



# Growing a Green Local Economy

**County Strategies for Economic, Workforce and Environmental Innovation**

**Green Government Initiative**



National Association of Counties



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### Green Government Initiative



#### **About NACO – The Voice of America's Counties**

The National Association of Counties (NACO) is the only national organization that represents county governments in the United States. Founded in 1935, NACO provides essential services to the nation's 3,068 counties. NACO advances issues with a unified voice before the federal government, improves the public's understanding of county government, assists counties in finding and sharing innovative solutions through education and research, and provides value-added services to save counties and taxpayers money. For more information about NACO, visit [www.naco.org](http://www.naco.org).

To request copies of this publication or other related materials about NACo's Green Government Initiative, please contact:

Jared Lang  
Program Manager, Green Government Initiative  
National Association of Counties  
Phone: (202)942-4224  
E-mail: [jlang@naco.org](mailto:jlang@naco.org)

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The report assembles a wide breath of research and analysis from across the non-profit, academic, and business communities. To follow up on the concepts and strategies highlighted in this document, please refer to the list of sources cited in the back of this publication.



## Growing a Green Local Economy: County Strategies for Economic, Workforce and Environmental Innovation

With new policy attention and investment flowing into “green” economic activity, opportunities are arising for counties to position their communities to take part in the green economy. Pursuing green economic growth is paying off for local governments around the country. Between 1998 and 2007, “green” jobs grew at a faster rate than overall jobs. All sectors of our economy have been hit by the recession, but investments in green technology have fared far better than conventional investments. Looking forward, the green economy presents significant growth opportunities for America’s counties.<sup>1</sup> This guidebook serves as a resource for counties interested in understanding their role in the green economy and tapping into its tremendous potential.

### What is the Green Economy?

The concept of a “Green Economy” is quite new. As such, community and industry leaders have not settled on one clear definition of the green economy. On one end of the spectrum, definitions limit the green economy to simply the clean energy industry. While on the other end of the spectrum, definitions include the greening of every single economic input.

Despite the disparity in definitions, leaders working on green economic issues agree that it represents the confluence of economic development, workforce development, and environmental stewardship. Green economic practices are unique in that they encourage county economic development and workforce departments to account for the environmental impacts of their decision-making, while environmental departments are encouraged to account for the ways their policies effect economic growth and job creation. The concept is predicated on the idea that economic prosperity and environmentalism should be mutually beneficial.

*Defining the Green Economy: A Primer on Green Economic Development*, an analysis of 25 separate studies on the green economy, offers perhaps the clearest definition of the green economy. At its core, the green economy is the clean energy economy, consisting primarily of four sectors: renewable energy (e.g. solar, wind, geothermal); green building and energy efficiency technology; energy-efficient infrastructure and transportation; and recycling and waste-to-energy.<sup>2</sup> Although these are the growth sectors leaders primarily focus on, the green economy is not just about the ability to produce clean energy.

**“To remain competitive in the global economy, we need to discard notions of a dichotomy between economic growth and environmentalism and position our local economies at the forefront of innovation, competitiveness, and wise environmental stewardship.”**

**– Valerie Brown**  
NACo President, Supervisor, Sonoma County, CA

The green economy also includes retrofitting existing products and process improvements that result in efficiency and positive environmental impacts.

### What are the Sectors of the Green Economy?

The integration of economics and environmentalism creates several new industry sectors and requires the re-evaluation of many existing production consumption processes. The sectors impacted by green economic development vary depending on how stakeholders define the green economy. Figure 1 illustrates a green economic sector analysis adapted from *Defining the Green Economy: A Primer on Green Economic Development*.

### County Strategies for Greening Local Economies

Each county has unique challenges that require different approaches to greening their local economy. In order to best meet the needs of NACo members, strategies for impacting the green economy can be broken down into five broad categories:

- Green Economic Development
- Resource Efficiency and Green Purchasing
- Local Production
- Waste Management
- Green Infrastructure

The strategies and implementation tools are described in further detail in the following sections. But before delving into the 5 strategies, it should be noted that three overarching themes run across them all.

# Figure 1: Sectors of the Green Economy

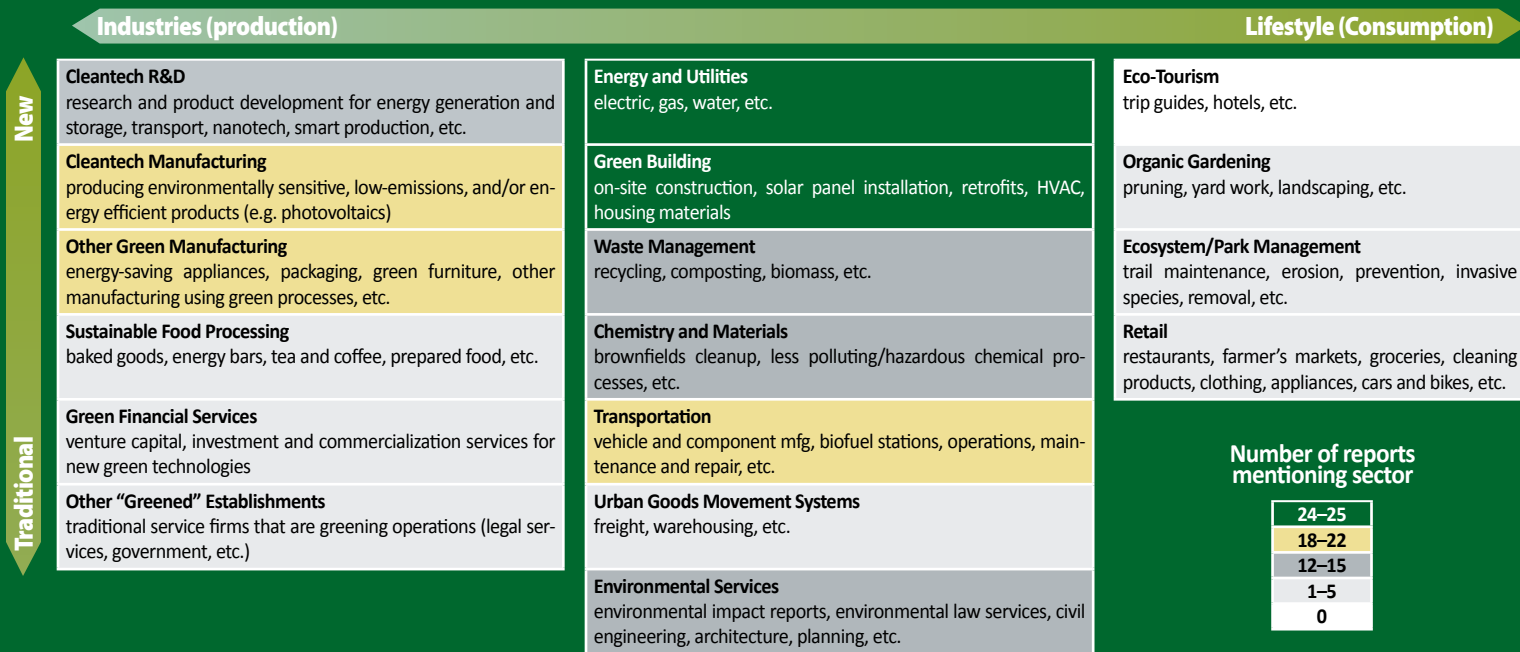


Figure 1 is adapted from *Defining the Green Economy: A Primer on Green Economic Development*. It illustrates the economic sectors most commonly included into the green economy. The key highlights the frequency with which studies performed by industry and public sector leaders included specific sectors. The vertical axis organizes the sectors from traditional economic practices undergoing changes due to the integration of economic and environmental goals to sectors that are now emerging. The horizontal axis organizes the sectors from production to consumption activities.

## Retrofit

The least costly and most efficient way to go “green” is to retrofit existing systems and processes to utilize existing resources more efficiently.

## Grow “Green”

Growth provides a crucial opportunity to incorporate green from the ground up. All production systems can be examined and altered to green standards.

## Consume “Green”

The consuming of products, services, and food has numerous economic and environmental impacts. When purchasing everything, consumers can make efforts to ensure products are produced efficiently and with the least impact to the environment.

By its nature, green economic development results in many social and environmental benefits. For the sake of clarity and brevity, this report focuses almost exclusively on the strategies and economic benefits accruing from the integration of local economic and environmental activities.

## Green Economic Development

Traditional economic development focuses on increasing production of goods and services. Production and exportation are vital for generating local income. Consequently, building export bases dominates much of traditional economic development strategies. In a green economy, traditional economic development strategies are adapted to build business that improves environmental outcomes.

## Green Business Attraction and Retention

Key targets for green economic development commonly include businesses that manufacture components for clean energy generation, perform clean energy and technology research and develop-

ment, and produce new environmentally-friendly versions of traditional products.

Attracting new green business is believed to be most substantial strategy for developing green local economies. Yet, high initial costs for site relocation, research, development, and marketing of green products and services often prevents the private sector from expanding.<sup>3</sup> With that in mind, county government can develop a green economic development strategy that targets incentives to green businesses and reduces barriers of entry into their communities.

## Model Program

### Ohio Green Enterprise Zone Clinton County/City of Wilmington, OH

On July 16th, 2009 the City Council of Wilmington, Ohio unanimously voted to establish the Wilmington Green Enterprise Zone (GEZ)—the first of its kind in the country. Funded as a line item of the City of Wilmington budget, GEZ is an innovative policy tool that seeks to spur green business and job creation in Clinton County by bringing about a convergence of two key areas of economic development: local capacity building and targeted financial incentives. In addition, Clinton County will:

- Serve as a consultant to parties seeking resources at the local, state, and federal levels.
- Provide an annual report on regarding the activity and agreements within the GEZ and advise the Mayor of Wilmington and Wilmington City Council on green development issues.
- Provide Green Enterprise Grants (GEG) for qualifying projects that improve material and energy efficiency or deploy advanced energy technologies for new or existing businesses.<sup>4</sup>

Counties commonly take advantage of several strategies to attract green businesses:

- Expedited review processes
- Technical support (e.g. with finding real estate, financing, land development review processes, etc.)
- Assistance with outside grants, loans, and support
- In-kind contributions (e.g., of land or infrastructure or staff support)
- Paying relocation expenses

In addition, several strategies are designed to both attract and retain green businesses.

- Grants for targeted green ventures
- Tax credits and refunds for targeted green businesses
- Fee exemptions for local government processes (e.g. land development review, building renovation, etc.)
- Subsidized loans

### **Green Economic Gardening**

Economic gardening is an economic development model that embraces the fundamental idea that entrepreneurs drive economies. The model seeks to create jobs by supporting existing companies in a community and helps community members develop new businesses. The concept connects entrepreneurs to resources, encouraging the development of essential infrastructure and providing them with needed information. Economic gardening initiatives provide local entrepreneurs with access to competitive intelligence on markets, customers, and competitors comparable to the resources customarily only available to large firms. This type of development increases local capital and provides income to residents who are likely to stay in the community for the long term. Traditional economic gardening can be adapted to target green business sectors. Services can include:

- County-supported business counselors
- Customized business research
- Market trends
- Industry information
- Customer analysis and identification
- Demographics and psychographics
- Marketing resources/lists
- Industry trends/forecasts, business financial info
- GIS – tools that provide customer locations and trends, drive-time analysis, plot competitor locations

### **Green Jobs and Workforce Training**

Before making location decisions, green businesses examine local demographics to determine whether communities offer the best employee-bases to support their staffing needs. In order to attract and retain green businesses, counties need well-trained workforces. Counties leading the way in green economic development have harmonized workforce training and economic development programs to accelerate green economic outcomes. By analyzing the employment needs of existing green businesses and new businesses counties want to attract, they can develop workforce training programs to train workers for available jobs.

Green jobs may be new, but most are achievable by transforming existing roles and retraining workers. The newly created White House Task Force on Middle Class Working Families defines green jobs as jobs that 1) involve tasks associated with improving the environment; 2) provide sustainable family wages, health and retirement benefits, and decent working conditions; and 3) are available to di-

## **Model Programs**

### **Pueblo County Economic Gardening Program Pueblo County, CO**

The Pueblo County, Colo., Geographic Information Systems (GIS) Department offers consulting services for local businesses to help them find optimal locations and grow in the community. The GIS department uses software from Redlands, Calif.-based ESRI that supports a variety of analysis and mapping needs, and provides demographic, business and shopping center data as well as the ability to incorporate in-house data.

Christopher Markuson, GIS manager for Pueblo County, and his team help business owners analyze and map demographic data and find valuable sources of information to improve their business models. They recently helped a local Web-based business that wanted to improve market penetration nationwide and Pueblo Community Health with a fundraising campaign. When last studied in September 2009, Markuson said, “We’ve tracked 58 new jobs emerging from the businesses we’ve helped grow, bringing in over \$2.8 million of new revenue into the county.” Markuson also noted that most of the new jobs paid livable wages (\$45,000 each on average), offered benefits, and had little potential to move out of the community. For more information on the program, please visit [www.pueblobusiness.org](http://www.pueblobusiness.org).

### **Boulder County Green Jobs Pipeline Boulder County, CO**

The Green Jobs Pipeline Partnership is a collaborative effort of Boulder County Housing and Human Services, Boulder County Housing Authority, Boulder County Community Services and Workforce Boulder County. The county piloted renewable energy and energy efficient projects for the Boulder County Housing Authority—providing paid internships and on-the-job training for low-income workers. The process links workforce demand with training for people in specific sectors—creating a pipeline from unemployment to work.

The program has weatherized 500 homes throughout Boulder, Broomfield, Larimer & Gilpin Counties—upgraded with cutting edge life/safety and energy efficiency enhancements. The training includes include soft skills, pre-apprenticeship training, and wraparound services that are needed to serve ex-offender, youth and other hard to serve populations. The goal is to build sustainable public-private partnerships that ensure Boulder County residents can find pathways out of poverty.<sup>6</sup>

verse workers from across the spectrum of race, gender, and ethnicity. In forming these jobs and sectors, county green workforce training strategies and programs should incorporate both the demand for trained employees and existing supply already available within communities.<sup>5</sup>

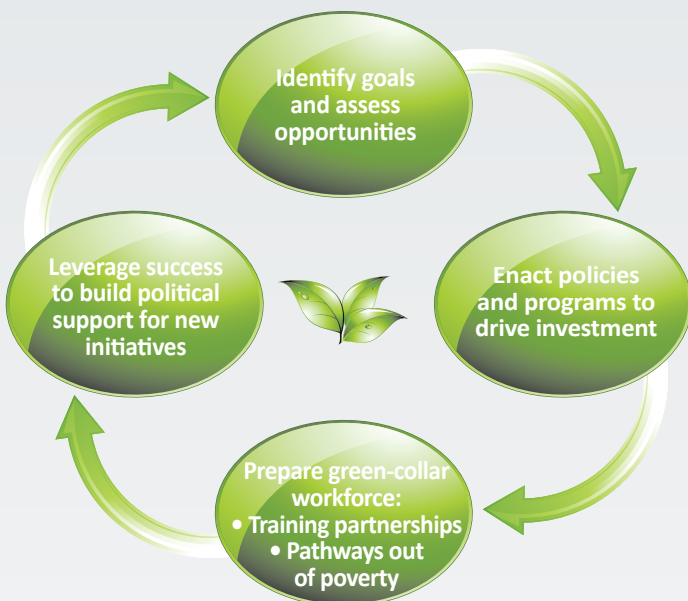
The National Association of Counties has performed extensive work on green jobs issues. For more information, please refer to NACO’s Issue Brief County Economic Development and Green Jobs: The Role of County Officials.

## Workforce Training Partnerships

Because the connections between local demographics, existing skills, workforce training, and employment are so complex, effective workforce training requires partnership across communities. For decades local workforce boards have been utilized to foster community partnership. When building partnerships and initiating efforts to train workforces for green employment, this is a great place to start. These are the common participants in green job training:

- County and city government leaders
- State government leaders
- Non-profit job training organizations
- Unions
- Local Businesses
- Community Colleges
- Universities

## Stimulating Green-Collar Jobs and Opportunity in the New Energy Economy



The diagram depicts the process by which counties can develop their local green workforces. The cyclical representation illustrates the iterative nature of green workforce development strategies.<sup>7</sup>

## Resource Efficiency and Green Purchasing

In addition to green economic development strategies that increase production and supply, there are additional, often more effective, methods for building green local economies. Resource Efficiency and Green Purchasing are two broad strategies for addressing the consumption-side of the green economy—harnessing community buying power and demand for energy, water, and green products. Simply by more efficiently utilizing resources, counties can:

- Reduce the cost of running local government
- Reduce the cost of doing business for existing green businesses
- Lower barriers of entry for new green businesses
- Reduce utility costs for homeowners, improving community quality of life and attracting a stronger workforce.
- Reduce the negative impacts on the environment caused by resource use

## Buildings

The built environment is a vital component of all economies. The way homes, businesses, civic institutions, and infrastructure are built, designed, and maintained has broad implications for resource consumption. As a result, pursuing resource efficiency in local building stocks can create new jobs and increase counties' attractiveness. Building energy efficiency measures include:

- Upgrading mechanical and electrical systems
- Replacing lighting and lighting controls
- Adding energy management and information systems
- Upgrading heating, ventilation and cooling air conditioning (HVAC) systems
- Incorporating low-flow water fixtures
- Developing renewable energy capacity
- Distributed generation
- Combined heat and power (CHP)
- Covering roofs with reflective materials
- Replacing windows
- Adding insulation

Counties can lead by example by performing energy efficiency upgrades in their own facilities. At the same time, counties can also leverage their resources by pursuing community-wide energy efficiency strategies that influence local businesses and residences. For more information see NACo's *Internal County Energy Management Strategies Factsheet*.

## Green Building Tools and Standards

A 2008 CoStar Group, Inc. study found that green buildings standards in the U.S. were "adding value" to buildings, as exhibited in higher occupancy levels, rents and sales prices as compared to traditional commercial properties.<sup>8</sup> Several commonly used tools to green buildings include:

- The U.S. Green Building Council's *LEED Rating System* is an internationally recognized green building certification system, providing third-party verification that buildings and communities are designed and built using sustainable strategies.<sup>9</sup>
- *National Green Building Standard* defines green building for single and multifamily homes, residential remodeling projects and site development projects, while still allowing for the flexibility required for regionally-appropriate best green practices.<sup>10</sup>
- *ENERGY STAR* offers several tools for managing energy use in buildings. Portfolio Manager is an interactive energy management tool that allows users to track and assess energy and water consumption across their entire portfolio of buildings in a secure online environment. Whether you own, manage, or hold properties for investment, Portfolio Manager can help you set investment priorities, identify under-performing buildings, verify efficiency improvements, and receive EPA recognition for superior energy performance.<sup>11</sup>
- The *ENERGY STAR Building Manual* is a strategic guide to help plan and implement profitable energy saving building upgrades. Users can maximize energy savings by sequentially following the five building upgrade stages.

Counties can offer incentives such as density bonuses or expedited review processes (Arlington County, VA), or enact regulations that require buildings to meet green building standards (Los Angeles County, CA). For sample incentives and regulations to encourage the use of these tools, please see the database available at [www.greencounties.org](http://www.greencounties.org).

## Energy Efficiency Financing Mechanisms

With the challenges local governments are facing, the National Association of Counties understands that it is difficult to find funding for green building initiatives. As a result, the Green Government Initiative is dedicating much of its resources to helping counties find new financing methods. Included are several traditional and new models for financing energy efficiency.

- Counties can apply for grant funding from federal, state and non-profit sources to fund energy efficiency improvements.
- **Performance Contracting** is a model used by counties to pay for energy efficiency upgrades with the savings they create. Loans are taken out up-front and paid off over time with the savings they create.
- **Property Assessed Clean Energy (PACE)** programs enable counties to loan funds to residents and businesses for energy efficiency retrofits. Proceeds are repaid 20 years via an annual assessment on their property tax bill.
- **Revolving Loan Funds** enable counties to create a pool from their existing resources to loan over and over again for energy efficiency retrofits. Loan interest and fees replenish the fund and cover maintenance.
- **Loan Loss Reserves** can be set up to back-up traditional loans made by private lenders—in turn reducing loan interest rates, which makes loans much more affordable and increases the benefits of making energy efficiency investments.

For more information on green building in counties, please see *Counties & Commercial Green Buildings Factsheet*<sup>12</sup> and *Counties & Residential Green Building Standards*.<sup>13</sup> There are also several factsheets available on the models include here at [www.greencounties.org](http://www.greencounties.org).

## Operations

The daily operations of both public and private facilities offer an inordinate number of opportunities to increase efficiency. These strategies are just as valuable for creating new jobs and revenue for local communities as business attraction and workforce development. Often, these strategies take less capital, expertise, and time to implement. Hence, they the most popular and most often pursued strategies.

## Green Procurement

Green procurement is the selection of products and services that minimize environmental impacts. Strategies include:

- Office Supply Purchasing Policies
- Green Cleaning Policies
- Green Building Operations Policies

For sample resolutions and purchasing policies, please visit NACo's Green Government Database.<sup>14</sup>

## Fleet Management

Fleet (vehicle) management can include a range of functions, such as vehicle financing, vehicle maintenance, vehicle telematics (tracking and diagnostics), driver management, fuel management and health & safety management. Fleet Management provides opportunities to remove or minimize the risks associated with vehicle investment, improving efficiency, productivity and reducing overall transportation costs. For more information on fleet management strategies, please see NACo's Transportation and Alternate Fuels Resources at [www.greencounties.org](http://www.greencounties.org).<sup>15</sup>

## Local Business Community Efficiency

By influencing local businesses to reduce energy and water consumption, counties can increase their attractiveness to companies that create green jobs and skilled workers. The National Association of Counties Green Government Initiative has produced several publications on methods for undertaking community-wide energy efficiency—including policies and action plans.

## Residential Efficiency

By influencing the reduction of energy and water consumption in homes, counties can increase resident quality of life and make their communities more attractive to the employees that green businesses desire. The National Association of Counties has identified several strategies to reduce residential energy and water consumption.

## Operations Tools and Standards

Green standards provide defined guidelines for local businesses. Some common standards and regulations include:

- *Green Plus* is a program that educates and certifies small and medium sized businesses in triple bottom line sustainability. The organization offers benchmarking tools and strategies for green business operation and procurement.<sup>16</sup>
- *Green Seal* offers certification for local businesses looking to green their products and services.<sup>17</sup>
- *LEED for Existing Buildings Rating System* helps building owners and operators measure operations improvements and

## Model Programs

### Green Business Partnership Sarasota County, FL

The Green Business Partnership is a collaborative effort of businesses, business organizations and county government. It was initiated through an innovative grant awarded by the Florida Department of Environmental Protection to Sarasota County. An on-site certification assessment to verify the performance of applicant businesses to the Green Business Partnership standards. Certification is valid for three years, after which a recertification process is required. Local businesses are seeing noticeable results due to their participation in the program. For example:

- Carlson Studio Architecture is saving more than \$1,600/year by conserving energy and water
- Children's World Uniform Supply reduced its paper consumption 50 percent
- Mirasol FAFCO Solar reduced its garbage costs 50 percent .
- The John and Mable Ringling Museum of Art reduced energy consumption and saved \$100,000/year<sup>24</sup>





maintenance on a consistent scale, with the goal of maximizing operational efficiency while minimizing environmental impacts.<sup>18</sup>

- The US Environmental Protection Agency's **ENERGY STAR** Program provides many platforms that can be used to leverage county resources to promote energy efficiency throughout the community.
  - » The "Change the World, Start with ENERGY STAR" campaign is designed to encourage local residents to pledge with millions of others to take small, individual steps to conserve energy. Energy Star offers a process for how to set up a competition.<sup>19</sup>
  - » *Energy Star's Guidelines for Energy Management* offers a proven strategy for superior energy management and financial performance with tools and resources to help each step of the way.<sup>20</sup>
  - » *Energy STAR's Residential Program* offers tools and resources for how local residents can improve energy efficiency in their homes.
- The US Environmental Protection Agency's *WaterSense* Program helps consumers identify water-efficient products and programs that meet *WaterSense* water efficiency and performance criteria. *WaterSense* offers products, programs, and practices to help save water and money and encourage innovation in manufacturing.
- *Residential Energy Services Network (RESNET)* Certified Auditors provide *Home Energy Rating (HERs)* and offer strategies for meeting Energy Star Performance Standards.

## Local Production and Utilization

Producing and consuming locally builds community wealth, increases regional self-reliance and economic security, and eliminates the environmental impacts associated with transporting goods over long distances. Due to the multiplier effect, the positive impacts of local expenditures ripple throughout entire local economies. The local economic chain works something like this:

1. manufactures create jobs by producing goods in a community
2. on-site jobs and income are created by distributing and installing the goods
3. and additional jobs and economic activity are created by supplying goods and services to people in the primary green activity.

More specifically, local manufacturing can produce high quality jobs and export products. Locally-sourced food can provide better quality food at a lower cost to communities. Locally-sourced renewable energy can reduce the cost of living for local residents, the cost of doing business for businesses, and create security in the energy supply.

### Local Food Systems

The way we produce, process, and consume food has major implications for green economic growth and environmental quality. The term "foodshed" is used to examine local food systems in a holistic manner and create more sustainable methods for producing and consuming food. Foodsheds include everything from where food is produced to where it is consumed—including the land it grows on, the routes it travels, the markets it goes through, the way its eaten, and its disposal. Many "eat local" campaigns utilize a simple 100-mile radius, but local foodsheds are unique to different communities. Each community can perform an analysis to determine the unique scale and make-up of their local foodshed.

### Food Policy Councils

A food council is a group of stakeholders that provides support to governments and citizens in developing policies and programs related to the local food economy. County governments can support



Strategies to improve the food system should include interventions at each stage of the system.

food councils by sponsoring their creation and providing technical support, in-kind contributions (e.g. office space, funding, staff assistance, etc.), and political legitimization from elected officials.

### Farm to School

Farm to school programs take advantage of the buying power of school districts to support local farms—both providing food at discounted rates to school districts and fueling local economic activity. School districts purchase produce and local agricultural products from farms to serve as part of school meals. Counties that directly control school districts can develop local food purchasing policies. Otherwise, counties can indirectly support farm-to-school programs by providing the capacity to apply for grants, leadership to create partnerships, and help farms to build capacity to provide food in the form that schools can immediately use.

### Food Infrastructure Development

Food supply infrastructure includes growers, suppliers from which to purchase seeds, tools and machinery facilities in which to store goods, processing and packing facilities to transform raw products into marketable ones, and shipping and distribution methods to deliver products to buyers. To help develop food system infrastructure, counties can streamline permit processes and offer financial aid for food producers, targeted tax rebates, political support and favorable zoning regulations.

### Agriculture Conservation Easements

Agricultural conservation easements are deed restrictions landowners voluntarily place on their property to keep land available for agriculture and ensure it does not get developed. County governments can support agricultural conservation easement programs first and foremost by passing legislation that allows for their establishment. In addition, counties can provide capacity and technical assistance to help set them up.

### Community Gardens and Urban Farms

Community gardens are spaces in urban and suburban communities where residents can grow food and plants. They are public spaces

that are managed and maintained with the active participation of community residents. By enabling citizens to grow their own food, community gardens reduce family food budgets, create food security, and offer income producing opportunities. In addition, community gardens offer opportunities for restoring vacant lots, which in turn raises local property values and improves community health.

For more information on how counties can influence food systems, please see refer to *Counties and Local Food Systems*.<sup>25</sup>

## Renewable Energy Generation

Renewable energy technologies offer economic advantages for two main reasons: (1) they are labor intensive, so they generally create more jobs per dollar invested than conventional electricity generation technologies, and (2) they use primarily indigenous resources, so most of the economic ripple effect is realized within the local community. In fact, The Wisconsin Energy Bureau estimates that renewable energy generation creates three times as many jobs as the same level of spending on fossil fuels.<sup>26</sup>

Across the country, counties are pursuing wind energy generation, solar, geothermal, biomass, and smart grid technologies. The following strategies can be pursued to increase renewable energy generation in counties:

- Pursue renewable energy generation in conjunction with energy efficiency retrofits of county buildings.
- Offer tax and financial incentives, such as Property Assessed Clean Energy (PACE).
- Offer county residents and businesses with assistance utilizing state and federal tax rebates and benefits for renewable energy.
- Assisting large energy developers with siting and permitting.
- Offer positive messages.
- Communication during the development and operation of any energy project of scale is critical. Counties can effectively communicate the impacts of project with the community at all stages of development and operation.

For more information on wind energy development, please see the *Wind Energy Guide for County Commissioners*.<sup>27</sup> And despite its name, the U.S. Department of Energy's *Solar Cities Program* also offers great tools and funding opportunities for counties.<sup>28</sup>

## Waste Stream Management

By reducing the costs and negative externalities associated with waste disposal, counties are creating jobs and reducing the costs of doing business. Counties with competitive business environments understand full-well the value of sustainable waste management. Many local governments have adopted aggressive solid waste management programs. The County of Hawai'i, for example, has declared its intention to develop a zero waste future. Achieving this goal will require innovative technologies to reduce the waste stream, increase recycling rates, and transform waste to energy without relying on incineration.

Private waste companies can provide the expertise to bring about new ways of managing solid waste, while creating jobs and reducing environmental impacts in the process. For instance, Waste Management International has announced plans to fundamentally transform its operating model from that of a "waste" company to a "materials" company. Because of the significant role counties play in waste management, the green transformation of the waste industry creates tremendous opportunities for counties.<sup>29</sup>

## Commingled versus Single Stream Recycling

Commingled recycling requires residents to separate all paper in one bin and all containers (plastic, glass, etc.) in another. Single Stream recycling enables all recycles to be placed in one bin—making it easier to recycle but increasing contamination. Both strategies have unique benefits and drawbacks, but, no question, single stream recycling is increasing in popularity.<sup>30</sup> Considering the goal of recycling programs is to earn the highest possible diversion rates, counties should examine the characteristics of their communities and determine which strategy is best.

## Landfill Gas to Energy Recovery Systems

Landfill gas is produced when microorganisms break down organic material in landfills, and is comprised of approximately 50-60 percent methane and 40-50 percent carbon dioxide. At most landfills in the United States, these greenhouse gases are simply burned off, or "flared." According to EPA data, there are currently 425 landfills with LFGTE projects in the U.S. that power more than 1 million homes. They estimate that there are about 570 landfills that have the potential to develop LFGTE projects in the future. National Association of Counties staff can connect counties to organizations that can help them assess whether the landfills in their communities are viable candidates for LFGTE projects.

### Landfill-Gas-to-Energy Recovery Systems

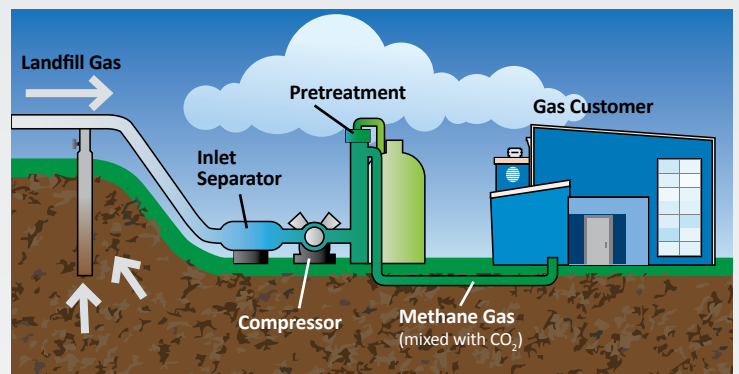


Figure adapted from NST/Engineers, Inc.

## Construction Recycling

The construction waste stream is one of the largest components of the overall waste stream. Hence, many counties focus efforts specifically on construction recycling. They provide the tools and assistance needed to help contractors obtain the highest diversion rates on construction, demolition and deconstruction projects. Tools available include sample jobsite waste guidelines, waste management plan templates, sample recycling specifications, directories of local recyclers. Technical assistance can include presentations to jobsite workers on building material reuse, salvage, and recycling, and site visits to assess diversion options. In addition, counties can require that all building permits have plans that comply with county reuse and recycling targets.

## Composting

Composting offers an effective method for diverting waste from landfills, while at the same time providing viable mulch for local agriculture. Counties can facilitate composting by residents and local businesses with demonstrations at county facilities. Strategies include:

- Developing education, training and initiatives to promote composting on farms, homes, and businesses
- Modify county code to include reasonable composting rules for the commercial and industrial sector

## Landfill Redesign

New waste stream management methods require landfills to re-tool. Strategies include:

- Accept and sort commingled recyclables
- Recover and sell reusables
- Establish organic material and rock grinding services
- Install full signage and demonstrations in county facilities

## Waste Management Training and Social Marketing

- Train the trainers, technicians, regulators, residents, businesses
- Facilitate research required to support sound resource management, including facilitation of public, private, and academic partnerships

## Sustainable Design and Planning

Land use decisions significantly impact resource use, environmental quality, and economic activity. As a result, planning and zoning authority provides counties with powerful tools for influencing the green economy. By encouraging smart, coherent land use decisions, counties can increase the quality of life of local residents and improve the local business environment.

## Commercial Corridor Revitalization

Strong business corridors build strong neighborhoods and create community wealth—increasing property values, attracting businesses, and increasing economic stability. Counties can build the capacity of communities, merchant groups, and community-based organizations to strengthen the physical, social, and economic character of their neighborhoods—with a keen eye on attracting green businesses. County corridor revitalization programs can include community planning, hands-on implementation assistance, grant funding, analysis of market data, trainings and peer networks, and green business attraction.

## Open Space Conservation

In its most basic form, open space is land that has not been developed for intensive human use; it has no (or very few) buildings, roads, or other structures. Open space conservation has intrinsic value to the environment, but it can also be viewed as a green economic development strategy.<sup>31</sup> Homes and businesses located in communities with strategic open space conservation programs experience higher property values. Open space is a financially valuable community amenity.

## Green Infrastructure Development

Green Infrastructure is a network of waterways, wetlands, woodlands, wildlife habitats and other natural areas of countywide significance that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to health and quality of life. As an interconnected system, green infrastructure provides greater environmental viability, value, and function than the sum of the individual resources. Green Infrastructure can include simple low impact development techniques such as small patches of grass and trees as well as large-scale managed use of wetlands as water treatment components. Effective management of green infrastructure also creates jobs and fosters economic growth. Some strategies for building county green infrastructure include:<sup>32</sup>

- Create a plan for green infrastructure management and development—including identifying existing assets and gaps.
- Build a countywide map of existing and desired green

## Model Programs

### EcoComplex Catawba County, NC

The EcoComplex evolved out of a need to meet legislation enacted by North Carolina in 1989 mandating that all landfills reduce solid waste by 40% by 2001. Catawba County faced a greater challenge than most of its peers due to the fact that its waste stream was approximately 78% industrial, which is most difficult to reduce. The EcoComplex was developed to recover all useable products and by-products from a group of private and public partners, and use the waste products as either sources of energy or as raw materials in the production of products (pallets, lumber, compost, brick shapes/art). The EcoComplex currently creates enough renewable energy to power approximately 1,200 average sized homes, and an expansion of production to 2,400 homes will be completed in the near future. To date, benefits include:

- Generating \$20 million for Catawba County's tax base
- Increasing the life of current landfill by 35 years
- Enabling Catawba County to consistently hold the position as the #2 recycler in North Carolina

### Community-wide Green Infrastructure Plan Alachua County, FL

Alachua County, Florida is a county of 252,388 people in North-Central Florida—including urban, suburban, and rural growth patterns. The County's Green Infrastructure Investment Strategy entails protecting green infrastructure through land acquisition, land use authority, development regulations, and community outreach.

The County has addressed green infrastructure through its Comprehensive Plan and land development code, promotes Low Impact Development (LID), maintains urban boundaries, and enforces non-point source clean water mandates for impaired local water bodies. Some resource protection standards include requiring large natural buffers along all water features, requiring open space and connectivity between developments, requiring minimum percentages of preserved tree canopy coverage, and offering a transfer of development rights (TDR) program. The county estimates that their preservation efforts have resulted in \$150 million benefit to local property owners and \$3.5 million per year in tax revenue for the county.<sup>34</sup>

- infrastructure that can be readily updated.
- Streamline the preparation of environmental information and recommendations for area master plans.
- Facilitate a more environmentally effective review and mitigation process for all development projects.

For more information on county green infrastructure strategies, please see NACo's Green Infrastructure Program.<sup>33</sup>

## Green Policy and Planning

Counties excel as thought leaders, organizers, and conveners. At the same time, all the strategies illustrated in this document will

## Model Programs

### Zero Waste Plan for the County of Hawai'i

#### Hawai'i County, HI

In December 2007, the County Council adopted a resolution to “embrace and adopt the principles of zero waste as a long-term goal for Hawai'i County.” The zero waste philosophy promotes the efficient use of materials to eliminate waste and pollution by emphasizing a closed-loop system of production and consumption, and moving in logical increments toward the goal of zero waste.

Concurrent with the adoption of the resolution, the County formed the Solid Waste Advisory Committee (SWAC) and contracted with a consultant to develop the Zero Waste Plan for the County of Hawai'i (February 2009). The recommendations in the Plan are projected to increase the County's current recycling rate of 29 percent to a rate of 44 percent by the end of the planning period of 2015. The plan is designed to recover almost \$11,000,000 from the waste stream and maintain 684 new jobs at the same time.<sup>35</sup>

## Economic Benefits of Green Infrastructure

### Economic growth and investment

Businesses attract and retain more motivated staff in environments with green amenities

### Land and property values

Views of natural landscapes can add up to 18% to property values

### Labor productivity

Green spaces near workplaces reduce sickness absence, increasing productivity

### Tourism

Eco-tourism supports jobs

### Products from the land

Agriculture serves as an employment base

### Recreation and leisure

Footpaths, cycle paths and bridleways enable healthy, low-cost recreation

### Health and well being quality of place

Residents receive health benefits from natural environments

### Land and biodiversity

Green infrastructure provides vital habitats and jobs managing the land

### Flood alleviation and management

Urban green spaces reduce pressure on drainage and flood defenses

### Climate change adaptation and mitigation

Green infrastructure can counter soaring summer temperatures in cities

require the establishment of effective policies and planning to be implemented. Well-developed plans offer counties the opportunity to capture as many positives of the green economy as possible, while leaving behind the negative externalities of resource use and economic development.

### Comprehensive Planning

Incorporating integrated land use and transportation that reduce resource use and, in turn, improve the environment for green business development.

### Air Quality Planning

Air quality is the broadest indicator of environmental quality. Effective air quality planning will be required to best meet new EPA air quality standards and ensure local communities can control costs associated with running government and businesses.

### Integrated Energy Management Planning

Communities are beginning to view energy as a top priority to ensure their economic competitiveness. Hence, they develop community energy use plans that coincide with their comprehensive plans.

### County Building Codes

County building codes can be amended to support resources efficient design and planning.

### Integrated Waste Management Plans

Plans includes important solid waste goals to help achieve environmental sustainability—including efficient waste disposal and waste diversion strategies, such as recycling and composting.

## Action Steps

Each county has unique challenges that require different approaches to greening their local economy. As a result, this section does not pretend to provide a one-size-fits-all approach, but offers some strategies to work from.

### Green Economy Task Force

A Green Economy Task Force can be established to advise the county commissioners on scoping the size of the local green economy, developing goals, and pursuing projects. The task force can also be a hub for partnerships between county departments, schools, local economic development corporations, residents, and businesses.

### Assessment

Once the county establishes a group to drive the work around greening the local economy, the next step is to analyze the existing landscape. Here are some potential steps for doing so:

1. Identify model jurisdictions that have successfully developed green economic development initiatives
2. Create an inventory of the county's green industrial sectors
  - Identify the short-term and the long-term green economy sectors where the county has a competitive advantage and should focus on in terms of cluster development.
  - Identify the criteria that companies in these selected sectors most often use to select locations for their firms.

3. Establish a baseline of the county green economy Sample Inventory:<sup>37</sup>

The above figure is adapted from a diagram developed in 2008 by the consulting firm Ecotech in the *Economic Value of Green Infrastructure*.

## Model Programs

### Green Economy Task Force and Economic Development Strategy Montgomery County, MD

County Executive Isiah Leggett appointed the Green Economy Task Force, a group of leaders drawn from a variety of business, financial, academic and professional organizations, to undertake one of the most thorough planning exercises completed to date on the county role in the greening the local economy. The Task Force coordinated its work with the county's Sustainability Working Group, a separate group tasked with identifying actions to meet greenhouse gas reduction goals. The Green Economy Task Force began with an effort to assess their local green economy and, in April 2010, released an action plan detailing strategies for attracting green businesses and growing green jobs. The action plan is unique to the County, but the process offers some valuable lessons for America's counties. Implementation recommendations include seven county policy advances, three strategies for financing green economic development, two strategies for workforce training, four strategies for building public support, and three strategies for measuring growth.<sup>36</sup>

- Green Technology Companies
- Green Manufacturing
- Corporations Going Green
- Green Service and Product Providers
- Green Venture Funding
- Green Technology R&D
- Green Technology Education and Workforce Training
- Green Demonstrations
- Green Incubators

#### 4. Develop future goals

- The detail of the analysis really depends on resources. Some counties access the economy to the best of their knowledge with internal staff and community leaders. Some counties hire consultants.

#### Developing a Plan

Once counties understand the current state of their green economies, they can create plans for reaching where they would like to be. The plans can be comprised of these sections: Action Steps, Projects, Funding, Policy, Partnership, Regulations, and other recommendations and opportunities that will foster green workforce development and business attraction. Include projections for the county green economy as a result of implementing the plan.

#### Plan Development Tips:

- A very collaborative process is the key to success
- Draw on work done nationally, i.e. Climate Prosperity Project, Apollo Project, Maryland Clean Energy Center, Clean Energy States Alliance, Green For All, etc.
- Customize strategy to your county
- Leverage federal and state funding
- Position your county as a leader in the state and nation
- Prioritize projects
- Perform projects in phases

## End Notes

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## About the NACo Green Government Initiative

The NACo Green Government Initiative serves as a catalyst between local governments and the private sector to facilitate green government practices, products and policies that result in financial and environmental savings. Launched in 2007, the Initiative provides comprehensive resources for local governments on all things green, including energy, green building, air quality, transportation, water quality, land use, purchasing and recycling. For more information contact Jared Lang, NACo Program Manager, Green Government Initiative at 202.942.4224 or [jlang@naco.org](mailto:jlang@naco.org).

NACo wishes to thank its Green Government Initiative Partners for their support in this effort. NACo's Green Government Initiative Partners are all working hard to develop the solutions counties need to build their local green economies. Without their support, this work would not be possible.

