
Taos Launchpad

218 Paseo Del Cañon E
Taos, NM 87571
Ph. 575-224-6690

Recycling Proposal

Taos Launchpad houses a cutting-edge facility with production and training capabilities in micro-startups, recycling, manufacturing, prototyping, visual arts, digital media, sciences, electronic repair, computer programming, woodworking, metalworking, automotive, agriculture, clothing/eco-textiles, and more. We are committed to sustainability transforming our town's waste into resource.

We focus on offering influential workshops and programs that provide opportunities which can't be found anywhere else in our town. By providing a safe and engaging creative space that sparks curiosity we provide a healthy outlet for youth and adult makers. We are combining programs and curriculums proven to work as the foundation of Taos Launchpad.

We refurbish e-waste discarded locally to equip the facility. This includes our computer lab, large-format printers, art and ink supplies, radio broadcasting equipment, recording studio equipment, instruments, 3D printers, and more.

OVERVIEW

Our local waste-stream holds potential to create sustainable resources.

During the initial assessment, after sorting donated/discarded materials, we test and determine whether the device is readily usable, repairable, or to be broken down to its core materials.

We are developing a handbook for disassembling components, as well as different uses and ways to process a wide variety of materials.

We have requested \$20,000 from the Town of Taos to fund a processing plant that meets e-Steward certification and create a solution to the e-waste issue as well as plastics not currently accepted at our center. To put this number into perspective:

Taos has intended to improve our recycling for many years. In 1999, a large group of townspeople came together to develop Vision 2020. Recycling is mentioned 21 times in that document stating in the objectives, "Keep Taos clean by expanding recycling services; by

providing public trash receptacles in employment, commercial, and mixed use centers; by sponsoring clean-up days; and by developing and enforcing an anti-litter campaign* the document goes on to name land use policies:

27. The Town of Taos will continue to fund and maintain its recycling facility, and will expand it if necessary.

28. The Town of Taos will make its recycling facility more user friendly by providing dispersed recycling bins throughout town, making hours more convenient, cleaning up and erecting self-guided signage at the main facility, and sponsoring educational campaigns.

In 2008, the county accepted a donation of a 5 acre parcel of land from the town of Taos to build a state of the art recycling center. The next year, in 2009, **the county received a \$500,000 loan from the New Mexico Department of Finance Administration for engineering and to start construction of the facility** but in 2010 county officials determined the project wasn't feasible **after spending \$50,000- the remaining \$450,000 was used to redo three roads** in Penasco. The land slated for the recycling center reverted to the town in 2015*. Taos has a diversion rate of just over 5% when compared to the national average of 35% it is clear we must come up with a better solution for our waste.

By sponsoring the Taos Launchpad recycling project, you are empowering a marketplace of eco friendly products that will represent our town's commitment to responsibility and the environment. This will attract great attention nationally, while developing new assets for our town.

Taos Launchpad products will be made locally by youth and adult artisans and makers from materials which are environmentally harmful when thrown in the trash and costs the town money to discard safely.

We offer specialized training and vocational skills that individuals will use to create more local businesses and a higher quality of local services.

WHAT WE WANT

We propose a partnership between the Taos Launchpad and the Town of Taos recycling center to better manage our electronic waste stream.

We will offer a new drop-off location.

We will take responsibility for the removal and processing of materials.

We will utilize materials to generate resources.

GOALS

1. Transform our e-waste stream into a local resource.
2. Reduce the amount of waste that needs to be shipped.
3. Expand the current plastic recycling program.
4. Provide a deeper understanding of the environmental impact of e-waste.
5. Provide innovative learning experiences in resourcefulness by working with what we have.

THE BIGGER PICTURE

Our current e-waste disposal system wastes resources. When electronics are piled inside a box or left outside and exposed to the elements- they become devalued. When the ends of cables are cut off- the value is being cut by 1000% or more.

An example of devaluation:

Copper value at 0.50-0.79 per pound of insulated copper wire. USB cables average at 10 grams with insulation. 448 grams in a pound. 44+ Cables for 1 dollar.

Individual cables can sell used from \$2-10.

If a phone, laptop, or monitor is working initially and you pile heavy electronics on top of them- the display tends to break and drastically reduces the value of the device.

Many electronic devices contain health threatening toxins such as lead, mercury, beryllium, lithium and cadmium, and ozone-depleting chlorofluorocarbons. Much of the e-waste in the United States is sent overseas, polluting the water and soil, creating toxic environments for people in developing nations. By taking accountability for our e-waste through proper processing, our efforts will have a global impact.

Through proper management, the value of this local resource is maintained, e-waste stays out of the landfill, the groundwater stays clean and people aren't harmed in the process.

HOW WE PROCESS NOW

We use processed materials in several different areas. As of now, our electronics section is highly organized with laptop chargers sorted by voltage, computer cables sorted by type, etc.

For example: When we receive a computer, we make the decision “Is it worth the time to fix, can we increase the value by breaking it down, or can a student benefit from taking it apart?”

If it’s a decent machine, we refurbish it and it finds a use in the facility or can be donated or sold.

If it is too old to do anything with, students can break it down and sort the parts which can be used to refurbish other machines or turned into something else. The student receives education, repair skills and possibly a new laptop or gadget in the process.

EQUIPMENT IN PLACE

CNC Milling

CNC machines for creating injection molds and other goods from waste products.

3D Printing

3D printers for producing parts that can be used to prototype, cast into metal, or produce molds.

Laser Cutting

CO2 laser cutter/engraver to create products from plastics, wood, cardboard, etc.

EQUIPMENT NEEDS

Safety Equipment (\$5,000)

Ventilation/filters

Personal protective equipment

Fire prevention

Sorting Bins

Items that have been deemed unusable will be broken down and sorted by their core materials.

-Cables

(USB, Video, FireWire, Ethernet, Power)

-Circuit boards

(capacitors, resistors, transistors, power supplies)

Items that cannot be purchased from anywhere in Taos.

-Plastics

(ABS, PLA, HPET, Rubber)

-Metals

(Aluminum, Copper, Steel, Tin, Silver, Gold)

Plastic Granulator (\$3,000)

This machine will granulate the sorted plastics into pellets that can be used for injection molded parts, or filaments needed for 3D printers.

Plastic Extruder and Spooler (\$1,000)

This extrudes the plastic at a set diameter of 1.75 or 3mm and rolls it into a spool.

Injection Molding (\$2,000)

This will use the waste plastics to mass produce parts.

Sheet Metal Roller (\$1,000)

Can be used to create sheet plastics as well as sheet metal. Sheet plastics can be used for vacuum forming parts.

Vacuum Forming Table (\$1,000)

Can quickly make parts from sheet plastic.

Metal Furnace (\$1,000)

Producing billets that can be used for machining, lost casting, jewelry, etc.

Specialized Tools (\$1000)

CERTIFICATION

Taos Launchpad has initiated the application process toward becoming an e-Steward certified processing facility.

BUDGET FOR RECYCLING FACILITY

\$10000 toward processing and manufacturing equipment

\$5000 toward safety equipment, and building development.

\$5000 toward training, certifications, and to offer paid part-time positions.

CONCLUSION

We are developing the most cutting-edge recycling facility in New Mexico and request sponsorship from the Town of Taos.

We have reserved 2000 square feet inside our facility for the sorting and processing of the materials. There is another 4000 square feet that is being reserved for material storage.

Taos Launchpad has become a space where people can come together to share ideas and collaborate. We have attracted some of the brightest members of our community and together, with support from our town, we can resolve these pressing issues.

Thank you for your consideration,

Kyle Butler, Paige McCluggage, Becky Holsinger, Montana Hall, Lex Lyford, Robert Mcewen, Aidan Schaffer, and Natalina Oliverio.

Taos Launchpad

A 501(c)3 Organization
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Sources:

Vision 2020- Town of Taos document:

<http://www.taosgov.com/planning/completedvision/vision2020.pdf>

Taos News “With Taos recycling center still a dream, property reverts to town”

<http://www.taosnews.com/stories/with-taos-recycling-center-still-a-dream-property-reverts-to-town,29874>

Where does America’s e-waste end up?

<https://www.pbs.org/newshour/science/america-e-waste-gps-tracker-tells-all-earthfix>