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Council on Jobs, Innovation and the Economy

**Final Report
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On December 4, 2006, Governor John E. Baldacci signed an Executive Order appointing the Council on Jobs, Innovation and the Economy (Attachment A). The purpose of this group is to recommend specific structures and entities that will enhance jobs and economic growth. The Council's recommendations build on the framework of the yearlong Brookings Institute study. The Council has bipartisan membership and includes representatives from business and the workforce community.

The Brookings report, released in October 2006, proposed two specific activities to stimulate economic activity and create jobs in Maine. The first is a \$20 million Cluster Development Fund and the second is a \$180 million Research and Development (R&D) Bond.

Recommendations of the Council

On February 27, 2007 the Council issued an interim letter which detailed its recommendations with regard to the cluster fund. This letter recommended that a \$20 million Cluster Development Fund be included in the 2008-9 biennial budget to support industry led clusters similar to the boat building and composite activity of the North Star Alliance. These cluster grants will be awarded through competitive third party review and will be open to all geographies and all sectors of the economy. The cluster grants will be administered by the Maine Technology Institute (MTI). The full text of this interim letter from the Council is included in this report as Attachment B.

The current letter describes the Council's recommendations with regard to the R&D bond

The Council recommends a \$150 million R&D Bond to be allocated \$50 million per year for three years. The bond will be open to public, not for profit and private sector applicants whose research activities will further the growth of the innovation based Maine economy and create self sustaining, good paying jobs in the state. The recommendation, described further in this letter

includes threshold amounts for the University of Maine, the biomedical sector and the marine sector in recognition of the extensive existing level of mature activity by these research centers, and provides a funding pool available to all other sectors that have been targeted by the state. All applications in each pool will be reviewed by third parties and funds will be awarded in a competitive process to be administered by the Maine Technology Institute.

The guiding principles for these recommendations are:

1. The state needs to make bold, focused investments in R&D in order to compete in the global economy.
2. Investments should be rigorously reviewed in a competitive process with the involvement of third party experts.
3. Collaboration between institutions including the University, not for profits, and industry, and contribution to potential emerging clusters will be highly valued.
4. Results of these activities should be assessed to determine their effectiveness in contributing to the growth of strong competitive economic sectors and sustainable Maine based companies and jobs.

Rationale for the Recommendations

It is well understood that the economy of Maine is transforming. The old sectors that defined the state such as textiles, shoes and pulp and paper have been challenged by lower cost global competitors. In response, Maine has begun to invest in innovation in order to provide impetus for new sectors to emerge and existing sectors to evolve into areas where Maine can demonstrate a sustainable competitive advantage. The innovation driven economy that Maine is building will rely on a flow of ideas coming from research and development investments. The 2005 Science and Technology Action Plan for Maine describes why research and development is an important driver of competitive advantage:

R&D is the activity through which ideas are conceived and innovation occurs -- fundamental discoveries are made; process improvements are tested and adopted; new products and services are developed and produced. (2005 Science and Technology Action Plan, page 1)

Summaries of Recent Studies and Recommendations relating to R&D

A number of recent reports all concur that Maine needs to increase its spending on research and development. The relevant reports are:

Science and Technology Action Plan for Maine 2005 (www.maineinnovation.com)

Recommendations of the Joint Select Committee on Research, Economic Development and the Innovation Economy—August 2006
(<http://www.maine.gov/legis/opla/BREDJSCREPORT.pdf>)

2005 Evaluation of Maine's Public Investment in R&D (UNC-CH) October 2006
(www.maineinnovation.com)

Charting Maine's Future: An Action Plan for Promoting Sustainable Prosperity and Quality Places (Brookings) October 2006
(<http://www.brookings.edu/metro/pubs/maine.htm>)

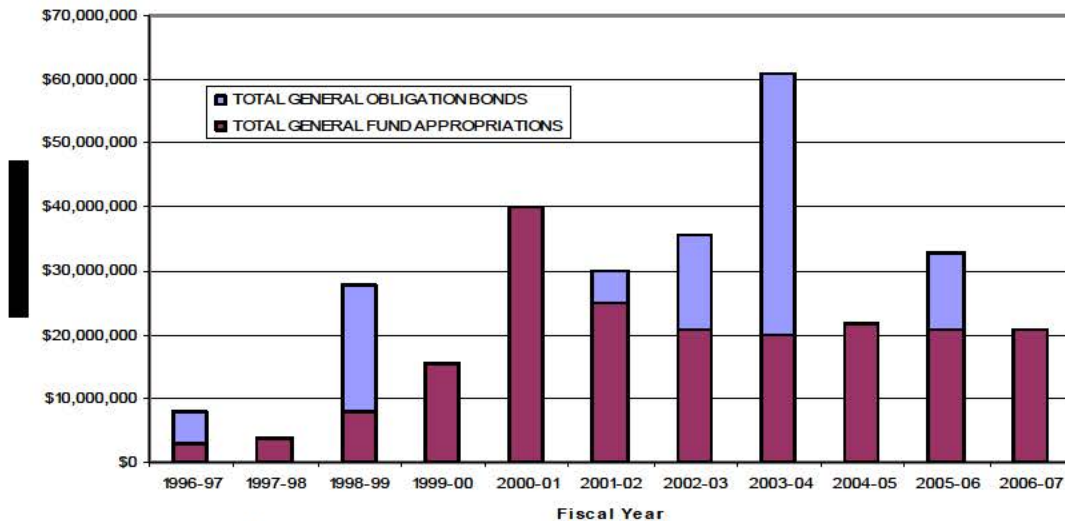
Maine's Comprehensive R&D Evaluation 2006 (PolicyOne)
(www.maineinnovation.com)

2007 Maine Innovation Index (www.maineinnovation.com)

The Office of Innovation released the **2007 Maine Innovation Index** last week which reviews the recent history of Maine's investment in research and development. It shows that Maine's total investment in R&D grew sharply from 1997 but has leveled off in recent years. This includes all private and not for profit investment as well as the state's spending.

In terms of state funded R&D, the report also documents that investment has dropped significantly in recent years and needs to be increased.

State of Maine R&D Funding - FY1996/97-2006/07



Source: Office of Innovation

In the mid-1990's through 2003-04 annual state investments in R&D grew to \$61 million. After 2003-04 Maine state investments in R&D receded to annual levels between \$20 and \$35 million. The data indicates that it may be time for Maine to once again "prime the pump" to foster R&D growth particularly in order to further stimulate industry based R&D and innovation. (Innovation Index p.1)

The **2005 Science and Technology Action Plan for Maine** saw the same issue and set the goal of doubling the research and development carried out by Maine's companies, universities and nonprofit research labs to \$1 billion by 2010. They say:

Reaching this goal will require continued strategic expansion of Maine's entire R&D enterprise. This level of activity is required for Maine to realize even a portion of its economic potential. (2005 Science and Technology Action Plan, page 1)

In December, 2006 the **Joint Select Committee on Research, Economic Development and the Innovation Economy** released its recommendations for future legislative action to expand research and economic development activities in the state. They describe six themes which emerged and guided the committee's recommendations:

- A. Innovation drives economic growth.
- B. A long-term commitment and vision for state investment in research and development are necessary ingredients for success.
- C. Sustained investment is essential to success.
- D. When possible, state resources should be provided through a competitive process.
- E. Collaboration among academia, non-profits and industry should be encouraged.
- F. Use of Maine's limited resources should be focused.

The Council investigation found similar themes and concurs with these principles.

With regard to bonding, the Joint Select Committee recommended:

A bond issue of up to \$50 million for each of the next 5 years totaling up to \$250 million for competitive grants administered by the Maine Technology Institute to stimulate economic growth and job creation through investments in research and development and commercialization, in anticipation of an additional \$250,000,000 in federal and private funding. (Report of the Joint Select Committee)

The **Brookings** report recommends a similar bond fund to support research and development activities. They suggest a level of \$180 million over 3 years. Their report urges the state to make bold focused investments that are coordinated with the emerging clusters of competitive activity. (Brookings, page 102)

The Council used the findings of these reports to come to its recommendations on bonding levels and the structures for implementing and awarding these funds. In addition, the Council had discussions with Maine Technology Institute, the Office of Innovation, the State Treasurer, and representatives of the Maine Science and Technology Advisory Committee (MSTAC).

The Council also received presentations from a number of important parties who now conduct research in order to see the type and quality of research that various entities in the state might be proposing. Because of the central role of MTI in the proposed process, the Council invited Charles Colgan to review his recent evaluation of MTI with the Council. This report can be found at <http://www.mainetechnology.com>.

Council's Review of Bond Capacity

Finally before proposing a bond issue the Council conducted its own analysis of the state's debt levels and capacity.

The analysis of the state's ability to take on the \$150 million bond recommendation concluded that the state has the capacity to take on new total bonded indebtedness well above the recommended levels. In fact, some of the projections indicate that a level of even \$500 million of new indebtedness would be within certain of the state's financial guidelines. The Council conferred with bond experts who indicated that Maine ranked solidly on some of the most important criteria used to assess debt capacity.

1. In terms of debt per capital Maine ranks 33rd vs. other states (with a lower ranking indicating less debt).
2. In terms of debt as a percent of personal income Maine ranks 34th.
3. Maine can add up to \$500 million of new debt before debt service accounts for 5 percent of the state's revenues.

Analysis also noted that the state is currently paying down between \$70 and \$80 million of debt per year, partly due to Maine's policy of relatively short 10 year debt amortization. Charts further detailing these analyses are included as Attachments C-I.

In addition, the Council reviewed the analysis by the Maine Department of Administrative and Financial Services of the unfunded pension and retiree health benefits. Although the state must clearly be very disciplined in the issuance of such benefits in the future, the quantification of the current liability and the proposed plan for funding over the required window puts the state in a relatively stable position, particularly versus other states which have lower funding levels and/or have not even quantified the liabilities. On all these matters, the Council was also informed by the visit on March 8th by the three (3) bond rating agencies.

As a result of these activities the Council reached the following conclusions:

1. The main objective of the R&D bond funds must be to further the development and expansion of quality private sector jobs that can sustain themselves in the long term without state or federal government support.
2. Total State of Maine bonding capacity is adequate over the next three years to recommend a substantial R&D bond.
3. R&D funding should recognize the importance of both basic and applied research and the potential of each in creating long-term economic sustainability in Maine.
4. Maine has a unique mix of academic institutions, private non-profit organizations and commercial entities involved in R&D, all of which should be eligible for funding in a third party competitive process.

5. The awarding of funds must strike a balance between the importance of sustained investment in mature organizations, institutions and clusters as well as nurturing opportunities in emerging technology areas.
6. The Maine Science and Technology Advisory Board (MSTAC), in conjunction with the State of Maine Office of Innovation has the resources and capacity to develop evaluation criteria for each technology sector consistent with “A Science and Technology Action Plan for Maine-2005”.
7. The Maine Technology Institute (MTI) has established itself as an excellent entity to manage the grant review process and administer available funds. However, it must be properly funded to take on this increased level of activity.

The Governor’s Council on Jobs, Innovation and the Economy therefore recommends the following:

1. A three year R&D bond totaling \$150 million dollars with \$50 million available in each year.
2. Funding shall be for capital and infrastructure that supports economic growth consistent with state bonding guidelines.
3. That funding will be made available in four specific categories:
 - The University of Maine System (UMS): \$15 million each year for proposals supporting R&D infrastructure within the UMS
 - Biomedical: \$7 million each year available to biomedical proposals
 - Marine: \$5 million each year available for marine related proposals
 - All Technology Sectors: \$23 million each year to support proposals related to any of the technology areas i.e. (biotechnology, composites, environmental, marine & aquaculture, information, precision manufacturing and agriculture & forestry) identified in the State of Maine Science and Technology Action Plan - 2005.
4. Review criteria for each category will be developed by the MSTAC, in collaboration with the Office of Innovation and recommended to the MTI for its use in issuing Request for Proposals (RFPs). While the primary criteria for funding applied research is clearly the development, creation, and expansion of quality private sector jobs that can sustain themselves in the long term without state or federal government support, in developing criteria for each sector, the MSTAC will also consider the criteria currently being used in the allocation of past grants such as those used by the BioMedical Coalition and in recent Marine bond RFPs.
5. MTI will be responsible for creating all RFP’s regardless of category, organizing and managing the peer reviewed evaluation process, and managing all awarded grants. The

current spending cap on MTI costs must be raised or an alternative funding mechanism approved to ensure that MTI is properly staffed for these increased activities.

6. In the event that within either the “Biomedical”, “Marine” or “UMS” category, there are not, on an annual or review cycle basis, applications of sufficient quality or quantity to utilize the dollars so designated, the balance shall be transferred to the “All Technology Sectors” category to be available for distribution.

Additional overarching principles of selection criteria that the Council suggests that the MSTAC, the Office of Innovation and MTI take into consideration when administering the R&D bond fund can be found in Attachment J.

The Council appreciates the opportunity to express its views on the contribution a Research and Development Bond and a Cluster Development Fund will make to Maine’s economy. **We believe that the prospects for economic growth and job creation in the state of Maine are positive. Investment in research and development will give Maine companies access to world class technology. These investments will allow some of the vibrant clusters of Maine companies to compete and succeed in the global economy. If we make these investments in a focused and disciplined way they will lead to the growth of well paying jobs in successful and enduring Maine companies.**