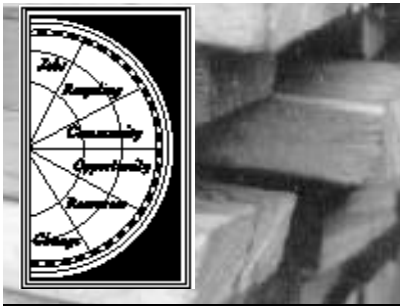


US EPA ARCHIVE DOCUMENT



# Deconstruction Works: A Study of Programs in Action

## Case Study #2: Welfare-to-Work Program

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### What is Deconstruction?

Deconstruction is the process of carefully dismantling a building in order to salvage components for reuse and recycling. This labor intensive, low-tech, and environmentally sound process has emerged as an alternative to traditional demolition methods. Demolition places high priority on removing structures as quickly and cheaply as possible, and in the process, minimizes employment and maximizes waste.

Deconstruction has many benefits, including: maximizing the recovery of materials, conserving finite old growth forest resources, and providing many employment and job training opportunities. By coupling deconstruction activities with traditional demolition methods, communities can create local economic activities around remanufacturing or reprocessing salvaged materials while diverting demolition debris bound for landfills and preserving resources through reuse.

## Redwood Community Action Agency Old Growth Redwood Recycling Project

### Project Goals

The Housing Rehabilitation Division (HRD) of the Redwood Community Action Agency (RCAA) oversees the Old Growth Redwood Recycling (OGRR) project. The HRD has been operating since January 1984 and administers housing rehabilitation programs, housing conditions surveys, sewer and water lateral programs, and the California Disaster Assistance Program.

The catalyst for the creation of OGRR came when the California Department of Fish and Game (CDFG) approached RCAA's HRD staff for help. CDFG had acquired over 5,000 acres of pasturelands in various parts of the county to convert them back to wetland habitat. These lands contained numerous large barns and other structures that were not compatible with the wetland habitat conversion plans.

CDFG's initial plan was to burn the structures, but their staff was also allowed to explore other options. The CDFG worked with RCAA and a Memorandum of Understanding for the OGRR project was signed to deconstruct the barns, built almost completely of old growth redwood. The amount of salvageable material was estimated at over 220,000 board feet.

Given the opportunity to deconstruct the barns and add to the Agency's financial self-sufficiency, the RCAA Board of Directors authorized the use of some of the Agency's unrestricted funds to jumpstart OGRR.

Additional money was raised, including: a \$5,000 waste diversion grant from Humboldt County to purchase basic tools, a \$10,000 development grant from the Materials for the Future Foundation (MFF)/US Environmental Protection Agency (US EPA) Deconstruction Grant Program, and an Economic Development Technical Assistance grant from the Community Development Block Grant Program.

RCAA applied for funding after the OGRR project had already been in operation for four months. MFF/US EPA grant funds

### Grant funds were used as follows:

Salaries and Wages	\$6,238.05
Fringe Benefits	\$1,913.96
Retirement Fund	\$4.66
Mileage--Personal	\$127.31
Consumable Supplies	\$59.72
Communications	\$.05
Administrative Expenses	\$1,000.00
Consultants	\$656.25
<b>Total</b>	<b>\$10,000.00</b>

were used for inventory acquisition and to bridge the shortfall of administrative funding.

The OGRR project provided an opportunity to start a locally based, environmentally sound, community economic development business. This RCAA project developed partnerships between CalWorks, the Private Industry Council (PIC), California Department of Fish and Game, Humboldt County Environmental Services, other government agencies, and the private sector.

### **OGRR Project Goals**

- 1) Identify, salvage and recycle available old growth redwood lumber from structures slated for demolition.
- 2) Create an old growth redwood recycling lumberyard. One of the barriers to using salvaged wood is consistent availability. The lumberyard can make reused wood available on an on-going basis by allowing the OGRR to stock an inventory for sale.
- 3) Create jobs and develop worker skills through Welfare-to-Work and the PIC's placement and training programs. Participants will be trained in deconstruction and either hired permanently as the program expands, or prepared for transition into the private sector in the deconstruction or construction fields.
- 4) Become a self-sustaining program through deconstruction fees and the sale of wood. Money raised beyond that goal will support other RCAA community activities in Humboldt County.

### **Employment/Training**

#### **Welfare to Work**

The OGRR deconstruction crew was composed of three CalWorks Welfare-to-Work participants, an assistant crew foreman with 50% of his wages being paid by the PIC, and a crew foreman paid by RCAA. OGRR was designed to train unemployed men and women from economically disadvantaged communities and to create up to twenty jobs over the course of four years. During this phase of the project, which lasted nine months, nine trainees went through the CalWorks and PIC programs. As of October 1999, four of these nine trainees were employed, two were continuing their training through the PIC program, and one was on workers' compensation.

### **Waste Diversion**

OGRR deconstructed 5 buildings and diverted over 60,000 board feet of old growth redwood over a nine month period. A farmhouse, two small barns and two large barns were deconstructed. The area covered by these buildings totaled approximately 12,000 sq. ft. Approximately 39,000 board feet of the recovered lumber were processed by pulling nails, trimming ends and grading material into two categories stacked according to lengths. Of the processed material, 13,000 board feet was sold, mostly through wholesalers. The average price received was \$1.29 per board foot.

Twenty five thousand pounds of debris was landfilled. Most of it originated from the farmhouse complex and consisted of primarily inorganic material which had accumulated over the years. Approximately 375 cubic yards of organic debris was burned on the various sites and 360 cubic yards of wood waste were sent to a local co-generation plant and used as boiler fuel. About 27,000 board feet of processed material with an estimated value of \$25,000 was inventoried.

At the end of this phase of the project, a number of CDFG buildings remained available for deconstruction. Approximately 160,000 board feet of salvageable wood remain in these buildings. OGRR also has a long list of potential buildings that are can be deconstructed if funds become available.

OGRR's monthly operating costs were \$8,000, with yearly costs of approximately \$96,000. This included full-time pay for two crew leaders, liability insurance, workers compensation insurance, and other operational costs.

### **Greenhouse Gas Emissions**

Source reduction of wood through deconstruction directly reduces greenhouse gas emissions by keeping the material out of the landfill and increasing forest carbon sequestration.

By reusing 75 tons of lumber, 56 tons of organic materials and 81 tons of wood waste, this project reduced greenhouse gas emissions by 67 Metric Tons of Carbon Equivalent (MTCE) -- roughly the amount emitted annually by more than 50 cars. To estimate your greenhouse gas reduction benefits from source reduction

or recycling, use EPA's online calculator - Waste Reduction Model(WARM) at <http://www.epa.gov/global-warming/actions/waste/w-online.htm>, and for additional information on climate change and waste visit <http://www.epa.gov/globalwarming/actions/waste/index.html>.

## Lessons Learned

The lack of start-up capital was a significant barrier to the project's success and manifested itself in the following three areas:

1. The lack of capital to purchase and/or rent the proper equipment and tools. Equipment needs were often overlooked resulting in an inefficient deconstruction crew.
2. Every business needs cash in order to be more readily responsive to the needs of its clients and vendors. Much of the project's money was locked up in assets and inventory, and this inhibited its fiscal agility.
3. A lack of funds to hire administrative personnel created significant problems in handling the day-to-day realities of starting a business while also planning for its growth. The time and personnel needed to develop and implement a marketing plan was too great for the OGRR project. A full time program administrator/developer was definitely necessary to sustain the OGRR project past the initial phase.

The insufficient number of subsidized deconstruction trainees was also a barrier. The local CalWorks program and the PIC were not able to provide the project with the number of trainees expected. There were times when there were no trainees available and, over the duration of the project's activities, an average of three subsidized trainees were available at any one time. A minimum of six trainees was expected and the project had the capacity to handle twice that number.

The worker's compensation insurance rates of \$.41 per dollar for non-subsidized deconstruction employees combined with the poor supervisor-to-trainee ratio increased the agency's cost significantly. This expense is certainly a barrier to deconstruction on the OGRR project.

The weather also posed difficulties for the project. Generally, deconstruction cannot be done in the wind and rain. Since Humboldt County has notoriously harsh winters, provisions for productive work during these times are critical for the continuity of the project and for long-term profitability.

## Conclusions

In mid-July of 1999, OGRR's active deconstruction operations halted because of depleted operational funds. RCAA's Executive Director and Board of Directors, while very supportive of OGRR and its feasibility, could not continue to be its primary source of funding. It was unrealistic to expect the project to "break even" within the first year of operation. A larger source of funding was needed to carry the project through the start-up phase to become financially self-sustaining.

The OGRR partners recently applied for two grants through the Federal Office of Community Services, and they are awaiting responses. If additional funding does not materialize, the partners may move to liquidate existing inventory.

Despite the financial challenges, everyone involved with the OGRR project recognized its significance as a catalyst for future projects. The OGRR partners developed a model for economic development and resource conservation that, with adequate capital, could become sustainable.

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