



## School Nominee Presentation Form

### ELIGIBILITY CERTIFICATIONS

#### School and District's Certifications

The signatures of the school principal and district superintendent (or equivalents) on the next page certify that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of their knowledge. *In no case is a private school required to make any certification with regard to the public school district in which it is located.*

1. The school has some configuration that includes grades early learning to 12.
2. The school has been evaluated and selected from among schools within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. Neither the nominated public school nor its public school district is refusing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district wide compliance review. The Department of Defense Education Activity (DoDEA) is not subject to the jurisdiction of OCR. The nominated DoDEA schools, however, are subject to and in compliance with statutory and regulatory requirements to comply with Federal civil rights laws.
4. OCR has not issued a violation letter of findings to the public school district concluding that the nominated public school or the public school district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
5. The U.S. Department of Justice does not have a pending suit alleging that the public school or the public school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
6. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the public school or public school district in question; or if there are such findings, the state or public school district has corrected, or agreed to correct, the findings.
7. The school meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

### U.S. Department of Education Green Ribbon Schools 2015-2018

Public  Charter  Title I  Magnet  Private  Independent  Rural

Name of Principal: Mr. Lanc Sellden

Official School Name: Central High School

Official School Name Mailing Address: 550 Warrior Way, Grand Junction, CO 81504

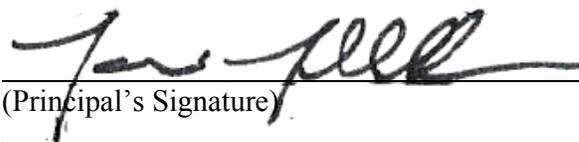
County: Mesa State School Code Number \*: 8669

Telephone: 970-254-6200 Fax: 970-254-6104

Web site/URL: <http://chs.mesa.k12.co.us> E-mail: [lanc.sellden@d51schools.org](mailto:lanc.sellden@d51schools.org)

\*Private Schools: If the information requested is not applicable, write N/A in the space

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

  
(Principal's Signature)

Date: 3/27/18



Name of Superintendent: Mr. Ken Haptonstall

District Name: Mesa County Valley School District 51

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

[Handwritten Signature] Date: 3/27/18  
(Superintendent's Signature)

**Nominating Authority's Certifications**

The signature by the Nominating Authority on this page certifies that each of the statements below concerning the school's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The school has some configuration that includes grades Pre-K-12.
2. The school is one of those overseen by the Nominating Authority which is highest achieving in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
3. The school meets all applicable federal civil rights and federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Colorado Department of Education

Name of Nominating Authority: Dr. Katy Anthes, Ph.D.

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

[Handwritten Signature] Date:  
(Nominating Authority's Signature)

**SUBMISSION**

The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: March 31, 2018

**Public Burden Statement**

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email ICDOcketMgr@ed.gov and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

# **2018 U.S. Department of Education Green Ribbon Schools Award**

## **Central High School, Mesa County Valley School District 51, Colorado**

Central High School was built in the 1960s, and after some re-models and expansions, the current building has been modernized and retrofitted to increase efficiency and decrease energy usage. Opening skylights, changing faucets, and changing student and staff behavior are just some examples of how Central High School has evolved. Over the past 10 years, Central High School has undergone profound and transformative changes that make it an excellent and well-rounded example of what a Green Ribbon School could look like. For example, the changes in structure, policy, curriculum, and student involvement reflect a team approach as well as a sincere desire to be innovative, environmentally responsible, and high achieving. The incredible support of the school district in Central High School's efforts has also continued to guide the school on its journey, and each year provides us with new opportunities to expand our work in each of the three ED-GRS Pillars. The school community truly believe in continuous growth, and Central High School hopes to continue this work in each Pillar to continuously improve and impact more students, staff, and community members along the way.

Central's biggest accomplishments from Pillar One have been its significant reduction in energy use of 39%, Greenhouse Gas emissions reduction of 42%, water use reduction of 36%, and a fluorescent lights usage decrease from 1489 to 154. Furthermore, 58% of Central High School's electricity is renewable largely due to the roof-mounted solar panels. These accomplishments are monumental because this building was originally built more than 50 years ago and does not enjoy some of the technologies available in new construction today. Reducing Greenhouse Gas emissions, improved water efficiency and conservation, reducing waste production, and promoting alternative transportation methods have all been aggressively addressed at Central High School, and significant strides have been made through team efforts, data tracking, clear protocols, and communication. One of the best examples is when the school administration, athletic/scheduling secretary, science department chair, and lead custodian met with district partners to plan a two-month period in which our building committed to not turning on the second air conditioning compressor. Central High School saved \$3,572 from this pilot program. Not only did this commitment save money, but it contributed to reducing energy use and Greenhouse Gas Emissions.

Furthermore, the exciting blossoming partnership between the Special Education department and the Science team is representative of the team feeling at Central High School. The plan will involve not only relocating the school's current greenhouse to the planned outdoor classroom, but will involve team teaching efforts so that students in Environmental Science classes can mentor and work alongside students in special education classes who are learning about growing plants and what that means in terms of cost and environmental impact. The plan also includes the building of a compost pile, which will hopefully lead to composting from the cafeteria. This project will be the basis of several interdisciplinary and service-oriented projects in our building. There are limitless opportunities for this partnership, and Central hopes to lead the way for other schools in the district who may be considering team teaching, Project-Based Learning, Outdoor Classrooms, student mentors, and interdisciplinary work.

The improvement to student and staff health has been thorough and purposeful throughout the school building, demonstrating strong achievement in Pillar Two. There are specific protocols in place in the building for all exposure to potentially dangerous or hazardous materials, and those protocols are meticulously followed and enforced by our trained teachers, custodial staff, and our district's Environmental Safety Director. Routine inspections and tracking have helped to make our building safe, clean, and a healthy place to be. In addition to these processes, school staff have worked to promote healthy living, both physically and mentally. Central High School is very proud of the Physical Fitness

commitment of 225 minutes per week, the staff's monthly participation in Wellness Challenges, and the requirement for all students to take Advisory classes for 90 minutes a week in which the curriculum is based on the National Association of Counseling Standards. The school is committed to a strong awareness of social and emotional issues, including suicide prevention and depression signs. The culture of the building places a high regard for healthy living from a variety of perspectives, and the staff and students support each other in reaching goals and healthy living.

The other exciting component of Central High School's commitment to student and staff health are the plethora of outdoor education, exercise, and recreation activities. In addition to PE programs, JROTC, and athletic programs, Central High School offers a REC club that plans monthly activities—from kayaking, to paddle boarding, to skiing, to snow shoeing, to river rafting, to hiking, to biking. Approximately 30-50 students participate in the outdoor recreation club in which students learn about healthy opportunities in an outdoor setting. A component of each outing is teaching stewardship and ecology of each area visited. Another opportunity at Central is the OWLS program (Outdoor Wilderness Leadership in Science.) This a STEM Discovery class designed for juniors and seniors. This is a course designed to teach students science concepts and camp leadership skills that prepare them for an opportunity to become camp counselors for a week-long wilderness camp for 6<sup>th</sup> grade students. Students learn the curriculum that is taught at the camp, and they learn to work with wildlife biologists and other natural resource professionals as they help teach and mentor camp attendees.

A tremendous amount of work has been done by staff in an attempt to provide effective environmental and sustainability education highlighted in Pillar Three. All students at Central High School are required to take Environmental Science or AP Environmental Science, typically during their freshman year. This exposure to units such as *natural resources, weather and climate, ecosystems, populations, and interactions* has stimulated tremendous growth in our student understanding of the need to be environmentally responsible and civic-minded as they approach efforts to minimize environmental costs and impact. This approach extends beyond the classroom. The "Green Team" at Central High School is a student-run organization and a direct result of this dedication to Environmental Science curriculum. The "Year of the Green Warrior" has become a catch phrase at Central, and all student leadership organizations have been invited to participate. This movement has included staff, district personnel, students, and local businesses.

One of the most visible and serious academic changes made at Central High School is the partnership with the National Institute for STEM Education. Central is in the process of becoming the first STEM certified high school in Colorado. The process for this certification includes significant commitment by the staff to embrace and foster STEM thinking skills through all classroom structures, course design, teaching strategies, and cross-disciplinary units. At this time, environmental topics of study such as sustainability and the environment are providing contexts for team teaching between science teachers and other content areas such as math and English teachers.

In conclusion, Central High School has made impactful strides in each of the three Pillars. The school community has worked diligently, and will continue to work diligently to make all of Central's plans a reality and to continue to provide avenues and opportunities for students to thrive in a safe and positive school culture that is committed to academic excellence and environmental understanding.

#### School Demographics:

- Grade Level: High (9-12)
- School Type: Public
- School Setting: Rural
- Is your school in one of the largest 50 districts in the nation? No
- Does your school serve 40% or more students from disadvantaged households? Yes
- Percent Receiving Free and Reduced Price Lunch: 50.6%
- Percent Limited English Proficient: 2.7%

#### School Enrollment/Graduation/Attendance:

- Total Enrolled: 1,524
- Graduation Rate: 83.6%
- Attendance Rate: 88%

#### Awards/Recognition:

- Is your school participating in a local, state, or national school program, which asks you to benchmark progress in some fashion in any or all of the Pillars? Yes, U.S. EPA Energy Star Program
- Has your school received any awards for facilities, health, or environment? Yes, Energy Star Label in 2011

## Pillar 1: Reducing Environmental Impact and Costs

### Element 1A: Reduced or Eliminated Greenhouse Gas Emissions

**Describe the school's plan to manage and reduce energy use, such as an energy master plan, an energy conservation plan, an energy charter, an energy action plan, and/or energy conservation guidelines.**

Central High School and School District 51 operate under a district-wide energy policy adopted by our school board in December 2007. Our district simultaneously partnered with the U.S. Environmental Protection Agency's Energy Star Program in September 2007. Central High School is an integral part of this partnership. Energy conservation and sustainability activities at Central are coordinated through the district's Resource Conservation Management Office.

**Describe how, and to what degree, the school can demonstrate a reduction in energy use and/or in greenhouse gas (GHG) emissions from an initial baseline. Include data on baseline and current energy usage (kBTU/student/year and/or kBTU/sq.ft./year), percentage reductions, and years.**

Baseline period 2006-07 kBTU/sq.ft./year is 81.17, GHG emissions 2,353.5 MTCO<sub>2</sub>.

Current period 2016-17 kBTU/sq.ft./year is 49.74, GHG emissions 1,366.1 MTCO<sub>2</sub>.

Energy Use reduction of 31.43 kBTU/sq.ft./year, or 39%.

GHG emissions reduction of 987.4 MTCO<sub>2</sub>, or 42%.

**Describe how the school tracks resource use in EPA ENERGY STAR Portfolio Manager or a similar tool and what the results of the tracking have shown. Include ENERGY STAR Rating if possible.**

Central High School's energy use and GHG emissions are tracked and measured by an Energy Manager software called Dude Solutions. Energy use, cost data, and building attributes are uploaded to the EPA Energy Star Portfolio Manager database. Administrators, staff, and students use energy data from these two databases for instructional and operational purposes. Our current Energy Star Status through June of 2017 is an Energy Star Score of 92, up from our baseline score of 39. Our last certification was 2011.

**Describe how/whether the school's energy is obtained from on-site renewable energy generation, purchased renewable energy, or other renewable/green energy sources. Include specific energy sources and percentages if possible.**

Central High School's energy usage comes from 49.7% electricity and 50.3% natural gas. Approximately 58% of Central's electricity is renewable, and 41% of this on-site renewable energy generation comes from roof-mounted solar panels; the other 17% is purchased from a community solar garden.

Central High School has reduced its total non-transportation energy use from baseline. Our current energy usage (kBtu/student/year) is 5,669, and the current energy usage (kBtu/sq.ft./year) is 47.9. From the initial baseline in July of 2006 until June of 2017, Central High School has reduced this usage by 41%. This reduction in energy use has been documented by Energy Star Portfolio Manager and in Dude Solutions Energy Manager Software.

**Describe how/whether the school has constructed or renovated portions of the school building(s) in the past 10 years that meet "green" building standards or have focused on improved energy conservation.**

From 2009 until 2011, as part of District 51's involvement in an energy performance contract with an energy services firm, Central High School received extensive lighting retrofits and building automation system controls upgrades. The school installed variable frequency drives on large air handlers, rooftop unit supply fans, and skylights in the main hallways. Additionally, Central installed new high-efficiency hot water boilers and replaced inefficient kitchen electric ovens with ENERGY Star rated gas ovens.

**Are there any other actions your school has taken (not covered above) to support Element 1A?**

Central High School has added additional roofing insulation on north classrooms, reduced HVAC runtimes, and supported student-led campaigns to turn off lights and energy-consuming devices during holidays and after hours.

### **Element 1B: Improved Water Quality, Efficiency, and Conservation**

**Describe how, and to what degree, the school can demonstrate a reduction in the total water consumption from an initial baseline. Include data on baseline and current water usage (gallons per occupant), percentage reductions, and years.**

Central High School has measured water usage from July of 2006; the most recent measurements are from June 2017. The average baseline, water use is 1,348 gallons per occupant. The current water use is 955 gallons per occupant. We showed a 36% reduction in domestic water usage. Our irrigation water is not metered because it is provided by the local irrigation district. We were able to document these reductions by monitoring utility billing data, school data reports and Dude Solutions Energy Manager.

**Describe school's water-conserving efforts, including fixtures and appliances (e.g., waterless urinals, dual flush toilets, etc.)**

Water conservation efforts included the replacement of urinals, toilets, sinks, showers, and faucets with low-flow fixtures throughout the school as a part of an energy performance contract during 2010-2011. Our estimated water saving from the water conservation measures was 1,114 KGal annually. Actual water savings during 2016 compared to our baseline are 858 KGal. This is measured by our Energy Conservation Measure (ECM), which is part of a report given by our local water assessment company.

**Describe the school's efforts and results for developing water-efficient and/or regionally appropriate plant selection/landscaping and the use of alternative water sources for any irrigation needs.**

The landscape of Central High School is divided by grassy sports fields and grass in front of the school and in the school courtyard. The grass selection is regionally appropriate and also includes trees and some gravel. Our grass is mainly Kentucky Blue Grass, but in an attempt to develop a more water-efficient field, we have been over-seeding with a seed that is more Rye Grass than Blue Grass. This grass is hearty and needs to be watered only 2-3 times per week, depending on heat and rainfall.

Central High School has 10.87 acres of irrigated ground, which does include athletic fields; 95% of this property is irrigated from the canal that is fed from the Colorado River using non-potable water.

**Describe the school's efforts and results in reducing storm water runoff from the school site and/or reducing impermeable surfaces on school grounds.**

The irrigation pumps on Central High School's property are controlled by a frequency drive that maintains an even flow rate and a steady pressure. This decreases wear on the system and achieves a more even coverage with the variably sized zones. The pump also uses less power because with the frequency drive, it is not necessary for the pump to run at full capacity. The other 5% of the property uses domestic water with matched precipitation rotor sprinklers, which allow for targeting all areas evenly, yielding superior uniformity at a low precipitation rate, thereby avoiding runoff, saving water, and preventing erosion.

Central participates in the annual training provided by the district for maintenance and custodial staff on storm water management. Grounds staff receive extra storm water training emphasizing management of grass clippings, snow removal and proper use of ice melt. The district also owns a vacuum truck to clean out storm drains as needed. Central High School is under state storm water permit COR-070085 and submits annual reports.

**Describe how the school ensures that all school water sources are protected from potential contaminants including lead.**

Annual training is provided for teachers, maintenance and custodial staff for the proper disposal of hazardous waste and the prohibition of pouring contaminants down domestic drains. Maintenance "work orders" are created to promptly fix plumbing problems.

In April 2017, our district collected lead sampling reports from each municipal water provider and determined that there were no issues. In May 2017, the City of Grand Junction conducted a round of testing in

buildings within its jurisdiction and reported no elevated levels of lead. In October 2017, the school district hired a contractor to collect samples from all drinking water locations in the entire school district.

**Describe the school’s planning and implementation to develop school grounds for ecologically beneficial uses such as rain gardens, wildlife and native plant habitat, and outdoor classrooms. Include percentage of school grounds for school garden, xeriscaping, etc.**

The school has made some efforts to reduce some areas of the property requiring irrigation and providing xeriscape areas. For example, the courtyard where many students eat lunch now has a large concrete pad in the center with benches so that the amount of grass requiring water in that area has been reduced.

The Science department has also teamed with the Special Education department to take over monitoring of the Green House that is on campus and begin the design of the planned outdoor classroom. The Special Education department met with the science team to discuss ways of pairing curriculum and supervision of the existing green house, but also plans to re-locate the green house to the outdoor classroom that is planned to be built in late spring 2018. The financing for the outdoor classroom has been secured by the reduction in Central’s energy usage over the summer. Our building agreed to keep the second condenser in our building off during June and July. By maintaining this limited use of air conditioning, the savings in the electricity bill can be passed along to the school and plans have been made to allocate those to the design and building of the outdoor classroom.

**Are there any other actions your school has taken (not covered above) to support Element 1B?**

As suggested in the 2014 Group Water Use Assessment, the education of staff and students around water usage has increased. The student organization, the Green Team, completed an audit and provided teachers and students with ways to conserve water. This group is continuing to grow and offer more systematic education for fellow student organizations such as the Student Senate and teaching staff.

### **Element 1C: Reduced Waste Production**

**Describe how, and to what degree, the school implements a school-wide plan of waste reduction, recycling, and/or composting in order to divert significant solid waste from the landfill or incineration. Include data on baseline and current recycling and composting rates (e.g., cubic yards per year, monthly waste generated per person, monthly recycling/composting rates), percentage reductions, and years.**

In 2010, Central High School went under contract with Waste Management, and the school started a cardboard, co-mingled paper, co-mingled plastics, aluminum and glass recycling program. Our long-term goal is to recycle 100% of cardboard, and as much comingled materials as possible. Emphasis is placed on kitchen and cafeteria recycling as well classroom and sporting events. For 2017-18, the goal at Central High School is to recycle 50% of waste materials.

Data for Solid Waste diverted from landfilling: (Our Baseline Waste Diversion was 0%)

- Annual FY1617 garbage service cubic yards: 1,434
- Annual FY1617 recycling service cubic yards: 791
- Annual FY1617 compostable cubic yards: 0
- Recycling Rate =  $((791 + 0) / (1434 + 791 + 0) \times 100) = 35.55\%$
- Monthly waste Generated per person: .89 cubic yards per occupant

As we draw our plans for the outdoor classroom, Central High School does have future plans to increase recycling and create a compost program, but there has not been a viable place to put the compost yet. The hope is for this compost to be collected in a structure closer to the cafeteria or by the outdoor classroom, but the roadblocks so far have been space and money, both of which are currently being solved.

**Describe how, and to what degree, the school uses office/classroom paper content that is post-consumer material, fiber from forests certified as responsibly managed and/or chlorine-free.**

Our school orders office/classroom paper from Contract Paper Group, Inc. who “only purchases paper from environmentally responsible suppliers.” Contract Paper Group does not purchase trees from rainforests,

and only purchases trees from tree farms, and they encourage consumers to always do the same. According to their website, Contract Paper Group “purchases from a manufacturer that uses certified sustainable forest management practices. These manufacturers maintain tree farms and must replant at a very high rate to continue their crop. There are agencies in place that oversee paper manufacturers' forests. They certify that forests comply with local, state and federal laws, as well as agency rules and policies regarding re-growth and environmental impact.”

**Describe the school’s efforts in storing/maintaining an inventory of potentially hazardous materials used in various programs, if any (e.g., science, art, maintenance, cleaning, pest control, etc.).**

Teachers in affected curriculums and custodial staff are required to take and submit a chemical inventory annually. The inventory must list the compound, amount, when it was purchased, and where it is stored. These are submitted to Charles Pope, the school district’s Environmental Health and Safety Manager.

Central also has chemical purchasing policy to minimize over-stocking chemicals in classrooms. Teachers must obtain documented approval prior to purchases; specifically, science, art, and wood shop teachers will check with other teachers in their curriculum prior for re-use and prior to disposal requests.

**Describe how, and to what degree, the school has reduced/eliminated hazardous waste generation over a measureable baseline. Include specific waste such as batteries and CFL light bulbs.**

Our custodial staff is diligent about collecting batteries, aerosol cans, projector bulbs, and CFL light bulbs and delivering them for proper disposal through Charles Pope.

In 2015, 1,489 fluorescent were disposed. After installation of LED lighting in 2016, 154 fluorescent lights were disposed, equaling a decrease of 1,335 lights. Due to improved battery recycling efforts in 2015, 153 pounds were recycled, and in 2016, Central High School’s numbers improved in 2016 to 185 pounds sent to recycling. With an increased emphasis of reporting and disposal procedures, science laboratory waste was 19 pounds in 2015 and improved to 126 recycled pounds in 2016. Our building has a teacher designated as the Safety Liaison, and she is paid a stipend to manage lab waste and maintain protocols.

Hazardous waste disposal is tracked through a copy of the chemical inventory with Safety Data Sheets, which are located in affected classrooms, the Main Office and the District Administration Office. The following is a list of the types and amounts of hazardous waste generated at Central High School:

- Flammable liquids:
  - Science chemical solutions, 5 gallons
  - Art & Wood Shop solvents, 2 gallons
- Corrosive liquids
  - Science chemical solutions, 1 gallon
- Toxics
  - Science chemicals, 1 gallon
- Mercury
  - None
- Other:
  - Science chemicals, 2 pounds
  - Oxidizers, 1 gallon

**Describe the school’s green cleaning custodial practices, including green cleaning products, services, advanced equipment, and/or policies.**

Our school custodians follow school district policies for proper chemical mixing and disposal, as directed by Charles Pope. However, they do not specifically purchase green cleaning products. Harsh chemicals such as bleach are not used in cleaning practices except for district schools with a Pre-School Curriculum, and in that case, it is mixed daily, tested with pH to meet state sanitation standards. Custodians are prohibited from using bleach except for machine washing of cleaning rags on Central’s campus.

Central High School's head custodian is looking into new purchasable products and equipment to find affordable green cleaning products whenever possible. She has set a goal of purchasing at least 25% of cleaning products that are green cleaning products for the next school year.

**Describe how the school's purchasing practices specifically promote environmentally preferable purchasing/green purchasing, as applicable, for consumable products, furniture, and equipment for administration, instruction, and/or maintenance.**

The school does not have a specific purchasing practice to note, but when choices are available, the school does purchase environmentally preferable options. For example, the school does purchase paper from "Contract Paper Group," a company committed to utilizing recycled products, both paper and toner.

**Element 1D: Use of Alternative Transportation**

**Describe how/whether the school is reducing its transportation energy use through means such as encouraging a) walking or bicycling to and from school, b) expanded school bus use, or c) EV charging stations. Include data and results of the efforts.**

The school has reduced transportation energy use by not providing bus transportation to any students who live three miles or closer to the school campus. This change has promoted more student walking, bicycling, and carpooling to school. The numbers of students who live three miles or closer and who choose to walk or bike have increased since this policy change.

Similarly, the park next to the school has a larger parking area, and many students are picked up after school by their parents at the park rather than in front of the school, so the amount of idling cars on Central's campus has decreased significantly.

**Describe the school's implementation of the following green transportation practices: a) efficient carpooling; b) no-idling loading areas; c) safe routes to school; and/or d) expanded bicycle storage.**

The schools in our district have designated no-idling loading areas and have provided signs to help spread this message. Central High School has increased bicycle storage by replacing older, smaller racks with two larger racks that hold 50% more bikes. The bicycle storage area is attractive and safe because of security cameras directly above the bike racks to monitor thefts. While the impact on number of students who bike has not been measured yet, these practices do provide a viable alternative transportation option.

**Describe how/whether the school has implementation practices that focus on transportation efficiency, reduced environmental impact, or other creative ways of promoting alternative transportation. Include data and summary results of the efforts.**

90% of our bus fleet is powered with propane, which is cleaner and produced domestically. Propane buses do not need to be warmed up in winter months, therefore reducing idling time and reducing emissions. This provides a cleaner, healthier environment for passengers, employees, and the community. The propane fleet has saved the district more than \$150,000 per year in fuel costs compared to the former diesel fleet.

**Are there any other actions your school has taken (not covered above) to support Element 1D?**

During the summer of 2017, our building secretary worked to schedule all events, custodial work, and summer school in different parts of our building so that we would not have to turn on the second large chiller for air conditioning in the back part of our school building. The Avoided Utility Cost Report for this action helped our electric usage to decrease by 23%, our electric demand to decrease by 8.8%, and our avoided electric costs to save \$3,572.

Our school is looking into sponsoring a bike or walk to school day for our staff and students. The Green Team is hoping to choose a day and advertise for this event. We are also looking into hosting a battery recycle day in which the community could bring batteries to our building so that we can properly dispose of them.

## Pillar 2: Improving the Health and Wellness of Students and Staff

### Element 2A: Integrated School Environmental Health Program

**Describe the efforts in implementing the school's or the school division's Integrated Pest Management (IPM) plan in the school, including: year of implementation, program responsibility/oversight, pest monitoring process, record keeping, notification practices, and efforts to reduce pesticide use.**

The school district directs staff to store food in permanent, airtight, hard, plastic containers. Maintenance staff installed door sweeps under doors where there is daylight to keep mice from entering buildings. Maintenance staff are directed to fill holes in walls and along foundations.

In August 2017, the EPA, Mesa County Health Department, Colorado State University, and School District 51 began initial school inspections to begin a formalized IPM Policy. As standard practice, pesticides for mice are strictly prohibited. Pesticides are being used for cockroach infestation. Applications are made when schools are not in session. The goal with our new policy is to reduce cockroach pesticide applications by 70% by the end of 2018. Instead of using snap traps and glue traps, EPA has suggested using battery operated closed traps which avoid urine spillage and potential hanta virus contamination. Cockroach motels and less hazardous chemicals will be used instead of pesticide spray.

**Describe how, and to what degree, the school's efforts and practices have minimized/eliminated student and staff exposure to the potentially hazardous contaminants including: cigarette smoke, mercury, carbon monoxide, fuel burning combustion appliances, airborne contaminate sources, asbestos, radon, chromate copper arsenate, and lead.**

- Cigarette smoking is prohibited at all times on all parts of the campus.
- Local exhaust systems are installed in science, art, and wood shop classrooms. They are inspected and flow rates are documented annually.
- Carbon Monoxide monitors are installed at each location in the building where gas powered equipment is in use (boiler rooms, kitchens).
- Our school does not have any fuel burning combustion appliances or issues with mercury.
- All areas where asbestos can be accessed are marked with signs, and all asbestos tiles have all been sealed. Any teacher in those rooms with sealed asbestos tile or access to asbestos have been trained by the Director of Environmental Safety on potential dangers and protocols for reporting any issues.
- Our school has tested all frequently occupied rooms at or below ground level for radon gas and has fixed and retested all rooms with levels that tested at or above 4 pCi/L OR our school was built with radon resistant construction features and tested to confirm levels below 4 pCi/L.
- Our school has identified any wood playground or other structures that contain chromate copper arsenate and has taken steps to eliminate exposure.
- Our school has identified and eliminated exposure to lead paints or other possible lead exposure.

**Describe the plan and timetable for inspecting and maintaining the school's ventilation systems and all unit ventilators and for ensuring that the systems are clean and operating properly.**

The District employs HVAC Filter Technicians who inspect, clean, change filters and make repairs as needed. At Central High School, filters are replaced as follows: Wood shop-twice a week; Uninvents-3 times a year; Main Building roof top units-3 times a year; Kitchen-1 time per year; Gym-3 times a year.

**Describe how, and to what degree, the school ensures that all classrooms and other spaces are adequately ventilated with outside air, consistent with state or local codes, or national ventilation recommendations and standards.**

When the 1998 and 2006 additions were added, all of the HVAC systems installed in our building met the applicable state and ASHRAE standards. The HVAC systems in the remaining sections of the school were replaced and upgraded to meet the standards set in 2006. The entire school is controlled and monitored with an automatic digital control system that allows us to verify the amount of outside air, and it automatically sets the

minimum at 15%. The percentage of outside air fluctuates based on the outside temperatures. When exterior weather is temperate, outside air percentage can reach 100.

**Describe how the school has taken specific and comprehensive actions to prevent exposure to asthma triggers in and around the school.**

The Environmental Health & Safety Manager uses the EPA Tools For Schools Model to investigate and correct IAQ complaints. All efforts to prevent exposure to asthma triggers are made by our custodial and maintenance staff, as our custodians are encouraged to use less hazardous and effective green cleaning chemicals whenever possible. The school district has filter technicians who inspect and change filters in all roof-top units annually or more frequently if necessary. The monitoring of filters purposefully reduces asthma triggers in our building. District 51 is a voting member on the Mesa County Air Quality Board who works with the EPA, Mesa County Board of Health, and State Health Departments to manage the Mesa County air shed, vehicle emissions, open wood burning, and particulate matter.

**Describe how the school has taken specific steps to protect indoor environmental quality, such as implementing EPA “IAQ Tools for Schools” and/or conducting other periodic, comprehensive inspections of the school facility to: a) identify environmental health and safety issues; and b) take corrective actions.**

When staff have IAQ questions or complaints, the Environmental Health & Safety Manager uses the Tools for Schools checklist to conduct one-on-one interviews to determine the possible source of contamination and corrective actions. The Environmental Health & Safety Manager meets with maintenance staff and submits work orders to repair HVAC and/or chemical-related IAQ problems quickly and efficiently.

**Describe the school maintenance and implementation of an up-to-date plan and its careful enforcement in managing and controlling student and staff exposure to chemicals that are used in the school (e.g., pesticides, cleaning supplies, fuel, and paint).**

Our school carefully enforces state regulation of managing and controlling student and staff exposure to chemicals. No students or untrained staff have access to chemicals, pesticides, cleaning supplies, fuel, or paint. Staff who have been trained by our Environmental Health & Safety Manager are the only staff who maintain or monitor potentially harmful chemicals. Classroom chemicals and custodial chemicals are kept in locked areas, and even such items as hand sanitizer are kept out of reach of students. These provisions are monitored by frequent and regular internal inspections by the Environmental Health and Safety Manager, School Safety Liaison and annual inspections from Mesa County Health Department.

**Describe the school’s routine inspections and prompt action to: a) control moisture from leaks, condensation, and excess moisture; and b) clean up mold or remove moldy materials promptly when found.**

Teachers and custodians promptly report leaks to maintenance staff using the “work order” system. Plumbers, carpenters, electricians and painters have been trained to report suspect mold contamination during building repairs. Custodians and Maintenance staff are trained to clean “minor” 2 square-foot mold conditions. Environmental Health & Safety Manager responds and implements necessary corrective actions for “major” mold contamination greater than 2 square feet.

**Element 2B: Nutrition and Fitness**

**Describe the school’s implementation of the following programs (or programs with similar intent) and results and outcomes related to the targeted efforts.**

*Nutrition and fitness recognition programs (such as USDA’s HealthierUS School Challenge and the Governor’s Nutrition and Physical Activity Awards Program)*

Nutrition Services operates our school lunch offerings and have posted signs throughout the cafeteria to identify healthy choices from the four food groups at lunch. Foods are prepared according to USDA’S Healthier Choices guidelines.

Central High School is in compliance with District 51, and meets the criteria of the above Nutrition & Physical Fitness award designations. Central has received funding from the Colorado Health Foundation to secure a Health & Wellness Coordinator who reports directly to the D51 Executive Director of Curriculum. The position was filled in August 2017 with a former PE teacher. As the new local wellness board is formed, content and curriculum will be reviewed and implemented, and D51 will formally apply for above designations.

*A “farm to school” program to use local, fresh food and/or a food purchasing programs identified as “environmentally preferable”*

District 51 proudly sources as a first priority local products (primarily fruits and vegetables) every year from several local farmers. D51 has applied for and received statewide notice/grant funding to help local farmers secure official USDA “Good Agricultural Practices” designations to allow products to safely be secured for school meal programs. Products unavailable locally are sourced through the “Colorado Proud” statewide network via Fresh Pack in Denver, Colorado. Central participates in these districtwide efforts.

*On-site garden that may supply food for students in the cafeteria or to the community*

District 51 sources and provides STEM learning with the Western Colorado Community Alliance. The Community Alliance has provided donated fruits and vegetables to the D51 school meal program, primarily to create learning opportunities for various schools in Mesa County.

Also, Central’s Special Education department has started to grow a garden in the greenhouse, but there has not been sharing with the cafeteria or community yet. The teachers working with this would like to see this expansion.

**Describe the school’s practice related to physical education and whether they meet or exceed state guidelines and minimum requirements.**

Our requirements for students exceed the state requirements because we require students to take PE 1 and PE 2, as well as a Personal Fitness and Wellness class. This amounts to 225 minutes of PE each week.

**Describe the type of outdoor education, exercise, and recreation activities available to students.**

Our students enjoy a variety of outdoor education, exercise, and recreation activities. Through the school, we offer a REC club that plans monthly activities from kayaking, to paddle boarding, to skiing, to snow shoeing, to river rafting, to hiking, to biking. Our school also has a very healthy athletic program with sports teams for all students: volleyball, softball, football, cross country, track, cheerleading, swimming, golf, basketball, baseball, and tennis. The school also hosts the JROTC program that provides one physical training day per week. Our school allows marching band students to receive credit for 3 consecutive years of marching band.

Our geographic location provides ample opportunities for recreation and outdoor education as well. There are ample hiking trails, rivers, and mountainous areas that many students take advantage of. The Bureau of Land Management (BLM) land that borders our community is also a highly utilized place by our school community for camping, hiking, mountain biking, and four wheeling. There are four golf courses in our community, tennis parks, numerous parks and open space, and the Colorado National Monument nearby.

Specific school opportunities are as follows:

- Physical education, Personal Fitness, Team Training, Weights classes
- REC Club: Approximately 30 students participate in our outdoor recreation club in which students have the opportunity to canoe, hike, bike, paddleboard, snowshoe, and camp. The emphasis is on healthy opportunities in an outdoor setting. The REC club has an emphasis on outdoor recreation in our local canyons, mesas, lakes, and rivers. A component of each outing is teaching stewardship and ecology of each area visited.
- OWLS: Outdoor Wilderness Leadership in Science is a STEM Discovery class designed for juniors and seniors in order to teach students science concepts and camp leadership skills that prepare them for an opportunity to become camp counselors for a week-long wilderness camp for 6<sup>th</sup> grade students.

Students learn the curriculum that is taught at the camp. They learn to work with wildlife biologists and other natural resource professionals as they help teach and mentor camp attendees.

- AP Field Trips: Students participate in an annual overnight raft trip in which they learn riparian ecology and the geology of the Colorado River, while at the same time experiencing the team work of paddling two-person kayaks. They participate in river clean-up efforts, removal of noxious weeds, native tree planting projects, and tree protection projects that all help mitigate and maintain the riparian corridor.
- AP Science: students participate in an annual winter ecology trip in which they learn about seasonal changes in an alpine setting, learn about the watershed, all while exercises on snowshoes.

**Describe the school's efforts and progress to improve staff wellness in the areas of nutrition and increased physical activity.**

Our staff at Central High School participates often in the challenges offered by the district. Our treasurer, Ann Bricker, won one of the challenges last year. Winners receive prizes. Here is the monthly challenge cycle that 35% of our staff participates in each month:

- September: Portal Challenge: Participate in Health Screenings for a lower deductible and logging into the Community Health Portal to view results and seek free medical advice/consultation.
- October: 10-day Squat Challenge.
- November: Hold the Holidays Challenge and 10 Day Sleep Challenge.
- December: Substitute Sweets Challenge and Continued Hold the Holidays Challenge.
- January: 1-week Water Challenge and 10 Day Full Body Challenge.
- February: Coloring Challenge and continued 10 Day Full Body Challenge.
- March: Financial Fitness Challenge.
- April: Financial Fitness Challenge Continues.
- May: 10-day Walking Challenge (Counting Steps.)

In addition, our staff has formed many small "walking groups" to walk around campus and the park next door during lunch breaks and breaks throughout the day.

**Element 2C: Coordinated School Health, Mental Health, School Climate, and Safety**

**Describe how the school is implementing a range of partnership programs with the local health department, businesses, postsecondary institutions, and other members of the community to improve students' and school staff members' nutrition, fitness, and safety.**

The school works mostly with Community Hospital, Colorado Mesa University, Healthy Kids Colorado, and CEI to promote the health and wellness of students and staff members. Community Hospital offers wellness challenges, health screenings, and affordable physicals. The school also shares an athletic trainer who is employed by Rocky Mountain Orthopedic Group with one other high school to provide training services for student athletes.

Central High School also partners with Colorado Mesa University and Western Colorado Community College. Students can take classes, including Health and Wellness classes, through this partnership. Healthy Kids Colorado and CEI provide survey data and additional support for promoting and supporting positive school climate and overall health and wellbeing of students and staff.

**Describe the school's use of a Coordinated School Health approach or other health-related initiatives to address overall school health issues. This could include comprehensive wellness policies and/or a health and wellness committee/team.**

Central High School utilizes the Social/Emotional Learning framework that has been put in place at the district level. This SEL Framework provides data for all school staff to look at the overall health of students at Central High School. The school also administers the Healthy Kids Colorado Survey every other year. The data from this survey helps to provide our school with information about overall school health issues. Our baseline data from 2015 will be compared with the 2017 data when it's made available by Healthy Kids Colorado.

Our school board has also recently passed mandates to require annual suicide training for all staff and students so that both are aware of issues and warning signs that may be apparent in students and peers. The staff has also received formal training/professional development to consider Trauma-Informed classrooms. This training was provided by the Director of At-Risk Students, Kathy Ebel, and the district psychologist, Karen Vermillion. Teachers have been given de-escalation strategies to be more proactive in classroom situations where a student may have undergone a traumatic incident or who is living in a traumatic situation. The C3PO Advisory Committee is also tasked with analyzing the data from SEL and HKC surveys and adjusting instruction in advisory accordingly.

**Describe how the school addresses school health professional services for student needs, including the presence of a full-time school nurse in the school and/or a school-based health center.**

Our school addresses school health professional services very seriously and provides a full-time school nurse as well as a full-time health assistant in our building. There are two different health offices located in our building, and both our nurse and health assistant remain current and vigilant over a variety of student health issues. These nurses mandate protocols for administering medication, emergency health incidents, field trip protocols, diabetic training, and mental health issues.

Our school nurse also works on Student Learning Objectives each year and is currently working to monitor and provide outreach to students with chronic health issues and poor attendance to see if she can get those students to school more often.

**Describe how the school addresses and implements comprehensive programs to support student mental health and positive school climate (e.g., anti-bullying programs, peer counseling, etc.).**

Every student, grades 9-12, attends a 30-minute advisory three days a week. During this time, staff and students cover topics such as bullying, sources of strength, positive school climate, and fostering strong relationships. The school uses the College Board Advisory Curriculum, which is based on the American School Counselor Association (ASCA) standards. We also offer groups such as grief group, trauma group, seeking safety group, and anxiety group in which many students participate. In addition, counselors provide suicide safety lessons to all staff and students.

Another organization, C-Ties, is a mentoring/leadership organization that has worked with Central. This group has partnered with Colorado Mesa University mentors to train students on peer mentorship. C-Ties students are assigned as mentors to all 9<sup>th</sup> grade advisories and attend those advisories on Tuesdays, providing lessons and activities for the 9<sup>th</sup> grade advisory classes.

Central High School also received a Positive School Culture and Climate grant in the year 2015-16. The staff who went to training developed an advisory committee, which completely revamped our advisory structure, dividing advisories into tribes, which include multi-grade-level advisories. The structure allows the staff to promote “tribal challenges” such as service learning, intramural sports/competitions, attendance and tardy challenges, and grade challenges, all of which work to support positive school climate.

### **Pillar 3: Providing Effective Environmental and Sustainability Education**

#### **Element 3A: Shared Responsibility for Environmental Learning**

**Describe the school’s focus on environmental and sustainability literacy specifically reflected through schoolwide practices and programs, lesson planning, and/or school curriculum documents.**

All students are required to take either an environmental science course or AP environmental science course, typically in the freshmen year. Environmental science is an interdisciplinary, laboratory-based course with the foundation in earth science and thematic connections between multiple disciplines, including life science, physical science, mathematics, and language arts. The course is designed for students to investigate a variety of scientific concepts as they manifest in our environment and connect them with issues of local and/or global significance. Environmental science students conduct various studies throughout the school’s campus (e.g. indoor pollution, energy efficiency, water quality, etc.) and share findings with other classes that implement proposed solutions.

**Describe how, and to what degree, the school has integrated environmental and sustainability concepts throughout its instructional program and across subject areas and grade levels.**

- Units of study in environmental science include Earth’s history, natural resources, weather and climate, ecosystems, populations and interactions. Throughout the units, sustainability is the unifying theme that helps students formulate answers to the questions: “How do humans depend on Earth’s resources?” and “How do people model and predict the effects of human activities on Earth’s climate?” Students study the complex and significant interdependencies between humans and the rest of Earth’s systems through the impacts of natural hazards, our dependencies on natural resources, and the environmental impacts of human activities.
- All classrooms participate in the recycling of paper, cardboard, and plastic.
- The anchor text for all Comp/Lit 9 students is *Rocket Boys*, which lends itself to cross-curricular lesson planning among Comp/Lit 9 teachers, Environmental Science teachers, and Global Studies teachers, all 9th grade core teachers. Teachers are beginning to develop teaching partnerships to plan Project-Based Learning units of study.
- High school students serve as counselors for 6<sup>th</sup> grade students at the nearby Bookcliff middle school, who participate in a week-long Outdoor Wilderness Lab (OWL). Between 100-150 6<sup>th</sup> graders participate in this program, and our student’ responsibility is to design and deliver lessons on energy concepts, water quality, biodiversity, wildlife, forestry, nature trails, and outdoor recreation.
- Rec club and MESA programs (Mathematics, Engineering, Science Achievement) participate in events promoting awareness of our community’s environmental challenges, such as tamarisk removal and trail maintenance.
- Our students have been participating in the River Watch program sponsored by Colorado Parks and Wildlife for more than 15 years, focused on monitoring water quality of the Gunnison River.

**Describe how the school’s assessment materials across subject areas and grade levels have clear expectations and target proficiency levels for environmental and sustainability concepts. Include quantifiable measures, indicators, or benchmarks of progress toward environmental literacy and/or environmental proficiency.**

Students participate in project-based learning experiences that also serve the purpose of performance assessments. Examples of recent projects integrating environmental and sustainability concepts include investigating how abiotic factors impact the stability of riparian ecosystems and developing solutions for conserving energy on our campus. The standards that students were expected to master included the following:

- HS-LS2-1: Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales;
- HS-LS2-2: Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales;
- HS-LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity;
- HS-ESS3-4: Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

All experiences are assessed based on rubrics that reflect the NGSS and Common Core standards. Five teachers from the Central High School Science department were on the district rubric-writing committee for this course and are trained to assess for these standards. Measurement data for specific performance on these assessments is not quantifiable yet, but the science scores for ACT science have been consistently higher than the other subject areas during the years that our 11th graders were required to take the ACT. Science ACT scores were at or above 19, while the school-wide scores peaked at 18.6.

**Describe the school’s emphasis on ensuring that professional development in environmental and sustainability education is offered to teachers.**

- Environmental science teachers participate in professional development offered by our district which includes designing the curriculum for the environmental science course, writing the instructional rubrics that define mastery of standards, and collaborating on lesson planning.
- Environmental science teachers also participate in professional development sponsored by our community partners. For example, in May 2017, teachers participated in a Citizen Science workshop facilitated by Samantha Heinritz, Education Technician at the Colorado National Monument. In August 2017, teachers explored questioning strategies and discussion routines in order to promote environmental literacy in an in-service presented by Sarah Johnson, a watershed education specialist from Wild Rose Education.
- Science teachers attend a summer course called TEN (Teaching Environmental Science Naturally), developed collaboratively by local teachers and Colorado Parks and Wildlife. The course helps teachers develop skills to provide students with engaging learning experiences in the classroom and on field trips and includes quality resources from Project Learning Tree, Project WILD, and Project WET.
- The AP Environmental teacher regularly attends AP Summer Institute and Mock Readings.
- Presentations by our district environmental office are conducted to educated teachers and staff of the impact of a coordinated effort for recycling and waste reduction.

### **Element 3B: Use of the Environment and Sustainability to Develop STEM Content**

**Describe how, and to what degree, the school makes available environment-related courses and measures (e.g., AP Environmental Science, International Baccalaureate Environmental Systems; and postsecondary dual enrollment courses, etc.). Include student outcome measures and program enrollments as appropriate.**

Our school offers AP Environmental Science as part of our enhanced and rigorous environment-related course work. Our school also offers AP Biology, AP Chemistry, and AP Physics, all of which touch upon and reinforce ideas surrounding sustainability and the environment. We encourage all incoming STEM students to take AP Environmental Science as part of their course of study.

Our student enrollment in AP Environmental Science is strong and consistent: 2013-14 (40 enrolled); 2014-15 (30 enrolled); 2015-16 (34 enrolled); 2016-17 (37 enrolled); 2017-18 (47 enrolled.)

Our average student score has been consistent and increasing: 2013-14 (2.7 average score); 2014-15 (2.87 average score); 2015-16 (2.85 average score); 2016-17 (3.0 average score).

**Describe how the school uses sustainability and the environment as a context or theme for connecting/learning STEM thinking skills and content knowledge.**

As a STEM school, Central High School is focused on improving classroom teaching strategies that support STEM thinking skills to help students retain content knowledge. All science teachers are part of the STEM design process, Claim/Evidence/Reasoning, and Project-Based Learning strategies as taught by the Buck Institute.

Furthermore, Central High School is in the process of become the first STEM Certified High School in Colorado through the National Institute of STEM Education. This process includes significant commitment by the school to embrace and foster STEM thinking skills through classroom structure, course design, teaching strategies, and cross-disciplinary units. Our hope is to continue utilizing scientific topics of study such as sustainability and the environment as contexts for these cross-disciplinary units and planning between science and other content areas.

**Describe the school use of sustainability and the environment as a context for connecting and learning green technologies and career pathways.**

Central High School works to provide exposure for students to a variety of careers that include sustainability, green technologies, and career pathways. We host a Career Fair every fall where we provide many speakers who address science as a career. We host professionals such as environmental engineers, civil

engineers, soil scientists, physicists, the district's Director of Environmental Health and Safety, and electricians and building specialists.

Furthermore, we provide opportunities for our STEM students to job shadow many of these professionals in the field. Sometimes job shadows can lead to Career Wise internships, apprenticeships, or career pathways. For example, students have observed at Reynolds Polymer, Leitner Poma, Colorado Printing Company, Capco, FCI Constructors, Bulldog Manufacturing, the Grand Junction Chamber of Commerce, the School District 51 Technology Department, and Boeing. All of these companies provide open doors for students to shadow and learn as they learn about career pathways.

The science team and the STEM coordinator have plans to work with counseling to combine post-graduation data gathering, such as how many students are choosing environmental careers after graduation. This system for collection is in process.

**Describe how the school's environmental and sustainability focus supports an age-appropriate understanding of natural systems.**

Throughout the 9<sup>th</sup> and 10<sup>th</sup> grade years, our science courses focus on land, air, and water science with an emphasis on the long term use of our natural resources. Our curriculum focus is on living sustainably and finding solutions to our greatest environmental challenges (pollution of watershed, availability of water, changing personal habits.) The curriculum allows for students to reflect on past knowledge and relate action to their individual home lives.

**Are there any other actions your school has taken (not covered above) to support Element 3B?**

The Career Fair mentioned earlier allows 9<sup>th</sup> and 10<sup>th</sup> grade students exposure to a variety of STEM professionals, including scientists, physicists, machinists, attorneys, electricians, and many more. 9<sup>th</sup> and 10<sup>th</sup> grade students register to hear information about careers and what opportunities for those careers exist in the Grand Junction area. We have 45 presenters each year, and for the last two years, the CAMA (Colorado Alliance of Manufacturing Association) has been highly represented and highlighted as STEM career options. Our school partnership with these community members has increased student and community awareness of STEM career opportunities at Central High School.

**Element 3C: Development and Application of Civic Knowledge and Skills**

**Describe the school's emphasis on outdoor learning as a tool to: a) teach an array of subjects in context; b) engage the broader community; and c) develop important civic skills.**

The Outdoor Wilderness League, or OWL, is a class that teaches students leadership skills in science education, including stewardship of our land, air, and water. Students participate in a semester long class in which they learn about water quality, soil testing, land ethics, and waste management (among many other topics). These students then become mentors and teachers for 6<sup>th</sup> grade students in a week-long science and outdoor education camp.

Rec Club Advisory is a group that teaches sustainability and community action working toward building an outdoor classroom that could be utilized by various school groups in order to promote environmental and outdoor education.

Environmental Science classes, including AP Environmental Science, conduct home energy audits and are encouraged to get their parents and families involved in analyzing their household energy habits. Students use Watt Meters to measure their energy use and discover areas within their homes that are potential energy wasters. They are then encouraged to unplug, reconfigure, and rethink how they are consuming energy.

**Describe: a) how/whether, and to what degree, the school promotes and encourages students to conduct class or individual, age-appropriate, civic/community engagement projects; and b) the important outcomes that have been achieved (using data as appropriate).**

The CHS AP Environmental Science students evolved into a Central High School Green Team and designated the 2017-2018 school year as the "Year of the Green Warrior." There are 30 students currently on

this Green Team. The team audits classrooms, offices, hallways, and acts as consultants to bring change to the school building. They meter appliances, assess lighting needs, and submit plans for individual teachers and offices with ways to decrease our energy use and increase awareness of wasteful practice. The team works with custodial staff and administration at the building and district levels in order to implement lighting changes throughout the day that could reduce energy use from unnecessary lighting.

The team is also working on several initiatives including working with local businesses that students frequent for lunch to develop a “Green Warrior Sticker” that allows students to receive a discount for re-using cups/containers. Also, the Green Team has proposed a clause in each building use agreement in which the outside group sponsoring the activity agrees to the “recycling plan” and disposes of waste following building protocol. Furthermore, the Green Team has provided more numbers of recycling containers and has worked to increase the signage around the containers so that waste is put in the correct bin.

The Environmental Science teachers have hosted an Environmental Presentation Night each semester in the past and would like to host this again. These evenings have been conducted by students in the Environmental Science classes as a way to showcase research done in the classes. Topics include: water, air, electricity, wildlife habitats, oil and gas exploration, mining, and more. Students invite their parents and community and present their information to their audience, leaving time for a “question and answer” session. Important outcomes that have been achieved in this endeavor have been the presentations to staff and students, which have increased the presentation skills and audience awareness of the students involved.

**Describe the innovative practices and/or partnerships the school promotes and participates in to support environmental and sustainability education.**

The school collaborates with many local partnerships including the Colorado National Monument, U.S. Forest Service, Bureau of Land Management, CSU Extension, Audubon, Eureka, McConnell Science Museum, and CMU Water Center. These organizations are dedicated to supporting outdoor education opportunities for students at our school who are often unable to afford costs accompanied with field trips. The partners strengthen our existing environmental education by expanding student access to parks and providing quality field experiences. The partnerships also increase student stewardship and enjoyment of the outdoors and give students opportunities to transfer classroom learning to real-world context. Providing quality outdoor educational opportunities for our economically disadvantaged students is one of our top priorities.

**Describe how, and to what degree, the district’s environmental and sustainability education efforts have shown growth in academic achievement among students over time. Include data as applicable.**

The number of D51 students who are proficient in science in the 11<sup>th</sup> grade has increased by 3% in 2017, when compared with 2016 data and exceeds state average by 2%.

Last summer, three of our students were selected for the Frontiers of Science Scholarship award, which is a \$3,500 scholarship that allows students to spend six weeks at the University of Northern Colorado developing their own scientific explorations in relation to the environment and sustainability.

**Are there any other actions your school has taken (not covered above) to support Element 3C?**

Our school has recently received a grant from the Western Community Foundation to build a new robotics lab and to increase student participation in FIRST robotics competitions. Participation in FIRST events such as FLL and FRC have been exclusive to students whose parents can provide financial support and transportation for students. Thus, minority students, free and reduced populations, and women have been excluded from participating in these STEM competitions. The grant provided funding for participation in tournaments, but also allowed Central to offer a robotics class during the day which provides access to all students regardless of socioeconomic status. The hope is to attract more students to Central for opportunities in STEM and robotics.