

## ENERGY AND WATER REQUESTS

- *Arkansas River Corridor, OK*

- **Organization:** Indian Nations Council of Governments (INCOG) and Army Corps of Engineers
- **Amount Requested:** \$1,000,000
- **Purpose:** The Arkansas River below Keystone Dam is arguably one of the greatest, but most underutilized natural resources in Tulsa County. The need to improve the river's environment and provide for areas of quality urban development inspired the creation of the Arkansas River Corridor Master Plan by INCOG and the US Army Corps of Engineers. The projects from the Master Plan that are proposed include two additional low water dams, pedestrian bridges, habitat improvement, bank stabilization and major safety and environmental improvements to the existing Zink Low Water Dam. The funds requested for appropriation under this section will be used by the US Army Corps of Engineers, Tulsa District, to perform the following studies in support of the design and implementation of the proposed projects: NEPA Environmental studies; alternatives formulation and screening; a sediment transport study; geotechnical studies; and developing local cost share agreements and scopes of work.
- **Justification:** The Arkansas River project has been developed through an inclusive community based planning process involving key stakeholders including business and industry, state and federal resource agencies, affected governments and residents. Significant local development along the river corridor has already been inspired by the proposed low water dam construction, and more new proposals have been announced that are dependent on the completion of these infrastructure projects. Better river flow management, environmental habitat improvements, sediment management, public safety, recreational opportunities and private development opportunities will result from the implementation of the proposed projects. The implementation of the proposed projects, as recommended in the Arkansas River Corridor Master Plan prepared by the Corps of Engineers and local partners, will significantly improve the environmental conditions of the river, improving habitat and stabilizing river banks and the river's normal flow regime, and providing opportunities for private development on the shores at appropriate locations. This project has been acknowledged and proposed by the Corps of Engineers to be effective in mitigating negative impacts of Keystone Dam and providing significant environmental benefits.
- **Authorization:** Sec. 3132, P.L. 110-114 (WRDA 2007)

- *Carbon Nanotube Technology Center (CANTEC)*

- **Organization:** University of Oklahoma
- **Amount Requested:** \$1,000,000
- **Purpose:** OU's Center for Applications of Single-Walled Carbon Nanotubes (CANTEC) investigates various applications in several important areas: biomedical applications (biosensors, cancer cell targets, and cancer therapeutics), polymer composites of unique electrical and mechanical properties, metal-nanotube composites, thermally conducting composites, transparent electrodes, solar cells, field emission devices, and thin film transistors. This project enhances the efforts of NanoNet, a State wide initiative including OU, OSU, and TU. This project also enhances the nanotube research program funded by the Department of Energy in Chemical Engineering and other research programs in several departments involved in nanomaterials research. The nanotube synthesis group at OU is internationally recognized as leaders in the field. This project will allow other researchers in the OU College of Engineering to expand this leadership to the much broader field of nanotube applications. The College has world-class expertise in catalysis, reaction engineering, polymer and composite technology, biomedical devices, protein synthesis and separation, and computer modeling that can be put together in a multi-disciplinary effort.

- **Justification:** Single walled carbon nanotubes have extraordinary properties (electronic, optical, mechanical) that can have a tremendous impact in technology. The United States has a large number of companies engaged in research in carbon nanotubes, in parallel to Japan and the European Union, where major programs in carbon nanotubes have been launched. However, until recently, the lack of reliable methods for manufacturing carbon nanotubes of the same structure and chirality at reasonable cost for high volume applications has been a serious limiting factor. The commercial process developed at OU has been internationally recognized as one of the most reliable and reproducible. The efforts of CANTEC researchers to incorporate these materials in technological applications will facilitate the transition from research to commercialization. Through this project jobs may be created and kept in Oklahoma in the nanotechnology and engineering sectors. The economic benefit will come not only by preserving the jobs connected to the manufacture of carbon nanotubes but also by creating new jobs if new companies are created around the various resulting technological opportunities.
  - **Authorization:** DOE/Science – Activities authorized under Department of Energy Organization Act (42 U.S.C. 7101 et seq.)
- ***Consolidated Alternative Fuels Research Center/ Transit Operations and Maintenance Training Facility***
    - **Organization:** Oklahoma State University
    - **Amount Requested:** \$800,000
    - **Purpose:** The funding would support a feasibility study of a proposed project on the Oklahoma State University – Stillwater campus to create a unique facility that provides both a regional/national research and testing center for alternative fuels and a training facility for transit and local government transportation.
    - **Justification:** With the major transition of university vehicles to CNG (compressed natural gas), maintenance facilities need to be updated to support this initiative, as well as providing training space for new maintenance personnel from campus and surrounding areas. It would improve maintenance and operations efficiency of the two OSU bus systems and university motor pool by giving the university the capacity to maintain vehicles in a timely manner and reduce mean time of repair of vehicles. County and region would be impacted because OSU Transportation Services also works on other town and county school buses and transit vehicles. Also, it would give county and regional motor pools an opportunity to shift to more fuel efficient alternative fuel vehicles and have the support/training resources in place to support this move. Most vehicles currently available must be retrofitted with alternative fuel kits to operate on CNG. These kits must be installed by a certified technician. OSU Transportation Services will be able to provide this service to all government agencies in the surrounding area. This project will allow OSU to support maintenance demands of an alternative fueled transit and university fleet operation. We will be able to promote alternative fuel solutions by providing CNG, cellulosic ethanol, and biodiesel while continuing to pursue resources to provide other alternative fuels such as hydrogen and electric vehicle technology. Additionally, we will be able to offer training that would incorporate both classroom and distance based technology for use by state and government agencies.
    - **Authorization:** DOE/Energy Efficiency and Renewable Energy - Activities authorized under Department of Energy Organization Act of 1977, as amended (42 U.S.C. 712); Energy Reorganization Act of 1974 (42 U.S.C. 5813(6)(7)(8)); Energy Policy Act 1992 (42 U.S.C. 13231).
  - ***Energy and Water Sustainability and Protection Initiative***
    - **Organization:** Ground Water Protection Council
    - **Amount Requested:** \$2,000,000

- **Purpose:** With funding in fiscal year 2010, GWPC plans to make it possible to overlay oil and gas well and coal mining location information on source water protection area maps, expand e-permitting access to industry, and expand data innovation to maximize the recovery of oil and gas from marginal wells to additional states. This initiative allows many marginal wells to be reworked and brought back online at a significant cost savings through new technology, redrilling, or horizontal drilling. Also, the RBDMS electronic commerce project allows small and medium sized industry operators to expand into previously cost-prohibitive areas in an environmentally sound manner. Funding will also be used to conduct a study on hydraulic fracturing.
- **Justification:** This funding allows state oil and gas agencies to enhance oil/gas production, and at the same time, better protect the environment. In 2005, Senator Inhofe included a provision in the Energy Policy Act encouraging the use of hydraulic fracturing. In 2004, EPA concluded that hydraulic fracturing poses minimal threat to underground drinking water. Approximately 35,000 wells are hydraulically fractured annually in the United States and close to one million wells have been hydraulically fractured in the United States since the technique's inception, with no known harm to groundwater. Hydraulic fracturing plays a major role in the development of virtually all unconventional oil and gas resources and should not be limited in the absence of any evidence that such fracturing has damaged the environment. Without hydraulic fracturing the United States would be producing a fraction of the oil and natural gas it is currently producing and would be even more dependent on foreign oil than it is today. The ability of producers to hydraulically fracture their wells is critically important to this country's ability to maximize the amount of oil and natural gas we produce domestically to supply our critical domestic needs. This technique has been employed by industry under the supervision of state regulators, it has proved an extremely safe and environmentally benign technology. This is the result of the nationally successful RBDMS (Risk Based Data Management System) system currently used by 21 state oil and gas agencies. The RBDMS program allows state agencies to increase environmental protection, provide access to new reserves and supplies of oil and gas, reduce compliance burdens on industry, and increase tax revenues generated through oil and natural gas production. Additional research would be helpful to provide any updates of the 2004 EPA study to keep this crucial technique from being subjected to burdensome and unnecessary regulation which would have the result of decreasing domestic oil and gas production and increase reliance on foreign energy.
- **Authorization:** DOE/Energy Efficiency and Renewable Energy - Activities authorized under Department of Energy Organization Act of 1977, as amended (42 U.S.C. 712); Energy Reorganization Act of 1974 (42 U.S.C. 5813(6)(7)(8)); Energy Policy Act 1992 (42 U.S.C. 13231).

- ***Municipal Water Infrastructure Rehabilitation***

- **Organization:** City of Yukon
- **Amount Requested:** \$5,500,000
- **Purpose:** The city of Yukon requests funding for a phased project between FY 2009-2011. The three-year project will include a 9.5 mile main water line connecting Yukon and Oklahoma City, two new water towers to provide storage and pressure and replacement of existing water line network.
- **Justification:** The City of Yukon has been forced to find new sources of water because of the 2006 EPA mandate on significantly lower arsenic standards in drinking water. Yukon is partnering with Oklahoma City to supplement Yukon's water supply but the water supply and distribution system requires changes to meet the short and long-term supply for the growing city. Funding for this project was previously appropriated to the Corps of Engineers in FY2003, however, the money was reprogrammed. This request is for the payback of those funds.

- **Authorization:** Sec. 223 of P.L. 102-580 (WRDA 1992)
- ***National Energy Policy Institute***
  - **Organization:** University of Tulsa
  - **Amount Requested:** \$2,000,000
  - **Purpose:** Funding is requested for the research of alternative fuels, the communication of research results, and translation of results into jobs and businesses. The Institute has three overarching goals: to develop policy options that will significantly reduce the economic and geopolitical leverage other countries have on the United States because of its dependence on oil and gas imported from those countries; develop policy options for future energy sources from a multitude of alternatives since there is no single source solution for reducing the dependency on foreign oil; and to use the best available science, technology, and economic analysis available.
  - **Justification:** Much has been said for decades about the need to develop alternatives to the traditional fossil fuels used for transportation and electric generation. This project evaluates the cost-effectiveness of different policy alternatives that would encourage those goals. In addition, in partnership with TU, the NEPI proposes to take the results of that evaluation and develop training programs to translate the most cost-effective alternatives into sustainable businesses and jobs. These programs will address technology transfer, business management, engineering and vo-tech components of training needs. This joint effort will contribute to the major policy objectives of reduction of imported oil consumption and job creation.
  - **Authorization:** DOE/Science – Activities authorized under Department of Energy Organization Act (42 U.S.C. 7101 et seq.)
- ***Oklahoma Comprehensive Water Plan Study***
  - **Organization:** Oklahoma Water Resources Board and Army Corps of Engineers
  - **Amount Requested:** \$2,300,000
  - **Purpose:** This is a multi-year study to provide technical assistance to the state of Oklahoma and its citizens in updating the Oklahoma Comprehensive Water Plan. The OWRB envisions that, combined with federal cost-shared funds, the OWRB could work with local water suppliers in evaluating their system conditions, long-term needs, and develop a strategy to meet their needs over a 50-year time horizon.
  - **Justification:** The OWRB anticipates that continued funding of their Financial Assistance Program would provide low-cost loans and grants to enable actual implementation of long-term strategies. The plan would also address the long-term needs of other water use sectors, including agricultural, industrial, power, recreational and environmental considerations. OWRB is preparing the periodic update of the State’s Comprehensive Water Plan to be able to plan for future water availability needs throughout the state and plan for water and wastewater financing with a 25% minimum matching requirement by communities.
  - **Authorization:** Section 5119 of P.L. 110-114 (WRDA 2007)
- ***Oologah Lake Watershed, OK and KS***
  - **Organization:** Tulsa Metropolitan Utility Authority and Army Corps of Engineers
  - **Amount Requested:** \$135,000
  - **Purpose:** The primary purpose of the Oologah Watershed Feasibility Study is to assure the long-term viability of the reservoir for public water supply for the Tulsa metropolitan service area and northeast Oklahoma as well. Funding would allow for the collection of watershed and reservoir water quality data, required maintenance, analysis and compilation of the data, and the development of a master plan.
  - **Justification:** Approximately twenty percent of Oklahoma’s citizens rely on drinking water supplied by Tulsa, either directly or through rural water districts served by Tulsa. Oologah

provides approximately half of the water used for this area. Data have demonstrated declining aquatic habitat quality in Oologah for several years which directly affects the quality of the raw water withdrawn from the reservoir. Taste and odor problems have increased and treatment costs have risen as the aquatic habitat and water quality have declined.

- **Authorization:** Sec. 208 of P.L. 89-298 (Flood Control Act of 1965); US Senate Committee on Environment and Public Works Resolution, Verdigris River and Tributaries, OK and KS, dated July 31, 2007

- ***Planning Assistance to the States***

- **Organization:** Oklahoma Water Resources Board
- **Amount Requested:** \$500,000  
**Purpose:** This project assists Oklahoma in development of plans for management, utilization and conservation of water resources. It provides technical assistance for the development of the Oklahoma Comprehensive Water Plan. The State Water Plan is to provide technical assistance for acquisition of hydrologic data, groundwater characterization, database development, and data distribution; expansion of surface water and groundwater monitoring networks; assessment of existing water resources, surface water storage, and groundwater storage potential; numerical analysis and modeling necessary to provide an integrated understanding of water resources and water management options; participation in State planning forums and planning groups; coordination of Federal water management planning efforts; and technical review of data, models, planning scenarios, and water plans developed by the State.
- **Justification:** The OWRB anticipates that continued funding of their Financial Assistance Program would provide low-cost loans and grants to enable actual implementation of long-term strategies. This program has been very instrumental in past and present water resources planning endeavors in Oklahoma. Studies initiated in Oklahoma under this program must be under letter agreement with the OWRB and cost-shared equally between the Corps and a non-federal sponsor.
- **Authorization:** Sec. 22 of P.L. 93-251 (WRDA 1974), as amended

- ***Red River Chloride Control Study, Elm Fork Area VI, TX and OK***

- **Organization:** Oklahoma Water Resources Board and Army Corps of Engineers
- **Amount Requested:** \$2,201,000
- **Purpose:** The purpose of the Red River Chloride Control project is to control natural chloride brine emissions at ten major source areas to improve water quality for municipal, industrial, and agricultural uses. Improvements to date include construction of low flow dams, pump stations, and diversion pipelines to impoundment facilities. Area VI is on the Elm Fork, a tributary of the North Fork of the Red River, in Harmon County, Oklahoma. The majority of brine in this area is from three small canyons that drain into the Elm Fork. The plan for this area is to construct a 115-acre detention reservoir around the entrance to the canyons. The Elm Fork River would be diverted around this reservoir and the brine would be pumped from the detention reservoir to a permanent storage reservoir on Fish Creek.
- **Justification:** The project is designed to control about 420 tons (82%) per day of natural chloride brine emissions. Recent concerns about the availability of adequate supplies of water in southwestern Oklahoma have fostered renewed interest in continuing work at Area VI.
- **Authorization:** WRDA 1986, Sec. 1107 as amended by Sec. 3136 of P.L. 110-114 (WRDA 2007)

- ***Southeast Oklahoma Water Resource Study***

- **Organization:** Oklahoma Water Resources Board and Army Corps of Engineers
- **Amount Requested:** \$500,000

- **Purpose:** The project covers a 29-county area in southeast Oklahoma, including the Kiamichi River Basin and other tributaries of the Red River. The output of this multi-year study will be a Southeast Oklahoma Watershed Management Plan that identifies solutions to water resource problems within the study area, including a systems approach to collaboratively develop pertinent existing, forecasted and strategic information for the Oklahoma Comprehensive Water Plan.
  - **Justification:** This is one of three studies that will result in development of watershed management plans. Studies are assessing water demands and existing water resources within the study area; strengths and weaknesses of the infrastructure currently in place; and alternatives for long-term plans that identify environmentally sound water resource projects required to utilize the full potential of waters in the region for both the study area and the State of Oklahoma for the ecosystem in the Kiamichi River basin and other critical ecosystem/habitat areas.
  - **Authorization:** 1983 Supplemental Appropriation (P.L. 98-63); FCSA signed July 2001
- ***Water Quality Testing Lab, New Science and Agriculture Building***
    - **Organization:** Oklahoma Panhandle State University
    - **Amount Requested:** \$275,000
    - **Purpose:** OPSU proposes to establish a water quality testing laboratory located on the campus of OPSU for the purpose of community service and academic instruction. The water testing facility would provide comprehensive water testing for the municipalities, schools, and industries located in the Oklahoma Panhandle and surrounding communities as well as northwestern Oklahoma. In addition to testing water for drinking, the laboratory would be set up in order to test wastewater for municipalities and industry including well testing for the oil and gas industry. Testing of water for disease progression and agricultural purposes such as irrigation and livestock usage would be done as well.
    - **Justification:** With a water quality testing laboratory at OPSU, the agricultural community, residents, municipalities, and public schools within the area would have timely access to a facility capable of reliable and expedient testing of water samples for both chemical and biological hazards. The centralized location of the OPSU campus in the Oklahoma Panhandle is ideal to ensure that the samples arrive in a timely manner, and would eliminate the need for overnight shipping of samples in most cases. Currently, the municipalities and schools must send their samples overnight to Oklahoma City for testing. The laboratory would insure safe, clean drinking water as well as facilitate the monitoring of other water resources and disease in the area.
    - **Authorization:** Section 5158 of P.L. 110-114 (WRDA 2007)
  - ***Water Supply Infrastructure Development***
    - **Organization:** City of Bartlesville
    - **Amount Requested:** \$2,500,000
    - **Purpose:** This project will evaluate infrastructure options and initiate implementation of water supply infrastructure development, including: the surveying, design, bidding, and construction of a new raw water pump station and water transmission line.
    - **Justification:** The City of Bartlesville is a regional supplier of drinking water, providing service to six rural water districts and three municipalities. As such, securing a long-term water supply is critical to the economic vitality of this area.
    - **Authorization:** Section 219 of WRDA 1992, as amended by Section 5158 of P.L. 110-114 (WRDA 2007)
  - ***Army Corps of Engineers, General Investigations in Oklahoma***

- **\$500,000 for Washita River Basin, OK** – authorized under House Resolution (1938) and Senate Resolutions (1954 and 1962)
- **Army Corps of Engineers, Construction General in Oklahoma**
  - **\$10,133,000 for McClellan-Kerr Arkansas River Navigation System, 12 Foot Deepening Project, AR and OK** – authorized by PL 108-137, Sec. 136
- **Army Corps of Engineers Operations & Maintenance lakes, locks, dams in Oklahoma**
  - **\$521,000 for Arcadia Lake, OK** – authorized under the Flood Control Act of 1970
  - **\$902,000 for Birch Lake, OK** – authorized under the Flood Control Act of 1962
  - **\$3,202,000 for Broken Bow Lake, OK** – authorized under the Flood Control Act of 1958
  - **\$2,217,000 for Canton Lake, OK** – authorized under the Flood Control Act of 1938
  - **\$1,035,000 for Copan Lake, OK** – authorized under the Flood Control Act of 1958
  - **\$8,814,000 for Denison Dam, Lake Texoma, TX and OK** – authorized under the Flood Control Act of 1938
  - **\$6,620,000 for Eufaula Lake, OK** – authorized under the Flood Control Act of 1946
  - **\$11,768,000 for Fort Gibson Lake, OK** – authorized under the Flood Control Act of 1941
  - **\$347,000 for Great Salt Plains Lake, OK** – authorized under the Flood Control Act of 1936
  - **\$748,000 for Heyburn Lake, OK** – authorized under the Flood Control Act of 1941
  - **\$1,738,000 for Hugo Lake, OK** – authorized under the Flood Control Act of 1946
  - **\$2,097,000 for Hulah Lake, OK** – authorized under the Flood Control Act of 1936
  - **\$2,751,000 for Kaw Lake, OK** – authorized under the Flood Control Act of 1963
  - **\$6,947,000 for Keystone Lake, OK** – authorized under the Flood Control Act of 1950
  - **\$15,000,000 for McClellan-Kerr Arkansas River Navigation System, OK** – authorized under the River and Harbor Act of 1946
  - **\$4,106,000 for Oologah Lake, OK** – authorized under the Flood Control Act of 1938
  - **\$1,276,000 for Pine Creek Lake, OK** – authorized under the Flood Control Act of 1958
  - **\$8,441,000 for Robert S. Kerr Lock and Dam and Reservoir, OK** – authorized under the River and Harbor Act of 1946
  - **\$1,254,000 for Sardis Lake, OK** – authorized under the Flood Control Act of 1962
  - **\$1,414,000 for Skiatook Lake, OK** – authorized under the Flood Control Act of 1962
  - **\$6,625,000 for Tenkiller Ferry Lake, OK** – authorized under the Flood Control Act of 1938
  - **\$1,431,000 for Waurika Lake, OK** – authorized under Public Law 88-253 (1963; river basin and flood control project authorizations)
  - **\$5,903,000 for Webbers Falls Lock and Dam, OK** – authorized under the River and Harbor Act of 1946
  - **\$856,000 for Wister Lake, OK** – authorized under the Flood Control Act of 1938