

2017



**FISCAL YEAR 2017 ANNUAL
PROGRAM PLAN &
ALLOCATIONS**

FOR THE YEAR JULY 1, 2016 TO JUNE 30, 2017

EXECUTIVE SUMMARY

The Clean Energy Development Fund's (CEDF) performance goal for the 2017 fiscal year (FY17) is to deploy approximately \$5 million into programs and projects that efficiently and effectively advanced the CEDF's overall goal of increasing renewable energy generation in Vermont while reducing costs and environmental impacts of in-state energy use and increasing economic benefits. The Fund's top programmatic goal for the year is to demonstrably grow the Vermont market for advanced wood heating with bulk pellets.

The FY17 plan and budget is largely a continuation of the FY15 and '16 plans and budgets. In the FY15 plan \$8.3 million was allocated to eight different programs. The Fund will start FY17 with ~\$5.8 million in State funds allocated to programs started in the last two fiscal years and continuing into and through FY17. The Fund will continue to focus on advanced wood heating as the renewable energy technology that can have the greatest impact on reaching CEDF's goals.

The CEDF was not allocated any new funding for FY17. The only revenue budgeted for FY17 is the interest and principal repayments from CEDF issued loans and the small amount of interest earned on CEDF's balance of funds.

In addition to the CEDF State funds, approximately \$1.9 million of Federal ARRA funds remain in CEDF's ARRA Revolving Loan Fund. The FY17 plan includes the redeployment of these funds to a new credit enhancement program in support of commercial rooftop solar and bulk pellet heating projects.

PURPOSE OF THE ANNUAL PROGRAM PLAN and BUDGET

The purpose of the Annual Program Plan is to identify the initiatives and programs that the CEDF will pursue during the fiscal year and to establish an annual budget for the expenditure and program allocation of CEDF funds.

The Annual Program Plan and associated budget represent the CEDF's efforts to use the funds available to meet the legislated purpose of the CEDF as well as the goals and strategic approach adopted in CEDF's current Strategic Plan.

MANAGEMENT & GOVERNANCE

In accordance with 30 V.S.A. § 8015, the CEDF is administered by the Department of Public Service (PSD). A Fund Manager hired by the PSD, with assistance from other PSD staff, manages the day-to-day operations of the Fund.

The Clean Energy Development Board (Board) reviews and approves the CEDF Annual Program Plan, budget and programs. As designed in 30 V.S.A § 8015, the Board consists of seven

persons, three appointed by the Commissioner of the Public Service Department and two each by the Chairs of the Senate and House Committees on Natural Resources and Energy.

The current Board members, the appointing authority who appointed them, and the year each member's term expires are:

- Jared Duval, PSD Commissioner, 2019
- Linda McGinnis, Co-Chair, PSD Commissioner, 2017
- Johanna Miller, House Energy Committee Chair, 2017
- Janice St. Onge, PSD Commissioner, 2019
- Sam Swanson, Co-Chair, Senate Energy Committee Chair, 2019
- Gaye Symington, House Energy Committee Chair, 2019
- Mark Whitworth, Senate Energy Committee Chair, 2017

PLANNING FRAMEWORK

While this annual plan focuses on the programs and spending of one year, the planning decisions are based on a framework that assumes multiple years of programmatic activity. Even though the CEDF does not currently have a secured on-going funding source, the Fund has chosen to plan its work as if there will be successive years of fully funded budgets (at \$2M/year) that evolve strategically.

The CEDF will continue to use the planning framework of knowledge, practice, and results (KPR). The KPR framework provides a multi-year guide to make the best use of public resources in accomplishing CEDF's goals.

First, advancing the field of clean energy in the state requires knowledge about what is taking place in the renewable energy market. The CEDF will seek to obtain and maintain market knowledge in key clean energy sectors. Secondly, this knowledge will be used to inform the strategic decisions that create programs, or CEDF's practice. Understanding how CEDF funds stimulate beneficial changes in the market place will provide results that will be evaluated. The evaluation results will provide additional data/knowledge that will be used for changes to the Fund's practice. These three (KPR) components form a cycle of continuous improvement that can be applied within the targeted clean energy sectors as well as holistically across Vermont's entire clean energy economy.

The CEDF will use the KPR template as the framework to guide program development and strategic allocation of funds. When constructed annually, the KPR template will comprise the framework for the CEDF's annual work plan. Each annual plan can then be linked over time to compose a multi-year approach intended to evolve robust economic systems through which companies can offer cost effective renewable energy solutions to Vermont consumers.

CEDF STRATEGIC PLAN: VISION, GOALS AND OBJECTIVES

To guide the CEDF a five year strategic plan was developed in 2012 (published in January, 2013). That Plan was built to advance the statutory purpose of the CEDF to promote the development and installation of cost-effective and environmentally sustainable electric power and thermal energy resources for the long-term benefit of Vermont consumers, primarily with respect to renewable energy resources.¹ To prevent the strategic plan from becoming stagnate and forgotten until the next five year plan needs to be written, and to ensure that annual plans are aligned with the strategic plan, the CEDF reviews the strategic plan each year when creating its annual plan.

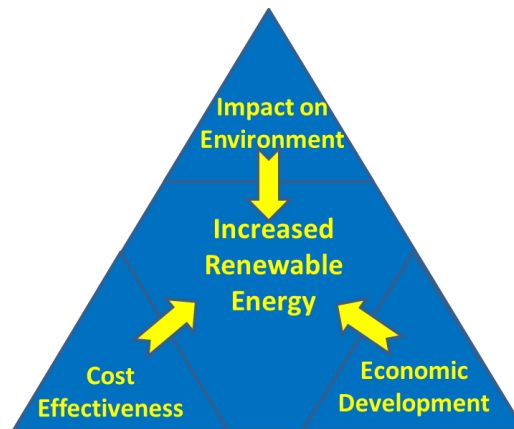


Figure 1. CEDF Goal & Objectives

In this year's review of the strategic plan the CEDF determined that the existing vision, primary goal, objectives, and strategies should continue to provide guidance for the Fund's annual activities and expenditures.

Vision

The CEDF serves the citizens of Vermont by increasing local small-scale renewable energy generation while maximizing associated economic development. The Fund coordinates with other state programs and private entities to integrate and advance renewable energy across all sectors of the State's energy economy.

Goal and Objectives

Supporting the vision is a primary goal of increased renewable energy generation in Vermont (thermal and electrical). Supporting the primary goal are three objectives (*Figure 1*):

1. Increase the economic development of Vermont's renewable energy sector
2. Increase the cost effectiveness/market maturity of renewable energy technologies in Vermont
3. Decrease greenhouse gas emissions and other environmental impacts of Vermont's energy use

Strategies

In pursuit of the primary goal and the three objectives the CEDF will:

- 1) Focus on a select renewable energy technology where funds can have the greatest impact in reaching the CEDF goals
- 2) Identify deployment barriers preventing increased renewable energy generation and coordinate with industry, state agencies, and private organizations to develop

¹ 30 V.S.A. § 8015 (c)

solutions that overcome those barriers in order to strengthen and build the markets for select distributed RE technologies

- 3) Build connections between renewable energy and energy efficiency
- 4) Work to increase jobs and revenue in the Vermont clean energy industry sector
- 5) Educate and support clean energy developers, businesses, and home owners in obtaining other incentives and financing
- 6) Support and strengthen clean energy finance and investment-related activities
- 7) Increase the leverage of CEDF funds while helping to lower the costs of renewable energy
- 8) Focus support on the CEDF programs that maximize the reduction of Vermont's energy related carbon emissions, and other environmental impacts
- 9) Promote lessons learned, success stories, impacts, challenges associates with CEDF funding activities
- 10) Continually evaluate programs, activities, and outcomes in order to adjust programs as necessary to meet goals

BUDGETED REVENUES

Revenues into the CEDF for FY17 are budgeted to be \$232,500. These funds come from: loan principle and interest payments, federal grants, and interest earned on the Fund's cash balance. The loan payments and interest earned will be used as general revenue for the CEDF programs detailed below. See Appendix A for the budget of CEDF State funds.

Separately, the CEDF has a renewable energy loan fund created by the 2009 American Recovery and Reconstruction Act (ARRA) that is administered by the Vermont Economic Development Authority (VEDA). Principal and interest payments from these loans are budgeted to be \$150,000 during FY17. These funds, as well as funds paid back and not redeployed in prior years, will be redeployed as detailed below. See Appendix B for the ARRA fund's budget.

OVERVIEW OF PLAN & BUDGET

The CEDF will continue to focus on advanced wood heating, and particularly bulk wood pellets, as the implementation of strategy #1, as listed above. The Fund will continue to work on ensuring that wood heating systems are advanced in their emissions, efficient, and use locally and sustainably harvested wood. The CEDF has identified many benefits of advanced wood heating, including:

- Local fuel procurement
- Support of the local forest product industry
- Support for the maintenance and creation of a working landscape
- Creation of jobs for the installation and service of heating systems
- Building upon the Vermont wood heating manufacturing base and strong biomass heating history
- Reducing the use of fossil fuel

The focus on wood heating is demonstrated in the Fund's FY17 budget of at least \$3.2 million of the \$5.8 million budgeted being invested in the development of advanced wood market in Vermont. The Fund's focus on wood heating was established in FY15 at which point the Fund began to build its knowledge of the advanced wood market. In FY16 the Fund established programs and awarded grants to grow the advanced wood heating market. In FY17 the CEDF anticipates that it will start to see successful results of the foundational work done over the prior two fiscal years to increase the quality and quantity of advanced wood heating systems installed and mature this market sector in Vermont.

The Fund will return to using the Small Scale Renewable Energy Incentive Program (SSREIP) as its primary program to affect change and achieve its goals and objectives. In FY16 the SSREIP only provided incentives for residential sized wood pellet heating systems. Larger systems for schools and low-income housing organizations were incentivized with grants awarded through competitive solicitations. An evaluation of this approach led the CEDF to determine that it would obtain better results if it reduced the use of broad-based competitive grants for installations in favor of market based incentives, such as the SSREIP. The Fund has determined that the SSREIP program, given current CEDF funding, is the most effective and efficient tool available to the CEDF to overcome the barriers that stymie market growth of technologies that are in the early stages of market development, such as the advanced wood heating sector in Vermont.

In FY17 the CEDF will be working with the Agency of Natural Resource's Air Quality Division and Department of Forest and Parks on implementing a wood stove change-out component of the SSREIP. This program was developed but not put into operation in FY16. The incentive will provide funds to Vermonters for the installation of new cleaner burning efficient wood and pellet stoves if they also retire older polluting wood stoves. The FY17 budget has \$25,000 plus \$100,000 from FY16 to provide \$125,000 worth of incentives for this program in FY 17.

While wood heating will be the focus the CEDF will continue to support other renewable energy technologies and will monitor and keep a pace with the overall clean energy sector.

CEDF's largest program was established in FY15 with the allocation of \$2.6 million for renewable energy programs in Windham County (representing 50% of the funds CEDF received from Energy Vermont Yankee at the end of FY 2014). In FY17 the CEDF will continue the programs started in FY15 and FY16 and should have all the remaining Windham County funds under executed grant agreements within the first half of the fiscal year. The CEDF will continue to take the same strategic approach to the Windham County funds as it does with the state-wide funds with the addition of considering Windham County's regional economic development plans, interests, and local input.

Federal ARRA clean energy funds used for renewable energy loans by the CEDF provide quarterly revenue to the CEDF as the loans are paid off. No new loans have been issued since the CEDF stopped its loan program. In FY17 approximately \$1.2 million these returned funds

will be used to establish a credit enhancement program focused on commercial roof-top solar and advanced wood heating for projects.

DESCRIPTION OF BUDGETED PROGRAMS

The programs, and program changes, described below provide details on the Fund's plan and provide a narrative for the budgeted line items in Appendixes A and B.

Windham County Programs

Over \$2.4 million will be spent on renewable energy programs in Windham County. These funds are meant to help the County to continue to address the local economic effects of the closure of the Vermont Yankee power plant as well as to leverage the County's strategies to build on its emerging clean energy economy.

Similar to the CEDF's overall strategic focus on local wood heating CEDF determined that the greatest lasting benefit to the County would be achieved through a strategic, high profile focus on wood heating. At the end of FY 2015 the CEDF awarded a \$1.6 million grant to a Windham County team lead by the Sustainable Energy Outreach Network (SEON). SEON, and its partners, created a collective effort called Windham Wood Heat that has been working on building the local wood heating market with specific focus on Windham County's public schools and municipalities.

Windham Wood Heat has \$1.3 million remaining of their grant to support schools and/or municipalities to switch from fossil fuels to local wood heat in FY17. The Fund will continue to work with the Windham Wood Heat to maximize the positive impact of their grant.

In addition to the Windham Wood Heat grant the CEDF will continue the existing solar financing program started in FY15 for Windham County residential customers. The use of this interest rate buy-down program has been slow, with few loans having been made. Increased outreach and education about the reduced interest rates (based on income, with lower income borrowers receiving a greater interest rate buy-down) available in this program should help Windham county customers that are interested in installing solar systems to participate in the program in FY17.

At the end of FY16 the CEDF released a \$300,000 solicitation for farm and/or food based anaerobic digestion projects located in the County. Any awards issued from this solicitation will start in FY17. The CEDF sees potential in supporting new anaerobic projects in Windham County as state wide interest in the anaerobic digestion of food and farm waste grows. Similar to the rest of the state, Windham County is working to divert organic waste away from landfills and to support its farm and local food economy. Farm and food waste digesters can be an effective technology to meet those goals and generate renewable energy.

Also near the end of FY16 the CEDF awarded a \$400,000 competitive grant to the Windham Regional Commission to develop a renewable energy grant program to provide renewable

energy and economic development benefits to the citizens of Windham County. The Commission will be investigating options and conducting a public comment/engagement process regarding program design in early FY17 and should start to issue grants/incentives in the second half of FY17.

Small Scale Renewable Energy Incentive (SSREI) Program

The SSREI Program will continue with an allocation of \$1,575,115 in FY17. The program has been a proven mechanism to grow the residential, small commercial and municipal markets for small-scale renewable energy technologies in a widely distributed and accessible manner. In evaluating past CEDF programs and the capacity of the CEDF the SSREIP was determined to be the most cost effective and impactful program in meeting the Fund's goals. This program's advantages are that it is market based, cost effective, simple, and access to the funds is open and transparent.

The SSREIP will continue to provide incentives for residential wood pellet heating systems but will also expand the program to offer larger incentives for commercial and institutional wood heating systems.

Of the \$1.5 million budgeted for the SSREIP \$125,000 will be for a wood stove change-out program and \$994,135 will be for incentives for residential and commercial bulk pellet systems. The expanded commercial and wood stove change-out incentives will likely be made available starting in September of 2016. In addition to the larger commercial incentive the advanced wood heating SSREIP incentive will be available for projects that connect buildings to wood fueled district heating systems.

The SSREIP will continue to offer incentives for solar hot water systems in FY17 as long as funding remains remaining for that technology (approximately \$56,000 at the start of FY17). In addition, in FY17 the program will complete a pilot program investigation of solar air heating that began in FY16.

The Vermont Small-Scale Renewable Energy Incentive Program will continue to be administrated under a contract with the Renewable Energy Resource Center, a division of the Vermont Energy Investment Corporation (www.erc-vt.org).

Advanced Wood Heating - Bulk Wood Pellet Infrastructure Grants

In FY16 the CEDF issued a request for proposals to support the bulk pellet delivery market. The ready and local supply of bulk pellets needs to grow to meet the increasing demand caused by the installations of bulk pellet heating systems. As a result of the solicitation five competitive grant awards were made for a total of \$474,068. Four of these projects should be completed in early FY17 and will increase the availability and reliability of bulk pellet deliveries for the 2016-17 heating season. The fifth grant is in support of a new pellet mill to be built in 2017 to supply pellets to for the 2017-18 heating season.

There will not be any new grant solicitations for bulk wood pellet infrastructure projects in FY17.

Advanced Wood Heating – School and Affordable Housing Installation Grants

In FY16 two grant solicitations were issued to provide competitive grants to schools and non-profit affordable housing projects to install advanced wood heating. Three schools and eight affordable housing projects were awarded grants as a result of the grant solicitations. A total of \$428,986 was awarded to the 11 projects, all but \$10K of the grant funds will be expended in FY17. There will not be any new competitive solicitations for advanced wood heating grant awards in FY17. Instead these types of projects will be supported through the SSREIP on a first-come first-served basis.

Program Evaluation

The CEDF has budgeted \$250,000 to sustain its commitment to program evaluation. The CEDF has regularly tracked and reported how CEDF's resources have been used and the resulting accomplishments, including the number and types of projects that have been funded, the renewable energy capacity that has been constructed, and the environmental benefits these projects provide.

However, while these reports effectively track progress made toward increasing the installation of new renewable energy capacity in Vermont, a more comprehensive assessment of program effectiveness including a continuous learning cycle consisting of planning, action and reflection, is warranted. Data gleaned from funded activities will enable the CEDF to improve program performance and will help the Fund to communicate its successes and difficulties, for the benefit of similar efforts.

Accordingly, the CEDF will dedicate funds to measuring progress toward the CEDF goal and objectives, identifying barriers facing the programs, and revealing program delivery problems. Based on the data collected the CEDF staff will recommend action to overcome barriers, to address problems and to improve overall CEDF program performance. The successful conduct of this monitoring and evaluation should produce benefits in program productivity that far exceeds the costs. These monitoring and evaluation efforts will primarily assess the:

1. Contribution the CEDF programs are making to increasing the amount of renewable energy in Vermont
2. Progress being made toward CEDF objectives
3. Effective use of the CEDF program funds

Farm Energy Program:

The CEDF will continue to collaborate with the Agency of Agriculture, Food and Markets and the Agency of Natural Resources to promote renewable energy projects that also strengthen the

local farming economy and support State environmental goals for water quality and solid waste.

At the end of FY16 the CEDF issued a request for proposals to support the installation of anaerobic digesters on smaller dairy farms and for heat recovery of compost systems on farms. Other than the awards that result from this solicitation the CEDF is not expecting to issue any new awards in the Farm Energy Program in FY17. Of the \$379,000 solicitation \$300,000 is reserved for projects located in Windham County and thus these funds are budgeted in the Windham County Programs line item.

Any new food waste program efforts in FY17 will build off the two food-waste digester pilot projects started in FY15. These two projects represent the remaining budgeted funds for the Farm Energy Program. Both projects have been granted extensions of their grants into FY17. The CEDF believes such food waste collection projects could have great potential to divert food waste organics from landfills (as required by Act 148) into renewable energy co-generation plants while also helping the profitability of farms.

Renewable Energy Market Knowledge Building:

With the Fund's focus on advanced wood heating there is a need for baseline data from which the Fund can measure progress and use in program evaluations. In addition, the Fund has a need for detailed market data to help inform program design and market health. In early FY17 the CEDF will issue a solicitation to hire a contractor to assist with collecting baseline data of the advanced wood heating market and developing more detailed knowledge for the CEDF of the Vermont wood heating market. This solicitation was planned to be issued in FY16 but was postponed. The resulting contract from the solicitation is not expected to use the full \$125,000 budgeted for this category. The Fund will reserve funds for other market knowledge needs as they arise during the fiscal year.

US Department of Energy SunShot Grant Activities

The CEDF will be completing activities funded by this federal grant in the first quarter of FY17. The grant is part of a regional grant awarded to the Clean Energy States Alliance for the purpose of the New England states working collaboratively to lower the soft-costs of installing roof-top and group net metered PV solar systems.

Activities funded by this grant include:

- An interest buy-down program for both residential and commercial systems to buy into group/community net metered systems.
- An analysis of the City of Burlington's solar PV permitting requirements and recommendations to the City Council on ways to improve/lower the cost of permitting PV in the City.
- An on-line Vermont solar guide.
- Vermont Fire Academy trainings for local fire departments on fighting structure fires where solar PV systems are installed.

Competitive Community Solar Grant:

In FY15 the CEDF issued a solicitation for community solar projects and issued awards to seven projects. All but one of the projects was completed. The one outstanding award was a \$76,000 grant to the Hyde Park Electric Department for a large town owned community solar project. The project encountered delays and issues with the terms of the grant award. The grant has been extended to accommodate Hyde Park as they have tried to develop the project and meet the CEDF award requirements. The CEDF is confident that Hyde Park will be able to meet the grant requirements and use the awarded funds in FY17. If they are not able, the funds will be redeployed in the SSREIP.

Vermont Clean Energy Industry Survey:

The Fund has budgeted \$50,000 to either continue to conduct the annual Vermont Renewable Energy Industry Survey, as it has since 2014, or to support a State agency that wants to take on the role of reporting on the size and health of the clean energy industry in Vermont. Over the past three years the survey data and analysis provided specific market information that was helpful to the Fund to gauge the effectiveness of state clean energy policies and incentives designed for growing this sector of the economy.

Solar Permitting Training:

The CEDF has \$14,000 that it received from a solar developer resulting from an environmental violation during the installation of a solar project. The funds are required to be spent on environmental permitting training of solar PV installers in consultation with the Agency of Natural Resources. The CEDF will work with ANR on developing the training during FY17.

Administration

The CEDF has budgeted \$20,000 for payment to Vermont Economic Development Authority (VEDA) to service and administer existing CEDF loans. The fees are based on a \$900 per quarter flat fee plus 1% of the outstanding balance of all CEDF loans VEDA is servicing.

The administration of the CEDF program will be done by the CEDF Fund Manager with support from others at the PSD including executive, programmatic, administrative, and business office staff. The CEDF has a budget of \$160,000 for administrative costs that include the salary of the Fund Manager, time of PSD programmatic staff, and CEDF travel expenses. Other administrative costs (overhead costs, business office support, etc.) are covered by the PSD without compensation from the CEDF. The CEDF is restricted to an administrative cost cap of 5% of its annual allocation/budget.

American Recovery and Reinvestment Act (ARRA) Revolving Loan Funds

As part of the ARRA funded programs the CEDF created a \$3.8 million revolving loan fund, administered and housed at VEDA. In 2012 the Fund decided to end the loan program and re-deploy the loan funds to other programs as the loans were paid back. The CEDF continues to believe the greatest benefit of these ARRA funds is to leverage other financial products available and not through direct loans. Approximately \$1.8 million of the ARRA funds loaned out have been repaid and are available to the CEDF in FY17.

The CEDF will use \$1.2M of the returned ARRA loan funds for a credit enhancement program with VEDA. The program will provide the best leverage of other funds to support the development of the renewable energy finance market in Vermont. The program will provide credit enhancement for commercial loans to construct commercial solar PV projects on rooftops and parking canopies and commercial/institutional advanced wood heating projects.

The CEDF will also continue its support of the Heat Saver loan program administered by the Public Service Department. For FY17 the CEDF has budgeted \$327,000 of CEDF-ARRA funds towards this program that provides an interest rate buy-down for residential energy efficiency, solar hot water, and wood heating projects.

ACTIVITIES AS PART OF THE PUBLIC SERVICE DEPARTMENT

The CEDF will continue its collaborative work with other state agencies and entities in all programs. The CEDF will build upon its current role as a virtual clearinghouse in state government where many turn for information about renewable energy policies and funding options. By doing so, the CEDF strengthens relationships to help generate broader economic development outcomes such as job growth, increased revenue and clean energy cluster advancement to benefit Vermont.

APPENDIX A

Fiscal Year 2017 DRAFT CEDF Budget	
CEDF FY 2017 Revenue	\$
Estimated CEDF Carry Forward	\$ 5,625,000
CEDF Loan Repayments (P&I)	150,000
Interest & Other Revenue	7,500
DOE-CESA SunShot Grant	75,000
TOTAL FY '17 Revenue & Carry Forward	5,857,500
CEDF Program Allocations & Expenses	
Programs	\$
Windham County Programs	2,420,562
Small-Scale Incentive Program	1,575,115
Advanced Wood Heat - Bulk Pellet Infrastructure Grants	474,068
Advanced Wood Heat – School and Affordable Housing Installation Grants	418,986
Program Evaluation	250,000
Farm Energy Program	173,769
Renewable Energy Market Knowledge Building	125,000
DOE-CESA SunShot Grant Activities	100,000
Competitive Community Solar Grant	76,000
RE Industry Survey	50,000
Solar Permitting Training	14,000
CEDF Loans - Administrator's Fees	20,000
CEDF Administration	160,000
TOTAL	5,857,500

APPENDIX B

Fiscal Year 2017 DRAFT ARRA-CEDF Budget	
ARRA Funds FY '17 Anticipated Revenue	\$
Estimated FY'16 Carry-Forward	1,744,436
Loan Repayments (P&I)	150,000
Interest on Cash Balance	1,000
TOTAL ARRA Revenue & Carry Forward	1,895,436
FY '17 ARRA Funds Allocation & Expenses	
Programs	\$
Commercial Credit Enhancements for Wood Heating and Roof-top Solar	1,200,000
Residential Credit Enhancement - Heat Saver	327,305
NeighborWorks IRB Program	110,000
ARRA Loan Administration Fees	22,500
New Programs	235,631
TOTAL ARRA \$ ALLOCATIONS	1,895,436