



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Thomas S. Burack, Commissioner

April 29, 2011

The Honorable David R. Boutin, Chairman
Senate Capital Budget Committee
State House, Room 100
Concord, NH 03301

Dear Chairman Boutin and Committee Members:

The Department of Environmental Services (DES) Capital Budget request for Fiscal Years 2012/2013 consists of six items totaling \$33.4 million, of which \$27.1 million is funded through other sources. The six items include state matching funds for the Clean Water and Drinking Water State Revolving Loan grants, funds for Dams Repairs and Reconstruction, Great Bay Oil Spill Protection Strategy, Winnepesaukee River Basin Infrastructure Improvements, and Suncook River Infrastructure. Of the \$6.3 million in General fund requests, \$3.3 million is for Dams, and \$1 million is for Suncook River Infrastructure Protection and Fluvial Erosion Hazards Assessment. The remaining \$2 million is for state match dollars for Suncook River disaster relief and mitigation and is being requested to be moved to the Department of Safety's (DOS) Capital Budget.

Below is a detailed summary, in bullet form of the individual requests. The Suncook River disaster relief and mitigation item is discussed in a separate letter to the Committee jointly submitted by DES and DOS.

1. CLEAN WATER STATE REVOLVING FUND LOAN PROGRAM \$16,225,952 (CWSRF)

Justification

- The current need for water pollution control infrastructure in New Hampshire is estimated at approximately \$1.5 billion. Most New Hampshire municipalities fund the planning, design and construction of these projects through the CWSRF.
- Loan rates are below market, saving municipalities hundreds of thousands of dollars in interest costs.
- \$16,225,952 allows us to receive \$80 million in federal loan funds for municipalities.
- DES is working with the Treasury Department and the US Environmental Protection Agency (USEPA) to develop a mechanism by which interest earned from the CWSRF will be used for the required state match for the CWSRF. This has occurred recently in several other states. Under this approach, earned interest would be separated from the other funds, bonds would be issued and the monies generated from the "interest earned" bonds would be used for match. The amount of funds available and the exact mechanism will be determined this summer.
- 4% of each capitalization grant made to the CWSRF program is set aside to pay for staff and related expenses. Loss of a capitalization grant, and thus its set aside, jeopardizes the stability of the CWSRF program and places highly trained and motivated staff at risk.

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- The Capital budget for Fiscal Years 2010/2011 did not provide for state match for the respective yearly capitalization grants. Thus the CWSRF capital budget request for Fiscal Years 2012 and 2013 contains the match for the capitalization grants for Fiscal Years 2010 through 2013 to avoid the loss of available subsidy.
- As a result of the large number of loans made under American Recovery and Reinvestment Act (ARRA), approximately only \$40 million in repayment account funds remain available for loans. This low fund balance comes at a time when demand for subsidized and low interest loans is high due to the need to meet increasingly more stringent federal water quality requirements and standards.
- The CWSRF capitalization grants for FY 10, 11, 12 and 13 in the amount of \$20,361,000 each year require a 20% state match but also may have a generous principal forgiveness component that would be advantageous to New Hampshire municipalities in need of new, or upgrades to existing, infrastructure.
- The 20% State match must be committed funds and identified in the State budget prior to an EPA award of the grant funds. The State must provide the required matching funds within a limited time after a capitalization grant becomes available or the opportunity for the grant will be lost.

2. DRINKING WATER STATE REVOLVING FUND LOAN PROGRAM \$6,420,220 (DWSRF)

Justification

- Since 1997, the DWSRF has provided public water systems to fund various types of projects including development of new water supplies, upgrade of existing treatment facilities, replacement of water mains, and installation of new storage tanks.
- The total demand for funding based on applications received is approximately \$85,000,000, and far exceeds the available supply of loan funds.
- \$6,420,220 in state match would enable us to receive \$40 million in federal loan funds.
- As a condition of each capitalization grant award, the State is required to provide a 20% match. The 20% State match must be committed funds and identified in the State budget prior to EPA awarding the grant funds. The State has only a limited timeframe to provide the match; otherwise we lose the grant monies for that year.
- 31% of each Capitalization Grant received from EPA (approximately \$4,000,000) can be used for DWSRF administration and other drinking water related programs. If the State did not receive an annual Capitalization Grant due to a lack of matching funds, monies would not be available to support the drinking water program in New Hampshire.
- The Federal grant amount available for NH to apply for in 2011 increased to \$13,573,000, but there was not sufficient match to meet this increase. Accordingly, we are asking for the additional match in the coming biennium. This allows us to apply for the additional grant funds prior to the 9/30/2011 application deadline. We anticipate this increased level of funding for the foreseeable future and are requesting match accordingly.
- DES is working with the Treasury Department and the USEPA to develop a mechanism by which interest earned from the DWSRF Repayment Funds can be used for the required state match for both the CWSRF and DWSRF programs, as has occurred recently in several other states. The amount of funds available and the exact mechanism will be determined this summer. However, the DWSRF loan program is substantially

smaller and younger than the CWSRF. Therefore, this approach will not be sustainable in the long term for the DWSRF program, so we anticipate having to seek additional general fund capital budget appropriations for this program at some point in the future.

3. DAM REPAIRS & RECONSTRUCTION \$3,300,000

Justification

- This request is to provide the funding needed to repair 9 state-owned dams that, because of their deteriorated condition, could pose a threat to public safety.
- The State owns a total of 274 dams, which impound the most important recreational lakes in the state.
- Of these, 48 are High Hazard Dams, the failure of which would cause loss of life downstream, and 38 are Significant Hazard Dams, the failure of which would cause significant property damage downstream.
- Even the loss of any of the Low Hazard Dams that the state owns could cause significant economic losses to the state due to the loss of recreational opportunities and the devaluation of waterfront property associated with such dams.
- Many of these dams were constructed in the mid-1800's to provide waterpower to fuel the industrialization of New Hampshire and Massachusetts, and most of the dams that the state owns are well over 100 years old. Because of their age, they require continued attention to maintain them in a safe condition.

Funds are requested to repair the following state-owned dams:

Bunker Pond Dam, Epping

- The dam is classified as a Low Hazard Dam.
- A town road crossing and three homes are at risk from failure of the dam.
- The earthen embankments were not well constructed and sinkholes periodically develop, indicating a loss of material from the dam.
- Additionally, during the May 2006 and April 2007 floods, increased seepage was observed flowing through the embankments.
- After soliciting input from the public and from other State Agencies, it was determined that removal of the dam was the best course of action to eliminate the hazard and restore the river to its natural condition.
- Design and permitting of the removal is underway with completion scheduled for January 2011. The cost of the physical removal of the dam is estimated to be \$200,000.

Buck Street Dam, Pembroke

- This is classified as a low hazard, run of the river dam with a reservoir that is very small in comparison to the whole watershed.
- Originally built in 1923, the purpose of the dam was to regulate the supply of water for power generation for the Suncook Mills Company. The dam has not been used for its original purpose for more than 60 years.
- The State acquired the dam in 1962 from the company.
- Combined with the Buck Street East Dam, the dams do not have sufficient discharge capacity through the spillways and outlets to pass high flows.

- During high spring runoff events, flows that exceed the capacity of the outlet works and spillways overtop the abutments of the dam.
- Flood events in recent years have caused damage to the dam that safety inspections have revealed.
- DES intends to remove the Buck Street Dam based on the balance of benefit and maintenance/repair costs over time, flooding issues upstream in and along the Suncook River, and an interest in river restoration.
- The cost of the physical removal of the dam is estimated to be \$200,000.

Seaver Reservoir Dam, Harrisville

- The dam was originally constructed in 1924 by the Ashuelot Gas and Electric Capacity to power its hydropower projects downstream on the Minnewawa River.
- The State acquired the dam from Public Service of New Hampshire in 1968.
- The dam is currently classified as a Significant Hazard Dam.
- Failure of the dam could affect 97 houses, nine town road crossings and one state road crossing.
- As part of a past modification to the dam, the outlet pipe through the embankment was extended and the downstream slope of the embankment was flattened.
- There are indications that there may be a gap in the joint between the original outlet pipe and the pipe extension, through which soil from the earthen embankment could be lost.
- Additionally, depressions have been observed on the downstream slope of the embankment, which are indicative of sloughing or soil loss into the outlet pipe. The results of a soil boring performed through the downstream slope of the embankment indicate that the embankment was poorly compacted when constructed.
- The proposed repair includes excavating the embankment to uncover the outlet pipe, repair the connection as needed, and reconstruct and properly compact the embankment. Estimated cost \$400,000.

Northwood Lake Dam, Epsom

- The dam at Northwood Lake was first constructed in 1926, and was used to store water for use by the mills downstream along the Suncook River. The dam was most recently reconstructed in 1973.
- The dam is classified as a High Hazard Dam. If it were to fail, it would likely result in loss of life and would cause significant damage to 14 houses, two state road crossings and 9 town road crossings downstream.
- During the floods of May 2006 and April 2007, both earth abutments of the dam were overtopped and had to be sandbagged to prevent erosion and failure of the dam.
- To correct this problem, a redesign/reconstruction of the dam, to include a crest gate system, is necessary to increase its discharge capacity. Estimated cost \$400,000.

Scotts Bog Dam, Pittsburg

- The dam at Scotts Bog was constructed in 1942 and is used for recreation and wildlife management.
- Failure of this Low Hazard dam would likely destroy a downstream road and result in economic loss to the North Country.

- The dam outlet works have partially failed and both earth embankments are in poor condition.
- The proposed work consists of reconstructing the outlet works and both earth embankments. Estimated cost \$350,000.

Mendums Pond Dam, Nottingham

- Mendums Pond Dam was originally constructed in 1840 and renovated in 1977.
- The dam is classified as a High Hazard Dam.
- This 31-foot tall, 440-foot long dam is constructed primarily of earth with an upstream concrete cutoff wall and a laid stone downstream face.
- Discharge is controlled by two low-level wooden gates and a concrete auxiliary spillway in bedrock.
- Portions of the downstream laid stone face are on the verge of collapsing, the two wooden gates need to be replaced and the dam does not have adequate discharge capacity to avoid being overtopped during the specified design storm.
- Failure of the dam from overtopping would likely result in damage to 36 homes, 23 town road crossings and two state road crossings.
- Repairs will include replacement of the two-low level gates, reconstruction of the downstream laid stone face and increasing the size of the auxiliary spillway to provide adequate discharge capacity. Estimated cost \$900,000.

Cass Pond Dam, Epsom

- The dam at Cass Pond is over 170 years old, and is classified as a Low Hazard Dam.
- Failure would likely destroy a town road crossing located immediately downstream.
- During the April 2007 flood, the left abutment of the dam suffered internal erosion and needed immediate repair to prevent failure.
- The eroded section was temporarily repaired with flowable fill, but permanent repairs are still needed.
- Further damage to both abutments was noted following the March 2010 floods.
- The proposed work consists of the permanent reconstruction of the left and right abutments and the installation of a low-level outlet pipe to meet current New Hampshire Dam Safety regulations. Estimated cost \$275,000.

Shehan Pond Dam, Clarkesville

- Shehan Pond Dam was originally constructed in 1960 and is owned by NH Fish and Game.
- The Low Hazard dam is in a significant state of disrepair and for safety reasons it may be necessary to drain the impoundment until repairs can be affected.
- The scope of work would include constructing an access road to the dam, the complete replacement of the concrete outlet works and rehabilitation of the existing earth embankments. Estimated cost \$400,000.

Barnstead Parade Dam, Barnstead

- The original dam on the Suncook River at Barnstead Parade was built more than 170 years ago, and was most recently reconstructed in 1967.

- The dam is classified as a Significant Hazard Dam since failure of the dam could affect 20 homes, four town road crossings and two state road crossings.
- During the floods on the Suncook River in May 2006, April 2007, and April 2010, flows overtopped the outlet works training wall, causing the erosion of soil from behind the wall. This damage had to be temporarily repaired after each flood event.
- Additionally, the upstream side of the right abutment has sustained erosion damage during high flow events that needs to be repaired.
- The repair will consist of rebuilding the embankment and providing erosion protection on the upstream side of the left abutment, and raising the downstream training wall and providing a cap on top of it to prevent further erosion. Estimated cost \$175,000.

We are also asking that the footnote below be attached to the Dams Repair and Reconstruction appropriation so that if emergency projects arise the Department has the ability to use the funds for those events. Similar language was used in the 2007 Capital Budget appropriation of dam funds.

“The sums appropriated in subparagraph C shall be for the following projects: Bunker Pond Dam, Buck Street Dam, Seaver Reservoir Dam, Northwood Lake Dam, Scotts Bog Dam, Mendums Pond Dam, Cass Pond Dam, Shehan Pond Dam and Barnstead Parade Dam. The department is authorized to reallocate appropriated funds as necessary to address emergencies or alternate repairs or reconstruction needs at other dams if delays in other projects occur.”

4. GREAT BAY OIL SPILL PROTECTION STRATEGY \$545,000

Justification

- This project involves the construction of two garage-like boom houses near Fox Point to rapidly deploy deflection boom equipment at the entrance of Little Bay to prevent oil spills from entering the sensitive environments of Great Bay and Little Bay.
- There are five active petroleum storage terminal facilities along the Piscataqua River in Newington and Portsmouth. These facilities have a total storage capacity of approximately 140 million gallons.
- Deliveries to the facilities (approximately 690 million gallons per year) are by tanker vessels that are required to navigate in a narrow river with a very strong tidal current. Over the years, there have been several spills of petroleum, the most recent of which occurred in 1996.
- Spills from these facilities or from the tanker vessels that travel on the river require immediate response to reduce the environmental impacts.
- Oil spilled in the Piscataqua River would be transported to Great Bay within two hours by the fast tidal current.
- During recent spill exercises and strategic planning sessions, it was determined that the existing strategy of storing the equipment on barges near the oil terminals could not be deployed within the two hour time limit.
- Building boom houses with boom reels and pre-installed anchoring locations would allow responders to deploy the deflection boom equipment as soon as they arrived on scene. Oil would then be collected by skimmers, preventing the oil from entering Little Bay and Great Bay.

- Without this new deployment strategy, oil that entered Little Bay and Great Bay would be moved back and forth by the changing tides, thus dispersing oil to the salt marshes, mudflats and eelgrass beds.
- Once they become oiled, it becomes virtually impossible to clean these areas. Heavy equipment used in the cleanup process would likely do more harm than good. For this reason, preventing oil from entering Little Bay and Great Bay is the top priority of the New Hampshire spill protection strategy.
- Great Bay is New Hampshire's largest and most complex estuary. Great Bay contains 17 square miles of estuarine waters and more than 100 miles of shoreline and is located more than 5 miles from NH's seacoast.
- This project will be funded from the Oil Pollution Control Fund.

5. WINNIPESAUKEE RIVER BASIN PROGRAM INFRASTRUCTURE CAPITAL IMPROVEMENTS **\$3,950,000**

Justification

- The Winnepesaukee River Basin Program (WRBP) is the state-owned sewer system serving portions of the NH Lakes Region communities of Center Harbor, Moultonboro, Gilford, Meredith, Laconia, Belmont, Sanbornton, Northfield, Tilton, and Franklin.
- The WRBP's highly-regarded wastewater collection and treatment facilities, which include a treatment plant in Franklin and a maintenance facility in Laconia, are operated by DES on behalf of the communities benefiting from the facilities.
- The wastewater treatment plant has been in continuous operation for over 30 years since it was placed into operation in 1979.
- Much of the original equipment at the plant has reached the end of its useful life and other, newer equipment at the plant is either at or over capacity, or lacks sufficient redundancy. Technological advances provide significant opportunities to increase efficiency, regulatory compliance, and/or reduce operating costs.
- A WRBP Capital Improvements Plan (CIP) was completed in 2009 with the concurrence of the WRBP Advisory Board. The CIP identifies and prioritizes necessary improvements including upgrades to the facilities buildings, stormwater drainage systems, electrical and communications/monitoring systems, other systems and piping that have reached their useful lives.
- As part of the ongoing upgrades recommended and prioritized in the CIP, additional work will be required to design and implement the necessary upgrades started in FY10/11.
- These capital improvements would be financed with low interest loans issued from the Clean Water State Revolving Fund.

The following WRBP projects are expected to be implemented in FY 2012/13:

Replacement of emergency generators

- The existing emergency generators are original equipment and 30 years old.
- The units are pressed into service when normal, utility power is not available and also during periods when utility generation or transmission capacity is strained due to high consumption.

- Turbine-powered generators of this type are no longer used in wastewater treatment plants, and there is only one other wastewater plant in the state still using turbines of the type employed in Franklin.
- Replacement units would be of a recent model and type which, among other criteria, would have a pool of local service technicians available to respond on a moment's notice.

Modernization of electrical systems

- The electrical distribution and switchgear systems are original equipment, and becoming increasingly unreliable.
- Power, at 480 volts, is fed into the main distribution panel and then distributed to local motor control centers where power is fed to individual pieces of equipment.
- The equipment is old and obsolete and parts are increasingly difficult to obtain because of age, and require specialized maintenance contracts and needs to be replaced.

Modernization of WRBP Laboratory

- The laboratory has not been upgraded or renovated in its 30 years of operation.
- The type and number of required laboratory analyses has increased beyond the laboratory's capabilities to comply with Federal NPDES permit requirements
- Permit requirements are more strenuous in terms of accuracy and conformance with quality assurance/quality control (QA/QC) standards. The laboratory needs to be upgraded to enable more efficient and effective operation.

Other Building Renovations

- These will include structural repairs to floor and ceiling slabs in the operations building;
- repairs to tunnel joint sections in the outside utility tunnels;
- upgrade or replacement of elevator and elevator control systems to increase reliability; and
- conversion and renovation of unused chemical handling areas of the plant into constructive work spaces including plan and records room and work area for maintenance of the records and plans.
- The plant-wide fire alarm and communication systems also require upgrade.
- The Supervisory Control and Data Acquisition (SCADA) monitoring and control system will continue to undergo updates and necessary modifications as the plant operations are upgraded.

Stormwater Drainage Improvements

- The WWTP is located at the end of a 2.5 mile access road, maintained by WRBP.
- The road has several cross culverts under the road to carry runoff and drainage from one side to the other.
- A number of the culverts have failed over the years which have resulted in expensive emergency repairs.
- This project would include inspection of all existing culverts and replacement or repair as required, restoration of surface drainage systems and the reclamation and repaving of the road.

WRBP Laconia Facility Master Plan and Upgrade Designs

- The WRBP Laconia compound is the site of the WRBP maintenance shop and the Winnisquam pumping station, the main station that handles approximately 60% of the average daily flow of 6.5 millions gallons per day.
- The Winnisquam pump station is critical to the WRBP operation and its failure would result in sewage overflows to Winnisquam Lake.
- This will include updating the master plan for the facility and design for facility rehabilitation to provide adequately sized sewage screening facilities, replacement of the emergency standby generator and replacement sewage pumps, including equipment at the Winnisquam pump station.

6. SUNCOOK RIVER INFRASTRUCTURE PROTECTION AND FLUVIAL EROSION HAZARD ASSESSMENT (DES & Safety) \$1,035,000

Justification

- In 2006, during an extreme flow event, the Suncook River was able to access floodplain near the river channel, and changed course (an avulsion) so that the path of the river shortened by approximately 1 mile, and now flows to the east of the original channel.
- The river has been naturally adjusting to its new course since the avulsion. The natural adjustment of its slope has resulted in a headcut (i.e., riverbed erosion) that has migrated upstream to a location approximately 575 feet downstream of the Route 4 bridge in Epsom. Continued upstream migration of this headcut has the potential to compromise this critical infrastructure.
- This request incorporates \$850,000 for construction of in-stream structures near Route 4 upon completion of the design and permitting for these structures and \$185,000 to conduct the river condition assessment and delineation of Fluvial Erosion Hazard zones on this river.
- This capital project will not only address a significant environmental problem that will continue to persist into the foreseeable future, but it will also provide important support for the municipalities and residents within the project area.

Should the Committee have further questions or require additional information, please contact Susan Carlson, DES Chief Operations Officer, at 271-1881 (susan.carlson@des.nh.gov), or me at 271-2958 (thomas.burack@des.nh.gov).

Sincerely,



Thomas S. Burack
Commissioner