APPLICATION COVER PAGE

Project Name: Building the Pipeline Through Project-Based Learning
Requested Funding: $170,365

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	Participating High School or Middle School Name	**Lead Contact Name**	**Grade Levels**	**Student Enrollment**
1.	Kennedy High School	Ben Merrill	9-12	204
2.	Mt. Angel Middle School	Debi Brazelton	6-8	163
3.	Silverton High School	Mark Hannan	9-12	1,144
4.	Mark Twain Middle School	Dandy Parsons	7-8	324

BUSINESS, INDUSTRY, LABOR AND POSTSECONDARY EDUCATION PARTNERS

The following individuals and/or organizations have reviewed, discussed, and agreed to their part in implementing the project proposed in this grant application:

	Name	Title	Organization
1.	Patrick Lanning	Chief Academic Officer	Chemeketa Community College
2.	Charlie Jones	Dean of Engineering, Technology and Management	Oregon Tech
3.	Greg Thompson	Dean, Agricultural Education	Oregon State University
4.	Dr. Daniel Cote	Owner Vice President	Cote Chiropractic Oregon Board of Chiropractic Examiners
5.	Del Smith	Owner & CEO	Evergreen Aviation
6.	Ken Hector	Community Outreach and Governmental Affairs	Silverton Hospital
7.	Don Fleck	Fire Chief	Mt. Angel Fire Department
8.	Diana Coleman	Vice President & General Manager	Mt. Angel Telephone and
9.	Pete Wall	President	Mt. Angel Chamber of Commerce
10.	Tommy Riedman	President	Riedman Home Construction Inc.
11.	Stacy Palmer	Director	Silverton Area Chamber of Commerce
12.	Andy Stevens	Owner	Premier Custom Homes
13.	Ken Kraemer	Owner	Kraemer Farms
14.	John F. Annen	President	Annen Bros., Inc.
15.	Bill Cummins	Plant Engineer & Maintenance Manager	Givaudan

Abstract: This proposal will capitalize on a variety of elements that have come together nicely in the Mid-Willamette Education Consortium (MWEC) region and will allow us to leverage resources more effectively to provide more career technical education (CTE) opportunities for students at two of the member districts. We are requesting funding for infrastructure and professional development to either implement or take to the next level a strong project-based curriculum (Curriculum for Agricultural Science Education—CASE; Project Lead the Way—PLTW; or High School of Business—HSB), which is based on a student-inquiry method of learning and aligned to academic and technical standards. The goal is for the learnings from this project to be shared with the other 27 schools in the consortium, and funding options will be explored together to expand the project throughout the region.

Activities that are a part of this proposal include Summer Training Institutes, PLTW Teacher Conference, quarterly collaborative meetings with all teachers, and A Day in the Trades Event. In addition, MWEC and the schools in the region were just awarded a USDA Challenge grant that will be leveraged to provide additional activities for STEM teachers and students from all districts in the consortium.

The collective impact model will be key to implementing and sustaining the project, which includes the sharing of CTE programs between schools and districts, both horizontally and vertically. The strength of this project is in working together since each district can't afford to duplicate programs, but can share resources to provide more opportunities for students. It will also clearly articulate a road for students to travel on from middle to high school and on to post-secondary opportunities; increase the academic rigor in CTE classes; and give students a chance to earn academic credit.

II. Project Description/ A. Project Outcomes and Progress Markers (10 Points)

Area	Goal	Progress Markers	Outcomes
Student Engagement in CTE	By June 2013, 100% of the 204 students at KHS will participate in the CTE programs	• New science curriculum is in place by Sept 2012	At least 90% of KHS students have successfully completed at least one PLTW course by June 2013.
	By June of 2013, 100% of MAMS 7th and 8th grade students will have taken the first 3 courses of the PLTW curriculum	• Teacher completes PLTW training during summer 2012 • PLTW is integrated into existing courses beginning Sept 2012	At least 85% MAMS students have successfully completed at least one integrated PLTW course by June 2013.
	By June 2014, the number of female students at KHS participating in PLTW Engineering and males participating in PLTW Biomedical will be 100%	• KHS teacher completes PLTW Biomedical summer core training • New science curriculum is in place by Sept 2012 • All students at KHS have completed one year of the new science curriculum by June 2013	All students at KHS have completed two years of the new science curriculum, and therefore at least one engineering and one biomedical science class by June 2014
	By June 2013, 18% of MTMS students will have participated in a CTE program	• Contract is offered to extend SHS Ag teacher's workload by one period by Sept 2012 • Transportation and scheduling logistics will be in place to support MTMS students attending a CASE at SHS • A contract will be in place for a MTMS teacher to serve as a middle school FFA co-advisor	18% of MTMS students will have taken a CTE class by the end of the 2012-13 school year. By June 2013, 15 middle school students will have joined the new MS Silverton FFA program.
Improved Teacher Knowledge and Practice	By Sept 2012, both KHS science teachers will participate in further PLTW training including EDD and BI	• Jeff Crapper will have completed Engineering Design and Development training and Carlie Harris will have completed Biological Investigations training by Sept. 2012	KHS students will have taken the first offering of Engineering Design and Development and Biological Investigations by June 2013.
	By Sept 2012, all of the PLTW teachers in MASD and SFSD will have completed the Aug training	• Jeff Crapper, Carlie Harris, Katie Iverson, and Daren Houts will have participated in PLTW teacher conference in Aug 2012	Students will be taught with the most up-to-date version of the PLTW curriculum and teachers will have participated in state-wide strategic planning with other PLTW teachers.
	By Sept 2013, the number of PLTW, CASE, HSB trained teachers will increase by 50% (based on the number of courses approved to teach)	• A baseline will be established in June 2012 • The number of teachers who have participated in training or are scheduled to participate in summer 2013 will be measured in June 2013	At the beginning of the 2013-14 school year, students will have at least 50% more project-based CTE courses to participate in compared to the number available at the beginning of the grant period.

Improved Rigor/Alignment to Diploma Requirements and Industry Standards	By June 2013, 3 PLTW Science courses will be required for graduation at KHS	• New curriculum is implemented and students are enrolled in classes by Sept 2013	90% of students will have successfully completed a new project-based science course during the 2012-13 school year
	By Sept 2012, Kennedy High School will have the facilities required to fully implement both PLTW curricula	• By the end of Aug 2012, Kennedy High School CTE/Science labs will be retrofitted in order to be able to support the new curriculum	Grant funds will have been used to bring the KHS CTE labs up to standards in order for 100% of KHS students to participate in a CTE course.
	By Sept 2013, at least 50% of the PLTW, CASE, and HSB courses will provide applied academic opportunities for students	• A baseline will be determined in June 2012 • The number of CTE courses available for applied academic credit or are scheduled to offer it in 2013-14 will be measured in June 2013	At the beginning of the 2013-14 school year, students will be able to earn applied academic credit in at least 50% of the courses in the CTE programs of study described in this grant.
Improved Partnerships	During Spring 2013, an event will be hosted for students from all schools, "A Day in the Trades", in which STEM students will be able to learn about careers and post-secondary training opportunities related to the trades	• Partners from the trades will be contacted and a date that works for all will be set for spring 2013 by Oct 2012 • MWEC will work with school principals to plan the logistics and facilitate the event	By the end of May 2013, students from MTMS, MAMS, SHS, and KHS will have participated in an event that will increase their knowledge of apprenticeship programs, training options, and careers in the trades. A survey will be administered to determine the knowledge gain and the resulting interest.
	By Jan 2013, advising materials will be produced for MASD and SFSD students that will clearly articulate paths to future education and career choices related to their high school CTE program of study	• MWEC will convene a meeting with Oregon Tech, Chemeketa apprenticeship/applied technology/business/ Ag programs, Oregon State, and interested industry partners to begin laying out the advising materials by 10/31/12 • MWEC staff will produce a draft of the materials to be reviewed by all parties by Nov 30th	By the end of Jan 2013, students will have the advising materials available to them in time to forecast for the next year's classes as well as to plan for the next steps in their future education and career paths
	By Sept 2012, a collaborative partnership will be enhanced allowing for students from both schools to participate in CTE courses currently not offered at the home school	• A new MOU will be in place between the two districts to facilitate: • KHS student continuing to travel to SHS to participate in Ag Ed programs • SHS students participating in Biomed/Sports Medicine classes at their home school, taught by a KHS teacher	By June 2013, 25 Kennedy students will have participated in the Ag Ed program at Silverton, and 25 Silverton students will have participated in the Sports Medicine program taught by KHS faculty.

	By Sept 2014, at least 85% of the high school PLTW, CASE, and HSB courses will provide dual credit opportunities for students	• A baseline will be determined in June 2012 • MWEC will work with schools to identify dual credit opportunities at Chemeketa, Oregon Tech, and WSU (and other institutions, as needed) • The number of CTE courses that offer dual credit or are scheduled to offer it in 2013-14 will be measured in June 2013	At the beginning of the 2013-14 school year, students will be able to earn dual credit in at least 85% of the courses in the CTE programs of study described in this grant.

B. Career and technical education program of study design (15 Points)

This project is based on four different project-based learning curricula that will take the CTE programs at the partner schools to the next level in preparing students for their future education and career endeavors. Each of these curricula, combined with local efforts to align and articulate programs with post-secondary partners, student support services specific to the needs of the individual school and students, and targeted professional development for regional teachers, form a solid CTE program of study. Below is a description of each, a more detailed list of each can be found in Appendix E:

- ***Project Lead the Way, Gateway to Technology, Middle School****: a modularized curriculum designed to spark and interest in STEM subjects and prepare students for further study in high school.*
- ***Project Lead the Way, Engineering Strand, High School****: a curriculum designed to prepare students to pursue post-secondary education and careers in STEM-related fields.*
- ***Project Lead the Way, Biomedical Strand****: a curriculum in which students explore the concepts of human medicine and are introduced to topics such as physiology, genetics, microbiology and public health through activities like dissecting a heart.*

Students examine the processes, structures and interactions of the human body – often playing the role of biomedical professionals.

- ***Curriculum for Agricultural Science Education****: a program that provides instructional support for the classroom teacher in four areas of support (curriculum, professional development, assessment, and certification) to promote solid classroom instruction using rigorous and relevant lessons while enhancing student learning.*
- ***High School of Business****: designed a lot like a college business administration program, in which the capstone course requires students to implement the principles learned throughout the program.*

In Project Lead the Way, teachers are provided with matrices for each class that show how it aligns to Language Arts, Mathematics, Science, Technology, Engineering/Healthcare (CTE), and International Society for Technology in Education (ISTE) standards. Two PLTW matrices, one that aligns to academic and another to CTE standards can be found as Appendix B of this grant.

PLTW students at certified schools have an opportunity to earn Oregon Tech engineering credit upon successful completion of the end-of-course assessment for each class. With the availability of the Evergreen STEM Institute for high school students in the Chemeketa region, schools can become certified by offering two PLTW courses (rather than the full four) and providing access to Evergreen STEM. CASE students earn dual credit through Chemeketa Community College. High School of Business will be new to Oregon and the Chemeketa region, so upon implementation of the curriculum dual credit opportunities will be explored with both Chemeketa and Oregon Tech.

As a part of this project, student-friendly advising materials will be produced and shared with students through their Advisory Group periods, counselors, and CTE teachers. These materials will be specific for the programs available to the students at each district and will focus on how their middle and high school CTE programs of study align to local educational opportunities and future careers, including local wage and "demand" information. Recent data from Oregon Employment Department shows that the majority of the occupations in demand over the next eight years will fall in to the job sectors covered by Building the Pipeline Through Project-Based Learning, and in the 2008 survey of Region 3 employers the majority of them said that they need employees who are capable of working in teams and solving problems which is addressed through all of the curricula including in this project. See Appendix C for a link to Region 3 labor market information.

Currently, students at Silverton High School have an opportunity to participate in FFA (Ag students) and FBLA (business students). This project would expand FFA participation to middle school students, and robotics competitions would be made available to students as well. PLTW and CASE both provide students with rigorous, hands-on learning that prepares them for their chosen career path, whether it is in the trades, requires a certificate or 2-year degree, or university studies.

The following table shows the current CTE programs of study at each school, and the new opportunities that would be added as a result of this project.

School	Current CTE Programs of Study	CTE Programs After Implementation of Project
Mt. Angel Middle School	None	PLTW/Pre-engineering
Mark Twain Middle School	None	CASE/Ag (2012) PLTW/Pre-engineering (2013)
Kennedy	Engineering	Engineering

High School	Public Safety CASE/Ag (through SHS) Business	Public Safety Biomedical Sciences/Sports Medicine CASE/Ag (through SHS) Business
Silverton High School	CASE/Ag Business Health Occupations Mechanical Tech	CASE/Ag HSB/Business PLTW/Engineering Health Occupations Biomedical Sciences/Sports Medicine (in partnership with KHS) Mechanical Tech

C. Innovation (15 Points)

There is a quote that goes something like, “Trouble is just opportunity in work clothes.” When schools come upon troubling economic times they have very tough choices to make. Unfortunately, many times the choice is made to eliminate the more expensive CTE programs, even though they are essential to preparing students for their future. After the 2008-09 school year, Kennedy High School discontinued its Ag program. It was then that the current principal put on his “work clothes” and worked out an arrangement with a neighboring school, Silverton High School, to allow Kennedy students to participate in its Ag education opportunities. In turn, Kennedy began two new CTE programs of study in Public Safety and Engineering in partnership with the local fire department and an engineering advisory committee. As a part of this project, Kennedy will begin a third CTE program of study in Health Sciences that will utilize the Biomedical strand of the PLTW curriculum taught through a Sports Medicine lens.

While this is a great arrangement that provides agricultural education opportunities to Kennedy students, it is not sustainable financially to the district. This project will allow the schools to now share programs with each other in that a Kennedy teacher will teach a period at Silverton High School each day (rather than bussing the kids to Kennedy),

providing SHS students with the opportunity to study Biomedical Sciences through a Sports Medicine lens. This innovative approach to sharing CTE programs is opening up opportunities for students from both districts that lead to a variety of high-wage, high-demand career options specific to each student's own interests.

In fall 2009, Silverton High School opened its new campus that includes a 30,000+ square foot CTE Building. This facility is already being shared with Kennedy students, and through this project it would also be shared with MTMS students. Currently, there is no CTE program at MTMS. Building the Pipeline Through Project-Based Learning would provide the means to offer an Ag "wheel-style" class (including woods, metals, and CASE plant and animal science) to MTMS students beginning in Fall 2012. Future plans include offering PLTW pre-engineering curriculum to students in Fall 2013.

At MAMS, PLTW will bring a new, needed curriculum to prepare students for cutting edge future careers. The access to the necessary technology to fully implement PLTW is extremely limited, so this project would provide the latest in tablet computers to supply our teacher and CTE students with the technology needed to implement the engineering curriculum to its fullest. It is a school's responsibility to prepare its students for the jobs of tomorrow, and this this program will replace a very traditional, outdated science program with a CTE-infused science curriculum that will reach every student in the school. Without additional funding in order to purchase the necessary technology, our teacher and students will be limited to the extent to which the PLTW curriculum can be implemented. Our goal is to implement the curriculum with fidelity and to its fullest potential. As a result, we will see an increase in student engagement and success in our science curriculum as well as an increase in state test scores in science.

Kennedy High School is a small school with only 204 students, yet it will be only the second school in the state to implement both PLTW curricula, engineering and biomedical sciences. All students will participate in this curriculum being taught by the science teachers, and in fact by fall 2012 Kennedy High School will have completed the reorganization of the science curriculum, resulting in a two track PLTW science curriculum from which students can choose:

Grade Level	Traditional Science (1)	Advanced Science (2)
9th	* Integrated Science (POE)	* Accelerated Biology (MI)
10th	* Biology (PBS)	* Conceptual Physics (EDD) **OR** * Human Body Systems / Medical Terminology I/II (HBS)
11th	* Introduction to Engineering Design (IED) **OR** * Sports Medicine (BI)	* Conceptual Physics (EDD) **OR** * Human Body Systems / Medical Terminology I/II (HBS) **OR** * Chemistry
12th		* Conceptual Physics (EDD) **OR** * Human Body Systems / Medical Terminology I/II (HBS) **OR** * Chemistry

(Abbreviations in the table above refer to the PLTW course that is being offered; please see the program of study section of the grant for more information.)

Silverton High School has already fully implemented the Curriculum for Agricultural Science Education and with this project will be able to implement both Project Lead the Way engineering and High School of Business project-based curriculum as well. High School of Business is a rigorous, high quality business curriculum that will reinvent the Business Department at SHS and prepare students for a variety of educational and career opportunities. Upon implementation, it will be the first HSB program in Oregon.

Students from both schools are also able to participate in the Evergreen STEM Institute at Chemeketa that provides PLTW specialization courses to students from the Chemeketa three-county region. Students take the courses in a hybrid format by attending the theory/lecture portion of the class online (often throughout the week during an independent study period) and then traveling to the Evergreen Space Museum to complete the hands-on lab portion of the class. Currently, Aerospace Engineering and Digital Electronics are being offered, with Civil Engineering and Architecture being added to the slate fall 2012.

Finally, the innovation of this project is further enhanced by using the Collective Impact model to bring about change to education that spans school site and district boundaries. By having a solid foundation on which to build and ensuring that all conditions required for successfully enacting change are met, the change has a much stronger chance of "sticking" and continuing to grow and move forward.

D. Diploma Connections (10 Points)

Currently, MASD is falling short of the state average and continues to show a growing gap in the number of students passing science OAKS:

Proficiency on OAKS Science Test		
Year	MASD Students	State Average
2008	66%	67%
2009	66%	68%
2010	63%	68%
2011	60%	72%

This project will allow MASD to increase engagement in science courses in 7th – 12th grades through a cohesive CTE program of study in engineering with biomedical opportunities available in high school as well. In addition, students will need to meet the Essential Skills requirement for graduation. Those who are unable to demonstrate

proficiency on OAKS will eventually need to have an appropriate work sample in science in order to graduate, and the CTE/Science teachers will play an important role in the creation and evaluation of science work samples.

Silverton High provides students with a daily Advisory Group period that helps students to receive guidance from the same educator for all four years of their high school career. This time gives students a chance to explore future career and educational options through all four years of their high school experience. Kennedy High School will be implementing the same model and it will be through the AG period at both high schools that students will learn more about the paths that are articulated through this grant, which addresses an aspect of the Extended Application. The PLTW and HSB capstone classes require students to complete a project that connects their academic experience to real-life situations, meeting the Extended Application requirement of the Oregon Diploma. Once completed, CASE will have a similar class that will meet the same requirement. All of this personalizes the educational experience for students and helps them to make the connection to their future though their chosen CTE path.

MWEC has already begun working with CTE teachers in the region to helping them to understand and support Essential Skills reading work samples. This project will expand on this work and provide a vehicle for CTE teachers to play an integral role in the development and evaluation of work samples in multiple areas.

During the 2010-11 school year, Oregon State professors conducted research on the efficacy of the CASE curriculum and the impact on teacher's practice, including the role that the summer core training plays. They found that the comfort level of Ag teachers to teach core academic content was greatly increased after participating in the

summer core training. CASE and HSB are both based on the PLTW model, so one would assume that the same may be true after teachers participate in those trainings as well. Kennedy PLTW teachers will be offering applied Mathematics credit to students, and this project will allow Silverton to adopt PLTW, which will allow them to pursue applied Math opportunities for students as well. In order to learn more about the research on the PLTW curriculum, see Appendix D.

E. Activities and Timeline (10 Points)

Timeline	Activity	Alignment to Outcomes
May - June 2012	• Kennedy High School hosts PLTW certification visit • Project Steering Committee meets to lay out work plan for project and set baseline data	• PLTW certification will allow KHS to offer Oregon Tech dual credit • Committee will set up a work plan and make sure all partners understand goals, roles, and responsibilities
July – Sept 2012	• Summer Training Institutes: Two week summer training for teachers, which is required by each of the curricula (CASE, PLTW, HSB) before a course can be offered. Teachers will have an opportunity to work through the entire curriculum and develop a network of other teachers who are using the same curriculum and pedagogy • Project Lead the Way Teacher Conference: for teachers who have already completed the summer training for a PLTW course, in order to come together with other teachers to learn what is "new", to network with industry, to learn new tips and tricks that they can use implement, and to assist with state-wide strategic planning • Kennedy High School CTE labs undergo their "makeover" • All teachers involved begin teaching new curricula • Project Steering Committee meets to evaluate progress, ensure everyone is	• Teachers must participate in training to begin teaching curriculum in the fall • Provides a state-wide support system for teachers so they will be able to better implement the curriculum and support student learning • CTE labs/classrooms are prepared to offer the CTE programs of study for the new school year • New project-based curricula is "launched' and students take advantage of new opportunities • Steering committee ensures the

	ready for the school year and prepared to offer new programs, begin work on "A Day in the Trades", new Kennedy science curriculum is reviewed, field trips are laid out by teachers and partners, review existing dual credit offerings and lay plans to pursue additional ones	project is going according to plan, processes feedback on all outcomes, and makes adjustments where necessary
Oct – Dec 2012	• Project Steering Committee meets to set date for the trades event and to develop a plan for it, to check on progress of outcomes, and do a status check with all partners • Middle School FFA Co-Advisors begin work on new MS FFA program • Partners meet and provide information to MWEC to begin working on the advising materials by Oct. 31st; materials are finished by Nov. 30th • Project website is launched	• Steering committee ensures the project is going according to plan, processes feedback on all outcomes, and makes adjustments where necessary • Students become engaged in CTE programs at a much greater level • Advising materials that will clearly articulate middle and high school CTE programs of study with post-secondary and career opportunities will be ready for students and will be published on the website • Project outcomes and progress will be shared through the website
Jan – March 2013	• Project Steering Committee meets to ensure the planning for "A Day in the Trades" is on track, to receive the advising materials for distribution, and to check on progress of outcomes	• Steering committee ensures the project is going according to plan, processes feedback on all outcomes, and makes adjustments where necessary
April – June 2013	• "A Day in the Trades" Event: This event will be a chance for students from both middle and high schools to experience apprenticeship and career opportunities in the trades. • Project Steering Committee meets to debrief "A Day in the Trades" event, to evaluate all outcomes, to provide input for final report to ODE, and to plan for the 2013-14 school year	• The event provides students with educational and career information; outcome will be measured by pre- and post-event surveys • Steering committee wraps up grant outcomes and begins the plans for continuation of the project into the next school year and beyond

F. Evaluation (5 Points)

As the "backbone support" for the collective impact project, MWEC will serve as the evaluator for the project. MWEC will utilize a logic model to in order to report on the activities and outcomes of the project (see Appendix A for the logic model to be used for

evaluation). Evaluation data will be collected for each outcome and benchmark quarterly and shared by MWEC at project steering committee meetings with partners. The project steering committee will look at where outcomes are on track and will identify any outcomes that are not progressing as expected at each meeting. As a part of this proposal, MWEC will receive funds to collect and prepare data for analysis, keep track of grant expenditures, assist with the preparation of materials and logistics for presentations and meetings, disseminate practices and products via the MWEC website and social media, prepare and submit all reports required for the grant, and provide support to other schools in the consortium who are interested in implementing aspects of the project. Tools that will be used to collect data are (this is not a definitive list): student databases, PLTW program assessment data, Perkins technical skill assessment data, and online surveys.

III. Partnerships (20 points)

The partners who have signed on to "Building the Pipeline Through Project-Based Learning" are all very excited about strengthening the role that CTE plays in local schools. Each played a different role in the development of this proposal from writing it to learning about it and desiring to play a greater role in CTE in both districts through classroom presentations, student mentoring, and event planning. As the project rolls out, every partner will add their own expertise and passion to it throughout the life of the project and beyond. All partners will be invited to participate on the project steering committee that will meet quarterly, and they will all be involved in developing the plan to extend it into the 2013-14 school year and beyond. With the scope of this project

covering multiple project-based learning curricula, a table is provided for you to see and understand the CTE programs supported by each partner:

Partner Organization	CTE Program of Study Area	Role in Project
Chemeketa Community College	All Programs	Grant writing, grant management, dual credit opportunities, project evaluator, assistance with development of advising materials for MASD and SFSD CTE students, support of the PLTW State Leader (an employee), faculty to work with high school teachers to align CASE with Chemeketa horticulture classes, general funds to support local Perkins consortium to assist with CTE program of study development and leadership
Oregon Tech	PLTW Engineering, PLTW Biomedical, HSB	PLTW Affiliate University, summer PLTW core training, development of well-articulated paths for Kennedy and Silverton students to travel in order to pursue engineering, health science, and management programs at Oregon Tech
Oregon State University	CASE	CASE Affiliate University, provide summer CASE core training, support of Ag teachers through OVATA, hosting of Oregon FFA Organization
Cote Chiropractic	PLTW Biomedical	Mentor students, site visits, classroom presentations, review and contribute to curriculum
Evergreen Aviation	PLTW Engineering	Support of Evergreen STEM Institute at Chemeketa
Silverton Hospital	PLTW Biomedical	Site visits, internships, provide an employee to teach Health Science classes at Silverton High School
Mt. Angel Fire Department	PLTW Biomedical Public Service POS	Classroom mentor, give student presentations, provide site tours to students, participate in career events
Mt. Angel Telephone	PLTW Engineering HSB	Classroom presentations, evaluation of student projects
Mt. Angel Chamber of Commerce	PLTW Engineering PLTW Biomedical HSB	Classroom presentations, evaluation of student projects
Riedman Home Construction	PLTW Engineering CASE	Assist with planning of “A Day in the Trades” event, classroom presentations
Silverton Area Chamber of Commerce	PLTW Engineering PLTW Biomedical HSB CASE	Classroom presentations, evaluation of student projects, assistance with “A Day in the Trades” event
Premier Custom Homes	PLTW Engineering CASE	Assist with planning of “A Day in the Trades” event, classroom presentations
Kraemer Farms	CASE	Classroom presentations, evaluation of student projects

Annen Bros., Inc.	CASE	Local specialty ag presentations to students, evaluation of student projects
Bill Cummins	CASE PLTW Engineering	

IV. Budget

C. Sustainability (5 Points)

This project relies heavily on multiple organizations working together in order to provide high quality CTE opportunities for kids. This project is looking to use a Collective Impact model in order to implement positive change in the area of career technical education for MASD and SFSD with the goal being that this project will spread to the rest of the districts in the MWEC region. In the Stanford Social Innovation Review article "Channeling Change: Making Collective Impact Work", the authors identify five conditions that distinguish collective impact from other types of collaboration. These conditions are displayed below and show how they are addressed in the project:

Condition	How Addressed in Project
Common Agenda	All partners have a shared vision for CTE, a common understanding of the challenges, and a combined approach to solving it through the activities outlined in this proposal.
Shared Measurement	Outcomes have been developed together; data will be gathered and used to ensure alignment of efforts and accountability of all partners.
Mutually Reinforcing Activities	The activities outlined in this proposal are differentiated based on the needs of each partner school, yet they are coordinated through a mutually reinforcing plan of action.
Continuous Communication	A wide variety of communication methods are in place and will be built upon in order to ensure frequent and meaningful communication. Regional professional learning communities for teachers as well as administrators; industry advisory meetings; quarterly meetings of grant partners; quarterly day-long collaboration with middle and high school teachers (to name a few).
Backbone Support	MWEC serves as "a separate organization with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinator participating organizations and agencies". MWEC staff are professional CTE educators with

	relationships with all consortium schools, and regularly coordinate with partners (including secondary schools, post-secondary institutions, and industry partners).

Another aspect stressed by the authors is that the "initiative must build on any existing collaborative efforts already underway..." The relationship between the districts to share programs began in 2009, and it will be with this project that the existing effort is strengthened, new elements are implemented, and it gains a "vertical" element with the inclusion of the middle schools in district CTE programs of study.

The greatest cost for the curricula outlined in this project is in implementation, and on-going costs are reasonable and easily funded by Perkins, general fund, or other grant funds. In addition, there is another level of sustainability built into the curricula in that when a teacher leaves a CTE program utilizing it, a new one can attend in-depth training and continue the program of study for the students. Funds are being requested for .17FTE of a SHS Ag teacher's time in order to offer the CTE program to middle school students. The principal at MTMS has developed a budgeting plan that will allow for this position to be funded from school general funds from 2013-14 and onward. MAMS will be incorporating the CTE program into already scheduled classes, therefore the instructor is already on staff and the costs are a part of the school's general operating budget, which increases the sustainability of the project.

V. BONUS Sections (Optional)/A. Communication/Replication (4 points)

Communication of "Building the Pipeline Through Project-Based Learning" will take place through a wide variety of venues. A list of opportunities to share the project that will be pursued are as follows:

Opportunity	Who will present
OACTE Conference presentation	Teachers and administrators
MWEC Executive Council	Mark Hannan, Troy Stoops, and MWEC
MWEC Regional Teacher PLCs	Teachers
Chemeketa High School Counselor Conference	MWEC
MWEC Regional Administrator meetings	MWEC and Principals
State and national PLTW network	Trish Conlon, PLTW State Leader
MWEC Regional Institute	Teachers, administrators, MWEC
Presentation to new OSU Ag teachers	MWEC
Presentation through OVATA	Ag teacher(s)
State CTE Regional Coordinator meetings	MWEC
Willamette Curriculum Coalition	Therese Gerlitz, Jennifer Christian, and/or Dandy Parsons
Mid-Willamette Conference Principals	Mark Hannan
COSA AP Conference	Principals and/or MWEC
COSA Jan Conference	Principals and/or MWEC
Local newspapers	Any and all partners involved
Site Visits by other schools	All schools
Web presence	All partners, MWEC host a project website
Social media	CTE blog and Facebook—MWEC

The project is easily replicable by other schools that are willing to look outside of the box for innovative ways to provide opportunities for students. Materials will be produced that outline how the project works, and they will be shared along with other information at all presentations and on the project website. One of the project's goals is to use the model as a way to assist other schools in the consortium to replicate it in a way that works for their school(s) and district(s). Funds required for communicating the project after June 30, 2013 will be accessed through the Perkins consortium, district general funds, and/or other funding sources that may become available.

B. Entrepreneurship (4 points)

All of the curricula that comprise this project include capstone courses that introduce students to all aspects of an industry and require them to synthesize information learned throughout their CTE program of study in a final project. In the PLTW capstone courses, students will learn how to identify a "problem" they wish to solve, develop a proposed solution using their learnings, search to make sure the solution has not already been patented, create a business plan, and then develop a prototype. Students will be able to pull knowledge from their entire program of study and apply it in a creative, real-world way. There have been instances where PLTW students end up getting a patent on their capstone project that benefits their community (for instance, one student designed a device that lifts an ambulance gurney while continuing to stabilize a patient's spine in order to be able to clean the airway).

Students at Silverton High School will operate the "Fox Shop", which provides them with real world marketing and sales experience, as well as providing funds to the program.

C. Student Diversity (4 points)

As a part of MWEC, Kennedy and Silverton High Schools have been participating in a Perkins “Non-Trad” grant during the 2011-12 school year. Teachers from Kennedy, Silverton, and Woodburn have been working together to design a “No Girls Allowed” event in 2012-13 to help recruit boys in to health science careers typically dominated by women. This project will strengthen relationships and build strong communication channels that will facilitate the planning and successful implementation of this event.

Through PLTW, MASD will have the ability to expose students to a curriculum in engineering they would otherwise not have the opportunity to take part in. Students will gain exposure to a field that is sorely lacking in employees of minority populations such as females, Latino, ELL, low socioeconomic, or those with learning disabilities. At MAMS, 46% of students are Hispanic, 26% are second language learners, 12% are special education, 41% are female, and 62% come from economically disadvantaged homes. The middle through high school CTE program of study will prepare students for the work world of tomorrow and close the achievement gap for minority students.

Silverton High School has forecasted for and plans to offer an all-girls welding class in the 2012-13 school year. This will provide girls with a comfortable environment in which to learn valuable CTE skills that can lead to high-wage careers in the trades.

Specifically, this project will expose a large number of middle and high school students from both communities to the opportunities that are available in the trades through the “A Day in the Trades” event that will allow students to learn about and experience the trades through interaction with current trade workers and interactive activities.