

Legacy Soil & Stone

— *a working name* —

Pricing & Equipment Reference

What we'd charge and what it costs — if we opened today

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This document is a quick-reference companion to the Financial Model workbook. It collects the current pricing, unit economics, and equipment costs in one place. All values are working estimates based on research to date. Items flagged with \triangle need further supplier quotes or bench testing to confirm.

Line 1 — Marbled Memorial Stones

Product line. Cremains are pearled into aggregate via the Marble Method, then cast into cement memorial pieces.

Retail Pricing

| Product | Price | Est. COGS | Notes |
|-----------------|--------------|-----------|--|
| Garden stone | \$180 | \$65 | Core product. Mid-size cement piece for garden placement. |
| Worry-stone set | \$125 | \$46 | Small handheld set (3-5 stones). COGS ≈70% of avg. |
| Candle holder | \$85 | \$42 | Mantel piece with inset for tealight or pillar. COGS ≈65%. |
| Memorial bundle | \$260 | \$81 | Combined stone + memorial soil sample. COGS ≈125%. |

COGS multipliers are relative to the \$65 avg base. The base includes: cement, sodium silicate binder, laboratory pan granulator consumables, mold/form wear, finishing, cedar presentation piece, packaging, and outbound shipping.

COGS Breakdown (per piece, estimated)

| Input | Est. Cost | Status |
|--|---------------|---|
| Portland cement (Type II, ~6 oz/piece) | \$1.50-\$2.50 | Researched. Commodity pricing. |
| Sodium silicate binder (water glass) | \$0.50-\$1.00 | △ Needs supplier quote at volume. |
| Pan granulator consumables (disc wear, energy) | \$2-\$4 | △ Estimate until bench runs. |
| Mold/form amortization | \$3-\$5 | △ Depends on form count and material. |
| Finishing (polish, seal, surface treatment) | \$3-\$5 | △ Estimate. |
| Cedar presentation piece | \$8-\$12 | △ Needs woodworker or supplier quote. |
| Packaging + outbound shipping | \$15-\$20 | Researched. USPS Priority / FedEx Ground. |

| | | |
|---|--------------|---|
| Inbound cremains shipping (USPS BOX-CRE) | \$8-\$12 | Researched. Priority Mail Express flat rate. |
| Total estimated COGS (blended avg) | ~\$65 | Working estimate. ⚠️ Confirm after bench run. |

Cremains Volume

A key constraint: how much cremains a family sends determines what can be made.

| Animal size | Cremains yield | What it makes |
|---------------------------|----------------|--|
| Cat / small dog (5-15 lb) | 150-400 g | Worry-stone set or candle holder, with leftover. |
| Medium dog (15-40 lb) | 400-900 g | Garden stone using full mass. Bundle possible. |
| Large dog (40-80 lb) | 900-1,800 g | Full garden stone + worry set. Multiple pieces. |

Cremains are mostly calcium phosphate (hydroxyapatite). Research indicates 15-20% cremains by volume in the cement mix is the sweet spot, with 17% as the working target. At that ratio, a 400 g cremains load produces a substantial garden stone.

Line 2 — Memorial Soil (Private NOR)

Service line. Companion animal composted in a commercial small-animal composter; finished memorial soil returned in a cedar planter.

Retail Pricing by Weight Tier

| Tier | Weight | Price | COGS | Gross margin |
|--------|----------|--------------|-------|--------------|
| Tiny | <10 lb | \$375 | \$85 | \$290 (77%) |
| Small | 10–20 lb | \$475 | \$110 | \$365 (77%) |
| Medium | 20–30 lb | \$525 | \$135 | \$390 (74%) |
| Large | 30–40 lb | \$625 | \$160 | \$465 (74%) |

COGS includes: carbon bulking materials, intake kit, commercial composter cycle share, cedar planter, starter plant, return shipping. All flagged \triangle for confirmation after first instrumented run.

COGS Breakdown (per intake, Tiny tier baseline)

| Input | Est. Cost | Status |
|---|--------------|---|
| Carbon bulking (wood chips, straw, sawdust) | \$8–\$12 | Researched. Local sourcing. |
| Composter cycle share (energy, maintenance) | \$10–\$15 | \triangle Estimate until first run. |
| Intake kit (insulated container, cold chain, liner) | \$12–\$18 | \triangle Needs final kit spec. |
| Cedar planter (Tiny tier, ~18×8×8 in) | \$12–\$18 | \triangle Needs woodworker quote. |
| Starter plant / seed pack | \$4–\$6 | Researched. Local nursery. |
| Return shipping (planter + soil) | \$18–\$25 | Researched. FedEx Ground / USPS Priority. |
| Documentation, photography, packaging | \$5–\$8 | Estimate. |
| Total estimated COGS (Tiny tier) | ~\$85 | Working estimate. Scales up with weight tier. |

Higher tiers add cost linearly: more bulking material, larger planter, heavier shipping. Roughly +\$25 per tier step.

Line 3 — Shelter Program (Community Soil)

Community service and revenue line. Shelter animals composted at volume in mass bays; finished soil sold to the community.

Pricing

| Revenue component | Price | COGS | Notes |
|---------------------------------|-------|------|---|
| Shelter intake fee (per animal) | \$15 | \$6 | Less than landfill hauler cost for the shelter. |
| Community soil bag (retail) | \$12 | \$3 | Bagged, screened, cured. Story card included. |

Line 3 blended gross margin: ~70%. Volume-dependent — improves as bay utilization rises.

Line 4 — Academic Research Partnerships

Built on Line 3's mass operation. Research partners pay for access to instrumented, controlled composting data.

Pricing

| Component | Revenue | COGS | Notes |
|-----------------------------------|-----------------|---------|---|
| Research partnership (annual avg) | \$12,000 | \$3,000 | Sensor time, sample prep, staff hours, reporting. |

Gross margin ~75%. Strategic value (institutional validation, published data) exceeds the dollar return.

Equipment & Startup Costs

Current working estimates for the Solid-path facility. All prices are research-based where noted; items flagged \triangle need final quotes.

Solid Path Equipment

| Item | Est. Cost | Status / Notes |
|---|---------------------|--|
| Commercial small-animal composter | \$4,200 | Researched. Replaces HDPE drum approach — same price, better insulation, cleaner compliance path. Specific model selection open. |
| Mass composting bay (starter, Line 3) | \$3,800 | Researched. Walls, airflow infrastructure, cover, turning approach. Single bay for pilot. |
| Laboratory pan granulator (pearling) | \$1,000–\$1,350 | Researched. Tilted rotating disc, bench-scale. Sized for single-intake batches of cremains. |
| Cement mixing station | \$700 | Researched. Mixer, mold set, curing rack, basic tooling. |
| CoolBot walk-in cold storage | \$3,500–\$5,000 | Researched. Insulated room + CoolBot controller + window AC. O.C.G.A. § 4-5-5 compliance. |
| Facility fit-out (curing shelves, intake area) | \$3,000–\$4,000 | \triangle Depends on building condition. |
| Temperature probes + data logger | \$300–\$500 | Researched. Multi-probe logger for composter + bay. |
| Intake kits (initial stock, ~20 kits) | \$600–\$800 | \triangle Kit spec not finalized. |
| First-year insurance (liability + composting rider) | \$2,000–\$2,500 | \triangle Needs quote from agent. |
| GA EPD Class 2 Permit-by-Rule | ~\$2,000 | Researched. One-time registration. |
| Business licensing + LLC formation | \$300–\$500 | Researched. GA SOS filing + local business license. |
| TOTAL SOLID PATH STARTUP | ~\$22K–\$25K | |

Dream Path Equipment (incremental over Solid)

| Item | Est. Cost | Notes |
|--|-----------------------|--|
| Facility (modular build on owned land) | \$40K-\$50K | Purpose-built. ⚠ Major variable. |
| Site work + memorial forest | \$15K-\$20K | Grading, paths, plantings, aesthetics. |
| Composter array (qty 3) | \$13,000 | Expanded capacity for Line 2 at volume. |
| Full mass-composting bay | \$11,000 | Upgraded from starter. Multi-cycle capacity. |
| Marble Method studio | \$3,500 | Dedicated space: laboratory pan granulator, mixing, curing, finishing. |
| Research-partner workroom | \$3,000 | Bench space, sensor rack, sample storage for Line 4. |
| Used pickup van | \$12K-\$15K | Shelter pickup + local delivery. |
| TOTAL DREAM PATH STARTUP | ~\$110K-\$120K | Not assumed at launch. Target for Year 2+ if validated. |

Key Materials & Consumables

Marble Method (Line 1)

| Material | Est. Cost | Notes |
|--|-----------------------|---|
| Sodium silicate (water glass) — binder | \$15–\$25 / gal | Non-toxic, food-safe once cured. Century of industrial use. \triangle Volume pricing TBD. |
| Portland cement (Type II) | \$12–\$15 / 94-lb bag | Commodity. Air-entrained for freeze-thaw durability. |
| White Portland cement (worry stones) | \$18–\$22 / bag | Premium finish applications. |
| Concrete sand | \$3–\$5 / 50-lb bag | Standard aggregate fill around pearled cremains. |
| Concrete sealer / surface treatment | \$15–\$30 / qt | Weather protection for outdoor pieces. |
| Silicone molds (set of forms) | \$50–\$150 / set | Reusable. \triangle Number of shapes drives cost. |

NOR Composting (Lines 2 & 3)

| Material | Est. Cost | Notes |
|--------------------------------------|-------------------|---|
| Wood chips (carbon bulking, primary) | \$30–\$50 / cu yd | Local tree service sourcing. Often free. |
| Straw bales (carbon supplement) | \$5–\$8 / bale | Feed stores. Seasonal pricing. |
| Sawdust (fine carbon) | \$10–\$20 / cu yd | Mill waste. Local sourcing. |
| Cold-chain gel packs (intake kits) | \$2–\$4 each | Reusable or disposable depending on kit design. |
| Insulated shipping containers | \$8–\$15 each | \triangle Kit spec TBD. Foam or molded EPS. |
| Cedar planter stock | \$12–\$25 each | \triangle Depends on tier size. Woodworker or bulk. |

Shipping & Logistics

| Route | Est. Cost | Method |
|--|-----------------|--|
| Cremains inbound (Line 1) | \$8-\$12 | USPS Priority Mail Express, BOX-CRE label. Flat-rate box. |
| Frozen pet inbound (Line 2, shipped) | \$25-\$45 | FedEx overnight or USPS Express. Cold-chain kit. Weight-dependent. |
| Memorial stone outbound (Line 1) | \$12-\$18 | USPS Priority or FedEx Ground. Weight-dependent. |
| Memorial soil outbound (Line 2) | \$18-\$25 | FedEx Ground. Cedar planter is heavy. Regional zone matters. |
| Shelter pickup (Line 3) | \$5-\$15 / trip | Fuel + wear. Within defined radius. Absorbed into intake fee. |
| Finished soil outbound (Line 3, APHIS) | \$5-\$8 / bag | Local pickup preferred. APHIS PPQ 525/526 if shipped interstate. |

Open Research Items

Items that need supplier quotes, bench testing, or field research before the numbers are final.

| Item | What's needed | Priority |
|---|--|----------|
| Laboratory pan granulator capacity vs. cremain volume | Bench run: how much cremain per batch, cycle time | High |
| Sodium silicate binder ratio | Bench run: exact volume per gram of cremain | High |
| Cement mix design around pearled aggregate | Test pours: ratio, cure time, strength | High |
| Commercial composter model selection | Vendor quotes: brand, model, thermal specs, delivery | High |
| Cedar planter sourcing + per-tier pricing | Woodworker quotes or bulk supplier | Medium |
| Intake kit final spec + per-kit cost | Container, cold chain, liner, labels, form | Medium |
| Insurance (liability + composting rider) | Agent quote: annual premium | Medium |
| Facility rent (Solid path) | Local real estate survey: greenhouse / barn / outbuilding | Medium |
| Shelter intake fee competitiveness | Survey: what shelters currently pay for landfill hauling | Medium |
| Community soil bag pricing | Market comp: local garden centers, bagged soil pricing | Low |
| Research partnership fee structure | Conversations with UGA Extension, Auburn, App State, Berry College | Low |

— end of pricing reference —