



Ypsilanti Food Cooperative
312 N. River Street
Ypsilanti, Michigan 48198
734-483-1354
Grant PSC-08-31

July 1 2008 through August 31, 2008

Complete Task

- 10% Expansion of Solar installation at Cooperative
- 5% Installation of Solar panels at City Hall
- 10% Utility meter reading program
- 10% Building of solar.ypsi.com website
- 10% Solar educational outreach

Progress over the past two months

The Ypsilanti Food Cooperative has achieved a great start on this grant. The Cooperative purchased additional racking material and rebuilding the rack to accommodate the 7 additional panels. The picture on the left is what the solar panels looked like before, and the picture on the right shows the same panels mounted on the new rack that can hold a total of 12 panels. We spent a total of \$688.27 for the additional racking material. A volunteer contractor, Blue Sky Construction, performed the rebuilding of the rack He had some open time in his schedule and wanted to fill it with this volunteer work.



The installation at City Hall is also moving along. We need to get a licensed structural engineer to approve (stamp) our design for the back of City Hall. We sent letters to four local structural engineering companies requesting quotes for this work. Three company replied to our inquiry; one was too busy to perform this work, one had a not to exceed

quote of \$5000 and another Not to exceed quote for \$3800. We selected Fitzpatrick Structural Engineering's quote for \$3800.

In parallel with this we performed an anchor pull test in the back wall of City Hall to determine the strength of anchors set in this wall. We purchased (\$184.29) Hilti HY 150 Max anchors and installation tools and set them in the back wall. We then asked a Hilti engineer to come and pull test the anchors. We demonstrated that we could get at least 2000# of pull on the anchors. The picture on the left is was taken while doing the test pull and the picture on the right is what the anchor looks like set in the wall. The anchors were places by volunteers Blue Way and Dave Strenski. Hilti performed the pull test for no fee.



We have also made progress on the laptop program that will read the utility meters and push that data to the solar.ypsi.com website. All the wires from the utility meters are run into the Cooperative. We used a used parallel port switch box to connect the utility wire to a parallel port that we can connect a laptop too. We have started writing the program to read the parallel port and count the pulses coming from the meters. The program is

working, but we now need to convert the pulses into kilo-watt-hour data. The picture to the left shows the three utility meters used for net-metering with DTE Energy. Note the small "Customer Access Enclosure" boxes next to the meters. This is where we connect our wires to read the meter. The conduit connecting these boxes contains standard phone wire to bring the data into the store. The program is being written by volunteers Paul Haas and Dave Strenski.



The website that will receive this data has been started. Steve Pierce of www.HDL.com has agreed to donate the web address solar.ypsi.com. Steve Pierce and Brian Robb run the website wireless.ypsi.com and have created a map of their internet repeaters. Brian has agreed to take what

he's learned from built their wireless map and make our solar map. The initial design is complete and will be online soon.

We continue our solar educational out reach program and present solar photovoltaic and solar ovens to a group of 40 people at the Ann Arbor Reuse Center on July 12th, and also gave presentations at the Ypsilanti Heritage Festival August 15,16,17 reaching 16 people. The presentations were given by volunteers Adam Chase and Dave Strenski, with Corinne Sikorski coordinating the talks with the organizers of the festival. An update about our project was published in the local paper. "City solar project slowly moving forward" By Pat Grimes, Special Writer, published: August 21, 2008. http://www.ypsilanticourier.com/stories/082108/loc_20080821005.shtml

Anticipated energy saving

The Cooperative and City Hall will not see any energy savings until the solar panels are online. Once the utility meter-reading program is working, we'll be able to see the energy delivery to the buildings and any energy conservation.

Expenditures compared to budget

We spent a total of \$688.27 against our budgeted \$1000 for Uni-Strut material. We still need to buy the racking material for the system at City Hall, but will not have a handle on that cost until the licensed structural engineer design is finished.

We spent \$184.29 on Hilti anchors and tools to install the anchors. We needed to set some anchors in City Hall's back wall to understand what pull out force we could get and use that information for the structural engineering design. We budgeted \$3800 for structural engineering and this is part of that cost.

Noteworthy Accomplishments

Getting the rack on the Cooperative ready for the new panels was a good accomplishment.

Getting the utility meter reading program working and the beginning of a webpage start it great. We'll now have a central place where we can post information/progress about the project.

Risk to the project

The one outlying risk to the project is getting approval from the Historic District Commission (HDC) for attaching solar panels to the back of City Hall. We have public support, and City Council approval. We have been to the HDC many times already asking for approval, but they will not approve the project until they see the final structural engineering design.

Deviations from the Statement of Work

None.

Money Spent in the Past Two Months

Steel channel

4 10-foot sections 14.97 per section	\$ 59.88
	\$ 3.59 - tax
	\$ 63.47 - Total

Hilti test anchors

Anchor adhesive dispenser	\$ 59.00
Anchor adhesive HY150 max	\$ 34.30
Threaded rod 3/8" x 12"	\$ 14.99 - package of 10
Masonry drill bit 7/16" x 18"	\$ 65.57
	\$ 10.43 - tax
	\$184.29 - Total

Cooperative Solar Rack expansion

UniRac Rails with fasteners 2 @ 72"	\$114.66
UniRac Rails with fasteners 4 @ 106"	\$309.66
4 splice bars for UniRac rails	\$ 39.92
20 pack of solar panel clamps	\$ 53.43
12 copper grounding lugs	\$ 71.76
	\$ 35.37 - tax
	\$624.80 - Total