2,000 kcal/day figure is a baseline, not a rule: infants need formula (not substitutable with adult food or water alone), and anyone managing diabetes, allergies, or another medical diet needs their own stored supply, since generic emergency food won't cover it. See the Access & Functional Needs chapter for detail. Separately, this tier is written for staying home: 55-gallon barrels and bulk cases aren't something you carry. If evacuation is plausible for your household, keep a dedicated, portable subset (the 5–7 gallon jugs and a few days of lightweight food) packed and ready to grab, distinct from the bulk stay-home stock. See the Go-Bags & 72-Hour Kits skill guide for what belongs in that portable kit beyond water and food.

What 1 Gallon/Day Actually Covers

This is a survival floor, not a comfort target, and it assumes no laundry and no toilet flushing (this manual's own sanitation approach uses a no-flush bucket system for exactly that reason). Humanitarian relief standards (WHO/Sphere) put the fuller operating figure at 7.5-15 liters/person/day, roughly 2-4 gallons, once drinking, hygiene, and cooking are all counted properly, up to four times this tier's number. Fourteen gallons/person is still the right Tier 1 floor; a household with anyone pregnant, nursing, sick, or doing hard physical work, or planning past the first couple weeks, should build Tier 2 bulk storage toward the higher figure rather than just multiplying this one by more days. See the Storing Water Correctly skill guide for the full breakdown.

Quick Checklist

- ☐ Water: 14 gal/person, food-grade containers, dated
- ☐ Backup water treatment (bleach or tablets) on hand and dosing known
- ☐ 14-day non-perishable food supply, no-cook options included
- ☐ Manual can opener (+1 spare) and food thermometer in kit
- ☐ 14-day pet food supply, waterproof container
- ☐ FIFO rotation schedule set (e.g., spring/fall clock changes)
- ☐ Water stored where it won't freeze, or headspace left for expansion
- ☐ Medical/special-diet needs (infant formula, allergies, diabetic supplies) stocked separately
- ☐ Portable grab-and-go water/food subset packed, separate from bulk stock
- ☐ Practiced: lived a full day on Tier 1 stores only, including manual can opener

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Phase 1-to-2 transition, still finite but beginning to build renewable capability. Active resource management when municipal water and sewer service is offline.*

Tier 2 begins where the stored buffer runs out. The household shifts from consuming pre-packaged supplies to actively purifying water from outside sources and cooking from bulk, shelf-stable ingredients. This tier requires equipment that Tier 1 doesn't: filtration capable of processing untreated water indefinitely, and a cooking method independent of the electrical grid.

Skills to Build

- **Water Purification:** Learn to operate a gravity filter, run a rolling boil (1 minute at altitudes below 6,500 ft, 3 minutes above), and correctly dose chemical treatments for larger batches than a single gallon. Most gravity filters (including Berkey- and Sawyer-style) are rated for bacteria and protozoa but not all remove viruses; check the manufacturer's rating, and for any surface water with possible sewage contamination, follow filtering with a chemical or UV step rather than filtering alone. Practice all three methods before you need them. Filter cartridges and pump technique both have a learning curve. See the Water Purification skill guide for the full method breakdown.
- **Bulk Cooking:** Practice cooking dry grains and beans (which require long soak/simmer times) on a camp stove before an emergency. Fuel-efficient technique (soaking overnight, using a lid, simmering instead of boiling) stretches limited propane substantially.
- **Source Identification:** Know, in advance, where the nearest streams, irrigation canals, ponds, or rain-catchment points are relative to your home, and understand that all of them require treatment before use. See the Collecting Water From Snow, Dew & Condensation skill guide for real, honestly-rated options when none of those exist nearby.
- **Bulk Food Rotation:** Bulk stores in Mylar are stable for years but not indefinitely once opened. Check seals seasonally and watch for signs of pest intrusion (small holes, frass) in grain and bean stores.

Go deeper: the Water & Food Addendum builds these into real, tested competency. For the hands-on how-to, see Water Purification, Storing Water Correctly, Auditing Your Food Supply, Calorie Planning for Your Food Supply, Sourcing & Hauling Water, Sealing Bulk Food for Long-Term Storage, Legal Rainwater Harvesting in Utah, Food Preservation: Canning, Dehydrating & Smoking, Building a Biosand Water Filter, What to Grow: Crop Selection & Seed Saving, Food Safety After a Power Outage, Solar Cooking: Box, Panel & Parabolic, Collecting Water From Snow, Dew & Condensation, Water Testing: Strips, Labs & Field Methods, Building a Walipini: The Underground Greenhouse, Building a Food Forest, Improvised Cold Storage: Root Cellars & Evaporative Cooling, Hunting, Trapping & Field Dressing Basics, Foraging Wild Edibles Basics, Backyard Poultry & Small Livestock Basics, Row

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Tech & Equipment

- **Gravity Water Filters:** High-volume systems (e.g., Berkey-, Sawyer-style) with spare filter elements. These are the workhorse of Tier 2: buy the largest capacity your budget allows and keep at least one full spare element set. The cartridge itself is a finite, stored resource, though; Tier 3 covers a sand-and-gravel alternative that doesn't wear out the same way.
- **Propane Stoves:** Two-burner camp stoves with a stable stand. As a rough planning number, a single 20-lb propane tank runs a two-burner stove for roughly 15–20 hours of actual burner time; for 3 months of daily cooking, plan on multiple tanks, not one. Store more than you think you'll need; cooking dry beans from scratch uses far more fuel than reheating.
- **Backup Cooking Fuel:** Propane can run out or become unavailable to purchase. Keep a second, independent fuel source (a wood-burning rocket stove or camp fire ring) so a single fuel type isn't a single point of failure for every meal in this tier. See the Solar Cooking skill guide for a method that needs no fuel at all, just direct sun.
- **Pressure Cooker:** Cuts cooking time (and therefore fuel use) for beans and grains dramatically: often the difference between a meal in 30 minutes versus 2+ hours.
- **Water Testing Kits:** Test strips for pH, chlorine residual, and bacteria presence, to confirm treated water is actually safe before drinking it at scale. See the Water Testing skill guide: strip tests, lab panels, and field bacteria tests don't work the same way or tell you the same thing.
- **Battery Carbon Monoxide Detector:** Required if any propane or wood cooking happens indoors, even briefly or with a window cracked. CO is odorless; ventilation alone isn't a reliable safeguard, and this is a life-safety item, not an optional one.

Materials & Supplies

Item	Quantity / Spec	Notes
Bulk water storage	55-gal food-grade drums	Filled, or clean and ready to fill from a treated source.
Treatment chemicals (bulk)	ClO ₂ tablets / calcium hypochlorite / bleach	Calcium hypochlorite (“pool shock”) is a compact way to store large-volume treatment capacity; store separately from food, well-labeled.
Bulk food	Grains, beans, powdered milk, salt, sugar	Store in Mylar bags with oxygen absorbers inside sealed buckets.
Vitamins	Household multivitamin supply	Guards against nutritional deficiency on a limited, repetitive diet.
Pet supplies	3-month bulk food + flea/tick prevention	Bulk-bag and reseal to keep food fresh over the full window.

Northern Utah Note

Spring snowmelt (roughly March–May) makes Wasatch Front streams and canals highly turbid: cloudy water clogs gravity filter elements fast. Let turbid water settle overnight or pre-filter through cloth before running it through your primary filter.

Quick Checklist

- ☐ Gravity filter (virus rating checked) + full spare element set
- ☐ Propane stove, pressure cooker, and adequate multi-tank fuel reserve
- ☐ Backup non-propane cooking method available
- ☐ Battery CO detector in use anywhere indoor cooking happens
- ☐ Water testing strips on hand
- ☐ Local untreated water sources identified in advance
- ☐ Bulk grains/beans/staples stored in Mylar + oxygen absorbers
- ☐ Bulk water treatment chemical on hand, stored away from food
- ☐ 3-month pet food supply bagged and sealed
- ☐ Practiced: cooked a full day’s meals on Tier 2 gear only

Tier 3: Permanent (Indefinite)

Goal: Phase 2, producing rather than consuming. Transition to production-based self-sufficiency.

Tier 3 assumes stored and purchased supplies are exhausted or unavailable for the foreseeable future. The household shifts from consuming reserves to producing food and managing a renewable water source on an ongoing basis. This is the most skill-intensive tier in the chapter: the equipment matters far less than whether the skills were practiced before they were needed.

Skills to Build

- **Agriculture:** Planting, irrigating, and harvesting within Northern Utah's short growing season (roughly 120–140 frost-free days along the Wasatch Front). Know your local average last-frost (mid-to-late May) and first-frost (late September–early October) dates and plan varieties accordingly. See the What to Grow skill guide for which crops actually close the nutrition gap stored staples leave behind, not just which ones fit the season.
- **Non-Commercial Water Filtration:** A biosand filter, built from sand, gravel, and a durable housing to a specific tested design, treats water indefinitely without a replaceable cartridge, the Tier 2 gravity filter's real limitation. It only works if built to spec: correct sand grain size, a slow enough flow rate, and 2–4 weeks for a biological layer to mature before it's actually effective. See the Building a Biosand Water Filter skill guide for the full design and why the fast-flow bucket version common online isn't the same, tested thing.
- **Seed Saving:** Extracting, drying, and storing viable seed from open-pollinated (non-hybrid) crops so each harvest can seed the next season without outside resupply. See the What to Grow skill guide for real isolation distances by crop and how long saved seed actually stays viable, corn and onion seed included, which don't last nearly as long as beans or squash do.
- **Hunting & Trapping:** Ethical harvesting, field dressing, and meat preservation. Build this skill and the relevant licensing/legal knowledge now, while the framework of normal law and season still applies; competence takes years, not a single emergency. In a sustained, widespread disruption, wild game and fish near any population center get scarcer and more contested the longer things go on, a well-documented pattern from real famines and wartime shortages, not a hypothetical; scout and hunt quietly rather than advertising a productive spot, avoid overharvesting a visibly stressed local population, and coordinate shared hunting or fishing grounds through the same community governance this manual's Security & Self-Defense chapter covers for other shared resources. See the Hunting, Trapping & Field Dressing Basics skill guide for licensing steps and the real field-dressing timeline.
- **Food Preservation:** Canning (water-bath and pressure), dehydrating, smoking, and root cellaring, all without relying on grid electricity. Acid decides the canning method: water-bath canning is only safe for high-acid

foods (fruit, properly acidified pickles); low-acid foods (vegetables, meat, poultry, soups) require pressure canning, since boiling alone doesn't destroy the botulism bacteria's spores. This distinction isn't a technicality, a real 2015 outbreak sickened 29 people from potato salad made with water-bath-canned, low-acid potatoes. See the Improvised Cold Storage skill guide for the actual root-cellar and evaporative-cooling designs behind that root-cellar mention.

Go deeper: the Water & Food Addendum builds these into real, tested competency. For the hands-on how-to, see Water Purification, Storing Water Correctly, Auditing Your Food Supply, Calorie Planning for Your Food Supply, Sourcing & Hauling Water, Sealing Bulk Food for Long-Term Storage, Legal Rainwater Harvesting in Utah, Food Preservation: Canning, Dehydrating & Smoking, Building a Biosand Water Filter, What to Grow: Crop Selection & Seed Saving, Food Safety After a Power Outage, Solar Cooking: Box, Panel & Parabolic, Collecting Water From Snow, Dew & Condensation, Water Testing: Strips, Labs & Field Methods, Building a Walipini: The Underground Greenhouse, Building a Food Forest, Improvised Cold Storage: Root Cellars & Evaporative Cooling, Hunting, Trapping & Field Dressing Basics, Foraging Wild Edibles Basics, Backyard Poultry & Small Livestock Basics, Row Crop & Raised Bed Gardening, Growing in a Food Forest, Growing in a Walipini, Hydroponics & Aquaponics Basics, Perennial Vegetables, Regenerative Agriculture: Cover Crops, No-Till & Composting, and Microgreens.

Tech & Equipment

- **Irrigation Systems:** Drip lines, a solar-powered pump, and rain-catchment diverters. As of this writing, Utah permits collecting rooftop rainwater without a water right up to 200 gallons (two containers, 100 gal max each) with no registration required, or up to 2,500 gallons in an above-ground container or cistern with free registration through the Utah Division of Water Rights. Register before exceeding 200 gallons, and verify current limits with the Division before installing. This is state law, not local practice, and it does change.
- **Processing Tools:** A hand-crank grain mill, dehydrator (solar or electric), and full canning supply set (jars, lids, pressure canner).
- **Hunting Gear:** Rifle or bow appropriate to local game, plus traps and a field dressing kit. See the Hunting, Trapping & Field Dressing Basics skill guide for trap types and what a field dressing kit actually needs.
- **Greenhouse / Season Extension:** Cold frames or a greenhouse meaningfully extend Utah's short growing season on both ends. A walipini, a sunken pit greenhouse using the earth's own stable temperature, is a real, specific design for this; a Jean Pain compost heat mound is a real way to add sustained heat on top of it through winter without burning any fuel. A food forest is a different approach entirely: a multi-layer perennial planting that needs years to establish but far less ongoing labor once it does.

Materials & Supplies

Item	Quantity / Spec	Notes
Seed bank	Heirloom / open-pollinated, viability varies by crop	Wheat and beans genuinely store 5+ years; corn and onion seed don't and need replanting more often. Potatoes are saved as tubers, not true seed. See the What to Grow skill guide.
Livestock	Breeding stock + feed reserve	Chickens, rabbits, and/or goats are the most common small-footprint choices.
Soil amendments	Compost, lime, manure, wood ash	Wasatch Front soils often run alkaline; test before amending heavily.
Barter goods	Surplus salt, sugar, coffee, alcohol	High shelf-stability, high trade value, low storage footprint.

Northern Utah Note

Local resource: USU (Utah State University) Extension offices publish region-specific planting calendars, soil testing services, and canning/preservation classes, worth using well before Tier 3 is actually needed. Mule deer and elk are the primary big-game options along the Wasatch Front; scouting and skill-building now are far more valuable than gear alone.

WARNING

Food Preservation: What Actually Works, and What to Avoid Entirely

Preservation carries more folklore than almost any other skill in this manual, and an unsafe method can seem to work for years before it doesn't; surviving isn't the same as safe. Real, backed-by-research methods: water-bath canning for genuinely high-acid foods, pressure canning for low-acid foods, both following a tested recipe's exact time (and pressure/time adjusted for elevation, see the skill guide below), dehydrating with meat preheated to 160-165°F before drying, and cold-smoking or curing with a precisely measured nitrite dose, not a family tradition without a known dose. Avoid entirely: open-kettle canning, oven canning, "dry canning" of dry goods (flour, rice) in jars, wax/paraffin sealing, inversion (upside-down) cooling as a substitute for real processing, reusing single-use canning lids, and an untested family recipe or unlisted substitution, extra low-acid ingredients can silently invalidate a safe processing time. See the Food Preservation skill guide below for the full breakdown and real dosing/timing tables.

Quick Checklist

☐ Local frost dates known; planting calendar built

- ☐ Biosand filter built, ripened for 2+ weeks, and flow rate tested against expected output
- ☐ 5+ year heirloom seed bank stored cool/dry/dark
- ☐ Canning, dehydrating, and root-cellaring skills practiced (not just equipment owned), using tested recipes and altitude-adjusted times/pressure
- ☐ Irrigation/rain-catchment system installed within legal storage limits
- ☐ Hunting/trapping skills and legal framework understood
- ☐ Livestock (if applicable) housed, fed, and bred sustainably
- ☐ Barter goods stockpiled separately from personal-use stores
- ☐ Rain-catchment system registered with Utah Division of Water Rights if over 200 gal
- ☐ Practiced: harvested and preserved at least one crop from saved seed, using only non-electric methods

Tier 4: Thriving (Sustainable Community)

***Goal:** Phase 2 at community scale. Move from single-household survival to a resilient local food and water system: one with surplus, shared infrastructure, and knowledge transfer that outlast any one household.*

A single household, however well prepared, is a single point of failure: one illness, injury, or bad harvest can undo months of Tier 3 self-sufficiency. Tier 4 is about turning individual capability into a networked, redundant local system: the difference between surviving and actually thriving long-term.

Skills to Build

- **Community Coordination:** Organizing a neighborhood food co-op, tool-share, or seed library requires the same planning skills as running a small volunteer organization: scheduling, record-keeping, and fair-division rules for shared harvests or resources.
- **Teaching & Mentorship:** Deliberately teach canning, gardening, water treatment, and preservation skills to neighbors and the next generation. A skill known by only one household is a skill one bad season away from being lost.
- **Surplus & Trade Management:** Converting a good harvest into stored community reserve, barter, or charity rather than letting it spoil unused; requires basic preservation-at-scale and simple record-keeping of what's owed/traded.

- **Shared Infrastructure Stewardship:** Maintaining a shared well, spring, or filtration system that serves more than one household means agreeing on and following a maintenance schedule and usage rules before there's a crisis to argue about.

Go deeper: the Water & Food Addendum builds these into real, tested competency. For the hands-on how-to, see Water Purification, Storing Water Correctly, Auditing Your Food Supply, Calorie Planning for Your Food Supply, Sourcing & Hauling Water, Sealing Bulk Food for Long-Term Storage, Legal Rainwater Harvesting in Utah, Food Preservation: Canning, Dehydrating & Smoking, Building a Biosand Water Filter, What to Grow: Crop Selection & Seed Saving, Food Safety After a Power Outage, Solar Cooking: Box, Panel & Parabolic, Collecting Water From Snow, Dew & Condensation, Water Testing: Strips, Labs & Field Methods, Building a Walipini: The Underground Greenhouse, Building a Food Forest, Improvised Cold Storage: Root Cellars & Evaporative Cooling, Hunting, Trapping & Field Dressing Basics, Foraging Wild Edibles Basics, Backyard Poultry & Small Livestock Basics, Row Crop & Raised Bed Gardening, Growing in a Food Forest, Growing in a Walipini, Hydroponics & Aquaponics Basics, Perennial Vegetables, Regenerative Agriculture: Cover Crops, No-Till & Composting, and Microgreens.

Tech & Equipment

- **Community-Scale Processing:** A shared grain mill, community canning kitchen, or root-cellar co-op spreads the cost of expensive equipment across several households and keeps it in use (and maintained) year-round. The Improvised Cold Storage skill guide covers the actual designs a shared root cellar would be built from.
- **Expanded Water Infrastructure:** A shared well, developed spring, or larger-capacity filtration system sized for a cluster of households, with an agreed maintenance and access plan.
- **Seed Library Infrastructure:** Labeled, cataloged seed storage with germination-testing tools, so viable seed stock is distributed across multiple households instead of concentrated in one root cellar.
- **Communication for Coordination:** Simple, low-tech signage or a scheduled meeting cadence so a multi-household system can coordinate without depending on cell service (see the Communication chapter).

Materials & Supplies

Item	Quantity / Spec	Notes
Community seed bank	Redundant across households	Multiple households each hold a duplicate set; no single point of failure.
Shared reserve stock	Community-agreed buffer	A pooled reserve for households that have a bad season, replenished from surplus.
Teaching materials	Simple printed how-to guides	Low-tech, no-power-required instructions neighbors can use without you present.
Trade/charity surplus	Ongoing, from good harvests	Explicit surplus set aside for barter or mutual aid, tracked simply.

Northern Utah Note

Utah already has a working template for this: LDS community cannery and bishop's storehouse programs demonstrate shared preservation infrastructure and mutual-aid distribution at real scale. A neighborhood-level version, regardless of household affiliation, can borrow the same basic model: shared equipment, agreed contribution rules, and a simple record of what's been put in and taken out.

Quick Checklist

- ☐ At least one shared/community food-preservation resource identified or organized
- ☐ Skills taught to at least one household beyond your own
- ☐ Seed stock duplicated across more than one household
- ☐ Shared water infrastructure (if any) has an agreed maintenance plan
- ☐ Community reserve or mutual-aid buffer established
- ☐ Simple record-keeping in place for shared/traded resources
- ☐ Practiced: run at least one shared event (canning day, seed swap, skill-share) with neighbors

At a Glance: Water & Food Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Water Plan	Food Plan
Tier 1	Phase 1	Hours – 14 days	Stored water, 14 gal/person	Stored non-perishables, no cooking required
Tier 2	Transition	2 weeks – 3 months	Filtered/treated outside sources	Bulk staples, camp-stove cooking
Tier 3	Phase 2	Indefinite	Managed irrigation/catchment	Grown, hunted, and preserved food
Tier 4	Phase 2	Sustainable community	Shared/community infrastructure	Community surplus, trade, and reserves

CHAPTER 2

Sanitation & Hygiene

Why This Category Comes Second

The priority ranking behind this manual puts Sanitation & Hygiene second for a specific reason: disease, not the disaster itself, is historically the leading cause of death in the days and weeks that follow. Contaminated water and unmanaged human waste turn a survivable event into a cholera or dysentery outbreak. Water and food keep people alive long enough to matter; this chapter keeps the household from poisoning itself with its own waste while everything else is going wrong around it.

As with Chapter 1, each tier adds to the one before it rather than replacing it: the bucket-toilet habit from Tier 2 remains the daily routine even after Tier 3 composting comes online, and Tier 1's hygiene basics never stop mattering just because the household has moved on to a harder problem.

Two Phases: Stored vs. Produced

The same two-phase shift that runs through this manual's other chapters applies here too. Tier 1 is Phase 1: using hygiene supplies already on hand while toilets and taps still work. Tier 3 is Phase 2: sewer service isn't coming back, and waste handling shifts to safely closing the loop rather than just containing it. Tier 2 is the transition: the toilet stops flushing reliably and containment becomes the household's own responsibility, but it's still largely working from stored supplies, not yet running a self-sustaining system. Tier 4 is Phase 2 at community scale. This chapter's companion, Medical Care, runs the same four-tier structure for treating injury and illness; the two are meant to be read side by side, since most of what actually kills people after a disaster is a sanitation failure that becomes a medical one.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Phase 1, using what's already on hand. Maintain hygiene while municipal water/sewer service is temporarily disrupted, and prevent a short outage from turning into a disease problem.*

Tier 1 assumes toilets and taps still physically exist but may not be reliable. The goal is simple: don't let a power or water outage turn into a stomach illness because hygiene habits slipped.

Skills to Build

- **Hygiene with Limited Water:** Practice sponge-bathing technique (a damp cloth and a small basin of water, working from cleanest areas to dirtiest) so it’s not the first time you’re doing it when water is actually scarce. Keep brushing twice a day even on minimal water: the mechanical brushing itself, not the toothpaste, does most of the plaque-prevention work, and baking soda is a genuine substitute once the toothpaste supply runs out; see the Bathroom & Hygiene skill guide for the full technique.
- **Waste Containment:** Double-bag household garbage, twist-tie it closed, and store it away from living space and any water source until removal is possible. This alone prevents most of the pest and odor problems that come with a short outage. See [Household Trash & Pet Waste Disposal](/skills/household-trash-and-pet-waste-disposal/) for the full technique once removal isn’t coming soon.

Go deeper: the Sanitation & Hygiene Addendum builds these into real, tested competency. For the hands-on how-to, see Bathroom & Hygiene Without Running Water, Household Trash & Pet Waste Disposal, Death, Burial & Body Disposition, Composting Toilets: Humanure, Vermicomposting & Incineration, and Soap Making: Lye & Oils.

Tech & Equipment

- **NOAA Weather Radio:** Battery or hand-crank, to monitor boil-water notices, often the first official signal that water contamination is a risk.

Materials & Supplies

Item	Quantity / Spec	Notes
Hygiene	Soap, toothpaste, feminine hygiene products, hand sanitizer, baby wipes	Hand hygiene is the single cheapest disease-prevention tool in this entire chapter.
Sanitation	Heavy-duty contractor bags (3–6 mil), twist ties, moist towelettes, toilet paper	14-day supply. Thicker mil rating resists tearing under weight.

Quick Checklist

- ☐ Hygiene practice reviewed with limited-water technique (sponge-bathing, brushing without wasting water)
- ☐ Household garbage double-bagged, twist-tied, and stored away from living space and water sources
- ☐ Hygiene supplies stocked in 14-day quantities
- ☐ Contractor bags, twist ties, and 14-day toilet paper supply on hand

- ☐ NOAA weather radio (battery or hand-crank) in kit
-

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Phase 1-to-2 transition, skills change but supplies are still largely stored. Manage human waste without sewer systems and prevent epidemics (cholera, dysentery) in a static environment.*

Tier 2 begins when the toilet no longer flushes reliably. Waste management moves from a convenience problem to the single largest disease-prevention task in the household.

Skills to Build

- **Waste Management:** Build and run a bucket toilet (single-bucket, emptied and covered after each use, or twin-bucket for a rotating fill/rest cycle). Every use gets a scoop of cover material: this is the single habit that controls both odor and disease risk. Plan for the 14-day toilet paper supply above running out on a longer disruption too: a portable bidet bottle (a few ounces of stored water per use) or reusable cloth wipes, washed as their own separate hot load, both stretch that stock; see the Bathroom & Hygiene skill guide for the full how-to and the safety details that actually matter.
- **Alkaline (Lime) Treatment:** A real, fast-acting pathogen-kill method, not just containment: hydrated lime (calcium hydroxide) raises bucket-toilet contents above pH 12, which destroys the bacteria and viruses responsible for most disaster-related outbreaks (E. coli reduced below detection within an hour at pH above 11) within about 2 hours, versus the 12-month wait Tier 3 humanure composting requires. This is real emergency-sanitation practice, the same method aid organizations use to treat pit-latrines sludge and disaster-response wastewater, not a home remedy. Hydrated lime is caustic: wear gloves, a mask, and eye protection, and keep it away from kids and pets the same way you'd treat any corrosive chemical.
- **Vector Control:** Flies, mosquitoes, and rodents are mechanical disease carriers, not just a nuisance: proper refuse sanitation alone does roughly 90% of the job of fly control and 65% of rat control, so a well-run bucket toilet and sealed trash containers are already most of the work. Empty or remove anything that collects standing water after rain, buckets, tarps, old containers, since that's exactly where mosquitoes breed; a single container of standing water left for a week is enough. Rodent-proof food storage and trash the same way you'd pest-proof against any other scavenger.
- **Water Testing:** Use test strips to check any water source for fecal contamination before it's used for drinking, cooking, or wound cleaning; cross-reference the Water & Food chapter's Tier 2 filtration guidance. See the Water Testing skill guide for real field-expedient bacteria tests (no lab, no mail required) and their honest limits.

- **Drying Out After Flooding:** Mold can start growing on a wet surface within 24 to 48 hours, a real deadline, not a rough guideline: open doors and windows, run fans, and keep indoor humidity under 50% to dry a wet space out inside that window. If a space genuinely can't be dried within 24 to 48 hours, treat it as an active mold problem rather than hoping it dried in time. Any surface actually touched by floodwater needs real disinfecting, not the lighter dish-sanitizing dilution elsewhere in this chapter: 3/4 cup regular bleach (or 1/2 cup concentrated) per gallon of water, kept wet for at least 2 minutes, then rinsed and dried, with real PPE, gloves, goggles, an N95, used for structural re-entry. Discard anything porous, carpet included, that was actually submerged in floodwater; it can't be fully disinfected.
- **Menstrual Hygiene Without Resupply:** A reusable menstrual cup or washable cloth pads (the same wash-as-a-separate-hot-load protocol covered in the Bathroom & Hygiene skill guide) remove the resupply dependency entirely. If disposable products are being rationed, never extend a single tampon past its intended wear time to stretch a limited supply.

Go deeper: the Sanitation & Hygiene Addendum builds these into real, tested competency. For the hands-on how-to, see Bathroom & Hygiene Without Running Water, Household Trash & Pet Waste Disposal, Death, Burial & Body Disposition, Composting Toilets: Humanure, Vermicomposting & Incineration, and Soap Making: Lye & Oils.

Tech & Equipment

- **Bucket Toilet System:** 5-gallon buckets with tight-sealing lids and a snap-on toilet-seat attachment. Set up as twin-bucket if you're planning to feed the contents into Tier 3 composting later; it's much easier to build that habit from the start than switch systems mid-emergency.
- **Compost Additives:** Bulk sawdust, cat litter, or agricultural lime as cover material; controls odor and begins the composting process immediately. This is a light dusting for odor, not the same as the treatment-dose hydrated lime below; don't assume the cover material alone is disinfecting anything.
- **Hydrated Lime (Treatment-Grade):** A separate, higher-strength product from the agricultural lime used as cover material: roughly 1-2 cups of hydrated lime per 5-gallon bucket, stirred in and held for at least 2 hours before disposal, is the real dose behind the Alkaline Treatment skill above. Buy it specifically for this purpose and store it separately labeled from cover-material lime so the two don't get confused under pressure.

Materials & Supplies

Item	Quantity / Spec	Notes
Waste cover material	5+ gal / person	Sawdust, peat moss, or kitty litter; used at every bucket-toilet visit.
Hydrated lime	5-10 lbs, stored separately from cover material	Treatment-grade, for actual pathogen kill (1-2 cups per 5-gal bucket, 2+ hour hold), not the light dusting used for odor control.
Disinfectants	Unscented bleach, several gallons	Surface cleaning and, per the Water & Food chapter, backup water treatment.
Feminine care	Reusable cloth pads or menstrual cups	Reduces both waste volume and resupply dependency.

WARNING**What Actually Destroys Pathogens (and What Doesn't)**

Disease, not the disaster itself, is the leading killer in the aftermath, and that's overwhelmingly a waste-management failure, so it's worth being precise about what actually works. Validated methods, backed by real dosing and real research: proper double-bagging plus cover material (contains, doesn't destroy, but blocks the fecal-oral route that matters most), hydrated lime at the dose above held 2+ hours (destroys bacteria and viruses fast), and 12+ months of true humanure aging (destroys essentially everything given enough time). What people mistakenly trust as equivalent and isn't: a light dusting of ordinary cover-material lime or cat litter (controls odor, does nothing to pathogens at that concentration), an improvised backyard burn that never reaches a sustained high temperature throughout (leaves cool pockets where hardy organisms survive), and standard chemical disinfectants like bleach or ozone against certain resistant pathogens (some parasites, notably the toxoplasmosis parasite in cat waste covered in the pet chapter, survive these entirely). When a method depends on reaching a specific temperature, pH, or time, verify it's actually reaching that number, don't assume good intentions are the same as a controlled process.

Northern Utah Note

Site any bucket-toilet disposal or future compost pile well away from wells, canals, and any water source you're relying on for Tier 2 filtration. Contamination of your own water supply from your own waste system is a real and preventable failure mode.

WARNING**Never Stretch a Tampon Past Its Wear Time to Ration Supply**

Toxic shock syndrome is rare but genuinely dangerous, and the length of time a tampon has been left in is the single most consistent factor across real cases: 8 hours is the real limit, not a conservative suggestion. Symptoms can look like a mild viral illness at first, then progress to high fever, low blood pressure, and organ failure within a day or two. Rationing a limited supply by extending wear time is exactly the mistake that raises this risk; switch to a reusable cup, cloth pads, or a lower-absorbency product changed on schedule instead of stretching a disposable one.

Quick Checklist

- ☐ Bucket toilet system built and in daily use, cover material applied every time
- ☐ Hydrated lime (treatment-grade) on hand and dosing understood, separate from cover-material lime
- ☐ Standing water eliminated around the property; trash and food storage rodent-proofed
- ☐ Water testing strips used on every new source before use
- ☐ Reusable menstrual supplies (cup or washable pads) on hand, not just a disposable stockpile
- ☐ Waste/compost site located away from all water sources
- ☐ Practiced: dried out a wet or flooded space within the 24-48 hour mold-growth window at least once

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2, safely closing the loop on human waste rather than just containing it. Long-term waste management without any modern supply chain.*

Tier 3 assumes sewer service is not coming back for the foreseeable future. Waste handling shifts from containment to actually destroying pathogens and, where possible, producing something usable out of the other end of the process.

Skills to Build

- **Humanure Composting:** Safely converting human waste to usable soil amendment using the method popularized by Joseph Jenkins: a carbon cover material at every addition, and a minimum aging period of 12 months, ideally longer, and always at least a full year, before the finished compost goes anywhere near food crops. Skipping the aging period is the single most common and most dangerous mistake with this method. See the Composting Toilets skill guide for the actual carbon-to-nitrogen ratio and pathogen die-off science behind this.

- **Pyrolysis / Biochar (Advanced):** A faster alternative to the 12-month aging method: purpose-built pyrolysis equipment (a sealed retort that heats waste to 300–700°F or more without oxygen) destroys essentially all pathogens in hours rather than a year, and produces biochar, a genuinely useful soil amendment. This is a real, actively used sanitation technology, not a fringe idea, but it depends entirely on the equipment reaching and holding that temperature throughout the load. A backyard burn barrel or an improvised biochar rig doesn’t reliably do that; cooler pockets can leave hardy pathogens (like Ascaris eggs) alive. Treat this as a real upgrade path once you own or build equipment that actually verifies sustained temperature, not a shortcut around the aging method with what you already have.
- **Vermicomposting (Worm-Assisted):** Composting worms, kept in a dedicated bin fed by a urine-diverting toilet, digest solids far faster than passive aging and cut disease-indicator organisms dramatically (real field data shows roughly 99% reductions). This is genuine, actively used sanitation technology, not a novelty, but it’s a pretreatment step, not a finish line: the reduced material still needs the same off-site disposal or further aging as any other partially treated waste, treat a vermicomposting bin as cutting your workload, not skipping the safety requirement. See the Composting Toilets skill guide for worm species and bin setup.
- **Incinerating Toilet (Equipment Option):** A commercial off-grid toilet that burns waste to sterile ash after each use rather than batch-treating it later: the most sterile of the equipment options here, and the simplest to use correctly, but it depends on a steady fuel or electricity supply to run, which is a real planning cost this book’s Energy & Heat chapter should factor into any Tier 3 power budget. See the Composting Toilets skill guide for current real-world unit and per-use operating costs.
- **Soap Making:** Producing soap from fat and lye is what makes a household’s hygiene supply genuinely self-sustaining once stocked soap runs out, rather than just a bigger stockpile with the same expiration date. The fat-to-lye ratio has to be calculated for the specific fat used, not guessed: too much lye leaves a harsh, skin-irritating bar, too little leaves a soft one that spoils. See the Soap Making skill guide for the real chemistry, the lye-safety practice that isn’t optional, and how to make lye itself from wood ash once buying it isn’t an option either.

Go deeper: the Sanitation & Hygiene Addendum builds these into real, tested competency. For the hands-on how-to, see Bathroom & Hygiene Without Running Water, Household Trash & Pet Waste Disposal, Death, Burial & Body Disposition, Composting Toilets: Humanure, Vermicomposting & Incineration, and Soap Making: Lye & Oils.

Materials & Supplies

Item	Quantity / Spec	Notes
Soap-making supplies	Lye, fats/oils, essential oils	Produces an effectively unlimited hygiene supply once the skill is established; see the Soap Making skill guide.

Northern Utah Note

If hunting is part of your Water & Food Tier 3 plan, proper field-dressing hygiene (clean tools, avoiding gut contents, prompt cooling of meat) is itself a disease-prevention skill that belongs in this chapter as much as that one.

WARNING

Pyrolysis Isn't a Backyard-Fire Shortcut

Pathogen destruction in pyrolysis depends on sustained, even, oxygen-limited heat, something a sealed retort with a thermometer delivers and an open burn or improvised barrel setup can't reliably guarantee. If you're building or buying pyrolysis equipment for humanure, verify it holds temperature throughout the load, not just at one hot spot, before trusting the output near food crops. Until then, the 12-month aging method above is the proven, equipment-free default. This same distinction matters for pet waste: dog and cat waste carries pathogens (roundworms, and in cats, *Toxoplasma*) that ordinary home composting doesn't kill, so it still needs the dedicated, non-food-adjacent disposal covered in the Household Trash & Pet Waste Disposal skill guide, verified pyrolysis aside.

Quick Checklist

- ☐ Humanure system running with a minimum 12-month aging cycle enforced before use on crops (or verified pyrolysis equipment as a faster alternative)
- ☐ Soap-making supplies and skill established for an ongoing hygiene supply
- ☐ Practiced: field-dressing hygiene reviewed if hunting is part of the household's food plan

Tier 4: Thriving (Sustainable Community)

Goal: Phase 2 at community scale. Build a community waste-management and hygiene system that doesn't depend on any single household's supplies.

In Tier 3, all of this household's waste-management capability lives in whatever one household built and maintains: a single lost site or forgotten rule can contaminate a shared water source. Tier 4 spreads that capability, and its rules, across a neighborhood.

Skills to Build

- **Neighborhood Waste Siting:** Plan bucket-toilet and composting sites at a neighborhood scale, sited well away from any shared or individual water source, with clear rules about who maintains what.
- **Crowded-Conditions Hygiene:** Lice and scabies spread easily wherever people are sharing close quarters, bedding, or clothing for an extended period, a real risk once a neighborhood is sheltering displaced households together. Scabies symptoms can take 4 to 8 weeks to appear after a first exposure, so someone can spread it before anyone knows it’s there. Treat every household member and close contact at the same time, not just the person with visible symptoms, and wash clothing and bedding in water hot enough to kill both lice and scabies mites, 122°F for 10 minutes, the same hot-wash standard already established elsewhere in this chapter, not a special exception.
- **Handling a Death in the Community:** The common fear, that a body left unburied spreads an epidemic, is largely a myth the World Health Organization and Red Cross have specifically pushed back on: a person who died from trauma, drowning, or the disaster itself doesn’t generally carry organisms that pose a public-health risk, and survivors are actually more likely to spread disease than the deceased are. The real exception is a death from a communicable disease already spreading through the community, cholera among them, where standard precautions do matter. What actually matters in every case: document identity, location, and circumstances before burial if at all possible, since undocumented mass burial is what causes lasting harm, to grieving families and to any later legal or insurance process, not a disease outbreak. Coordinate through whatever community structure this tier has already established rather than improvising alone. See the Death, Burial & Body Disposition skill guide for the actual legal paperwork, body preservation without embalming, and the real, state- and county-dependent rules around burial on private land.

Go deeper: the Sanitation & Hygiene Addendum builds these into real, tested competency. For the hands-on how-to, see Bathroom & Hygiene Without Running Water, Household Trash & Pet Waste Disposal, Death, Burial & Body Disposition, Composting Toilets: Humanure, Vermicomposting & Incineration, and Soap Making: Lye & Oils.

Tech & Equipment

- **Communal Composting Site:** A properly sited, correctly sized humanure composting operation serving multiple households, with an enforced aging period before any output is used.

Materials & Supplies

Item	Quantity / Spec	Notes
Community sanitation reserve	Bulk cover material, hydrated lime, contractor bags	Sized for the neighborhood, not one household; access rules agreed in advance.
Trained waste-system stewards	Names, skills, and availability	Kept simple and current; more than one person needs to know how the community's system actually works.

Northern Utah Note

Utah counties run Community Emergency Response Team (CERT) training, a free, existing framework for exactly this kind of distributed skill-building. Plugging into (or starting) a neighborhood CERT group is a faster path to Tier 4 than building a parallel system from scratch.

Quick Checklist

- ☐ Community waste/composting site sited and rules agreed
- ☐ Crowded-shelter hygiene plan (lice/scabies) agreed on before displaced households are sheltered together
- ☐ Community protocol for handling a death agreed on before it’s needed
- ☐ Community sanitation reserve and trained-steward roster established
- ☐ Practiced: a CERT training or equivalent community drill completed

At a Glance: Sanitation & Hygiene Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Waste/Hygiene Plan	Key Skill
Tier 1	Phase 1	Hours – 14 days	Existing toilets/taps, careful hygiene	Limited-water hygiene, waste containment
Tier 2	Transition	2 weeks – 3 months	Bucket toilets, hydrated-lime treatment	Vector control, water testing
Tier 3	Phase 2	Indefinite	Humanure composting (12+ mo. aging, or verified pyrolysis)	Soap-making, self-sustaining hygiene supply
Tier 4	Phase 2	Sustainable community	Neighborhood waste infrastructure	Distributed stewardship, shared siting rules

CHAPTER 3

Medical Care

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Comes Third

An untreated wound turns a minor injury into a fatal infection just as reliably as unmanaged waste turns a survivable event into an outbreak. This chapter is this manual's companion to Sanitation & Hygiene: that chapter keeps disease from starting, this one is what actually treats a person once something has gone wrong anyway, whether that's an injury, an illness, or a condition that would normally mean a trip to a hospital or a pharmacy.

As with every chapter in this manual, each tier adds to the one before it rather than replacing it: the trauma kit built in Tier 1 stays in the bag through Tier 3, and the triage judgment learned in Tier 2 is still the first thing you reach for once herbal medicine and suturing come online.

Two Phases: Stored vs. Produced

The same two-phase shift that runs through this manual's other chapters applies here too. Tier 1 is Phase 1: self-treating minor injuries with a stocked kit while hospitals and pharmacies still function. Tier 3 is Phase 2: pharmacies, hospitals, and dentists aren't coming back, and care shifts to what can be grown, brewed, or performed at home instead. Tier 2 is the transition: a hospital visit for anything short of a true emergency isn't realistic, and medical care shifts from first aid to sustained, doctor-free treatment, but the household is still largely working from a stored medical kit, not yet producing its own medicine. Tier 4 is Phase 2 at community scale. Read this chapter alongside its companion, Sanitation & Hygiene, since most of what actually kills people after a disaster is a sanitation failure that becomes a medical one.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Phase 1, using what's already on hand. Treat minor injuries and manage existing medication needs while hospitals and pharmacies are temporarily hard to reach.*

Tier 1 assumes any injuries are minor enough to self-treat and that a hospital, even if inconvenient to reach, still exists. The goal is a stocked kit and real, practiced skill, not a stockpile no one in the household actually knows how to use.

Skills to Build

- **First Aid & CPR:** Get certified through the Red Cross or American Heart Association before an emergency, not during one. At minimum, know Hands-Only CPR (call for help, push hard and fast in the center of the chest, ~100–120 compressions/min) and basic wound care: irrigate a wound thoroughly with clean water rather than pouring on hydrogen peroxide or rubbing alcohol, which damages healthy tissue and slows healing despite the common belief otherwise. See the First Aid Basics skill guide for the full technique breakdown.
- **Watching a Wound After the Fact:** Without antibiotics on hand for every scrape, monitoring a healing wound matters as much as treating it. Expanding redness, increasing warmth, new swelling, or a fever above 100.4°F mean it's getting worse, not better. A thin red streak traveling from the wound toward the armpit, groin, or behind the knee is lymphangitis, infection spreading through the lymph system toward the bloodstream, and it moves fast: treat it as a true emergency requiring evacuation to real care, not something to watch overnight. Any animal bite, wild or domestic, gets the same first response regardless of infection risk: scrub the wound with soap and running water for 5 to 10 minutes immediately, and don't tape or butterfly-bandage it closed, which traps bacteria inside. Raccoons, skunks, bats, and foxes carry the real rabies risk in most of the country; treat a wild animal acting strangely, especially a normally nocturnal species active in daylight, as a reason to avoid it entirely, and get evaluated for rabies post-exposure treatment immediately after any wild-animal bite or scratch, since it's nearly 100% effective given promptly but doesn't work once symptoms start.
- **Medication Management:** Keep a written list of every household member's medications, dosages, allergies, and prescribing doctor, stored with the first aid kit. Most insurance plans won't pay for an extra 14-day buffer supply on top of a normal fill; ask your doctor or pharmacist now about an emergency-supply override or an early-refill exception, and treat a self-pay buffer as the fallback if that isn't available.

Go deeper: the Medical Care Addendum builds these into real, tested competency. For the hands-on how-to, see First Aid Basics, Medical Kits: What Actually Goes in Each One, Understanding START Triage, Pregnancy, Childbirth & Newborn Care, Isolating a Sick Household Member, Herbal Medicine & the Home Apothecary, and Dental Emergencies & Basic Care.

Tech & Equipment

- **Digital Thermometer:** For fever detection; a rising fever is often the earliest sign that a minor wound has become infected.

- **Pulse Oximeter (Optional):** Useful for monitoring respiratory issues. Note that a normal reading at Wasatch Front elevation (roughly 4,300–5,500 ft) runs a few points lower than the sea-level baseline most devices are calibrated to describe as “normal.” Don’t panic at a 94–95% reading that would be concerning at sea level; know your household’s normal resting baseline in advance.
- **Headlamp:** Hands-free lighting is the difference between treating a wound properly at night and doing it one-handed while holding a flashlight.

Materials & Supplies

Item	Quantity / Spec	Notes
Prescriptions	14-day supply, all household meds	Insulin, heart medications, etc. Rotate on the same FIFO schedule as food.
Trauma supplies	Tourniquet (CAT/SOFT-T), Israeli bandage, hemostatic gauze	Commercial tourniquets only: apply 2–3 inches above the wound, never over a joint, and note the application time on the tourniquet or skin.
Basic medications	Pain relievers, antihistamines, anti-diarrheal, antacids	Ibuprofen/acetaminophen, diphenhydramine, loperamide: covers the majority of minor complaints.

Northern Utah Note

Elevation affects more than pulse oximeter readings: cold-weather injuries (frostbite, hypothermia) are a real Tier 1 risk along the Wasatch Front in winter, not just a Tier 2+ concern. Know the early signs (shivering that stops, confusion, numb extremities) and treat them as urgent; see the Energy & Heat chapter for prevention.

WARNING

Environmental Emergency Treatment: Hypothermia & Heat Illness

For suspected hypothermia: get the person out of wet clothing and into dry layers/blankets immediately, focusing on the torso and head first; give warm (not hot) sweet drinks only if they’re fully alert and able to swallow safely; never rub or massage cold extremities, which can trigger a dangerous heart rhythm in a severely hypothermic person; and treat confusion, slurred speech, or loss of coordination as a medical emergency requiring evacuation to real care, not something to wait out at home. For heat exhaustion (heavy sweating, weakness, nausea, cool clammy skin): move to shade, remove excess clothing, cool the skin with water or wet cloths, and sip water if fully conscious. Heat stroke is different and far more dangerous: hot, dry or flushed skin, confusion, or loss of consciousness means the body’s cooling system

has failed. Cool as aggressively as possible (wet the whole body, fan, ice packs at the neck/armpits/groin if available) while arranging emergency care immediately, since heat stroke can be fatal within hours without it.

Special Medical Needs

This tier assumes generally healthy adults. Anyone with a chronic condition, a disability, or a medical device (oxygen, dialysis, mobility equipment) needs a plan well beyond this baseline kit; see the Access & Functional Needs chapter, and build that plan first if it applies to your household.

Quick Checklist

- ☐ Hypothermia and heat illness treatment steps known by every adult, not just recognition of the signs
- ☐ First aid/CPR certification current for at least one adult in the household
- ☐ Written medication list (drug, dose, allergy, prescriber) with the kit
- ☐ 14-day prescription buffer arranged with doctor/pharmacist
- ☐ Trauma kit: commercial tourniquet, Israeli bandage, hemostatic gauze
- ☐ Basic medications stocked in 14-day quantities
- ☐ Practiced: hands-only CPR and wound-irrigation technique reviewed by every adult

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Phase 1-to-2 transition, skills change but the kit is still largely stored. Treat injuries and illness without hospital access, and sort care by severity when no doctor is available.*

Tier 2 begins when a hospital visit for anything short of a true emergency isn't realistic. Medical care shifts from first aid to sustained, doctor-free treatment, and a household needs a real way to decide what actually needs attention first.

Skills to Build

- **Triage:** Learn simple severity-based sorting (a basic version of the START method: can they walk, are they breathing, is there uncontrolled bleeding) so the worst injuries get attention first when no doctor is available to make that call. See the Understanding START Triage skill guide for the full method.

- **Quarantine:** Isolate a sick household member in a separate room with dedicated dishes, towels, and a doorway hand-sanitizing routine: the single most effective way to keep a stomach illness from taking down the whole household at once. The same isolation logic applies to a respiratory illness, not just a stomach one: add a well-fitted mask for anyone entering the sick person's room and real ventilation, a cracked window or a fan, since airborne spread needs a different response than surface contact does. See the Isolating a Sick Household Member skill guide for the full setup.

Go deeper: the Medical Care Addendum builds these into real, tested competency. For the hands-on how-to, see First Aid Basics, Medical Kits: What Actually Goes in Each One, Understanding START Triage, Pregnancy, Childbirth & Newborn Care, Isolating a Sick Household Member, Herbal Medicine & the Home Apothecary, and Dental Emergencies & Basic Care.

Tech & Equipment

- **Medical Instruments:** Blood pressure cuff, stethoscope, otoscope, and SAM splints: enough to properly assess and stabilize, not to substitute for a hospital.
- **Sterilization:** A pressure cooker (for boiling instruments) or alcohol burner. Anything that will touch a wound needs to be sterilized between uses, not just rinsed.

Materials & Supplies

Item	Quantity / Spec	Notes
Medical bulk supplies	Boxes of nitrile gloves, masks, gauze, tape, sutures/staples	Buy in bulk; gloves and gauze get used far faster than people expect.
Extended antibiotics	Discuss a 90-day emergency supply with your doctor	Do this through a licensed prescriber first. Livestock/fish-labeled antibiotics are sometimes discussed as an unregulated last-resort backup in prepper circles, but dosing and purity aren't verified for human use. Treat this as a real risk, not a convenient workaround, and research thoroughly (and legally) well before relying on it.

Quick Checklist

- ☐ At least one household member trained in basic triage
- ☐ Quarantine space and protocol identified before it's needed, masks/ventilation plan included for respiratory illness

- ☐ Medical instrument set (BP cuff, stethoscope, splints) + sterilization method
- ☐ 90-day prescription conversation had with a doctor/pharmacist
- ☐ Bulk medical supplies stocked
- ☐ Practiced: quarantine protocol rehearsed (even as a drill) with the household

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2, care shifts to what can be grown, brewed, or performed at home. Long-term health maintenance, herbal medicine, and surgical basics without any modern supply chain.*

Tier 3 assumes pharmacies, hospitals, and dentists are not coming back for the foreseeable future. Care shifts to what can be grown, brewed, or performed at home. This tier leans harder on reference material than any other: the equipment here is far less important than owning and having actually read the books.

Skills to Build

- **Herbal Medicine:** Identifying, growing, and processing medicinal plants: yarrow for bleeding, willow bark for pain, among others. Treat this as a serious skill requiring real study (correct identification, dosing, and drug interactions matter), not a folk-remedy shortcut. See the Herbal Medicine & the Home Apothecary skill guide for evidence quality by herb, dangerous look-alikes, and drug interactions.
- **Suturing & Basic Dental:** Wound closure, tooth extraction, and temporary cavity filling. Learn from a dedicated reference (see Medical Library below) and practice on inanimate materials before ever needing the skill for real. See the Dental Emergencies & Basic Care skill guide for recognizing when a tooth infection is a real medical emergency, real pain management, and the actual risks of a last-resort extraction.
- **Midwifery:** Assisting childbirth without medical intervention: a skill worth building in advance through a class or experienced mentor, not a manual alone, given the stakes. Pregnancy is the one scenario in this manual with a known timeline, which makes advance planning genuinely more effective here than almost anywhere else: know the due date, identify at least two real routes to obstetric care, and know the pregnancy symptoms (heavy bleeding, a severe unresolving headache, sudden vision changes, a sustained drop in fetal movement) that are always a true emergency. See the Pregnancy, Childbirth & Newborn Care skill guide for the full, bounded guidance on what to actually do if delivery happens before help arrives.

Go deeper: the Medical Care Addendum builds these into real, tested competency. For the hands-on how-to, see First Aid Basics, Medical Kits: What Actually Goes in Each One, Understanding START Triage, Pregnancy, Childbirth

& Newborn Care, Isolating a Sick Household Member, Herbal Medicine & the Home Apothecary, and Dental Emergencies & Basic Care.

Tech & Equipment

- **Medical Library:** Physical, non-digital reference books: Where There Is No Doctor, Where There Is No Dentist, and The Survival Medicine Handbook. These are the actual instruction manuals for the skills above; treat them as essential equipment, not optional reading.
- **Surgical Kit:** Scalpels, forceps, retractors, and a bone saw, all fully sterilizable metal, for stabilizing and closing wounds, not for procedures beyond a layperson’s training.
- **Dental Kit:** Extraction forceps, temporary filling material, and clove oil (a traditional topical analgesic for tooth pain).
- **Microscope (Optional):** Useful for identifying bacteria or parasites in a water or stool sample if someone in the household has the training to interpret what they’re seeing.

Materials & Supplies

Item	Quantity / Spec	Notes
Medicinal herb seed bank	Echinacea, lavender, mint, aloe, etc.	Confirm cold-hardiness before relying on a species; see Northern Utah note.
Raw materials	Alcohol, honey, salt	Alcohol for tinctures/cleaning, honey as a natural wound dressing and preservative, salt for electrolytes and cleaning.
Barter medical goods	Extra painkillers, antibiotics, hygiene items	High trade value in a community without other medical access.

Northern Utah Note

Aloe vera is not cold-hardy and will not survive a Wasatch Front winter outdoors. Grow it as a potted plant that comes indoors, or substitute a hardier climate-appropriate alternative. Yarrow, mullein, and echinacea, by contrast, all do well in this climate.

WARNING

Postpartum Hemorrhage Is the Leading Cause of Maternal Death Worldwide

After a placenta delivers, firmly massaging the mother's lower abdomen, over the uterus, in a circular motion encourages the uterus to contract, which is what actually controls bleeding after birth; a uterus that stays soft and doesn't contract is the single most common cause of dangerous postpartum bleeding. This is a real, evidence-backed action a layperson can take, not a folk remedy, worth doing immediately and continuing while arranging evacuation to real care, not a substitute for it. Heavy bleeding that doesn't respond to firm massage is a true emergency; see the Pregnancy, Childbirth & Newborn Care skill guide for the full context this single fact sits inside.

Quick Checklist

- ☐ Medical library (Where There Is No Doctor, Where There Is No Dentist, Survival Medicine Handbook) owned and read
- ☐ Herbal medicine garden established with cold-hardy, correctly identified species
- ☐ Sterilizable surgical and dental kits assembled
- ☐ Midwifery plan in place if relevant to the household, including due date, real routes to obstetric care, and pregnancy emergency signs known
- ☐ Barter medical goods stockpiled separately from personal-use stock
- ☐ Practiced: at least one household member has drilled a suturing/wound-closure technique on practice material

Tier 4: Thriving (Sustainable Community)

***Goal:** Phase 2 at community scale. Build a community medical-care system that doesn't depend on any single caregiver's knowledge or any single household's supplies.*

In Tier 3, all of this household's medical capability lives in one or two trained people and one supply cache: a single serious illness or loss disables the whole system. Tier 4 spreads that capability across a neighborhood, so care continues even if one household is out of action.

Skills to Build

- **Distributed Health Skills:** Deliberately train more than one person per neighborhood in first aid, herbal medicine, midwifery, and basic dentistry, not to replace the household's own caregiver, but so no single injury, illness, or absence takes out the whole community's medical capacity at once.

- **Outbreak & Quarantine Protocols:** Agree, in advance, on how the group will identify and respond to a spreading illness (who isolates, where, and for how long) rather than negotiating it for the first time during an actual outbreak.
- **Shared Health Records:** For households that opt in, keep a simple, physical record of allergies, chronic conditions, and blood type, so a responder who isn’t your regular caregiver can still treat you safely.

Go deeper: the Medical Care Addendum builds these into real, tested competency. For the hands-on how-to, see First Aid Basics, Medical Kits: What Actually Goes in Each One, Understanding START Triage, Pregnancy, Childbirth & Newborn Care, Isolating a Sick Household Member, Herbal Medicine & the Home Apothecary, and Dental Emergencies & Basic Care.

Tech & Equipment

- **Shared Medical Cache:** A community-level stock of surgical instruments, trauma supplies, and extended antibiotics beyond what any single household could reasonably store alone, accessible to trained responders.
- **Community Apothecary/Herb Garden:** A shared medicinal-herb growing space, larger and more diverse than any one household’s Tier 3 garden, reducing the risk of losing a needed species.
- **Distributed Reference Library:** Multiple copies of the core medical texts held by different households, so a fire, flood, or move doesn’t erase the community’s only copy.

Materials & Supplies

Item	Quantity / Spec	Notes
Community medical reserve	Bulk trauma & medication stock	Sized for the neighborhood, not one household; access rules agreed in advance.
Trained-responder roster	Names, skills, and availability	Kept simple and current; the point is knowing who to call, fast.
Shared reference copies	Distributed across multiple households	Redundancy against losing the only copy of a critical text.
Communal herb stock	Larger-scale medicinal plantings	Reduces single-garden crop failure risk for the whole group.

Quick Checklist

- ☐ More than one trained first-aid/medical responder per neighborhood cluster
- ☐ Outbreak/quarantine protocol agreed on before it's needed
- ☐ Shared health records system in place for opted-in households
- ☐ Shared medical cache and trained-responder roster established
- ☐ Reference library copies distributed across more than one household
- ☐ Practiced: a CERT training or equivalent community drill completed

At a Glance: Medical Care Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Medical Care Level	Key Skill
Tier 1	Phase 1	Hours – 14 days	First aid, self-treat minor injuries	CPR, wound care, medication management
Tier 2	Transition	2 weeks – 3 months	Doctor-free triage and stabilization	Triage, quarantine
Tier 3	Phase 2	Indefinite	Herbal medicine, basic surgery/dental	Suturing, midwifery, plant medicine
Tier 4	Phase 2	Sustainable community	Distributed, multi-responder care network	Cross-training, shared health records

CHAPTER 4

Energy & Heat

Why This Category Comes Fourth

In Northern Utah specifically, winter isn't a special case: it's most of the year. Hypothermia can kill in hours, not days, and it doesn't require a blizzard; a cold, damp, powerless house overnight is enough. This chapter and the previous one are closely linked: cold-weather injuries are a medical emergency, and the wrong heating choice (an unvented fuel source in a sealed room) is a carbon monoxide emergency. Energy for lighting and communication matters too, but heat is the piece with a survival clock attached to it.

As with the prior chapters, each tier adds capability rather than replacing what came before: Tier 1's flashlights and glow sticks stay in the kit even after Tier 3 brings a wired-up solar array online.

Two Phases: Stored vs. Generated

The same two-phase shift that runs through this manual's other chapters applies here too. Tier 1 is Phase 1: surviving on stored batteries, propane, and body heat, nothing is being generated. Tier 3 is Phase 2: there's no grid to return to and no more fuel deliveries, so energy shifts from something stored and consumed to something continuously generated (solar, wood, human power) and repaired. Tier 2 is the transition, and it starts generating sooner here than in the Water & Food chapter: a solar generator introduces real generation at Tier 2 already, but propane, kerosene, and firewood reserves are still finite, so Tier 2 is still partly running on a clock. Tier 4 is Phase 2 at community scale. Knowing which phase a given piece of gear belongs to is the difference between a plan that runs out and one that doesn't.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: Phase 1, using what's already stored. Conserve body heat and battery power while waiting for grid restoration. Prevent hypothermia and carbon monoxide poisoning.

Tier 1 assumes the grid is down but help or restoration is realistically days away, not months. The two failure modes that actually kill people in this window are hypothermia and carbon monoxide poisoning; both are entirely preventable with correct habits, and both are the focus of this tier over anything else.

Skills to Build

- **Layering:** Base layer (moisture-wicking, not cotton; wet cotton actively pulls heat from skin), insulating layer (wool or synthetic fleece), and a wind/weather shell. Layering traps warm air between layers far more effectively than one thick garment. See the *Staying Warm Without Power* skill guide for the full technique.
- **Fuel Safety:** Understand that any fuel-burning device (camp stove, grill, generator) produces carbon monoxide, an odorless gas that kills without warning. The rule has no exceptions: never run one indoors, in a garage (even with the door open), or in a tent. See the *Fire-Starting & Generator Safety* skill guide for the full safety rundown.
- **Battery Conservation:** Put phones in low-power mode or airplane mode except for brief check-ins, and reserve power banks for communication devices and medical equipment, not entertainment or convenience.
- **One-Room Heating:** Pick the smallest interior room without exterior walls, close it off, hang blankets over the doorway, and concentrate heating and bodies there instead of trying to heat the whole house. See the *Staying Warm Without Power* skill guide for the full setup.

Go deeper: the Energy & Heat Addendum builds these into real, tested competency. For the hands-on how-to, see Fire-Starting & Generator Safety, Staying Warm Without Power, Building a Jean Pain Compost Heat Mound, Building a Rocket Mass Heater, DIY Solar Water Heater, Sizing a Solar Array & Battery System, Sizing a Fuel-Powered Generator, Pedal Power: Bicycle Generators, and Stirling Engines: Turning Stored Heat Back Into Power.

Tech & Equipment

- **LED Flashlights/Headlamps:** One per family member: high lumens, low battery draw. Headlamps free both hands, which matters more than it sounds like it will.
- **Power Banks:** 20,000+ mAh capacity, enough for multiple phone/radio charges without grid power.
- **Propane Camp Stove:** Outdoor cooking only: never indoors, never in a garage, never in a tent. This is the single most important rule in this chapter.
- **Carbon Monoxide Detector:** Battery-operated, placed near sleeping areas (not directly beside the stove or heater itself, to avoid nuisance alarms), required any time a fuel-burning device is used nearby. Check the alarm's expiration date; most CO sensors are only rated for 5–7 years and stop reliably sensing after that even if the unit still powers on.

Materials & Supplies

Item	Quantity / Spec	Notes
Warmth	Wool blankets, 0°F-rated sleeping bags, thermal underwear	0°F rating is a survival minimum, not a comfort rating; actual comfort is several degrees higher than the rating.
Lighting	Extra batteries (Li-ion, AA, AAA), chemical glow sticks	Glow sticks carry no fire risk; prefer them over candles when open flame isn't necessary.
Fuel	16 oz propane cylinders, ~1 can/day estimate	For outdoor cooking only.
Ignition	Waterproof matches, lighters, fire starters	Store at least two independent ignition methods in case one fails.

WARNING**Carbon Monoxide Kills Without Warning**

Any fuel-burning device, a camp stove, grill, or generator, produces carbon monoxide, a colorless, odorless gas. By the time symptoms appear, poisoning is already underway. The rule has no exceptions and no safe workaround: never run one indoors, in a garage even with the door open, in a tent, or on a porch or in a carport. Pair every fuel-burning device with a working, battery-backed CO detector, placed near sleeping areas, not directly beside the device itself.

Battery Safety: Don't Mix Ages or Chemistries

Never load a device with a mix of old and new batteries, or batteries of different chemistries (alkaline, lithium, NiMH) together. The weaker battery gets reverse-charged by the stronger ones, which can cause leakage, reduced performance, or in rare cases overheating and venting. Buy and store batteries in labeled, dated sets, and replace a full set together rather than topping off with whatever's on hand. This applies to every battery-powered device throughout this manual, not just this chapter's own equipment.

Northern Utah Note

Hypothermia along the Wasatch Front is a Tier 1 risk, not a Tier 2+ concern: a powerless house in a January cold snap can drop to dangerous indoor temperatures within a single night. Know the early signs (uncontrollable shivering that suddenly stops, confusion, slurred speech, numb extremities) and treat them as a medical emergency; see the Medical Care chapter for treatment. Elderly household members and infants lose body heat faster and need a warmer safe-room target than healthy adults; plan their space accordingly, and see the Access & Functional Needs chapter for anyone dependent on powered medical equipment.

Quick Checklist

- ☐ Batteries stored and replaced in matched sets; no mixing ages or chemistries in a device
- ☐ LED flashlight/headlamp per person, with spare batteries
- ☐ Power bank(s), 20,000+ mAh, reserved for comms/medical devices
- ☐ Battery CO detector installed near sleeping areas, alarm not expired
- ☐ Propane camp stove and fuel: outdoor-only use understood by everyone in the household
- ☐ 0°F-rated sleeping bags/wool blankets, one per person
- ☐ Two independent ignition methods stored
- ☐ Safe room identified and ready to close off (blankets over doorway, away from exterior walls)
- ☐ Practiced: everyone in the household can name the CO safety rule without prompting

Tier 2: Extended (2 Weeks – 3 Months)

Goal: Phase 1-to-2 transition, still finite but beginning to generate power directly. Generate alternative power for critical devices (radios, medical) and provide safe heating/cooking for weeks without grid power.

Tier 2 moves from surviving on stored batteries to actually generating and managing power and heat on an ongoing basis. This is where equipment choice and correct setup matter most: the wrong heater or an improperly grounded solar system is a fire or CO risk, not just an inconvenience.

Skills to Build

- **Alternative Cooking:** Get comfortable running a propane or wood stove for actual daily meal prep, not just boiling water. Fuel-efficient technique matters over a multi-month window (see the Water & Food chapter's Tier 2 bulk-cooking guidance).
- **Solar Setup:** Learn to safely connect portable panels to batteries or a power station: correct polarity, appropriate gauge wiring, and not exceeding the charge controller's rated input.
- **Fuel Storage & Rotation:** Propane itself doesn't expire, but tanks and valves corrode over years and need periodic inspection. Kerosene degrades within roughly 1–2 years unless treated with a stabilizer. Firewood needs to season (dry) for 6–12 months before it burns efficiently and cleanly; green wood burns dirty and contributes to chimney creosote buildup.
- **Draft-Proofing:** Seal gaps around windows and doors in the safe room with weatherstripping or towels; heat retention matters as much as heat generation.

Go deeper: the Energy & Heat Addendum builds these into real, tested competency. For the hands-on how-to, see Fire-Starting & Generator Safety, Staying Warm Without Power, Building a Jean Pain Compost Heat Mound, Building a Rocket Mass Heater, DIY Solar Water Heater, Sizing a Solar Array & Battery System, Sizing a Fuel-Powered Generator, Pedal Power: Bicycle Generators, and Stirling Engines: Turning Stored Heat Back Into Power.

Tech & Equipment

- **Solar Generator:** A portable power station (1000Wh+) with solar input, for radios and medical devices. Size it against actual device wattage draw, not just the marketed capacity; a CPAP or oxygen concentrator alone can meaningfully change the sizing math. See the Access & Functional Needs chapter if that applies to your household, and the Sizing a Solar Array & Battery System skill guide for the real formula behind that sizing math.
- **Unvented Propane Heater with Oxygen-Depletion Sensor:** Products like the Mr. Heater Buddy are sometimes labeled “indoor-safe,” but they are unvented (there is no exhaust to the outside); the low-oxygen shut-off sensor is what makes indoor use survivable, not ventilation the unit provides itself. Always crack a window for fresh air exchange per the manufacturer's instructions, keep a working CO detector in the same room, and never run one in a room where people are sleeping unless the specific model is rated for that use.
- **Wood Stove:** If already installed, have the chimney professionally swept and the damper function checked before the season it's needed; creosote buildup from summer disuse is a real chimney-fire risk. See the Building a Rocket Mass Heater skill guide for a far more fuel-efficient alternative, plus the real legal path to building one. See the Stirling Engines skill guide if you want to pull a real, honest bonus of electricity out of a fire you're already running for heat.

- **Battery Bank:** Deep-cycle AGM or lithium batteries for solar storage. Lithium batteries lose usable capacity in cold temperatures; plan for an insulated or heated storage location if they'll sit through a Utah winter.

Materials & Supplies

Item	Quantity / Spec	Notes
Fuel reserves	20+ gal propane/kerosene, or 1+ cord firewood	A cord is a stacked pile 4 ft × 4 ft × 8 ft; use this to sanity-check any firewood delivery.
Lighting	LED lanterns (100+ hr runtime), extra bulbs	Far more efficient than incandescent lanterns over a multi-month window.
Extension cords	Heavy-duty, 12-gauge	12-gauge is rated for higher current draw, needed for running real appliances off a generator or power station.
Window insulation	Plastic shrink kits or heavy blankets	Applied at night especially: single-pane and older double-pane windows are the biggest heat-loss point in most homes.

Northern Utah Note

If a fuel-burning generator (rather than a solar generator) is part of your plan, the same CO rules from Tier 1 apply at a larger scale: outdoors only, at least 20 feet from any window, door, or vent, and never in a garage even with the door open. Heavy snow load can also bring down power lines and block generator/panel access; keep a clear, shoveled path to any outdoor equipment as part of your winter routine. See the Sizing a Fuel-Powered Generator skill guide for choosing the right size and fuel type before you need it.

Quick Checklist

- ☐ Solar generator or equivalent power source, sized against actual device wattage needs
- ☐ Heating source confirmed vented-outside OR unvented-with-working-ODS, CO detector co-located
- ☐ Wood stove chimney swept and damper checked before the season it's needed
- ☐ 20+ gallons fuel or 1+ cord seasoned (dry) firewood on hand
- ☐ Battery bank stored where cold won't significantly cut capacity
- ☐ Heavy-duty 12-gauge extension cords on hand

- ☐ Window insulation applied nightly in the safe room
- ☐ Practiced: ran the household's actual heating/power setup for at least one full night before needing it

Tier 3: Permanent (Indefinite)

Goal: Phase 2, generating rather than consuming. Total energy independence using renewable sources and biomass. Transition to hand tools and passive heating.

Tier 3 assumes there's no grid to return to and no more fuel deliveries. Energy shifts from something stored and consumed to something continuously generated and managed (solar, wood, and human power) with the skills to repair the systems that make that possible.

Skills to Build

- **Woodworking:** Building and maintaining wood stoves, chimneys, and the hand tools this tier depends on.
- **Electrical Repair:** Wiring DC systems, repairing inverters, and maintaining battery banks: the off-grid solar array in this tier is only as reliable as the household's ability to fix it.
- **Passive Solar Design:** Using thermal mass and south-facing glass to capture winter heat passively. Design in summer shading (an overhang or deciduous trees) too; the same south-facing glass that's an asset in a Utah January becomes a liability in July without it. See the DIY Solar Water Heater skill guide for applying this same principle to heating water instead of a room.
- **Biomass Processing:** Making charcoal or processing wood for maximum BTU efficiency per unit stored: a meaningful multiplier on a finite woodlot. See the Building a Jean Pain Compost Heat Mound skill guide for a different approach: extracting sustained heat from wood chips through decomposition instead of combustion.

Go deeper: the Energy & Heat Addendum builds these into real, tested competency. For the hands-on how-to, see Fire-Starting & Generator Safety, Staying Warm Without Power, Building a Jean Pain Compost Heat Mound, Building a Rocket Mass Heater, DIY Solar Water Heater, Sizing a Solar Array & Battery System, Sizing a Fuel-Powered Generator, Pedal Power: Bicycle Generators, and Stirling Engines: Turning Stored Heat Back Into Power.

Tech & Equipment

- **High-Efficiency Wood Stove:** With a cooktop, so one fuel source covers both heating and cooking simultaneously.

- **Off-Grid Solar Array:** Larger-scale panels, charge controllers, and inverter system sized for ongoing household power, not just critical devices. See the Sizing a Solar Array & Battery System skill guide for the actual formulas, load tiers, and the Utah-specific winter sun-hours gotcha that undersizes most first attempts.
- **Hand Tools:** Saws, axes, drills, and grinders, non-electric or DC-powered, since grid tools become useless the moment the array or battery bank has a bad day.
- **Bicycle Generator:** For charging small batteries through human power when solar input is low (heavy overcast, deep winter). See the Pedal Power skill guide for real output numbers, a real commercial option, and the DIY design that actually works.

Materials & Supplies

Item	Quantity / Spec	Notes
Fuel stockpile	Cordwood reserves, coal, or charcoal capability	Plan a sustainable harvest rate, not just a stockpile; see Northern Utah note.
Spare parts	Fuses, wire, diodes, capacitors, solder	Covers general household and appliance repairs; see the Communication chapter for radio-specific spare parts and its note on EMP resilience.
Thermal mass	Water barrels, stone, or brick inside the home	Absorbs daytime heat and releases it slowly overnight: a passive multiplier on any active heating.
Clothing production materials	Wool, leather, fur	For making or repairing warm clothing if textile resupply is no longer available.

Northern Utah Note

Solar panels need to be mounted at an angle steep enough to shed snow, or cleared by hand after storms; a snow-covered array produces nothing. Cold measurably improves solar panel efficiency (panels perform better cold than hot), which partly offsets shorter winter daylight, but battery storage capacity drops in the cold, so oversize storage rather than relying on panel output alone. If sourcing firewood locally, coordinate with wildfire defensible-space guidance in the Shelter & Structural Safety chapter; woodpile placement matters for both heat supply and fire risk.

Quick Checklist

- ☐ Off-grid solar array installed and household can perform basic repairs
- ☐ Wood stove with cooktop installed, chimney maintained
- ☐ Hand tool set (non-electric/DC) assembled
- ☐ Sustainable firewood harvest rate planned against actual woodlot/supply
- ☐ Passive solar design includes summer shading, not just winter capture
- ☐ Spare electrical parts stocked
- ☐ Thermal mass installed in the primary living space
- ☐ Practiced: household has gone through at least one full off-grid week on Tier 3 systems only

Tier 4: Thriving (Sustainable Community)

***Goal:** Phase 2 at community scale. Build a neighborhood-scale energy and heat system so no single household's equipment failure or fuel shortfall becomes a life-threatening emergency.*

A single household's Tier 3 solar array or wood stove is still a single point of failure: a failed inverter or an empty woodlot with no way to restock leaves that household with no heat or power until it's fixed. Tier 4 links households together so capacity, fuel, and repair skill are shared rather than isolated.

Skills to Build

- **Microgrid Coordination:** Planning and agreeing on how multiple households' solar/battery systems can be connected or at least coordinated, including simple rules for whose need takes priority when total supply is limited (medical equipment first, for example).
- **Distributed Repair Skills:** Teach electrical and mechanical repair broadly rather than concentrating it in one household: a neighborhood with five people who can fix an inverter is far more resilient than one with a single expert.
- **Woodlot Management:** Coordinate a sustainable, rotating harvest across a shared or community woodlot so no single winter strips it faster than it can regrow.
- **Load Prioritization Planning:** Agree in advance on who gets shared power access first during a shortfall (medical devices, then heat, then everything else) rather than deciding it under pressure.

Go deeper: the Energy & Heat Addendum builds these into real, tested competency. For the hands-on how-to, see Fire-Starting & Generator Safety, Staying Warm Without Power, Building a Jean Pain Compost Heat Mound,

Tech & Equipment

- **Shared Microgrid or Battery Bank:** A solar and battery system sized to serve multiple households, with clear physical connections and access rules.
- **Community Woodlot:** A managed, shared wood-harvesting area with an agreed sustainable-yield schedule.
- **Shared Repair Workshop:** A stocked space with hand tools, spare electrical parts, and a place for community members to learn and practice repair skills together.
- **Redundant Small Systems:** Several smaller solar/battery setups distributed across households instead of one large centralized system: a design choice that means one failure doesn’t take down power for everyone.

Materials & Supplies

Item	Quantity / Spec	Notes
Community fuel depot	Shared wood/fuel reserve	Sized and restocked against the woodlot's actual sustainable yield.
Shared spare-parts inventory	Fuses, wire, inverter components	Centralized so no single household needs to stock everything alone.
Skill-share roster	Who can repair what	Simple and current; same model as the medical responder roster in the Medical Care chapter.
Redundant equipment	Multiple smaller systems vs. one large one	Deliberate design choice for resilience over efficiency.

Northern Utah Note

Utah’s rural electric cooperatives already operate on a shared-infrastructure, member-owned model, a useful real-world template for how a neighborhood energy-sharing agreement could be structured, including how costs, maintenance responsibility, and access are typically divided among members.

Quick Checklist

- ☐ Shared or coordinated microgrid/battery capacity established across more than one household
- ☐ Load-priority agreement in place before a shortfall happens
- ☐ Repair skills taught to more than one person in the neighborhood
- ☐ Community woodlot or fuel depot with a sustainable-yield plan
- ☐ Shared spare-parts inventory and repair workshop space established
- ☐ Practiced: run at least one community energy/heat coordination drill or meeting

At a Glance: Energy & Heat Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Heat Plan	Power Plan
Tier 1	Phase 1	Hours – 14 days	Layering + one-room heating	Flashlights, power banks
Tier 2	Transition	2 weeks – 3 months	Unvented/vented heater or wood stove	Solar generator, battery bank
Tier 3	Phase 2	Indefinite	Wood stove + passive solar design	Off-grid solar array, human power
Tier 4	Phase 2	Sustainable community	Shared fuel/woodlot management	Neighborhood microgrid, shared repair

CHAPTER 5

Shelter & Structural Safety

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Comes Fifth

Shelter & Structural Safety is about keeping the structure you're in intact and safe, especially against Northern Utah's dominant hazard, earthquake, plus the recurring regional hazards (wildfire, extreme heat and cold, flooding) that threaten a home the rest of the year. A structural or entry failure is a near-certainty in a major seismic event, so this chapter is written heavy on hazard mitigation and hardening. This chapter's companion, Security & Self-Defense, covers keeping people out who intend harm; the two are meant to be read together, since a household that has hardened its structure but never thought about entry security, or the reverse, has only solved half the problem.

As with the prior chapters, each tier adds capability rather than replacing it: Tier 1's seismic strapping and utility shut-off knowledge stay relevant even after Tier 3 adds a relocation or long-term hardening plan.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Immediate life safety and structural integrity. Focus on preventing injury during the initial event (e.g., earthquake) and knowing how to shut down utilities safely.*

Tier 1 is dominated by earthquake preparedness, not because every emergency is a quake, but because the Wasatch Front sits on an active fault system and the same hazard-mitigation and utility-shutoff skills apply to most other short-term emergencies as well.

Skills to Build

- **Hazard Hunting:** Walk the home identifying and securing unsecured heavy furniture, appliances, water heaters, and glass. The leading cause of earthquake injury is falling and shifting objects, not building collapse. See the Securing Your Home Against Earthquake Damage skill guide for stud-finding and anchoring technique.

- **Utility Shut-off:** Know exactly where the main gas, water, and electric shut-offs are and how to operate them. Critical nuance: only shut off gas if you smell it, hear hissing, or see obvious damage. Turning it off unnecessarily means a licensed technician has to relight pilot lights before service resumes, and in a widespread disaster that wait can stretch to weeks.
- **Earthquake Drill:** Practice “Drop, Cover, and Hold On” (drop to hands and knees, take cover under sturdy furniture, hold on until shaking stops) until it’s automatic. This is the current, evidence-based standard; the older “triangle of life” technique that circulates online has been debunked and is not recommended by any seismic safety authority. Unlike California, Oregon, and Washington, Utah does not yet have an operational ShakeAlert earthquake early-warning system. There’s no expectation of advance notice before shaking starts here, so this has to be a reflexive response to feeling the ground move, not something triggered by a phone alert.

Go deeper: the Shelter & Structural Safety Addendum builds these into real, tested competency. For the hands-on how-to, see Emergency Shelter Basics and Securing Your Home Against Earthquake Damage.

Tech & Equipment

- **Gas Shut-off Wrench:** A dedicated wrench kept near the external gas meter, essential for Utah homes given seismic risk. Don’t rely on finding a random tool when it’s needed.
- **Cordless Drill:** For emergency strapping, boarding, or structural repairs.
- **NOAA Weather Radio:** Battery or hand-crank powered, for official alerts.

Materials & Supplies

Item	Quantity / Spec	Notes
Seismic straps	Heavy-duty steel, water heater + furnace	Mandatory in practice for Utah homes: an unstrapped water heater is one of the most common sources of post-quake gas leaks and fires.
Furniture anchors	L-brackets or nylon straps	Secure bookcases, TVs, and other tip hazards directly to wall studs, not just drywall.
Window protection	Pre-cut plywood or security film	Pre-cut and labeled per window now; cutting boards to size during an actual emergency wastes critical time.

WARNING

An Unstrapped Water Heater Is a Leading Post-Qquake Fire Source

An unstrapped water heater is one of the most common sources of post-quake gas leaks and fires: it tips, the rigid gas line connected to it shears or cracks, and gas leaks into a space that may already have an open flame source (a pilot light) nearby. Heavy-duty steel strapping is a cheap, one-time fix for a real, common failure mode, not a precaution most households actually need to worry about skipping.

Northern Utah Note

The Wasatch Fault is capable of producing a magnitude 6.5–7.5 earthquake, and seismologists consider the region overdue for one at that scale. This isn't a hypothetical hazard; it's the specific, well-documented risk this tier is built around. The Great Utah ShakeOut is a real, free annual statewide earthquake drill (usually held in October); participating is a low-effort way to actually rehearse Drop, Cover, and Hold On rather than just reading about it.

Quick Checklist

- ☐ Water heater and furnace seismically strapped
- ☐ Heavy furniture/TVs anchored to wall studs, not just drywall
- ☐ Gas shut-off wrench staged at the meter; every adult knows the “only if you smell/hear gas” rule
- ☐ Windows measured and plywood/film pre-cut and labeled
- ☐ Practiced: Drop, Cover, and Hold On drilled, ideally during the annual Great Utah ShakeOut

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Hardening the home's physical structure against sustained conditions, and maintaining a stocked retreat space distinct from day-to-day living areas.*

Tier 2 assumes normal repair and construction services are degraded or unavailable, so a household needs its own materials and practiced routine for reinforcing the structure itself, not just calling someone to fix it.

Skills to Build

- **Barricading:** Practice reinforcing doors and windows quickly with available materials, rather than figuring it out for the first time under pressure. This is a structural-hardening skill as much as a security one; see the Security & Self-Defense chapter for the deterrence side of the same problem. See the Home Lockdown & Barricading Basics skill guide for real reinforcement technique.

Go deeper: the *Shelter & Structural Safety Addendum* builds these into real, tested competency. For the hands-on how-to, see *Emergency Shelter Basics and Securing Your Home Against Earthquake Damage*.

Tech & Equipment

- **Reinforcement Kits:** Door jamb reinforcement bars and window security bars, sized and test-fitted to your actual doors and windows in advance.

Materials & Supplies

Item	Quantity / Spec	Notes
Boarding materials	Pre-measured plywood + screws	For rapid window/door covering; pairs with the pre-cut Tier 1 stock.
Safe room supplies	Water, radio, first aid, stocked interior room	A retreat point distinct from the Energy & Heat chapter's safe room, or combined with it if space is limited.

Quick Checklist

- ☐ Door/window reinforcement kits test-fitted in advance
- ☐ Safe room stocked with water, radio, and first aid
- ☐ Practiced: barricading routine rehearsed with available materials

Tier 3: Permanent (Indefinite)

***Goal:** Long-term structural resilience, including seriously weighing rural relocation for households in dense urban areas.*

Tier 3 assumes sustained instability with no return to normal infrastructure in sight. For households in dense urban areas, this is the point to seriously weigh relocation to a more self-sufficient rural property; that’s a shelter decision as much as a security one, and it’s not one to make under pressure.

Materials & Supplies

Item	Quantity / Spec	Notes
Relocation assets	Rural property deed, cabin materials, bug-out vehicle	For urban/suburban households, seriously evaluate this option well before Tier 3 conditions actually arrive. See the Security & Self-Defense chapter's Tier 3 for the defensibility side of the same decision.

Northern Utah Note

If relocating to a rural property with woodlot access, coordinate any defensive landscaping (see the Security & Self-Defense chapter) with wildfire defensible-space guidance below: spacing, plant selection, and clearance around structures. The same plantings that deter human intrusion often need to be balanced against wildfire risk in this region, and the two aren't always aligned by default.

Quick Checklist

- ☐ Relocation option evaluated in advance, not decided under pressure
- ☐ If relocating, defensive landscaping cross-checked against wildfire defensible-space rules

Tier 4: Thriving (Sustainable Community)

***Goal:** Build enough collective shelter capacity to safely absorb displaced neighbors or family, so sheltering people doesn't depend on any single household's space.*

A single household can only house so many people for so long. Tier 4 formalizes what an informal offer to a neighbor can't sustain: planned space, resource-sharing rules, and enough collective capacity that taking someone in doesn't collapse the group's own stability.

Skills to Build

- **Sheltering Displaced People:** Plan, in advance, how to safely and sustainably take in neighbors or family members (vetting, space allocation, and resource-sharing rules) so an influx of people in genuine need doesn't destabilize the group. Fold this into the same written charter the Security & Self-Defense chapter's Tier 4 builds for guard rotation and governance, rather than maintaining two separate agreements. See the Act of Thriving's Governance chapter for what actually makes a charter like this hold up in practice.

Go deeper: the Shelter & Structural Safety Addendum builds these into real, tested competency. For the hands-on how-to, see Emergency Shelter Basics and Securing Your Home Against Earthquake Damage.

Materials & Supplies

Item	Quantity / Spec	Notes
Guest/shelter capacity	Extra bedding, tents, allocated space	Planned in advance so an emergency influx doesn't mean scrambling for space.

Quick Checklist

- ☐ Plan in place for safely sheltering displaced neighbors/family
- ☐ Guest/shelter capacity (bedding, tents, allocated space) planned in advance

Regional Hazard Considerations

The tiers above are written to be disaster-agnostic; the skills and gear apply no matter what caused the disruption. But Northern Utah carries a specific set of recurring natural hazards beyond earthquake, each of which demands its own shelter-specific preparation. This section applies across all four tiers rather than being tied to a single duration: a wildfire threat is relevant whether you’re in Tier 1 or Tier 3.

Wildfire

Wildfire season in Utah generally runs June through October, and foothill and canyon communities along the Wasatch Front sit squarely in the wildland-urban interface: the zone where development meets flammable open land.

- Defensible Space Zoning:** Follow the standard 0-5-30-100 ft zone model: noncombustible material only within 5 ft of the structure (no bark mulch, no shrubs against the house), lean fuel spacing from 5–30 ft, and thinned/maintained vegetation from 30–100 ft. This is the same defensible-space principle referenced in the Security & Self-Defense chapter’s defensive-landscaping guidance; the two goals (deterring intrusion, resisting fire) need to be balanced together, not treated separately.
- Home Hardening:** Ember-resistant vent screens (embers, not flame contact, ignite most homes lost to wildfire), a Class A fire-rated roof, noncombustible siding or skirting near ground level, and gutters kept clear of dry debris.
- Evacuation Readiness:** Keep the portable go-bag subset described in the Water & Food chapter’s Tier 1 note packed and ready; wildfire evacuations are often faster-moving and shorter-notice than other disaster triggers.

- **Smoke & Air Quality:** Even households far from active fire lines face smoke exposure for days at a time. Keep N95 or P100 respirators on hand, and know how to build a low-cost Corsi-Rosenthal box (a box fan with MERV-13 filters taped to its sides) as an effective, inexpensive DIY air filtration option if a HEPA purifier isn't available. Seal windows and doors during smoke events rather than ventilating.

Extreme & Extended Heat

The Salt Lake Valley's basin geography and urban heat island effect can extend summer heat waves well past what surrounding areas experience, and prolonged heat without reliable cooling is a genuine hazard, especially for elderly household members, infants, and anyone without power for air conditioning.

- **Passive Cooling:** Close blinds/reflective coverings on south- and west-facing windows during the day, ventilate by opening windows at night when outside temperature drops, and retreat to the lowest, most interior room during peak afternoon heat: the inverse of the Energy & Heat chapter's winter safe-room strategy.
- **Low-Power Cooling:** A box fan draws a fraction of the power an air conditioner does. If running on a Tier 2 solar generator, prioritize fans and evaporative (swamp) cooling, which works well in Utah's low-humidity climate, over trying to run AC.
- **Heat Illness Recognition:** Know the difference between heat exhaustion (heavy sweating, weakness, nausea) and heat stroke (hot/dry or wet skin, confusion, loss of consciousness). Heat stroke is a medical emergency; see the Medical Care chapter for treatment. Anyone medically vulnerable to heat should have a specific cooling plan; see the Access & Functional Needs chapter.
- **Structural Prevention:** Shade trees or awnings on south/west exposures and light-colored, reflective roofing meaningfully reduce indoor heat gain over a full summer, worth planning as part of any Tier 3 construction project.

Extreme & Extended Cold

Cold-weather survival (layering, safe-room heating, hypothermia recognition) is covered in depth in the Energy & Heat chapter; this section covers only the shelter-specific side of winter risk that belongs here instead.

- **Pipe Freeze Protection:** Insulate exposed pipes (crawl spaces, exterior walls, unheated garages) before winter, and know how to shut off and drain them if a hard freeze is coming. Let faucets drip slightly during extreme cold snaps; moving water resists freezing better than still water.
- **Burst Pipe Response:** Know the main water shut-off location (same one referenced in Tier 1's utility shut-off skill). A burst pipe left running can cause more damage in hours than most other winter hazards combined.

- **Roof Snow Load:** Heavy, wet Wasatch Front snowfall can exceed a roof's design load, particularly on flatter or older roof sections. Know your roof's rated snow load and have a plan (professional snow removal, a roof rake for reachable sections) for unusually heavy years.
- **Ice Dams:** Watch for ice buildup at roof edges after heavy snow; it can force meltwater back under shingles into the structure. Proper attic insulation and ventilation prevent most ice dams before they start.

Flooding

Utah's flood risk comes primarily from two sources: rapid spring snowmelt overwhelming rivers and canals after a heavy snowpack winter, and flash flooding from summer monsoon thunderstorms in canyons and normally-dry washes. Salt Lake City has real precedent here: City Creek overflowed down State Street in 1983 after a fast, warm snowmelt, a widely documented event worth knowing about.

- **Know Your Flood Zone:** Check FEMA flood maps for your property before an event, not during one; it determines whether sandbagging, insurance, or evacuation planning should be a priority.
- **Structural Flood Prep:** Grade soil away from the foundation, maintain functioning gutters and downspouts extending well clear of the house, and consider a sump pump with battery backup if the property has a history of water intrusion.
- **Sandbagging:** Learn correct sandbag placement (stacked in a running-bond pattern, not just piled) before a flood watch is issued; most jurisdictions along the Wasatch Front make sand and bags available at fire stations or public works yards during snowmelt season.
- **Flash Flood Safety:** Never walk or drive through flowing water. "Turn Around, Don't Drown" is the National Weather Service's standard guidance for good reason: it takes surprisingly little moving water to sweep away a person or a vehicle. Avoid canyon narrows and washes entirely during a flash flood warning, regardless of how clear the sky looks overhead.
- **Post-Flood Water Safety:** Treat any water source that may have mixed with floodwater as contaminated; apply the same purification steps from the Water & Food chapter's Tier 2 guidance before using it for anything.

WARNING

"Turn Around, Don't Drown" Isn't a Slogan

It takes surprisingly little moving water, roughly a foot, to sweep away a vehicle, and far less to sweep away a person on foot. Never walk or drive through flowing water, and avoid canyon narrows and washes entirely during a flash flood warning, regardless of how clear the sky looks overhead.

Regional Hazard Quick Checklist

- ☐ Defensible space zones (0-5-30-100 ft) established and maintained around the home
- ☐ Ember-resistant vents, Class A roofing, and clear gutters (wildfire hardening)
- ☐ N95/P100 respirators on hand; Corsi-Rosenthal box materials or HEPA purifier available
- ☐ Passive cooling measures (reflective coverings, night ventilation) in place for summer
- ☐ Heat illness signs known by every adult in the household
- ☐ Exposed pipes insulated; main water shut-off location known
- ☐ Roof snow load and ice dam risk assessed
- ☐ Property’s FEMA flood zone checked; sandbagging technique known
- ☐ Practiced: household knows evacuation triggers for wildfire and flash flood specifically, distinct from the general lockdown/evacuation routine

At a Glance: Shelter & Structural Safety Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Duration	Structural/Shelter Focus
Tier 1	Hours – 14 days	Seismic safety, structural hazard mitigation
Tier 2	2 weeks – 3 months	Reinforced entry points, stocked safe room
Tier 3	Indefinite	Long-term structural resilience or rural relocation
Tier 4	Sustainable community	Shared shelter capacity for displaced members

CHAPTER 6

Security & Self-Defense

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Comes Sixth

Security & Self-Defense is about keeping people out who intend harm, and about knowing how to actually defend yourself and your household if it comes to that. An actual home-defense scenario is comparatively rare next to this manual's companion chapter, Shelter & Structural Safety, where a structural failure is a near-certainty in a major seismic event; this chapter is written in that proportion, serious but not treated as the dominant daily concern.

As with the prior chapters, each tier adds capability rather than replacing it: Tier 1's basic entry deterrence stays relevant even after Tier 3 adds a defensible perimeter. And one point matters enough to state up front, before anything else in this chapter: owning a firearm is not the same skill as being proficient with one. If you intend to use one for defense, you need to train to proficiency, and that is not something a book can, or will, attempt to provide. Practical courses and consistent training are required; this chapter points to where to get that training, not a substitute for it.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: *Basic entry deterrence and safe firearm storage. Secure the home against opportunistic entry in the hours after an event, when normal security (locked doors, working alarms, visible occupancy) may be degraded.*

Tier 1's goal, basic entry deterrence, matters most in the immediate aftermath of an event, before anything has had time to escalate into a sustained threat.

Skills to Build

- **Lockdown:** Know how to rapidly secure every entry point (doors, windows, garage) as a single practiced routine, not something worked out in the moment. See the Home Lockdown & Barricading Basics skill guide for the full routine and the reinforcement upgrades behind it.

Go deeper: the Security & Self-Defense Addendum builds these into real, tested competency. For the hands-on how-to, see Firearm Safety, Storage & Self-Defense Basics and Home Lockdown & Barricading Basics.

Tech & Equipment

- **Door/Window Sensors:** Battery-operated alarms to detect entry attempts, useful even with normal utilities degraded.

Materials & Supplies

Item	Quantity / Spec	Notes
Lock reinforcement	3-inch strike plate screws, deadbolts	Replaces the short screws builders use by default, which anchor into the door jamb alone rather than the wall stud.
Light discipline	Blackout curtains or heavy blankets	Reduces visible signs of occupancy/supplies at night.

WARNING

Firearms Safe Storage

If firearms are in the home, regardless of what tier the household is otherwise operating at, safe storage is a Tier 1 baseline, not something to defer until active defense planning in Tier 3. Store firearms unloaded in a locked safe or lockbox; store ammunition separately from the firearm itself, which is standard practice in households with children; use a secondary device (a cable or trigger lock) as backup even inside a safe; and keep both genuinely inaccessible to children and anyone else unauthorized. If rapid access matters for home defense, a quick-access biometric or keypad safe is designed specifically to balance that speed against child safety; it’s a real product category, not a compromise to avoid. This applies independent of the rest of this chapter’s tiers. See the Firearm Safety, Storage & Self-Defense Basics skill guide for the real tradeoffs between storage options, why Utah has no legal requirement to do any of this, and why owning a firearm is not the same as being trained to use one.

Quick Checklist

- ☐ Deadbolts and strike plates upgraded to 3-inch screws
- ☐ Blackout curtains/blankets available for the main living areas
- ☐ Door/window entry sensors installed

- ☐ Any household firearms stored unloaded, locked, with ammunition stored separately
- ☐ Practiced: lockdown routine drilled as a single, fast sequence

Tier 2: Extended (2 Weeks – 3 Months)

Goal: Managing OPSEC (Operational Security), organizing neighborhood coordination, and knowing the actual law around defending yourself, when police response is delayed or nonexistent.

Tier 2 assumes normal policing and emergency response are degraded or unavailable, and that the household's supplies and stability may attract opportunistic attention over a period of weeks or months. The shift here is from reactive (Tier 1's lockdown routine) to proactive: reducing visibility and coordinating with neighbors.

Skills to Build

- **OPSEC (Operational Security):** Maintain light and noise discipline, and avoid discussing supply levels or security measures outside the household. The goal is to not stand out as a target in a stressed neighborhood.
- **Neighborhood Watch:** Coordinate patrols and share information with trusted neighbors: a network sees and covers far more than a single household can alone.
- **Perimeter Assessment:** Identify and clear concealment zones (overgrown bushes, debris, blind corners) near entry points where someone could approach unseen.

Go deeper: the Security & Self-Defense Addendum builds these into real, tested competency. For the hands-on how-to, see Firearm Safety, Storage & Self-Defense Basics and Home Lockdown & Barricading Basics.

Tech & Equipment

- **GMRS Radios:** Handheld radios for family/neighbor coordination. Unlike FRS radios, GMRS legally requires an FCC license: inexpensive (no test required, roughly a \$35 fee covering the whole immediate family, valid for 10 years) but a real requirement, not a formality to skip. See the Communication chapter for the full radio picture.
- **Motion Sensor Lights:** Solar-powered, directional lighting to deter approach without relying on grid power.
- **Surveillance Cameras:** Battery or solar powered, with local SD card storage rather than cloud dependency: footage stays accessible even with internet and cell service down.

Materials & Supplies

Item	Quantity / Spec	Notes
Barrier materials	Sandbags, gravel, heavy furniture	For blocking or slowing entry at weak points.
Signage	“No Trespassing,” “Protected by Alarm”	Deterrent value regardless of whether an alarm system is actually installed.
Community pact	Written agreement with neighbors	Patrol schedules and response protocols; use the Mutual Aid Agreement template to put it in writing before it's needed, not during a crisis.

Legal Note: Use of Force

Utah has Castle Doctrine and Stand Your Ground provisions, but the legal specifics of justified use of force, including what counts as an imminent threat and when retreat is or isn’t required, are genuinely complex and consequential to get wrong. This manual isn’t a substitute for that knowledge: take a certified self-defense law course (organizations like USCCA or an NRA-affiliated instructor offer these) and, if firearms are part of your plan, get proper training and verify current Utah law directly rather than relying on secondhand summaries, including this one. See the Firearm Safety, Storage & Self-Defense Basics skill guide for the specific statutes behind Castle Doctrine and Stand Your Ground.

Quick Checklist

- ☐ Light/noise OPSEC discipline practiced by the household
- ☐ Neighborhood watch network established with trusted neighbors
- ☐ Concealment zones near the home identified and cleared
- ☐ GMRS license obtained if handheld radios are part of the plan
- ☐ Motion lights and battery/solar cameras (local storage) installed
- ☐ Written community pact in place with neighbors
- ☐ Use-of-force legal knowledge current via a certified course, if firearms are part of the plan

Tier 3: Permanent (Indefinite)

Goal: Total fortification and establishing a defensible perimeter for long-term survival.

Tier 3 assumes sustained instability with no return to normal policing in sight. The focus shifts from hardening a single structure to designing and maintaining an actual defensible position. For households in dense urban areas seriously weighing rural relocation, see the Shelter & Structural Safety chapter's Tier 3 for the shelter side of that same decision; the defensibility of wherever you land is the security side of it.

Skills to Build

- **Perimeter Defense:** Design layered barriers (fencing, natural terrain features, berms) that slow and channel approach rather than relying on a single line of defense.
- **Gray Man Theory:** The practice of making a home or person appear unremarkable, already-looted, or not worth the risk to target: often more effective than visible fortification, which can itself attract attention.
- **Conflict Resolution:** Establish community governance and clear rules of engagement in advance; most group failures in sustained crises come from internal conflict, not outside threats.
- **Construction:** Build reinforced structures, observation points, or concealed storage as ongoing projects, not one-time installs.

Go deeper: the Security & Self-Defense Addendum builds these into real, tested competency. For the hands-on how-to, see Firearm Safety, Storage & Self-Defense Basics and Home Lockdown & Barricading Basics.

Tech & Equipment

- **Long-Range Optics:** Binoculars and spotting scopes for early threat detection at a mile or more; early warning is worth more than any single defensive structure.
- **Perimeter Alarms:** Solar wireless sensors, tripwires, or seismic detectors along likely approach routes.
- **HF Radio Base Station:** For long-range intelligence and coordination with other groups. Legal operation requires an FCC amateur radio license in normal circumstances; the FCC does permit unlicensed emergency use when there's an immediate threat to life or property (47 CFR 97.405), but the right approach is getting licensed and trained now, not relying on the emergency exception. See the Communication chapter.
- **Thermal Imaging:** For detecting intruders in total darkness or heavy concealment.

Materials & Supplies

Item	Quantity / Spec	Notes
Fortification	High-tensile fencing, reinforced gates, bollards	Focus on channeling and slowing approach, not just blocking it outright.
Defensive landscaping	Hawthorn, rose, barberry under windows/fences	A real, established technique (part of Crime Prevention Through Environmental Design): thorny plantings deter approach without looking overtly defensive. Cross-check against the Shelter & Structural Safety chapter's wildfire defensible-space guidance before planting near a structure.
Barter/defense goods	Ammunition, firearms (if legally owned and trained), non-lethal deterrents	Ongoing proper training and safe storage matter as much as the equipment itself.
Community defense pact	Formalized mutual aid agreement	Shared guard duty and resource protection, building on the Tier 2 written pact, the same Mutual Aid Agreement template, extended and re-signed as the arrangement grows.

Quick Checklist

- ☐ Layered perimeter (fencing, terrain, barriers) designed and built
- ☐ Gray Man principles applied; visible fortification balanced against not attracting attention
- ☐ Community governance and rules of engagement documented
- ☐ Long-range optics and perimeter alarms in place
- ☐ HF radio operator licensed and trained, not relying on the emergency-use exception
- ☐ Defensive landscaping installed, cross-checked against wildfire defensible-space rules
- ☐ Firearms training current and storage secure, if applicable
- ☐ Practiced: perimeter/observation routine drilled with everyone who'll stand watch

Tier 4: Thriving (Sustainable Community)

Goal: Build a neighborhood-scale security system, with formal governance and shared watch capacity, so protection doesn't depend on any single household's stamina.

A single household standing watch indefinitely is not sustainable: fatigue, illness, or just needing to sleep creates gaps no amount of equipment fixes. Tier 4 formalizes what Tier 2 and 3 started informally: shared watch rotations and written governance.

This chapter's companion

This chapter covers formal community governance for security specifically; the Shelter & Structural Safety chapter's Tier 4 covers the parallel question of sheltering displaced people, and the two are meant to run on the same written charter rather than two separate agreements. The Act of Surviving's Part 8 covers the coordination cadence that gets a group to this point, and The Act of Thriving's Governance chapter, a companion manual organized by a community's own life-stage, covers what actually makes a written charter hold, Elinor Ostrom's eight design principles drawn from 800+ real cases, not just this chapter's security-specific version of it.

Skills to Build

- **Formal Community Governance:** Move from informal rules of engagement to a written charter (dispute resolution process, decision-making authority, and expectations for members) agreed on before it's tested by a real conflict. The Act of Thriving's Governance chapter covers what actually makes a charter like this hold up in practice, not just what to put in it.
- **Collective Training & Cross-Training:** Run regular group drills so multiple people, not just one or two, can lead a response or stand a watch competently. A security system with a single expert is a security system with a single point of failure.
- **Rotating Guard Duty:** Formalize a sustainable watch schedule across multiple households so no one person or family carries the load alone indefinitely.

Go deeper: the Security & Self-Defense Addendum builds these into real, tested competency. For the hands-on how-to, see Firearm Safety, Storage & Self-Defense Basics and Home Lockdown & Barricading Basics.

Tech & Equipment

- **Shared Observation Post:** A community watchtower or elevated observation point with better coverage than any single household's perimeter alarms.
- **Community Alert System:** A siren, relay radio network, or other method to notify the whole group quickly, building on the Tier 2/3 radio equipment.

- **Shared Training Range/Space:** A safe, agreed-upon space for ongoing firearms and non-lethal deterrent training, so skills stay current across the group rather than fading after initial training.
- **Shared Perimeter Infrastructure:** Community-funded and maintained fencing, gates, or barriers at shared property lines, splitting cost and upkeep across households.

Materials & Supplies

Item	Quantity / Spec	Notes
Community defense cache	Shared ammunition/trauma supply reserve	Coordinate with the Medical Care chapter's shared medical cache; overlapping trauma supply needs.
Written charter/bylaws	Governance, dispute resolution, guard rotation	The actual document, not just a verbal understanding; verbal agreements fail under stress.
Shared perimeter materials	Fencing, gate hardware, signage	Split cost and maintenance responsibility across contributing households.

Northern Utah Note

Many Utah city police departments (Salt Lake City among them) already run active, formal Neighborhood Watch coordination programs, a legitimate, existing framework worth joining or using as a structural template now, well before Tier 4 conditions make it urgent.

Quick Checklist

- ☐ Written community charter/bylaws established, covering governance and dispute resolution
- ☐ Guard duty rotation formalized across multiple households
- ☐ More than one person per household cross-trained to lead response or stand watch
- ☐ Shared observation post and alert system established
- ☐ Community defense cache and shared perimeter infrastructure in place
- ☐ Practiced: a full watch-rotation and community alert drill completed

At a Glance: Security & Self-Defense Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Duration	Security Posture
Tier 1	Hours – 14 days	Lockdown routine, basic deterrence, safe firearm storage
Tier 2	2 weeks – 3 months	OPSEC, neighborhood watch, use-of-force law
Tier 3	Indefinite	Layered perimeter defense
Tier 4	Sustainable community	Formalized, rotating community watch

CHAPTER 7

Communication

Why This Category Matters

When normal networks are congested or down, the household that can still reach the outside world, and coordinate internally, makes better decisions than one that's cut off. Communication is ranked lower in this manual's priority order than water, medical care, or shelter because a household can survive days without it; but every other chapter depends on it working eventually, whether that's calling for help, coordinating a neighborhood watch rotation, or reaching an out-of-state contact to say everyone is safe.

This chapter escalates faster in technical complexity than the others: Tier 2 already assumes an FCC license, and Tier 3 assumes amateur radio licensing and real radio-operating skill. That's intentional. Unlike food storage or first aid, radio communication has hard legal and technical floors that can't be worked around with money or effort alone. Build the skills, not just the gear.

Plain-Language Glossary

WEA: Wireless Emergency Alert, the automatic loud-tone alert on modern cell phones. NOAA radio / SAME: a dedicated weather-alert radio that tone-triggers for your specific county. FRS vs. GMRS: FRS is license-free, low-power, short-range; GMRS is the licensed step up with more power and range, and is the radio type this chapter builds around. HAM (amateur radio): a separate, more advanced licensed radio service with far greater range and technical capability than GMRS. HF/VHF/UHF: radio frequency bands. HF travels farthest (regional to global) but needs the most skill/equipment; VHF/UHF are shorter-range but simpler (this is what GMRS uses). LoRa/Meshtastic: a low-power, unlicensed radio technology that automatically relays text messages between small devices. NVIS: an HF antenna technique that bounces signal off the atmosphere for regional coverage, useful specifically because it works well in mountainous terrain. ARES/RACES: volunteer amateur radio emergency-response organizations that already exist in most Utah counties. Refer back to this box any time an unfamiliar term shows up below.

If You're Starting From Zero

This chapter has a lot of moving pieces, but the value is front-loaded: the cheapest, simplest steps matter the most. In order of priority: (1) Make the contact cards and agree on an out-of-state contact and two meeting places; this costs nothing but time. (2) Buy a NOAA weather radio and a couple of power banks; inexpensive, no license needed, useful in almost any emergency. (3) If budget allows for one radio purchase, a pair of GMRS handhelds plus the family license is the single best next step before considering HAM radio. It's inexpensive, legal, and covers the whole household. Everything past that (HAM licensing, HF radio, mesh networks) is real value for a long-duration or community-scale scenario, but it's an if-and-when investment, not a starting point.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Maintain contact using standard networks and prepare for congestion. Focus on low-bandwidth methods (texting) and official alerts.*

Tier 1 assumes cell networks are still standing but overloaded: voice calls fail to connect while texts eventually queue through. The goal is using the infrastructure that still exists as efficiently as possible, plus falling back to non-digital methods (paper maps, memorized numbers) the moment it doesn't.

Skills to Build

- **SMS Protocol:** Default to text over voice during any disaster. Texts use a fraction of the bandwidth and queue for delivery instead of simply failing when towers are saturated, which is exactly what happens in the first hours after a major event.
- **Contact Memorization:** Know at least two or three key phone numbers without pulling them from a digital contact list; a dead or lost phone shouldn't mean losing the ability to reach anyone.
- **Alert Monitoring:** Understand IPAWS (the Integrated Public Alert & Warning System), FEMA's umbrella system that pushes the same official alert out through three channels at once: Wireless Emergency Alerts (the loud, distinct tone on modern cell phones, based on location, and one of the few things that still gets through even when networks are too congested for calls/texts), the Emergency Alert System or EAS (the familiar tone that interrupts AM/FM/satellite radio and broadcast/cable/satellite TV), and NOAA Weather Radio's tone alerts. All three are automatic and require no signup. Know how to receive at least two of them, since any single channel can fail (a dead phone defeats WEA, no power defeats a plugged-in TV for EAS).

- **Local Emergency Notification Registration:** Separately from IPAWS, register for your county's own opt-in alert system. This is where local, non-federal notices (evacuation orders, local road closures, local water issues) actually get sent, and it requires signing up in advance. Weber, Davis, Box Elder, Morgan, Cache, and Rich counties currently use Everbridge (replacing the older CodeRED system in 2024); Salt Lake County residents should check with Salt Lake Valley Emergency Communications Center (vecc911.org) or their specific city, since Salt Lake County's system differs from the northern-county Everbridge rollout. Whatever your county uses, confirm directly; these systems and their names change.
- **Map Reading:** Practice navigating Northern Utah with a paper map before GPS is unavailable. Road numbering, canyon names, and county boundaries aren't intuitive if you've only ever followed a blue dot.

Go deeper: the Communication Addendum builds these into real, tested competency. For the hands-on how-to, see Family Communication Plan & Emergency Radio and Ham Radio Licensing & Off-Grid Mesh Networking.

Tech & Equipment

- **Cell Phones with Offline Maps:** Pre-load offline map areas (Google Maps' "Download Area" feature or equivalent) for your home region; this works without any signal at all once downloaded. Free.
- **Power Banks:** 20,000+ mAh capacity, enough for multiple full recharges without grid power. Roughly \$25–50 each; prices vary and change, treat this as a rough planning range, not a quote.
- **NOAA Weather Radio:** Battery or hand-crank model with tone-alert functionality, shared with the Energy & Heat and Security & Self-Defense chapters' equipment lists; one unit covers all three. Roughly \$20–40. See the Family Communication Plan & Emergency Radio skill guide for how to program it.
- **Solar Charger:** A foldable panel for recharging power banks and phones directly from sunlight, extending the useful life of Tier 1 battery stock indefinitely. Roughly \$30–70 for a basic panel.

Materials & Supplies

Item	Quantity / Spec	Notes
Contact cards	Laminated, wallet-sized, one per person	Out-of-state contact info plus two meeting places: one near home for a sudden local event, one outside the immediate area in case the neighborhood itself is inaccessible. See the Family Communication Plan skill guide for building the full plan.
Physical maps	Utah state + specific county (Davis, Salt Lake, Weber, etc.)	Paper, not a phone screen; useless once the battery dies.
Writing tools	Waterproof notepad + pens	For logging messages, leaving notes for other household members, or tracking radio traffic.
Charging cables	Spare USB-C/Lightning, stored separately from phones	A single lost or damaged cable shouldn't strand every device in the house.

The Out-of-State Contact Trick

After a regional disaster, local phone circuits are often the most congested, but a long-distance call can sometimes get through when a local one can't, because it doesn't compete for the same saturated local towers. Designate one out-of-state relative or friend as the household's single point of contact: everyone calls or texts that one number to check in, and that person relays status between separated family members. Put that number on every contact card.

School and Workplace Reunification

The two-meeting-point plan above assumes the household is together or can travel freely; it doesn't cover the specific, common scenario of a disaster hitting during school or work hours, with the family physically separated across different institutions. Every school has its own emergency reunification procedure (often a specific, controlled release process, not just "come pick up your kid"); know it in advance by asking the school directly, rather than assuming you can just show up. Confirm who besides the parents is authorized for pickup, since that list may need updating. Do the same for any workplace emergency plan for adults in the household. Build this into the household's plan explicitly: if a disaster hits during school/work hours, what does each family member actually do, and where does everyone end up. This is a harder problem than the general meeting-point plan and deserves its own specific answer.

Quick Checklist

- ☐ Text-first habit understood by every household member
- ☐ 2-3 key phone numbers memorized by each person, not just stored digitally
- ☐ Offline map areas downloaded to every phone
- ☐ NOAA weather radio with tone alert in the kit
- ☐ Registered for your county's opt-in emergency notification system (Everbridge for Weber/Davis/Box Elder/Morgan/Cache/Rich; check directly for Salt Lake County and others)
- ☐ Each child's school reunification procedure known in advance, including current authorized-pickup list
- ☐ Workplace emergency plans known for every working adult in the household
- ☐ Laminated contact cards made, including out-of-state contact and two meeting places
- ☐ Paper maps of Utah and home county on hand
- ☐ Waterproof notepad and pens, spare charging cables stored separately from devices
- ☐ Practiced: every household member can recite the out-of-state contact number from memory

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Establish local coordination and outside contact when cell towers are down or congested indefinitely.*

Tier 2 assumes cell infrastructure can no longer be relied on at all. Communication shifts to radio, which means it also shifts to being a licensed, regulated activity. Getting licensed before it's needed isn't optional here; unlike most of this manual, using this equipment without the license is a legal violation, not just a skills gap.

Skills to Build

- **Radio Protocol:** Use clear, plain speech and call signs rather than "10-codes." 10-codes vary by agency and jurisdiction and cause real confusion between different groups, which is exactly why professional emergency response shifted to plain-language protocols years ago.
- **GMRS Licensing:** Get the FCC GMRS license (a flat \$35 fee, no test required, valid for 10 years, and it covers your entire immediate family under one license) before you need the radios, not after. Apply directly at the FCC's Universal Licensing System (wireless.fcc.gov); the whole application takes about 15 minutes online and the license is typically issued within a couple of weeks. This is the same license referenced in the Security & Self-Defense chapter's Tier 2 equipment. See the Family Communication Plan & Emergency Radio skill guide for how to choose between GMRS and ham radio.

- **Satellite Messaging:** Practice composing short, information-dense messages; satellite devices charge per message or have limited data budgets, and battery life is precious in the field.
- **Net Operations:** Participate in scheduled radio “check-in” windows rather than leaving a channel open continuously. This saves battery on every radio in the network and keeps the channel clear for actual emergencies.

Go deeper: the Communication Addendum builds these into real, tested competency. For the hands-on how-to, see Family Communication Plan & Emergency Radio and Ham Radio Licensing & Off-Grid Mesh Networking.

Tech & Equipment

- **GMRS Radios:** Handhelds (up to 5W) for individuals, mobile/base units (up to 50W, but only on the main repeater-capable channels; other channels are limited to 5W or less) for a vehicle or home base station, all covered under the single family GMRS license above. Roughly \$30–60 per handheld, \$100–250 for a mobile/base unit.
- **Satellite Messenger:** Devices like a Garmin inReach or Zoleo for two-way global text messaging with no cell coverage required: the single most reliable way to reach the outside world from a dead zone. Roughly \$300–450 for the device, plus a monthly or annual subscription (roughly \$15–50/month depending on plan); the subscription is the real ongoing cost to budget for, not just the hardware.
- **HAM Scanner:** A receive-only scanner to monitor local emergency responder traffic (ARES/RACES nets, fire/EMS dispatch). Listening requires no license at all, only transmitting does, so this is a zero-barrier way to gain situational awareness even before anyone in the household is licensed. Roughly \$30–150 depending on capability.
- **Repeater Antenna:** An external antenna on a GMRS base station extends effective neighborhood range well beyond a handheld’s built-in antenna. Roughly \$40–150 depending on type and mount.

Materials & Supplies

Item	Quantity / Spec	Notes
Subscription plans	Active satellite device service	Or, at minimum, documented knowledge of how to activate one on short notice.
Code phrases	Pre-agreed family status codes	E.g., “Code Green” = all safe, “Code Red” = evacuate. Short, unambiguous, agreed on in advance.
Batteries	Bulk AA/AAA supply	For radios and flashlights; see the Energy & Heat chapter's note on not mixing battery ages/chemistries in the same device.
Frequency list	Printed local GMRS repeater + HAM net frequencies	A phone-stored list is useless the moment the phone dies; print it.

Northern Utah Note

Utah’s mountainous terrain blocks VHF/UHF line-of-sight signal constantly; a canyon or ridge that separates two households can kill a direct GMRS signal that would carry for miles on flat ground. This is exactly the problem Tier 3’s NVIS antenna technique below is built to solve, and it’s worth understanding now that terrain, not just distance, is the real constraint on radio range along the Wasatch Front.

Quick Checklist

- ☐ GMRS license obtained (covers the whole family)
- ☐ Handheld + mobile/base GMRS radios acquired and programmed
- ☐ Satellite messenger with active or activatable subscription
- ☐ HAM scanner for monitoring emergency traffic (no license needed to listen)
- ☐ Family code phrases agreed on and memorized
- ☐ Printed frequency list stored with the radio gear
- ☐ Bulk battery supply stocked
- ☐ Practiced: household has run at least one scheduled radio check-in/net

Tier 3: Permanent (Indefinite)

Goal: Long-range intelligence gathering and decentralized local networking without any infrastructure.

Tier 3 assumes no cell towers, no internet, and no satellite subscription billing infrastructure to rely on. This is full amateur (“ham”) radio territory: real licensing, real operating skill, and equipment capable of both regional and global reach without any commercial network underneath it.

Skills to Build

- **HAM Radio Licensing:** Pass the Technician exam (opens VHF/UHF and limited HF privileges) and ideally the General exam (opens most HF bands); both are administered regularly and don’t require Morse code today, unlike decades past. Do this well before Tier 3 conditions arrive; it’s not learnable from a book in a crisis. See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for the exact exam format, fees, and how it compares to GMRS.
- **NVIS Antenna Setup:** Configure a Near Vertical Incidence Skywave antenna, a technique that bounces HF signal nearly straight up and back down, ideal for regional (roughly 0–300 mile) coverage in exactly the kind of mountainous terrain that blocks normal line-of-sight radio along the Wasatch Front. See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for the actual antenna setup.
- **Mesh Network Maintenance:** Learn to troubleshoot LoRa/Meshtastic nodes and their solar power supplies. These are simple devices, but a dead node with a dead battery is a hole in the network’s coverage until someone finds and fixes it. See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for the Meshtastic setup this builds on.
- **Morse Code (CW):** Basic proficiency lets a signal too weak for voice still get through. CW remains the most bandwidth-efficient mode in amateur radio, useful when conditions are marginal and every other method has failed.

Go deeper: the Communication Addendum builds these into real, tested competency. For the hands-on how-to, see Family Communication Plan & Emergency Radio and Ham Radio Licensing & Off-Grid Mesh Networking.

Tech & Equipment

- **HF Transceiver:** A shortwave radio capable of global communication via ionospheric skip, the only equipment in this chapter that can reach beyond regional range with no repeater or satellite infrastructure at all. A capable new unit typically runs roughly \$600–1,500+; used gear from licensed operators can cost meaningfully less.
- **Meshtastic Nodes:** LoRa devices (e.g., Heltec V3, RAK WisBlock) for encrypted, offline local text messaging that automatically relays between nodes. No license required for this specific use case, since it operates on unlicensed ISM bands. Roughly \$30–80 per node; inexpensive enough to deploy several. See the Ham Radio Licensing & Off-Grid Mesh Networking skill guide for setup.

- **High-Gain Antennas:** Long-wire or dipole antennas for HF; a Yagi for directional VHF/UHF work. A basic wire/dipole antenna can be built for well under \$100; commercial directional antennas run higher.
- **Solar Power Station:** A dedicated, high-wattage solar array to keep a radio “shack” powered continuously; cross-reference the Energy & Heat chapter’s Tier 3 off-grid solar guidance for sizing.

Materials & Supplies

Item	Quantity / Spec	Notes
Technical manuals	Radio repair, antenna theory, electronics schematics	Physical books, the same principle as the Medical Care chapter's medical library.
Spare parts	Fuses, diodes, capacitors, coaxial cable, and tubes if applicable	A stock of basic spare electronic components lets minor equipment failures get fixed rather than ending the household's radio capability entirely.
Encryption keys	Printed pre-shared keys for Meshtastic channels	Share only with trusted community members; treat these like a physical key, not a password to type from memory under stress.
Signal mirrors & whistles	Analog backup signaling	No battery, no license, no electronics to fail: the simplest possible fallback for line-of-sight or audible signaling.

EMP Resistance: A Real but Overstated Claim

Vacuum-tube electronics are genuinely more physically robust against an electromagnetic pulse than typical modern solid-state gear, and a fully tube-based radio system can survive an EMP that would damage ordinary electronics. But treat this as a minor, nuanced factor rather than a prepping strategy on its own: a complete tube-based station is large, power-hungry, and inefficient compared to solid-state radios, tube gear is increasingly hard to source and maintain, and much of the popular “tubes survive EMP” claim traces back to an old, partly-debunked Cold War narrative rather than rigorous testing. If EMP resilience genuinely matters to your plan, a small Faraday-caged spare radio (a basic handheld stored in a sealed metal container, disconnected from any antenna) is a simpler and more practical safeguard than building around tube technology.

Legal Note: Transmitting Without a License

The FCC permits unlicensed radio transmission in a genuine emergency involving immediate danger to life or property (47 CFR 97.405), but exactly as in the Security & Self-Defense chapter's HF discussion, the right plan is getting licensed and trained now, not relying on that exception. A licensed, practiced operator communicates far more effectively under real pressure than someone transmitting for the first time in a crisis.

Quick Checklist

- ☐ At least one household member holds a Technician or General HAM license
- ☐ NVIS-capable HF antenna set up and tested
- ☐ Meshtastic (or equivalent LoRa mesh) nodes deployed and solar-powered
- ☐ Basic CW (Morse code) proficiency in at least one operator
- ☐ HF transceiver and high-gain antennas installed
- ☐ Technical manuals and spare radio parts on hand; a Faraday-caged backup handheld if EMP is a concern
- ☐ Meshtastic channel encryption keys printed and distributed to trusted contacts only
- ☐ Signal mirror and whistle in every go-bag as a no-power fallback
- ☐ Practiced: made actual contact with a station beyond line-of-sight range using Tier 3 gear

Tier 4: Thriving (Sustainable Community)

Goal: Build a redundant, distributed community communication network so no single operator, device, or point of failure silences the whole group.

A single household's Tier 3 radio setup is still one operator and one set of equipment; illness, equipment failure, or simply needing sleep creates a communication gap. Tier 4 spreads capability across a neighborhood: more licensed operators, shared infrastructure, and formal protocols so the network keeps functioning even when any single part of it doesn't.

Skills to Build

- **Net Control Operations:** Train more than one person to run a scheduled, formal community radio net. Managing check-ins, prioritizing traffic, and keeping order on a shared channel during an actual emergency takes real practice, not just licensing.
- **Training More Licensed Operators:** Deliberately grow the number of licensed HAM operators in the community, the same redundancy principle as the medical-responder and repair-skill training in earlier chapters.
- **Message Relay / Traffic Handling:** Learn formal message-relay practice (the same tradition behind the real-world ARRL National Traffic System). Accurately passing a message between two parties who can't reach each other directly is a specific, practiced skill, not something that happens reliably by accident.
- **Mesh Network Expansion:** Extend Meshtastic (or equivalent) node coverage across the neighborhood so text relay capability doesn't depend on any single household's node staying powered.

Go deeper: the Communication Addendum builds these into real, tested competency. For the hands-on how-to, see Family Communication Plan & Emergency Radio and Ham Radio Licensing & Off-Grid Mesh Networking.

Tech & Equipment

- **Community Repeater:** A shared GMRS or HAM repeater on the highest available point serving the neighborhood, dramatically extending effective range for everyone connected to it.
- **Shared Mesh Backbone:** Multiple Meshtastic nodes deliberately positioned for coverage overlap, so losing any single node doesn't create a dead zone.
- **Community Net Control Station:** A well-equipped, well-powered base station designated (and backed up) as the primary net control point.
- **Redundant Power for Comm Infrastructure:** Shared solar/battery capacity dedicated to keeping the repeater and net control station powered; tie this into the Energy & Heat chapter's Tier 4 shared microgrid concept rather than building it separately.

Materials & Supplies

Item	Quantity / Spec	Notes
Shared frequency/protocol directory	Documented and distributed to every household	Everyone in the network needs the same reference, not just net control.
Spare radio equipment cache	Backup handhelds, batteries, antenna parts	Community-level reserve beyond what any single household stocks alone.
Printed community roster	Callsigns, frequencies, household assignments	Physical copies distributed across multiple households, the same redundancy principle as the medical reference library.

Northern Utah Note

Salt Lake, Davis, and Weber counties all have active, established ARES (Amateur Radio Emergency Service) groups: real, existing volunteer networks affiliated with county emergency management, not a hypothetical resource. Davis County's ARES group has a direct connection to this manual's Security & Self-Defense chapter: it was formed specifically in response to the 1983 flood that sent City Creek down State Street in Salt Lake City. Joining your county's ARES group now, rather than building a parallel network from scratch, is the fastest and most credible path to this tier.

Quick Checklist

- ☐ Multiple trained net control operators in the community
- ☐ More than one household has a licensed HAM operator
- ☐ Community repeater or shared mesh backbone established
- ☐ Shared frequency/protocol directory distributed to all participating households
- ☐ Spare radio equipment cache maintained at the community level
- ☐ Connected to (or actively building) a county ARES/RACES group
- ☐ Practiced: run a full community net with message relay/traffic handling exercised

At a Glance: Communication Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Duration	Local Comms	Long-Range Comms
Tier 1	Hours – 14 days	Text messaging, in-person contact cards	Out-of-state contact via cell network
Tier 2	2 weeks – 3 months	GMRS radio (licensed)	Satellite messenger
Tier 3	Indefinite	Meshtastic/LoRa mesh network	HF radio (HAM licensed), NVIS
Tier 4	Sustainable community	Community repeater, shared mesh backbone	County ARES/RACES network

CHAPTER 8

Access & Functional Needs

Why This Category Matters

Access & Functional Needs (AFN) is the category most likely to make the difference between life and death for a specific household member, precisely because generic advice applies to them the least. A stockpile of stored water helps everyone; a wheelchair, an insulin pump, or a hearing loss doesn't average out. The plan has to be built around the specific person, not a generic "household of four, generally healthy adults" assumption the rest of this manual leans on more comfortably.

This chapter draws on established sources (the National Kidney Foundation, medical device manufacturers, and Utah's own Be Ready Utah access-and-functional-needs program) but it is still general guidance. For any household member on a specific medical device, medication, or therapy, the specific emergency plan for that condition should come from their own doctor, dialysis center, or durable medical equipment (DME) supplier. Use this chapter to organize that conversation, not to replace it.

Two Phases: Stored vs. Produced (a Limited Fit Here)

The same two-phase shift that runs through this manual's other chapters applies here too, with a real limit worth naming directly. Tier 1 is Phase 1: surviving the first outage using what's already on hand. Tier 2 is the transition: the disruption has outlasted Tier 1's stored buffer, and the household shifts to sustaining daily adaptive living rather than just getting through an emergency. Tier 3 is where most chapters reach a clean Phase 2, producing what's needed; this chapter can't fully get there, since a specific medication or specialized medical device generally can't be produced at home the way food or fuel can. Tier 3 here means building and repairing adaptive equipment from available materials where genuinely possible, and formal mutual-aid arrangements so care doesn't depend on any single caregiver or piece of equipment lasting indefinitely, community redundancy standing in for production. Tier 4 extends that same community-based approach further. This is the one chapter in the manual where "Phase 2" means distributing dependency, not eliminating it.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Phase 1, using what's already on hand. Maintain continuity of essential medical/adaptive services and ensure safe evacuation if required. Focus on immediate needs for mobility, communication, and medical equipment.*

Tier 1 is about surviving the first outage or disruption using what's already on hand, and making sure any household member with a mobility, sensory, medical, or cognitive need is included in every other chapter's Tier 1 plan, not handled as an afterthought.

Skills to Build

- **Medical Equipment Power Continuity:** Know, in writing, exactly what each powered medical device needs during an outage, and get that plan from the device's own manufacturer or your DME supplier, not general advice. See the equipment-specific guidance below for CPAP, oxygen, and dialysis, which differ significantly from each other, and the Backup Power for Medical Equipment & Caregiving skill guide for the sizing math itself.
- **Manual Adaptive Equipment:** Know how to use and transition to non-electric mobility equipment (manual wheelchair, manual hospital bed crank, non-powered walker) if a powered version becomes unusable.
- **Evacuation Assistance:** Plan, specifically and in advance, how any household member with a mobility impairment will actually be moved (down stairs, into a vehicle, to a shelter) including who does it and what equipment is needed. This isn't solvable in the moment.
- **Communication Alternatives:** For any household member who is Deaf, hard of hearing, or non-verbal, establish alternatives before they're needed: basic ASL phrases, written phrase cards, or a TTY device. See the Communication chapter for the broader household communication plan this should plug into.

Go deeper: the Access & Functional Needs Addendum builds these into real, tested competency. For the hands-on how-to, see Backup Power for Medical Equipment & Caregiving and DIY Assistive Equipment Fabrication.

Tech & Equipment

- **Backup Power for Medical Devices:** A dedicated battery or inverter sized to the specific device's actual power draw. See the equipment-specific notes below, since "backup power" means something very different for a CPAP than for an oxygen concentrator. See the Backup Power for Medical Equipment & Caregiving skill guide for the full sizing approach.
- **Manual Medical Tools:** Non-electric versions of essential equipment where they genuinely exist: a manual wheelchair as backup to a power chair, a manual hospital bed crank. Note that not every device has a real

manual equivalent; see below.

- **Assistive Communication:** A portable TTY device, large-print notepad, or picture/communication board, matched to the specific household member’s actual needs.

Materials & Supplies

Item	Quantity / Spec	Notes
Utah Special Needs Registry	Voluntary registration	A real, confidential state program. Registering shares your household's specific needs with emergency responders in advance so they can plan for you. It does not guarantee rescue priority, but it means responders know you're there. Register through Be Ready Utah or your county emergency management office.
Extra medications	30-day supply, disability-related	Same FIFO rotation principle as the Medical Care chapter, and the same insurance-buffer conversation to have with a prescriber in advance.
Caregiver plan	Named backup caregiver, in writing	A trusted neighbor or friend who knows the specific care needs and can act if the primary caregiver is incapacitated or unreachable. See the Backup Power for Medical Equipment & Caregiving skill guide for formalizing this.
Personal items	Spare glasses, hearing aid batteries, dentures, prosthetic components, insulin	Small items that are easy to forget in a general kit but can be genuinely disabling to lose.

Equipment-Specific Guidance: CPAP & Oxygen

CPAP machines and oxygen concentrators both require continuous power and have no true “manual mode.” For CPAP, a power station or battery pack sized for at least one full night’s runtime is the standard backup; confirm your specific machine’s DC/battery compatibility with its manufacturer rather than assuming. For oxygen concentrators, internal batteries typically run only 30 minutes to 2 hours depending on flow rate, not enough for an extended outage, and most home concentrators need roughly 1,000+ watts from a power station or generator to run continuously (cross-reference the Energy & Heat chapter’s guidance on sizing backup power to actual device wattage). The genuinely power-free backup for oxygen is a prescribed backup cylinder (compressed or liquid oxygen tank), not the concentrator itself; ask your DME supplier about keeping one on hand. Separately, call your electric utility and ask about their medical-equipment priority reconnection program; most utilities maintain one, and registering in advance is what makes it useful.

WARNING**Equipment-Specific Guidance: Dialysis**

This differs by dialysis type, and getting it right matters. Do not treat this as a “manual operation” problem the way a wheelchair is. In-center hemodialysis patients cannot dialyze at home; the emergency plan is knowing the location and contact information for at least one alternate dialysis center in advance, and having transportation arranged. Home hemodialysis patients should follow their home training staff’s specific stop-dialysis protocol during a power outage and call their care team immediately; a hemodialysis machine cannot be operated manually or without power. Peritoneal dialysis (PD) patients on an automated cycler (APD/CCPD) can switch to manual CAPD exchanges during an outage if already trained to do so; this is a real, valid bridge, but the technique needs to be learned in advance from your care team, not attempted for the first time during an emergency. Keep at least a 2-week supply of PD supplies with 7 days specifically set aside for manual exchange, and pack an emergency bag with your written dialysis orders and medication list. If manual exchange isn’t possible, dialysis centers typically provide a short-term “emergency diet” (limiting potassium and fluids) to bridge until dialysis resumes; get those specific instructions from your nephrology team now, not during the emergency.

WARNING**Equipment-Specific Guidance: Cold-Chain Medications (Insulin and Others)**

Unopened/reserve insulin needs true refrigeration (36–46°F per FDA guidance) to maintain its full shelf life. In-use insulin is more forgiving than most people realize: most formulations tolerate room temperature below 86°F for roughly 28 days (some specific products up to 56 days; check the specific product’s labeling), which is exactly why a room-temperature power outage isn’t automatically an emergency for insulin already in use. What insulin cannot tolerate is freezing; direct contact with ice permanently damages it, so always buffer it from ice packs with a towel or its own packaging. A FRIO-style cooling wallet (evaporative cooling, no power or ice required, roughly 45 hours of cooling per soak) is a genuine no-power option for in-use insulin specifically, not a substitute for refrigerating reserve stock. During a power outage: a closed refrigerator holds safe temperature for about 4 hours; a cooler with ice holds it 24–48 hours before the ice needs replacing; an unplugged freezer with insulin wrapped (never touching a frozen surface directly) can hold safe temperature up to 48 hours. This same cold-chain logic applies to other refrigerated medications; check each one’s specific manufacturer guidance rather than assuming insulin’s numbers apply universally.

Quick Checklist

- ☐ Utah Special Needs Registry registration completed, if applicable

- ☐ Written, device-specific power/backup plan obtained from each device’s manufacturer or DME supplier
- ☐ Electric utility notified of medical equipment dependence; priority reconnection program confirmed
- ☐ For dialysis-dependent household members: written plan obtained from their specific care team (in-center, home HD, or PD)
- ☐ For insulin or other cold-chain medications: refrigeration backup plan (cooler+ice, FRIO wallet, or unplugged freezer) known and supplies on hand
- ☐ 30-day supply of disability-related medications, rotated on the same schedule as other household meds
- ☐ Named backup caregiver identified and briefed on specific care needs
- ☐ Spare glasses, hearing aid batteries, dentures, and prosthetic components stocked
- ☐ Evacuation plan specifically covers how each household member with a mobility impairment will be moved
- ☐ Communication alternatives (ASL basics, phrase cards, TTY) in place for any Deaf/hard-of-hearing/non-verbal household member
- ☐ Practiced: backup power for each powered medical device tested for one full night before it’s needed

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Phase 1-to-2 transition, the stored buffer runs out. Sustain adaptive needs when supply chains are broken and professional services are unavailable. Focus on self-reliance for daily living.*

Tier 2 assumes the outage or disruption has outlasted Tier 1’s stored buffer, and that home health aides, DME suppliers, and routine medical appointments may not be reliably available. The household shifts from “get through the emergency” to “sustain daily adaptive living” for an extended, uncertain period.

Skills to Build

- **Home Modification:** Build temporary ramps, widen doorways where feasible, or install grab bars: practical, physical changes that reduce daily reliance on assistance that may not be available.
- **Alternative Hygiene:** Maintain personal care routines with limited water and mobility. Plan specific techniques in advance with input from the person’s own routine, not a generic assumption.
- **Community Support:** Coordinate with neighbors for tasks beyond one person’s physical capability. This is the household-level version of the mutual aid networks built out further in Tier 4 and in other chapters.

- **Basic Equipment Repair:** Learn simple maintenance on wheelchairs, hearing aids, or prosthetics (tire changes, battery contacts, basic adjustments) so a minor failure doesn’t become a major one.

Go deeper: the Access & Functional Needs Addendum builds these into real, tested competency. For the hands-on how-to, see Backup Power for Medical Equipment & Caregiving and DIY Assistive Equipment Fabrication.

Tech & Equipment

- **Solar Power Station:** Sized large enough to run medical devices and charge adaptive tools on an ongoing basis. Cross-reference the Energy & Heat chapter’s Tier 2 sizing guidance, using the actual wattage of the specific devices this household depends on.
- **Manual Tools:** Hand-cranked devices for mixing food, pumping water, or other daily tasks that reduce dependence on powered equipment.
- **Communication Aids:** Pre-written phrase cards, picture boards, or a charged electronic communication device, matched to ongoing (not just emergency-moment) daily communication needs.

Materials & Supplies

Item	Quantity / Spec	Notes
Adaptive utensils	Specialized eating/cutting tools	For limited dexterity; inexpensive and easy to overlook until they're needed.
Mobility aid parts	Spare wheels, batteries, repair kits	For wheelchairs/scooters, matched to the specific make and model already in use.
Incontinence supplies	3-month supply	Adult diapers, pads, hygiene wipes; plan quantity based on actual daily use, not a generic estimate.
Comfort items	Extra pillows, blankets, seating aids	For prolonged sitting or altered routines; genuinely affects quality of life over a multi-week disruption.

Northern Utah Note

Utah’s Division of Services for People with Disabilities (DSPD) and the Utah Parent Center both maintain emergency preparedness resources specifically for Utah families; worth reviewing directly rather than relying only on this manual, since they’re updated more frequently and address state-specific programs and benefits this manual doesn’t track.

Quick Checklist

- ☐ Home modifications (ramps, grab bars, doorway clearance) assessed and completed where feasible
- ☐ Solar power station sized to actual medical/adaptive device wattage
- ☐ Spare mobility-aid parts (wheels, batteries) matched to specific equipment on hand
- ☐ 3-month incontinence supply stocked, sized to actual use
- ☐ Basic equipment repair skills practiced by at least one household member
- ☐ Neighbor/community support network identified for tasks beyond household capability
- ☐ Practiced: household has run at least one Tier 2 drill using only manual tools and solar power for adaptive needs

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2 (community-dependent): building/repairing what's possible and formalizing mutual aid for what isn't. Build long-term independence within a community. Focus on sustainable adaptive living and mutual aid.*

Tier 3 assumes no return to normal medical supply chains or professional services for the foreseeable future. The focus shifts to building and maintaining adaptive capability locally, and to formal mutual-aid arrangements that don't depend on any single caregiver or piece of equipment lasting indefinitely.

Skills to Build

- **Assistive Technology Fabrication:** Building or modifying tools from available materials to replace or repair adaptive equipment: a real skill, best learned by working with an occupational therapist or assistive-tech specialist in advance rather than improvised from scratch. See the DIY Assistive Equipment Fabrication skill guide for real organizations that already do this and where DIY stops and professional help starts.
- **Mutual Aid Coordination:** Organizing community support for tasks that genuinely require multiple people: transfers, home modifications, or sustained caregiving.
- **Non-Pharmaceutical Symptom Management:** For pain or inflammation management when pharmaceuticals are unavailable, options like willow bark (a natural precursor to aspirin's active compound) exist, but treat this as a real medical topic. Dosing, drug interactions, and contraindications for the specific person's other conditions matter, and this should build on the Medical Care chapter's Herbal Medicine & the Home Apothecary skill guide rather than replace an actual prescribed regimen wherever one is available.

- **Long-Term Home Accessibility:** Permanent modifications for independent living, planned and built as durable infrastructure rather than temporary workarounds.

Go deeper: the Access & Functional Needs Addendum builds these into real, tested competency. For the hands-on how-to, see Backup Power for Medical Equipment & Caregiving and DIY Assistive Equipment Fabrication.

Tech & Equipment

- **Custom Fabrication Tools:** Hand tools, a 3D printer if feasible, or basic woodshop capability for making or modifying adaptive devices.
- **Community Communication Systems:** A shared sign language or gesture system usable across the community, not just within one household, for non-verbal communication in a group setting.
- **Reference Library:** Physical books on disability management, herbal remedies, and assistive technology, the same principle as the Medical Care chapter’s medical library.

Materials & Supplies

Item	Quantity / Spec	Notes
Raw materials	Wood, metal, fabric, rubber	For making or modifying adaptive tools as they wear out or break.
Herbal remedies	Chamomile, valerian, willow bark, etc.	For pain/inflammation management under real medical understanding, not as a casual substitute; see the Herbal Medicine & the Home Apothecary skill guide.
Community pact	Formalized mutual-aid agreement	Specifically covering mobility assistance, cooking, and personal care; build on the community pacts described in the Security & Self-Defense and Medical Care chapters.
Barter items	Adaptive equipment parts, medical supplies, specialized tools	High value in a community without other medical/adaptive equipment access.

Northern Utah Note

USU (Utah State University) has assistive technology and disability research programs that publish accessible, practical resources, a stronger long-term reference than generic national material for anything specific to adapting to Utah's climate and terrain (ramps and mobility surfaces in snow, for instance, are a genuinely different problem than in a milder climate).

Quick Checklist

- ☐ Assistive-tech fabrication skills built with input from an occupational therapist or specialist
- ☐ Community mutual-aid pact formalized, specifically covering mobility/care tasks
- ☐ Reference library on disability management and assistive tech assembled
- ☐ Raw materials for tool/equipment fabrication and repair stocked
- ☐ Herbal remedy use, if any, understood in the context of the specific person's other conditions and medications
- ☐ Permanent home accessibility modifications completed
- ☐ Practiced: at least one adaptive tool successfully fabricated or repaired from raw materials

Tier 4: Thriving (Sustainable Community)

Goal: Phase 2 (community-dependent) at full scale. Build a community-wide inclusive response system so no household with access or functional needs depends on a single caregiver, device, or neighbor to survive and thrive.

A single household's Tier 3 plan still depends heavily on one or two caregivers and one set of adaptive equipment. Illness, injury, or loss of that caregiver is a severe, sometimes life-threatening gap. Tier 4 spreads that support across the community: more trained caregivers, shared equipment, and a system that actively checks on isolated members rather than assuming someone will notice if they're struggling.

Skills to Build

- **Distributed Caregiving:** Train more than one person in the community on the specific care needs of vulnerable neighbors (with their consent and involvement), the same redundancy principle used for medical responders and radio operators in earlier chapters, applied to ongoing personal care.

- **Wellness-Check Systems:** Establish a regular, structured check-in system for community members who are isolated, elderly, or have significant care needs. Don't rely on someone happening to notice an absence.
- **Inclusive Community Planning:** Ensure community-level plans (shelter, evacuation, communication) are built with input from AFN community members from the start, not retrofitted afterward. Accessibility designed in is far more effective than accessibility added on.
- **Community Equipment Fabrication & Repair:** Extend Tier 3's individual fabrication skill to a shared community capability, so adaptive equipment repair doesn't depend on any single household's tools or expertise.

Go deeper: the Access & Functional Needs Addendum builds these into real, tested competency. For the hands-on how-to, see Backup Power for Medical Equipment & Caregiving and DIY Assistive Equipment Fabrication.

Tech & Equipment

- **Shared Adaptive Equipment Cache:** A community-level stock of spare mobility aids, communication devices, and adaptive tools beyond what any single household could reasonably stock alone.
- **Accessible Community Shelter Design:** Any shared shelter space (see the Shelter & Structural Safety chapter's Tier 4 guest/shelter capacity) built or retrofitted with genuine accessibility (ramps, clear pathways, and quiet/low-stimulus space) from the start.
- **Community Fabrication Workshop:** A shared space and tool set for building and repairing adaptive equipment at scale, building on Tier 3's individual capability.
- **Redundant Communication Access:** Ensure the community's Tier 4 communication systems (see the Communication chapter) include AFN-accessible formats: visual alerting for Deaf/hard-of-hearing members, text-based options, and staffed relay support where needed.

Materials & Supplies

Item	Quantity / Spec	Notes
Community adaptive equipment reserve	Spare mobility aids, communication devices	Sized for the neighborhood, with clear rules for access and return.
Trained-caregiver roster	Names, specific skills, and availability	Same model as the medical responder roster in the Medical Care chapter.
Wellness-check schedule	Documented, regular check-in assignments	Simple and current; the point is making sure no one is missed.
Shared reference library	Disability management, assistive tech, herbal remedy references	Distributed across multiple households for redundancy.

Northern Utah Note

The CMIST framework (Communication, Medical care, Independence, Supervision, Transportation) is the actual planning model Utah’s own public health system uses for AFN emergency planning. Using the same framework at a neighborhood level, rather than inventing a new one, makes it far easier to coordinate with official response if and when that becomes available again.

Quick Checklist

- ☐ More than one trained caregiver per household with significant AFN needs, community-wide
- ☐ Structured wellness-check system established and staffed
- ☐ Community shelter/evacuation plans built with direct AFN community input
- ☐ Shared adaptive equipment cache and community fabrication workshop established
- ☐ Communication systems include accessible formats (visual, text-based, relay support)
- ☐ Practiced: a full community wellness-check and inclusive-shelter drill completed

At a Glance: Access & Functional Needs Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above, and it does not replace a plan built with the specific person’s own care team; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Individual Plan Focus	Community/Support Focus
Tier 1	Phase 1	Hours – 14 days	Device-specific backup power, meds, evacuation plan	Named backup caregiver, Special Needs Registry
Tier 2	Transition	2 weeks – 3 months	Home modifications, sustained adaptive supplies	Neighbor coordination for daily tasks
Tier 3	Phase 2 (community)	Indefinite	Equipment fabrication/repair, long-term accessibility	Formal mutual-aid pact for care and mobility
Tier 4	Phase 2 (community)	Sustainable community	N/A: fully community-integrated	Distributed caregiving, wellness checks, inclusive design

CHAPTER 9

Mental Health

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Matters

A household can be perfectly stocked with water, food, and medical supplies and still fail if panic, grief, or conflict breaks it down from the inside. Disaster behavioral health research consistently shows that psychological reactions to disaster follow a recognizable arc over time. This chapter is organized around that arc, moving from acute stress in Tier 1, through the well-documented “disillusionment” phase in Tier 2, to long-term resilience and community mental health infrastructure in Tiers 3 and 4.

This chapter is general guidance, not a substitute for professional mental health care. If you or someone in your household is in crisis right now, call or text 988 (the Suicide & Crisis Lifeline); that’s true whether or not any other part of this manual is in play.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: *Manage acute stress, shock, and panic. Provide Psychological First Aid to stabilize family members in the immediate aftermath.*

Tier 1 covers the acute stress reaction in the first hours and days: what disaster behavioral health researchers call the “impact” and “heroic” phases, when adrenaline and immediate survival focus dominate. The goal isn’t therapy; it’s stabilization: helping people feel safe enough to think clearly and function.

Skills to Build

- **Psychological First Aid (PFA):** Use the actual FEMA-published framework (Listen, Protect, Connect, Model, Teach) from the “Listen, Protect, Connect: Family to Family, Neighbor to Neighbor” handbook developed for exactly this use case. Listen without judgment; protect physical and emotional safety; connect people to family, neighbors, and basic resources; model calm coping behavior yourself; and teach simple, accurate information about normal stress reactions. This is designed to be usable by non-professionals, and it works

specifically because it's simple enough to remember under stress. See the Psychological First Aid skill guide for the WHO/Red Cross version of the same approach.

- **Routine Maintenance:** Establish daily schedules (meals, sleep, chores) as early as possible. Predictable routine is one of the most effective, low-cost ways to reduce anxiety in both children and adults during a crisis.
- **De-escalation:** Learn basic de-escalation for family arguments or panic attacks under stress: lower your own voice and pace, don't argue with someone mid-panic, and focus on grounding (naming things they can see/hear/touch) rather than reasoning.
- **Recognizing Acute Stress Reactions:** Know the signs (hypervigilance, insomnia, irritability, intrusive thoughts) as normal short-term reactions to an abnormal event, not a sign that something has gone permanently wrong. That framing itself reduces fear about the reaction.

Go deeper: the Mental Health Addendum builds these into real, tested competency. For the hands-on how-to, see Psychological First Aid, Substance Withdrawal: What's Actually Dangerous, and Safety Planning When Home Isn't Safe.

Tech & Equipment

- **Mental Health Apps:** Download offline-capable mindfulness or grounding apps before a disaster; many require an internet connection to activate features even if content plays offline, so test this in advance rather than assuming.
- **988 Suicide & Crisis Lifeline:** Memorize it. Call or text 988, 24/7, free and confidential. Utah-area-code callers are routed to the Utah Crisis Line, staffed by the Huntsman Mental Health Institute, a real, established local resource, not just a national hotline forwarding you elsewhere.
- **211 Utah:** Memorize it separately from 988: 211 is for non-emergency community resource referrals (food, housing, financial assistance), not crisis intervention. Knowing which number does which saves critical time.

Materials & Supplies

Item	Quantity / Spec	Notes
Comfort items	Familiar toys, blankets, hobbies	Especially important for children: a familiar object provides real psychological anchoring during disruption.
Journaling supplies	Notebooks and pens	For processing stress and trauma: writing it down is a well-supported, low-cost coping tool.
Family rules	Pre-agreed, written behavior/conflict rules	Decide these when calm, not in the middle of a stressful moment, the same principle as the Communication chapter's family code phrases.

Crisis Resources: Know the Difference

988: call or text, 24/7, for a mental health crisis or suicidal thoughts, yours or someone else's. 211: non-emergency, for finding resources like food banks, shelters, or financial help. 911: immediate danger to life. This manual's crisis-related guidance below is meant to help while you're getting to real help, not as a substitute for it.

Talking to Children About a Disaster

Children process disaster differently than adults, and standard, well-established guidance (echoed by the American Academy of Pediatrics and organizations like Save the Children) differs from the general PFA framework in a few specific ways. Be honest without oversharing frightening detail: children generally cope better with a truthful, age-appropriate explanation than with vague reassurance they can sense is incomplete. Maintain routine as aggressively as circumstances allow; predictability is even more protective for children than for adults. Give children a small, real task or role: helplessness is a major driver of child anxiety during a crisis, and even a token responsibility measurably helps. Expect and don't overreact to regression (bedwetting, increased clinginess, baby talk); it's a normal, temporary response, not a sign of lasting harm. Limit repeated exposure to disaster news or imagery specifically for children; research from events like 9/11 found that repeated media exposure independently increased trauma symptoms in children beyond the event itself.

Quick Checklist

- ☐ 988 and 211 numbers memorized by every adult in the household, and the difference between them understood
- ☐ PFA framework (Listen, Protect, Connect, Model, Teach) known by at least one adult

- ☐ Daily routine plan (meals, sleep, chores) ready to implement immediately
- ☐ Comfort items and journaling supplies packed, especially for children
- ☐ Family conflict-resolution rules written down in advance, while calm
- ☐ Offline mindfulness/grounding app downloaded and tested before an emergency
- ☐ Age-appropriate honesty and routine-first approach for children in the household understood by every caregiver
- ☐ Practiced: every adult can describe normal acute stress signs without alarm

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Address the “Disillusionment Phase” where grief, hopelessness, and exhaustion set in as the reality of prolonged disruption becomes clear.*

This tier is named directly after a real, well-documented stage in SAMHSA’s six-phase model of disaster psychological response (Pre-disaster → Impact → Heroic → Honeymoon → Disillusionment → Reconstruction). After the initial adrenaline of Tier 1 fades and the “honeymoon” sense of community solidarity wears off, disillusionment sets in: people realize how much has actually been lost, how long recovery will take, and how limited outside help is. This is a well-studied, predictable phase; expecting it in advance makes it meaningfully easier to get through.

Skills to Build

- **Grief Support:** Support family members through loss (of a home, possessions, routines, or a sense of normalcy) without rushing them past it. Grief during Tier 2 is a proportionate response to real loss, not a problem to fix quickly.
- **Substance Use Awareness:** Recognize increased alcohol or drug use as a common coping mechanism during the disillusionment phase. This is well-documented in disaster behavioral health research, not a moral failing, but it does need to be noticed and addressed rather than ignored. If a supply disruption forces withdrawal, see the Substance Withdrawal skill guide: alcohol and benzodiazepine withdrawal can be fatal in a way opioid withdrawal, despite looking far worse, usually isn’t.
- **Community Connection:** Deliberately maintain social bonds with neighbors: isolation is one of the strongest predictors of poor mental health outcomes during this phase, and connection is one of the strongest protective factors.

- **Stress Management Teaching:** Teach simple relaxation techniques (slow breathing, grounding exercises) to the whole household, not just whoever is naturally calmer under pressure.

Go deeper: the Mental Health Addendum builds these into real, tested competency. For the hands-on how-to, see Psychological First Aid, Substance Withdrawal: What’s Actually Dangerous, and Safety Planning When Home Isn’t Safe.

Tech & Equipment

- **Community Radio:** Listening to local news, even when there’s little new information, maintains a sense of connection and normalcy that matters more than the specific content.
- **Online Forums:** If power/connectivity allows, connecting with other affected households or communities can reduce the isolation that defines this phase, but weigh this against the OPSEC guidance in the Security & Self-Defense chapter before sharing specifics.

Materials & Supplies

Item	Quantity / Spec	Notes
Coping/resilience books	Physical, non-digital	Same principle as other chapters' reference libraries: useful without power.
Activity kits	Card games, puzzles, board games	Genuinely effective, low-cost tension reduction, especially for children and groups.
Exercise equipment	Resistance bands, jump ropes	Physical activity is one of the better-supported, low-cost interventions for anxiety during prolonged stress.

Recognizing When Substance Use Has Become a Problem

The line between “coping” and “developing a problem” is blurry in the moment. Watch for use that increases over weeks rather than stabilizing, use to avoid rather than cope, or any use that starts interfering with caregiving or safety. If it’s happening, address it directly and without shame; isolation and secrecy make it worse. SAMHSA’s National Helpline (1-800-662-4357) is a free, confidential, 24/7 referral resource specifically for substance use and mental health, separate from 988.

Quick Checklist

- ☐ Household understands the disillusionment phase is normal and expected, not a sign of failure

- ☐ Grief being acknowledged, not rushed past, for any real losses
- ☐ Substance use patterns being watched for and discussed openly, without shame
- ☐ Regular contact maintained with neighbors/community to prevent isolation
- ☐ Physical activity built into the daily routine
- ☐ Activity kits and coping/resilience books available
- ☐ Practiced: a household check-in routine (even brief) happening regularly, not just during obvious crises

Tier 3: Permanent (Indefinite)

***Goal:** Build long-term psychological resilience within a community. Address disaster fatigue and the loss of societal structure.*

Tier 3 assumes disruption has outlasted the “recovery” framing entirely: this is now simply how life works. The focus shifts from getting through a phase to building a sustainable psychological foundation: purpose, structure, and real skill in supporting others through genuine crisis, not just stress.

Skills to Build

- **Community Governance & Conflict Resolution:** Facilitate group decision-making fairly: this is as much a mental health skill as a logistics one, since unresolved group conflict is a major, ongoing source of chronic stress.
- **Purpose & Meaning:** Help household and community members find genuine purpose in daily survival tasks, a documented protective factor against despair during prolonged hardship, not just a nice idea.
- **Safe Crisis Support Within Real Limits:** Get trained through an actual certification like Mental Health First Aid, which teaches laypeople to recognize and respond to developing mental health crises safely, the same way CPR training teaches physical first aid. Within that training’s real scope: prioritize physical safety, use de-escalation and grounding, and for anyone expressing suicidal thoughts, ask directly and remove access to lethal means (firearms, medications); this is one of the single most effective, well-evidenced actions a layperson can take, and it does not require clinical training. What lay support cannot safely do is manage psychosis, mania, or a severe dissociative episode alone: those situations call for prioritizing transport to any available care over attempting to “handle” it at home, even in a Tier 3 scenario.
- **Cultural Preservation:** Maintain traditions, holidays, and rituals: these anchor identity and continuity precisely when the rest of life has lost its normal structure.

Tech & Equipment

- **Reference Library:** An extensive collection of books on psychology, philosophy, and history, genuinely useful raw material for the “purpose and meaning” work above, not just entertainment.
- **Music/Art Supplies:** Instruments, paints, or clay for creative expression: a well-supported outlet for processing prolonged stress that doesn’t require language.

Materials & Supplies

Item	Quantity / Spec	Notes
Ceremony materials	For marking birthdays, seasons, achievements	Deliberately marking time and milestones counters the flattening, structureless feeling of prolonged crisis.
Herbal remedies	Chamomile, valerian root, lavender	Reasonable support for mild anxiety, but valerian in particular can interact with sedatives, alcohol, and some prescription medications; treat this the same as the herbal guidance in the Medical Care and Access & Functional Needs chapters, not as a substitute for treating a serious anxiety or panic disorder.
Community pact	Formalized mental health support agreement	Builds on the community pacts in the Security & Self-Defense and Medical Care chapters: explicitly include mental health support and conflict resolution, not just physical needs.

Northern Utah Note

The Huntsman Mental Health Institute (University of Utah) is a real, major regional mental health resource beyond just operating the 988 Utah Crisis Line, worth knowing about directly, and worth connecting with (or training through) before Tier 3 conditions make outside professional support unavailable.

Quick Checklist

- ☐ At least one household or community member Mental Health First Aid certified
- ☐ Means-restriction practice understood (removing access to firearms/medications during acute suicide risk)

- ☐ Clear understanding of what lay crisis support can and cannot safely handle
- ☐ Purpose-building daily structure established beyond pure survival tasks
- ☐ Cultural/family traditions and milestones actively maintained
- ☐ Herbal remedy use understood in context of interactions and real limits
- ☐ Community pact explicitly covers mental health support
- ☐ Practiced: household has a rehearsed, calm response for a family member expressing suicidal thoughts

Tier 4: Thriving (Sustainable Community)

***Goal:** Build a community-wide mental health support network so no single household, or single crisis, has to be faced alone.*

A single household's Tier 3 resilience still concentrates support in one or two people; if they burn out, get sick, or are themselves in crisis, the household has no backup. Tier 4 distributes psychological support capability across the community, the same redundancy principle used for medical responders, radio operators, and caregivers in earlier chapters.

Skills to Build

- **Distributed Peer Support:** Train multiple community members in Mental Health First Aid or equivalent peer-support skills, so crisis support doesn't depend on any single trained person's availability.
- **Community Wellness Checks:** Extend the Access & Functional Needs chapter's wellness-check system to explicitly cover psychological isolation and struggle, not just physical/medical needs.
- **Facilitated Group Processing:** Learn to run simple group check-ins or processing circles: a real, low-tech way for a community to collectively process shared loss rather than everyone carrying it in isolation.
- **Sustainable Caregiver Support:** Actively watch for burnout in the people doing the supporting: caregiver and responder burnout is a well-documented risk in prolonged crises, and the supporters need support too.

Go deeper: the Mental Health Addendum builds these into real, tested competency. For the hands-on how-to, see Psychological First Aid, Substance Withdrawal: What's Actually Dangerous, and Safety Planning When Home Isn't Safe.

Tech & Equipment

- **Community Gathering Space:** A dedicated physical space for group activities, ceremonies, and processing: the community-scale version of Tier 3's individual purpose-and-meaning work.
- **Shared Creative/Recreation Supplies:** Music, art, and game supplies sized for group use, building on Tier 3's individual stock.
- **Peer Support Roster:** A simple, current list of who in the community is trained in peer support or Mental Health First Aid, same model as the medical and radio operator rosters in earlier chapters.

Materials & Supplies

Item	Quantity / Spec	Notes
Shared reference library	Psychology, philosophy, coping resources	Distributed across multiple households for redundancy, same as other chapters' shared libraries.
Community ceremony/ritual materials	For shared milestones and losses	Group-scale version of Tier 3's household ceremony materials.
Peer support training materials	Mental Health First Aid or equivalent curriculum	Kept on hand so training can continue even without outside access to a course.

Northern Utah Note

Utah's SafeUT app and crisis line infrastructure (run in coordination with the Huntsman Mental Health Institute) already model exactly this kind of accessible, low-barrier peer and crisis support at scale, a genuinely useful reference for how a community-level peer support system can be structured, even though the app itself depends on connectivity this manual's later tiers assume is gone.

Quick Checklist

- ☐ Multiple community members trained in Mental Health First Aid or peer support
- ☐ Wellness-check system explicitly covers psychological isolation, not just physical needs
- ☐ Community gathering space established for group processing and ceremony
- ☐ Peer support roster maintained and current
- ☐ Caregiver/responder burnout actively watched for and addressed
- ☐ Practiced: at least one facilitated group check-in or processing session held

At a Glance: Mental Health Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above, and it does not replace professional mental health care; if you or someone in your household is in crisis, call or text 988 regardless of which tier you’re in.

Tier	Duration	Primary Focus	Key Tool
Tier 1	Hours – 14 days	Acute stress stabilization	Psychological First Aid (Listen, Protect, Connect, Model, Teach)
Tier 2	2 weeks – 3 months	Disillusionment phase, grief, isolation	Routine, community connection, watching for substance use
Tier 3	Indefinite	Long-term resilience, purpose, safe crisis support	Mental Health First Aid certification
Tier 4	Sustainable community	Distributed community mental health network	Peer support roster, wellness checks

CHAPTER 10

Pet Evacuation & Shelter

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Matters

After Hurricane Katrina, a significant number of people refused to evacuate because there was nowhere for them to go that would take their pets too, and many who did evacuate without them tried to go back for them, putting themselves at further risk. Congress responded with the federal PETS Act (2006), which requires state and local disaster planners to account for pets and service animals. That requirement doesn't extend to every shelter, though: most Red Cross and general public shelters still only accept service animals, not pets, for public health reasons. That single fact (general shelters aren't pet shelters) is the reason this entire chapter exists as its own category rather than a line item in Shelter & Structural Safety.

Every skill and item below is genuinely about your pet's welfare, but it's also about making evacuation something your household will actually do when it needs to, instead of hesitating over what happens to a family member who can't pack their own bag.

WARNING**Human Medications Are a Real Poisoning Risk to Pets**

Several common household and emergency-kit medications are toxic, sometimes fatally, to dogs and cats. Ibuprofen and other NSAIDs are toxic to both. Acetaminophen (Tylenol) is especially dangerous to cats, who lack the ability to metabolize it safely, and can be fatal even in small amounts. Xylitol (a sweetener in some medications, gum, and toothpaste) is highly toxic to dogs. Keep the Medical Care chapter's human medication supplies physically separated from pets, and if you suspect a pet has ingested any human medication, call your vet or the ASPCA Animal Poison Control Center (888-426-4435) or the Pet Poison Helpline (855-764-7661) immediately rather than waiting to see if symptoms appear.

Two Phases: Stored vs. Produced

The same two-phase shift that runs through this manual's other chapters applies here too. Tier 1 is Phase 1: evacuating or sheltering with pets using supplies staged in advance. Tier 3 is Phase 2: commercial pet food, veterinary care, and medications are no longer reliably available, and the focus shifts to producing pet food locally and managing pet health with home-level skill. Tier 2 is the transition: daily care and triage without a vet, but still running on the stored kit rather than local production. Tier 4 is Phase 2 at community scale. Knowing which phase a given supply or skill belongs to is the difference between a plan that runs out and one that doesn't.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Phase 1, using what's already on hand. Immediate pet safety, evacuation readiness, and basic care when utility services (water/power) are disrupted.*

Tier 1 is about being able to evacuate with your pets calmly and quickly, or shelter in place with them safely, using supplies staged in advance. Most of what makes pet evacuation fail isn't lack of love; it's lack of a pre-packed kit and a practiced routine.

Skills to Build

- **Pet First Aid:** Basic wound care, pet CPR, and recognizing distress signs (lethargy, excessive panting, tremors, hiding). A dedicated pet first aid class (many Red Cross chapters and some vet clinics offer them) is a real, worthwhile investment: pet anatomy and dosing are different enough from human first aid that generic knowledge doesn't transfer directly. See the Pet Evacuation & First Aid Basics skill guide for the core technique.
- **Evacuation Logistics:** Practice loading each pet into its carrier or crate quickly and calmly before it's an emergency: a cat who has never seen its carrier except on vet-visit days will fight being loaded exactly when speed matters most. See the Pet Evacuation & First Aid Basics skill guide for carrier-training technique.
- **Identification Management:** Keep microchip registration, license tags, and collar ID current and correct: a microchip with an outdated phone number helps no one. Verify the registration annually, not just at implant time.
- **Shelter Identification:** Know, in advance, which local shelters, hotels, or fairgrounds accept pets. See the note above on why this can't be assumed of a general shelter.

Go deeper: the Pet Evacuation & Shelter Addendum builds these into real, tested competency. For the hands-on how-to, see Pet Evacuation & First Aid Basics.

Tech & Equipment

- **Pet Carriers/Crates:** Properly sized for each animal, labeled with your contact info and “EMERGENCY – DO NOT SEPARATE”: a label that matters if you and your pet are ever separated during a chaotic evacuation.
- **Pet First Aid Kit:** Styptic powder (stops minor bleeding, e.g., a torn nail), saline, a muzzle (even calm pets may bite when injured and frightened), a sling, vet records, and gauze.
- **Microchip Scanner:** Optional, but useful for verifying your own pet’s chip is actually registering correctly, and potentially for helping reunite a neighbor’s lost pet.
- **Digital Photo Backup:** Current photos of you together with each pet, stored off-device (cloud or printed): this is standard evidence shelters and rescue organizations use to help confirm ownership during reunification.

Materials & Supplies

Item	Quantity / Spec	Notes
Food & water	14-day supply, airtight/waterproof containers	Same rotation discipline as the Water & Food chapter's human supplies.
Medications	14-day supply of regular meds	Heartworm, flea/tick, thyroid, etc.; see the flea/tick species warning below before restocking these.
Leashes/harnesses	Extra set(s)	In case originals are lost, damaged, or another household member needs to handle the pet simultaneously.
Sanitation	Litter, poop bags, disinfectant, waste bags	Plan for a shelter or vehicle environment, not just home.
Comfort items	Familiar blanket, toy, or bed	Genuinely reduces a pet's stress in an unfamiliar environment; don't treat this as optional.
Vaccination records	Physical and digital copies	Required by most pet-friendly shelters and boarding facilities; don't assume you'll have time to request them from your vet during an actual evacuation.

WARNING**Flea/Tick Products: Species Matters**

Permethrin-based flea and tick products made for dogs are highly toxic, often fatally, to cats, and this isn't limited to direct application: a cat can be poisoned simply by grooming a treated dog it lives with. Never use a dog-labeled flea/tick product on a cat, check labels carefully in multi-pet households, and keep a treated dog separated from any cats until the product has fully dried, per the product's own instructions.

Quick Checklist

- ☐ Pet carriers/crates sized, labeled, and pets comfortable being loaded into them
- ☐ Microchip and ID tag information current, verified within the last year
- ☐ 14-day pet food/water supply and 14-day medication supply stocked
- ☐ Pet first aid kit assembled, including a muzzle and styptic powder
- ☐ Vaccination records (physical + digital) accessible without needing to contact the vet during an emergency
- ☐ Pet-friendly shelters/hotels within evacuation range identified in advance
- ☐ Flea/tick products checked for correct species before use in multi-pet households
- ☐ Human medications stored physically separate from pet-accessible areas
- ☐ Practiced: full evacuation-loading drill completed with every pet in the household

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Phase 1-to-2 transition, still running on the stored kit but without professional support. Sustain pet health and hygiene when veterinary services are unavailable and you are in a static or temporary shelter environment.*

Tier 2 assumes the household (with pets) is either sheltering in place for an extended period or living somewhere temporary, and that a vet visit for anything short of a true emergency isn't realistic. The focus shifts to sustained daily care and basic triage without professional support.

Skills to Build

- **Pet Triage:** Assess injury severity and prioritize care without a vet available. This is similar in spirit to the Medical Care chapter's human triage guidance, but pet-specific: know which symptoms (labored breathing,

unresponsiveness, uncontrolled bleeding, suspected poisoning) mean an emergency-only vet or emergency hotline call is worth the risk, versus what can wait or be managed at home.

- **Dietary Management:** Learn to prepare a nutritionally reasonable homemade diet from bulk ingredients if commercial pet food runs out, ideally worked out with a vet in advance, since dogs and cats have real, different nutritional requirements (cats in particular require taurine, which isn't reliably present in a homemade diet without deliberate sourcing).
- **Behavioral Management:** Calm anxious or traumatized pets in unfamiliar environments. Consistent routine, familiar scent items, and patience matter more than corrective training during this period.
- **Waste Management:** Properly dispose of pet waste in a shelter or temporary living situation. Cross-reference the Sanitation & Hygiene chapter's waste containment guidance, since pet waste carries its own disease-transmission risk if mismanaged.

Go deeper: the Pet Evacuation & Shelter Addendum builds these into real, tested competency. For the hands-on how-to, see Pet Evacuation & First Aid Basics.

Tech & Equipment

- **Pet Thermometer:** A digital rectal thermometer for monitoring fever. Normal temperature ranges differ from humans (roughly 100–102.5°F for most dogs and cats), so know the normal range before assuming a reading is abnormal.
- **Manual Can Opener:** For opening canned pet food without power, the same principle as the Water & Food chapter's human equivalent.
- **Collapsible Bowls:** Lightweight and easy to transport or store; useful whether sheltering in place or relocated.
- **Pet Grooming Kit:** Brushes, nail clippers, and pet-safe shampoo. Matted fur and overgrown nails are a real welfare and health issue over an extended period, not just cosmetic.

Materials & Supplies

Item	Quantity / Spec	Notes
Bulk pet food	3-month supply, dry kibble	Stored in Mylar bags with oxygen absorbers, same technique as the Water & Food chapter's bulk staples.
Extended medications	3-month supply of chronic meds	Discuss an extended supply directly with your vet first. Non-veterinary-labeled (fish/livestock) antibiotics are sometimes discussed as an unregulated last resort in prepper circles, but species-specific dosing and drug safety differ meaningfully between animals; treat this the same as the human equivalent caution in the Medical Care chapter, not as a casual substitute for veterinary guidance.
Bulk sanitation	3-month litter, poop bags, disinfectant	Same rotation/storage principle as other bulk household supplies.
Comfort/morale items	Extra treats, toys, familiar scents	A genuine welfare need over an extended disruption, not a luxury.
Pet-friendly shelter list	5+ locations within 50 miles, printed	A phone-stored list is useless once the phone dies. Print it, the same principle as the Communication chapter's frequency list.

Northern Utah Note

Be Ready Utah publishes a pet-specific evacuation kit checklist and maintains information on pet-friendly shelter options, worth reviewing directly alongside this chapter, since it’s updated more frequently than this manual and reflects current state guidance.

Quick Checklist

- ☐ Pet triage priorities understood (emergency-only vet situations vs. manageable-at-home)
- ☐ Homemade diet plan reviewed with a vet in advance, including species-specific nutrition needs
- ☐ Pet thermometer on hand with normal temperature range known
- ☐ 3-month bulk pet food supply stored in Mylar + oxygen absorbers
- ☐ 3-month chronic medication supply discussed with a vet
- ☐ Printed pet-friendly shelter list (5+ locations) on hand
- ☐ Grooming kit assembled and basic grooming skills practiced

- ☐ Practiced: pet waste disposal routine rehearsed for a temporary/shelter environment
-

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2, producing pet food and care rather than buying it. Long-term pet sustainability, community integration, and self-sufficiency without commercial pet supply chains.*

Tier 3 assumes commercial pet food, veterinary care, and medications are no longer reliably available. The focus shifts to producing pet food locally, managing pet health with home-level skill and herbal support, and, for households maintaining small livestock, understanding basic breeding and care beyond a single companion animal.

Skills to Build

- **Pet Herbal Medicine:** Identify and prepare safe herbal remedies: chamomile for mild anxiety is broadly considered safe for dogs and cats in appropriate doses. Aloe is more complicated: aloe vera is actually toxic to dogs and cats if ingested (it can cause vomiting and diarrhea), so topical use for minor burns is reasonable only with supervision to prevent licking, and a pet-formulated aloe product with the toxic compounds removed is safer than using a houseplant directly. When in doubt, treat any new herbal remedy the way you'd treat a new medication: research the specific species and dose first.
- **Breeding/Reproduction:** Basic understanding of reproduction if maintaining a small herd or flock (rabbits, chickens) for sustained protein: a real skill with real welfare and population-management implications, not just a technical add-on.
- **Community Pet Care:** Organize shared feeding, grooming, and medical care with neighbors, the pet-specific version of the mutual aid networks described in other chapters.
- **Sustainable Sanitation:** Compost pet waste where safe and legal. Dog and cat waste specifically should not go into a compost pile intended for food-crop soil (unlike humanure, it can carry pathogens and parasites that survive typical home composting temperatures); direct it to a dedicated, non-food-adjacent composting or disposal method instead. See </skills/household-trash-and-pet-waste-disposal/> for the actual bag-or-bury technique.

Go deeper: the Pet Evacuation & Shelter Addendum builds these into real, tested competency. For the hands-on how-to, see Pet Evacuation & First Aid Basics.

Tech & Equipment

- **Pet Medical Library:** Physical books on pet first aid, herbal medicine, and nutrition, same principle as the Medical Care chapter’s medical library.
- **Basic Surgical Tools:** Sterilizable forceps, scissors, and sutures for minor procedures only. Treat this the same as the human equivalent in the Medical Care chapter: appropriate for what a trained layperson can safely do, not a substitute for veterinary surgery.
- **Community Communication:** A shared sign language or gesture system for coordinating pet care non-verbally within a group; builds on the Access & Functional Needs chapter’s community communication guidance.

Materials & Supplies

Item	Quantity / Spec	Notes
Feed stock / livestock	5+ year ingredient supply or small livestock source	Chicken, rice, vegetables, or a small source like rabbits/chickens; plan alongside the Water & Food chapter's Tier 3 livestock guidance.
Pet-safe herbal remedies	Chamomile, valerian, aloe (topical only), etc.	Valerian is worth a specific note: cats often respond to it more like catnip (stimulating) rather than the mild sedative effect seen in dogs and humans; know your species before assuming an effect.
Raw materials	Soap, oils, fabrics	For making pet hygiene products once commercial supply is gone.
Community pact	Formalized shared pet care agreement	Builds on the community pacts in other chapters: explicitly covers feeding, grooming, and medical support for pets.
Barter items	Extra pet food, medications, supplies	High trade value among other pet-owning households in a self-sufficiency scenario.

Quick Checklist

- ☐ Herbal remedy use understood per-species, including aloe’s ingestion risk
- ☐ Sustainable local pet food source established (grown feed or small livestock)
- ☐ Pet waste composting kept separate from any food-crop soil system
- ☐ Basic surgical kit assembled, scoped to safe layperson procedures only
- ☐ Community pet care pact formalized
- ☐ Barter pet supplies stockpiled separately from personal-use stock

- ☐ Practiced: at least one herbal remedy correctly identified, prepared, and administered at a known-safe dose
-

Tier 4: Thriving (Sustainable Community)

***Goal:** Phase 2 at community scale. Build a community-wide pet care and sheltering network so no single household's pets depend entirely on that household's own supplies, skills, or survival.*

A single household's Tier 3 pet care plan still fails completely if that household is incapacitated, relocated, or lost; their pets have no fallback. Tier 4 distributes pet care capability across the community: shared knowledge, shared supplies, and a real plan for fostering or caring for pets whose people can't, temporarily or permanently.

Skills to Build

- **Distributed Pet First Aid:** Train more than one person in the community in pet first aid and basic triage, the same redundancy principle used for human medical responders in earlier chapters.
- **Emergency Fostering Coordination:** Organize, in advance, who can temporarily foster pets if their household is incapacitated, evacuated separately, or lost. This needs to be arranged before it's needed, not improvised.
- **Community Breeding/Population Management:** For communities maintaining small livestock for food, coordinate breeding and population size across households to avoid overtaxing shared feed resources.
- **Reunification Coordination:** Extend the individual household's photo-ID system (Tier 1) to a community level: a shared, simple system for reuniting lost pets with owners across a wider area than one household can cover alone.

Go deeper: the Pet Evacuation & Shelter Addendum builds these into real, tested competency. For the hands-on how-to, see Pet Evacuation & First Aid Basics.

Tech & Equipment

- **Shared Pet Medical Cache:** A community-level stock of pet first aid and basic medical supplies beyond what any single household could reasonably stock alone.
- **Community Fostering Network Roster:** A simple, current list of households able and willing to foster, with any relevant constraints (species, allergies, space), same model as the caregiver and responder rosters in other chapters.

- **Shared Feed/Livestock Infrastructure:** Community-scale feed production or livestock housing if raising animals for pet/human protein at scale, coordinated rather than duplicated household-by-household.

Materials & Supplies

Item	Quantity / Spec	Notes
Community pet supply reserve	Bulk food, medication, sanitation stock	Sized for the neighborhood, with clear access rules, same model as other chapters' shared reserves.
Fostering agreement templates	Simple written agreements	The Mutual Aid Agreement template adapts directly: covers expectations and duration if one household temporarily cares for another's pets.
Shared reference library	Pet first aid, nutrition, herbal medicine	Distributed across multiple households for redundancy.

Northern Utah Note

Local animal shelters and humane societies along the Wasatch Front (Salt Lake County Animal Services, Humane Society of Utah, and others) already coordinate on emergency sheltering during major incidents. Connecting with these organizations now, even just to understand their existing disaster protocols, is a faster path to a working Tier 4 plan than building one from scratch.

Quick Checklist

- ☐ Multiple community members trained in pet first aid
- ☐ Emergency fostering network established and rostered, before it’s needed
- ☐ Community pet medical/supply cache established
- ☐ Reunification system extended to community scale
- ☐ Shared feed/livestock infrastructure coordinated if applicable
- ☐ Practiced: at least one fostering-network or reunification drill completed

At a Glance: Pet Evacuation & Shelter Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Evacuation/Shelter Plan	Health & Nutrition
Tier 1	Phase 1	Hours – 14 days	Pre-packed kit, practiced loading, pet-friendly shelter list	14-day food/meds, first aid kit
Tier 2	Transition	2 weeks – 3 months	Sustained sheltering, triage without a vet	3-month bulk food/meds, homemade diet plan
Tier 3	Phase 2	Indefinite	Self-sufficient, community-integrated care	Local feed production, herbal remedies, basic surgery
Tier 4	Phase 2	Sustainable community	Shared fostering network, reunification system	Community pet supply reserve, distributed first aid

CHAPTER 11

Digital Data & Documents

Why This Category Matters

A household that survives a disaster physically intact can still lose everything on paper (proof of identity, property ownership, insurance coverage, or years of financial and medical history) if the documents proving it exist only in one place. This chapter is about redundancy: making sure no single fire, flood, or hard-drive failure can erase who you are on paper.

The chapter follows the same 3-2-1 principle used by IT professionals for critical data (3 copies, on 2 different media types, with 1 stored off-site) applied to a household's actual life instead of a server room.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Protect originals from immediate physical damage (fire, flood, water damage) and ensure copies are accessible for insurance claims and identification.*

Tier 1 is about getting ahead of the single most common failure mode: a fire, flood, or chaotic evacuation destroying or leaving behind the physical originals of documents that are difficult or slow to replace.

Skills to Build

- **Document Digitization:** Scan every vital record to PDF at a resolution that's actually readable (300 DPI minimum) and organize files with consistent, searchable names: a folder of 40 files named "scan001.pdf" through "scan040.pdf" defeats the purpose under stress. See the Document Go-Bag & Digital Backup skill guide for the full checklist.
- **3-2-1 Backup Strategy:** 3 copies of every vital file, on 2 different media types (e.g., an external drive and cloud storage), with 1 copy stored off-site: a copy on a second hard drive in the same house doesn't protect against a house fire. See the Document Go-Bag & Digital Backup skill guide for setting this up.
- **Insurance Documentation:** Create a video walkthrough of your home's contents, narrating what's visible, room by room. Most insurers accept this as claims evidence and it takes 15 minutes, far less effort than an itemized list, while capturing more.

- **Encryption:** Use a real tool, not an ad hoc method: VeraCrypt (free, cross-platform) for an encrypted container or drive, or your operating system's built-in full-disk encryption (BitLocker on Windows Pro, FileVault on macOS) for a laptop that might be lost or stolen. See the Document Go-Bag & Digital Backup skill guide for applying this to your vital-records backup.
- **Legal Continuity Documents:** A will, financial and healthcare power of attorney, and, if you have minor children, a guardianship designation are the actual legal documents this chapter's own Materials & Supplies table below assumes you already have. See the Wills, Power of Attorney & Guardianship skill guide for what each document does, when a DIY version is defensible versus when to get an attorney, and the witnessing rules that most often invalidate a DIY attempt.

Go deeper: the Digital Data & Documents Addendum builds these into real, tested competency. For the hands-on how-to, see Document Go-Bag & Digital Backup and Wills, Power of Attorney & Guardianship.

Tech & Equipment

- **Fireproof/Waterproof Safe:** UL-rated (e.g., SentrySafe, Honeywell), but check the specific rating class, not just "fireproof" on the box. UL 72 Class 350 protects paper (keeps interior below 350°F), while Class 125 protects electronic media (below 125°F and controlled humidity). A safe rated only for paper does not equally protect a hard drive stored inside it; if you're storing both, verify the safe is rated for both, or use separate rated containers.
- **Encrypted External Hard Drive:** 1TB+ for digital copies of all vital records, encrypted with one of the tools above. An unencrypted backup drive is a liability if it's ever lost or stolen.
- **Fireproof Document Bag:** A portable, silicone-coated fiberglass bag (SentrySafe and similar brands make these) for the go-bag: for documents that need to travel with you, not just sit in a home safe.
- **Scanner:** A flatbed or portable scanner for digitizing documents. A phone camera works in a pinch but produces lower, less consistent quality than even an inexpensive dedicated scanner.

Materials & Supplies

Item	Quantity / Spec	Notes
Original documents	Birth/marriage certificates, passports, SSN cards, deeds, insurance policies, wills/trusts	Store in the fire/water-rated safe; see the equipment note on matching the rating to what's stored.
Digital copies	Encrypted USB drive in emergency kit	The “grab and go” copy, separate from the home safe's drive.
Cloud backup	Secure account with automatic sync (e.g., Backblaze, iCloud, Google Drive)	Your off-site copy in the 3-2-1 strategy; verify it's actually syncing, not just installed.
Password manager emergency kit	Printed official export (not a handwritten list)	Use your password manager's own emergency-access feature (1Password's built-in “Emergency Kit” PDF or Bitwarden's “security readiness kit” template) rather than hand-copying passwords into a binder. Store the printed kit in the safe alongside other documents.
Cash reserve	\$1,000+ in small bills, stored in the safe	A starter reserve for immediate liquidity; the full cash and financial strategy is covered in the Economic & Financial chapter.

Quick Checklist

- ☐ All vital documents scanned at 300+ DPI with consistent, searchable file names
- ☐ 3-2-1 backup in place: 3 copies, 2 media types, 1 off-site
- ☐ Video home-contents walkthrough recorded and backed up
- ☐ Encryption tool (VeraCrypt, BitLocker, or FileVault) actually in use, not just installed
- ☐ Fire/water-rated safe checked against what’s actually stored in it (paper vs. electronics rating)
- ☐ Fireproof document bag packed in the go-bag with paper copies of key documents
- ☐ Password manager’s official emergency kit printed and stored securely, not a plaintext password list
- ☐ \$1,000+ cash reserve in small bills in the safe
- ☐ Will, financial and healthcare power of attorney, and (if applicable) a named guardian for minor children, actually signed and properly witnessed, not just planned
- ☐ Practiced: located and opened every backup (safe, drive, cloud account) within the last 6 months to confirm access still works

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Maintain access to critical data when cloud services are offline and physical infrastructure is damaged. Focus on offline redundancy and manual record-keeping.*

Tier 2 assumes the cloud backup from Tier 1 may be unreachable for an extended period, and that new records (medical visits, financial transactions, important events) need to be tracked without the digital tools normally used for it.

Skills to Build

- **Offline Data Access:** Practice actually retrieving files from an encrypted drive without an internet connection before you need to do it under pressure. Password managers and some encryption tools behave differently offline than most people expect.
- **Manual Record-Keeping:** Maintain paper logs for financial transactions, medical events, and family records during the disruption; these become the source record to digitize later, not an afterthought.
- **Data Recovery Basics:** If a drive starts failing (clicking sounds, files disappearing, slow/unresponsive behavior), stop using it immediately and don't repeatedly power-cycle it: every additional read attempt on a failing drive risks further damage. The old advice to freeze a failing hard drive is a persistent myth and not a reliable recovery method; if the data is genuinely critical, the safest layperson step is to stop using the drive and consult a professional data recovery service rather than attempting DIY fixes.
- **Secure Storage:** Protect physical media from heat, moisture, and theft. A drive or paper archive stored in a hot attic or damp basement degrades quietly, with no warning until it's needed.

Go deeper: the Digital Data & Documents Addendum builds these into real, tested competency. For the hands-on how-to, see Document Go-Bag & Digital Backup and Wills, Power of Attorney & Guardianship.

Tech & Equipment

- **Solar Power Station:** To power external drives and scanners for continued digitization; cross-reference the Energy & Heat chapter's Tier 2 sizing guidance.
- **Portable SSD:** Additional encrypted storage for rotating backups. SSDs have no moving parts and tolerate movement/vibration better than traditional hard drives for a go-bag or vehicle.
- **Paper-Based System:** Labeled binders and folders for manual record-keeping. Organize by category from the start rather than as a single growing pile.

- **Thermal Printer:** Useful for quick, ink-free printing of logs and receipts, but thermal paper fades significantly over months to a few years, especially with heat or light exposure. Treat thermal printouts as a short-term convenience, not an archival copy; anything that needs to last should be transcribed to standard paper or digitized.

Materials & Supplies

Item	Quantity / Spec	Notes
Off-site physical backup	Encrypted drive with an out-of-state relative	Pairs with the Communication chapter's out-of-state contact; the same person can often hold both roles.
Paper copies	Printed vital documents in the fireproof go-bag	The physical fallback if every digital copy is simultaneously unreachable.
Writing supplies	Pens, pencils, paper	For manual logs; inexpensive and easy to overlook until needed.
Disinfectant	For cleaning/preserving documents after water exposure	Mold sets in fast on wet paper; address exposure within 48 hours if at all possible.
Silica gel packets	For moisture/mold prevention	Replace or re-dry periodically; saturated silica gel stops absorbing and offers no protection.

Quick Checklist

- ☐ Offline access to encrypted drives tested and confirmed working
- ☐ Paper log system set up and organized by category from the start
- ☐ Failing-drive protocol understood: stop use immediately, no DIY “fixes,” professional recovery for critical data
- ☐ Physical media stored away from heat/moisture extremes
- ☐ Off-site backup drive placed with an out-of-state relative or trusted contact
- ☐ Thermal-printed records understood as short-term only, not archival
- ☐ Silica gel packets fresh (not saturated) in document storage
- ☐ Practiced: a manual paper log actually maintained for at least one full week as a dry run

Tier 3: Permanent (Indefinite)

***Goal:** Long-term preservation of family history, knowledge, and records without any digital infrastructure. Focus on physical durability and community knowledge sharing.*

Tier 3 assumes no reliable digital infrastructure for the foreseeable future. This shifts the core trade-off: digital media is convenient but degrades or fails suddenly and needs active migration to new hardware every few years, while correctly stored acid-free paper and properly processed archival film degrade slowly and predictably, and can genuinely last a century or more without any power or maintenance at all.

Skills to Build

- **Archival Preservation:** Store paper documents in acid-free folders and boxes. Standard acidic paper and folders yellow and become brittle within decades; archival-grade materials are inexpensive by comparison and dramatically extend document life.
- **Microfilm / Film Photography:** Create long-term analog backups of important records. Properly processed silver-halide microfilm is the gold standard for multi-century document preservation used by professional archives, well beyond what any current digital format can promise.
- **Community Knowledge Base:** Organize and share vital information (skills, history, records) with trusted community members. Knowledge held by only one person is knowledge one bad season away from being lost, the same principle as other chapters' skill-redundancy guidance.
- **Data Migration:** Transfer data from failing or aging digital media to new storage proactively, on a schedule. Don't wait for failure. No digital medium is a "store once, forget forever" solution the way archival paper or film can be.

Go deeper: the Digital Data & Documents Addendum builds these into real, tested competency. For the hands-on how-to, see Document Go-Bag & Digital Backup and Wills, Power of Attorney & Guardianship.

Tech & Equipment

- **Archival Storage:** Acid-free folders and boxes, plus climate-controlled storage where possible. Stable temperature and humidity matter more than any single container choice.
- **Film Camera & Darkroom:** For creating analog backups of documents and photos: a real, working skill set, not just nostalgia, in a scenario with no digital infrastructure.
- **Magnetic Tape Drive:** For long-term, air-gapped data storage if available. Worth noting this is genuinely enterprise-grade equipment, expensive and not easy to source for most households; treat it as an if-

available option, not a baseline expectation.

- **3D Printer:** For fabricating replacement tools or parts from digital files if the specific need arises.

Materials & Supplies

Item	Quantity / Spec	Notes
Archival paper	Acid-free, for long-term storage	The single highest-leverage, lowest-cost upgrade in this entire tier.
Microfilm rolls	For permanent analog backups	Pairs with the film camera/darkroom skill above.
Climate control	Dehumidifiers, silica gel, temperature monitoring	Consistency matters more than any single extreme; avoid large swings, not just avoiding heat or moisture individually.
Community archive	Physical library shared with trusted neighbors	Redundancy against losing any single household's collection to fire, flood, or loss.
Barter items	Digital storage devices, batteries, cables	High trade value in a community still running any digital equipment at all.

Northern Utah Note

Salt Lake City is home to one of the most extensive archival preservation operations in the world: FamilySearch’s Granite Mountain Records Vault, built into a mountainside specifically for long-term, climate-controlled preservation of genealogical microfilm. It’s not a resource available for personal storage, but the underlying model (climate-controlled, physically secure, redundant archival storage) is exactly the principle to scale down for a household or community archive, and FamilySearch’s free genealogy resources are a genuinely useful tool for the “family history” half of this chapter’s goal.

Quick Checklist

- ☐ Vital paper documents moved into acid-free folders/boxes
- ☐ Microfilm or archival film backups created for the most critical records
- ☐ Community knowledge base established with trusted neighbors
- ☐ Digital media migration schedule set (not waiting for failure)
- ☐ Climate-controlled or at least climate-stable storage arranged
- ☐ Community archive redundancy established across more than one household

- ☐ Practiced: successfully migrated data from one storage medium to another as a planned exercise
-

Tier 4: Thriving (Sustainable Community)

***Goal:** Build a community-wide record-keeping and archival system so no single household's fire, flood, or loss erases records the whole community depends on.*

Beyond personal documents, a functioning community needs its own records (who owns what, what agreements were made, what happened and when), especially once formal government record-keeping may not be reliably available. Tier 4 extends this chapter's redundancy principle from individual households to the community's actual governance and history.

Skills to Build

- **Community Record-Keeping:** Maintain formal, shared records of property boundaries, mutual aid agreements, trades, and disputes resolved. Informal community agreements need a real record once formal legal/government systems can't be relied on to arbitrate disagreements.
- **Distributed Archival Skills:** Train more than one person in the community in archival preservation and digitization, the same redundancy principle used for medical, radio, and caregiving skills in earlier chapters.
- **Shared Digitization Projects:** Organize community-wide digitization efforts (shared history, collective skills, local knowledge) rather than leaving it to individual households working in isolation.
- **Succession Planning for Records:** Explicitly plan who takes over a household or community record archive if its original keeper is lost. An archive with no successor is a single point of failure no matter how well it's maintained.

Go deeper: the Digital Data & Documents Addendum builds these into real, tested competency. For the hands-on how-to, see Document Go-Bag & Digital Backup and Wills, Power of Attorney & Guardianship.

Tech & Equipment

- **Shared Digitization Equipment:** Community-level scanners, cameras, and archival supplies, reducing the cost burden on any single household.
- **Distributed Archive Sites:** Multiple physical archive locations across different households or a shared community building; no single fire or flood should be able to erase the community's records.

- **Community Records Registry:** A maintained, accessible index of what records exist and where. An archive no one can find is barely better than no archive at all.

Materials & Supplies

Item	Quantity / Spec	Notes
Community records archive	Property, agreements, trade, dispute records	The community's actual functioning legal/governance memory in the absence of formal systems.
Shared archival supplies	Acid-free materials, film, digitization equipment	Pooled community resource rather than duplicated per household.
Distributed backup network	Copies held across multiple households	Same redundancy principle as every other chapter's shared reserve; no single point of failure.

Quick Checklist

- ☐ Community record-keeping system established for property, agreements, and disputes
- ☐ Multiple people trained in archival/digitization skills community-wide
- ☐ Records physically distributed across more than one location/household
- ☐ Community records registry maintained so records can actually be found
- ☐ Succession plan in place for who maintains records if the current keeper is lost
- ☐ Practiced: a community records audit completed to confirm everything is where the registry says it is

At a Glance: Digital Data & Documents Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Duration	Storage Method	Access Strategy
Tier 1	Hours – 14 days	Fireproof safe, encrypted drive, cloud backup	3-2-1 backup, password manager emergency kit
Tier 2	2 weeks – 3 months	Off-site backup, paper logs	Offline drive access, manual record-keeping
Tier 3	Indefinite	Acid-free archival paper, microfilm	Community knowledge base, scheduled data migration
Tier 4	Sustainable community	Distributed community archive	Shared records registry, succession planning

CHAPTER 12

Economic & Financial

Why This Category Matters

Money doesn't stop mattering during a disaster; it just stops working the normal way. Card networks and ATMs depend on the same power and internet infrastructure as everything else in this manual, and even when they're up, price gouging and scams both spike predictably after a disaster. This chapter is about keeping the household financially functional through each tier, from immediate cash access through to a local economy that may not use conventional money at all.

This chapter is general emergency-preparedness guidance, not financial or investment advice; nothing here, including the discussion of precious metals as a historical barter medium, is a recommendation about what to buy, hold, or invest in. For actual investment or financial planning decisions, talk to a licensed financial advisor.

Two Phases: Stored vs. Produced

The same two-phase shift that runs through this manual's other chapters applies here too, arguably more cleanly than anywhere else: Tier 1 is Phase 1, simple liquidity, having usable cash already on hand. Tier 3 is Phase 2: conventional currency has lost practical value, and the local economy runs on skills, production, and trust instead, less about stockpiling and more about having something genuinely valuable to offer. Tier 2 is the transition: cash itself starts mattering less than goods and skills, but the household is still stretching whatever cash reserve remains rather than fully running on production and trade. Tier 4 is Phase 2 at community scale. Knowing which phase a given plan belongs to is the difference between a plan that runs out and one that doesn't.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: *Phase 1, using what's already on hand. Access cash when ATMs/banks are offline and manage immediate expenses for evacuation or supplies.*

Tier 1 assumes card networks, ATMs, or banking access may be unreliable for hours to days, while normal commerce is still otherwise functioning. The goal is simple liquidity (having usable cash on hand) plus the paperwork that makes insurance and recovery faster once it starts.

Skills to Build

- **Cash Management:** Store, count, and secure cash reserves safely. Split reserves between a home safe and a portable go-bag amount, so a single access failure (can't get to the safe, or can't get home) doesn't strand you. See the Financial Preparedness Basics skill guide for building the reserve itself.
- **Insurance Claim Filing:** Understand your policy's Additional Living Expenses (ALE) provision before you need it. It reimburses the difference between your normal cost of living and temporary costs after a covered loss (hotel, temporary rent, extra meals), not the full cost, and it's typically capped around 20–30% of your dwelling coverage. Know your specific number in advance. See the Financial Preparedness Basics skill guide for documenting your home before you ever file.
- **Budgeting Under Stress:** Practice prioritizing essential purchases (fuel, water, food, medication) over non-essentials before you're actually doing it under pressure. Decision fatigue makes this measurably harder in the moment.
- **Fraud Detection:** Recognize the scam patterns that reliably spike after disasters: fake contractors demanding upfront payment, impersonators posing as FEMA or insurance representatives, and fraudulent charities. If someone asks for payment before doing verifiable work, or contacts you unprompted claiming to be a government agency, treat it as a red flag by default.
- **Income Continuity Planning:** Know your employer's actual disaster/emergency leave policy before you need it. Many employers have one, but most employees have never read it. If remote work is possible, confirm in advance what you'd actually need to make it work (power and connectivity; cross-reference the Energy & Heat and Communication chapters). If self-employed, treat business continuity as seriously as household continuity: a backup way for clients to reach you, business records backed up per the Digital Data & Documents chapter, and a clear sense of how long the business can survive with reduced or no income.

Go deeper: the Economic & Financial Addendum builds these into real, tested competency. For the hands-on how-to, see Financial Preparedness Basics and Barter & Local Trade Systems.

Tech & Equipment

- **Cash Counting Tray:** Optional; useful only if managing a larger reserve or helping neighbors count/verify cash.
- **Secure Storage:** A fireproof/waterproof safe or a hidden diversion safe for cash. Cross-reference the Digital Data & Documents chapter's guidance on matching a safe's UL rating to what's actually stored inside it.
- **Calculator:** For manual transaction tracking if phones/apps are unavailable. A \$5 item that removes real friction from tracking money by hand.

Materials & Supplies

Item	Quantity / Spec	Notes
Small-denomination cash	\$1,000+ in \$1, \$5, \$10, \$20 bills	ATMs will be empty or offline; large bills are hard to use for small purchases and harder for a stressed cashier to make change for.
Insurance policy copies	Physical + digital, home/auto/health	Cross-reference the Digital Data & Documents chapter's 3-2-1 backup approach for these specifically.
Inventory photos/video	Digital proof of home contents	Same video-walkthrough technique described in the Digital Data & Documents chapter; faster claims processing starts with better documentation.
Contact list	Insurance agent, bank, credit card numbers, offline copy	A phone-stored list is useless once the phone dies; keep a printed copy with the cash reserve.

Know Your Legal Protection Against Price Gouging

Utah's Price Controls During Emergencies Act (Title 13, Chapter 41) makes it illegal to charge excessive prices (generally more than 10% above the pre-emergency average) on necessities during a declared state of emergency. It's enforced by the Utah Attorney General's office, and the Division of Consumer Protection has a real track record of ordering refunds. Report suspected price gouging to them; you have a legal remedy, not just a grievance. Note this protection applies specifically during an active declared emergency; it doesn't necessarily extend to a Tier 3-style prolonged breakdown where formal government enforcement may no longer be functioning.

Quick Checklist

- ☐ \$1,000+ cash in small bills, split between home safe and portable reserve
- ☐ Insurance policy's specific ALE percentage/cap known in advance
- ☐ Insurance, bank, and credit card contact info printed and stored offline
- ☐ Home inventory video/photos current and backed up
- ☐ Household can recognize common post-disaster scam patterns
- ☐ Utah Attorney General price-gouging reporting contact known
- ☐ Employer's disaster/emergency leave policy read and understood

- ☐ Self-employed household members have a business continuity plan (client contact backup, records backed up, runway estimate)
- ☐ Practiced: household has discussed spending priorities (essentials-first) before an actual emergency forces the decision

Tier 2: Extended (2 Weeks – 3 Months)

Goal: Phase 1-to-2 transition, still spending down cash while trade begins to matter. Stretch cash reserves, navigate a broken banking system, and begin transitioning to local trade.

Tier 2 assumes normal banking and commerce are unreliable for an extended period, and that cash itself may become less useful than goods and skills for getting what the household actually needs. This is where barter begins to matter, alongside continuing to stretch whatever cash reserve remains.

Skills to Build

- **Barter Negotiation:** Trade fairly in a local, unregulated economy. A reputation for fair dealing is worth more than a single good trade, since you'll likely be trading with the same neighbors repeatedly. See the Barter & Local Trade Systems skill guide for what real historical barter economies reveal about this, and where they tend to fail.
- **Record Keeping:** Maintain manual ledgers for debts, trades, and expenses. Memory is unreliable under stress and across many small transactions, and a written record prevents disputes before they start.
- **Price Assessment:** Understand that scarce goods (fuel, batteries, medications) become genuinely more valuable in a disrupted local economy. This isn't the same as illegal price gouging by a retailer; it's the reality of informal trade between individuals once the legal gouging protections above no longer straightforwardly apply.
- **Community Banking:** Organize informal lending or resource-sharing pools with neighbors, the financial equivalent of the mutual aid pacts described in other chapters.

Go deeper: the Economic & Financial Addendum builds these into real, tested competency. For the hands-on how-to, see Financial Preparedness Basics and Barter & Local Trade Systems.

Tech & Equipment

- **Manual Ledger System:** Bound notebooks for tracking all transactions. Bound (not loose-leaf) makes pages harder to lose or dispute after the fact.

- **Scale:** For weighing bulk goods (food, fuel, ammunition) to ensure fair trade. Disputes over quantity are one of the most common sources of trade conflict.
- **Secure Storage:** A lockbox or hidden cache for cash and valuable trade goods, separate from the Tier 1 home safe to avoid a single point of failure.

Materials & Supplies

Item	Quantity / Spec	Notes
Barter inventory	Alcohol, tobacco, coffee, sugar, salt, batteries, hygiene products, OTC meds	High shelf-stability and broad demand make these reliable trade goods. Cross-reference the Water & Food, Sanitation & Hygiene, and Medical Care chapters' bulk supply guidance.
Receipts/invoices	Paper forms for trades or loans	Formalizes informal trades; reduces disputes and creates a record if the relationship or memory later disagrees.
Precious metals	Small amounts of silver/gold coins (optional)	Historically used as a barter medium of last resort during economic disruption due to durability and broad recognizability. This is general historical context, not investment guidance; consult a licensed financial advisor for any investment decision.
Fuel reserves	Stabilized gasoline/diesel or propane	High trade value; cross-reference the Energy & Heat chapter's fuel storage and stabilization guidance.

Quick Checklist

- ☐ Barter inventory stocked with broadly recognized, high-demand goods
- ☐ Manual ledger system in place and understood by relevant household members
- ☐ Scale on hand for verifying bulk trade quantities
- ☐ Secure storage for trade goods separate from the primary cash safe
- ☐ Community resource-sharing/lending arrangements discussed with trusted neighbors
- ☐ Practiced: at least one household member has conducted a practice trade negotiation

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2, producing and trading rather than spending down a reserve. Establish a sustainable local economy based on skills, production, and mutual aid. Cash becomes worthless.*

Tier 3 assumes conventional currency has lost practical value, and the local economy runs on skills, production, and trust instead. This is less about stockpiling and more about the household, and community, having something genuinely valuable to offer on an ongoing basis.

Skills to Build

- **Skill Valuation:** Trade high-value skills (medical, mechanical, farming, security) directly for food or shelter. A practiced, credentialed skill (see the Medical Care and Security & Self-Defense chapters' training guidance) is a renewable asset in a way a stockpile isn't.
- **Community Governance:** Establish fair trade rules, dispute resolution processes, and credit systems collectively. An economy without agreed rules degrades into exactly the kind of conflict the Security & Self-Defense chapter's community governance guidance is meant to prevent.
- **Production Economics:** Manage supply and demand for locally produced goods (crops, livestock, crafts). Understand that overproducing one good crashes its trade value the same way it would in a formal market.
- **Resource Accounting:** Track community assets (tools, seeds, fuel) for long-term sustainability. You can't manage what isn't tracked, and shared resources without accounting tend to be over-consumed by whoever gets there first.

Go deeper: the Economic & Financial Addendum builds these into real, tested competency. For the hands-on how-to, see Financial Preparedness Basics and Barter & Local Trade Systems.

Tech & Equipment

- **Community Ledger:** A centralized record-keeping system for all trades and debts, the community-scale version of Tier 2's household ledger.
- **Standardized Weights/Measures:** Calibrated scales and measures for fair trade. A community-wide standard prevents the disputes that come from every household using a different reference.
- **Secure Vault:** A community safe for shared valuables or trade reserves, with clear access rules agreed on in advance.

Materials & Supplies

Item	Quantity / Spec	Notes
Skill directory	Printed list of community members' skills/services	Makes trade actually efficient; no one has to remember or ask around who can do what.
Trade goods	Bulk salt, alcohol, ammunition, tools, medical supplies	Functions as a de facto community currency due to broad, reliable demand.
Local scrip	Community-issued tokens or notes (optional)	A real historical pattern (local/complementary currencies have existed for centuries) for facilitating trade within a defined community without relying on external currency.
Production tools	Seeds, livestock, hand tools	Generates ongoing tradeable surplus rather than a one-time stockpile. Cross-reference the Water & Food chapter's Tier 3 production guidance.

Quick Checklist

- ☐ Household's tradeable skills identified and practiced, not just theoretical
- ☐ Community trade rules and dispute resolution process established
- ☐ Community ledger and standardized weights/measures in use
- ☐ Skill directory compiled and distributed within the community
- ☐ Production tools (seeds, livestock, hand tools) generating actual ongoing surplus
- ☐ Practiced: at least one skill successfully traded for goods or shelter within the community

Tier 4: Thriving (Sustainable Community)

Goal: Phase 2 at community scale. Formalize the community's economy (currency, credit, and trade infrastructure) so prosperity is shared and durable rather than dependent on informal goodwill.

Tier 3's economy runs on informal trust and memory; that works at small scale but breaks down as a community grows or as original participants are lost. Tier 4 formalizes what Tier 3 started, turning the informal trade rules, ledgers, and mutual aid pacts scattered across this manual's other chapters into an actual functioning local economic system.

Skills to Build

- **Currency/Credit System Design:** Formally design and manage a local scrip or credit system, including how it's issued, backed, and kept from being counterfeited or over-issued, the same discipline a real currency requires, at community scale.
- **Economic Dispute Resolution:** Extend the community governance work from Tier 3 into a real, trusted process for resolving trade and debt disputes. Economic trust, once broken, is hard to rebuild.
- **Apprenticeship & Skill Transfer:** Formalize skill-teaching as part of the economy. A community that trades only in existing skills stagnates; one that also trades in teaching those skills compounds its capability over time.
- **Market Organization:** Organize recurring trade events (a regular market day). Predictable, scheduled trade is dramatically more efficient than ad hoc individual trades and strengthens the community connections described in the Mental Health chapter's Tier 2 guidance.

Go deeper: the Economic & Financial Addendum builds these into real, tested competency. For the hands-on how-to, see Financial Preparedness Basics and Barter & Local Trade Systems.

Tech & Equipment

- **Formal Scrip/Token System:** Physically durable, hard-to-counterfeit tokens or notes if the community has settled on a local currency. Simple anti-counterfeiting measures (unique markings, a controlled ledger of serial numbers) matter even at small scale.
- **Community Market Infrastructure:** A designated space and schedule for recurring trade, building on the Mental Health chapter's community gathering space.
- **Distributed Ledger Copies:** Multiple households holding copies of the community ledger, the financial-record equivalent of the Digital Data & Documents chapter's distributed archive, preventing any single lost ledger from erasing the community's economic memory.

Materials & Supplies

Item	Quantity / Spec	Notes
Community credit reserve	Backing for any local currency/credit system	Whatever the community has agreed backs its scrip: goods, skills-hours, or another shared standard.
Market infrastructure materials	Tables, signage, scheduling materials	Low-cost, high-leverage; the main barrier to a functioning market is usually coordination, not equipment.
Apprenticeship materials	Teaching aids for community skill-transfer	Builds on the shared reference libraries established in other chapters.

Quick Checklist

- ☐ Local currency/credit system (if used) formally designed with anti-counterfeiting basics
- ☐ Economic dispute resolution process trusted and actually used by the community
- ☐ Regular market/trade event scheduled and running
- ☐ Skill apprenticeship/teaching formalized as part of the local economy
- ☐ Community ledger distributed across multiple households
- ☐ Practiced: at least one full market day held with multiple households participating

At a Glance: Economic & Financial Across All Tiers

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 plan scales, not as a standalone checklist.

Tier	Phase	Duration	Primary Medium	Key Skill
Tier 1	Phase 1	Hours – 14 days	Cash	Insurance/ALE knowledge, fraud detection
Tier 2	Transition	2 weeks – 3 months	Cash + barter goods	Barter negotiation, manual ledgers
Tier 3	Phase 2	Indefinite	Skills and production	Skill valuation, community governance
Tier 4	Phase 2	Sustainable community	Formal local currency/credit	Currency design, market organization

CHAPTER 13

Fitness

Why This Category Matters

Nearly every other chapter in this manual assumes a body capable of carrying it out: hauling water, evacuating on foot, clearing debris, working a hand-crank tool, digging a garden bed, or simply staying upright through a physically demanding day on reduced food and disrupted sleep. Fitness isn't a separate emergency-prep category so much as the physical capacity that makes every other category actually executable. An injury from poor lifting technique, or exhaustion from attempting a task the household isn't conditioned for, can disable a household as effectively as the disaster itself.

As with the Access & Functional Needs chapter, treat this as general guidance: anyone with an existing medical condition, injury, or mobility limitation should adapt this, ideally with input from a doctor or physical therapist, rather than follow it as written.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Maintain the physical capacity to safely perform immediate survival tasks (evacuation on foot, lifting and clearing debris, carrying an injured person) without adding a second injury to the emergency.*

Tier 1 isn't about building fitness; it's about not getting hurt using whatever fitness you already have, under stress, fatigue, and possibly caloric restriction. Most exercise-related injuries during an actual emergency come from bad technique under pressure, not from a lack of underlying strength.

Skills to Build

- **Safe Lifting Technique:** Lift with the legs and hips, not the lower back: bend the knees, keep the load close to the body, and avoid twisting while lifting. This single habit prevents a large share of the debris-clearing and heavy-carrying injuries that happen in the first hours after a disaster. See the Physical Readiness for Emergencies skill guide for the full technique.
- **Effort Pacing:** Under caloric restriction (see the Water & Food chapter's rationing guidance), sustained physical output drops. Pace heavy tasks accordingly rather than working at a normal-diet pace and burning out or injuring yourself partway through.

- **Pre-Exertion Warmup:** Even a 2–3 minute warmup (light movement, dynamic stretching) meaningfully reduces strain and sprain risk before a sudden bout of heavy lifting or fast movement. Worth the time even when it feels like there isn’t any to spare.
- **Recognizing Overexertion:** Know the early signs of heat exhaustion, hypothermia, and simple overexertion (dizziness, nausea, disproportionate fatigue) before they progress. Cross-reference the Shelter & Structural Safety chapter’s Regional Hazards section and the Medical Care chapter for treatment.

Go deeper: the Fitness Addendum builds these into real, tested competency. For the hands-on how-to, see Physical Readiness for Emergencies.

Tech & Equipment

- **Broken-In Footwear:** Comfortable, already broken-in shoes or boots in the go-bag. New or ill-fitting footwear causing blisters can genuinely disable an evacuation on foot. Don’t let the first time you wear evacuation footwear be during an actual evacuation.
- **Properly Sized Pack:** A pack fitted to actually carry weight on the hips, not just the shoulders. An improperly loaded or fitted pack turns a manageable hike into a shoulder and back injury.
- **Blister/Chafing Prevention:** Moleskin, blister pads, and anti-chafe balm. Small, cheap items that prevent a disproportionately large mobility problem.

Materials & Supplies

Item	Quantity / Spec	Notes
Broken-in footwear	1 pair per person, go-bag staged	Worn periodically to stay broken in, not left new in the closet.
Blister/chafing supplies	Moleskin, pads, anti-chafe balm	Cross-reference the Medical Care chapter's first aid kit; keep a set specifically with the go-bag too.
Electrolyte supplies	Oral rehydration salts or electrolyte mix	Physical exertion under stress increases fluid/electrolyte loss beyond normal daily needs. Cross-reference the Water & Food chapter's hydration guidance.

Quick Checklist

- ☐ Every adult can demonstrate correct lifting technique (legs/hips, not back)
-

- ☐ Go-bag footwear broken in through actual periodic use, not brand new
- ☐ Blister/chafing prevention supplies in the go-bag
- ☐ Household understands effort pacing under caloric restriction
- ☐ Overexertion, heat exhaustion, and hypothermia signs known by every adult
- ☐ Practiced: at least one loaded-pack walk completed to test footwear and pack fit before an emergency

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Build and maintain functional strength and endurance for sustained manual labor (hauling water and fuel, operating manual tools) without gym access.*

Tier 2 assumes daily life now includes real physical labor that most households aren't normally conditioned for: hauling water in Water & Food's Tier 2 barrels, working the Energy & Heat chapter's manual tools, or simply walking farther and carrying more than usual. This tier is about building the specific, functional capacity those tasks require.

Skills to Build

- **Functional Bodyweight Training:** Build strength around the movement patterns that actually transfer to survival tasks: squats (lifting), hip hinges (lifting from the ground), push-ups (pushing/pressing), and loaded carries (literally practicing carrying weight, which is one of the most directly transferable exercises to hauling water or supplies). See the Physical Readiness for Emergencies skill guide for the full routine.
- **Rucking:** Walking with a weighted pack: a well-established, low-equipment training method that directly builds the specific endurance needed for a loaded evacuation on foot or daily hauling trips. Start light (10% of body weight is a reasonable starting point) and increase gradually. See the Physical Readiness for Emergencies skill guide for progressive loading.
- **Basic Injury Management:** Current sports-medicine guidance has moved past the old "RICE" (Rest, Ice, Compression, Elevation) approach in favor of PEACE & LOVE: in the first 48 hours, Protect the injury, Elevate it, Avoid anti-inflammatory medication when possible (it can slow tissue healing), use Compression, and Educate yourself on realistic recovery time; after that acute phase, focus on Load (gradual, tolerable movement), Optimism, Vascularization (light cardio to promote blood flow), and Exercise (progressive rehab). Complete rest and ice alone are no longer considered the best approach for most soft-tissue injuries.

- **Recovery Management:** Sleep and adequate food intake are part of physical capacity, not separate from it. Cross-reference the Water & Food and Mental Health chapters; a household running a caloric or sleep deficit will see real strength and endurance losses regardless of training.

Go deeper: the Fitness Addendum builds these into real, tested competency. For the hands-on how-to, see Physical Readiness for Emergencies.

Tech & Equipment

- **Resistance Bands:** Lightweight, inexpensive, and versatile; shared equipment with the Mental Health chapter’s Tier 2 supplies.
- **Weighted Pack/Rucksack:** For rucking training; can simply be a normal pack loaded with water jugs or sandbags rather than a dedicated purchase.
- **Jump Rope:** Compact, cheap cardio equipment requiring no other space or equipment.

Materials & Supplies

Item	Quantity / Spec	Notes
Training log	Simple notebook	Tracking load and frequency prevents the two most common training mistakes under stress: doing too much too soon, or not progressing at all.
Basic injury supplies	Compression wraps, elevation-friendly setup	Supports the PEACE & LOVE protocol above; cross-reference the Medical Care chapter's trauma supplies.

Quick Checklist

- ☐ Functional bodyweight routine (squat, hinge, push, carry) established and practiced regularly
- ☐ Rucking practiced with a loaded pack at a realistic training weight
- ☐ PEACE & LOVE injury protocol understood in place of outdated RICE guidance
- ☐ Recovery (sleep, nutrition) treated as part of the fitness plan, not separate from it
- ☐ Practiced: household has completed physical labor tasks (hauling water/fuel) using correct technique under realistic conditions

Tier 3: Permanent (Indefinite)

***Goal:** Sustain physical capacity through the demands of daily survival labor itself, while preventing the long-term overuse injuries that come with sustained manual work.*

By Tier 3, physical conditioning largely comes from the work itself: farming, hauling, construction, food preservation, rather than dedicated exercise time. The focus shifts from building fitness to protecting it: preventing repetitive strain, recognizing when age or cumulative injury genuinely limits what a person can safely do, and keeping the whole household capable over years, not weeks.

Skills to Build

- **Movement Self-Assessment:** Recognize the early signs of overuse injury (persistent joint pain, recurring strain in the same area) before they become disabling. Early attention prevents most chronic injuries; ignoring early signals is what turns them chronic.
- **Teaching Correct Form:** Actively teach proper lifting and movement technique to other household and community members. An injury from one person's bad form doing shared heavy labor affects everyone who depends on that labor.
- **Work-Integrated Conditioning:** Deliberately vary daily labor tasks to avoid the same repetitive movement pattern every day. Rotating between different physical tasks (digging, hauling, building) reduces overuse injury risk compared to the same motion repeated for months.
- **Realistic Capacity Assessment:** Honestly match tasks to what each person can currently do. Pushing an aging or previously-injured household member to match a younger person's physical output is how a minor limitation becomes a serious injury. Cross-reference the Access & Functional Needs chapter's guidance on this.

Go deeper: the Fitness Addendum builds these into real, tested competency. For the hands-on how-to, see Physical Readiness for Emergencies.

Tech & Equipment

- **DIY Strength Equipment:** Filled sandbags, water jugs, or containers filled with rocks/sand function as genuine strength training equipment with zero cost beyond containers already on hand.
- **Basic Mobility Tools:** A simple stretching/mobility routine requires no equipment at all, but a yoga mat or padded surface makes it more likely to actually happen consistently.

Materials & Supplies

Item	Quantity / Spec	Notes
DIY weight-training materials	Sand, rocks, sturdy containers	Zero ongoing cost beyond what's already on hand.
Joint/mobility support	Compression wraps, supportive footwear	Preventive, not just reactive; cheaper to prevent an overuse injury than treat one without professional care.

Quick Checklist

- ☐ Household actively watches for and addresses early overuse-injury signs
- ☐ Correct lifting/movement technique taught to others, not just known individually
- ☐ Daily labor tasks rotated to avoid repetitive strain from a single movement pattern
- ☐ Task assignments realistically matched to each person's current physical capacity
- ☐ DIY strength equipment (sandbags, filled containers) in regular use
- ☐ Practiced: household has gone a full season without a preventable overuse injury

Tier 4: Thriving (Sustainable Community)

Goal: Build community-wide physical capacity so heavy labor, defense, and construction work aren't limited by, or dependent on, any single household's strength or stamina.

A single household's Tier 3 physical capacity is still a hard ceiling: there's only so much heavy labor a few people can sustainably do. Tier 4 pools physical capability across the community: shared heavy labor, task-matching across a wider range of abilities, and training that builds capacity across more people rather than concentrating it in whoever happens to be strongest.

Skills to Build

- **Community Work Rotation:** Rotate heavy-labor duties across willing, able community members rather than letting the same few people carry the physical load indefinitely, the same burnout-prevention principle used for caregiving and security watch duty in earlier chapters.

- **Group Training Sessions:** Regular, shared physical training builds both capability and social connection. Ties directly into the Mental Health chapter’s guidance on community connection as a protective factor during prolonged stress.
- **Ability-Based Task Matching:** Formally match tasks to the full range of physical abilities across the community: heavy construction for those capable of it, equally valuable lighter-duty or skill-based roles for those who aren’t, rather than an all-or-nothing expectation. This builds directly on the Access & Functional Needs chapter’s inclusive-planning principle.
- **Physical Role Succession:** Plan for what happens to labor-intensive roles (security patrol, construction, hauling) as the people currently filling them age, are injured, or are lost, the same redundancy principle used for medical, radio, and caregiving roles throughout this manual.

Go deeper: the Fitness Addendum builds these into real, tested competency. For the hands-on how-to, see Physical Readiness for Emergencies.

Tech & Equipment

- **Shared Community Training Space:** A common area for group training sessions. Doesn’t need to be elaborate, just consistent and accessible.
- **Shared Heavy Tools:** Tools genuinely requiring multiple people to operate safely or effectively (two-person saws, heavy hauling equipment). Pooled community resources rather than household-by-household duplication.

Materials & Supplies

Item	Quantity / Spec	Notes
Community DIY equipment	Shared sandbags, weighted containers	Scaled-up version of the Tier 3 household equipment.
Labor rotation schedule	Documented, regularly updated	Same model as the shared duty rosters in the Security & Self-Defense and Access & Functional Needs chapters.

Quick Checklist

- ☐ Heavy-labor duties formally rotated across the community, not concentrated in a few people
- ☐ Regular group training sessions held

- ☐ Tasks matched to the full range of physical abilities in the community, not an all-or-nothing standard
- ☐ Succession plan in place for physically demanding community roles
- ☐ Shared heavy tools and training space established
- ☐ Practiced: a full community labor rotation has run at least one complete cycle

At a Glance: Fitness Across All Tiers

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.

Tier	Duration	Primary Focus	Key Practice
Tier 1	Hours – 14 days	Injury prevention under stress	Safe lifting technique, broken-in footwear
Tier 2	2 weeks – 3 months	Functional strength/endurance building	Rucking, bodyweight training, PEACE & LOVE
Tier 3	Indefinite	Sustaining capacity through daily labor	Task rotation, realistic capacity matching
Tier 4	Sustainable community	Distributed community labor capacity	Work rotation, ability-based task matching

CHAPTER 14

Transportation

New here? Ready, Set, Ready is a 10-minute starting point: an honest assessment, one gap closed for real, then a map for using the rest of this site.

Why This Category Matters

Nearly every other chapter assumes the household can actually get somewhere: to a pet-friendly shelter, an alternate dialysis center, a rally point with neighbors, or simply away from danger. A full pantry and a broken-down car in the driveway is still a stranded household. Transportation is the connective tissue between every other category's plans and the physical ability to execute them.

As with the Access & Functional Needs chapter, adapt this to your household's actual situation: vehicle type, whether anyone can't drive, and whether animal power or a bicycle is realistic on your specific property and terrain.

Two Phases: Stored vs. Produced (a Partial Fit Here)

The same two-phase shift that runs through this manual's other chapters applies here too, though less cleanly: Tier 1 is Phase 1, a working vehicle and passable roads, used as-is. Tier 2 is the transition, fuel and service become unreliable, and the household shifts from occasional maintenance to active upkeep plus a non-fuel backup. Tier 3 is where most chapters reach a clean Phase 2, full production; transportation only gets there partially. The tier's own goal is mobility "without reliable commercial fuel or vehicle service infrastructure," and it depends on household skill and stored spare parts as much as on genuine alternative power. Biodiesel and wood gas are real, but advanced and household-dependent, not a default outcome the way growing your own food is. Tier 4 pools that same partial capability at community scale. Worth being direct about: for most households, this chapter's Tier 3 stretches and repairs what exists longer than it produces something wholly new.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

Goal: Phase 1, using what's already available. Ensure immediate vehicle readiness and safe route planning for evacuation or reaching resources when normal traffic infrastructure and road conditions are disrupted.

Tier 1 assumes the household still has a working vehicle and passable roads most of the time, but conditions (weather, debris, congestion, a specific hazard) can make any single route or method of travel unreliable without warning.

Skills to Build

- **Vehicle Readiness Habit:** Never let the fuel tank drop below half. Treat “half a tank” as the new empty. This single habit means a sudden evacuation never starts with a trip to a gas station that may be out of fuel, without power, or has a line around the block.
- **Multi-Route Planning:** Identify at least two evacuation routes from home in different directions, not just the fastest normal-conditions route. A single route can be blocked by debris, flooding, or traffic exactly when it’s needed most. Tie this to the Communication chapter’s two meeting-point plan.
- **Hazard Recognition While Driving:** Know when not to drive: never cross a flooded road (see the Shelter & Structural Safety chapter’s “Turn Around, Don’t Drown” guidance; vehicles are swept away in surprisingly shallow moving water), treat any downed power line as energized and stay in the vehicle away from it, and reduce speed drastically or stop in heavy wildfire smoke rather than driving on reduced visibility.
- **Traction Law Compliance:** Understand Utah’s Traction Law (Administrative Rule R920-6) before winter storms hit, not during one. When active: AWD/4WD vehicles need mud-and-snow (M+S) tires at minimum, or chains/snow socks/3-peak-mountain-snowflake (3PMSF) tires; 2WD vehicles need 3PMSF tires at minimum, or chains on at least two drive wheels. The Cottonwood Canyons have a stricter “Class 3” designation with additional tread-depth requirements when warning beacons are flashing.

Go deeper: the Transportation Addendum builds these into real, tested competency. For the hands-on how-to, see Vehicle Emergency Kit & Roadside Basics, Land Navigation Without GPS, and Basic Bicycle Maintenance & Repair.

Tech & Equipment

- **Vehicle Emergency Kit:** Jumper cables or a portable jump-starter pack, a tire repair/plug kit, a portable air compressor, a tow strap, and an ice scraper/snow brush, kept in the vehicle year-round, not just when winter weather is forecast. See the Vehicle Emergency Kit & Roadside Basics skill guide for how to actually use each piece.
- **Traction Devices:** Tire chains or snow socks matched to your specific vehicle and tire size, purchased and test-fitted in your driveway in advance. Chain sizes sell out fast once a storm is forecast, and the first fitting should never be on the side of a canyon road in the dark.
- **Basic Tools:** An adjustable wrench, a basic screwdriver set, and a flashlight/headlamp kept in the vehicle, shared principle with the Energy & Heat chapter’s equipment list.

Materials & Supplies

Item	Quantity / Spec	Notes
Vehicle 72-hour kit	Water, non-perishable food, blanket, first aid	A vehicle-specific version of the Water & Food and Medical Care chapters' kits; don't assume the house go-bag will always be with the car. See the Go-Bags & 72-Hour Kits skill guide for the full list and how to size a get-home bag specifically.
Paper maps	State + county, kept in the vehicle	Same principle as the Communication chapter's physical maps; useless if left at home when the car is what's stranded.
Winter driving supplies	Ice melt/sand, blankets, hand warmers	For traction on ice under tires and for waiting out a breakdown in cold weather.

WARNING

Two Rules Worth Never Breaking Behind the Wheel

Never drive across a flooded road; vehicles are swept away in surprisingly shallow moving water. And treat any downed power line as energized no matter how it looks, staying in the vehicle away from it rather than getting out to move it or check.

Northern Utah Note

Traction Law enforcement is real, not just a suggestion. Utah Highway Patrol and local law enforcement can and do cite vehicles that don't meet the posted requirements, and being turned away at a canyon checkpoint during a storm is a common, avoidable failure. Check current requirements directly at udottraffic.utah.gov before any winter mountain drive, since specific canyons and roads activate the rule independently based on conditions.

Quick Checklist

- ☐ Fuel tank habitually kept above half
- ☐ At least two evacuation routes identified from home, in different directions
- ☐ Every driver in the household knows the flooded-road and downed-power-line rules
- ☐ Traction devices matched to each vehicle, purchased and test-fitted before winter
- ☐ Vehicle emergency kit (jumper cables, tire kit, tow strap) in every vehicle

- ☐ Vehicle-specific 72-hour kit packed and current
- ☐ Paper maps kept in the vehicle, not just at home
- ☐ Practiced: driven at least one alternate evacuation route to confirm it's actually passable

Tier 2: Extended (2 Weeks – 3 Months)

Goal: Phase 1-to-2 transition, fuel and service become unreliable. Maintain personal transportation capability when fuel is scarce and normal vehicle service or repair isn't available.

Tier 2 assumes fuel and vehicle service are unreliable for weeks at a time. The household shifts from occasional maintenance to active upkeep, and adds non-fuel-dependent transportation as a genuine backup rather than a novelty.

Skills to Build

- **Basic Vehicle Maintenance:** Check and top off fluids, inspect belts and hoses for cracking, and clean battery terminals. Most roadside breakdowns come from a handful of preventable causes, and catching them early beats fixing them stranded.
- **Fuel Management & Safety:** Never siphon fuel by mouth. Swallowing or aspirating gasoline is a genuine poisoning risk that can cause severe chemical pneumonitis and has killed people who tried it; use a manual siphon pump instead, which costs under \$15 and removes the risk entirely. For stored fuel, follow the Energy & Heat chapter's stabilization and rotation guidance.
- **Alternate Route Navigation:** Practice navigating with paper maps and landmarks rather than GPS. Cross-reference the Communication chapter's map-reading skill, applied specifically to driving routes rather than on-foot evacuation. See the Land Navigation Without GPS skill guide for map-and-compass technique.
- **Bicycle as Backup Transport:** Basic bike maintenance (tire repair, chain lubrication) and safe technique for riding while hauling cargo: a genuinely practical fuel-free option for short-to-medium trips once the skill and the right equipment are in place. See the Basic Bicycle Maintenance & Repair skill guide for the actual repair steps.

Go deeper: the Transportation Addendum builds these into real, tested competency. For the hands-on how-to, see Vehicle Emergency Kit & Roadside Basics, Land Navigation Without GPS, and Basic Bicycle Maintenance & Repair.

Tech & Equipment

- **Basic Mechanic Tool Kit:** Ideally sized to your specific vehicle make/model. Many auto parts retailers sell kits matched to common models.
- **Manual Fuel Transfer Pump:** For safely moving fuel between containers or into a tank. Never mouth-siphon, per the safety note above.
- **Bicycle with Cargo Capacity:** Panniers or a small cargo trailer, sized to actually haul meaningful supplies, not just commute empty-handed.
- **Bike Repair Kit:** Tire levers, a patch kit, a spare tube, and a compact pump.

Materials & Supplies

Item	Quantity / Spec	Notes
Stabilized fuel reserve	See Energy & Heat chapter for quantities	Cross-reference rather than duplicate; this chapter and Energy & Heat draw from the same stored fuel.
Spare vehicle parts	Belts, fuses, essential fluids	Matched to your specific vehicle's actual maintenance schedule.
Bicycle spare parts	Tubes, chain links, brake pads	Cheap insurance against a bike being the one thing standing between the household and mobility.

WARNING

Never Siphon Fuel by Mouth

Swallowing or aspirating even a small amount of gasoline is a genuine poisoning risk that can cause severe chemical pneumonitis, and it has killed people who tried it. A manual siphon pump costs under \$15 and removes the risk entirely; keep one with your fuel-transfer supplies and don't rely on the mouth-siphon method you may have seen demonstrated casually.

Electric Vehicles: A Different Set of Constraints

EVs remove fuel-storage concerns entirely but trade them for others: AAA testing shows EVs lose roughly 30–40% of range in 20°F weather, largely from cabin heating draw. A real planning factor for Utah winters, not a minor inconvenience. Plan charging stops more frequently in cold weather (roughly every 100–120 miles rather than 150–180), and if a home solar setup is part of your Energy & Heat chapter plan, understand whether it can actually charge a vehicle during a grid outage; most home solar systems without a specific EV-charging configuration cannot, even if they power other things in the house.

Quick Checklist

- ☐ Household can perform basic fluid/belt/battery maintenance checks
- ☐ Manual fuel transfer pump on hand; mouth-siphoning understood as genuinely dangerous, not just discouraged
- ☐ At least one household member comfortable navigating by paper map alone
- ☐ Bicycle(s) with cargo capacity maintained and ready
- ☐ Bike repair kit assembled and basic repair skill practiced
- ☐ EV owners: cold-weather range and charging-stop planning adjusted for winter
- ☐ Practiced: completed a real trip using only bicycle transport to confirm the setup actually works

Tier 3: Permanent (Indefinite)

***Goal:** Phase 2 (partial): skill and stored parts stretch mobility further than production replaces it. Sustain mobility without reliable commercial fuel or vehicle service infrastructure.*

Tier 3 assumes no more fuel deliveries and no mechanic to call. Transportation capability now depends entirely on household skill, stored parts, and, for some households, genuinely alternative power sources for movement.

Skills to Build

- **Advanced Vehicle Repair:** Diagnose and repair common failure points (starter, alternator, fuel pump, ignition system) at a household level. A real skill that takes deliberate study and practice now, not something to learn for the first time when it's the only running vehicle left.
- **Alternative Fuel Knowledge:** Biodiesel (processed from used cooking oil) and wood gas (a real, historically proven technology: "producer gas" vehicles were common across fuel-starved WWII-era Europe) are both genuine options, but both are technically demanding and require real study and practice before relying on them. Treat this as an advanced skill to research and build toward now, not a casual weekend project.
- **Animal-Powered Transport:** If you're raising draft animals as part of the Water & Food chapter's Tier 3 livestock plan, basic handling, harnessing, and tack maintenance is a real, learnable skill worth building deliberately for a rural Utah property.
- **Land Navigation:** Dead-reckoning and terrain-reading without GPS or maintained roads. A genuinely different skill than following a paper map on existing roads. See the Land Navigation Without GPS skill guide

for map-and-compass technique, pace counting, and which natural-navigation tricks actually work.

Go deeper: the Transportation Addendum builds these into real, tested competency. For the hands-on how-to, see Vehicle Emergency Kit & Roadside Basics, Land Navigation Without GPS, and Basic Bicycle Maintenance & Repair.

Tech & Equipment

- **Advanced Tool Set:** Engine-level repair tools, not just roadside-emergency basics.
- **Draft Animal Tack:** Harness and related equipment, properly fitted and maintained, if pursuing animal-powered transport.
- **Maintained Bicycle/Cart System:** As a reliable primary transport method, not just a Tier 2 backup.
- **Small-Scale Alternative Fuel Setup:** A wood gasifier or biodiesel processing setup, if pursuing that path. Genuinely advanced equipment that assumes the skill above is already developed, not equipment to buy and figure out later.

Materials & Supplies

Item	Quantity / Spec	Notes
Comprehensive spare parts stockpile	Belts, hoses, filters, fluids, common wear parts	Sized against your specific vehicle's actual failure history, not a generic list.
Animal feed reserve	If using draft animals	Cross-reference the Water & Food chapter's livestock feed guidance.
Detailed regional maps	Physical, covering beyond the immediate county	For land navigation beyond the range of daily paper maps.

Quick Checklist

- ☐ Household can diagnose and repair common vehicle failure points
- ☐ Alternative fuel option (biodiesel/wood gas) researched and, if pursued, actually practiced, not just equipment on a shelf
- ☐ Draft animal handling and tack maintenance skills built, if applicable
- ☐ Land navigation practiced without GPS or maintained roads
- ☐ Comprehensive spare parts stockpile matched to actual vehicle needs

- ☐ Practiced: completed a real repair on a household vehicle using only stocked parts and tools
-

Tier 4: Thriving (Sustainable Community)

***Goal:** Phase 2 (partial) at community scale. Build community-scale transportation resilience so mobility doesn't depend on any single household's vehicle, fuel reserve, or mechanical skill.*

A single household's Tier 3 transportation plan is still one vehicle, one skill set, and one fuel reserve. A breakdown or empty tank leaves that household stranded regardless of how well-prepared they were individually. Tier 4 pools transportation capability the same way earlier chapters pool medical, security, and energy capability.

Skills to Build

- **Community Route & Evacuation Planning:** Coordinate evacuation routes and rally points across the neighborhood in advance. Building directly on the Security & Self-Defense chapter's community pact, so the household's individual route plan is backed by a shared one.
- **Distributed Mechanic Skills:** Train more than one person in vehicle repair, the same redundancy principle used for medical, radio, and caregiving skills throughout this manual.
- **Fuel Pooling & Rationing:** Establish a shared fuel depot with clear, agreed access rules. Cross-reference the Energy & Heat chapter's fuel storage and the Economic & Financial chapter's barter/trade framework for how access gets allocated fairly.

Go deeper: the Transportation Addendum builds these into real, tested competency. For the hands-on how-to, see Vehicle Emergency Kit & Roadside Basics, Land Navigation Without GPS, and Basic Bicycle Maintenance & Repair.

Tech & Equipment

- **Shared Heavy Equipment:** A community-pooled tractor, trailer, or other heavy-hauling equipment. Expensive and often underused at the household level, genuinely useful shared.
- **Community Fuel Depot:** Shared, securely stored fuel reserve. Cross-reference the Energy & Heat chapter's storage guidance, scaled to serve multiple households.

Materials & Supplies

Item	Quantity / Spec	Notes
Community transport roster	Who has what vehicle, capability, and skill	The Mutual Aid Agreement template's household skill/equipment table is a real starting point, filled out with vehicle capability specifically.
Shared spare parts cache	Common wear parts across vehicle types in the community	Pooled resource beyond what any single household stocks alone.

Northern Utah Note

udottraffic.utah.gov provides real-time road condition, closure, and traction-law information statewide. Worth bookmarking at the household level now and treating as a standing community resource for coordinating shared routes and rally points.

Quick Checklist

- ☐ Community evacuation routes and rally points coordinated with neighbors
- ☐ Multiple community members trained in vehicle repair
- ☐ Shared fuel depot established with agreed access rules
- ☐ Shared heavy equipment (tractor, trailer) pooled and accessible
- ☐ Community transport roster maintained and current
- ☐ Practiced: a community route-coordination drill completed

At a Glance: Transportation Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Phase	Duration	Primary Mode	Key Constraint
Tier 1	Phase 1	Hours – 14 days	Personal vehicle	Route/hazard awareness, traction law
Tier 2	Transition	2 weeks – 3 months	Vehicle + bicycle backup	Fuel scarcity, no professional service
Tier 3	Phase 2 (partial)	Indefinite	Self-maintained vehicle, animal power	No fuel supply chain, no mechanics
Tier 4	Phase 2 (partial)	Sustainable community	Shared/pooled community transport	Distributed skill and fuel access

CHAPTER 15

Post-Disaster Recovery & Rebuilding

Why This Category Matters

Every other chapter in this manual is built around surviving and sustaining through a disruption. This chapter is about the part that comes after: safely returning to a damaged home, navigating insurance and rebuilding without getting defrauded, and getting the household's finances and structure back to a stable footing. It's a real, distinct phase: the disaster behavioral health model cited in the Mental Health chapter ends in "Reconstruction" for a reason, and this manual didn't have a matching chapter for it until now.

Recovery isn't only relevant after a Tier 1 or Tier 2 event. A household that spent months in Tier 3 self-sufficiency may still eventually face this exact set of problems once normal infrastructure and services return. Read this chapter whenever it becomes relevant, not necessarily in the same order as the others.

This chapter's companion

This chapter covers what to know and have for recovery, by category. The Act of Surviving, a companion manual on this site organized by chronology instead of category, has a matching Recovery page covering the same ground as an actual sequence of steps, reachable from wherever a real situation resolves, not fixed at a specific tier. Worth reading alongside this chapter, not instead of it.

Tier 1: Short-to-Medium Term (Hours – 14 Days)

***Goal:** Safely determine whether it's safe to re-enter or re-occupy a damaged structure, and document damage before cleanup destroys the evidence needed for insurance.*

Tier 1 begins the moment it's physically possible to return to a damaged property. The two priorities are re-entry safety and documentation, done in that order, since neither insurance claims nor cleanup matters if re-entering the structure itself causes an injury.

Skills to Build

- **Structural Safety Self-Assessment:** Before entering any damaged structure, look for red flags from outside first: visible foundation cracks, walls that are out of plumb (leaning), a sagging roofline, or the smell of gas. If local authorities have posted an official safety placard, treat it as binding: green means inspected and safe, yellow means restricted/limited use only, red means no entry at all, full stop, regardless of how urgent it feels to get inside. See the Safely Re-Entering a Damaged Home skill guide for the full room-by-room order.
- **Damage Documentation:** Photograph and video everything before touching or cleaning anything: wide shots of each room plus close-ups of specific damage. This is the evidence base for both the insurance claim and any FEMA assistance application, and it's much harder to reconstruct convincingly after cleanup has started. Cross-reference the Economic & Financial chapter's pre-disaster home inventory video as the "before" half of this comparison. See the Filing Claims After a Disaster skill guide for the correct order of operations.
- **Insurance Notification:** Contact your insurer as soon as reasonably possible to open a claim and get a claim number. Most policies have a notification window worth knowing in advance. Never sign anything, pay anything, or agree to repair work from a contractor who shows up uninvited immediately after a disaster; legitimate contractors don't need to solicit door-to-door in an active disaster zone. See the Filing Claims After a Disaster skill guide for avoiding contractor fraud specifically.

Go deeper: the Post-Disaster Recovery & Rebuilding Addendum builds these into real, tested competency. For the hands-on how-to, see Filing Claims After a Disaster and Safely Re-Entering a Damaged Home.

Tech & Equipment

- **Documentation Tools:** A phone or camera with adequate storage, plus a backup battery. Cross-reference the Communication and Energy & Heat chapters' power bank guidance.
- **Basic Re-Entry PPE:** Sturdy closed-toe boots, work gloves, and an N95 or better respirator mask. Debris, mold, and dust are real hazards in a damaged structure even before any structural concern.
- **Flashlight/Headlamp:** For any structure without reliable power. Never use an open flame to check for gas leaks or in a structure with any suspected gas smell.

Materials & Supplies

Item	Quantity / Spec	Notes
Insurance policy & contact info	Physical + digital copy, accessible without power	Cross-reference the Digital Data & Documents chapter's 3-2-1 backup; this is exactly the scenario that guidance was built for.
Claim documentation folder	Physical binder or dedicated digital folder	Photos, claim number, adjuster contact info, and a running log of every call and decision. Memory is unreliable across a multi-month claims process.
Basic re-entry PPE	Gloves, N95/respirator, sturdy boots	Kept with the go-bag, not assumed to be available after the event.

WARNING**The ATC-20 Tag System**

After a significant event, especially an earthquake, trained inspectors (often volunteer structural engineers, coordinated through a framework called ATC-20) may post a green, yellow, or red placard on visibly damaged buildings. Green means inspected and safe to occupy without restriction; yellow (“Restricted Use”) means limited entry only, at the owner’s own risk, for specific purposes; red (“Unsafe”) means no entry is authorized at all, and access is controlled by the local jurisdiction, not the property owner. If no placard is posted yet, don’t assume that means it’s safe; it may simply mean an inspector hasn’t reached that property yet.

WARNING**Never Use Open Flame to Check for a Gas Leak**

A lighter, a match, or a candle used to check for a gas leak, or used at all in a structure with any suspected gas smell, can ignite the gas itself. A spark from a light switch or anything electrical carries the same risk; leave the structure and ventilate or evacuate instead of investigating by flame or switch.

Quick Checklist

- ☐ Structure checked from outside for red-flag damage before anyone enters
- ☐ Official safety placards (if posted) identified and obeyed without exception
- ☐ Full photo/video documentation completed before any cleanup begins
- ☐ Insurance company contacted and claim number obtained
- ☐ No agreements signed or payments made to uninvited/unsolicited contractors

- ☐ Basic re-entry PPE (gloves, respirator, boots) used for every entry into a damaged structure
- ☐ Practiced: household knows in advance where the insurance policy and contact info are stored and accessible without power

Tier 2: Extended (2 Weeks – 3 Months)

***Goal:** Navigate insurance claims, temporary housing, and initial repairs while avoiding the fraud that specifically targets households during rebuilding.*

Tier 2 is the active claims-and-rebuilding window, and it's also the window where post-disaster contractor fraud is most common and most damaging. Households are stressed, time-pressured, and often dealing with a contractor for the first time. Vetting discipline here matters as much as the technical repair work.

Skills to Build

- **Contractor Vetting:** Verify any contractor's license directly through the Utah Division of Professional Licensing (dopl.utah.gov) before signing anything. Utah contractor license numbers end in -5501, and the DOPL lookup shows license status (active/expired/suspended/revoked), classification, and bond status. Confirm the classification actually matches the work: a licensed electrician's license doesn't authorize roofing work, for example. Red flags: no verifiable license, demanding full payment upfront, pressure to sign immediately, and door-to-door solicitation right after a disaster.
- **Claims Navigation:** Track every disaster-related expense for Additional Living Expenses (ALE) reimbursement (see the Economic & Financial chapter's ALE guidance) and know your policy's specific documentation and filing deadlines rather than assuming there's unlimited time. See the Filing Claims After a Disaster skill guide for appealing a denial or applying for an SBA disaster loan.
- **FEMA Individual Assistance Awareness:** If a federal disaster is declared for your area, FEMA's Individual Assistance program may help with housing and other disaster-caused needs. Apply at DisasterAssistance.gov or by calling 1-800-621-3362. File an insurance claim first where applicable; FEMA assistance is generally meant to supplement insurance, not replace it, and eligibility requires U.S. citizenship, non-citizen national status, or qualified alien status. See the Filing Claims After a Disaster skill guide for the full correct order of operations.

Go deeper: the Post-Disaster Recovery & Rebuilding Addendum builds these into real, tested competency. For the hands-on how-to, see Filing Claims After a Disaster and Safely Re-Entering a Damaged Home.

Tech & Equipment

- **Contractor Bid Comparison Sheet:** A simple written comparison of at least two or three bids (price, scope, timeline, and license verification status for each) makes it far harder to be pressured into a bad decision under stress.

Materials & Supplies

Item	Quantity / Spec	Notes
Running expense log	Every disaster-related expense, dated	The basis for ALE reimbursement; see the Economic & Financial chapter.
Contractor verification records	DOPL lookup printouts/screenshots	Kept with the claim documentation folder as proof of due diligence.

Quick Checklist

- ☐ Every contractor’s license verified directly through dopl.utah.gov before any agreement
- ☐ At least two to three contractor bids compared before choosing
- ☐ No upfront full payment made to any contractor
- ☐ Every disaster-related expense logged for potential ALE reimbursement
- ☐ Policy-specific claim filing deadlines known and tracked
- ☐ FEMA Individual Assistance eligibility checked if a federal disaster declaration applies
- ☐ Practiced: household has actually looked up a contractor on dopl.utah.gov at least once, before it’s urgent

Tier 3: Permanent (Indefinite)

Goal: Complete a full structural rebuild, or make and execute a permanent relocation decision, and restore long-term financial stability.

Tier 3 assumes the immediate crisis has passed but the underlying damage requires a genuinely long-term response: a full rebuild taking months to years, or a decision that rebuilding isn’t the right choice at all.

Skills to Build

- **Permit Process Navigation:** Understand your local jurisdiction’s permitting requirements before rebuilding starts. Unpermitted work can create real problems at resale or with future insurance coverage, even if it seems faster in the moment.
- **Rebuild-vs-Relocate Decision-Making:** Weigh cost, timeline, emotional attachment, and practical factors (flood zone status, wildfire risk from the Shelter & Structural Safety chapter’s Regional Hazards section) honestly rather than defaulting to rebuilding simply because it’s the familiar choice.
- **Long-Term Financial Recovery:** Rebuild savings and financial stability deliberately rather than assuming things will simply return to normal. Cross-reference the Economic & Financial chapter’s broader guidance.

Go deeper: the Post-Disaster Recovery & Rebuilding Addendum builds these into real, tested competency. For the hands-on how-to, see Filing Claims After a Disaster and Safely Re-Entering a Damaged Home.

Materials & Supplies

Item	Quantity / Spec	Notes
Permit documentation	Filed with local jurisdiction	Store copies per the Digital Data & Documents chapter's archival guidance.
Contractor agreements	Written, signed, filed	Never proceed on a verbal agreement alone for major rebuild work.

Quick Checklist

- ☐ Local permit requirements understood before rebuild work begins
- ☐ Rebuild-vs-relocate decision made deliberately, weighing real risk factors
- ☐ All contractor agreements in writing and filed
- ☐ Long-term financial recovery plan in place, not just crisis-mode spending
- ☐ Practiced: reviewed the household’s flood zone and wildfire risk status (Chapter 5) as part of the rebuild-vs-relocate decision

Tier 4: Thriving (Sustainable Community)

***Goal:** Coordinate community-scale recovery so rebuilding isn’t an isolated, household-by-household struggle against the same fraud risks and information gaps every time.*

A single household relearns every lesson in this chapter from scratch: which contractors are trustworthy, how the claims process actually works, what FEMA assistance covers. Tier 4 turns that hard-won knowledge into a shared community resource.

Skills to Build

- **Shared Contractor Vetting:** Pool verified contractor information across the neighborhood, building on the Economic & Financial chapter’s community pact, so one household’s due diligence benefits everyone rather than being repeated from zero each time.
- **Community Damage Assessment:** Train community members in basic rapid visual screening (the same spirit as the professional ATC-20 process, at a lay level) so a neighborhood can triage which homes most urgently need a professional inspector, rather than everyone waiting in the same queue. See the Safely Re-Entering a Damaged Home skill guide for the red flags this trains people to recognize.
- **Mutual Aid Rebuilding Labor:** Coordinate shared labor for rebuilding work. Cross-reference the Fitness chapter’s Tier 4 community labor rotation and the Security & Self-Defense chapter’s community governance framework.

Go deeper: the Post-Disaster Recovery & Rebuilding Addendum builds these into real, tested competency. For the hands-on how-to, see Filing Claims After a Disaster and Safely Re-Entering a Damaged Home.

Tech & Equipment

- **Shared Rebuild Equipment:** Community-pooled tools (beyond individual household tool sets) for rebuilding work, same principle as the Transportation chapter’s shared heavy equipment.

Materials & Supplies

Item	Quantity / Spec	Notes
Community contractor referral list	Verified, shared, and kept current	The community-scale version of Tier 2's individual vetting process.
Shared rebuild labor roster	Who can help with what, and when	Same model as other chapters' shared duty rosters.

Quick Checklist

- ☐ Verified contractor list shared and maintained across the community

- ☐ Community members trained in basic damage-assessment triage
- ☐ Mutual aid rebuilding labor coordinated and rostered
- ☐ Shared rebuild equipment pooled and accessible
- ☐ Practiced: at least one household’s rebuild benefited directly from shared community knowledge or labor

At a Glance: Post-Disaster Recovery & Rebuilding Across All Tiers

A single-page reference for planning purposes. This does not replace the detailed guidance above; use it to see how the plan scales, not as a standalone checklist.

Tier	Duration	Primary Focus	Key Safeguard
Tier 1	Hours – 14 days	Re-entry safety, damage documentation	Obey official safety placards without exception
Tier 2	2 weeks – 3 months	Insurance claims, initial repairs	Verify every contractor through dopl.utah.gov
Tier 3	Indefinite	Full rebuild or relocation	Written agreements, deliberate risk-weighting
Tier 4	Sustainable community	Shared recovery infrastructure	Pooled contractor vetting and labor

APPENDIX

Appendix A: Master Checklist by Tier

Download or print one tier at a time:

Every checklist item from every chapter, reorganized by tier instead of by category. Use this to see everything relevant to a single tier at once, whether you are starting Tier 1 preparation from scratch or auditing how complete your Tier 3 posture actually is.

Tier 1: Full Checklist

Chapter 1: Water & Food

- ☐ Water: 14 gal/person, food-grade containers, dated
- ☐ Backup water treatment (bleach or tablets) on hand and dosing known
- ☐ 14-day non-perishable food supply, no-cook options included
- ☐ Manual can opener (+1 spare) and food thermometer in kit
- ☐ 14-day pet food supply, waterproof container
- ☐ FIFO rotation schedule set (e.g., spring/fall clock changes)
- ☐ Water stored where it won't freeze, or headspace left for expansion
- ☐ Medical/special-diet needs (infant formula, allergies, diabetic supplies) stocked separately
- ☐ Portable grab-and-go water/food subset packed, separate from bulk stock
- ☐ Practiced: lived a full day on Tier 1 stores only, including manual can opener

Chapter 2: Sanitation & Hygiene

- ☐ Hygiene practice reviewed with limited-water technique (sponge-bathing, brushing without wasting water)
- ☐ Household garbage double-bagged, twist-tied, and stored away from living space and water sources
- ☐ Hygiene supplies stocked in 14-day quantities

- ☐ Contractor bags, twist ties, and 14-day toilet paper supply on hand
- ☐ NOAA weather radio (battery or hand-crank) in kit

Chapter 3: Medical Care

- ☐ Hypothermia and heat illness treatment steps known by every adult, not just recognition of the signs
- ☐ First aid/CPR certification current for at least one adult in the household
- ☐ Written medication list (drug, dose, allergy, prescriber) with the kit
- ☐ 14-day prescription buffer arranged with doctor/pharmacist
- ☐ Trauma kit: commercial tourniquet, Israeli bandage, hemostatic gauze
- ☐ Basic medications stocked in 14-day quantities
- ☐ Practiced: hands-only CPR and wound-irrigation technique reviewed by every adult

Chapter 4: Energy & Heat

- ☐ Batteries stored and replaced in matched sets; no mixing ages or chemistries in a device
- ☐ LED flashlight/headlamp per person, with spare batteries
- ☐ Power bank(s), 20,000+ mAh, reserved for comms/medical devices
- ☐ Battery CO detector installed near sleeping areas, alarm not expired
- ☐ Propane camp stove and fuel: outdoor-only use understood by everyone in the household
- ☐ 0°F-rated sleeping bags/wool blankets, one per person
- ☐ Two independent ignition methods stored
- ☐ Safe room identified and ready to close off (blankets over doorway, away from exterior walls)
- ☐ Practiced: everyone in the household can name the CO safety rule without prompting

Chapter 5: Shelter & Structural Safety

- ☐ Water heater and furnace seismically strapped
- ☐ Heavy furniture/TVs anchored to wall studs, not just drywall

- ☐ Gas shut-off wrench staged at the meter; every adult knows the “only if you smell/hear gas” rule
- ☐ Windows measured and plywood/film pre-cut and labeled
- ☐ Practiced: Drop, Cover, and Hold On drilled, ideally during the annual Great Utah ShakeOut

Chapter 6: Security & Self-Defense

- ☐ Deadbolts and strike plates upgraded to 3-inch screws
- ☐ Blackout curtains/blankets available for the main living areas
- ☐ Door/window entry sensors installed
- ☐ Any household firearms stored unloaded, locked, with ammunition stored separately
- ☐ Practiced: lockdown routine drilled as a single, fast sequence

Chapter 7: Communication

- ☐ Text-first habit understood by every household member
- ☐ 2-3 key phone numbers memorized by each person, not just stored digitally
- ☐ Offline map areas downloaded to every phone
- ☐ NOAA weather radio with tone alert in the kit
- ☐ Registered for your county’s opt-in emergency notification system (Everbridge for Weber/Davis/Box Elder/Morgan/Cache/Rich; check directly for Salt Lake County and others)
- ☐ Each child’s school reunification procedure known in advance, including current authorized-pickup list
- ☐ Workplace emergency plans known for every working adult in the household
- ☐ Laminated contact cards made, including out-of-state contact and two meeting places
- ☐ Paper maps of Utah and home county on hand
- ☐ Waterproof notepad and pens, spare charging cables stored separately from devices
- ☐ Practiced: every household member can recite the out-of-state contact number from memory

Chapter 8: Access & Functional Needs

- ☐ Utah Special Needs Registry registration completed, if applicable
- ☐ Written, device-specific power/backup plan obtained from each device's manufacturer or DME supplier
- ☐ Electric utility notified of medical equipment dependence; priority reconnection program confirmed
- ☐ For dialysis-dependent household members: written plan obtained from their specific care team (in-center, home HD, or PD)
- ☐ For insulin or other cold-chain medications: refrigeration backup plan (cooler+ice, FRIO wallet, or unplugged freezer) known and supplies on hand
- ☐ 30-day supply of disability-related medications, rotated on the same schedule as other household meds
- ☐ Named backup caregiver identified and briefed on specific care needs
- ☐ Spare glasses, hearing aid batteries, dentures, and prosthetic components stocked
- ☐ Evacuation plan specifically covers how each household member with a mobility impairment will be moved
- ☐ Communication alternatives (ASL basics, phrase cards, TTY) in place for any Deaf/hard-of-hearing/non-verbal household member
- ☐ Practiced: backup power for each powered medical device tested for one full night before it's needed

Chapter 9: Mental Health

- ☐ 988 and 211 numbers memorized by every adult in the household, and the difference between them understood
- ☐ PFA framework (Listen, Protect, Connect, Model, Teach) known by at least one adult
- ☐ Daily routine plan (meals, sleep, chores) ready to implement immediately
- ☐ Comfort items and journaling supplies packed, especially for children
- ☐ Family conflict-resolution rules written down in advance, while calm
- ☐ Offline mindfulness/grounding app downloaded and tested before an emergency
- ☐ Age-appropriate honesty and routine-first approach for children in the household understood by every caregiver
- ☐ Practiced: every adult can describe normal acute stress signs without alarm

Chapter 10: Pet Evacuation & Shelter

- ☐ Pet carriers/crates sized, labeled, and pets comfortable being loaded into them
- ☐ Microchip and ID tag information current, verified within the last year
- ☐ 14-day pet food/water supply and 14-day medication supply stocked
- ☐ Pet first aid kit assembled, including a muzzle and styptic powder
- ☐ Vaccination records (physical + digital) accessible without needing to contact the vet during an emergency
- ☐ Pet-friendly shelters/hotels within evacuation range identified in advance
- ☐ Flea/tick products checked for correct species before use in multi-pet households
- ☐ Human medications stored physically separate from pet-accessible areas
- ☐ Practiced: full evacuation-loading drill completed with every pet in the household

Chapter 11: Digital Data & Documents

- ☐ All vital documents scanned at 300+ DPI with consistent, searchable file names
- ☐ 3-2-1 backup in place: 3 copies, 2 media types, 1 off-site
- ☐ Video home-contents walkthrough recorded and backed up
- ☐ Encryption tool (VeraCrypt, BitLocker, or FileVault) actually in use, not just installed
- ☐ Fire/water-rated safe checked against what's actually stored in it (paper vs. electronics rating)
- ☐ Fireproof document bag packed in the go-bag with paper copies of key documents
- ☐ Password manager's official emergency kit printed and stored securely, not a plaintext password list
- ☐ \$1,000+ cash reserve in small bills in the safe
- ☐ Practiced: located and opened every backup (safe, drive, cloud account) within the last 6 months to confirm access still works

Chapter 12: Economic & Financial

- ☐ \$1,000+ cash in small bills, split between home safe and portable reserve
- ☐ Insurance policy's specific ALE percentage/cap known in advance
- ☐ Insurance, bank, and credit card contact info printed and stored offline

- ☐ Home inventory video/photos current and backed up
- ☐ Household can recognize common post-disaster scam patterns
- ☐ Utah Attorney General price-gouging reporting contact known
- ☐ Employer's disaster/emergency leave policy read and understood
- ☐ Self-employed household members have a business continuity plan (client contact backup, records backed up, runway estimate)
- ☐ Practiced: household has discussed spending priorities (essentials-first) before an actual emergency forces the decision

Chapter 13: Fitness

- ☐ Every adult can demonstrate correct lifting technique (legs/hips, not back)
- ☐ Go-bag footwear broken in through actual periodic use, not brand new
- ☐ Blister/chafing prevention supplies in the go-bag
- ☐ Household understands effort pacing under caloric restriction
- ☐ Overexertion, heat exhaustion, and hypothermia signs known by every adult
- ☐ Practiced: at least one loaded-pack walk completed to test footwear and pack fit before an emergency

Chapter 14: Transportation

- ☐ Fuel tank habitually kept above half
- ☐ At least two evacuation routes identified from home, in different directions
- ☐ Every driver in the household knows the flooded-road and downed-power-line rules
- ☐ Traction devices matched to each vehicle, purchased and test-fitted before winter
- ☐ Vehicle emergency kit (jumper cables, tire kit, tow strap) in every vehicle
- ☐ Vehicle-specific 72-hour kit packed and current
- ☐ Paper maps kept in the vehicle, not just at home
- ☐ Practiced: driven at least one alternate evacuation route to confirm it's actually passable

Chapter 15: Post-Disaster Recovery & Rebuilding

- ☐ Structure checked from outside for red-flag damage before anyone enters
- ☐ Official safety placards (if posted) identified and obeyed without exception
- ☐ Full photo/video documentation completed before any cleanup begins
- ☐ Insurance company contacted and claim number obtained
- ☐ No agreements signed or payments made to uninvited/unsolicited contractors
- ☐ Basic re-entry PPE (gloves, respirator, boots) used for every entry into a damaged structure
- ☐ Practiced: household knows in advance where the insurance policy and contact info are stored and accessible without power

Tier 2: Full Checklist

Chapter 1: Water & Food

- ☐ Gravity filter (virus rating checked) + full spare element set
- ☐ Propane stove, pressure cooker, and adequate multi-tank fuel reserve
- ☐ Backup non-propane cooking method available
- ☐ Battery CO detector in use anywhere indoor cooking happens
- ☐ Water testing strips on hand
- ☐ Local untreated water sources identified in advance
- ☐ Bulk grains/beans/staples stored in Mylar + oxygen absorbers
- ☐ Bulk water treatment chemical on hand, stored away from food
- ☐ 3-month pet food supply bagged and sealed
- ☐ Practiced: cooked a full day's meals on Tier 2 gear only

Chapter 2: Sanitation & Hygiene

- ☐ Bucket toilet system built and in daily use, cover material applied every time

- ☐ Hydrated lime (treatment-grade) on hand and dosing understood, separate from cover-material lime
- ☐ Standing water eliminated around the property; trash and food storage rodent-proofed
- ☐ Water testing strips used on every new source before use
- ☐ Reusable menstrual supplies (cup or washable pads) on hand, not just a disposable stockpile
- ☐ Waste/compost site located away from all water sources
- ☐ Practiced: dried out a wet or flooded space within the 24-48 hour mold-growth window at least once

Chapter 3: Medical Care

- ☐ At least one household member trained in basic triage
- ☐ Quarantine space and protocol identified before it's needed, masks/ventilation plan included for respiratory illness
- ☐ Medical instrument set (BP cuff, stethoscope, splints) + sterilization method
- ☐ 90-day prescription conversation had with a doctor/pharmacist
- ☐ Bulk medical supplies stocked
- ☐ Practiced: quarantine protocol rehearsed (even as a drill) with the household

Chapter 4: Energy & Heat

- ☐ Solar generator or equivalent power source, sized against actual device wattage needs
- ☐ Heating source confirmed vented-outside OR unvented-with-working-ODS, CO detector co-located
- ☐ Wood stove chimney swept and damper checked before the season it's needed
- ☐ 20+ gallons fuel or 1+ cord seasoned (dry) firewood on hand
- ☐ Battery bank stored where cold won't significantly cut capacity
- ☐ Heavy-duty 12-gauge extension cords on hand
- ☐ Window insulation applied nightly in the safe room
- ☐ Practiced: ran the household's actual heating/power setup for at least one full night before needing it

Chapter 5: Shelter & Structural Safety

- ☐ Door/window reinforcement kits test-fitted in advance
- ☐ Safe room stocked with water, radio, and first aid
- ☐ Practiced: barricading routine rehearsed with available materials

Chapter 6: Security & Self-Defense

- ☐ Light/noise OPSEC discipline practiced by the household
- ☐ Neighborhood watch network established with trusted neighbors
- ☐ Concealment zones near the home identified and cleared
- ☐ GMRS license obtained if handheld radios are part of the plan
- ☐ Motion lights and battery/solar cameras (local storage) installed
- ☐ Written community pact in place with neighbors
- ☐ Use-of-force legal knowledge current via a certified course, if firearms are part of the plan

Chapter 7: Communication

- ☐ GMRS license obtained (covers the whole family)
- ☐ Handheld + mobile/base GMRS radios acquired and programmed
- ☐ Satellite messenger with active or activatable subscription
- ☐ HAM scanner for monitoring emergency traffic (no license needed to listen)
- ☐ Family code phrases agreed on and memorized
- ☐ Printed frequency list stored with the radio gear
- ☐ Bulk battery supply stocked
- ☐ Practiced: household has run at least one scheduled radio check-in/net

Chapter 8: Access & Functional Needs

- ☐ Home modifications (ramps, grab bars, doorway clearance) assessed and completed where feasible
- ☐ Solar power station sized to actual medical/adaptive device wattage

- ☐ Spare mobility-aid parts (wheels, batteries) matched to specific equipment on hand
- ☐ 3-month incontinence supply stocked, sized to actual use
- ☐ Basic equipment repair skills practiced by at least one household member
- ☐ Neighbor/community support network identified for tasks beyond household capability
- ☐ Practiced: household has run at least one Tier 2 drill using only manual tools and solar power for adaptive needs

Chapter 9: Mental Health

- ☐ Household understands the disillusionment phase is normal and expected, not a sign of failure
- ☐ Grief being acknowledged, not rushed past, for any real losses
- ☐ Substance use patterns being watched for and discussed openly, without shame
- ☐ Regular contact maintained with neighbors/community to prevent isolation
- ☐ Physical activity built into the daily routine
- ☐ Activity kits and coping/resilience books available
- ☐ Practiced: a household check-in routine (even brief) happening regularly, not just during obvious crises

Chapter 10: Pet Evacuation & Shelter

- ☐ Pet triage priorities understood (emergency-only vet situations vs. manageable-at-home)
- ☐ Homemade diet plan reviewed with a vet in advance, including species-specific nutrition needs
- ☐ Pet thermometer on hand with normal temperature range known
- ☐ 3-month bulk pet food supply stored in Mylar + oxygen absorbers
- ☐ 3-month chronic medication supply discussed with a vet
- ☐ Printed pet-friendly shelter list (5+ locations) on hand
- ☐ Grooming kit assembled and basic grooming skills practiced
- ☐ Practiced: pet waste disposal routine rehearsed for a temporary/shelter environment

Chapter 11: Digital Data & Documents

- ☐ Offline access to encrypted drives tested and confirmed working
- ☐ Paper log system set up and organized by category from the start
- ☐ Failing-drive protocol understood: stop use immediately, no DIY “fixes,” professional recovery for critical data
- ☐ Physical media stored away from heat/moisture extremes
- ☐ Off-site backup drive placed with an out-of-state relative or trusted contact
- ☐ Thermal-printed records understood as short-term only, not archival
- ☐ Silica gel packets fresh (not saturated) in document storage
- ☐ Practiced: a manual paper log actually maintained for at least one full week as a dry run

Chapter 12: Economic & Financial

- ☐ Barter inventory stocked with broadly recognized, high-demand goods
- ☐ Manual ledger system in place and understood by relevant household members
- ☐ Scale on hand for verifying bulk trade quantities
- ☐ Secure storage for trade goods separate from the primary cash safe
- ☐ Community resource-sharing/lending arrangements discussed with trusted neighbors
- ☐ Practiced: at least one household member has conducted a practice trade negotiation

Chapter 13: Fitness

- ☐ Functional bodyweight routine (squat, hinge, push, carry) established and practiced regularly
- ☐ Rucking practiced with a loaded pack at a realistic training weight
- ☐ PEACE & LOVE injury protocol understood in place of outdated RICE guidance
- ☐ Recovery (sleep, nutrition) treated as part of the fitness plan, not separate from it
- ☐ Practiced: household has completed physical labor tasks (hauling water/fuel) using correct technique under realistic conditions

Chapter 14: Transportation

- ☐ Household can perform basic fluid/belt/battery maintenance checks
- ☐ Manual fuel transfer pump on hand; mouth-siphoning understood as genuinely dangerous, not just discouraged
- ☐ At least one household member comfortable navigating by paper map alone
- ☐ Bicycle(s) with cargo capacity maintained and ready
- ☐ Bike repair kit assembled and basic repair skill practiced
- ☐ EV owners: cold-weather range and charging-stop planning adjusted for winter
- ☐ Practiced: completed a real trip using only bicycle transport to confirm the setup actually works

Chapter 15: Post-Disaster Recovery & Rebuilding

- ☐ Every contractor's license verified directly through dopl.utah.gov before any agreement
- ☐ At least two to three contractor bids compared before choosing
- ☐ No upfront full payment made to any contractor
- ☐ Every disaster-related expense logged for potential ALE reimbursement
- ☐ Policy-specific claim filing deadlines known and tracked
- ☐ FEMA Individual Assistance eligibility checked if a federal disaster declaration applies
- ☐ Practiced: household has actually looked up a contractor on dopl.utah.gov at least once, before it's urgent

Tier 3: Full Checklist

Chapter 1: Water & Food

- ☐ Local frost dates known; planting calendar built
- ☐ 5+ year heirloom seed bank stored cool/dry/dark
- ☐ Canning, dehydrating, and root-cellaring skills practiced (not just equipment owned)
- ☐ Irrigation/rain-catchment system installed within legal storage limits
- ☐ Hunting/trapping skills and legal framework understood

- ☐ Livestock (if applicable) housed, fed, and bred sustainably
- ☐ Barter goods stockpiled separately from personal-use stores
- ☐ Rain-catchment system registered with Utah Division of Water Rights if over 200 gal
- ☐ Practiced: harvested and preserved at least one crop from saved seed, using only non-electric methods

Chapter 2: Sanitation & Hygiene

- ☐ Humanure system running with a minimum 12-month aging cycle enforced before use on crops (or verified pyrolysis equipment as a faster alternative)
- ☐ Soap-making supplies and skill established for an ongoing hygiene supply
- ☐ Practiced: field-dressing hygiene reviewed if hunting is part of the household's food plan

Chapter 3: Medical Care

- ☐ Medical library (Where There Is No Doctor, Where There Is No Dentist, Survival Medicine Handbook) owned and read
- ☐ Herbal medicine garden established with cold-hardy, correctly identified species
- ☐ Sterilizable surgical and dental kits assembled
- ☐ Midwifery plan in place if relevant to the household
- ☐ Barter medical goods stockpiled separately from personal-use stock
- ☐ Practiced: at least one household member has drilled a suturing/wound-closure technique on practice material

Chapter 4: Energy & Heat

- ☐ Off-grid solar array installed and household can perform basic repairs
- ☐ Wood stove with cooktop installed, chimney maintained
- ☐ Hand tool set (non-electric/DC) assembled
- ☐ Sustainable firewood harvest rate planned against actual woodlot/supply
- ☐ Passive solar design includes summer shading, not just winter capture

- ☐ Spare electrical parts stocked
- ☐ Thermal mass installed in the primary living space
- ☐ Practiced: household has gone through at least one full off-grid week on Tier 3 systems only

Chapter 5: Shelter & Structural Safety

- ☐ Relocation option evaluated in advance, not decided under pressure
- ☐ If relocating, defensive landscaping cross-checked against wildfire defensible-space rules

Chapter 6: Security & Self-Defense

- ☐ Layered perimeter (fencing, terrain, barriers) designed and built
- ☐ Gray Man principles applied; visible fortification balanced against not attracting attention
- ☐ Community governance and rules of engagement documented
- ☐ Long-range optics and perimeter alarms in place
- ☐ HF radio operator licensed and trained, not relying on the emergency-use exception
- ☐ Defensive landscaping installed, cross-checked against wildfire defensible-space rules
- ☐ Firearms training current and storage secure, if applicable
- ☐ Practiced: perimeter/observation routine drilled with everyone who'll stand watch

Chapter 7: Communication

- ☐ At least one household member holds a Technician or General HAM license
- ☐ NVIS-capable HF antenna set up and tested
- ☐ Meshtastic (or equivalent LoRa mesh) nodes deployed and solar-powered
- ☐ Basic CW (Morse code) proficiency in at least one operator
- ☐ HF transceiver and high-gain antennas installed
- ☐ Technical manuals and spare radio parts on hand; a Faraday-caged backup handheld if EMP is a concern
- ☐ Meshtastic channel encryption keys printed and distributed to trusted contacts only

- ☐ Signal mirror and whistle in every go-bag as a no-power fallback
- ☐ Practiced: made actual contact with a station beyond line-of-sight range using Tier 3 gear

Chapter 8: Access & Functional Needs

- ☐ Assistive-tech fabrication skills built with input from an occupational therapist or specialist
- ☐ Community mutual-aid pact formalized, specifically covering mobility/care tasks
- ☐ Reference library on disability management and assistive tech assembled
- ☐ Raw materials for tool/equipment fabrication and repair stocked
- ☐ Herbal remedy use, if any, understood in the context of the specific person's other conditions and medications
- ☐ Permanent home accessibility modifications completed
- ☐ Practiced: at least one adaptive tool successfully fabricated or repaired from raw materials

Chapter 9: Mental Health

- ☐ At least one household or community member Mental Health First Aid certified
- ☐ Means-restriction practice understood (removing access to firearms/medications during acute suicide risk)
- ☐ Clear understanding of what lay crisis support can and cannot safely handle
- ☐ Purpose-building daily structure established beyond pure survival tasks
- ☐ Cultural/family traditions and milestones actively maintained
- ☐ Herbal remedy use understood in context of interactions and real limits
- ☐ Community pact explicitly covers mental health support
- ☐ Practiced: household has a rehearsed, calm response for a family member expressing suicidal thoughts

Chapter 10: Pet Evacuation & Shelter

- ☐ Herbal remedy use understood per-species, including aloe's ingestion risk
- ☐ Sustainable local pet food source established (grown feed or small livestock)

- ☐ Pet waste composting kept separate from any food-crop soil system
- ☐ Basic surgical kit assembled, scoped to safe layperson procedures only
- ☐ Community pet care pact formalized
- ☐ Barter pet supplies stockpiled separately from personal-use stock
- ☐ Practiced: at least one herbal remedy correctly identified, prepared, and administered at a known-safe dose

Chapter 11: Digital Data & Documents

- ☐ Vital paper documents moved into acid-free folders/boxes
- ☐ Microfilm or archival film backups created for the most critical records
- ☐ Community knowledge base established with trusted neighbors
- ☐ Digital media migration schedule set (not waiting for failure)
- ☐ Climate-controlled or at least climate-stable storage arranged
- ☐ Community archive redundancy established across more than one household
- ☐ Practiced: successfully migrated data from one storage medium to another as a planned exercise

Chapter 12: Economic & Financial

- ☐ Household's tradeable skills identified and practiced, not just theoretical
- ☐ Community trade rules and dispute resolution process established
- ☐ Community ledger and standardized weights/measures in use
- ☐ Skill directory compiled and distributed within the community
- ☐ Production tools (seeds, livestock, hand tools) generating actual ongoing surplus
- ☐ Practiced: at least one skill successfully traded for goods or shelter within the community

Chapter 13: Fitness

- ☐ Household actively watches for and addresses early overuse-injury signs
- ☐ Correct lifting/movement technique taught to others, not just known individually

- ☐ Daily labor tasks rotated to avoid repetitive strain from a single movement pattern
- ☐ Task assignments realistically matched to each person's current physical capacity
- ☐ DIY strength equipment (sandbags, filled containers) in regular use
- ☐ Practiced: household has gone a full season without a preventable overuse injury

Chapter 14: Transportation

- ☐ Household can diagnose and repair common vehicle failure points
- ☐ Alternative fuel option (biodiesel/wood gas) researched and, if pursued, actually practiced, not just equipment on a shelf
- ☐ Draft animal handling and tack maintenance skills built, if applicable
- ☐ Land navigation practiced without GPS or maintained roads
- ☐ Comprehensive spare parts stockpile matched to actual vehicle needs
- ☐ Practiced: completed a real repair on a household vehicle using only stocked parts and tools

Chapter 15: Post-Disaster Recovery & Rebuilding

- ☐ Local permit requirements understood before rebuild work begins
- ☐ Rebuild-vs-relocate decision made deliberately, weighing real risk factors
- ☐ All contractor agreements in writing and filed
- ☐ Long-term financial recovery plan in place, not just crisis-mode spending
- ☐ Practiced: reviewed the household's flood zone and wildfire risk status (Chapter 5) as part of the rebuild-vs-relocate decision

Tier 4: Full Checklist

Chapter 1: Water & Food

- ☐ At least one shared/community food-preservation resource identified or organized
- ☐ Skills taught to at least one household beyond your own

- ☐ Seed stock duplicated across more than one household
- ☐ Shared water infrastructure (if any) has an agreed maintenance plan
- ☐ Community reserve or mutual-aid buffer established
- ☐ Simple record-keeping in place for shared/traded resources
- ☐ Practiced: run at least one shared event (canning day, seed swap, skill-share) with neighbors

Chapter 2: Sanitation & Hygiene

- ☐ Community waste/composting site sited and rules agreed
- ☐ Crowded-shelter hygiene plan (lice/scabies) agreed on before displaced households are sheltered together
- ☐ Community protocol for handling a death agreed on before it's needed
- ☐ Community sanitation reserve and trained-steward roster established
- ☐ Practiced: a CERT training or equivalent community drill completed

Chapter 3: Medical Care

- ☐ More than one trained first-aid/medical responder per neighborhood cluster
- ☐ Outbreak/quarantine protocol agreed on before it's needed
- ☐ Shared health records system in place for opted-in households
- ☐ Shared medical cache and trained-responder roster established
- ☐ Reference library copies distributed across more than one household
- ☐ Practiced: a CERT training or equivalent community drill completed

Chapter 4: Energy & Heat

- ☐ Shared or coordinated microgrid/battery capacity established across more than one household
- ☐ Load-priority agreement in place before a shortfall happens
- ☐ Repair skills taught to more than one person in the neighborhood
- ☐ Community woodlot or fuel depot with a sustainable-yield plan

- ☐ Shared spare-parts inventory and repair workshop space established
- ☐ Practiced: run at least one community energy/heat coordination drill or meeting

Chapter 5: Shelter & Structural Safety

- ☐ Plan in place for safely sheltering displaced neighbors/family
- ☐ Guest/shelter capacity (bedding, tents, allocated space) planned in advance

Chapter 6: Security & Self-Defense

- ☐ Written community charter/bylaws established, covering governance and dispute resolution
- ☐ Guard duty rotation formalized across multiple households
- ☐ More than one person per household cross-trained to lead response or stand watch
- ☐ Shared observation post and alert system established
- ☐ Community defense cache and shared perimeter infrastructure in place
- ☐ Practiced: a full watch-rotation and community alert drill completed

Chapter 7: Communication

- ☐ Multiple trained net control operators in the community
- ☐ More than one household has a licensed HAM operator
- ☐ Community repeater or shared mesh backbone established
- ☐ Shared frequency/protocol directory distributed to all participating households
- ☐ Spare radio equipment cache maintained at the community level
- ☐ Connected to (or actively building) a county ARES/RACES group
- ☐ Practiced: run a full community net with message relay/traffic handling exercised

Chapter 8: Access & Functional Needs

- ☐ More than one trained caregiver per household with significant AFN needs, community-wide

- ☐ Structured wellness-check system established and staffed
- ☐ Community shelter/evacuation plans built with direct AFN community input
- ☐ Shared adaptive equipment cache and community fabrication workshop established
- ☐ Communication systems include accessible formats (visual, text-based, relay support)
- ☐ Practiced: a full community wellness-check and inclusive-shelter drill completed

Chapter 9: Mental Health

- ☐ Multiple community members trained in Mental Health First Aid or peer support
- ☐ Wellness-check system explicitly covers psychological isolation, not just physical needs
- ☐ Community gathering space established for group processing and ceremony
- ☐ Peer support roster maintained and current
- ☐ Caregiver/responder burnout actively watched for and addressed
- ☐ Practiced: at least one facilitated group check-in or processing session held

Chapter 10: Pet Evacuation & Shelter

- ☐ Multiple community members trained in pet first aid
- ☐ Emergency fostering network established and rostered, before it's needed
- ☐ Community pet medical/supply cache established
- ☐ Reunification system extended to community scale
- ☐ Shared feed/livestock infrastructure coordinated if applicable
- ☐ Practiced: at least one fostering-network or reunification drill completed

Chapter 11: Digital Data & Documents

- ☐ Community record-keeping system established for property, agreements, and disputes
- ☐ Multiple people trained in archival/digitization skills community-wide
- ☐ Records physically distributed across more than one location/household

- ☐ Community records registry maintained so records can actually be found
- ☐ Succession plan in place for who maintains records if the current keeper is lost
- ☐ Practiced: a community records audit completed to confirm everything is where the registry says it is

Chapter 12: Economic & Financial

- ☐ Local currency/credit system (if used) formally designed with anti-counterfeiting basics
- ☐ Economic dispute resolution process trusted and actually used by the community
- ☐ Regular market/trade event scheduled and running
- ☐ Skill apprenticeship/teaching formalized as part of the local economy
- ☐ Community ledger distributed across multiple households
- ☐ Practiced: at least one full market day held with multiple households participating

Chapter 13: Fitness

- ☐ Heavy-labor duties formally rotated across the community, not concentrated in a few people
- ☐ Regular group training sessions held
- ☐ Tasks matched to the full range of physical abilities in the community, not an all-or-nothing standard
- ☐ Succession plan in place for physically demanding community roles
- ☐ Shared heavy tools and training space established
- ☐ Practiced: a full community labor rotation has run at least one complete cycle

Chapter 14: Transportation

- ☐ Community evacuation routes and rally points coordinated with neighbors
- ☐ Multiple community members trained in vehicle repair
- ☐ Shared fuel depot established with agreed access rules
- ☐ Shared heavy equipment (tractor, trailer) pooled and accessible
- ☐ Community transport roster maintained and current

- ☐ Practiced: a community route-coordination drill completed

Chapter 15: Post-Disaster Recovery & Rebuilding

- ☐ Verified contractor list shared and maintained across the community
- ☐ Community members trained in basic damage-assessment triage
- ☐ Mutual aid rebuilding labor coordinated and rostered
- ☐ Shared rebuild equipment pooled and accessible
- ☐ Practiced: at least one household's rebuild benefited directly from shared community knowledge or labor

Shelter & Structural Safety: Regional Hazard Considerations (Cross-Tier)

These items do not map to a single tier. Wildfire, extreme heat/cold, and flooding preparedness apply across the whole spectrum of this manual and should be reviewed regardless of which tier a household is currently focused on. See Chapter 5 for full detail.

- ☐ Defensible space zones (0-5-30-100 ft) established and maintained around the home
- ☐ Ember-resistant vents, Class A roofing, and clear gutters (wildfire hardening)
- ☐ N95/P100 respirators on hand; Corsi-Rosenthal box materials or HEPA purifier available
- ☐ Passive cooling measures (reflective coverings, night ventilation) in place for summer
- ☐ Heat illness signs known by every adult in the household
- ☐ Exposed pipes insulated; main water shut-off location known
- ☐ Roof snow load and ice dam risk assessed
- ☐ Property's FEMA flood zone checked; sandbagging technique known
- ☐ Practiced: household knows evacuation triggers for wildfire and flash flood specifically, distinct from the general lockdown/evacuation routine

APPENDIX

Appendix B: Emergency Contacts Quick Reference

Every phone number, hotline, and reporting contact referenced across this manual, gathered in one place. Print this page and keep a copy with the Tier 1 go-bag and in the fireproof document safe (Chapter 11); a phone-stored copy is useless once the phone is dead.

Life-Safety Emergencies

Contact	Number	When to Use
911	911	Immediate danger to life, active fire, crime in progress.
988 Suicide & Crisis Lifeline	Call or text 988	Any mental health crisis or suicidal thoughts, yours or someone else's. Utah-area-code callers route to the Huntsman Mental Health Institute's Utah Crisis Line.
Poison Control (human)	1-800-222-1222	Suspected poisoning or medication overdose, human.
ASPCA Animal Poison Control	1-888-426-4435	Suspected pet poisoning (may involve a consultation fee).
Pet Poison Helpline	1-855-764-7661	Alternative 24/7 pet poisoning hotline.

Non-Emergency Support

Contact	Number	When to Use
211 Utah	Dial 211	Non-emergency community resource referrals: food, housing, financial assistance. Not for crisis intervention (use 988).
SAMHSA National Helpline	1-800-662-4357	Free, confidential, 24/7 referral for substance use and mental health support.
NOAA Weather Radio / NWS	Local frequency (see Ch. 4/5)	Weather alerts, boil-water notices, flash flood warnings. Part of IPAWS, along with Wireless Emergency Alerts (cell) and the Emergency Alert System / EAS (TV and radio broadcast interruption); all automatic, no sign-up required.

Utah State & Local Resources

Contact	Number	When to Use
Be Ready Utah	beready.utah.gov	State emergency preparedness guidance, referenced throughout this manual.
County Emergency Notifications (Everbridge)	Sign up via daviscountyutah.gov or webercountyutah.gov emergency management pages	Local opt-in alerts (evacuation orders, road closures) for Weber, Davis, Box Elder, Morgan, Cache, and Rich counties. Not automatic; requires registration. Salt Lake County uses a different system; check vecc911.org or your city directly.
Utah Special Needs Registry	Via Be Ready Utah / county emergency management	Voluntary registration sharing AFN household needs with responders in advance (Ch. 8).
Utah Division of Consumer Protection	commerce.utah.gov	Report price gouging during a declared state of emergency (Ch. 12).
Utah Division of Water Rights	waterrights.utah.gov	Rainwater catchment registration above 200 gallons (Ch. 1).
Utah ARES (by county)	slcoares.org (Salt Lake), dcarc.net (Davis), webercountyutah.gov (Weber)	Volunteer amateur radio emergency communications (Ch. 7).
USU Extension	extension.usu.edu	Planting calendars, soil testing, food preservation classes (Ch. 1).
UDOT Traffic / Traction Law	udottraffic.utah.gov	Real-time road conditions, closures, and active traction law requirements by route (Ch. 14).
Utah DOPL (Contractor License Verification)	dopl.utah.gov	Verify any contractor's license, classification, and status before hiring. Utah contractor licenses end in -5501 (Ch. 15).
FEMA Individual Assistance	DisasterAssistance.gov or 1-800-621-3362	Federal disaster assistance for housing and other needs, if a federal disaster declaration applies to your area (Ch. 15).

Household-Specific (Fill In Before Printing)

Contact	Number	When to Use
Out-of-state contact	_____	Single point of contact for the whole family to check in with (Ch. 7).
Family doctor / pediatrician	_____	
Veterinarian	_____	
Dialysis center / specialist care	_____	See Ch. 8 for device- and condition-specific planning.
Homeowner's/renter's insurance agent	_____	
Electric utility (medical equipment priority line)	_____	Register medical equipment dependence in advance (Ch. 8).
Local meeting point #1 (near home)	_____	
Local meeting point #2 (outside neighborhood)	_____	

APPENDIX

Appendix C: References & Further Reading

Organizations, official guidance, and resources referenced throughout this manual, organized by chapter. Web addresses and program details change over time: verify current information directly rather than assuming a resource listed here is unchanged from when this manual was written.

Chapter 1: Water & Food

- **Be Ready Utah:** beready.utah.gov: state household preparedness guidance, including the 2-week recommendation this manual's Tier 1 aligns with.
- **Utah Division of Water Rights:** waterrights.utah.gov: current rainwater catchment registration rules and limits.
- **USU (Utah State University) Extension:** extension.usu.edu: region-specific planting calendars, soil testing, and food preservation classes.

Chapter 2: Sanitation & Hygiene

- **CDC: Emergency Water Treatment:** cdc.gov: official guidance on bleach/chlorine dioxide dosing for water disinfection.
- **The Humanure Handbook:** By Joseph Jenkins (humanurehandbook.com): the source text behind this chapter's Tier 3 composting method.

Chapter 3: Medical Care

- **Where There Is No Doctor / Where There Is No Dentist:** Hesperian Health Guides (hesperian.org): the standard lay-accessible reference texts cited in this chapter's medical library guidance.
- **The Survival Medicine Handbook:** By Joseph and Amy Alton: a widely used prepper-oriented medical reference.

Chapter 4: Energy & Heat

- **U.S. Consumer Product Safety Commission (CPSC):** [cpsc.gov](https://www.cpsc.gov): generator and carbon monoxide safety guidance.
- **Be Ready Utah:** beready.utah.gov: winter storm and power outage preparedness.

Chapter 5: Shelter & Structural Safety

- **Great Utah ShakeOut:** shakeout.org/utah: the annual statewide earthquake drill referenced in this chapter's Tier 1 practice guidance.
- **Utah Geological Survey:** geology.utah.gov: Wasatch Fault and regional seismic hazard information.
- **ShakeAlert:** shakealert.org: the U.S. earthquake early-warning system; useful for tracking whether Utah has joined California, Oregon, and Washington in coverage, which it had not as of this manual's writing.
- **National Weather Service: Turn Around Don't Drown:** [weather.gov/safety/flood-turn-around-dont-drown](https://www.weather.gov/safety/flood-turn-around-dont-drown): official flash flood safety guidance.
- **FEMA Flood Map Service Center:** msc.fema.gov: look up a property's official flood zone.
- **ATC-20 (Applied Technology Council):** atcouncil.org/atc-20: the green/yellow/red post-disaster building safety tagging system referenced in this chapter.

Chapter 6: Security & Self-Defense

- **Project ChildSafe:** projectchildsafe.org: firearm safe storage guidance and, in many areas, free storage devices.
- **Utah Bureau of Criminal Identification (BCI):** bci.utah.gov: Utah Concealed Firearm Permit course requirements and applications.
- **NRA Instructor Locator:** nrainstructors.org: searchable directory of certified firearms instructors, including Utah.

Chapter 7: Communication

- **FEMA: Integrated Public Alert & Warning System (IPAWS):** [fema.gov](https://www.fema.gov): the federal umbrella system behind Wireless Emergency Alerts, the Emergency Alert System (EAS), and NOAA Weather Radio alerts.
- **Davis County / Weber County Emergency Management (Everbridge):** daviscountyutah.gov/emergency-management and webercountyutah.gov/emergency-management: local opt-in emergency notification sign-up for northern Utah counties.

- **FCC Universal Licensing System (ULS):** wireless.fcc.gov: GMRS and amateur radio license applications.
- **ARRL (American Radio Relay League):** arrl.org: the U.S. national amateur radio organization; licensing exam info and the National Traffic System.
- **Meshtastic:** meshtastic.org: the open-source LoRa mesh networking project referenced in this chapter's Tier 3 equipment.
- **Utah County ARES Groups:** slcoares.org (Salt Lake), dcarc.net (Davis), webercountyutah.gov/emergency-management (Weber): local volunteer emergency radio organizations.

Chapter 8: Access & Functional Needs

- **Be Ready Utah: Access & Functional Needs:** beready.utah.gov/family-preparedness/access-and-functional-needs: state AFN-specific preparedness guidance and the CMIST planning framework.
- **National Kidney Foundation:** kidney.org: emergency planning guidance for dialysis and kidney disease.
- **Home Dialysis Central:** homedialysis.org: detailed disaster planning for home hemodialysis and peritoneal dialysis patients.
- **Utah Special Needs Registry:** specialneedsutah.org: voluntary state registry connecting AFN households with emergency responders.
- **Utah Division of Services for People with Disabilities (DSPD):** dspd.utah.gov
- **FDA Insulin Storage Guidance:** fda.gov: the source for this chapter's cold-chain medication storage temperature and duration figures.
- **Utah Parent Center:** utahparentcenter.org: Utah-specific family disability resources and emergency preparedness materials.

Chapter 9: Mental Health

- **988 Suicide & Crisis Lifeline (Utah):** 988.utah.gov: call or text 988; Utah-specific crisis line information.
- **SAMHSA (Substance Abuse and Mental Health Services Administration):** samhsa.gov: the six-phase disaster behavioral health model referenced in this chapter's Tier 2, and the National Helpline.
- **Listen, Protect, Connect: Family to Family, Neighbor to Neighbor:** FEMA/Dr. Merritt Schreiber: the original Psychological First Aid handbook this chapter's Tier 1 framework is drawn from.

- **Huntsman Mental Health Institute (University of Utah):** healthcare.utah.edu/hmhi: operates the Utah Crisis Line and other regional mental health resources.
- **Mental Health First Aid:** mentalhealthfirstaid.org: the certification course referenced in this chapter's Tier 3 crisis-support guidance.
- **Save the Children: Disaster Guidance for Families:** savethechildren.org: child-specific coping and communication guidance referenced in this chapter's Tier 1 note.
- **American Academy of Pediatrics (AAP):** healthychildren.org: pediatric guidance on children's disaster reactions and media exposure.

Chapter 10: Pet Evacuation & Shelter

- **AVMA: PETS Act FAQ:** avma.org/pets-act-faq: background on the federal Pets Evacuation and Transportation Standards Act of 2006.
- **ASPCA Animal Poison Control Center:** aspca.org/pet-care/animal-poison-control: 24/7 poisoning hotline (fee may apply).
- **Be Ready Utah: Pet Preparedness:** beready.utah.gov: Utah-specific pet evacuation kit checklist and pet-friendly shelter information.

Chapter 11: Digital Data & Documents

- **UL (Underwriters Laboratories):** ul.com: UL 72 fire-resistance rating standard for safes and record protection equipment.
- **1Password Emergency Kit guidance:** 1password.com/blog/where-to-store-your-emergency-kit
- **Bitwarden Security Readiness Kit:** bitwarden.com/resources/bitwarden-security-readiness-kit
- **FamilySearch:** familysearch.org: free genealogy resources; operator of the Granite Mountain Records Vault referenced in this chapter's Northern Utah note.

Chapter 12: Economic & Financial

- **Utah Division of Consumer Protection:** commerce.utah.gov: report price gouging during a declared state of emergency.
- **Utah Code Title 13, Chapter 41: Price Controls During Emergencies Act:** le.utah.gov: the actual statute referenced in this chapter's Tier 1 legal note.

- **Insurance Information Institute:** iii.org: general consumer guidance on homeowners/renters insurance, including Additional Living Expenses coverage.

Chapter 13: Fitness

- **PEACE & LOVE Injury Management:** Dubois, B. & Esculier, J-F., British Journal of Sports Medicine (2020): the peer-reviewed origin of the updated soft-tissue injury protocol referenced in this chapter's Tier 2, replacing the older RICE approach.
- **CDC: Physical Activity Basics:** cdc.gov: general, medically reviewed guidance on safe exercise progression.

Chapter 14: Transportation

- **UDOT Traffic / Traction Law:** udottraffic.utah.gov: real-time Utah road conditions, closures, and current traction law (Rule R920-6) requirements by route, including the Cottonwood Canyons' stricter Class 3 designation.
- **AAA: Cold Weather EV Range Testing:** AAA (American Automobile Association): the source of this chapter's electric vehicle cold-weather range loss figures.
- **Utah Division of Motor Vehicles:** dmv.utah.gov: vehicle registration, titling, and related requirements.

Chapter 15: Post-Disaster Recovery & Rebuilding

- **Utah DOPL (Division of Professional Licensing):** dopl.utah.gov: verify any contractor's license, classification, and status before hiring.
- **FEMA Individual Assistance:** DisasterAssistance.gov, or 1-800-621-3362: federal disaster assistance for housing and other needs when a federal disaster declaration applies.

General Cross-Chapter Resources

Ready.gov (FEMA) and the American Red Cross (redcross.org) publish broad, regularly updated household preparedness guidance that overlaps with nearly every chapter in this manual and is worth reviewing directly as a general supplement.