CITY OF TRAVERSE CITY

INTERMODAL EARTH FLOW PROPOSAL

Prepared For

Frank Dituri, Director of Department of Public Services
City of Traverse City
06/21/2023
This quote valid for 30 days
Lead Time: 4 months from receipt of deposit to shipping

Prepared By

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GREEN MOUNTAIN TECHNOLOGIES
COMMERCIAL COMPOSTING SOLUTIONS

COVER LETTER

Green Mountain Technologies (GMT) is pleased to offer this proposal detailing the 20' Intermodal Earth Flow. Our offering has been informed through email communications and phone meetings between Frank Dituri (City of Traverse City) and Van Calvez (GMT). This proposal pertains specifically to CPT0012880- Piloting Municipal Food Waste Collection and Composting in Traverse City.

The Earth Flow is the result of over 30-years of dedicated product development in the in-vessel composting space. The result:

- The bestselling industrial in-vessel compost system of its size in North America
- A fully-automated composting process saving time and money
- A completely self-contained vessel controlling odor and leachate
- A dedicated team of composting experts to support the system
- Exceptional fabrication here in America to the highest standards

Our goal at GMT is to divert organics from sanitary landfills. As operators ourselves, we know the best way to do this is to ensure that every dollar of yours is well spent, so that you are still profitably diverting waste 20 years or more down the line. We achieve this by bringing over 200 years of combined composting experience and more than 500 well-designed compost facilities (including the largest food waste composting facility in the United States, likely the world) to the table. Our project team includes two senior consultants (Van Calvez and Michael Bryan-Brown) as well as critical team members from the design, controls, and CAD departments.

Please let us know if you have any questions or concerns and thank you for reaching out to Green Mountain Technologies!

| Orion Black-Brown, Director of Operations, Green Mountain Technologies

COST ESTIMATE

Quantity	Description	Cost
	EF-20-IM Mechanics & Controls	*$ 109,950*
1	Compost Control System	
1	5HP Outdoor Rated VFD	
2	0.5 HP Outdoor Rated VFD's	
1	Earth Flow Mixing System	
1	Custom Painted, Insulated and Retrofitted 40' Intermodal Hi-Cube Shipping Container	
1	Auger Gear Motor – 5hp, 3 phase (208/230/460V – 60Hz)	
2	Carriage & Rail Gear Motors – Fractional 0.5hp, 3 phase (208/230/460V – 60Hz)	
1	Aeration System – 0.5hp, 3 phase (208/230/460V – 60Hz) and 6'' In-line Exhaust/Biofilter Blower	
1	Dial Temperature Probe	
	Freight, Consulting, Commissioning, & Training	*$ 15,000*
5	Consultation Calls with Composting Expert/Engineer to Ensure a Successful Installation at the Site	
1	Operations and Maintenance Manual	
2	Days of On-Site Commissioning and Training	
1	Estimated Freight and Crane Delivery	
1	Year Parts Only Equipment Warranty & Unlimited Remote Support	

Suggested Add-Ons

1	Small Spare Parts Package	*$ 1,895*
1	Single-Phase 220V Power Connection Upcharge	*$ 895*
1	Moisture Addition System	*$ 895*
1	Hydraulic Tote Tipper	*$ 14,950*
1	Set of Replacement, Bolt-On, Abrasion-Resistant Auger Flighting (3 sections/set)	*$ 2,385*
3	Manual Temperature Measurement Port ($290 per port)	*$ 290*
1	Piping for Pile-Based Biofilter	*$ 990*
	Subtotal for Suggested Add-Ons:	*$ 22,300**
	Total for this Proposal:	***$147,250****

**Shipping subject to change. Price does not include taxes or transactional fees.*

Optional Add-Ons

1	WebMACS Web-Based Controller – Remote Monitoring and Temperature Tracking	*$ 9,990*
1	Automated Temperature Measurement System (Requires WebMACS)	*$ 7,790*
1	Bear-Proof Load Doors	*$ 4,990*

FINANCING

GMT offers financing and loan options to qualified clients throughout North America. The following sample estimates are based upon 7.99% interest rates and assume a base price of $129,980.

Financing Strategy		*Monthly Estimate (3-Year)*	*Monthly Estimate (5-Year)*	*Monthly Estimate (7-Year)*
Equipment Finance		$4,073	$2,635	$2,025
Tax Lease		$3,271	$2,369	NA
EFA with Balloon		$3,271	$2,369	NA
	Balloon	*25% = $32,495*	*15% = 19,497*	*NA*

The tax lease option has a purchase option at the end of the agreement with the potential for 100% of the payments to be expensed. The Equipment Finance Agreement (EFA) with balloon has the same payment option as the tax lease. However, the asset is depreciated and qualifies for section 179 deductions. Lastly equipment finance has no balloon payment and instead of being expensed the asset is depreciated and qualifies for section 179 deduction. All financing is independent of usage and does not include any applicable taxes or fees.

In addition to the financial benefits the Earth Flow offers significant environmental and educational benefits. According to the EPA's WARM model, diverting 250 tons per year (TPY) of mixed food waste from the landfill off-sets roughly 100 TPY of carbon dioxide, which is roughly equivalent to driving across America 100 times in a gas-powered vehicle. It should be noted that this number is a gross underestimate as it assumes material is trucked off-site and excludes the tremendous carbon sequestration potential from proper application of compost.

GENERAL SPECIFICATIONS

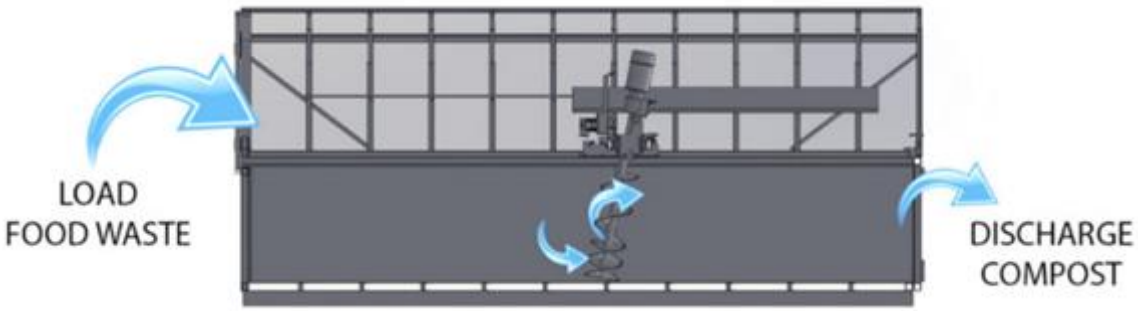
The intermodal Earth Flow is built from an upcycled shipping container, significantly lowering the cost of construction and simplifying transportation. The container is built to the following specifications and can process the following quantities:

General Specifications	
Vessel Length	20.0 feet (6.1 meters)
Vessel Width	8.0 feet (2.44 meters)
Vessel Height	9.5 feet (2.9 meters)
Empty weight	3.4 tons (3 metric tons)
Loaded weight	12.5 tons (11.4 metric tons max)
Material	304 Stainless on contact surfaces
Electrical consumption	12 to 14 kwh per day

Capacity Specifications	
Volume	20 yd^3 (15 m^3)
14-day retention	0.7 ton/day
21-day retention	0.5 ton/day

For those composting materials such as bedded manure or green waste, retention times of 14 days are adequate. For those composting energetic or putrescible materials such as food waste, retention times of 21 days are recommended. Most feedstocks will require 2 to 8 weeks of curing once removed from the vessel.

All compost mixes entering the Earth Flow must have a particle size of 6-inch minus, a combined bulk density less than 900 lbs. per cubic yard, a C:N ratio in the range of 20:1 to 40:1, and a starting moisture content of about 60%. Failure to meet these criteria may damage the vessel and/or reduce composting efficacy. The Earth Flow can handle almost all organic matter that meets these criteria including small animal mortalities, compostable plastics, and fats/meats.



CONTRACT ENGAGEMENT

The terms and conditions of GMT's equipment are provided at the end of the proposal under the heading Terms and Conditions. In the event of a conflict between the terms of this proposal and those outlined under Terms and Conditions, the terms of this proposal shall control. This proposal will remain valid for 30 days.

If the terms of this proposal are acceptable, please sign below and return to GMT. A fully executed copy will be returned to you for your files. If you choose to fax or email a copy of this authorization page, please also return the signed original copy via U.S. Mail.

GMT will provide these services using its reasonable best efforts consistent with the level and skill ordinarily exercised by members of the commercial composting-related engineering and consulting profession currently practicing under similar conditions.

ACCEPTANCE:

This Agreement is accepted by Owner this ____ day of _____ 2023.

_____
Signature

By: _____

Title: _____

THE VESSEL

GMT Responsibilities

- Provide an insulated retrofitted container compost vessel
- GMT will install the mixing system within the container

Client Responsibilities

- International shipping client cuts and installs load and access doors
- Create a structurally sound foundation for vessel to sit upon

The intermodal Earth Flow is built from an upcycled shipping container. The walls, dump doors, and ceiling of the container are insulated with spray foam and lined with 304 stainless steel. A stainless-steel aeration floor is embedded beneath the welded 11-gage stainless floor liner. The in-floor aeration system entraps all leachate and can be drained by turning the ¼ inch turn valve located near the aeration blower. Exercise caution when operating equipment inside the vessel, ensuring not to damage the stainless liner. The vessel has one load end door, two maintenance hatches and one dump end door and meets the following specifications.

- Single 20’ high-cube shipping container
- Color as stipulated by client (provide color # from an industry standard color deck such as Sherwin Williams)
- 304 SS welded floor liner
- 304 SS liner covering insulation on walls and discharge doors
- 2# urethane foam insulation on walls and ceilings
- Polypropylene cladding on upper walls
- 48”x 80” aluminum load door frame with two doors and lexan panels
- Two Lexan maintenance windows, 20" x 15.5"

Royal Blue

Barn Red

GMT Green

Highlighted above are a few common color selections. The color of the vessel is the customer’s choice – so long as the paint is standard and widely available. Please notify GMT as to which color you would like to use.

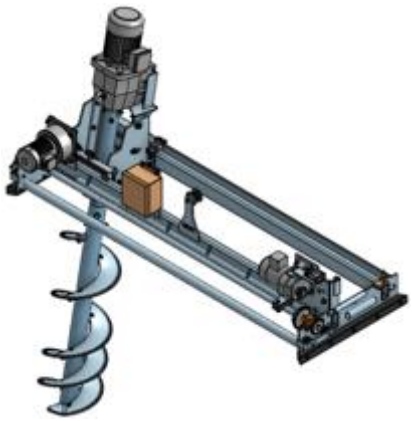
Warning! Make sure to always tie back the load and dump end doors when opening the system. Failure to comply may result in the doors slamming shut injuring operators.

THE MIXING SYSTEM

The mixing system is the principal mechanical system for the Earth Flow both agitating, shredding, and moving compost inside the vessel. The mixing system is comprised of three separate sub-assemblies, the carriage, travel car and auger assembly. These systems are driven by robust drive chains and reliable brother motors. The angle of the auger can be adjusted to control retention time within the vessel. All components will be installed in the vessel and tested prior to shipment.

The mixing system is comprised of the following components:

- 304 stainless steel welded assembly
- Two Fractional ½ hp brother drive motors and gearboxes
- One 5 hp Nord auger motor and gearbox
- Drive chain and sprockets
- UHMW plastic slides
- Stainless steel fasteners and hardware
- Three sections of auger flighting
- A 3'' auger drive and stub shaft
- A 3'' pillow block bearing



Make sure to replace the auger flighting before the teeth have worn off. Failure to comply may damage the mixing system and or reduce the composting efficacy.

Warning! No one is allowed to enter the vessel or be within five feet of the mixing system while it is operating. Make sure to keep hair, fingers and limbs away from the auger, chain drives, sprockets and sliders at all times. Failure to comply may result in serious injury or death.

THE CONTROL SYSTEM

GMT Responsibilities	Client Responsibilities
• Provide a detailed wiring schematic • Terminate all low voltage wiring	• Hang all panels on the right side of the vessel • Run all high voltage wire and conduit • Provide a distribution box, distribution panel, and breakers • Terminate all high voltage connections

The Earth Flow is powered by GMT's rugged industrial control system which is tested at length in our UL certified shop prior to shipment. Motors are US standard 60 hz 208/230/460V three phase power. Controls and blowers require 15A 110V services. GMT assumes all panels will be hung on the right side of the container when facing the earth flow from the load end. Power and panel location may be adjusted for an additional fee.

The control system comes with the following components:

Main Control Panel

- NEMA 4X enclosure 20" H x 17.5" W x 9" D
- Crouzet PLC Controller - 24V Input
- PULS Power Supply - AC 100-240V 50-60Hz Input - 24V 1.3A 30W Rating
- Key switch for power up security an emergency stop switch for safety
- Panel assembly UL Certified

Positional Motor's VFDs

- 200-240V Three Phase Electrical Service
  - (2) Non-Switched, Constant Torque, Sensorless Vector, Variable Frequency Drives – ½ HP 0.37 kW Rating
  - 2.9A FLA (both motors), 50-60Hz
- 380-460V Three Phase Electrical Service
  - (2) Non-Switched, Constant Torque, Sensorless Vector, Variable Frequency Drives – 1 HP 0.75 kW Rating
  - 1.4A FLA (both motors), 50-60Hz

Auger Motor VFD

- (1) Non-Switched, Constant Torque, Sensorless Vector, Variable Frequency Drive - 5 HP - 14.8 Amp - 5.5 kW - Constant Torque Sensorless
- AC Input: 200-240VAC, 13A FLA/380-460VAC, 6.5A FLA, 50-60Hz

Cable Chain Wiring Harness

- Igus Energy Chain - Dust Proof - Heat Treated Plastic - Non-Openable - Mounting Brackets Included – Preassembled with SOW electrical cables for motor drives and limit switch signal
- (4) Plunger Limit Switches

Carriage J-box

- NEMA 4X FRP Enclosure 10" H x 7.5" W x 5" D
- NEMA 4X Cord Grips Terminal blocks for Limit Switch Termination to SOOW cable

THE AERATION SYSTEM & BIOFILTER

GMT Responsibilities	Client Responsibilities
• Provide aeration blower in insulated blower box • Provide biofilter blower • Provide and install PVC pipe connections for biofilter and aeration system	• Provide biofilter media • Run conduit and/or wire to the biofilter blower • Terminate the biofilter blower • Provide a method to periodically drain excess leachate from the aeration system

The Earth Flow is a completely aerobic digester, meaning all compost has 13% or higher percent oxygen throughout the composting process, negating methane/odor emissions and greatly improving product quality. To ensure aerobic conditions are completely met and all odor is contained, GMT introduces fresh oxygenated air through an in-floor aeration system and captures all exhaust air in a biofilter composed of ground wood debris. The in-floor aeration system also serves as a leachate collection point and can be drained by unscrewing opening the ¼ inch drain valve located near the aeration blower.

The aeration system and biofilter meet the following specifications:

- ½ hp aeration blower
- 6'' inline centrifugal biofilter blower
- One insulated aluminum blower box
- Two pieces of stainless-steel tubing connected to aeration port and embedded below the 11-gauge welded floor liner
- PAS PVC plumbing assembly with drain valve and hose adapter
- Two 1.5" cleanout ports, 1 at load end, 1 at discharge end
- Biofilter piping assembly (to be purchased by client if not provided by GMT)

Warning! Keep fingers away from the blowers while they are operating. Failure to comply may result in serious injury.

UTILITITES AND SITE PREP

GMT Responsibilities

- 5 remote client meetings to clarify operations and site prep work.
- Detailed wiring schematics
- A ¾" female standard garden hose fitting for addition moisture system (if purchased)
- Install and test the moisture addition system

Client Responsibilities

- Get power and water to the site.
- Pour a concrete foundation for the vessel to sit upon
- Ensure that there is roadway access to the installation location.
- Purchase and install a ¾" standard male garden hose fitting with water hookup close to the location of the control panels.
- Any stamping or permit requirements associated with the project

The Earth Flow requires standard US standard 60 hz 208/230/460V three phase power. Single phase 220V power can be accommodated for an upcharge. Power and water must be brought to the right-hand side of the vessel as viewed from the load end (see image for reference). Please contact GMT as soon as possible if this is an issue.

The Earth Flow must sit upon a solid, unsettling surface. We suggest reinforced poured concrete pads with compacted aggregate bases measuring:

- At least 30' long x 12' for IM20's
- At least 50' x 12' for IM40's

The surface should slope towards the load end of the vessel at a grade of 1% to 2%. This keeps all leachate draining towards fresh feedstocks, mitigating pathogen transmission. It is important that you have roughly 20' of space on either side of the vessel for loading and unloading the composter. In most applications two small bunkers will also be required for curing the material and storing finished products.

If installing a tote tipper, a concrete pad measuring 5 feet wide by 6 feet long is required at the load end of the vessel.

TERMS AND CONDITIONS

1. **Payment Terms**, Terms of payment are 50% down, 40% upon completion of equipment prior to shipment and balance net 30 upon commissioning unless otherwise noted in writing. Any past due payments will be subject to a service charge and shall bear interest at the highest rate allowed by law in the State of Washington. Customer agrees to pay all costs including reasonable collection costs, attorney's fees and expenses related to the enforcement of payment obligations hereunder.
2. **Warranties**. (a) For the period of one year after delivery of the Product and specified equipment, Seller warrants that the product will be free from defects in workmanship and materials. This warranty is non-transferrable and applicable to the original Buyer only. (b) Seller's responsibility, and Buyer's remedy under this warranty, is limited to the repair or replacement, at Seller's option, of the component(s) that are determined by Seller to be defective. Buyer shall give Seller written notice of the alleged defect within the one-year warranty period. This warranty includes repair or replacement of parts but does not include labor associated with diagnosing, repairing, removing or installing components. (c) Defective components shall be held for Seller's inspection and/or returned to Seller at Seller's request. (d) If Seller finds that Product, or any portion of it, is defective due to Seller's workmanship and materials, Seller shall be responsible for providing Buyer with replacement components, including paying shipping charges associated with the defective component. If Seller finds that Product, or any portion of it, is not defective, Buyer shall be responsible for all costs associated with investigating and repairing or replacing the component, including all shipping charges. (e) This warranty shall in no event apply and shall be null and void and unenforceable if the alleged defect in the Product is the result of 1) abuse or misuse of the Product; or 2) improper operation which is not in accordance with any instructions in any appropriate operations and/or maintenance manual of Seller provided to Buyer; or 3) customary wear and tear of designated wear components, such as: auger flighting, auger shoes, auger bearings and plastic slide blocks. With respect to purchased components such as: electric motors, gearboxes, blowers and proximity switches, GMT makes no warranty whatsoever and buyer shall rely solely upon the existing warranties, if any, for the respective manufacturers thereof. (f) THE WARRANTY SET FORTH IN THIS SECTION IS EXPRESSLY MADE IN LIEU OF ALL OTHER WARRANTIES, AND SELLER HEREBY EXCLUDES ALL OTHER WRITTEN OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF FITNESS AND MERCHANTABILITY. THIS WARRANTY SHALL NOT BE EXTENDED, ALTERED, OR VARIED EXCEPT BY A WRITTEN INSTRUMENT SIGNED BY SELLER AND BUYER. The remedies provided herein are exclusive and Seller shall have no responsibility with respect to this order for any incidental, consequential or special damages of any kind.
3. **Inspection and Acceptance**. Products shall be finally inspected and accepted within five business days after their arrival at the Buyer's facility. Except for warranty claims, all claims whatsoever must be asserted in writing by Buyer within said five-day period or they are waived and the Product shall be deemed to conform with the terms of this Quotation and any agreed-upon specifications. There shall be no revocation of acceptance. Products may be rejected only for defects which constitute substantial noncompliance of the Products with any agreed-upon specifications, and Buyer's remedy for lesser defects shall be those provided under the warranty provisions below.
4. **Changes**. After Buyer signs this Quotation or issues a purchase order, any changes to the Product or its specifications may be made solely upon Seller's written consent and (a) at a charge which Seller shall determine is sufficient to cover its additional costs and (b) with a change in delivery schedule necessary to cover related delays.
5. **Delays**. Seller will not be liable for any delay in the performance of orders or contracts, or in the delivery or shipment of goods, or for any damages suffered by Buyer by reason of such delay, if such delay is, directly or indirectly, caused by, or in any manner arises from, fires; floods; accidents; civil unrest; acts of God; war; governmental interference or embargos;

TERMS AND CONDITIONS

strikes; labor difficulties; shortages of labor, fuel, power, materials, or supplies; transportation delays; or any other cause or causes beyond its control.

6. **Taxes**. Prices on the specified Products are exclusive of all city, state, and federal excise taxes, including, without limitation, taxes on manufacture, sales, receipts, gross income, occupation, use, and similar taxes. Buyer shall pay all federal, state, and local sales, use, property, excise, or other taxes imposed on or with respect to the sale of Product hereunder, except taxes levied on Seller's net income. Whenever required, any tax or taxes will be added to Seller's invoice as a separate charge to be paid by the Buyer.
7. **Limitation of Liability**. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, OR SPECIAL DAMAGES OF ANY KIND WHATSOEVER IN CONNECTION WITH THIS SALE. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DAMAGES OF ANY KIND IN CONNECTION WITH THE SALE OR USE OF ANY PARTICULAR PRODUCTS SOLD HEREUNDER IN AN AMOUNT GREATER THAN THE PURCHASE PRICE OF THE PRODUCT.
8. **Customer Indemnification**. Customer shall defend, indemnify and hold harmless GMT and its employees and agents against all sums, costs, liabilities, losses, suits, actions, penalties, fines, interest and other expenses (including reasonable attorney's fees) that GMT may incur that result from (a) Customer's ownership, maintenance, transfer, transportation or disposal of the goods sold hereunder, (b) Customer's use of the goods sold hereunder, (c) Customer's failure to test the goods or assure itself that the goods are fit for Customer's intended purpose, (d) any infringement or alleged infringement of the intellectual property rights of others arising from Customer's specifications, and (e) Customer's violation or alleged violation of any federal, state, county or local laws or regulations, including without limitation, the laws and regulations governing product safety, labeling, packaging and labor practices.
9. **Governing Law**. This Sale shall be governed by the laws of the State of Washington.
10. **Dispute Resolution**. Any dispute arising out of, related to, or regarding this sale will be resolved by submission of the dispute to a sole arbitrator. The parties shall attempt to mutually agree on an impartial arbitrator. If the parties cannot agree on an arbitrator within five business days, either party may apply to King County Superior Court for the appointment of an arbitrator by a King County Superior Court Judge. The arbitration proceedings shall be conducted in accordance with the Commercial Arbitration Rules of the American Arbitration Association ("AAA") then in effect, except that the arbitration shall not be administered by the AAA. Any judgment upon the arbitrator's award shall be entered in the Superior Court for King County, and the award shall be final and binding and enforceable under the terms of the Washington Arbitration Act. The Arbitrator will determine which party is the most prevailing and order the other party to pay the most prevailing party's arbitration costs and reasonable attorneys' fees. All costs and fees incurred on appeal shall be awarded to the most prevailing party on appeal. Arbitration costs awarded to the most prevailing party shall include the fees and administrative costs payable to any arbitrator, as well as expert witness fees. Each party shall advance one half of the arbitrator's initial fee deposit, with the deposit to be awarded as part of the costs of the proceeding to the most prevailing party.
11. **Materials Escalation Clause**. If, during the performance of this contract, the price of steel significantly increases, through no fault of contractor, the price of steel shall be equitably adjusted by an amount reasonably necessary to cover any such significant price increases. As used herein, a significant price increase shall mean any increase in price exceeding 5% experienced by contractor from the date of the contract signing. Such price increases shall be documented through quotes, invoices, or receipts. Where the delivery of steel is delayed, through no fault of contractor, as a result of the shortage or unavailability of steel, contractor shall not be liable for any additional costs or damages associated with such delay(s).