



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

JUL 20 2006

MEMORANDUM

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

SUBJECT: Transmittal of Updated List of "Project Ideas for Potential Supplemental Environmental Projects"

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TO: Assistant Administrators
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Through enforcement settlements containing Supplemental Environmental Projects (SEPs), EPA and the Department of Justice (DOJ) have secured public health and environmental benefits going beyond compliance that positively impact communities affected by the violations. In FY05, EPA concluded 207 settlements with SEPs totaling \$57 million. I am pleased to support these efforts by transmitting an update of "Project Ideas for Potential Supplemental Environmental Projects." This list, which is attached, is an extensive summary of innovative and beneficial potential SEPs, and provides an excellent resource to those interested in performing a SEP.

Based on ideas gathered from the public and several EPA program offices, the Office of Enforcement and Compliance Assurance (OECA) has updated the list of "Project Ideas for Potential Supplemental Environmental Projects," to include several new project ideas. Among the most noteworthy are the following:

- Sustainable infrastructure projects, such as water efficiency projects designed to encourage reduction of household water use, buy-back programs to replace older plumbing fixtures, and lead detection surveys and repair of water distribution system leaks;
- Rain garden incentive programs and stormwater control projects, including biological sinks, vegetative buffers and the use of porous pavement;

- Lead-based paint abatement projects, where violators conduct abatement in target housing or child-occupied facilities, particularly where the housing is located in an environmental justice community;
- Residential wood burning stove projects, where violators provide individual homeowners with EPA-certified woodstoves, in exchange for trading in old, uncertified, inefficient woodstoves; and
- Projects designed to collect and recycle mercury switches from the hoods and trunks of end of life vehicles to prevent mercury from entering the environment from crushing and shredding operations at scrap and salvage yards.

These project ideas provide opportunities to garner significant public health and environmental benefits. In addition, several of these project ideas support broader Agency priorities, including the Agency's environmental justice mission. In particular, sustainable infrastructure projects can help to enhance the nation's water quality by ensuring efficient use and management of water resources; lead-based paint abatement projects remove lead hazards that affect children's health; and the replacement of inefficient wood burning stoves can reduce the amount of pollutants that can contribute to respiratory illnesses.

We encourage enforcement staff to review the project ideas list and to share it with defendants and respondents engaged in enforcement settlement negotiations. The project ideas list can be also found on the SEP web page at:

www.epa.gov/compliance/civil/seps/

Please note that EPA cannot direct a violator to a particular project, and that any project that is ultimately included in a settlement as a SEP must comport with the 1998 SEP Policy.

We sincerely appreciate the time that Headquarters and Regional staff and DOJ devote to the development of project ideas, and the negotiation and oversight of SEPs in enforcement settlements. Your efforts show a clear commitment to improving the environmental health of the communities and ecological systems affected by violations. Should you have any questions on the updated projects list, please contact Robert Kaplan, Director of the Office of Civil Enforcement's Special Litigation and Projects Division (SLPD), or have your staff contact Melissa Raack at (202) 564-7039 or Beth Cavalier at (202) 564-3271 in SLPD.

Attachment

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PROJECT IDEAS for POTENTIAL SUPPLEMENTAL ENVIRONMENTAL PROJECTS
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DISCLAIMER

The following list is a compilation of ideas for Supplemental Environmental Projects (SEPs) submitted by private individuals and entities, as well as federal, state and local governmental agencies. Inclusion of a project herein does not constitute or imply its endorsement, recommendation or pre-approval by the United States Government. In addition, inclusion of any project in a settlement with the United States for violations of environmental law must comport with the terms of the May 1998 SEP Policy, including the requirement that the project have a nexus to the violation, and that the project is not one that the violator is required to perform, or which the court would likely order as injunctive relief in that case or in another case the Agency could bring. States and other entities may also be interested in including these project ideas in their own settlements, in accordance with their own state laws and state policies.

Public Health Type Projects

Public Health Clinics - Operate and maintain health clinics serving low income and minority communities and sensitive populations. Such projects could include the purchase and operation of a mobile health clinic, including outfitting the mobile unit with the necessary medical equipment and staff, or supporting the operations of a stationary health clinic for a specified period of time, or providing for medical diagnostic visits for low income children and young adults at a not-for-profit clinic. For example, a mobile health unit could provide assistance such as asthma screening and treatment; blood lead level testing and treatment for children in public housing; or testing for baseline medical markers in migrant workers.

Rail Car Replacement – Reduce Risk of Exposure to Toxic Chemicals During Transit - Where replacement or retrofitting of railcars is not already required (see DOT regulations), projects that involve the replacement of rail cars manufactured prior to 1989 could be acceptable as pollution reduction or public health SEPs. Rail tank cars are used to transport a variety of hazardous chemicals and substances such as anhydrous ammonia and vinyl chloride monomer (VCM). Rail tank cars manufactured after 1989 utilize steel treated to prevent fracturing. Pre-1989 rail tank cars did not. It is estimated that 50% of the current fleet of rail tank cars used today to transport hazardous chemicals were manufactured prior to 1989.

o Reduce Lead Hazards:

Lead-based Paint Abatement - Conduct abatement in target housing or child-occupied facilities, particularly where the housing is located in an environmental justice community.

Health Screening Equipment - Purchase and donation of lead health screening equipment to schools, public health departments, clinics, etc.

Provide Lead Inspections and Risk Assessments - Free or low cost for low-income homeowners or small rental property owners in affected communities.

Provide Support for Activities Conducted by Community-Based Organizations - Particularly those working on lead poisoning prevention for critical activities including training in Lead Safe Work Practices and dust testing, screening high-risk housing for hazards, laboratory costs, lead-safety supplies, and outreach to families at highest risk.

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Support Neighborhood Lead Centers - To pay for staffing and equipment (e.g., HEPA vacs, X-Ray Fluorescence Machines, portable screening devices, computers, and software).

Perform Lead Hazard Control in Daycare Centers and Schools - Focusing on those located in high-risk communities.

Create Lead-Safe Housing Registries - To help families locate lead-safe housing for their families.

Provide Free Lab Tests for Lead - For dust, soil, and paint chip samples; make available to low-income homeowners, small rental property owners, agency staff, and community-based organizations.

Provide Safe Housing - Either by supporting safe houses or setting aside one or more units to be used as community safe houses to accommodate families' short-term relocation needs.

Support Community Lead Clinics - To facilitate screening, treatment, and case management for lead-poisoned children, including environmental investigations in their homes.

o Reduce Air Pollutants that Contribute to Respiratory Illness:

Purchase of Emissions Credits for Retirement - Purchase and retirement of PM, SO₂ and NO_x emission credits.

Purchase/Installation of Fuel Cells - To reduce/eliminate air emissions from traditional power sources.

Residential Wood Burning Projects - Residential Wood Burning projects include changing the way people operate their stoves or fireplaces, encouraging people to heat more efficiently by replacing old woodstoves or fireplaces with USEPA-certified woodstoves, or installing catalytic combustor devices. Projects include providing individual homeowners with USEPA certified woodstoves in exchange for trading in old, uncertified, inefficient woodstoves. Residential wood burning emits numerous toxic compounds, including polycyclic organic matter (POM), dioxin, and toxic vapors including benzene and formaldehyde.

Road Paving - Reducing dust and particulate matter from unpaved, dirt or gravel surfaces. The American Heart Association has linked particulate matter to cardiovascular disease.

In light of the Diesel Emission Reduction Act of 2005, USEPA and USDOJ enforcement staff are advised to discuss the diesel emission reduction projects identified below with USEPA Headquarters enforcement staff prior to their inclusion as SEPs in a federal enforcement settlement.

o Reduction of Diesel Emissions:

Diesel retrofits - Diesel retrofits and/or replacements of buses, trucks, locomotives, and other vehicles powered by diesel engines to reduce emissions of particulate matter and other pollutants that contribute to childhood asthma, where retrofits, replacements and/or upgrades are not already required by law. (Note that projects involving the retrofit/replacement of school buses are no longer acceptable as SEPs) The primary toxic emissions reduced are particulates released by the diesel engines powering diesel vehicles, especially city buses and other large fleets of diesel vehicles. Anti-idling projects are intended to reduce

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diesel exhaust emissions by reducing the amount of time that buses idle. Replacement projects aim to remove older buses from fleets and replace them with new, less polluting buses. Retrofit projects promote upgrading buses that will remain in the fleet with better emission control technologies and/or fueling them with cleaner fuels.

Retrofit Special Use Vehicles - Such as handicapped vans and transport for the elderly (the American Heart Association has linked cardiovascular disease to particulate matter).

Retrofit Municipal Vehicles - Such as garbage trucks, ambulances, police vans.

Convert Diesel Powered Switching Locomotives to Hybrid Power - Convert existing diesel powered switching locomotives to hybrid switcher, which uses a large bank of lead acid batteries to power the electric traction motors on the axles. The batteries in a hybrid switching locomotive are kept charged by a small diesel powered generator, which runs only as required to keep batteries charged. Hybrid switching locomotives run more efficiently and quietly than conventional diesel switchers, and produce much less pollution from diesel emissions.

Truck Stop Electrification - Technology installed at locations where extended truck idling occurs. Truck stop electrification projects provide heating, air conditioning, and electricity to the driver's compartment and thereby allow a driver to shut down the main propulsion engine of the diesel truck, eliminating almost all of the air pollution produced during layovers. Truck stop electrification utilizes power from the electric grid, which is a much cleaner, more efficient energy source than the vehicle engine. Installation and startup can typically be accomplished in just a few months. The primary toxic emissions reduced are particulates released by the diesel engines powering the trucks.

Control of Port Equipment - Port operations often have numerous diesel powered nonroad equipment operating at the site. Such equipment may include yard hostellers, fork lifts, sweepers, scrubbers, diesel powered cranes, etc. Emissions from this type of equipment can be controlled with a diesel particulate filter or other controls including diesel oxidation catalysts and selective catalytic reduction. Use of a diesel particulate filter in conjunction with ultra low sulfur diesel fuel may produce even greater emissions reductions.

Control of Locomotive Auxiliary Power Unit ("APU") - The APU on a locomotive runs the air conditioning and heating units for the passenger train and is a significant source of diesel particulate as trains travel through residential areas. Unlike the prime mover of a locomotive that emits most of the diesel particulate during engine acceleration, the APU runs constantly during the trip. Control of the APU appears to provide a relatively inexpensive approach to reduce human health risk from diesel particulate. Application of a diesel particulate filter should provide significant environmental benefit because retrofitting of the APU would establish at least 90% reduction of diesel particulate and the application of controls could be applied to many commuter trains.

Control of Repowered Tug - Certain tugs have repowered (upgraded) engines that make installation of controls to further reduce diesel particulate possible.

o Reduction of Gasoline Emissions

Commute Solutions Projects - Such projects are designed to encourage and provide tools to implement commute vehicle miles traveled (VMT) reduction programs (e.g., teleworking, carpooling/vanpooling, subsidized transit pass, flextime, carpool or alternative transportation incentives). The toxic emissions

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reduced are primarily those associated with vehicular exhaust and fueling.

Projects could include:

- Provide space and equipment for telecommuting center to reduce employee VMT
- Provide employee subsidies for van/carpools
- Provide vans for vanpools
- Mass transit options – provide employees with subsidies for mass transit options – bus passes, subway passes, commuter train tickets
- Lunch shuttles - provide transportation during lunch hours for employees to run errands to reduce midday driving
- Shuttles - provide shuttles between commuter nodes to improve choices for commuters
- Purchase/donate land for commuter park-n-ride lots
- Build bicycle parking and changing/showering facilities
- Purchase and/or operate commuter buses for a specified period of time

Alternative Fuel/Hybrid Vehicles - Entities with vehicle fleets (municipalities, “company car” fleets, taxi services, limo services) could replace gasoline-powered vehicles with alternative fuel or hybrid vehicles.

Gas Can Replacement - Portable gas cans, like those used to fuel lawnmowers, account for a significant amount of smog-forming emissions every day. By using newer gas cans with features such as shut off valves, harmful gasoline fumes can be reduced by 75%. These fumes contain several HAPs, including benzene. Projects can be designed to address this issue by conducting programs that allow citizens to trade in old gas cans and, in return, receive a rebate, discount or even free environmentally-friendly cans.

o Improve Drinking Water or Groundwater Quality:

Assessment of Drinking Water Quality for Migrant Farm Worker Facilities - Assess drinking water quality and provide safe drinking water supply where necessary.

Install Water Lines for Private Homeowners - Where no other party has responsibility for connecting homes, this type of project can provide significant public health benefits to communities lacking a public water supply.

Install Sewer Lateral Lines for Private Homeowners - Where no other party has responsibility for connecting homeowners to a public sewer system, this type of project can provide significant benefits by removing homeowners from septic systems which may be failing and causing groundwater pollution.

Install Alternative Individual or Community Onsite Wastewater Treatment Systems – In areas where conventional septic systems (septic tank and drainfield systems or cesspools) fail to protect groundwater or hydrologically connected surface waters used as drinking water sources, install alternative systems that provide significantly higher pollutant removal reductions of nutrients and pathogens.

o Support Sustainable Water Infrastructure /Sustainable Utility Management

Environmental Management Systems - In order to help ensure long-term sustainability and where not already required, utilities could develop environmental management systems that, in addition to other

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environmental goals, include measurable goals for greater water efficiency.

Water Efficiency - Encourage reduction of household water use and future treatment costs through water efficiency demonstration projects such as buy-back programs to replace older plumbing fixtures in houses or public buildings, leak detection surveys, and subsequent repair of water distribution system leaks, where such repair is not already required.

Rain Garden Incentive Programs - Utilities or companies could develop incentive programs to encourage homeowners and businesses to engage in practices such as installation and maintenance of rain gardens. Rain gardens are vegetated depressions which have the potential to decrease stormwater runoff and peak stream flows, and combined sewer overflows. Build rain garden demonstration projects in public spaces, e.g., schools, libraries, public meeting facilities, transportation rights of way, etc.

Watershed Monitoring - In order to facilitate more informed watershed-based infrastructure decisions and possibly reduce future infrastructure costs, utilities could share ambient monitoring data with other stakeholders in a watershed, develop a watershed monitoring plan and monitoring program or establish a volunteer monitoring program in cases where the development of a monitoring plan or monitoring efforts are not already required.

Stormwater and Combined Sewer Overflow (CSO) Control - In order to reduce stormwater and CSO treatment needs and costs, utilities and companies could use low impact development practices or conservation designs to reduce the impacts of stormwater and CSOs on receiving waters. Practices could include the purchase of conservation easements, riparian buffers, floodplain and wetland restoration, tree plantings, forest conservation and reforestation, installation of raingardens, cisterns, rainbarrels, green roofs, porous concrete and pavement, where such activities are not already required.

Innovative Technology - Utilities could agree to employ and demonstrate innovative technologies that prolong the life of existing infrastructure and/or increase efficiency through lower energy use, or undertake other innovative approaches, such as offering pollutant reduction credits through technology and/or watershed trading.

Environmental Restoration Type Projects

o Wildlife Habitat Restoration:

Restore Migratory Bird/Endangered Species Habitat - Such projects could include the purchase and/or preservation of land used as nesting sites; development of habitat/creation of wildlife sanctuaries to encourage return of endangered or threatened species; reforestation; wetlands remediation.

Conservation of Endangered Species - Projects relating to the restoration and/or conservation of habitat for endangered species. Projects could include the establishment of bird or waterfowl sanctuaries; butterfly sanctuaries.

Preservation/Restoration of Aquatic Resources - Implement projects that create, restore and/or preserve threatened aquatic resources, including wetlands. Mechanisms to accomplish this goal can include:

- Implementing proposed aquatic resource restoration projects.
- Supporting land trust projects to preserve aquatic resources threatened with degradation or destruction by unregulated activities.
- Purchasing and retiring credits from mitigation banks approved by EPA and the Corps

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pursuant to the 1995 *Federal Guidance for the Establishment, Use and Operation of Mitigation Banks* (<http://www.epa.gov/owow/wetlands/mitbankn.html>).
- Construction or restoration of wetlands.

Impacts associated with the enforcement action should fall within the service area of the bank and credits should be available (i.e., not potential credits but rather credits that have already been released pursuant to the bank's credit release schedule).

Stream and Floodplain Restoration - Potential projects include removal of solid waste/sediments from stream/river-beds; stabilization and revegetation of stream banks; removal of invasive species and replacement with native species.

Restoration/Creation of Fish or Other Aquatic Habitat – Examples: re-establish oyster beds, remove artificial barriers to fish spawning grounds, removal of invasive plant species, creation of artificial reefs; re-establishment of native species, design/construction of a fish/aquatic species passageways to restore fish/aquatic species migration routes. Provide labor, plants, animals, supplies or other materials to reintroduce native species into aquatic and riparian habitat.

o Protection/Restoration of Damaged Environment:

Deep Row Incorporation of Biosolids on Reclamation Sites - An alternative land application method that solves many of the problems associated with surface application techniques. It involves the placement of biosolids (approximately 171 to 294 dry tons per acre) into shallow trenches that are then covered with overburden, eliminating odor problems and maintaining biosolids in a fairly stable anaerobic environment. The site is then planted with nitrogen-demanding hybrid poplar trees, the roots of which provide a natural recycling system that utilizes nutrients on-site over a six-year rotation. The site produces forest products, wildlife habitat, and reduces erosion while reclaiming abandoned, biologically-dead soils left after sand and gravel mining. After the six-year rotation utilizes most of the available nutrients, trees are harvested and biosolids re-applied in deep rows perpendicular to the original trenches.

Green Buffers and/or Conservation Easements - Purchase/donation of land that is maintained in its current state, e.g., farmland, open space, forest, prairie, etc. This land would then continue to serve as a natural treatment system that would buffer the effects of development on riparian and aquatic ecosystems. These buffers and conservation areas would help to attenuate stormwater, reduce flow volumes and velocities and pollutant loadings including temperature increases. Land could be purchased and maintained under a conservation easement by an individual or company, or an individual or company could work through a third party land trust and purchase land which would be donated to, and then managed by, the land trust.

Site Revegetation - Projects involving construction sites where the percent of site revegetation is increased to 100%, going beyond what is required by law.

Cleaning Up an Abandoned Mine Site or Plugging Leaks in an Abandoned Injection Well - Projects could include the clean-up of abandoned mine sites or the plugging of leaks in abandoned injection wells, assuming the entity performing the clean up has no liability for such activities.

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Pollution Prevention/Pollution Reduction Type Projects

o Reduction of PCB Hazards:

PCB Clean-up of PCB Fluid Contained in Old (pre-1976) Light Ballasts - When a ballast expires, it can result in the highly concentrated PCB fluid leaking as a solid which can be absorbed or ingested. The other pathway is inhalation by breathing the gas that is sometimes released when the ballasts burn out. Projects could address this situation by changing out old ballasts, collecting ballasts, or cleaning up spilled PCBs from leaking ballasts.

Voluntary Phase Out of PCBs - Voluntarily replace PCB-containing equipment.

o Facility/Process Changes to Reduce Pollutants:

Green Engineering - Implementation of green engineering methods and models at facilities, with specific measurable pollution prevention results as the goal.

Installation of Anaerobic Digesters - Digesters greatly decrease odor, kill coliform bacteria, put the nutrients into more manageable form and generate methane that can be used to heat a facility or to generate electricity that can be sold back to the grid.

Auto Body Refinishing/Coatings Controls/Pollution Prevention - [Stationary Sources] Automobile refinishing includes surface preparation, painting and equipment cleaning. Emissions are controlled through the use of products with low Volatile Organic Compounds (VOCs), improvements in application technique so less coating is used, and controls on the use of clean-up solvents. Toxic emissions reduced are primarily VOCs from the solvents used in paints.

Installation of a Coolant Recycling System to Recycle Spent Coolant - Recycling spent coolant from machining processes can reduce loadings of biological oxygen demand to the municipal sewer.

Install and Operate a Closed Loop Wastewater Treatment - Install and operate a closed loop wastewater treatment system so that facility's industrial waste streams can be treated and reused and therefore eliminate the facility's processed wastewater discharges to local publicly owned treatment works (POTW).

Electroplating Toxics Reduction - Toxic emissions from electroplating are primarily of metallic Hazardous Air Pollutants (HAP), including chromium and VOC from cleaning solvents. Projects are designed to reduce emissions resulting from evaporation, promote switching to cleaning solvents that evaporate more slowly than toxic solvents, and promote installation of ventilation hoods over plating baths. Other projects implement the use of cleaning procedures that reduce the amount of air pollutants.

o Hazardous/Solid Waste Recycling:

Recycling Center - Project could involve supporting an existing recycling center; construction of a recycling center where none currently exists; sponsorship of a household hazardous waste recycling program in which such wastes are collected and recycled or disposed of properly.

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Household Hazardous Waste (HHW) Collection Project - Collect, process, and dispose of HHW in an environmentally conscious manner; provide a product exchange and drop-off program for usable or recyclable wastes; provide education to homeowners on HHW; reduce the HHW being discharged to municipal publicly owned treatment works (POTWS); and reduce HHW going to the municipal landfills. The primary toxic emissions reduced are HAPs found in gasoline, paints, paint thinners, pesticides, cleaners, and other household chemicals.

Air Conditioner Exchange Program - Implementation of programs that accept older, less efficient window air conditioners (or other inefficient appliances) and providing incentives to purchase energy efficient replacements. Program includes proper disposal of old units (including refrigerant and metals recovery). New replacement units lower energy costs for the user, reduce overall electricity demand, and displace associated air emissions during summertime conditions, which are conducive for the formation of ground level ozone.

o Reduction of CFC Hazards:

Refrigerator Bounty Program with CFC-Containing Foam Recovery - Cooperate/contract with a turn-key company that specializes in recycling to offer consumers a "bounty", or monetary award for turning in old refrigerators, A/Cs, or other appliances. Through use of their own facilities and subcontractors, the contracted company provides for all aspects of running the program, including advertising, haul-away, disposal, awarding bounties, and savings data collection for the financier. The programs end up removing a large number of units from the grid in a short period of time in a responsible manner. The environmental benefits are: 1) ozone protection because CFC-12 is recovered from the compressor and CFC-11 is recovered from or incinerated with the insulation foam; 2) if a unit contains mercury switches or PCB capacitors, they are removed and destroyed; 3) improved water quality through prevention of mercury and PCBs leaching from land fills and/or scrap yards.

Replacement of Ammonia Refrigerant Systems - Replace ammonia refrigerant system with non-polluting glycol refrigerant system

o Reduce Hazards from Mercury:

Addressing Methylmercury Hazards - Bioaccumulation of MeHg (Methylmercury) in fish tissue may exist on most Great Plains Reservations. Population at significant risk includes the elderly, pregnant women, and nursing mothers. Projects could include construction and maintenance of health clinics, health screening, fish testing, and education to address methylmercury hazards.

Mercury Thermometer Exchange Program - The goal of such projects is to reduce anthropogenic (human-derived) loadings of mercury to the environment. Such projects can provide digital thermometers in an effort to support mercury thermometer exchange events through the state. In these events, the public is encouraged to trade in their mercury fever thermometers and receive a free digital fever thermometer. Mercury thermometers typically contain 0.5 to 1 gram of mercury. Turning in liquid elemental mercury and other mercury-containing devices is also encouraged

Mercury Switch Recycling - Collect and recycle mercury switches from the hoods and trunks of End of Life Vehicles to prevent mercury from entering the environment from crushing and shredding

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operations at scrap and salvage yards. Most mercury is found in the hood and light switches, although mercury may also be found in anti-lock brake systems and navigational systems. For every automotive switch recycled, about one (1) gram of mercury is removed from the environment. One gram of mercury deposited by rain or snow can cause a fish consumption advisory on a 20-acre lake.

o Reduce Pollution from Construction/Building Activities

Low Impact Development Practices for Construction/Retrofits of Parking Lots and Rooftops -

The high levels of impervious cover associated with parking lots and rooftops (shopping malls, business parks, etc.) have made them significant sources of urban nonpoint source pollutants. Low Impact Development (LID) is an approach to site design and stormwater management that is intended to be used to reduce downstream impacts by using the landscape as a natural filter. These techniques can also be used to reduce runoff, streambank erosion and as a means of recharging groundwater. LID practices are intended to be used as an integrated system. Boretention cells or raingardens, porous pavements or pavers, green roofs, rainbarrels, cisterns, urban forestry and other practices can be used either to maintain or restore the predevelopment hydrology of the site or to mitigate the impacts of the development by helping to reduce stormwater runoff and pollutant loadings. These practices can be used in new developments and in areas where development has already occurred.

Post Construction Best Management Plans (BMPs) - Design, implement, maintain post-construction BMPs to reduce runoff and associated pollutants to include: maintenance of pre-development hydrology and predevelopment runoff rates, minimize discharge of pollutants, minimize thermal impacts to receiving water bodies, protect areas that provide important water quality benefits, limit increases of impervious areas, limit land disturbance activities, limit disturbance of natural drainage features, ensure fertilizer and pesticide runoff/spills are contained, and provide pervious surface paving wherever possible.

Roof Gardens/Green Roofs - Projects involve the development and maintenance of Green Roof projects. Create and maintain "roof gardens" which, depending on the nature and design of the garden, could be used as actual garden recreation areas or for stormwater mitigation purposes. Roof gardens would replace the more traditional roofing with natural vegetative and absorbent materials that would reduce run-off while maintaining the garden. Along with reducing annual run-off volume by up to 60%, green roofs provide additional environmental benefits: a green roof filters air moving across it and reduces particulate matter, which contribute to respiratory illness; green roofs provide energy savings by improving building insulation and decreasing surface temperature of roofs; green roofs can provide wildlife habitat; green roofs can contribute to reductions of the urban heat island effect in summer through evapotranspirative cooling and reduced heat emissions relative to a black roof surface.

Rain Harvesting - Install and maintain systems in which rain water is collected and then used for irrigation purposes. For example, large outdoor shopping centers could use water from rain water retention ponds to water the landscaping. Rain harvesting could potentially be included as part of a Green Roof project. Projects could employ rainbarrels, cisterns or other systems which would recycle runoff and pipe it to be used for irrigation purposes or nonpotable water uses.

Water Reuse Systems - Installation of water systems that reuse wastewater or greywater. These systems could significantly reduce the volume of potable water needed for nonpotable water uses.

Water Conservation Systems - Implement facility or campus designs that employ state of the art

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water conservation techniques and fixtures that significantly reduce potable water consumption and water withdrawals from ground water or surface waters.

Enhanced Erosion Control Practices - Such projects utilize natural woody vegetation from construction sites as mulch to provide a biodegradable barrier for erosion control at sites greater than five acres. Liquid anionic polymers (PAMs) are added to stabilize the mulch where appropriate. PAMs are used alone or in conjunction with reseeding at sites less than five acres, to increase the effectiveness of existing sediment control methods. Project could also include preparation of a worksite erosion control manual and training for those who will implement the project in site assessment, preparation, and maintenance.

Green Building/Rehabilitation of Contaminated Properties - Green Building Projects may address one or several sources of pollution generated by a building or construction project. A green building project may involve the use of green building technologies at the redevelopment of a nearby contaminated property and could include activities such as:

- Purchase energy efficient materials/systems or low VOC emitting materials for the redeveloper;
- Construction of a greywater recycling system;
- Provision of superior stormwater management for a redevelopment project;
- Purchase of recycled construction materials;
- Recycle construction or demolition waste at the site;
- Development and implementation of large-scale integrated green design and procurement for a nearby cleanup and redevelopment project.

o *Kindergarten Through High School Environmental Safety Projects*

- Provide assistance to school districts by developing (1) an inventory of chemicals within the school; (2) a chemical management system; and (3) computerized inventory system.
- Evaluate chemicals used in school science labs, art programs, metal and wood shops, maintenance and groundskeeping departments, and provide safer alternatives.
- Conduct audit of facilities in school district with school district officials to assist them in determining which State and federal regulatory requirements apply.
- Develop and conduct training seminars for school districts (target audience – school district superintendents and other management officials, teachers, maintenance workers, groundskeepers) concerning state and federal environmental regulations.

Renewable Energy/Energy Efficiency Type Projects

o *Wind Power*

Provide an Onsite Dedicated Wind Turbine - A school or community with a good wind resource can benefit from an onsite dedicated turbine to meet energy needs. An onsite wind turbine can reduce a school's energy bills. If the turbine provides more energy than the school requires, the excess can be sold back to the utility, further improving the economics of the project.

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Add a Turbine to a Wind Farm - Support the addition of a turbine to an existing wind farm leveraging existing infrastructure costs, including challenges such as siting, and operations and maintenance responsibilities. Additionally, the turbine (and its energy production) could be dedicated to a school. Net revenue generated from the sale of electricity could be used to reduce the costs of school programs.

Install a Turbine on State Lands - Many States have state lands that are suitable for wind turbines. A project could involve installing turbines on state lands, with the understanding that revenue from the power generated would be returned to public schools in offsets or in actual revenue for school programs.

Implement a District Project - A utility scale wind turbine can be a large project for an individual school, but it may be more manageable for a school district. A district also has more lands available, offering a greater number of siting opportunities. Projects could include any portion of such an effort: feasibility analysis, site selection, installation, or even training local students or staff to maintain the turbine. This community-based effort would benefit the school system in energy cost savings and, if power is sold to the grid, in revenue that could be used for school programs.

Blend Wind Energy with Energy Efficiency - Studies have shown that total energy and energy cost savings are maximized per unit investment when efficiency measures are combined with renewables installations. Projects could include producing an investment/sizing tool that optimizes the benefits of blending energy efficiency with wind energy for schools and to develop some demonstrations of those benefits.

Provide Wind Power for a Local School Application - Projects could address specific needs of a school by providing wind-generated electricity directly to the school for that purpose. The best applications would be highly visible, such as lighting for school activities, water heating for showers, and space heating for hallways. These direct applications are more accessible and understandable to the public and decision-makers involved and can provide higher benefit to the school by offsetting energy with a higher value than the utility may be willing to credit.

Purchase the Wind "Premium" for a Local School - A utility might charge more for wind energy than for energy from traditional sources. Purchase wind premium (cents/kWh) for a school for a certain time period. The premium is determined as the cost of wind energy less avoided cost.

Wind Power Purchasing - Purchase wind energy for a specified period of time, reducing the need to burn fossil fuels and thereby leading to improved air quality at a level equal to planting more than 1,000 acres of trees.

Purchase Green Tags - Purchase green tags for schools, thus increasing the amount of tags the school could purchase with its own funds.

o Solar Power

Secure Energy - During a disaster, solar power can be used to refrigerate vaccines and medical supplies and power communication equipment. Projects could include outfitting schools with solar power that will provide a learning opportunity for students and a secure, powered base of operations for a community during a natural disaster. Provide solar power to hospitals, nursing homes, etc.

PROJECT IDEAS for POTENTIAL SUPPLEMENTAL ENVIRONMENTAL PROJECTS

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Installation of Solar Hot Water and Photovoltaic (PV) Applications - Such systems eliminate the emissions associated with electricity generation or heat from the burning of fossil fuels. PV systems are scalable and can be used in smaller settlements. Potential applications: schools, adding solar panels to truck stop electrification projects.

Audit and Assessment Type Projects

Address Problems with Oil & Gas Development and Production in Indian Country - Perform a baseline assessment and monitoring of the oil and gas production site.

Environmental Management Systems - Develop and implement a facility-wide or corporate-wide system for a specified number of years.

Comprehensive Energy Audits can find energy savings opportunities that would otherwise go unrealized. Coupling energy improvement assessments with implementation of recommended improvements for the building envelop and building processes can realize energy cost savings as well as reduced emissions from lower energy demand

Energy Audits and Efficiency Retrofits for Water Treatment and Water Supply - Municipal water treatment and supply facilities use vast amounts of energy. Energy savings opportunities exist at many facilities, which are especially timely to consider and implement when other improvement projects are being considered.

Measure and Compare Actual Post-Construction, Stormwater Runoff Flows, with the pre-construction, "theoretical" design flows for construction sites. Project aims would be to provide data for better calibration of runoff models. Development of improved models to be used to predict runoff volumes and rates based on the use of low impact development techniques at the site level, e.g., modules to enhance TR-55, the most common model used on construction and development sites.

Measure Levels of Natural Organic Matter (NOM) - Measure levels at in-stream, static sampling locations of NOM pre- and post- construction. NOM is the material that makes streams brownish in color. Such data could be used to establish need for post-construction stormwater management as well as low impact development retrofits. There is data available that indicates the loss of NOM in a stream results in significant impairment of the stream.

Compliance Promotion Projects

Develop/Implement Model Enforcement Management System - This would include the following:

- Development of Model Stormwater Pollution Prevention Plan (SWPPP)
- Pre-Inspect Site Prior to Groundbreaking to Ensure BMPs Adequate
- Training Program
- Pre-Contract Checklist
- Pre-Construction Meetings
- Tailgate Meetings
- Daily/Weekly/Monthly Inspections

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Develop Training/Outreach Materials & Conduct Training for Agricultural Producers Relating to:

- EPA Worker Protection Standards
- Manure management or odor abatement technology
- Pesticide equipment calibration

Sponsor Free Lead Safe Work Practices (LSWP) Training – Particularly targeted to affected communities, such as community contractors, maintenance staff, and small landlords.

Sponsor Lead Sampling Technician Training - Particularly targeted to community members, housing code inspectors, and state and local agency staff to facilitate initial identification of lead hazards and clearance dust testing after work that disturbs painted surfaces.

Sponsor Lead Poisoning Prevention Training - For prenatal nurses, social workers, health clinic staff, and other agency staff serving affected communities; tenant organizations; and community-based organizations (particularly those serving non-English speaking community members) so they can inform their clients/constituents about the risks of childhood lead poisoning and steps they can take to protect themselves.

Sponsor and Participate in Trainings for Property Owners - Educate other property owners in the community about the importance of controlling lead hazards, lead safe work practices, and their obligations under the federal lead disclosure law.