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# Montana Indian Country CARE Project Final Report



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Grant # RE 97851201

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## Contents

Section 1: Introduction .....	3
Your Partnership .....	3
Section 2: Project Reports.....	13
Section 2.1: Healthy Homes and Indoor Air Quality .....	13
Section 2.2 Education and School Outreach.....	14
Section 2.3 Pollution Prevention .....	15
Section 2.4 Solid Waste.....	16
Section 3: Overall Project Reflections.....	19
III. What Next? .....	25
Section A-2.1 Healthy Housing Indoor Air quality Support Documents .....	26
Section A-2.2 Education and Outreach .....	29
Section A-2.3 Pollution Prevention .....	37
Section A-2.4 Solid Waste .....	39
Financial Information .....	43
Appendix A.....	45
Rocky Mountain College & Chief Dull Knife College Water Quality Outreach .....	45
Appendix B.....	54
Community Mapping for Indian Country.....	54
Appendix C.....	66
K-12 Chemical Clean-out Campaign.....	66

## Section 1: Introduction

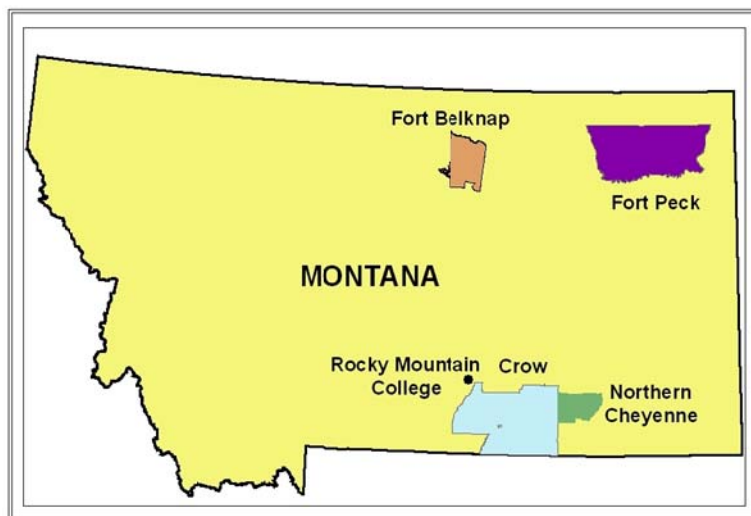
### Your Partnership

- a. ***What environmental problems does your community face that brought people together?***

Communities united beginning in October 2005 through the Indian County Environmental Health Project (ICEHP), collaboration between four tribal colleges and Rocky Mountain College. This Project identified the following environmental problems as priorities: (1) toxic contamination to watersheds from methamphetamine labs, (2) drinking water pollution and contaminants (H pylori, E Coli, Nitrates), (3) air quality (indoor and outdoor), (4) mold, (5) household chemical application and disposal, (6) pesticide use, and (7) solid and hazardous waste.

Montana Indian Country CARE Project (MICCP) communities, Fort Peck, Fort Belknap, Northern Cheyenne, and Crow are comprised of American Indian people predominantly living in poverty (Figure 1). These communities are remote, with very few services, environmental infrastructure, and employment opportunities. They are similar in that members experience environmental challenges including: emissions from coal fired power plants, close proximity to mining activities, cement plants, abandoned mines, leaking underground storage tanks, hazardous and non-hazardous waste management, water quality compromises, and indoor air quality challenges.

**Figure 1. Montana Indian Country CARE Communities**



Communities came together through MICCP because they shared a common interest in improving the health of their community and environment. Unlike other EPA programs, CARE focused on community members to identify environmental priorities and facilitate change.

**b. *How many individuals and their organizational affiliations were involved?***

There were a number of people who participated in the planning and implementation of the Montana Indian Country CARE Project from October 2006 to September 2009. The core individuals and organizations included staff, faculty, teachers, students and community leaders:

<u>Organization</u>	<u>Name</u>
USGS	Dr. Eric Wood
Roche Chemical, Denver Office	Business
ERSI	Mr. David Gadsden, Ms. Anne Taylor, Dr. Joseph Kerski
State of Montana	Ms. Katie Loveland
EPA Helena Office	Ms. Stephanie Wallace, Ms. Jennifer Wintersteen, Ms. Barb Burkland
University of Montana	Dr. Robin Saha
Centers for Disease Control	Mr. Dean Seneca
East Central University	Dr. Pat Bohan
Tribal Health Depts.	Various agency staff
Tribal Housing	Mr. Clifford Foote
Indian Health Service	Mr. Gary Carter, Ms. Jodee Dennison, Ms. Leann Johnson

Bureau of Indian Affairs, Fort Belknap, Fort Peck, Northern Cheyenne	Various agency staff
Big Horn County Emergency Response	Mr. Ed Aucker
Fort Peck Tribal Council	Mr. Rick Kirn
Crow Agriculture Department	Ms. Mari Eggers
Northern Cheyenne Volunteer Fire Department	Mr. Merlin Sioux
Fort Peck Tribes Mineral Offices	Mr. Johnny Doney
Turtle Mountain College	Ms. Stacy Blue
Fort Peck Environmental Office	Ms. Deb Madison
Wolf Point Fire Department	Mr. Steve Harrada
Nemont	Various representatives
Albertsons	Various representatives
National Center for Healthy Housing	Various representatives
MSU Pollution Prevention	Mr. Mike Vogel, Ms. Barb Allen
Montana DEQ	Mr. Brian Spangler
Montana Dakota Utilities	Various representatives
Fort Peck Schools (K-12)	Various teachers and superintendents
KVCK Radio Station	Business
Justice of Peace Fort Peck	Various representatives
Northern Arizona University, ITEP	Mr. Mansel Nelson
Rocky Mountain College PA Program	Mr. Joe Tritchler
Mid West Assistance Program	Mr. Mickey Hartnett
Fort Peck Community College	Ms. Grace Wood, various faculty and students
Little Big Horn College	Various students and faculty
Fort Belknap College	Various students and faculty
Chief Dull Knife College	Mr. Bill Wertman, Ms. Angela Spotted Elk, Ms. Tomi Wooden Legs, Ms. Paulee Small, Ms. Audrey Arapan, and various staff and students

**Table 1. Partner List**

***C. Did this project bring any new partners into your work? How did the new partners aid the partnership and project?***

A number of new partners joined the Project to assist communities with the implementation of education and intervention strategies to target specific community identified environmental challenges. These included:

**Fort Peck Tribes**

The Office of Environmental Protection (OEP) of the Fort Peck Tribes fully supported the Montana Indian County CARE Project (MICCP), and activities associated with the project

to empower citizens to positively affect change. The OEP office led community clean-up and recycling initiatives that included K-12 school children, volunteer staff from city, county, and tribal departments, and educational outreach on asthma and Meth. Deb and her staff supported educational outreach efforts of the MICCP to educate citizens about indoor air quality issues and asthma, a total of 78 homes have been reached. The OEP office participated in community leadership activities, GIS/GPS workshops, community park development, solid waste management and recycling planning , and partnerships with the Tribal College, Tribal Health Department, and Tribal Council to make environment and health initiatives a priority.

### **For Belknap Tribal Environmental Department**

Under the leadership of Ina Nez Perce, the Environmental office has led several community based initiatives to improve the health of people and the environment on the Fort Belknap reservation. Ina has supported the efforts of her staff to involve community in important aspects of environmental stewardship and management. Her office has led community clean-up and recycling campaigns involving every community on the reservation. She and her staff have developed innovative solutions to solid waste management issues, including promoting composting on the reservation. During the 2-years of the MICCP, the Environmental Department has bridged partnerships with the tribal college, tribal health department, and county. Examples of their work include community meetings to educate and inform citizens of bacteria in water and subsequent side effects, experts from major universities and the Centers for Disease Control participated. Sherry Bishop led the first ever solid waste management workshop, hosted by the Environmental Department and the MICCP. This workshop included over fifty people from four states and 9 tribes. Her staff works hard to keep community informed by publishing a quarterly newsletter. The Fort Belknap Environmental Department values community and education, the MICCP appreciates the 2-year partnership to further environmental stewardship initiatives.

### **Northern Cheyenne Environmental Department**

The commitment of the NCED staff can be seen in the length of their service to the community. Charlene Johnson, the Environmental Manager has supported educational and environmental efforts of Joe Walks Along, Jay Little Wolf, Arnie Lafanier, Shanny Spang- Gion, and Patricia Ramos. During the 2-year MICCP partnership, the Department led several important initiatives which positively impacted the community, including community clean-up days, solid waste management efforts, canister creation and drop off sites, participation in GIS/GPS workshops, community meetings, nitrate sampling efforts, community beautification projects, tire recycling activities, junk vehicle education, metal recycling, powwow outreach initiatives, mercury education and more. The NCED staff is committed to preserving the environmental quality and culture experienced by the NC people.

### **Crow Environmental Department**

The Crow Environmental Department works closely with the tribal council to ensure environmental stewardship and management of its resources. The Department hosted MICCP Coordinator Rose Rock Above, who has since been hired as the 106 program manager. During the 2-year partnership, the Crow Environmental Department participated in a number of important activities, including: hosting a GIS/GPS workshop for community members, creating a recycling campaign for Little Big Horn College and the community, managing solid waste efforts at Crow Fair, working with the K-12 schools to promote lead education activities, and creating extensive chemical inventories in K-12 schools. Through the MICCP, the Crow tribe recycled cardboard, aluminum cans, and plastic during the 2007, 2008 Crow Fairs. The efforts of Roberta Fitch, Theo Round Face, Carolyn Morrison and Rose Rock Above will forever impact the environmental thinking and responsibility of the Crow reservation.

***c. What role did your organization play in this partnership? What skills were most important from your organization to implement the project?***

Rocky Mountain College and the Department of American Indian Affairs played a vital role in bringing tribal communities together to share knowledge and resources related to environmental challenges. RMC's previous relationships with tribal colleges were important aspects of the project.

RMC was the primary fiscal agent and administrator of the grant. Allyson Kelley, RMC Environmental Health Instructor and Tribal College liaison directed the Project. Her duties included: managing all aspects of the grant implementation, hiring, budget, and reporting. RMC hosted several workshops and classes in addition to dinners and celebrations for tribal communities to attend. RMC connected with Tribal Colleges and Tribal Environmental Departments to house CARE Coordinators.

RMC played a unique role, being a non-tribal organization leading a community-based project to improve the environment and health of tribal communities. RMC was a partner with tribal communities, helping them achieve their environmental goals through education, mentoring, sharing of resources, and implementation of specific toxic reduction activities.

***d. Which partners were most active? How?***

**Tribal Environmental Departments:** The most active partners were individuals and programs working in different programs funded through the EPA. These partners included: Brownsfields (Sherry Bishop, Fort Belknap); Air (Jay Little Wolf, Northern Cheyenne; Solid Waste (Carolyn Morrison, Crow. Arnie LaFanie, Northern Cheyenne); General Assistance Programs (GAP) (Roberta Fitch, Crow. Charlene Alden, Northern Cheyenne). These programs and individuals assisted the Project with matching tribal environmental needs with MICCP objectives.

**Tribal Colleges:** The most active Tribal Colleges were Chief Dull Knife College (Vice President Bill Wertman), Fort Peck Community College (President James Shanley), Little

Big Horn College (Instructor Ms. Mari Eggers), and Fort Belknap College (Instructor Mr. Bill Bell, Mr. Dan Kinsey). All colleges were actively involved in project support, education, lab use, and technical assistance. Colleges often housed Coordinators and provided meeting spaces for community forums.

**Tribal Health Departments:** Fort Peck Tribal Health Department was active in the asthma education and outreach. They supported MICCP activities and provided clinical representation at various MICCP meetings and events.

***e. What resources and strengths did each organization bring to the project?***

The organizations brought various resources and strengths, unique to their expertise and tribe. Tribal colleges played a vital role in the offering of educational opportunities to the community through the Project. Tribal health departments play an important role in bringing health related information forward to the communities for specific intervention activities. Environmental departments' unique knowledge of toxics helped the Project focus on relevant concerns of both community and environmental agencies.

***f. What efforts did you make to ensure that the most vulnerable community members were included in the partnership?***

The Project targets vulnerable populations, therefore every activity initiated under the program encompassed the inclusion of vulnerable community members. However, there were specific instances where community members, for instance elders, were sought by Project Coordinators. Coordinators would travel to their home, provide educational materials on indoor air quality, and help answer questions relating to the environment or health.

Coordinators provided unique outreach specific to each tribe, for instance at Northern Cheyenne, the 4<sup>th</sup> of July Pow wow is well attended by nearly everyone in the community. Coordinators set –up booths at the Powwow grounds inviting people to learn about the Project.

Sporting events also were helpful in reaching vulnerable community members. Often elders travel to games to watch their grandchildren play; this provided a unique opportunity to reach elders in a positive way.

***g. What role did your EPA Project Officer play in the partnership?***

Nancy Reish, EPA Region 8 Project Officer, played a vital role in the Project. Her experience working with tribes added to the overall success of the Project. Ms. Reish was flexible and supportive in budgetary areas. Her experience with GIS at EPA matched the community GIS needs identified by and supported by the Project. She worked with communities to meet their needs while making projects and results lend themselves to EPA supported objectives and goals. This role was instrumental in the overall success of the project, without the leadership, support, and understanding of Ms. Reish, the project would not have succeeded.



***h. What barriers did your partnership experience and how did you overcome them?***

Some of the barriers included changes in environmental priorities, staff changes, time and planning, differing priorities, and EPA rules. Environmental priorities had changed some from the time the grant was written, funded, and implemented. The original priorities resulted from an environmental health certificate program at four tribal colleges in Montana. Not all partners and priorities followed the Project, for example students involved in the classes left the communities to find other jobs. There were numerous staff changes in the four communities due to the part-time status of CARE Coordinators. Coordinators were often forced to find better paying jobs to support their families (with full-time status and benefits). These changes resulted in slower results and reidentification of priorities for communities. We were able to overcome these changes by lots of on-site visits with community members and working closely with programs that were not funded through the project. An example is the Office of Environmental Protection at Fort Peck Tribes. The project partnered with this Office, shared resources, and found constancy in working with them, so that when new coordinators were hired there was an infrastructure and direction already in place. Time was both a barrier and strength. Projects always took more time to plan and implement than what was originally planned. Fortunately, the Project received a 1-year no cost extension which allowed several activities to be completed. In some ways communities saw the Project as a grant-funded program that would end once funding had ceased. We overcame this perception by building stakeholders and knowledge in the communities, that will continue the work once the Project ends.

***i. How has this partnership improved relationships among those involved? Please describe the working relationship that has improved the most and those that may still need work?***

The CARE partnership improved relationships among tribal colleges and tribal environmental departments. It increased the visibility of both entities and created opportunities for sharing resources, knowledge, and skills. For example, Chief Dull Knife College offered GIS classes for the community members, environmental staff, and natural resource personnel. Many of the participants had not stepped foot into the College, even though they drove past it every day and lived nearby. Because the College had a computer lab and access to Arc software, they were able to open their doors to environmental agencies for learning. This process resulted in students returning back to school to take classes, get degrees, or in some cases create new partnerships for water analysis projects and lab use. The project also strengthened the relationships between Rocky Mountain College and tribal colleges. Rocky was able to provide support to science faculty, share resources and lab equipment, and encourage community members to pursue education. Ongoing relationship building for tribal environmental departments and various tribal community agencies and organizations is needed. CARE opened the door for dialogue, partnerships, and trust building- it will be up to the community organizations and agencies to continue the CARE work.

***j. Has your organization engaged in similar process to CARE in which you had a similar role? Please describe briefly?***

In 2005, with the prompting of the Indian Health Service, Rocky Mountain College delivered a 1-year Environmental Health Certificate program to four native communities in Montana. I was hired to Direct this project, and because of this work, the Montana Indian Country CARE Project was founded. The process was somewhat different in that the first project at RMC was educationally based for college credit, and the CARE project was more community based with education used as an asset and resource to create greater opportunities for the community through CARE.

***k. Is there anything else about your partnership that you would like to share?***

No.

**II. Your Project**

The Montana Indian Country CARE Project (MICCP) includes four native communities in Montana, Fort Peck, Northern Cheyenne, Fort Belknap, and Crow. Each of the communities had similar and differing environmental priorities. Communities worked collectively and individually to achieve results.

***a. What toxics risks did your project address?***

The project addressed the following risks: Healthy Homes/Indoor air quality (mold, ETS, Lead, Radon, green cleaning); Education and School Outreach; Pollution Prevention (solvents/batteries from vehicles and industry); and Solid waste (illegal dumping, community clean-up, recycling, and junk vehicles).

***b. What toxic reduction strategies did you pursue?***

MICCP utilized several different toxic reduction strategies. Targeted activities were designed once community members identified areas of concern. Some of these strategies changed overtime, to fit the unique needs of the community. Specific strategies were divided into four main areas of interest: Healthy homes / Indoor Air Quality, Education and School Outreach; Pollution Prevention; and Solid Waste.

- 1. Elder and Student Outreach on Indoor Air Quality:** Modeled after the promatora model; the Project reached out to members of the community suffering from asthma and other respiratory conditions. Instead of a promatora, the project utilized an elder and a graduate student. Toxics to be reduced included: environmental tobacco smoke, mold, dust, pet dander, and VOC's from cleaning products.
- 2. In-Person Presentations and Resources for Schools:** K-12 outreach with schools to promote lead education through poster contests, brochures, and presentations to kids about lead. K-12 Chemical clean-out campaigns to remove chemicals from schools.

3. **Community Designed Effort to Solve Junk Vehicle Problem:** Car recycling campaign included door- to-door outreach, community barbeques, and a brochure designed by the community.
4. **Community Driven and Supported Clean-up to Promote Advocacy:** Multi- agency community clean-up days to promote solid waste reduction and community beautification. These days hosted on each reservation each year promoted community member action in the clean-up days. Door prizes donated by community businesses, giveaways including lawn implements, and free food to attract people to work during the clean-up days.
5. **In-Person Support for Schools to Manage Toxics:** Providing schools with means of disposing of chemicals and educating them about green chemistry/micro scale chemistry. Coordinators provided support to schools by conducting inventories of chemicals and talking with teachers/students. Coordinators then work with hazardous waste contractor to remove waste and send to approved landfill.

***c. How did you reach agreement on implementation decisions?***

Implementation of the Project was based on approval and consensus from a number of agencies and partners involved. For example, the Tribal President approved CARE related activities on a general level. Partnering organizations in each community led efforts based on general consensus from active participants. Communities in general were happy with additional support provided by CARE; there was never a disagreement on implementation decisions. For specific information on implementation please reference the project section.

***d. Did you reshape your partnership in any way to address strategy implementation? Please explain.***

There were four communities involved in the Project. In every community there were partners that would come and go. CARE Coordinators at each site helped address implementation challenges. The original grant included tribal college instructors as coordinators in the effort; however, it became evident that the instructors did not have enough time to devote to the Project. This led to the creation of part-time paid coordinators at each site.

***e. What outside resources were most important to your project?***

There were a number of outside resources that became important to the Project. The assistance of Matt Langenfeld, EPA Region 8 helped with chemical clean-out in schools. The assistance of Marilyn Muller, EPA Region 8 assisted with GIS and maps. Tribal colleges played an important role in addition to tribal environmental departments. Small businesses located on the reservations were important, providing support and supplies when needed. Community members who made food for meetings and events were important.

***f. Was there any environmental issue that EPA seemed to lack the tools or means to address? If so, please describe the situation or need you had.***

There were several environmental issues unique to Indian Country that EPA seemed to lack knowledge or tools to address. For example, information on junk vehicles and the potential pollution that occurs from cars leaking fuel, batteries, mercury switches, etc. There was not a tribal resource for the community; the Project created one with the input and assistance from EPA Project Officer Nancy Reish.

The air quality information seemed tedious, and in some cases not available. STORET and other sources were recommended; however, bringing this information down to a non-technical level was difficult, and in-fact never achieved.

Information about illegal dumping, solid waste storage, health impacts, and cultural norms were not addressed. EPA did not have a lot of tribally specific information/assistance for solid waste. The Project created brochures but more emphasis on illegal dumping and solid waste storage/pollution would be helpful.

Mercury information for the region was difficult to get. The Project was referred to Dwight Atkinson for the Mercury Aggregator tool. After several attempts to download mercury information the Project gave-up. Tribally specific mercury information in a user-friendly format would be helpful.

In general terms, EPA seemed to have one tribal resource for all tribes. We know that each tribe is unique, with different strengths, geographic locations, cultural customs, environmental progress, and leadership. It is because of these characteristics; EPA cannot create one "mold" for tribes, but could create templates for tribes to use that would address toxics in a way that is relevant to their community and reservation.

## Section 2: Project Reports

### Section 2.1: Healthy Homes and Indoor Air Quality

The Healthy Homes and Indoor Air Quality project started because community members were concerned about: (1) excess moisture and mold in the home; (2) high prevalence of asthma in certain communities; (3) poor design and inadequate building construction; and (4) household chemical use.

Housing disparities relating to structure, overcrowding, poor maintenance, and location plagued all CARE communities. These disparities were voiced early on and continued throughout Project. In talking with community groups, the Project Team and Coordinators determined that tackling housing disparities using multiple partners and programs was needed. The Project utilized a promtora outreach model (using tribal members/elders), tribal colleges and universities for housing training, and Indian Health Service personnel and educational materials.

#### MICCP Healthy Homes: Elder Outreach and Tribal Member Mentoring

One elder from Fort Peck visited 78 homes and mentored occupants on healthy housing and asthma triggers. At Northern Cheyenne a Tribal member visited 15 homes and mentored occupants on healthy housing topics and asthma triggers in the home. Occupants received educational materials and evidence based interventions to reduce asthma attacks (non-permeable pillowcase covers, no-smoking signs for home).

#### MICCP Healthy Homes: Tribal Colleges and Extension Offices for Training

MICCP offered three healthy homes courses; one at Fort Peck and two at Rocky Mountain College. These courses reached over 485 people and involved multiple partners including the National Center for Healthy Housing, Montana State University, East Central University, Indian Health Service, and Tribal environmental health offices. Tribal college facilities were used and students received certificates and Continuing Education Units (CEU's).

#### MICCP Healthy Homes: Indian Health Service Partnership

The Indian Health Service played an important role in the Project. A secondary goal of the MICCP was to assess the prevalence of asthma at Fort Peck and Northern Cheyenne using Indian Health Service Information and resources. Indian Health Service partnered with MICCP and offered information on housing, exposures in the home, and indoor air quality.

#### **a. *What toxic risks did your project address?***

The healthy homes and indoor air projects addressed microbiological pollutants (mold), radon, lead, excess moisture, carbon monoxide, asbestos, and volatile organic compounds.

***b. What toxic reduction strategies did you use?***

As mentioned above, the project utilized tribal members and elders to educate home occupants on healthy housing topics, tribal colleges and extensive partnerships to bring resourced and educational opportunities to communities.

**Section 2.2 Education and School Outreach**

We partnered with local K-12 schools, tribal colleges, universities, and federal agencies to teach a variety of workshops and classes. These classes included Community Participatory Mapping, Facilitative Leadership Skills, Lead, and Chemical Storage/Removal.

**MICCP: Community Participatory Mapping**

In conjunction with the United States Geological Service and tribal partners using GIS and GPS, CARE offered a series of 2 day workshops. These workshops aimed to educate community members about toxics in the community by showing them how to use GIS and GPS units to map sites (solid waste, burial sites, road problems, cemeteries, brown fields, junk cars, and water sources). Through this project over 88 in four tribal communities learned how to use a GPS unit and learned basic GIS skills. ESRI donated software to tribal colleges to use for this project, and USGS was invaluable in the development and implementation of workshops. Through these workshops, several partnerships have continued to grow. An additional workshop was offered at the request of communities on remote sensing. This workshop included 21 participants from communities and tribes in Montana.

**MICCP: Facilitative Leadership Skills**

The Fort Peck Community leaders learned about facilitative leadership through the Consensus Building Institute (CBI). This project included experts working with community members on asthma and housing related questions. A 2-day workshop was offered at Fort Peck Community College and over 15 people learned how to be facilitative leaders.

**MICCP: Chemical Storage and Approved Removal Practices**

With the help of EPA Region 8, MICCP partnered with schools in Montana to remove 7,058 pounds of hazardous chemicals from thirteen schools in CARE communities. This reached directly or indirectly 2, 533 students. CARE Coordinators worked with school administrators and teachers to create inventories of chemicals. CARE sent inventories to EPA and from there; inventories were prioritized based on their threat to human health.

CARE applied for a grant through EPA and subsequently was awarded \$50,000. CARE then partnered with Brad Firmite of Mountain States Environmental to package and remove chemicals. CARE staff then worked with teachers and administrators giving presentations on chemicals storage and procurement. Healthy homes / Indoor Air Quality, Education and School Outreach; Pollution Prevention; Solid Waste; and Pollution Prevention.

#### MICCP: Tribal College Water Quality Outreach

A unique partnership between Dr. Cristi Hunnes, RMC Biochemistry Professor, MICCP, Chief Dull Knife College, and the Northern Cheyenne Environmental Department- this outreach led to fifteen students learning how to collect samples and analyze results using PCR. EPA Region 8 provided technical support and resources for the project. Through this outreach, students researched antibiotic resistance in bacteria throughout the reservation. The project focused on water upstream and downstream of the sewage lagoon system.

#### ***What risks did your project address?***

Hazardous chemicals in schools, risk communication strategies, and hazardous waste sites (through mapping).

#### ***What toxic reduction strategies did you pursue?***

Please reference the above section for specific strategies.

### Section 2.3 Pollution Prevention

#### MICCP: Junk Vehicle Demonstration Project

In the summer of 2008, MICCP partnered with the Northern Cheyenne Environmental Department and the Northern Cheyenne Housing Authority to promote the removal and recycling of junk vehicles. The Coordinator went door to door and educated community members about toxic chemicals and waste in junk vehicles. MICCP created brochures for the community and solicited participants for the recycling campaign. An outside car crushing company was retained and came to the reservation for over a week. The recycler removed and recycled 102 mercury switches from cars, 57 car transmissions, and 102 car batteries. Through this effort mercury entering the environment was reduced. Car oil was recycled and battery acid was removed from the environment.

#### MICCP: Chemicals in School Labs

Through the K-12 Chemical Cleanout Campaign 19.2 pounds of liquid mercury was found and disposed of properly. The mercury was found in a Gatorade bottle in a middle school classroom at Hardin, Montana (Crow reservation). Finding and disposing of this

mercury has created a healthier environment for kids, and eliminated pollution from entering the environment (through certified hazardous waste removal and disposal).

***What toxic risks did your project address?***

The projects above addressed mercury, battery acid, transmission fluids, and car oils from entering the environment.

***What toxic reduction strategies did you pursue?***

We used multiple partners and programs to eliminate pollution from entering the environment (see specific references above).

**Section 2.4 Solid Waste**

**MICCP: Inter-Tribal Solid Waste Workshop**

At the request of several Tribes, MICCP organized and facilitated the first ever solid waste compliance and enforcement workshop for Tribal programs. Over 67 environmental professionals from 11 different reservations participated in the 8-hour workshop. Various speakers were recruited to share best practices for solid waste management. Live video-conferencing to Tribal College classrooms enabled tribes to participate at no cost (EPA staff participated too).

**MICCP: Illegal Dumping Campaign, Northern Cheyenne**

At the request of the Tribe, MICCP partnered with the Environmental Department to educate people about the costs of open dumping. Several dumpsites were cleaned up with Indian Health Service funds, but as soon as one site was cleaned up, the environmental staff would find two more sites to clean. Feeling like their attempts to clean the reservation were fruitless, the environmental staff started educating people about the costs of open dumping. MICCP developed brochures and made signs at each site. These signs included clean-up costs, the Northern Cheyenne law prohibiting illegal dumping, and before and after photos. A total of 3500 people were reached through this project and continue to be reached by seeing the signs. Eight signs are posted in areas once frequented by illegal dumpers. The signs make people think about illegal dumping in a different way.

**MICCP: Junk Vehicle Recycling**

Through the Junk Vehicle Campaign a total of 295,460 pounds of metal was recycled from cars, 34 tires, 780pounds of toxic fluids, and 12 truckloads of scrap metal, and 102 foam rubber carpets were removed / recycled from the reservation. Most people who live in Indian Country know about junk vehicle (also known as rez cars), but they do not think about the problems that can occur when junk vehicles remain in an area over time. Through the MICCP campaign, we found that a number of people used junk vehicles as garbage receptacles, and many of these vehicles (large vans included) were packed full of household waste. Some of the waste was bagged and some of it wasn't.



Volunteers from MICCP had to remove thousands of pounds of waste that was inside cars before they could be recycled. Storing waste inside cars led to rodent infestation and putrid smells. While most household waste found inside cars was not toxic or hazardous, it was extremely difficult to remove. There continues to be a junk vehicle challenge in reservation communities served by MICCP; however, this project demonstrated to community members that vehicles could be recycled and the environment can be restored when vehicles are removed from locations. The major problem found through this project is that if Tribes do not have a solid waste code, or the code is not enforced there will always be a solid waste problem in Indian Country.

#### MICCP: Cardboard Recycling

MICCP demonstrated that recycling can happen in Indian Country. Even though it can be expensive and cumbersome. At Crow Fair, 1,333 tons of cardboard was recycled from vendors and participants. This was the first time recycling occurred and people received the idea well. Coordinators went to vendors and asked for cardboard to be stacked in central locations at the end of each day. Coordinators then worked with environmental staff to remove cardboard to a second location. On the last day of Crow Fair, the cardboard was transported to Billings for recycling in several trucks. This practice has been repeated several times at Crow Fair and it is likely to continue as a result of the MICCP.

#### MICCP: Paper and Cardboard Recycling at a Tribal College

One of the first projects that MICCP started as a result of community members wanting recycling options was a recycling receptacle next to Little Big Horn College. Coordinators at Crow collected office paper and cardboard for several months. The idea of recycling caught on and people began to recycle on their own. BFI, the solid waste company serving Crow agreed to pick up and recycle paper and cardboard monthly. This project has not continued due to a lack of resources and commitment from the solid waste company; however, it was useful in that it demonstrated that recycling is doable in Indian Country.

#### MICCP: Community Clean-up Days

Reservations plan community clean-up days each spring. Through MICCP, community members had access to gloves, garbage bags, and recycling. All tribal program workers are required to pick-up garbage in specified areas of the reservation for a period of 8 hours. This generally occurs over 1-weeks time. At the end of the week all volunteers are invited to a barbeque where prizes are raffled off (including yard implements and tools for beautification). MICCP played an important role in sponsoring and supporting community efforts to beautify the reservation and remove toxics/waste from the environment.

***What toxic risks did your project address?***

Through the projects listed above, toxic fluids, PCBs, household waste, and general car components did not enter the environment.

***What toxic reduction strategies did you pursue?***

We used several strategies; community events to demonstrate recycling ability, community partners to assist with junk vehicle recycling, community members to share and learn information about illegal dumping and recycling.

***How did you reach agreement on implementation decisions?***

The Project Director would consult with CARE Coordinators located in each community. In cases where community partners needed or wanted to provide input, they were asked. In general, all projects were driven by the community; MICCP provided support and resources so that these projects could happen. Implementation of projects supported by CARE occurred only when there was a high level of community involvement, and the community asked for CARE's support in a specific area. There were not disagreements because everything came from the community.

### Section 3: Overall Project Reflections

The Montana Indian Country CARE Project created a logic model and followed it during the Project period. Following these steps helped all partners and community members understand how and when to act, and more importantly how to measure success.



Figure 2. MICCP Logic Model

***a. How likely is it that the progress achieved could have been made without your CARE partnership?***

The progress made in CARE communities in areas of pollution prevention, solid waste, education, healthy homes, and indoor air would not have occurred if the Montana Indian Country CARE Project did not lead efforts. In communities served by the project, poverty, unemployment, health and environmental challenges plague communities. Demonstration projects, and preventative measures as initiated by CARE are generally not part of the community dynamic. This is because people are faced with daily challenges that put them in a crisis mode. This mode permeates the environment, so that proactive measures are not implemented.

People in communities CARE. They truly wanted to make a difference and create healthier places for their children and grandchildren to grow up, but they often lacked resources or support. CARE was instrumental in creating opportunities that otherwise would not have happened. In this, our efforts were extremely successful and the progress, no matter how small or large made a difference in the lives of community.

Partnership. The role of Rocky Mountain College and Tribal Colleges, as stated previously was vital to the overall success and progress of MICCP. This partnership

allowed communities access to resources, information and new collaborations that otherwise would not have occurred. Four tribal communities in Montana partnered and communicated on different environmental concerns, the synergy resulting from new partnerships propelled the project to new levels each day.

***b. What do you consider your project's greatest achievement?***

There were many achievements, and because our project focused on four communities, it is important to recognize each community and greatest achievement.

At Fort Peck, home to the Assiniboine and Sioux tribes. CARE created opportunities for housing occupants to learn how to create healthy indoor environments, free from toxics and asthma triggers. The work of Francis Bighorn, CARE Coordinator reached over 78 homes. Through intensive education and interventions (pillow case covers for asthmatics) and no smoking signs, occupants who once struggled to control asthma and other upper respiratory diseases will no longer suffer. This outreach was, by far the greatest achievement at Fort Peck.

At Fort Belknap, home to the Gros Ventre and the Assiniboine Tribes. CARE in partnership with the Fort Belknap Indian Community Environmental Office led several efforts that reduced the impact of solid waste on the reservation. These efforts included composting, recycling, innovative outreach to 9 tribes on solid waste, and green cleaning initiatives to eliminate toxic chemicals used to clean homes.

At Northern Cheyenne, home to the Northern Cheyenne Tribe. CARE in partnership with the Northern Cheyenne Housing Authority, Environmental Department, and Tribal Enforcement Division promoted educational efforts to decrease illegal dumping and improper storage of household solid waste. The Northern Cheyenne Illegal Dumping Campaign was the first ever and was the result of people saying that open dumps would get cleaned up one day, and people would begin dumping their waste there again the next day. This cycle plagued the reservation. With the assistance from multiple agencies, including the Indian Health Service signs were erected on each site that was cleaned up. These signs showed before and after photos in addition to the cost of cleanup. Through intensive educational efforts and public awareness of solid waste issues, the Northern Cheyenne Tribe will eventually tackle the tremendous solid waste challenges faced by their community.

At Crow, home to the Crow Tribe. CARE promoted several solid waste management efforts that were vital to the community. The Crow Tribe did not have a solid waste management plan and during Crow Fair, an annual event that attracts over 25,000 people each year, solid waste would pile up. The CARE project sponsored the first ever recycling effort to reduce solid waste. Partnering with the Crow Environmental Department, CARE worked with youth to pick up garbage and recycle aluminum and cardboard throughout the 5-day event. Canisters around the dancing arbor painted with

white letters "CARE" encouraged people to recycle. They also encouraged people to properly dispose of their waste (littering to placing it in a receptacle).

***c. What was your greatest challenge and how did you deal with it?***

The greatest challenge was working with four distinct communities that were over geographically distant (up to 400 miles apart), and who represented four sovereign nations with different environmental priorities and views of toxic reduction activities promoted by CARE. It was difficult to give adequate attention to one community on a particular issue. This was somewhat alleviated by having CARE Coordinators on each reservation, but difficult because they worked only part-time. We dealt with this by traveling to communities as much as possible, and to only do what community members requested. This saved a lot of time and money.

***d. What would you do differently next time in terms of organizing and structuring your partnership to achieve your project objectives?***

We would focus on one community rather than four. Having the Tribe apply for and administer the grant would also be helpful in terms of building capacity to manage grants.

***e. How might you have been more strategic in designing or implementing your project?***

Create advisory boards in each community would have helped with communication and setting priorities that represent the entire community. Revisiting environmental priorities identified in 2005, to determine if the priorities had changed would have been helpful with implementing the project. Additionally, trying to recruit original members of the Indian Country Environmental Health Project to be active in the CARE grant would have helped with the design and implementation. Some of the individuals left communities, lost interest, or did not want to be a part of CARE. Additional community forums to help gain community buy-in and support would have helped with implementation. Planning for public relations and coverage with major newspapers and tribal papers would have increased public awareness of the project.

***f. If you chose to create one, did you find using a logic model or other goal-drive model helpful? Please explain. N/A***

***g. What extend did your CARE Community communicate or engage with other CARE communities and how was that interaction helpful?***

The only interaction that CARE community members had with others was at the CARE grantee conference and the Children's Environmental Health Summit conference. It was difficult to find other tribal communities involved in CARE at the time this project took place.

***h. Did media coverage play a role in your project? If so explain.***

Media coverage in remote locations throughout Montana is difficult to find. Locally, CARE was highlighted on radio stations, local television channels, and in the State’s largest newspaper, the Billings Gazette. We requested a lot more media coverage than we actually received.

***i. In what ways did you rely on EPA for assistance (assessing risks in your community, conflict resolution, and partnership support, voluntary programs, such as Tools for Schools or Pollution Prevention)?***

We relied on EPA a lot. There were a number of EPA created resources that our Project used to reach community members on different topic areas.

Materials distributed include:

Reduce Asthma	Native Air (backpack)	CARE/MSU Extension
To Create Healthy Homes	Asthma Home Check List	EPA/MICCP
Reduce Asthma	Help your Child Gain Control over Asthma	EPA/CDC
Share Information about TRI, Hg, Abandoned Mines	Map provided by Marilyn Mueller and Nancy Reish	EPA Region 8 Staff
Measure Mercury Emissions	TRI for MICCP Reservations	EPA
To promote recycling among NC tribal members	Banners	EPA Region 8, Nancy Reish, Victoria Parker Christensen
To reduce contamination caused by junk vehicles	Junk Vehicle Brochure	RMC CARE Created Brochure and Printed

***j. What role did your Project Officer and other EPA staff play in your work? What would you have liked more or less of?***

Nancy Reish, EPA Region 8 Project Officer provided support and direction during every step of the process. Nancy linked our project with other programs, EPA resources, outside resources, and best practices. Nancy was available nearly every day and always found innovative solutions to our challenges. She visited Montana reservations regularly and became a familiar face. Other EPA staff were extremely helpful, including Tracy Eagle of the Air Toxics Program. Marilyn Mueller with GIS work and Mapping. Matt Langenfeld with chemicals in schools and tools for schools. Kristina Meson with chemical cleanout projects in schools. EPA Helena staff Barb Burkland and Jennifer

Wintersteen on local tribal environmental issues. There are many other EPA staff members who helped make the CARE project a success. Nancy's involvement was perfect. The only thing that I would change was living in the same state or area as the Project Officer so that more site visits could occur.

***k. To what extent do you think that this project increased the capacity of your organization? Your partnership? Your community? Please provide examples.***

There were a number of organizations involved in this project, therefore I will list them individually and summarize the capacity building measures that resulted from CARE.

Rocky Mountain College- CARE increased our capacity to reach out to tribal colleges, tribal communities, and manage grants. RMC has been working with tribes for decades; CARE solidified these relationships and grew RMC's visibility to eventually help more students get degrees from RMC and partner colleges.

Crow- CARE hired a coordinator who is now the 106 Program Managers for the Tribe. Her work with EPA and CARE led to this job. CARE also helped the tribe understand the parameters of federal funding and EPA processes. It linked the Tribe with EPA and resources in a multitude of ways.

Northern Cheyenne- CARE supported the creation of several environmental education documents that were needed in the community, but never created. An example was a junk vehicles brochure. Several community members learned how to make brochures so that in the future, they can educate the community without the assistance of the EPA or CARE project. This was important because many of EPA's resources do not fit the specific needs of tribal nations.

Fort Belknap- CARE increased the capacity for the Environmental Department to conduct environmental outreach activities. An example is the "Green Cleaning Project" that was hosted in Hays, Lodge pole, and Agency on the Fort Belknap reservation. To conduct these projects, people had to learn about green cleaning supplies and toxic chemicals that we routinely use when cleaning. CARE supported the project and linked Fort Belknap and the Blackfeet Tribe together, so that they could share resources and green cleaning tips. This form of capacity, developing pathways for communication, is an important achievement of CARE.

Fort Peck- CARE supported and trained community members and housing staff on healthy housing. This was important because of the high prevalence of asthma and other respiratory diseases. Contractors and staff are now trained at Fort Peck, so that when they go into a home they can identify structural deficiencies and occupant induced hazards.

Training was by far the most notable capacity building tool undertaken by CARE. Training took several forms including: Training community members to make green cleaning products, training on GPS and GIS to map toxics, training on healthy homes, training on asthma triggers, training on facilitative leadership and decision making, training on how to access EPA resources, and training for schools on green chemistry.

***l. Did your project produce any new “community leaders”? Please describe.***

As mentioned previously, Rose Rock Above from Crow was a CARE Coordinator and now the EPA 106 Program Manager. Sherry Bishop, from Fort Belknap is the Browns fields Manger. Because of her involvement in the CARE Project, the community now views her in a different light. CARE gave her the resources to be in the community, training and sharing information about toxics with supplies and materials to support training efforts. Sherry has been in the community for decades, she is now seen as a leader, not only at Fort Belknap, but throughout EPA.

There were a number of Coordinators that remain in the community, and lead because of their work with CARE. Their names are: Grace Wood, Fort Peck. Tommy Wooden Legs, Northern Cheyenne. Paulee Small, Northern Cheyenne. Francis Big Horn, Fort Peck. Rusti Kirn, Fort Peck.

***m. What advice would you offer to other communities undertaking similar work?***

Work under the CARE project started before funding began and will continue after funding ends. Be proactive, supportive, and flexible. Below is an excerpt from a best practices document created by the Montana Indian Country CARE Project.

There were a number of principles that the CARE Project documented during the grant period that may be useful to other tribal recipients or multi-community recipient.

- Flexibility in time. The continuum of time proved both beneficial and challenging. Community based projects took longer than expected, and in general the greater number of people involved the more time a project will take.
- Monetary support. It is important to pay project staff for their time. Unemployment and poverty levels are high. CARE must include monetary support for workers, businesses, colleges, and other partners.
- Education to see change. Bringing community members into a tribal college to learn a new skill relating to toxic reduction pays off. The Project utilized tribal colleges for labs, computer applications, and meetings. This was extremely effective in growing the partnership and the knowledge of communities.
- Change as the community changes. There were a number of partners who left the project and some new partners that joined. Communities were changing each day, month, and year. The Project changed with them and modified the work plan to address change.



- If a community does not show a commitment – stop. This seems obvious enough but is worth repeating. There were a number of times when original activities were cancelled because the Project did not have adequate commitment from the community.
- Services to community. It was important that CARE be visible to community members, not a brochure or pen. Communities want action and results through service and opportunities for service.
- One size does not fit all. When there is not a brochure or resource available on a certain topic (i.e. junk vehicles for Indian Country), make one. The importance of sharing pertinent resources with a community that will enable them to address their needs is most important.

### III. What Next?

**a. *Will members of your partnership continue to work on these issues?***

For the most part, members of CARE continue to work on issues implemented under the CARE program. Without funding, some of the projects may not occur.

**b. *How will this work be sustained?***

Work initiated through CARE will continue through various tribal programs who employ people working on toxic reduction initiatives. Education that community members received as a result of the CARE project will be passed on for generations. Tribes continue to seek grant funding from federal agencies, like the EPA to continue toxic reduction initiatives. Individuals involved in the project learned to write grants, manage grants, and search federal grant databases.

**c. *If neither your organization nor the members of the partnership plan to continue the work please describe why.***

Each person involved in the CARE project will continue to work in various ways, but not under the formal CARE structure. When grant funding expires, workers are forced to find new grant funds or jobs that will support their work. This work then changes to fit the requirements of the funding agency.

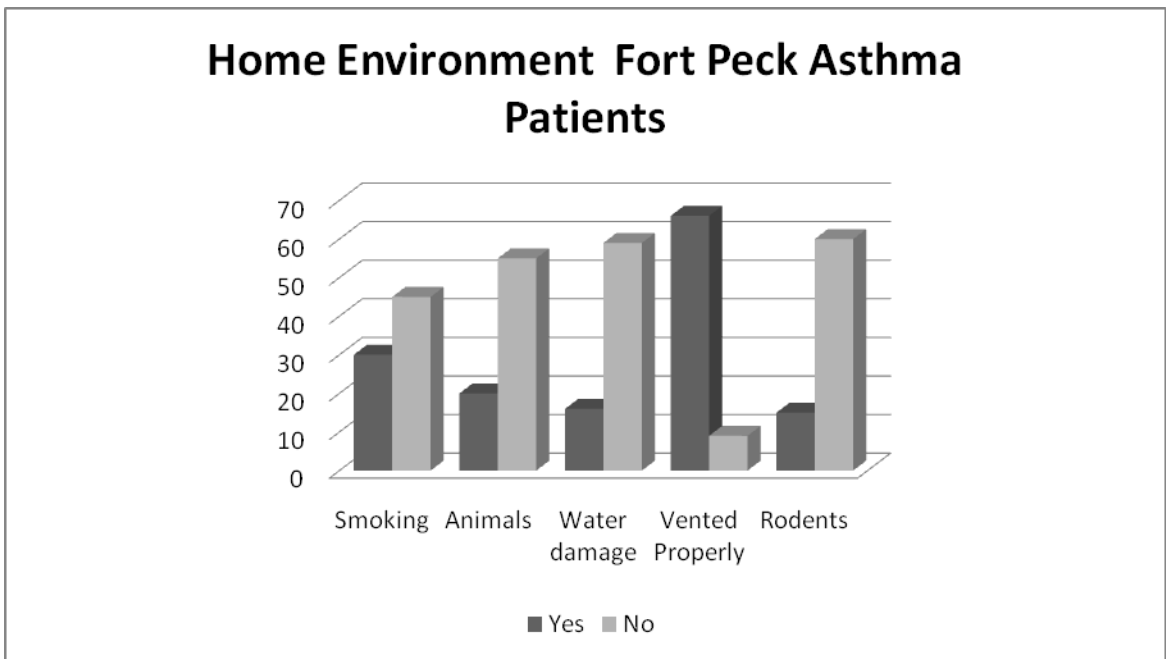
**d. *Please describe a continuing or next source of funding you have your for your work or other groups in your community that have continued the work and have found funding.***

There are several steps that we have taken to ensure work started through CARE continues. Examples of this include: The Northern Cheyenne Department of Energy grant to create energy efficiently in tribal buildings through retrofits. This was a desire of the tribe, CARE project Director Allyson Kelley wrote a grant for the Northern Cheyenne

tribe in 2009. This grant was awarded and three tribal buildings will be retrofitted to be energy efficient. Tribal employees will learn about energy efficiently and an Energy Conservation Strategy was introduced and designed with the support of CARE. To continue to support tribal GIS and mapping interests, CARE partnered with the Montana Wyoming Tribal Leaders Council and wrote a grant to the Montana Land Information Act in June 2009. This grant was not initially awarded, but discussions are underway to determine how to work with tribes to bring tribal GIS applications and support to Montana. This again was a direct result of work through CARE. The Project Director of CARE continues to work with tribal communities on funding related applications related to toxic reduction efforts initiated by CARE and community members.

**Section A-2.1 Healthy Housing Indoor Air quality Support Documents**

A focus of the MICCP was indoor air quality and Asthma. An elder and a respected community member was hired at Fort Peck and at Northern Cheyenne. They went to homes where occupants had complained of asthma. During their visits they educated the occupants about asthma triggers and toxics found in the home (from cleaning supplies to cigarette smoke). A total of 415 people were reached through this outreach effort. Through these efforts, we noticed that a number of people smoked inside their home, that water damage was a common concern and that rodents were seen. It was noted that a number of homes had good ventilation.



**Table 2. Fort Peck Home Outreach**

### Home Environment Northern Cheyenne Asthma Patients

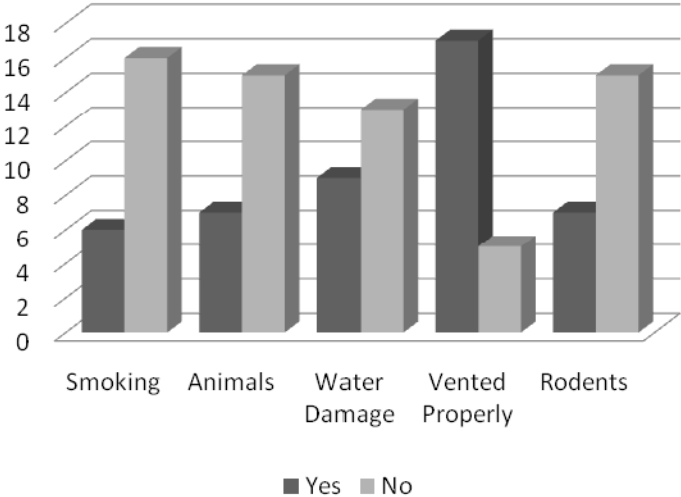
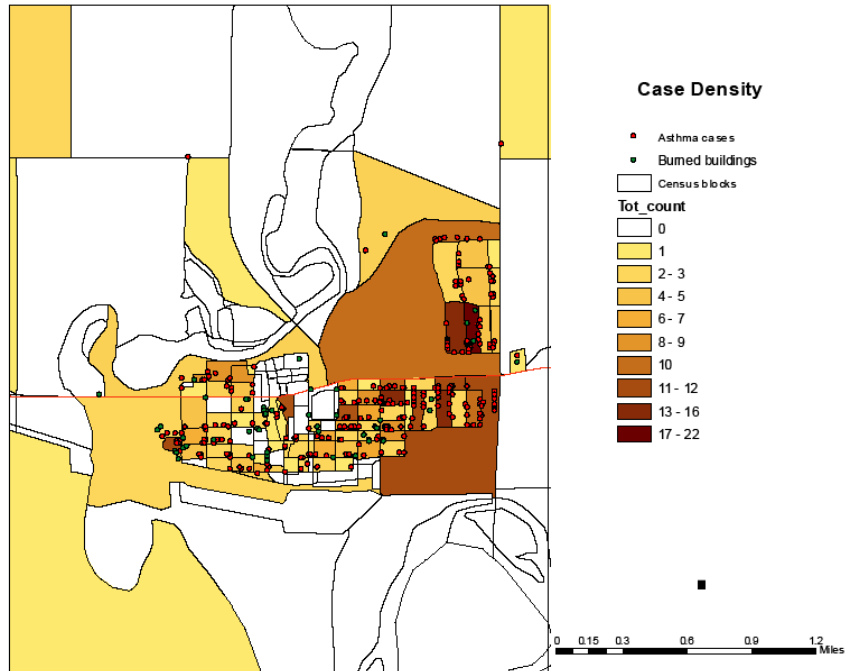


Table 3. Northern Cheyenne Home Outreach



**Figure 3. Map of Asthma Density and Burned Homes Fort Peck**

Through the community mapping workshops and work with the Fort Peck Environmental Health Office, MICCP helped map asthma cases on the reservation. The community was also concerned about the number of burned homes from arson activity. Figure 4 illustrates the location of asthma cases and burned homes in the community. The Fort Peck Environmental Health Office used this map to help present information to the Tribal Council to get funding to remove burned homes from arson activity.



**Figure 4. Healthy Homes Workshop- Onsite Assessment**

MICCP sponsored a number of Healthy Homes educational workshops for community members. These workshops focused on community identified needs such as asthma, mold, and substandard construction. Through MICCP a total of 29 tribal representatives attended healthy homes training. Three homes were inspected and 97 homes received Native Air backpacks. A total of 485 people were reached through this effort.

### Section A-2.2 Education and Outreach



**Figure 5. Solid Waste Workshop**

A total of 67 environmental professionals from 11 different tribes partnered in the first ever inter-tribal solid waste workshop on enforcement and compliance. Tribes selected peers who have exemplary programs for solid waste compliance and enforcement. A number of EPA officials participated in the 8-hour workshop.



**Figure 6. Crow 3rd Grade Classroom Lead Certificates**



**Figure 7. Poster Contest Winner Elijah Real Bird**

Students at Crow elementary and Lane Deer elementary learned about Lead through a partnership with the Montana Wyoming Tribal

Leaders Council, the Montana Indian Country CARE Project, and EPA Region 8. Students listened to a presentation by CARE Coordinators and then drew a poster about what they learned. This illustration was posted on the back of a Lead educational tool for Indian Country, developed by the Montana State University Extension Service. The Lead poster contest that reached over 494 grade-school students living on the Crow and Northern Cheyenne reservations. 105 American Indian students actively participated in the Lead education campaign.



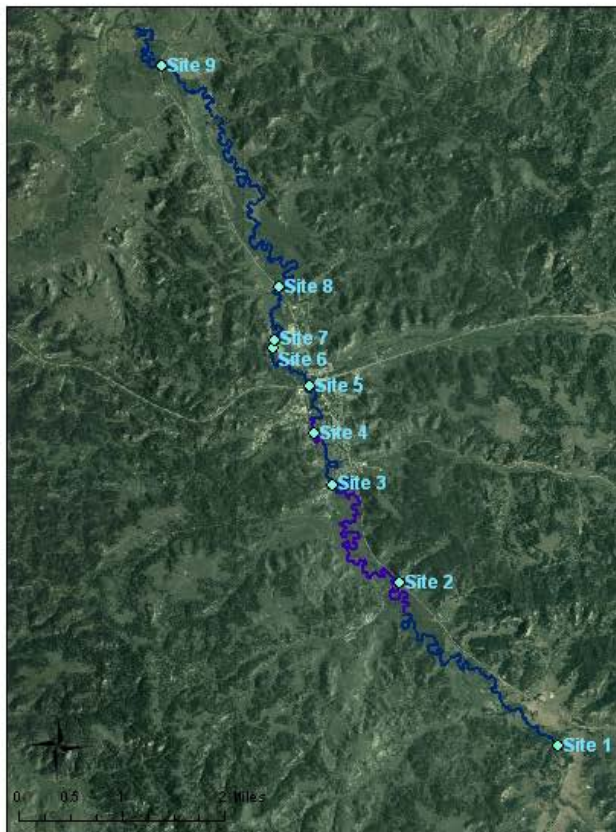
**Figure 8. Poplar High School Student IAQ Sampling**

Institute for Tribal Environmental Professionals (ITEP), CARE Partnership with Fort Peck Schools on IAQ and toxics. An innovative partnership formed between MICCP and ITEP. Through this partnership, 22 staff members and 382 K-12 students learned how to

conduct Indoor Air Quality Assessments using the latest technology and hands-on sampling devices. Lustre Grade School, Poplar High School, Wolf Point High School, and Frazer K-8 were involved in this outreach.

MICCP hosted a joint collaboration to foster co-learning between Rocky Mountain College and Chief Dull Knife College. This project resulted in over twenty students learning about water quality, antibiotic resistance of bacteria in water, and sewage lagoons. This partnership led to increased infrastructure and capacity at Chief Dull Knife College through peer mentoring and lab instruction and equipment procurement. This project built on existing GIS community work and taught students how to use GIS for sampling location and analysis. For a summary of the project and results, reference Water Quality Outreach and Mapping Project Appendix A.

# Lame Deer Creek Sampling Sites



**Site 1**  
 Location: Below Pow Wow grounds  
 Description: A series of three ponds, the first two appear to be stagnant with no flow between them. There is a slight flow between the second and third pond. The sample is taken just above the third pond.



**Site 2**  
 Location: Above Pow Wow grounds.  
 Description: Located near Lame Deer High School, the section we sampled is near a large (dry) culvert. This section flows through a wetland area.  
 Distance Downstream: 4.24 miles



**Site 3**  
 Location: North Sweet Medicine above lagoon.  
 Description: Larger water flow out of a culvert into a stand of cattails. Lots of human trash at the culvert. Stream wider than before.  
 Distance Downstream: 3.47 miles



**Site 4**  
 Location: Near Post Office  
 Description: A slower and smaller section than site 3, this section flows through a poplar grove, we sampled just before a chain link fence.  
 Distance Downstream: 0.94 miles



**Site 5**  
 Location: Near Warrior Trail road.  
 Description: A braided channel that is flowing from a marshy area with cattails, poplars and willows, flows into a culvert that goes under highway 212.  
 Distance Downstream: 0.84 miles



**Site 6**  
 Location: Lagoon Outflow  
 Description: Sampled at outflow, the stream then flows into a marshy area. The water is noticeably more murky after the outflow enters.  
 Distance Downstream: 0.80 miles



**Site 7**  
 Location: 200 feet below Lagoon outflow.  
 Description: The stream is much wider and deeper than at any other site, it is also more murky. It is still slow flowing. There are chunks of floating debris.  
 Distance Downstream: 0.09 miles



**Site 8**  
 Location: Mile Marker 1  
 Description: Coming out of a culvert, wider and shallower than site 7, water visibly more clear. Coming from a field with horses grazing.  
 Distance Downstream: 0.92 miles

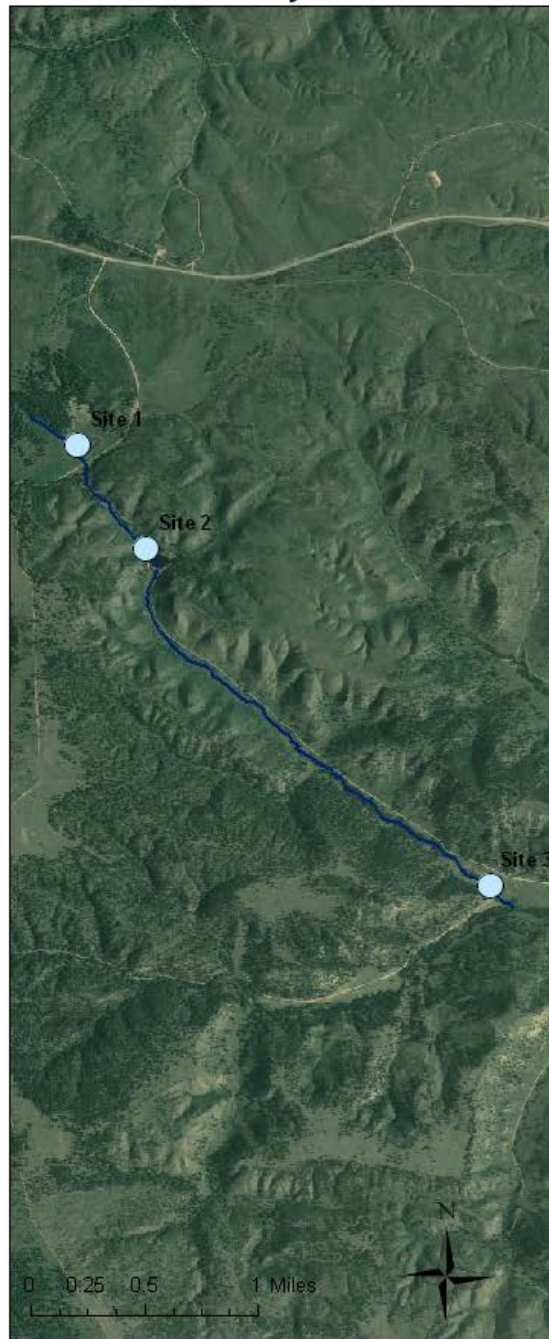


**Site 9**  
 Location: Dead Man's Curve  
 Description: Shallow and wide, clear water running into a culvert. An old fence blocks the culvert, and some water plants are growing on the downstream side of the blockage.  
 Distance Downstream: 5.64 miles

The nine sites along Lame Deer Creek cover a total of 16.9 miles. All samples were collected on May 11th between 12:30 and 4:00pm by students and supervisors from Chief Dull Knife and Rocky Mountain Colleges.



## Crazy Head Fork Sampling Sites



Site 1  
Location: Spring  
Description: Spring outflow in the Crazy Head Campgrounds. Flowed out of a pipe; very clear.



Site 2  
Location: Fourth Pond  
Description: Located 0.77 miles downstream of Site 1. Sample taken where stream flowed into the pond. Trash visible in the shallow water and along the shore.



Site 3  
Location: Stream  
Description: Located 2.95 miles downstream of the spring, or 2.18 miles downstream of Site 2. Small creek that flowed out of a culvert from a cattle range.



**Figure 9. Little Big Horn College Community Mapping/GIS (Cross reference Appendix B)**

MICCP conducted community mapping workshops in Fort Peck, Fort Belknap, Northern Cheyenne, and Crow. Through these efforts a total of 88 community members learned how to use a GPS and to do basic GIS to create maps of environmental areas of interest and concern. Primary goals of the workshop were to: 1) introduce CARE community members to GPS/GIS while increasing the awareness of environmental toxicants and or stressors, 2) attract more community members to become engaged and active in CARE toxic reduction activities. Secondary goals were to: determine the interest and need for mapping toxic sites in Indian Country, assess the interest and need for education on GPS/GIS, develop a community mapping work group for future mapping projects. 21 people learned remote sensing and added to their GIS skills through a second workshop. For a full report of the GIS Community Mapping Report, reference Appendix B.

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Pictured are Volunteers Michael Moore, Nancy Reish, Allyson Kelly and Grace Wood



## Poplar Cemetery Committee Receives Thrivent Funds

Sue Frantziak, a congregational coordinator for St. Johns' Lutheran Church, recently presented a check from Thrivent Financial for Lutherans, Roosevelt County Chapter #31368, to Pat Beck and Mary Lynne Granbois, members of the Poplar Cemetery Committee. Mary Lynne is the newest member of the committee, replacing Barb Mirox.

Con't on Pg. 4

## Montana Indian Country Care Project (MICCP)

The Montana Indian Country CARE Project is a community based program that implements a variety of activities to educate American Indian community members about toxic exposures and ways to alleviate such exposures through promotional, educational, and mitigation measures.

Montana's Indian Reservations are separate communities, who have diverse beliefs, cultures, and obstacles. Communities forming the basis for this project come from the following American Indian reservations: Fort Peck, Fort Belknap, Northern Cheyenne, and Crow which include the Assiniboine and Sioux, the Gros Ventre, the Northern Cheyenne and Crow Tribal people. Working in conjunction with Rocky Mountain College, Fort Peck Community College, Fort Belknap College, Chief Dull Knife College and Little Big Horn College and other partners, select reservation communities will share knowledge, resources, and experience to help provide an environmental health program for Montana's American Indian people with a focus on educating communities on everyday exposures to hazardous and toxic substances routinely found in Indian Country.

Under this project, partners will reach out to community members, conduct investigations, create resources to limit toxic exposures, and seek ways to continue environmental health outreach and education through toxic emission reduction and identification.

### Joining Together

Building on earlier work completed by Rocky Mountain College and a project called the Indian Country Environmental Health Project (ICEHP) a risk prioritization was completed through joint meetings, weekly interactive classes, field activities and interviews, and various discussions among science faculty at participating tribal colleges. Con't on Pg. 5

Figure 10. Fort Peck Poplar Shopper- example of media coverage



Montana Indian  
Country CARE  
Project for the  
Northern Cheyenne  
Reservation.

It has been over a year since the inception of the Montana Indian Country CARE Project. Some worthwhile projects have taken place in the last year. Community clean-up, GIS mapping workshops, education and outreach, toxic chemical removal at K-12 schools, LD Boys and Girls Club, and Chief Dull Knife College. The Veterans park on main street was cleaned up, houses and buildings were painted this summer, water analysis was made available for community residents, and healthy homes tool kits were distributed to members of your community. As well as Asthma kits that were distributed to the Lame Deer and Busby schools and head starts which are also available to parents with children who have asthma.

Projects planned for 2008 include:

- Working in conjunction with the MT/WYTLC, CARE staff will facilitate a poster contest, 8-hour lead training workshop, and provide information to tribal health care providers.
- Chemical Removal Follow-up with LDHS, NCHS, and the Boys & Girls Club.
- Healthy Homes Follow-up with the members of the community that received kits.
- Asthma Kit follow-ups with the surrounding schools and head starts.
- Work with the Local I.H.S. on an Asthma Project, we will also help facilitate a Health Fair for the members of the community.
- Community Clean-up Day recycling newspapers, aluminum, steel, glass, etc.

CARE Intern/Coordinator-Tomi Wooden Legs



CARE Intern-Rusty Limberhand



Please feel free to contact me at (406)477-6215 ext: 121 and we are located at the Chief Dull Knife College, if you would like to be a part of upcoming CARE efforts.

**Article from the Northern Cheyenne Tribal Report, written by Allyson Kelley Project Director**

Lame Deer, Montana.

Home to the Montana Indian Country CARE Project (MICCP), and many caring community members and visitors. There is a park as you drive down the main street of town. A place where people from the community can be found sitting in the shade, enjoying a meal, or conversing about the weather.

In early spring, members of the MICCP decided to perform a site beautification project at Lame Deer. Unanimously, the Park was selected as the most visible, and having ultimate potential for use and community involvement. Planning began. Youth Works agreed to help. Teddy McMacon wanted in. The park committee was excited. The Northern Cheyenne Housing Authority agreed to move cement slabs and dirt.

Hours of work, from people as far east as Pennsylvania created the park that you see today. A peaceful place, a place that Teddy will frequent with her hose and red riding lawnmower. Keep watching the park for more improvements; new tables, planters, leveling, and seeding. The Montana Indian Country Care Project, an EPA sponsored program wishes to recognize the valuable contributions of the following individuals: Teddy, Joe and the team at Youth Works, Tribal Housing, Tribal Environmental Department, Adriann KillsNight, Audrey Arpan, Paulee Small, and Tommi Wooden Legs. Help us keep the park clean and beautiful by disposing of garbage in designated areas.

**Section A-2.3 Pollution Prevention**



### Figure 12. Pollution Prevented from Vehicles

Through MICCP, 102 mercury switches were removed from cars. 57 car transmissions were disposed of and oil that was once leaking into the ground was removed through the car removal. 102 car batteries that contained acid were also removed from the environment.



### Figure 13. Cardboard Recycling Crow

The Crow Environmental Department partnered with MICCP to implement the first ever cardboard recycling effort in the community. This included recycling initiatives at Crow Fair, Little Big Horn College, and tribal offices. Through these efforts, 1,333 tons of cardboard were recycled.



**Figure 14. Chemical Clean-out Campaign, Hg 19 pounds in Gatorade Bottle**

The MICCP leveraged partnerships and resources to apply for a \$50,000 grant to remove 7,058 pounds of hazardous chemicals from 13 reservation schools protecting 2,533 students. Through this project CARE Coordinators learned about toxic chemicals, proper storage, green chemistry, and micro scale chemistry. For a full report on the K-12 Chemical Clean-out Campaign, reference Appendix C, K-12 Chemical Clean-out Report.

#### **Section A-2.4 Solid Waste**



**Figure 15. Junk Vehicle Recycling**

The Junk Vehicle Recycling campaign at Northern Cheyenne was a community driven effort to clean-up the reservation. A total of 295,460 pounds of metal was recycled from cars. 34 tires were recycled. 780 pounds of toxic fluids and 12 truckloads of scrap metal were removed from the reservation. Waste minimization that resulted from these efforts includes 102 foam rubber carpets, plastic components, and 31.57 tons of solid waste was disposed of.



**Figure 16. Community Sign for Vehicle Recycling**

**Campaign Hopes to End Illegal Dumping, Article written by Allyson Kelley, MICCP Project Director, Highlighted in the Indian Health Service 2009 Newsletter.**

Arnie Lafanier, Northern Cheyenne Tribal Solid Waste Coordinator, in conjunction with the Heather Latray of the Billings Area Indian Health Service orchestrated the removal of 1016.44 tons of solid waste at a cost of \$345,019.55 in 2008. The Indian Health Service works with tribal councils, utilities, and environmental staff to prioritize solid waste, water and wastewater infrastructure projects. According to Latray, "IHS attempts to serve all Indian communities, however rural, with convenient solid waste disposal sites so as to improve living standards, keep Indian people safe and healthy".

It is important to keep in mind that injuries may result from illegal dumps; examples include injuries from sharp or pointed objects and fires from flammable materials. Illegal dumps may also contribute to vector control problems, diseases spreading from rodents and insects. Jodee Dennison, Billings Area Injury Prevention Coordinator said, "It is difficult to identify the actual number of injuries that may occur on the reservation from solid waste".

The Montana Indian Country CARE Project, out of Rocky Mountain College supported the project by designing and purchasing signs for each of the sites. Signs include a photograph of the site before clean-up occurred, and the Northern Cheyenne Ordinance which prohibits illegal dumping 17(90), Code 7-7-14. Arnie Lafanier believes the signs



will really help deter people from illegal dumping, “It is our hope that these signs will stop people from dumping their waste, together we can really clean-up the reservation”. The project aims to reduce illegal dumping by educating community about the cost and impact illegal dumps have on the environment. By cleaning-up illegal dump sites we can decrease injuries and disease while promoting a healthier way of life for American Indian people.

**No Dumping Signs Posted**

<b>Site</b>	<b>Tons of Waste</b>	<b>Cost</b>
IHS Housing	41.08	\$13,351.00
Robinson	38	\$13,295.50
Ashland Flats	79	\$29,561.25
Littlebird	55.51	\$19,428.50
Rabbit Town	97.47	\$38,013.30
Clinton Small	226	\$92,532.90
Sweet Medicine	98.27	\$31,937.50
Walking Horse Creek	174.09	\$69,636.00

**New Clean-ups as of 12/15/08**

<b>Site</b>	<b>Tons of Waste</b>	<b>Cost</b>
Solider Gulch	24.13	\$4,343.40
Two Moons	108.03	\$19,445.40
Fox Site	74.86	\$13,474.80



**Figure 17. Arnie LaFanie, Solid Waste Coordinator**

### Financial Information

New	Organization Name	Type of organization (see above)	Funding amount	Additional details—funding period, etc.
	Hardware Hank, Lame Deer, MT	Tribal Business	\$300.00	To be used for community clean-up
	ESRI	Business	\$499.00	Conference registration waiver
	USGS EROS	Federal	\$16,800.00	Education
	Albertsons	Business	\$300.00	Food for meeting
	MSU Pollution Prevention	Non-Profit		Educational Resources
	Nemont	Business	\$100.00	Paper, plates, napkins, forks, and cups for meeting.
	Wolf Point Fire Department	Local Government	0	Fireman's Ball Tickets
	Fort Peck Book Store	Academic	0	Sweatshirt, T-shirt, Planner
	Justice of the Peace	Non Profit	0	Meeting supplies
	Montana Dakota Utilities	Business	0	Meeting supplies
	LAW Construction	Business	0	Meeting supplies
	Walleyes Unlimited	Business	0	Meeting supplies
	Montana State University	Academic	\$1200.00	Mold Workshop Instruction and Conference
	Montana State University Extension Office	Academic	\$1200.00	Health Home Inspection Workshop
	AEHAP	Non-profit	\$750.00	Travel and hotel for AEHAP Lecture
	Northern Cheyenne Housing Authority	Tribal	2 workers for 3 days @ \$21/hr= \$1,008	Heavy equipment operation for Car Recycling
	Northern Cheyenne Tribal Utilities	Tribal	1 worker for 1.5 days @ 18/hr=\$234	Heavy equipment operation for Tribal College open-dump cleanup.
	Northern Cheyenne	Tribal	Backhoe @	Heavy equipment cost

	Housing Authority		\$450 day/3 days=\$1350	
	Northern Cheyenne Tribal Utilities	Tribal	Front end loader @ \$300 day / 1.5 days= \$450	Heavy equipment cost
	St Labre Workers Tribal Assistance Program	Tribal	Garbage removal workers 4 @ 10 days/8 hrs/9.00hr= \$2,880	Workers to remove solid waste stored in cars during recycling/education campaign
	Northern Cheyenne Housing Authority	Tribal	\$650.00 (tents, chairs, barbeques, set up and removal for Northern Cheyenne Community Feed).	
	4 locations for Lead Workshop	Tribal College, Tribal Health	\$300@ 5 sites= \$1,500.00	
Total financial support received			\$29,221.00	

## Appendix A

### Rocky Mountain College & Chief Dull Knife College Water Quality Outreach

#### Proposal to EPA for Funding

#### Background

Tetracycline is one of the most common antibiotics found in water. The presence of tetracycline in water may increase antibiotic resistance, the acquired ability of a microorganism to grow in the presence of an antibiotic to which the microorganisms are usually sensitive<sup>1</sup>. Research is currently underway at Crow Agency, Montana and Billings, Montana to look for specific antibiotic resistance genes for tetracycline as well as for penicillin, both of which are commonly prescribed. In Billings, Montana, sewage is treated using both primary and secondary treatment protocols before discharging effluent back into the Yellowstone River. Crow Agency uses lagoons for treatment of sewage, before discharging effluent into the Little Big Horn River. Dr. Cristi Hunnes, Professor of Biochemistry at Rocky Mountain College, along with the Crow Environmental Health Steering committee have been collecting samples of discharge water at both sites for over one year. Their goal is to determine whether there is increased resistance to tetracycline and penicillin among bacterial species in the Yellowstone and Little Big Horn Rivers just below the waste water treatment sites.

Recent partnerships with Rocky Mountain College's Natural Science Division and the Crow Environmental Health Steering Committee attempt to help tribal members better understand how commonly prescribed antibiotics increase the likelihood of antibiotic-resistant bacteria found in surface waters. The Montana Indian Country CARE Project at Rocky Mountain College proposes to provide an outreach and education opportunity for the Northern Cheyenne tribe to increase their awareness of water quality characteristics, microorganism behavior, sewage treatment efficacy, and pharmaceuticals in water.

#### Project Overview

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<sup>1</sup> Martinko, J., and Madigan, M., 2006. Brock Biology of Microorganisms. New Jersey, Pearson Prentice Hall.

In November 2008, CARE Director, Allyson Kelley will approach the Tribal Environmental Director and the Vice-President of Chief Dull Knife College. Ms. Kelley will describe the proposed project and ask for Letters of Support from the tribe to conduct the project.

Ms. Kelley will work closely with Dr. Cristi Hunnes, Professor of Biochemistry at Rocky Mountain College to develop a field experience for students at Chief Dull Knife College and upper division students at Rocky Mountain College. The proposed field experience will take place in May 2009. Dr. Cristi Hunnes will lead the experience and share important information about water quality, microorganism behavior, and antibiotics in water. Ms. Kelley will work with Chief Dull Knife College to recruit tribal college students and interested community members. Dr. Hunnes will share information about sampling, collection and analysis during the field experience. Samples will be analyzed at the Rocky Mountain College laboratory by Dr. Hunnes and RMC upper division students. The chemistry lab at Rocky Mountain College will need to purchase research supplies for the project and lab equipment that will be utilized for future work with the Crow and Northern Cheyenne tribe. Results will be compared to samples collected previously at Crow Agency and Billings, Montana. In addition, new samples will be collected from the Little Big Horn River and Yellowstone River so that a more direct comparison might be made that takes into account the time of year that samples were collected. Comparison will provide valuable insight for future research of antibiotic resistance and the efficacy of sewage lagoons, overflow, and discharge.

#### Importance

Significant concerns related to the use of human and agricultural antibiotics are the increasing emergence of antibiotic-resistant bacteria<sup>2</sup>. At the Crow Indian Health Service, tetracycline and penicillin's are readily available and in many cases, overused by clinicians (Appendix A). A number of concentrated animal feedlot operations near Crow and Northern Cheyenne contribute to antibiotic resistant bacteria, as tetracycline is not metabolized by humans or animals before excretion.

Tribal communities often lack resources and infrastructure to properly maintain and treat sewage. Lagoons once created to serve a population of 2,000 people now serve over 3,500 (Lame Deer, Montana). The increasing population places an enormous burden on sewage treatment systems, often not allowing for the settling time necessary to properly treat and pass sewage. Tetracycline found in water may drastically change the chemical environment in which "bad" and "good" bacteria can survive. Notably important is the high concentration of animal feed lot operations in the Crow/Northern Cheyenne area and the established use of tetracycline in these operations to increase growth and diminish disease. Animals, like humans do not metabolize tetracycline. The lack of metabolism leads to excretion of tetracycline in waste, the presence of tetracycline in soil and water drastically changes in the environment in which bacteria thrive, thus creating resistant bacteria.

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<sup>2</sup> Kumar, Kuldip, Satish C. Gupta, Yogesh Chander and Ashok K. Singh. 2005. Antibiotic use in agriculture and its It is an impact on the terrestrial environment. *Adv. Agron.* 87:1-54

Objectives:

The objectives of the project are: (1) Increase awareness of water quality and water treatment on the Northern Cheyenne reservation by providing a 1-day field workshop for tribal students to learn collection technique, water quality parameters, and results; (2) screen for the occurrence of tetracycline and  $\beta$ -lactam antibiotic resistance in DNA collected from surface waters adjacent to sewage treatment discharge points on the Northern Cheyenne reservation, and (3) communicate results of analysis to tribal agencies and the EPA for implementation of proactive measures to reduce the occurrence of antibiotic resistance in the environment.

Proposed Budget:

Rocky Mountain College - Programmatic and Fiscal Management			
Project Period November 1, 2008 to August 3, 2009			
A5-2612-122			
			CARE
Category	Category Name		Year 1
1	Salaries	Subtotal	21,378.00
a.	Science Faculty		6,500.00
	Dr. Cristi Hunnes, May 1-31, 2009		
b.	Research Associate		3,150.00
	May 1-31, 2009 1@20.00 per hour @ 157 hours		
c.	Student Researchers		10,128
	May 1-31, 2009 6@15.00 per hour		
d.	Tribal Student Researchers		1,600.00
	May 1-31, 2009 4 @ 10.00 per hour @ 40 hours each		
2	Fringe Benefits	Subtotal	4,040.30
a.	32% on Salary item a		2,080.00
b.	25% on Salary item b		787.50
c.	Student fringe @ 10%		1,172.80

3	Travel	Subtotal	862.00
	a.	1-day van rental BIL-LD	150.00
	b.	250 miles	100.00
	c.	Sack lunches, workers 10@\$10each 1 days	100.00
	d.	1-day 4-WD SUV rental Billings to Crow Agency	300.00
		2 vehicles for 8 people	
	e.	140 miles	56.00
	f.	Sack lunches, workers 13@\$12 each	156.00
4	Supplies and Equipment	Subtotal	29,000.00
	a.	Field Laboratory Supplies	2,000.00
	b.	Autoclave	15,000.00
	c.	Microfuge	2,000.00
	d.	Electrophoresis	3,000.00
	e.	PCR	7,000.00
5	Other	Subtotal	-
6	Subcontracts	Subtotal	-
7	Total Project Costs		55,280.30

Equipment Justification:

Throughout the CARE Project RMC and its staff have worked with tribal colleges and tribal agencies to create opportunities for learning about the environment. RMC routinely hosts tribal college students and is actively involved in tribal college partnerships to share intellectual capacity among faculty and students. RMC feels that by purchasing equipment for this exercise, American Indian students will be served and continue to learn about environmental issues for years to come. Future projects underway to involve tribal communities and equipment use for the greatest benefit of the environment and tribes. RMC is committed to sharing these resources with tribal college students, faculty and community members.



## Outputs:

RMC Project Director Allyson Kelley will provide a written report of project status and interim results to EPA Project Officer Nancy Reish as mandated by the quarterly grant reporting equipments.

Dr. Cristi Hunnes will present findings at the 2009 INBRE Fall conference.

Dr. Cristi Hunnes, Allyson Kelley, and participating students will work collectively to publish findings and experience in scholarly journal.

Allyson Kelley will work with student researchers to schedule times to meet with the Northern Cheyenne and Crow tribal environmental departments to discuss the results of the project.

## Conclusion

Educating communities about water quality is important. Water to Indian people is life. The proposed project will provide a communication gateway for a well-known biochemistry professor to share her expertise with tribal community members on the Northern Cheyenne reservation.

Additionally, the impact of antibiotics in surface waters is a concern of American Indian people. This project will meet their concern with answers and hands-on field experiences. Information from this project may be widely disseminated to other tribal / non-tribal communities who are concerned about antibiotic resistance and water quality.

Appendix A of Water Quality Report

CROW "Total Drugs Dispensed" List

Page 1

Date of Listing: 10/15/07 By: VA Drug Class: TETRACYCLINES

Outpatient Drugs dispensed from 10/01/02 through 09/30/07

Total Number of Days = 1826

Drug Name	Number of Rx's	Type of Units Dispensed	Total Pills	Mg/pill	Total Mg's	Total Grams
DEMECLOCYCLINE 300MG TAB	5	TAB	465	300	139500	140
DOXYCYCLINE 100MG TAB**	1838	TAB	59902	100	5990200	5990
DOXYCYCLINE 20MG TAB	7	TAB	1169	20	23380	23
MINOCYCLINE 100MG CAP**	633	CAP	36302	100	3630200	3630
MINOCYCLINE 50MG CAPS	85	CAP	5261	50	263050	263
TETRACYCLINE 250MG CAP	626	CAP	72767	250	18191750	18192

LODGE GRASS "Total Drugs Dispensed" List

Page 1

Date of Listing: 10/15/07 By: VA Drug Class: TETRACYCLINES

Outpatient Drugs dispensed from 10/01/02 through 09/30/07

Total Number of Days = 1826

Drug Name	Number of Rx's	Type of Units Dispensed	Total Pills	Mg/pill	Total Mg's	Total Grams
DOXYCYCLINE 100MG TAB**	417	TAB	13831	100	1383100	1383

DOXYCYCLINE 20MG TAB	3	TAB	114	20	2280	2
MINOCYCLINE 100MG CAP**	69	CAP	3970	100	397000	397
MINOCYCLINE 50MG CAPS	18	CAP	1073	50	53650	54
TETRACYCLINE 250MG CAP	27	CAP	2782	250	695500	696

PRYOR IHS PHARMACY "Total Drugs Dispensed" List Page 1

Date of Listing: 10/15/07 By: VA Drug Class: TETRACYCLINES

Outpatient Drugs dispensed from 10/01/02 through 09/30/07

Total Number of Days = 1826

Drug Name	Number of Rx's	Type of Units	Dispensed	Total Pills	Mg/pill	Total Mg's	Total Grams
DOXYCYCLINE 100MG TAB**	768	TAB	25691	100	2569100	2569	
DOXYCYCLINE 20MG TAB	18	TAB	1122	20	22440	22	
MINOCYCLINE 100MG CAP**	40	CAP	2160	100	216000	216	
TETRACYCLINE 250MG CAP	82	CAP	5467	250	1366750	1367	

## Results of Project Funded by EPA CARE

### Background

The Montana Indian Country CARE Project supported a partnership between Rocky Mountain College and Chief Dull Knife College. This project had several objectives: (1) increase awareness of water quality and water treatment on the Northern Cheyenne reservation by providing a 1-day field workshop for tribal students to learn collection technique, water quality parameters, and results; (2) screen for the occurrence of tetracycline and  $\beta$ -lactam antibiotic resistance in DNA collected from surface waters adjacent to sewage treatment discharge points on the Northern Cheyenne reservation, and (3) communicate results of analysis to tribal agencies and the EPA for implementation of proactive measures to reduce the occurrence of antibiotic resistance in the environment.

## **People**

In May 2009 ten students and professors from Rocky Mountain College conducted a one-day field workshop with seven students from Chief Dull Knife College. Joe Walks Along, the Water Quality Director for the Northern Cheyenne Environmental Department gave a presentation to the students. Mr. Walks Along covered water from a cultural and health perspective. He summarized the sampling locations, the reasons why sampling occurs, and the water quality standards they follow. Three RMC students gave a presentation about the occurrence of tetracycline and  $\beta$ -lactam antibiotic resistance in DNA. Dr. Eric Wood from the USGS EROS provided an overview of Geographic Information Systems (GIS), and how to use GIS to cross reference data (as collected in this project). Mr. Bob Madsen and Mr. Brian Stiff, Instructors from Chief Dull Knife College (CDKC) shared information about PCR and classes available for community members and students at CDKC. Dr. Cristi Hunnes, Biochemistry Professor at RMC provided oversight and direction for the project and lab work. Ms. Allyson Kelley, MICCP Director facilitated the workshop and communication with Tribal officials and departments.

## **Budget Justification and Supports**

The MICCP provided funding for students to work in the lab at RMC, funding for Dr. Cristi Hunnes to oversee the work, a stipend for CDKC instructors, transportation costs, field supplies, and laboratory equipment. The support from MICCP was invaluable; students received a small wage for their time, college credit, and learned how to analyze samples in a laboratory environment. CDKC instructors were mentored by Dr. Cristi Hunnes and information was shared between groups. The MICCP purchased equipment for the RMC lab that allowed analysis to occur, and will help future students and partnerships grow. MICCP purchased field laboratory supplies, autoclave, microfuge, electrophoresis, and a PCR. This equipment resides at Rocky Mountain College in the laboratory, and will be used by students from RMC and Tribal Colleges in the future. Maintenance and calibration of equipment is managed by Dr. Cristi Hunnes and her research associates.

## **Sampling Results and Information**

CDKC students identified sampling locations. Students collected water using one-liter bottles, and four to five bottles at each site. We collected samples from 9 Lame Deer sites, both upstream and downstream of the lagoon. These sites are called LD1, LD2, etc. starting with the site furthest upstream and working our way downstream. We also collected 3 sites from Crazy Head, CH1, CH2, and CH3.

We did four PCR/Electrophoresis trials looking for TetA resistance for the samples. The first trial was a complete training run, with the 14 students (7 from RMC, 7 from CDKC) plus two instructors from CDKC each taking 1-2 samples and putting it through the process. There was a lot of variability due to learning curve and so many different people analyzing the samples.

In all cases, the positive TetA control was positive. Unless noted otherwise, the negative control showed up negative.

Trial 1: The negative control showed up positive!! So did LD1, LD2, LD3, LD5, LD6, LD7, LD8, and CH1. These results are highly suspect.

Trial 2: LD7 and LD8 were positive.

Trial 3: None were positive.

Trial 4: LD3, LD6, and LD8 were positive.

Three trials were done to analyze the samples for TetB resistance. In all cases, the TetB positive control showed up positive, the negative control showed up negative, and none of the samples showed up positive. Tet genes are antibiotic resistance genes against tetracycline. They are different genes that confer that resistance. Further analysis is required to confirm/refute these results.

### **Sustainability**

Now that RMC has the equipment and partnership, more collaboration will likely occur between RMC and CDKC. It is expected that through these collaborations, more people will be aware of water quality as it relates to the environment and health. We also anticipate additional grants and projects funding more work as a result of this partnership. For example, Montana State University is now funding CDKC instructor Brian Stiff to conduct research with students on viruses that may have a waterborne connection. Dr. Cristi Hunnes is funded by Montana State University to conduct similar water quality sampling and analysis on the Crow reservation. In August of 2009, the National Science Foundation funded students to collect more samples and analyze the samples at the RMC lab. Through these activities, students learn valuable skills that will help them enter into science careers and majors that otherwise might not have occurred. It is through this experience, that lives and minds are changed. This process leads to the sustainability of objectives related to the CARE project.

Further, the Northern Cheyenne Environmental Department may be able to use information collected in this project as a way to monitor and prioritize water quality areas and discharge points. The hospital may use this information to interpret antibiotic degradation in water and the impact on surface waters.

### **Conclusions**

In the future it is important to have a third party person involved in the project. Originally, the EPA was going to bring the mobile lab to the Northern Cheyenne reservation. They also agreed to provide analysis from the EPA Denver Laboratory. This work in PCR and electrophoresis would have validated the results of student analysis. EPA lab work would have told us if there was Tetracycline resistance in the DNA. The major purpose of this project was to educate and inform people about water quality- we accomplished this and more.

## Appendix B

### Community Mapping for Indian Country

#### Workshop Outcomes

#### Community Mapping for Indian Country

#### The Montana Indian Country CARE Project and United States Geological Survey Earth Resource Observation Science

Fort Peck Community College, Wolf Point

Fort Belknap College, Harlem Montana

Little Big Horn College, Crow Agency Montana

Chief Dull Knife College, Lame Deer Montana

June 10<sup>th</sup>-20<sup>th</sup>, 2007

#### Sponsored by:

Rocky Mountain College and the MICCP, USGS/EROS

Montana's Tribal College Partners

#### Funded by:

United States Environmental Protection Agency, Level II CARE Project

Grant # OAR-I0-06-01

Allyson Kelley, MPH. CHES

Program Director

American Indian Affairs, RMC

Eric Wood, PhD



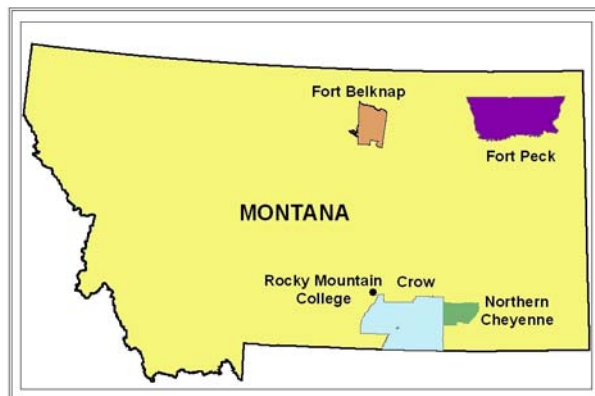
Senior Scientist

USGS/EROS

**Background:**

The Montana Indian Country CARE Project is a community based initiative to reduce toxics in Indian Country. Birthed out of lasting relationships with tribal colleges, Rocky Mountain College was able to secure federal funding through the Environmental Protection Agency, Level II Grantee funding for a 2-year period. The foundation for the MICCP was laid with the Indian Country Environmental Health Project (ICEHP), a 150 hour certificate program in environmental health, aimed at developing sustainable environmental health leaders and knowledge in Indian Country. ICEHP was further expanded in October 2006 when RMC was awarded \$299,997.00 to work with select Montana reservations to reduce toxics through everyday measures. The objective of the MICCP is to create healthier communities by hiring tribal members to coordinate community activities that focus on exposures to toxics in the air, water, and soil; and how to mitigate such exposures through educational interventions, community clean-ups, and targeted site remediation projects.

Community mapping through the MICCP was created by a partnership with RMC and USGS/EROS. This partnership combined academics, tribal colleges, community needs, and mapping expertise to form the first ever community mapping workshop in Indian



Country.

The MICCP foci area is toxic reduction, however the community mapping workshop attracted participation from tribal environmental managers, land professionals, students, teachers, and tribal

council persons. By attending the workshop, participants gained an enhanced capacity for using, understanding and creating maps in their respective communities. Participants also contributed to community toxic reduction efforts and environmental initiatives created from MICCP.

**Goals of the MICCP Mapping Workshop are:**

1. Explain what community mapping is and how it can be used to address specific community issues.
2. Outline a plan that informs local residents about community mapping and encourages their participation.
3. Demonstrate the basic principles of map reading, including topographic maps.
4. Collect and consolidate data pertinent to community mapping and add to existing USGS topographic maps.
5. Use a handheld GPS unit and ArcView software to document identified community environmental problems.

Community Mapping flyers were sent to all tribal agencies, professionals, college students, and teachers. No mapping experience was required to attend the workshop.

Upon completion of the 2-day mapping workshop, students learned;

- The basics of ArcView GIS 9.0 Mapping;
- The importance of knowing and mapping physical, chemical, and emergency response subjects on your reservation;
- How to create and disseminate mapping information for your tribal community.

The first day of the workshop included hand drawn maps, PowerPoint presentations, field activities on Garmin set up, a trial activity of mapping, and minimal computer applications.

After introductions, students were asked to draw a map of their reservation. This exercise provided insight into the participants knowledge of maps (inclusive items such as scale, legend, size, coordinates), and allowed students to get to know each other. At Fort Belknap, Chief Dull Knife, and Little Big Horn Colleges, students were give a pre and post test to measure their knowledge of community mapping and GPS/GIS. Participants at Fort Peck did not take the pre/post test, thus scores indicated below exclude Fort Peck attendees. Some participants attended on the partial days of the workshop, thus the scores reflect full participation, and partial attendance on day one or day two of the workshop. The test was comprised of 10 questions that related to basic definitions used in mapping (Appendix A).

Test scores for participants attending the full workshop are slightly higher than those attending partial days. The pre/post-test scores reflect an increase of knowledge based on improved post test scoring. Table 1 reflects the number of people in attendance at Fort Belknap, Little Big Horn, and Chief Dull Knife Colleges. Mean test scores improved by 2.24 points for students attending the full workshop. Partial



attendance reflected an improvement of 2.26 in pre/post test scores. This calculation is based on students attending the first day, and not the second, or the second day and not the first. Possible explanations as to why the post test score demonstrates a slight improvement over those attending the full workshop are based on the following hypotheses:

- Students who attended the second day had previous work experience and knowledge of GPS/GIS.
- The second day included hands on activities with GPS/GIS that required the student to demonstrate competence.

**Table 1:**

		Pretest score	Post-Test score
<b>Participants attending days 1 &amp; 2</b>	Mean	5.17	7.41
	N	22	22
	Std. Deviation	2.48	2.61
	Mean	4.9	7.16
<b>Participants partial attendance day 1 or 2</b>	N	34	34
	Std. Deviation	2.65	2.61

**Workshop Goals:**

Primary goals of the workshop were to: 1) introduce CARE community members to GPS/GIS while increasing the awareness of environmental toxicants and or stressors, 2) attract more community members to become engaged and active in CARE toxic reduction activities. Secondary goals were to: determine the interest and need for mapping toxic sites in Indian Country, assess the interest and need for education on GPS/GIS, develop a community mapping work group for future mapping projects.

**Learning Objectives:**

1. Explain what community mapping is and how it can be used to address specific community issues.
2. Use basic map reading skills to locate various geographical points on a map.

3. Identify and describe the basic features of a topographic map.
4. Access and use Google Earth application software to locate geographic points.
5. Determine the location of any geographical point using a map and GPS coordinates.
6. Accurately record coordinates using a handheld Garmin eTrex Legend GPS unit.
7. Locate and record certain reservation area features using digital pictures and a handheld Garmin eTrex Legend GPS unit.
8. Describe at least two different mapping related data collection techniques.
9. Summarize the basic principles of GPS and how it links with mapping.
10. Explain the importance of GIS in community mapping and how to access existing data.
11. Consolidate data using data forms and digital files.
12. Explain the process of a community map construction.
13. Download data from the Garmin eTrex Legend GPS unit on ArcView 3.x application software to create a map.

### Participants

72 community members signed up for the training at four reservations in Montana. Of the 72, 43 people attended the training. Of the 43, 12 participants missed at least one day of the two day workshop. Tribal environmental departments, Bureau of Indian Affairs employees, and tribal health workers made up the majority of student participation.



Fort Peck Community College,  
Poplar MT



Chief Dull Knife College, Lama Deer,  
MT



Fort Belknap College, Harlem, MT



Little Big Horn College, Crow  
Agency, MT

### Place

Workshops were held June 10<sup>th</sup>-20<sup>th</sup>, 2007 beginning at Fort Belknap College in Harlem, Montana. Training continued June 13<sup>th</sup>-14<sup>th</sup> at Fort Peck Community College in Wolf Point, Montana. Instructors

continued their journey south to Chief Dull Knife College in Lama Deer, Montana on June 15<sup>th</sup> and 18<sup>th</sup>. Workshops completed on June 19<sup>th</sup> and 20<sup>th</sup> at Little Big Horn College, Crow Agency, Montana.

## Workshop Content

Curriculum was developed by Eric Wood, Senior Scientist at USGS EROS. The content was based on feedback from Allyson Kelley, Project Director of MICCP, and community meetings where tribal members voiced their concerns about toxic sites, pollution, and energy development. The first day provided a brief overview of community mapping, PowerPoint exercises that demonstrated successful community mapping outcomes, hands on activities with the GPS unit, community mapping subjects, and day two planning. Day two was comprised of field work and downloading waypoints and track logs into ArcView GIS and Google Earth. Students created and printed maps based on waypoints collected. Instructors utilized Arcview Software provided by ESRI, and community mapping text books provided by ESRI and the MICCP. Reference books, ArcView 9x, and Garmins were given to participating tribal colleges upon completion of the workshops. The following reference books were utilized:

- Community Mapping Handbook, Mapping Our Land, A guide to making maps for our communities and traditional lands. Alix Flavelle. ISBN 1-55105-376-4.
- Making Community Connections, the Orton Family Foundation Community Mapping Program. ISBN 1-58948-071-6.
- Community Geography, GIS in Action. Lyn Malone, Anita M Palmer, and Christine L Voigt. ISBN 1-58948-051-1.

### 1. Overview of Community Mapping

At the beginning of each workshop, students were asked to introduce themselves, their affiliation with the tribe, and the reason for attending the workshop. Students were then asked to define community mapping. Answers were varied and included in the pre and post test analysis. After this

introduction, students were asked to draw a map of their reservation. Participants used markers, rulers, and poster size paper to draw maps. Students affixed them to walls, and explained the boundaries and topics of each map.



## 2. PowerPoint Presentations

PowerPoint presentations were utilized by the instructor to share community mapping definitions, examples of community mapping, and the benefits to a community. Presentations and worksheets reinforced learning objectives and provided the framework for independent field activities.



Presentations provided students with examples of how and why communities new to utilize GPS/GIS mapping. A community in Africa mapped coffee crops to determine geographic locations of superior coffee crops. Indigenous peoples in Canada mapping to establish ancestral boundaries. Communities use mapping to determine pollution sources, dumpsites, industrial areas, and housing structures.



## 3. Hands on Activities

After several hours of class-room presentations, students ventured to an outside location and attempted to map parking lots, city blocks, alleys, and college areas. Students entered waypoints and set a track log with assistance from the instructors. Students returned to the class room and downloaded files into Projected Shape files, and Google Earth KML files.

## 4. Community Mapping Subjects and Day Two

After a brief introduction to community mapping, students were asked what they wanted to map. Student lists included animal feed lot operations, noxious weeds, and open dump sites, and cemeteries, chemical storage areas, burned down houses, vacant houses, streets, cultural sites, and water sampling areas. Instructors assisted the class in developing day two activities.



Day two, students met early in the morning and paired up, driving to selected areas to map.

## 5. Creating a Map

After the field activity students returned to class, with GPS units in hand, field notes available, and a better understanding of community mapping. Students first downloaded waypoints and track logs as KML files. Students populated Google earth with the newly acquired information. After printing maps in Google Earth, students then downloaded data as Shape files. Students opened ArcView GIS and uploaded base map images. Students queried, inserted, and printed maps with the data collected during day two field activities.

The instructor's impression of field activities and community needs are:

- The need for technical expertise and mapping Montana reservations is overwhelming to tribal professionals and community members who want to produce maps.
- Basic mapping of houses, street names, cemeteries, community areas, water supplies, utilities, hazardous waste sites, and land boundaries are currently inadequate.
- Students came to the workshop wanting more technical expertise and time to map items necessitated by their current jobs. Example, Bureau of Indian Affairs professional wanting to map land boundaries of allottees and leases. A project that requires a high level of technical expertise, equipment, software, and time. While the community did not map this; the workshop reinforced learning objectives previously taught to the student.
- Due to lack of attendance, attention, and or other distractions, students did not collect waypoints and track logs accurately. Additional expertise and instructors to accompany students on day 2 was warranted.
- Future training should include:
  - More time for ArcView GIS and field activities.
  - Additional instructors to accompany students during data collection in the field.
  - Greater involvement from tribal agencies that have mapping needs.
  - Development of mapping subjects prior to the workshop (based on query to tribal agencies).
  - Involvement from all tribal professionals working in GIS/GPS. This would allow relationships to be created and minimize the duplication of efforts associated with mapping tribal communities.

## Evaluation

Students were asked what they liked and disliked about the workshop, the following provides a qualitative assessment of the workshop and considerations for future community mapping workshops:

- Excellent opportunity for tribes to learn GPS/GIS.
- Thank you for providing resources, Garmins and the software for our community to learn how and what to map.
- The workshop is a way to bring people together from different departments and communicate

The following are areas that need improvement for future workshops:

- There was too much information in a 2-day period. Retention and student success was inhibited because of this.
- Less class time and more field time would be useful.
- ArcView GIS was too much to learn in a 2-day workshop.

### **Follow Up**

The MICCP and USGS EROS are continuing the community mapping efforts in Indian Country. Current projects include:

- Mapping homes with a known diagnosis of an environmentally induced disease.
- Mapping water sampling sites where increased levels of coli forms and metals have been documented.
- Mapping non-point sources for reservation communities.
- Mapping homes for emergency response situations, providing a numerical address and street name, along with a coordinate.

### **Conclusions**

Overall the workshop was a tremendous success on several fronts. The MICCP was able to share their message of toxic reduction initiatives and activities with additional tribal members, not already involved in CARE. Students learned the importance of mapping in relation to toxic reduction activities, health related problems, emergency response, and land boundaries. USGS / EROS were able to act as a resource to Indian Country by providing instruction and resources for the workshop. Students were and are able to utilize USGS / EROS more effectively because of the workshop.

What remains is a tremendous amount of mapping for tribal people in Montana. The lack of funding, infrastructure, technical expertise, and disparities among tribes in Montana became evident through the efforts of this workshop. Students left the workshop feeling empowered to map, and somewhat overwhelmed in knowing where to begin. MICCP and USGS/EROS remain committed to providing technical expertise, resources, and connections for tribes to begin mapping what needs to be mapped in Indian Country.



Name \_\_\_\_\_

Tribal College \_\_\_\_\_

Date \_\_\_\_\_

## Community Mapping Workshop

### Pre/Post Questionnaire

1. What is **Community Mapping**?

2. What does **GPS** stand for? What does it do?

3. What does **GIS** stand for? What does it do?

4. What is a map **legend**?

5. What is a map **scale**?

6. What is a map **projection**?



7. What does **1:24,000** mean on a map?

8. What two key pieces of information do you need to enter into your GPS unit to use it accurately with a hardcopy map?

9. What does **UTM** stand for?

10. What is a **topographic map**?

## Appendix C

### K-12 Chemical Clean-out Campaign

Dates: October 1, 2008- September 30, 2008

Grantee: Rocky Mountain College

Project Title: K-12 Chemical Clean-out Campaign (K-12 CCC)

Project Manager: Allyson Kelley Telephone: (406) 238-7278 E-mail: [hinkela@rocky.edu](mailto:hinkela@rocky.edu)

EPA Project Officer: Matt Langenfeld Telephone: (303) 312-6284 Email: [langenfeld.matt@epa.gov](mailto:langenfeld.matt@epa.gov)

#### Background

The K-12 CCC was created by Rocky Mountain College to assist K-12 schools with management and disposal of hazardous chemicals in Indian Country schools throughout Montana. By working with state, federal, tribal, and school officials, this project removed hazardous chemicals from schools while educating teachers about proper storage and disposal. The K-12 CCC was aligned with EPA's Office of Solid Waste by addressing waste reduction and chemical reduction in Indian Country. Chemical inventories were completed by CARE interns and included chemical name, weight or volume, container description, and condition of container. The K-12 CCC focused on removing chemicals of greatest concern to the environment and human health. Brad Firmite, a certified hazardous waste contractor of Mountain States Environmental was retained to package and remove chemicals from schools. The project served nine schools in Indian Country safeguarding the health of 1,606 students.

#### Corrective Action

The primary focus area of the K-12 CCC was Corrective Action and Waste Minimization.

- K-12 CCC completed inventories at participating reservation schools.
- Teachers, interns, and technical experts were consulted to ensure proper storage and safety measures have been followed.
- Disposal of chemicals and reporting of weight, manifests, and inventories were completed by Mountain States Environmental.

## **Waste Minimization**

- K-12 CCC distributed information to participating schools on indoor air quality and chemical storage.
- Green and micro scale chemistry implementation was encouraged at all participating K-12 CCC schools.

## **K-12 Chemical Clean Campaign Project Goals**

Goal 1: Corrective Action and Waste Minimization. To reduce exposure to toxic chemicals found in reservation schools, as identified through the MICCP.

Status: Complete

Goal 2: Corrective Action. Eliminate toxics by removing unused, unwanted, and improperly stored chemicals in K-12 schools.

Status: Complete

Goal 3: Waste Minimization. Minimize the amount of chemical waste produced in K-12 schools by providing and mentoring K-12 teachers with information about EPA programs that promote green chemistry.

Status: Complete

## **Performance Plan Objectives**

1. Assess K-12 Needs for Chemical Waste Disposal and P2 Measures.

Goals: Addresses Goals 1 & 2

Activities: Contact MICCP reservation schools to determine the need for chemical disposal and P2 measures. Develop chemical inventory for K-12 schools.

Outputs: Coordinators will meet with educators to develop chemical inventory. Project Director and EPA representatives will meet with schools to determine best practices for P2 measures. The Project Director along with EPA Region 8 officials will solicit cost estimates from waste disposal companies for identified chemical inventories.

- Outcomes:
- a. Identification of chemicals in need of disposal at reservation schools;
  - b. Cost estimate from waste disposal companies;

- c. Strategize P2 campaign at participating schools, focusing on green chemistry and healthy school initiatives.

Environmental Results:

- a. Decreased exposure to potentially hazardous and toxic chemicals for American Indian students.
- b. Reduction of chemicals used in schools based on P2 campaign efforts.

**Status:**

The K-12 CCC contacted K-12 schools at Fort Peck, Northern Cheyenne and Crow. Project staff met with principals, teachers, janitorial staff, and maintenance workers to determine the need for chemical removal and to act as a resource for chemical storage and procurement procedures. Mountain States Environmental provided estimates and disposal for participating schools. The P2 campaign (Outcome 2-C) was not feasible because of the lack of teacher involvement and program funds to purchase supplies and lesson plans associated with implementation of healthy school initiatives. Overall, the project decreased exposure to 6, 657 pounds of toxic chemicals in Indian Country schools.

2. Hire EPA Certified Waste Disposal Contractor to Remove Unwanted School Chemicals.

Goals: Addresses Goal 2

Activities: Hire Company to package, transport, and dispose of unwanted chemicals.

Outputs: Chemicals will be removed from K-12 schools by retained contractor.

- Outcomes:
- a. Healthier school environments for American Indian children;
  - b. Unwanted chemicals will be disposed of properly according to RCRA guidelines;
  - d. Indian Country will learn proper disposal options and procedures for unwanted chemicals. Such lessons may be applied by K-12 students, teachers, and community members at home and throughout the community.
  - e. SC3 pollution prevention/reduction.

Environmental Results:

- a. Removal of toxic chemicals, thereby promoting healthier learning and ecologic environments.
- b. Quantitative report to the EPA documenting the actual poundage of chemicals disposed of through the K-12 CCC. A quantitative report will be provided by the retained contractor.

**Status:**

Mountain States Environmental was retained to package and dispose of unwanted chemicals. The table below outlines the number of schools, name of schools, and total pounds removed.

Location	Number of Students Reached	Tonnage of Chemicals Removed	Cost

Chief Dull Knife College *paid for out of CARE grant	300 Students 97% Indian	633 Lbs.	\$5,548.40
Lame Deer Boys & Girls Club *paid for out of CARE grant	449 Students 98% Indian	837 Lbs.	\$10,073.40
Plenty Coups High School	79 Students 100% Indian	158 Lbs.	\$5,915.00
Busby Tribal Schools	132 Students 100% Indian	4,038 Lbs.	\$7,805.00
Brockton School	59 Students 97% Indian	311 Lbs.	\$7,850.00
Wolf Point School	277 Students 59% Indian	366 Lbs.	\$9,910.00
Frazer Schools	53 Students 100% Indian	193 Lbs.	\$4,750.00
Lustre Grade School	30 Students 10% Indian	32 lbs.	\$3,405.00
Lodge Grass High School	227 students 100% Indian	89 Lbs.	\$5,605.00
Total Schools	9		
Total Students	6, 657		

### 3. Implementation of P2 Campaign at Participating Reservation Schools.

Goals: Addresses Goals 1, 2 &3

Activities: Work with K-12 teachers to create and implement P2 campaign, focusing on green chemistry, tool kits, microscale chemistry, Roche chemical checklist and the development of practices that promote P2 measures.

Outputs: Technical assistance provided by the EPA Region 8 office, State of Montana DEQ Bonnie Rouse, SC3 program, Rouche Chemical, and teachers sharing lessons learned with fellow school districts.

- Outcomes:
- a. The amount of chemicals ordered and utilized in schools will decrease based on the utilization of green chemicals and SC3 best practices;
  - b. Reduced amount of chemicals found in waste streams throughout Indian Country schools in Montana;
  - c. Indian Country schools will learn proper disposal options and procedures for the disposal of chemicals using the Roche Chemical Check List (currently in use at Colorado schools).

Environmental Results:

- a. Creation of a P2 campaign that promotes environmental sustainability in K-12 schools resulting in less pollution and improved practices for chemical waste.

**Status:**

The implementation of a P2 campaign was not achieved during the K-12 CCC. While teachers and students were interested in chemical removal and storage, there was not support for a P2 campaign from school administration officials or teachers. Additionally, almost all K-12 project funds were used to remove chemicals from schools leaving no money for P2 initiatives.

The following table illustrates two tools used by K-12 CCC staff to assist teachers with chemical issues in schools.

Your purpose/intended impact	The tool/program you used	Who provided the tool? EPA, a partner, other?	Of the following, please mark the category that best characterizes your purpose for using the tool.			
			For assessing risk	For raising awareness/understanding	For changing behavior/reducing toxics	Other
Educate teachers about IAQ.	IAQ Tools for Schools	R8/EPA	x	x	x	
Prioritize chemicals	EPA's 31 chemical priority list	EPA	x	x	x	

**Budget**

A total of 49,999.00 was awarded to Rocky Mountain College to carry out the K-12 CCC.

- Compensation- \$0
- Employee benefits- \$0
- Travel- \$824.90
- Supplies- \$53.24
- Services-\$47,280.00
- Indirect- \$1,840.86
- Total- \$49,999.00

Itemized expenses are listed below. Note RMC's indirect rate is separate and not listed in the table below.

LAST UPDATED: 05/30/08 SLS				(\$49,999 total)			
Date	Vendor	Where	What & Why	Price	EXP ENS E REP OR	GL Object Code Number	Running Total
9/5/2007	Grainger	Billings, MT	Coveralls	\$28.76	P	59312	\$28.76
9/5/2007	Grainger	Billings, MT	Gloves & Safet	\$5.14	P	59312	\$33.90
10/10/2007	Grainger	Billings, MT	More safety su	\$19.34	E	59312	\$53.24
10/16/2007	Mileage (To	Busby, MT	Mileage to Sch	\$12.95	E	59410	\$66.19
10/18/2007	Mileage (To	Busby, MT	Mileage to Sch	\$12.95	E	59410	\$79.14
10/19/2007	Mileage (To	Lame Deer, MT	Mileage to Sch	\$5.60	E	59410	\$84.74
10/23/2007	Mileage (To	Busby, MT	Mileage to Sch	\$12.95	E	59410	\$97.69
10/23/2007	Mileage (To	Busby, MT	Mileage to Sch	\$12.95	E	59410	\$110.64
12/12/2007	Mountain S	Billings, MT	Plenty Coups H	\$5,915.00	P	59679	\$6,025.64
1/25/2008	Mountain S	Billings, MT	Chemical Inver	\$2,040.00	P	59679	\$8,065.64
1/30/2008	Mountain S	Billings, MT	Busby N.C. Tri	\$7,805.00	P	59679	\$15,870.64
4/1/2008	Homestead	Wolf Point, MT	Hotel for AK (2	\$147.66	E	59410	\$16,018.30
4/1/2008	Espresso M	Wolf Point, MT	AK Snack, Hea	\$4.75	E	59420	\$16,023.05
4/1/2008	Sherman M	Wolf Point, MT	Healthy Homes	\$102.25	E	59420	\$16,125.30
4/2/2008	Mountain S	Billings, MT	Brockton Scho	\$7,850.00	P	59679	\$23,975.30
4/2/2008	Mountain S	Billings, MT	Wolf Point Sch	\$9,910.00	P	59679	\$33,885.30
4/2/2008	Mountain S	Billings, MT	Frazer Schools	\$4,750.00	P	59679	\$38,635.30
4/2/2008	Mountain S	Billings, MT	Lustre Grade S	\$3,405.00	P	59679	\$42,040.30
4/2/2008	Wolf Point	Wolf Point, MT	Healthy Homes	\$15.00	E	59420	\$42,055.30
4/2/2008	Frostees	Poplar, MT	Healthy Homes	\$68.00	E	59420	\$42,123.30
4/3/2008	Mileage (Ak	Poplar, MT	Mileage Round	\$261.80	E	59410	\$42,385.10
4/3/2008	Buckhorn C	Poplar, MT	Lunch: AK and	\$11.25	E	59420	\$42,396.35
4/3/2008	Town Pump	Wolf Point, MT	AK Snack	\$5.37	E	59420	\$42,401.72
4/3/2008	Town Pump	Miles City, MT	AK Snack trav	\$1.98	E	59420	\$42,403.70
4/22/2008	Thrifty Rent	Billings, MT	Car Rental: Ch	\$68.05	E	59410	\$42,471.75
4/22/2008	Holiday Sta	Billings, MT	Gas: Chem Gr	\$24.69	E	59410	\$42,496.44
5/28/2008	Mountain S	Billings, MT	Lodge Grass H	\$5,605.00	P	59679	\$48,101.44

The above reflects the amount spent during the project period on K-12 CCC related activities. Travel costs associated with the K-12 CCC includes travel to and from reservation schools and are reflected in the amount above. The services portion of this budget accounted for the largest expenditures, directly relating to the removal of chemicals from schools.

### Conclusion:

The K-12 CCC was a success on several fronts. A number of school staff and students recognized EPA's efforts to make schools healthier places for learning and growing. The project focused heavily on the actual removal of chemicals from schools rather than the systemic problems at



schools associated with excess chemical ordering and improper use and storage of hazardous chemicals. It would be helpful in the future to help schools identify ways to implement P2 campaigns and green and microscale chemistry activities. The nine schools referenced in this document represent the schools targeted for clean-out in Indian Country. There continues to be a high level of need for EPA and its partners to reach out to schools and provide technical assistance and disposal options for schools in need.

**Attachment A of K-12 CCC Report:**

Chief Dull Knife College MSES - Invoice #1575, Work Order #1342	633 Lbs.	\$5,542.00
Lame Deer Boys & Girls Club MSES - Invoice #1574, Work Order #1343	837 Lbs.	\$10,073.40
Plenty Coups High School MSES – Invoice #1649, Work Order #1398	158 Lbs.	\$5,915.00
Northern Cheyenne Busby Tribal Schools MSES - Invoice #1689, Work Order #1444	4,038 Lbs.	\$7,805.00
Brockton School MSES – Invoice #1730, Work Order #1480	311 Lbs.	\$7,850.00
Wolf Point School MSES – Invoice #1729, Work Order #1483	366 Lbs.	\$9,910.00
Frazer Schools MSES – Invoice #1727, Work Order #1482	193 Lbs.	\$4,750.00
Lustre Grade School MSES – Invoice #1728, Work Order #1481	32 lbs.	\$3,405.00

Lodge Grass High School MSES – Invoice #1772, Work Order #1526	89 Lbs.	\$5,605.00
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