

# Federal Support for Sustainable Rural Communities

## Case Studies



### Greensburg: Rebuilding a Community with Green Design



*Photos courtesy of David Doyle, EPA*

**Location:** Greensburg, Kansas

**Focus:** Greensburg has embraced green building, sustainable design, and renewable energy strategies as the community rebuilds after a devastating tornado hit in 2007, including mandatory LEED Platinum certified city-owned buildings and a 10 turbine wind farm.

#### **Federal Partners:**

U.S. Environmental Protection Agency  
U.S. Department of Agriculture  
U.S. Department of Commerce (Economic Development Administration)  
U.S. Department of Energy (National Renewable Energy Laboratory)  
Federal Emergency Management Agency  
Small Business Administration

#### **Project Description:**

On May 4, 2007, Greensburg was hit by an EF-5 tornado which killed 11 people and destroyed 95% of the city. In the wake of the tragedy, those residents who chose to return to Greensburg decided to rebuild the city by embracing green building, sustainable design, and renewable energy. In December 2007 as part of its recovery plan, Greensburg passed a resolution requiring all new public buildings to achieve a LEED Platinum rating. These buildings utilize wind turbines, solar panels, high-efficiency windows, recycled materials, and other techniques which reduce energy consumption and save hundreds of thousands of dollars in energy bills. Additionally, the city receives its power from a 10 turbine wind farm which provides enough energy to serve Greensburg and nearby communities.

Prior to the 2007 tornado, Greensburg had been facing economic challenges common to many other small Midwestern communities. Impacted by changes in the agricultural industry, by the year 2000 Greensburg was a struggling city of 1,500 people with a per capita income of around \$18,000. After the destruction of the city, residents and local officials saw an opportunity to rebuild in a way that was “stronger, better, greener”- now Greensburg’s new motto.

Receiving assistance from many federal agencies as well as support at the state level, Greensburg has begun its path to a sustainable recovery. Following the new guidelines established for the city under the 2007 green building resolution, Greensburg has built its school, city hall, hospital, county building, courthouse, and an arts center. The city hall was built with bricks that were collected from a power plant that was destroyed by the tornado and also utilizes geothermal heating / cooling and solar panels for energy.

# Greensburg: Rebuilding a Community with Green Design

The new K-12 school uses geothermal heat and a wind generator as well as other green systems which make the building 50% more efficient than if built under the traditional code. Additionally, in this time of fiscal challenges and constraints, Greensburg's new buildings provide a substantial amount of savings in energy costs. The new school saves an estimated \$150,000 a year, the hospital around \$120,000, and the courthouse \$14,000. In addition to the city's new structures, Greensburg's Main Street has been redeveloped as a narrower, more walkable space. The street also utilizes a green stormwater design system which nourishes plants during the dry season with water collected and stored in underground cisterns. Main Street has also supported some of Greensburg's new businesses, including an insurance agency, coffee shop, a home furnishings store, and others. The city established a "business incubator" to nurture new businesses by providing space at an affordable rent until the business is ready to expand.

Greensburg's wind farm, located 3 miles outside of the city, consists of ten 300 foot turbines. The wind farm produces 12.5 MW of energy which is enough to generate power for the entire city as well as other local communities, making Greensburg a green energy provider for the region. Technical assistance for the wind farm, as well as for the city's master plan and energy-efficient buildings, was provided by the Department of Energy's National Renewable Energy Laboratory. FEMA was also instrumental in supporting the first phase of Greensburg's recovery efforts.

Following the disaster and the town's new commitment to sustainable redevelopment, the *Greensburg GreenTown* grassroots organization was established to support residents, businesses, and the local government in achieving its vision. GreenTown has launched a variety of programs, including providing technical assistance, organizing educational trainings, fundraising for local sustainable development projects, and designing a GreenTour map and book for visitors and residents to learn about what projects are happening in the community. GreenTown has also created the "Chain of Eco-Homes" project which are model green homes built to educate local residents and attract visitors who pay to stay in the homes as overnight guests. Local residents have also adopted many of the green building techniques in their own new home construction, such as double-pane windows, thicker walls, solar panels, and geo-thermal heating.

Greensburg has embraced its role as a model green town and is turning its strategy into a commercial venture not only through its wind farm and other green jobs created, but also through a budding eco-tourism industry. While Greensburg has always had visitors to see its 109 foot deep well (the largest hand-dug well of its kind), the city's green buildings are becoming the community's newest attractions. Visitors pay



Photo: David Doyle, EPA

around \$100 dollars a night to stay in one of the featured eco-homes built through the Chain of Eco-Homes project. Tours are also given for visitors to the town to learn about Greensburg's redevelopment plans.

Finally, Greensburg and GreenTown have worked hard to encourage other communities, especially those impacted by natural disasters, to adopt similar redevelopment strategies. Recently, a group of leaders from Reading, KS visited Greensburg to learn how to rebuild their town after a tornado hit in May 2011. The city hopes that it can serve as an example for other communities such as Joplin, MO and Tuscaloosa, AL for how to rebuild sustainably after disasters.

**For more information about this project, contact:**

David Doyle, EPA  
913-551-7667  
doyle.david@epa.gov