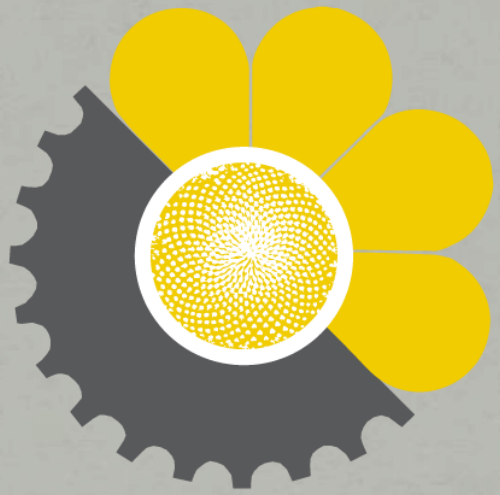
Industrial Ecology Application

Improving Solid Waste Management



CATAWBA COUNTY
EcoComplex

Catawba County EcoComplex

Economics and Ecology or Industrial Ecological System

The Catawba County **EcoComplex** is a system that is based on the fact that an individual component in a system is best utilized in the context of its relationship with other components and with other systems, rather than in isolation.

Catawba County EcoComplex

Economics and Ecology or Industrial Ecological System

Any government, jurisdiction, or private group can build an EcoComplex

Blackburn Resource Recovery Facility

500

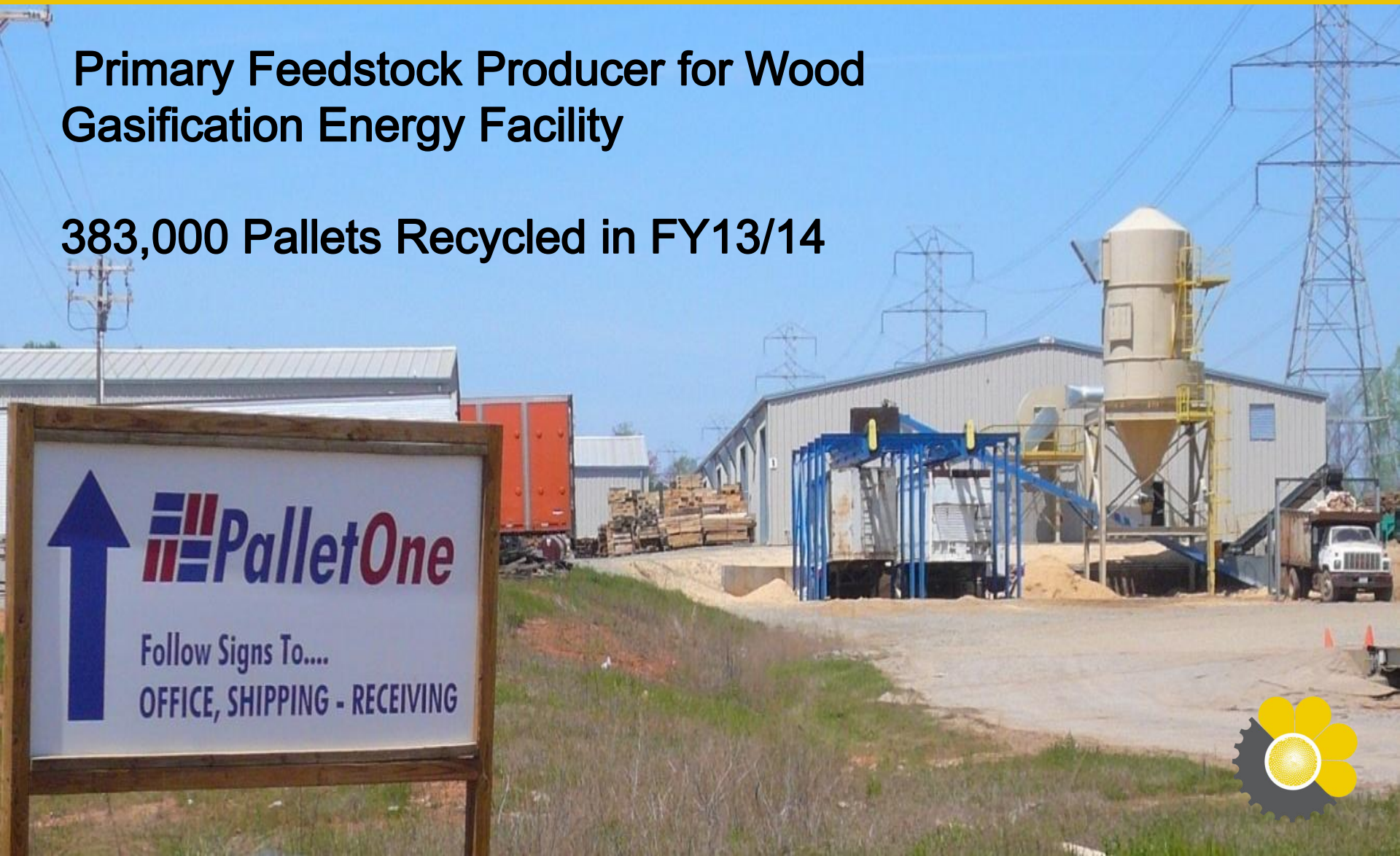
MSW and C&D Tons Per Day

No county tax dollars used to operate the landfill

Republic Services Materials Recovery Facility (MRF)

Landfill Gas-to-Energy Facility

Pallet Recycling Facility



Primary Feedstock Producer for Wood Gasification Energy Facility

383,000 Pallets Recycled in FY13/14

Blue Ridge Biofuels, LLC
Biodiesel Production Facility

LEED Certified Building

Dynamometer

Partnering with Local Farmers

Farming over
144 acres of
unused landfill buffer areas

Cultivating Crops for Biodiesel Production and Research

EcoComplex University Research

(Biodiesel, Bio-Crops, Food Crops, Algae, Syngas, Ethanol, Energy, Carbon Sequestration, & Multi-feed Digestion)

Appalachian State University

University of North Carolina – Charlotte

North Carolina Agricultural and Technical State University

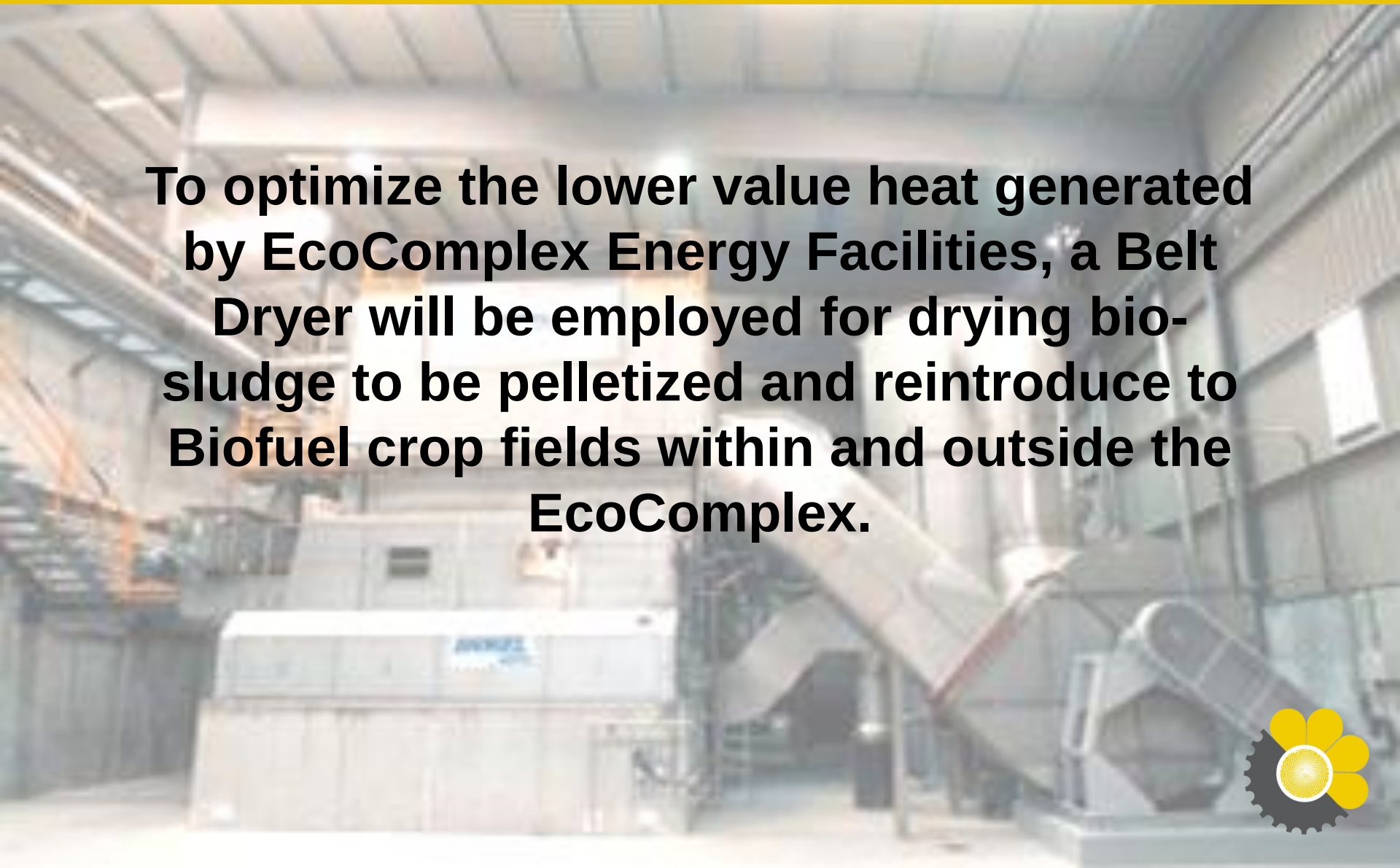
Immigrant Agriculture Program

A cooperative effort of Cooperative Extension, Utilities and Engineering, and North Carolina A&T State University, has been recognized by the International City/County Management Association (ICMA) with a 2014 ICMA Community Sustainability Program Excellence Award.

- **1-acre of land is provided for use as a horticultural demonstration site**
- **Includes a high tunnel structure that extends the growing season up to 6 weeks**
- **Works primarily with Hmong farmers living in Catawba County to help them become more successful in growing and marketing their produce.**
- **Features a Growers' School which provides hands-on experience with new crops, equipment and methods.**

Future Component

Biosolids Processing Facility



To optimize the lower value heat generated by EcoComplex Energy Facilities, a Belt Dryer will be employed for drying bio-sludge to be pelletized and reintroduce to Biofuel crop fields within and outside the EcoComplex.

Future Component

Wood Gasification Energy Facility

- Combined heat and power facility that will use sawdust, shavings, bark and chips from Pallet One and the Blackburn Resource Recovery Facility to generate electrical and thermal energy
- Will house a newly constructed wood fueled gasification system that could produce 2.5 megawatts per hour of energy
- Being developed through partnerships with GE Energy and Nexterra
- UNCC will have research activities centered on this facility and the synthesis gas generated by the technology will be utilized by this facility.

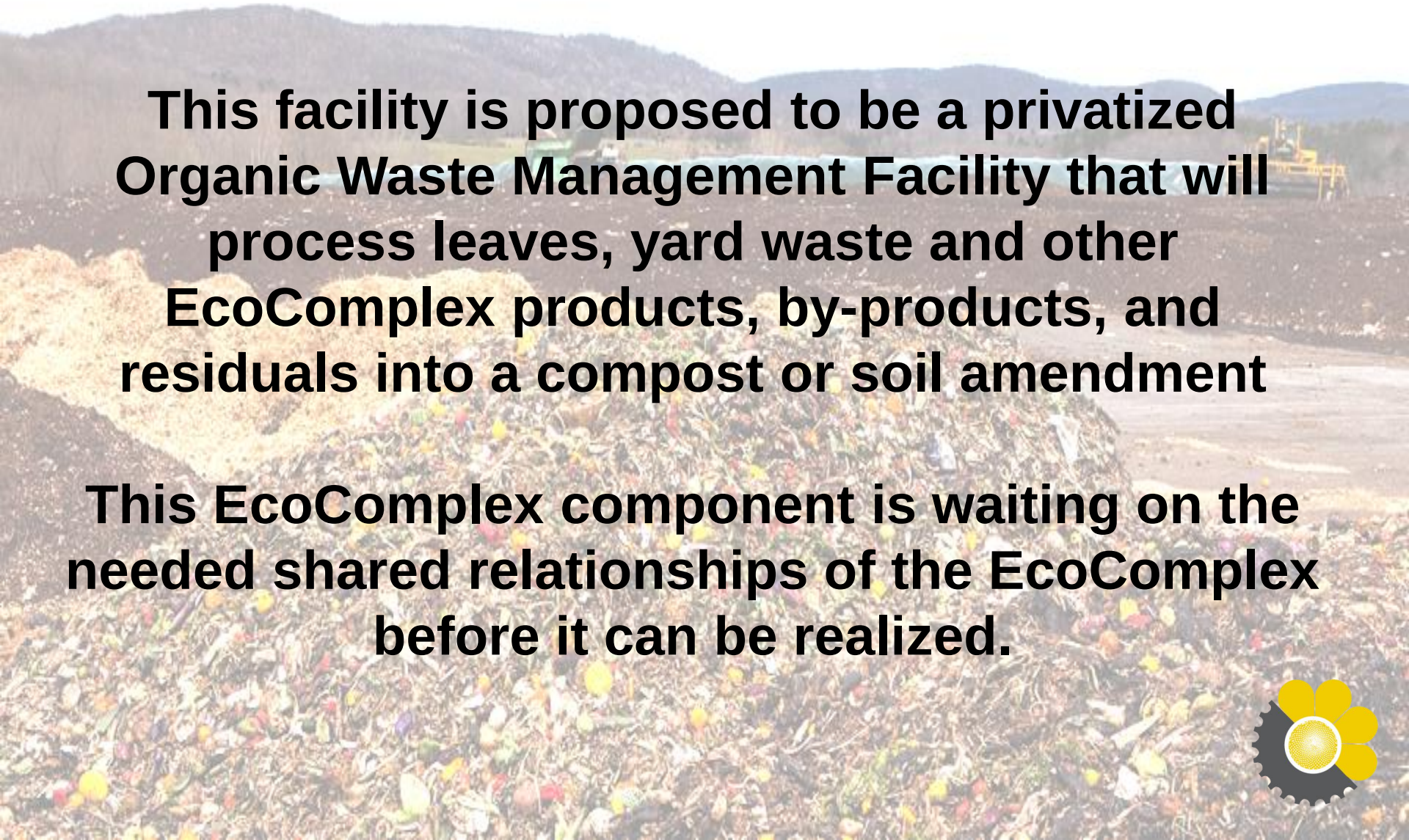
Future Component

Wood Gasification Energy Facility

Two to three times more efficient as conventional heat and power technology

Future Component

Composting/Soils Amendment Facility



This facility is proposed to be a privatized Organic Waste Management Facility that will process leaves, yard waste and other EcoComplex products, by-products, and residuals into a compost or soil amendment

This EcoComplex component is waiting on the needed shared relationships of the EcoComplex before it can be realized.

Visit the EcoComplex

www.ecocomplex.org

Barry Edwards, P.E.
Director of Utilities and Engineering
100-A SW Blvd
Newton, NC 28658
Phone 828.465.8261
barrye@catawbacountync.gov

CATAWBA COUNTY
EcoComplex