

Budget

Western Reserve Local (048397) - Mahoning County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (234)

U.S.A.S. Fund #:

[Plus/Minus Sheet \(opens new window\)](#)

Purpose Code	Object Code	Salaries 100	Retirement Fringe Benefits 200	Purchased Services 400	Supplies 500	Capital Outlay 600	Other 800	Total
Instruction		0.00	0.00	0.00	0.00	106,250.00	0.00	106,250.00
Support Services		0.00	0.00	19,176.00	0.00	0.00	0.00	19,176.00
Governance/Admin		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prof Development		12,000.00	10,293.00	38,548.00	0.00	0.00	0.00	60,841.00
Family/Community		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Safety		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Facilities		0.00	0.00	0.00	0.00	1,200,000.00	0.00	1,200,000.00
Transportation		0.00	0.00	1,500.00	0.00	0.00	0.00	1,500.00
Total		12,000.00	10,293.00	59,224.00	0.00	1,306,250.00	0.00	1,387,767.00
Adjusted Allocation								0.00
Remaining								-1,387,767.00

Application

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Applicants shall respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information, Experience and Capacity

1. Project Title: Investing In Our Future By Reinvesting Energy Savings Into A 6th - 12th Grade STEM Program

2. Executive summary: Provide an executive summary of your project proposal and which goal(s) in question 9 you seek to achieve. Please limit your responses to no more than three sentences.

Through a partnership with a local solar energy business, The University of Akron, and Western Reserve Local School District (WRLSD), Straight A funds will be combined with private equity funds to install solar panels. The resulting school district annual utility savings will then be used to enhance and sustain a STEM program in grades 6th-12th for students with and without disabilities.

307 3. Total Students Impacted:

4. Lead applicant primary contact - Provide the following information:

First Name, last Name of contact for lead applicant: Jeffrey Zatchok

Organizational name of lead applicant: Western Reserve Local School District

Unique Identifier (IRN/Fed Tax ID): 048397

Address of lead applicant: 13850 Akron-Canfield Road, Berlin Center, Ohio 44401

Phone Number of lead applicant: 330-547-0805

Email Address of lead applicant: jzatchok@wrls.k12.oh.us

5. Secondary applicant contact - Provide the following information, if applicable:

First Name, last Name of contact for secondary applicant: N/A

Organizational name of secondary applicant: N/A

Unique Identifier (IRN/Fed Tax ID): N/A

Address of secondary applicant: N/A

Phone number of secondary applicant: N/A

Email address of secondary applicant: N/A

6. List all other participating entities by name: Provide the following information for each additional participating entity, if applicable: Mention First Name, Last Name, Organizational Name, Unique Identifier (IRN/Fed Tax ID), Address, Phone Number, Email Address of Contact for All Secondary Applicants in the box below.

The University of Akron Susan Ramlo, Ph.D. IRN: 062869 Department of Engineering & Science Technology and Department of Curricular & Instructional Studies Schrank Hall South 123B Akron, OH 44325-6104 330-972-7057 sramlo@uakron.edu The University of Akron Charles H. Carlin, Ph.D. IRN: 062869 School of Speech-Language Pathology and Audiology Polsky Building 181 Akron, Ohio 44325-3001 330-972-6556 carlin@uakron.edu Valley Energy Solutions Ms. Erin Quinlan 8675 W Pine Lake Rd Salem, Ohio 44460 Office: 330-702-0147 erin@valleyenergysolutions.com

7. Partnership and consortia agreements and letters of support: - (Click on the link below to upload necessary documents).

* Letters of support are for districts in academic or fiscal distress only. If school or district is in academic or fiscal distress and has a commission assigned, please include a resolution from the commission in support of the project.

* If a partnership or consortium will be established, please include the signed Straight A Description of Nature of Partnership or Description of Nature of Consortium Agreement.

[UploadGrantApplicationAttachment.aspx](#)

8. Please provide a brief description of the team or individuals responsible for the implementation of this project including relevant experience in other innovative projects. You should also include descriptions and experiences of partnering entities.

Our innovative public and private sector partnership will produce energy savings that will be reinvested into middle and high school classrooms and in turn, improve student achievement in STEM content areas. Mr. Jeffrey Zatchok, Western Reserve superintendent and High School principal for 18 years. Member of the CORE team for the OSFC construction project of a new K-12 building at Western Reserve completed in December, 2011. This project included the use of a geothermal field for heating and cooling as well as other energy efficient systems to enable the project to receive a gold LEED certification. Rated an excellent school district by the state of Ohio for the past 12 years, High School and Elementary have been designated "Blue Ribbon" schools by the US DOE. Ms. Debbie Farelli, Western Reserve Local School District. 17 years of administrative experience in the public school system. Serves as an elementary and middle school principal and the Federal Programs Coordinator. Won and successfully implemented an Early Literacy Reading Grant. Leads standards implementations, developed parent involvement programs, and worked with the district teachers to transition to inclusive classrooms for students with learning disabilities Mr. Douglas McGlynn, Western Reserve Junior/Senior High School Principal. Over 33 years of Educational instruction and school Administration. Has many years of grant writing to improve instructional practices in the district. Susan Ramlo, Ph.D., Nationally recognized as a STEM education expert. 20 years of academic experience at The University of Akron. UA STEM liaison to the Akron Public Schools' STEM middle and high school with duties that include developing innovative secondary school curricula, providing professional development to teachers, facilitating Problem-Based Learning experiences, and producing novel STEM education and career experiences at the university for middle and high school students. Charles Carlin, Ph.D., educational administration: K-12 Leadership with specialized coursework in curricular development, literacy instruction, and evaluation of educational programs. As a former educational service center consultant, provided professional development to school districts on evidence-based instructional practices, differentiated instruction, and inclusion. He acted as the primary investigator on the Caseload Ratio Study and E-supervision of Speech-Language Pathologist Interns Study, which were multiyear grants funded through the Ohio Department of Education. Ms. Erin Quinlan, Valley Energy Solutions. Over 14 years of small business management experience in northeastern Ohio to include principal owner of a renewable energy company and numerous management positions in the health care. Program management and budget management experience numerous northeastern Ohio charity efforts which target quality of life issues and economic stimulus for young men and women in the Mahoning Valley. Mr. Daniel Quinlan, Valley Energy Solutions, over 16 years of technical experience in construction, energy efficient construction and solar technology integration. Nationally certified Solar Installer per the North American Board of Certified Energy Practitioners and recognized by the Department of Energy as a Residential Services rater. Has engineered, managed and installed numerous solar projects. Lieutenant Colonel (LTC). Richard Lonardo, Valley Energy Solutions, over 21 years of defense project management experience; has a B.S. in Chemical Engineering and M.S. in Environmental Engineering. LTC Lonardo integrated several renewable energy projects for the Department of Defense and has assisted several northeast Ohio companies in providing technologies to the U.S government and he supports both Youngstown State University and the Youngstown Incubator in economic development efforts.

B) PROJECT DESCRIPTION - Overall description of project and alignment with Outcomes

9. Which of the stated Straight A Fund goals does the proposal aim to achieve? - (Check all that apply)

Student achievement

Spending reductions in the five-year fiscal forecast

Utilization of a greater share of resources in the classroom

10. Which of the following best describes the proposed project? - (Select one:)

New - never before implemented

Existing and researched-based - never implemented in your district or community school but proven successful in other educational environments

Mixed Concept - incorporates new and existing elements

Enhancing/Scale Up - elevating or expanding an effective program that is already implemented in your district, school, or consortia partnership

11. Describe the innovative project.

Current district funding is not sufficient enough to enhance the current STEM program at the 6-12th grade levels. STEM content is not infused across content areas and grade levels, and the district cannot keep pace with advances in STEM technology and research-based instructional practices. Further, the district does not have the financial resources to fully prepare students with and without disabilities for future STEM employment and postsecondary coursework, partly because energy costs amount to \$131,000 a year and account for 2.5% of the district operating budget. Through Straight A funding as well as

Innovative private and public partnerships and funding, we will greatly enhance our STEM program. These enhancements will then positively impact student achievement. Additionally, Straight A funding, private-public partnerships, and solar energy savings will allow STEM enhancements to be sustained for the next 30 years. Through Straight A funding and public-private partnerships with experts in STEM curriculum development, alternative energy technologies, evaluation, and professional development, WRLSD will enhance their STEM programs in 6th-12th grades. Enhancements will be realized through professional development (Problem-Based Learning, Professional Learning Communities, etc.), instructional equipment upgrades, and the creation of hands-on, inquiry-based STEM labs. In order to sustain those enhancements and infuse real-life alternative energy technologies into the classroom, Straight A and private funds will also be used to install an array of solar panels. The installation of solar panels will deliver significant energy savings to the district over the 30 year life of the systems. Energy savings will then be used to enhance and support the district's STEM program.

12. Describe how it will meet the goal(s) selected above. - If school/district receives school improvement funds/support, include a brief explanation of how this project will advance the improvement plan.

a. Spending Reductions: Through a combination of Straight A and private equity funding, investments will be made into the installation of a solar panel array on school property. The use of solar energy will ensure immediate and long-term spending reductions for the district. Spending reductions in the five-year fiscal forecast, through the installation of a solar panel array will result in approximately \$159,005 in reduced utility costs to the school district for the first 5 years of production. This is a conservative number. This substantial energy savings will be reinvested into the classroom to increase STEM capacity and continue to provide increased savings and academic investments over the next thirty years. b. Utilization of a Greater Share of Resources in the Classroom: Currently, the STEM program has a limited budget of \$15,000 per year. Utility savings will enable the district to double the budgeted amount to the STEM program. Our innovative use of Straight A and private equity funding will reduce the district's operating costs and thus free up financial resources for enduring professional development and STEM curriculum enhancements in 6th-12th grades. The district will be supported by The University of Akron and Mr. Richard Lonardo. Energy spending reductions continue to grow each year the system is in operation in turn multiplying the investments into the classrooms. Specific STEM enhancements and classroom reinvestments will be: * Shift student STEM experiences into hands-on explorations in laboratory (field) and work settings. * Eliminate underused course offerings (auto mechanics, small engine repair, wood working, and silk screening). * Increase the capacity of our existing freshmen-level industrial technology course that uses the TPACK (Technology Pedagogy and Content Knowledge) framework. This course integrates STEM technology with 9th grade content involving student teams using 21st century skills and learning modules. * Develop a pre-engineering course for juniors and seniors that will prepare students for potential majors in engineering and engineering technology. * Develop STEM job shadowing program for juniors and seniors. * Provide STEM career exploration activities both for middle and high school students. * Create an implementation and monitoring plan for co-teaching and accommodations in regular education classrooms in order to provide equal opportunities for students who are at-risk and have disabilities. * Differentiate instruction with synthesis, application, and transfer types of assessments and learning experiences with an emphasis on Problem-Based Learning (PBL). * Use PBL in individual classrooms as well as across multiple disciplines/ classrooms to facilitate interdisciplinary, authentic STEM PBL experiences and integrated STEM content into the middle school curriculum. PBL activities will be developed by teams of teachers in a PLC format with experts drawn from the University of Akron and/or the community. * Purchase instructional technology and laboratory resources (Inventor Cloud, 3D printer, software upgrades, field data collection equipment, and portable solar panel unit). Provide faculty professional development on these technologies and resources including how to best utilize them in the classroom and during PBL activities. * Increase student exposure to northeast Ohio university programs like those at The University of Akron and Youngstown State University. Student achievement: Straight A and private equity funding will enable the district to save energy costs and allow more financial resources to be infused into the classrooms. Long-term energy savings will sustain efforts to increase student achievement by providing STEM PBL opportunities where students gain knowledge and application of technologies used in industry to equip students with and without disabilities with skills necessary to succeed in skilled trades and STEM related post-secondary programs.

C) SUSTAINABILITY - Planning for ongoing funding of the project, cost breakdown

13. Financial Documentation - All applicants must enter or upload the following supporting information. Responses should refer to specific information in the financial documents when applicable:

- a. Enter a project budget
- b. Upload the Straight A Financial Impact Template forecasting the expected changes to the five-year forecast resulting from implementation of this project. If applying as a consortia or partnership, please include the five-year forecasts of each school district, community school or STEM school member for review.
- c. If subsection (b) is not applicable, please explain why, in addition to how the project will demonstrate sustainability and impact.

N/A

14. What is the total cost for implementing the innovative project?

1,387,767.00 * Total project cost

* Provide a brief narrative explanation of the overall budget. The narrative should include the source and amount of other funds that may be used to support this concept (e.g., Title I funding, RttT money, local funding, foundation support, etc.), and provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.).

Based on the data from the Ohio Achievement Assessment and the Ohio Graduation Test, there is a need for differentiation across content to provide access to the regular curriculum for students with disabilities while challenging the regular education students and gifted identified students to use application and transfer of knowledge to solve real world problems. Another area of concern is the fact that W.R.L.S.D. is losing students to the Mahoning County Career and Technical Center and Post-Secondary programs at the local universities. Monies from the energy saving will be redirected to provide professional development for the K-12 teachers in differentiated instruction strategies, teaching problem solving and critical thinking, and performance based teaching and assessment. The 6th-12th grade teachers will receive further professional development in STEM and collaborative problem solving. The professional development will be provided by partnerships with the University of Akron and Inventor Cloud. Equipment, software, and curriculum required to implement the Inventor Cloud program and equipment to capture environmental data electronically to inform decisions for topics related to environmental sustainability will be purchased with the monies saved from the school district's energy savings. Beginning in kindergarten students will be taught PBL strategies and to think critically, apply prior knowledge, hypothesize, test, revise. This program will provide the opportunity for students to acquire the skills to work in critical need fields while also preparing students to enter STEM related college degree programs. Specifically: two teachers will be trained in the Inventor Cloud Program. They will then infuse the program into the 6th -12th grade curriculum, (\$3,000-Straight A Funds); Professional development for 50 teachers on differentiating instruction and developing and assessing project based learning activities (\$3,500-Straight A Funds); Ongoing professional development through professional learning communities for twenty five 6th -12th grade teachers in STEM content, assessment and curriculum alignment (\$5,500- Straight A Funds); Instructional equipment for the Inventor Cloud Program (\$94,750-Straight A Funds); Solar Array classroom lab equipment (\$1,500-Straight A Fund); Curricular supplies and materials to capture environmental electronic data in the field (\$10,000 Straight A Funds + \$2,500 annually for maintaining- Monies generated from the reinvestment of energy savings for years 2-5); Course buyout and summer funding for University of Akron (UA) Faculty to present professional development to the teachers at WRLSD (\$38,548- Straight A Funds, Fringe Benefits for UA faculty \$1,000- Straight A funds Mileage for UA faculty \$1,500- Straight A Funds); Professional development and consultation on alternative energy technologies and alignment of STEM curricula (\$18,176- Straight A Funds). The continuation of the program and related maintenance costs will be funded by the reinvestment of the monies generated by the reduced energy cost resulting from the solar panel arrays.

15. What new/recurring costs of your innovative project will continue once the grant has expired? If there are no new/recurring costs, please explain why.

24,000.00 * Specific amount of new/recurring cost (annual cost after project is implemented)

* Narrative explanation/rationale: Provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.). If there are no new/recurring costs, please explain why.

The district will carry the cost burden of a slight increase in total property insurance for the solar panel array during its estimated thirty year life. This represents a risk mitigation policy in case of natural disasters. The initial estimate of this cost is \$5,000 annually. Moreover, once the district takes complete control of the solar array at year 15 they will incur a reasonable annual maintenance and warranty cost which is estimated at \$6,000 per year for the remaining 15 years the system is in place. The district will continue to need professional development and STEM enhancements. These will total 2 hours a month for 25 teachers to participate in after school Professional Learning Communities at \$5,500. Technology upgrades will cost the district \$7500 per year. Additionally, WRLSD will seek to qualify as a STEM school within the State of Ohio's definition, which will then connect the district to the Ohio STEM Learning Network and additional free professional development.

16. Are there expected savings that may result from the implementation of the innovative project?

159,005.00 * Specific amount of expected savings (annual)

* Narrative explanation/rationale: Provide details on the anticipated savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.)

Upon the installation of a 750kW solar panel array on the premises of Western Reserve Local School District a monthly utility savings will begin immediately. Our project schedule estimates actual energy production to begin in July 2014 if this grant proceeds on schedule. The solar panel array will produce 50% of current electrical usage at the school district, based on the Department of Energy's National Renewable Energy Laboratory's solar production software, "PV Watts Calculator" (see attachment) for proven energy production of a 750 kW system that is located in Youngstown, Ohio. For the solar energy that is produced, the cost to the district under the power purchase agreement (see attachments) will be \$.043 per kWh, which is a notable decrease from the current First Energy costs of \$.085 per kWh. The solar panel array allows the district to purchase electricity (power) from the equity partner at the significantly reduced rate (i.e., \$.043 per kWh), for the 15 year term of the power purchase agreement. After 15 years, the equity partner turns over full ownership of the solar panel array to the district. For years 15-30 and after the power purchase agreement ends, the district continues to produce up to 50% of the electrical energy they need from their solar panel array. There will only be a minimal annual property insurance and maintenance fee to sustain. The expected annual savings in years 1-5 is \$159,005.00 and in years 6-15 is \$349,301.00.

17. Provide a brief explanation of how the project is self-sustaining. If there are ongoing costs associated with the project after the term of the grant, this explanation should provide details on the cost reductions that will be made that are at least equal to the amount of new/recurring costs detailed above. If there are no new/recurring costs, explain in detail how this project will sustain itself beyond the life of the grant.

The initial savings over the first five years of the project will be \$159,005 with no new or recurring costs for that entire life of the 15 year power purchase agreement. The total savings over the first 15 years of the project will be \$469,109. After the 15 year lease has expired and the district takes on ownership of the system, the district will save \$1,335,581 during years 16-30. At the end of 30 years, the total project savings will be \$1,804,690. During the first five years of the project, the energy savings from this reduced utility burden will be reinvested into the STEM educational component of the project to enable enduring staff development, additional instructor labor and STEM learning capacity and technology integration into targeted classroom curricula. Additionally, the faculty will continue to professionally develop themselves using Professional Learning Community (PLC) activities and external professional development, and these activities will be funded through solar energy savings.

D) IMPLEMENTATION - Timeline, communication and contingency planning

18. Fill in the appropriate dates and an explanation of the timeline for the successful implementation of this project. In each explanation, be sure to briefly describe the largest barriers that could derail your concept or

timeline for implementation and your plan to proactively mitigate such barriers. In addition, the narrative should list the stakeholders that will be engaged during that stage of the project and describe the communication that occurred as the application was developed.

Describe the ongoing communication plan with the stakeholders as the project is implemented. (Stakeholders can include parents, community leaders, foundation support and businesses, as well as educational personnel in the affected entities.)

*** Proposal Timeline Dates**

Plan (MM/DD/YYYY): 01/07/2014- 01/31/2014

*** Narrative explanation**

Upon award notification in December, we will aggressively deploy our public/private sector team to plan for implementation of the STEM enhancements beginning January 7, 2014. The team will meet with the Inventor Cloud development team to plan training and implementation. The faculty of the University of Akron will begin planning professional development for science teachers in grades 6-10 for the first phase of implementation. The team will meet with the 6th-10th grade classroom teachers to plan for the initial Project Based Assessment to establish a baseline to measure growth. The project plan will be rolled out to the K-12 staff and community. October 2013-November 2013 Continue legal review with PPA of Mahoning Co. Facilitate land utilization study Refine insurance and maintenance costs Finalize school management team Complete solar array site survey October 2013-December 2013 Detailed STEM discussion with University of Akron Develop a communication plan for public dissemination December 2013-December 2013 Analysis of program with lead faculty January 2014-January 2013 Start of professional development Initial announcement to public

Implement (MM/DD/YYYY): 02/01/2014- 08/01/2014

*** Narrative explanation**

Students in grades 6-10 will be given a PBL task in February 2014 to establish a baseline to measure growth. The 6th -10th grade science teachers will participate in professional development in PBL in February 2014 and implement a PBL activity by May. By August 2014 all K-12 staff will have received professional development on assessment of performance based projects, differentiating instruction; additionally the 6-12 staff will be trained in the Inventor Cloud Program. Equipment will be purchased and installed and the curriculum will be integrated into the school program by September 2014 for the 2014-2015 school year. Construction of the solar panel array will begin during the spring 2014. Actual power production and thus reduced utility cost savings is estimated to begin in June 2014. The Gantt chart that follows highlights major program efforts and draft milestone dates. The program management team will be led by one designated program manager on our staff and augmented by a program manager on the private sector team. Collectively these two individuals will report quarterly to the School Board on updates, issues and risk mitigation as well as budget management. February 2014-March 2014 Classroom content launch January 2014 Proposed ribbon cutting with the state December 2013-February 2014 Begin permitting effort February 2014-March 2014 Start land clearing and site preparation March 2014-June 2014 Installation of the solar panel array June 2014-July 2014 Final inspection (and in each phase) July 2014 Begin power generation

Summative evaluation (MM/DD/YYYY): 05/01/2014-05/30/2015

*** Narrative explanation**

Grades 6-10 student achievement will be measured by comparing the baseline project data to the May project data. The mode of instruction, performance, and assessment will be measured through classroom observations, walkthrough observations, and teacher lessons, projects, and assessments. Collection and review of student work samples, observation of classroom performance, electronic portfolios, interest inventories, and student scheduling requests will be used to measure student achievement, growth, and interest in STEM based careers. Analysis of energy cost savings generated by the solar panels will be reviewed every six months to track total annual energy savings. Financial records will be monitored and reviewed biannually to track the reinvestment into the STEM program. Quarterly meetings will be held to evaluate the program and determine further needs.

19. Describe the expected changes to the instructional and/or organizational practices in your institution.

The district will incorporate a co-teaching, PBL, and differentiated instruction model in regular education classrooms, which will in turn support all students. PBL is an experiential learning approach that focuses on investigating and solving real-world problems and utilizes an integrated curriculum. PBL promotes inquiry, engagement, in-depth understanding, and innovative thinking. PBLs, especially authentic PBLs, enable the embedding of instruction in some authentic context. Thus, these problems are authentic and meaningful to support student learning. Within this context, students are self-directed and engaged in the problem solving process (Jonassen, 2000). An authentic learning environment is one in which the cognitive demands are consistent with the cognitive demands in the environment for which we are preparing the learner (Honebein, et al. 1993). The PLC model will be used, in conjunction with professional development, to assist teachers and to facilitate innovative teaching practices. A recent study (Fulton, Britton, & National Commission on Teaching and America's Future, 2011) found that STEM-teacher PLCs offer the type of collaboration that helps STEM K-12 educators gain greater job satisfaction, want to remain in their teaching field, improve their content knowledge, feel comfortable discussing their content knowledge, and feel better prepared to teach in their subject area(s). Accommodations will be developed and faculty will be trained in PBL, PLCs, active-learning, and other pedagogical as well as content specific areas in order to further increase student achievement. Underutilized courses will be eliminated and faculty time will be focused on STEM related content at the middle and high school levels. Energy savings will be earmarked for ongoing classroom reinvestment, such as equipment for inquiry based laboratories and engineering software, and professional development. Professional development days, after school Professional Learning Communities, common planning time, and collaborations with The University of Akron will ensure time is available and capacity is built into the faculty to expand their knowledge of the STEM curriculum and solar energy.

E) SUBSTANTIAL IMPACT AND LASTING VALUE - Impact, evaluation and replication

20. Describe the rationale, research or past success that supports the innovative project and its impact on student achievement, spending reduction in the five-year fiscal forecast or utilization of a greater share of resources in the classroom.

This unique approach to education has a sustainable format thanks to the savings resulting from utility costs. That savings is expected for thirty years. However the lasting value of this project is its real potential to generate a new group of young men and women who gain confidence that they have the skills and passion to embrace a lifelong career in applied technical work or as engineers, scientists, mathematicians, manufacturing owners and business leaders. Our state will be poised to compete economically both from a regional perspective but as well as a global perspective. Therein is the value of this bold approach to education. The solar savings that generates sustainable education can be researched via Department of Energy work, especially at the National Renewable Energy Laboratory in Golden Colorado. PV WATTS is a proven software model that DOE launched and both State and Federal entities apply in the analysis of solar projects and proposed outputs. STEM integration, analysis and assessment tools have been utilized by the University of Akron based on State of Ohio Department of Education guidance. Thus the educational content of this project is guided by those principles.

21. Is this project able to be replicated in other districts in Ohio?

Yes No

22. If so, how?

Our public/private sector approach is replicable. Public and private sector partners can examine our project and form a similar teaming arrangement. Federal tax codes for private entities also facilitate replication. The solar component makes sense if private equity investors can team with certified and reliable solar installers like Valley Energy Solutions and if the school has available land area for location of the solar panel array. The STEM educational component of this effort is replicable as well given its focus on student outcomes versus procurement of hardware and software. The appropriate investment into faculty regarding cutting edge STEM education in the classroom can be replicated via detailed assessment of our report and appropriate dialogue and interaction with our faculty and the subject matter experts at University of Akron.

23. Describe the substantial value and lasting impact that the project hopes to achieve.

The solar panel array enables a thirty year financial benefit to the district. The educational component enables a much longer opportunity to grow and retain STEM students who excel in their careers, whether at applied pursuits or in academic settings. Northeastern Ohio benefits from a more competitive workforce that can compete effectively in our global environment. And we do so in a sustainable manner. This project will be a hallmark example for the School District, our Mahoning Valley as well as the State to brag about and attract and retain our youth and affiliated businesses and leaders and their families.

24. What are the specific benchmarks related to the fund goals identified in question 9 that the project aims to achieve in five years? Include any other anticipated outcomes of the project that you hope to achieve that may not be easily benchmarked.

Long-term goal: Within five years, WRLSD will reinvest over \$159,005 in energy savings into classroom-based projects that will increase student achievement in STEM related areas. Short-term objectives: * At the end of every year (i.e., July 1st -June 30th), the district will save \$35,000 in energy savings. o Measured by electric bills before funding and after years 1, 2, 3, 4 and 5. * Within five years, students enrolled in STEM related courses will demonstrate proficiency on STEM project- based assessments with at least a 75-80% accuracy. o Measured by teacher created performance-based STEM assessments before funding and after years 1, 2, 3, 4 and 5. * Within five years, 90% of students will receive scores of proficient or better on Ohio Achievement Assessments (OAA) and Ohio Graduation Tests (OGT), or end of course assessments in science and math with 90% accuracy. o Measured by student performance on OAA, OGTs, or end of course assessments in science and math before funding and after years 1, 2, 3, 4 and 5. * By March 2014, teachers will assess students in grades 6-12 using a PBL activity relating to environmental resources. o Used to establish a baseline for quantifying student achievement in PBL activities and assessments. * By June 2014, teachers at the middle and high school levels, within their respective PLCs, will design and implement one authentic STEM PBL unit into curricula. o Measured by quantifying the number of teachers who design and implement at least one STEM PBL unit into curricula before funding and after years 1, 2, 3, 4 and 5 (number of STEM related units/total number of middle school units). Student achievement will show improvement from the March 2014 baseline data. * By September 2014, each STEM related course in science and math will have at least 1 PBL experience per semester. o Measured by quantifying the number of experiences before funding and after years 1, 2, 3, 4 and 5. * By September 2014, WRLSD will have partnerships with at least 5 new STEM work settings that will allow high school students shadowing and limited work setting experiences. o Measured by quantifying the number of experiences before funding and after years 1, 2, 3, 4 and 5. * By November 2014, WRLSD will infuse STEM career interest inventories, guest speakers with STEM backgrounds, and STEM activities into middle school curricula in order to introduce students to STEM careers. o Measured by quantifying the number of middle school students who show interest in STEM careers based on interest inventories, attend guest speakers, and participate in extracurricular STEM related activities (science fairs, Science Olympiad, robotics competitions) before funding and after years 1, 2, 3, 4 and 5. * Within five years and in co-taught/differentiated classrooms, 90% of students at risk (i.e., those on free and reduced lunch) and students with disabilities will demonstrate at least proficiency on state mandated tests or end of course exams. o Measured by quantifying

goal performance or grades in co-taught classrooms before funding and after years 1, 2, 3, 4, and 5.

25. Describe the plan to evaluate the impact of the concept, strategy or approaches used.

* Include the method by which progress toward short- and long-term objectives will be measured. (This section should include the types of data to be collected, the formative outputs and outcomes and the systems in place to track the program's progress).

* Include the method, process and/or procedure by which the program will modify or change the program plan if measured progress is insufficient to meet program objectives.

Energy Savings- The district will monitor and track the energy savings every six months by comparing the cost of the utilities before and after the solar panel arrays are installed. Reinvestment of the savings realized by the solar panel arrays-The district will monitor the money that is reinvested into the STEM education program. A budget tracking the amount of the reinvestment used for professional development, equipment, supplies, and instruction will be reviewed annually and compared to student achievement and growth to establish the effectiveness of the program. Change in teaching techniques and mode of delivery- Through annual observations, walk through observations, and teacher professional learning community meetings, the administration will document evidence of teachers employing the PBL approach in each classroom. Teacher plans and student artifacts will also act as data and evidence of PBL activities and assessments. Increase in student achievement- Student work samples will be collected in electronic portfolios to measure the increase in achievement as it relates to the synthesis, application, and transfer of skills learned in the classroom to solve real world problems. Track students to identify if the early exposure to STEM activities result in an increase in students choosing STEM related career or postsecondary education pathways. The program will be evaluated annually to determine the amount of funds redirected into the STEM education program, the targeted use of funds, and the impact on student achievement. Trend data will be evaluated every 3 years to monitor the influence the program has on student's post-secondary education and career paths.

By virtue of applying for the Straight A Fund, all applicants agree to participate in the overall evaluation of the Straight A Fund for the duration of the evaluation timeframe. The Governing Board of the Straight A Fund reserves the right to conduct evaluation of the plan and request additional information in the form of data, surveys, interviews, focus groups, and any other related data to the legislature, governor, and other interested parties for an overall evaluation of the Straight A Fund.

PROGRAM ASSURANCES: I agree, on behalf of this applicant agency and/or all identified partners to abide by all assurances outlined in the Assurance section of the CCIP. In the box below, enter "I Accept" and indicate your name, title, agency/organization and today's date.

I accept. Jeffrey Zatchok Superintendent Western Reserve Local School District October 25, 2013