



Jackson County Green Energy Park

Proposal for Project Completion

prepared by
Timm Muth, JCGEP Director
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Executive Summary

The Jackson County Green Energy Park (GEP) captures methane gas from the old Dillsboro landfill, then uses that gas as fuel for a variety of energy-intensive craft studios. Since its inception, the GEP has worked to provide a model of success for other communities seeking to manage landfill gas or address other energy issues in an economically-viable and environmentally-conscious fashion. The GEP has successfully encouraged the creation of private-sector jobs, increased local tourism, and brought regional, national, and even international recognition to Jackson County. To date, the Green Energy Park has met a number of important infrastructure milestones: rehabilitation of an old trash transfer station into modern studio spaces and an art gallery; installation of an extensive glassblowing facility; operation of the world's *only* landfill gas-fired blacksmith forges and bronze/aluminum foundry; and construction of a wood and waste vegetable oil-fired ceramics kiln.

Construction of the Artisans' Complex will complete the original vision and Master Plan of the Green Energy Park. This facility – built using the framework of the old Webster Enterprises warehouse – will include a professional quality ceramics studio, along with rental studios to allow artists to set up an actual business space, and space for educational purposes.

Benefits to Community

- **Increased Economic Development.** Completion of the Artisans' Complex will *encourage the creation of private-sector jobs* by providing working facilities and low-cost studio spaces for eighteen (18) resident artists. The GEP will then become a logical starting point for WCU graduates and other artists as they start their careers.
- **Increased Rental Income.** By having actual studio spaces for artists to rent and set up shop within, the GEP will *increase facility rental income by at least \$50,000/yr*, offsetting a large portion of the GEP's operating costs.
- **Increased Tourism.** Completion of the Artisans' Complex will drive a *6-fold increase in the number of working artists located in Dillsboro*. Adding another eighteen working artist studios will put Dillsboro on the map as a destination for art-loving tourists. As seen in Asheville's River Arts District, developing a community of working artisans leads directly to significant increases in local tourism and investment.
- **Increased Partnership Opportunities.** Expanding the studio offerings at the GEP will strengthen the ties between the County and WCU and other local schools. It will encourage increased educational tours, provide unique training and research opportunities, and establish the GEP as a regional resource for arts and energy.
- **Increased Quality of Life.** More working artisans in town will foster expanded festival offerings, public art classes, and other recreational events.

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Green Energy Park

Proposal for Project Completion

I. Introduction

The main focus of this proposal is to present the recommended steps for completion of the GEP Master Plan. Background information on the GEP, including its history, mission, and benefits are presented in the second section. Historical data is available (but not included in this report) on past classes, tours, festivals, gallery sales, and studio rentals.

II. Completion of Master Plan & Artisans' Complex

Construction and startup of the Artisan's Complex will complete the original Green Energy Park Master Plan, and allow the project to begin functioning at its full capacity. These facilities will be built using the footprint and steel framework of the existing old Webster Enterprises warehouse. Figure 1 is a layout drawing for the proposed construction. Figures 2 and 3 offer 3-D views of the outside of the buildings. This series of spaces will include:

- **Working Ceramics Studio with four (4) stations**
- **Fourteen (14) "open" studio spaces**
- **Multi-use Education Center**
- **Professional-quality Gallery**
- **Outdoor courtyard and seating areas**
- **Office spaces, reception area, and restroom**

To help reduce the financial impact of construction costs, and allow additional time to acquire outside funding, this project could be broken into three (3) phases:

| ❖ Phase 1 | ❖ Phase 2 | ❖ Phase 3 |
|--|---|---|
| <ul style="list-style-type: none">○ Ceramics studio○ Kiln area○ Restroom○ Meeting room○ Electrical and mechanical services○ Entrance deck○ Covered breezeway | <ul style="list-style-type: none">○ 2A – Six (6) rental studios○ 2B – Four (4) rental studios○ 2C – Four (4) rental studios○ Outdoor education courtyard | <ul style="list-style-type: none">○ Gallery○ Multi-use Education Center○ Offices and Reception area○ Restrooms |

- ❖ **Working Ceramics Studio**
 - Four (4) studio spaces, two (2) kilns, and a full complement of equipment.
 - Professional ceramics studio will allow skilled artisans to create work and build a business for themselves, without startup capital limitations.
 - Both indoor pottery kilns will be fired using landfill gas as fuel. The existing outdoor kiln utilizes waste wood and waste vegetable oil as renewable fuels.
 - *A previous NC Rural Center grant provided funds for purchase of all major studio equipment (approximately \$70k worth). Equipment is waiting in crates.*

- ❖ **Fourteen (14) “open” studio spaces**
 - Will offer artists who rent the GEP’s various “hot” shops (blacksmithing, glassblowing, and ceramics facilities) a space to set up shop, store supplies, meet clients, and make sales – all the things needed to make a successful business.
 - Working studio spaces can accommodate a range of other local artisans (woodcarvers, jewelry makers, basket weavers, etc.) in need of inexpensive space.
 - Create an “Artists Village” atmosphere to encourage visitors to linger, watch the artists at work, and make purchases.
 - Provide working space for visiting artists to set up temporary shop.
 - *Phase 2B and 2C could potentially be constructed of used steel shipping containers, greatly reducing costs while demonstrating sustainable efforts.*

- ❖ **Multi-use Education Center**
 - 1,000 ft² space capable of hosting large groups for GEP or rentals.
 - Will facilitate speaking engagements and presentations.
 - Space available for a range of craft-related classes and activities (painting, mold making, basket making, etc.).
 - *A lack of available open indoor space currently limits the GEP’s (and the community’s) ability to host larger groups.*

- ❖ **Gallery**
 - Professional-quality gallery to support sales of work from all GEP artists.
 - Provide enough space for expanded gallery shows.
 - Encourage displays of work by visiting artists.

- ❖ **Outdoor Courtyard**
 - Allow visitors to watch artisans at work.
 - Encourage outdoor meetings and classes.
 - Possible avenue for local restaurants and food trucks.
 - Display space for outdoor sculptures.

- ❖ **Office spaces (2), a reception area, and restroom facilities.**

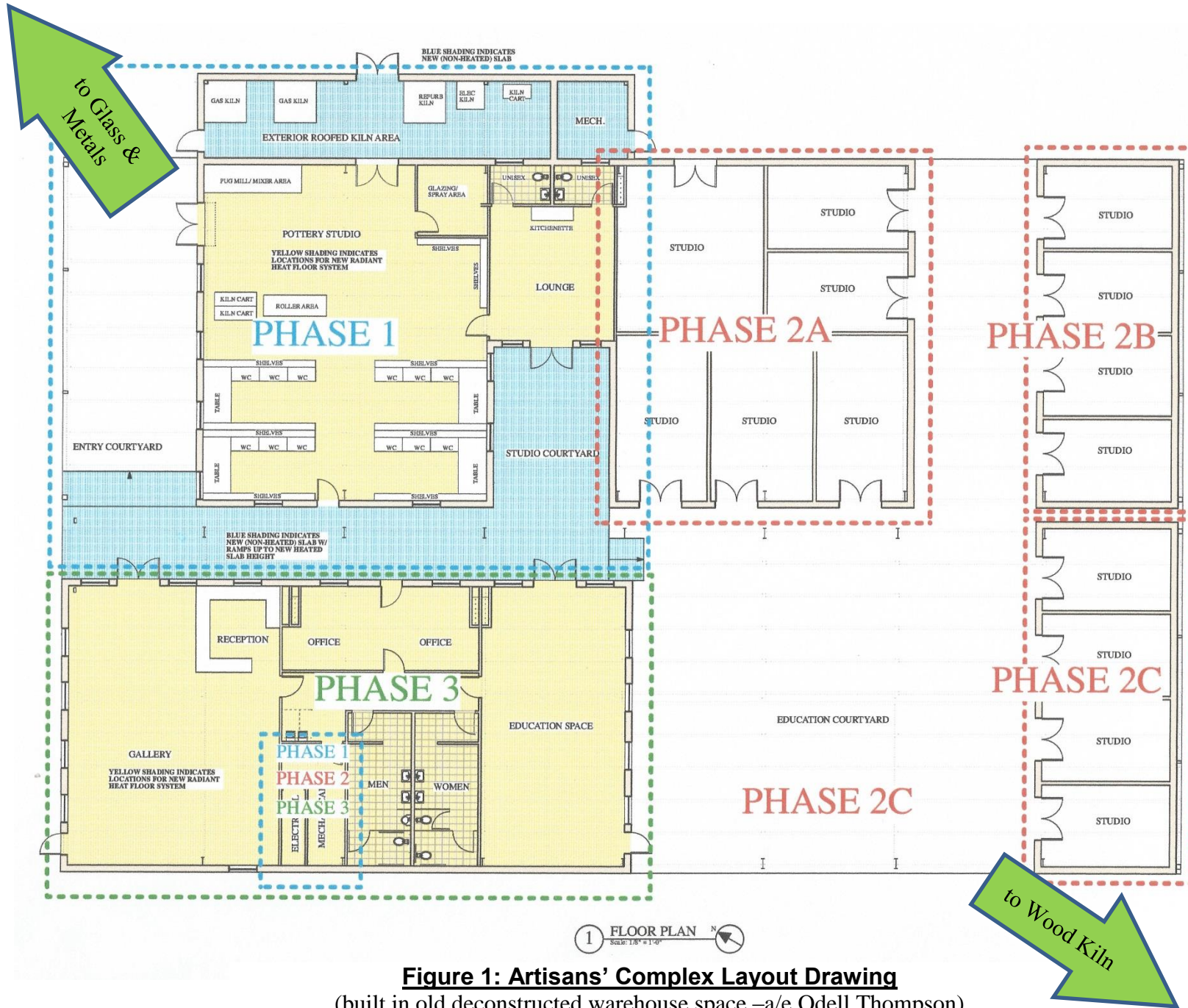


Figure 1: Artisans' Complex Layout Drawing
 (built in old deconstructed warehouse space –a/e Odell Thompson)



Figure 2: Artisans' complex – Orthographic View front

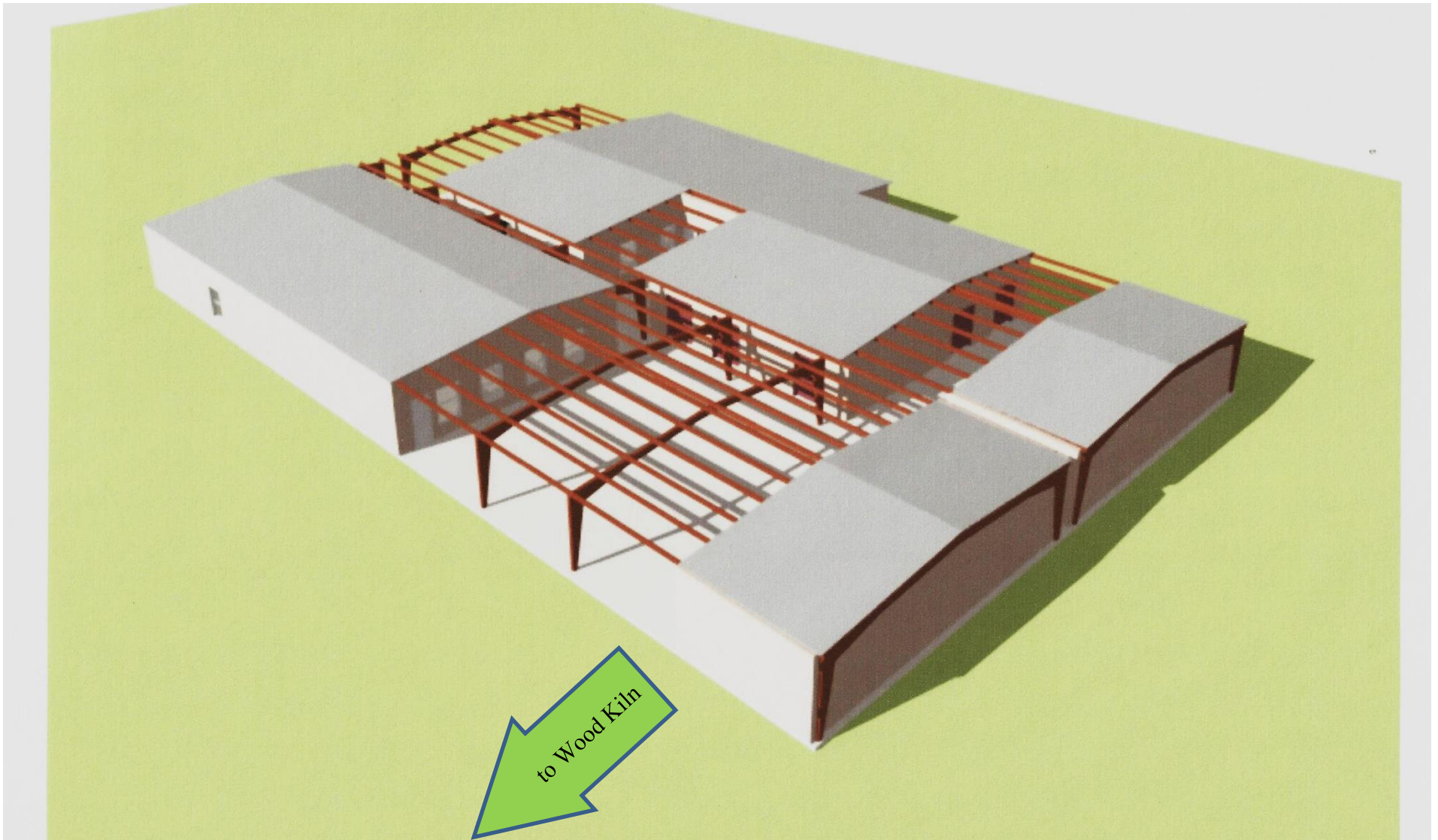


Figure 3: Artisans' complex – Orthographic View rear



Table 1: Estimate of Construction Costs – JCJEP Artisan’s Complex

Estimated March 1, 2015 by architect Odell Thompson

| Project Phase | Work Entailed | Ft ² | - | \$/ Ft ² | Cost |
|------------------------------------|--|--------------------|----|---------------------|--------------------|
| Phase 1 | POTTERY STUDIO- walls, doors, roofing, power, mech, lighting, sinks, radiant floor | 2111 | SF | \$85.00 | \$179,435 |
| | KILN AREA- walls, power, lighting, structure, roof | 604 | SF | \$100.00 | \$60,400 |
| | LOUNGE- walls, doors, roofing, power, plumbing, lighting, radiant floor | 446 | SF | \$90.00 | \$40,140 |
| | MECHANICAL- new slab, walls, power, pump for floor heat, lighting, roofing | 144 | SF | \$100.00 | \$14,400 |
| | ENTRY COURTYARD- new slab, paint steel | 858 | SF | \$10.00 | \$8,580 |
| | Furnishings, Fixtures, Equipment (FFE) | 2111 | SF | \$7.50 | \$15,833 |
| | SUBTOTAL PHASE 1 | | | | |
| Phase 2A | STUDIO SPACES- walls, doors, roofing, power, mech, lighting, sinks | 2167 | SF | \$70.00 | \$151,690 |
| | EXTERIOR SPACES- new slab, paint steel | 872 | SF | \$10.00 | \$8,720 |
| | Furnishings, Fixtures, Equipment (FFE) | 2167 | SF | \$7.50 | \$16,253 |
| | Subtotal 2A | | | | |
| Phase 2B | STUDIO SPACES- walls, doors, roofing, power, mech, lighting, sinks | 1009 | SF | \$70.00 | \$70,630 |
| | Furnishings, Fixtures, Equipment (FFE) | 1009 | SF | \$0.00 | \$0 |
| | Subtotal 2B | | | | |
| Phase 2C | STUDIO SPACES- walls, doors, roofing, power, mech, lighting, sinks | 1017 | SF | \$70.00 | \$71,190 |
| | EDUCATION COURTYARD- paint steel | 913 | SF | \$5.00 | \$4,565 |
| | Furnishings, Fixtures, Equipment (FFE) | 1017 | SF | \$0.00 | \$0 |
| | Subtotal 2C | | | | |
| SUBTOTAL: PHASE 2 | | | | | \$323,048 |
| Phase 3 | GALLERY/ OFFICES/ EDUCATION- walls, doors, roofing, power, mech, lighting, plumbing, radiant floor | 3408 | SF | \$120.00 | \$408,960 |
| | EDUCATION COURTYARD- paint steel | 2099 | SF | \$5.00 | \$10,495 |
| | Furnishings, Fixtures, Equipment (FFE) | 3408 | SF | \$15.00 | \$51,120 |
| | SUBTOTAL PHASE 3 | | | | |
| SUBTOTAL: CONSTRUCTION COST | | | | | \$1,112,410 |
| Design | A/E FEES (A, M, E, P, S) | 5% of Construction | | | \$55,621 |
| GRAND TOTAL | | | | | \$1,168,031 |



III. GEP History and Background Information

A. Project Overview

The Jackson County Green Energy Park (GEP) captures methane gas from the old Dillsboro landfill, then uses that gas as fuel for a variety of energy-intensive craft studios. Since its inception, the GEP has worked to provide a model of success for other communities seeking to manage landfill gas or address other energy issues in an economically-viable and environmentally-conscious fashion. The GEP has successfully encouraged the creation of private-sector jobs, increased local tourism, and brought regional, national, and even international recognition to Jackson County. To date, the Green Energy Park has met a number of important infrastructure milestones: rehabilitation of an old trash transfer station into modern studio spaces and an art gallery; installation of an extensive glassblowing facility; operation of the world's *only* landfill gas-fired blacksmith forges and bronze/aluminum foundry; and construction of a wood-fired ceramics kiln.

B. Mission

The Jackson County Green Energy Park utilizes clean renewable energy resources to meet three prime goals:

- * Encourage local and regional economic development.
- * Provide measurable environmental benefits, and meet environmental protection requirements as set by the NC Department of Natural Resources.
- * Offer unique educational opportunities and improved quality of life to both community members and non-resident visitors alike.

C. Benefits to Local Community

1. Increase Tourism

Art and cultural events at the Green Energy Park (GEP) attract new visitors to town, and bring local residents into town. And it is well-established that an increase in tourists and other visitors means increased economic benefits for local restaurants, lodging, galleries, gas stations, and other businesses. In FY 2014 the Green Energy Park hosted over 1,000 visitors who came specifically to tour the GEP. And as highlighted in the recent publication, *Arts & Economic Prosperity*, by the NC Department of Cultural Resources:

“Business leaders need not feel that a choice must be made between arts funding and economic prosperity. Nationally, as well as locally, **the arts means business.**”

- Per *Arts & Economic Prosperity* survey findings, arts tourists stay longer and spend more money than the average traveler.
- On average, 32% of attendees at art events live outside the county. For the GEP, more than 50% of attendees live outside Jackson County.



- Cultural tourists spend more than twice as much to attend an event than their local counterparts (nonlocal: \$39.96 vs. local: \$17.42)

A recent study by Handmade in America (*Economic Impact of the Professional Craft Industry in Western North Carolina*) highlights the often-overlooked effect of craft industries on our region:

- Total economic impact of all art-related activities in WNC: **\$206.5 million**
- WNC has the greatest concentration of craft education in the U.S.
- 56% of WNC artists operate full-time business.
- 33% of WNC artists employ other full- or part-time workers.
- 50% of area craft program graduates stay in WNC to establish their own studios.

2. Increased Business Investment

By drawing more visitors and tourists to town, the GEP aids in the economic recovery of Dillsboro. And while a thriving, vibrant town attracts more visitors and new residents, a strong economic climate attracts new business investment.

Asheville's River Arts District (RAD) offers an excellent example of how Art is good for business. The riverfront district used to be the run-down, seedy part of town. But as artists set up shop in the dilapidated warehouses and other buildings, they began a renaissance of the entire area. The presence of artists drew tourists and other visitors. Soon after, restaurant, boutiques, and other shops followed the stream of visitors into the arts district. Then major employers like FLS Energy decided to build or purchase office space there. The RAD is now an economic engine for Asheville, and the most thriving real estate and business market in town. The Green Energy Park, if brought to its full potential, could provide similar benefits for Dillsboro in terms of increased tourism, private sector job creation, and business investment.

3. Increase Visibility

The Green Energy Park is one of the unique features that helps to distinguish Dillsboro from all the other small mountain towns in WNC.

- GEP has brought statewide, national, and even international attention to Jackson County.
- Jackson County was recognized at a statewide conference of county commissioners for the GEP's innovative approach to community impact and revitalization.
- Just this year, articles on the GEP have appeared in the following publications:
 - *Charleston* magazine
 - *WNC* magazine
 - *WCU Alumni* magazine
 - *Energy from Waste* magazine
 - *Our Town* magazine
 - *Smoky Mountain Living* magazine



4. Environmental Benefits

Jackson County is required by NC DENR to take actions to lower overall contamination levels (both air and water contaminants) related to the Dillsboro landfill. Since its start, the operations of the Green Energy Park have dramatically reduced the pollution levels at the landfill. Taking these innovative efforts to reduce contaminants demonstrates Jackson County's strong commitment to protecting our natural environment for future generations, particularly given the close proximity of the landfill to the Tuckaseegee River.

Methane gas can leak from the landfill through gaps and fissures in the earthen landfill covering. This gas can also be transported by the movement of groundwater. The landfill site is surrounded by a series of sample probes that are tested quarterly for methane contamination by Altamont Engineering of Asheville. In 2002-2003 (prior to GEP's existence), gas levels in these sample probes averaged 35% methane, which is *600% greater than the lower explosion limit* for methane. By comparison, over the last three years the average sample probe reading has been 0% methane.

Other chemical contaminants (most notably, benzene, 1,1-dichloroethene, and 1,4-dichlorobenzene) within the landfill can migrate into the leachate and groundwater, then move offsite. All three of these contaminants were found to be greatly in excess of the Department of Water Quality 2L standards prior to the operation of the GEP. During the last round of sample testing, levels of these three contaminants were in most cases found to be below the detection level of the test equipment.

5. Educational Opportunities

The Green Energy Park provides an opportunity to share information with visitors about art, energy, and the importance of sustainable business practices. These educational opportunities can take many forms:

- Increased appreciation for local Heritage Arts through public demonstrations.
- Recruit visiting artists of national caliber to host workshops and demonstrations.
- Offer accessible, affordable, and unique art classes to visitors and locals alike.
- Provide opportunities for developing artists to build both craft skills and business acumen.
- Provide a platform for ongoing partnerships between Jackson County and Western Carolina University, Southwestern Community College, and Eastern Band of Cherokee Indians, as well as with local schools.

6. Quality of Life Impact

The Green Energy Park has a positive effect on the quality of life available to local community members. As well, a vibrant arts and culture community encourages the relocation of new residents, which in turn stimulates the sales of primary and secondary homes. The GEP offers several functions that help enrich people's lives:



- The GEP hosts a variety of annual festivals that bring together local artists, community members, and visitors to share creative ideas and enjoy the creative process.
- Completion of the GEP will create a vibrant artists' community within Dillsboro once again. Increased numbers of working artists and galleries will draw walking visitors, who in turn will spend time in town visiting other merchants and venues as well.
- The GEP represents a sustainable influx of outside dollars year-round, year after year, which will only increase with time.
- * Funding spent on the GEP impacts **local** people, helps to create **local** jobs, and represents an unique investment in County infrastructure. Creation of local jobs and small businesses means that sales and other **income stays within the community** much longer, and does not leave town to benefit wealthy individuals or businesses located elsewhere.

IV. Conclusion

The Green Energy Park is a unique facility and represents a unique opportunity for Jackson County. Completion of the planned Artisans' Complex and rental studios will allow for the creation of an artist "community" at the Green Energy Park, which will in turn draw tourists and new artists to the area. **The economic impact of a thriving art community within Jackson County cannot be overstated: it will bring new visitors to town, it will encourage further economic development, and will provide an extremely effective marketing angle to draw in tourists.**

The Green Energy Park has proven to be a valuable "bridge" between WCU and the citizens of Jackson County, bringing together students, faculty, and "regular" town folks to enjoy art and share their teaching talents. The GEP is also starting to draw interest from WCU's engineering and construction management schools, as a real-world laboratory for various research efforts. In 2014 a WCU Capstone Project team used their expertise and skills to assist with the design and installation of the GEP pottery kiln's waste vegetable oil burner system.

Lastly, the Green Energy Park represents an investment in the local community's infrastructure. This facility not only draws in outside visitors, but also provides opportunities for various community members to create an art-related business for themselves. Even taxpayers who do not use the GEP facilities will appreciate the benefits of a project that creates local job opportunities.