December 9, 2014

TO: Members of the Finance/Facilities/Technology Committee

FR: Tracy B. Bigney, Clerk of the Board

RE: December 19, 2014 Finance/Facilities/Technology Committee Meeting

The Finance/Facilities/Technology Committee will meet from **9:00 am to 11:00 am on Friday, December 19, 2014.** In addition to the Rudman Board Room at the System Office in Bangor, the following Polycom location will also be available:

UMFK – Alumni Conference Room  
USM – 211 Wishcamper Center, Portland

The agenda and background materials are enclosed. These materials will be posted on the Board of Trustees website (http://www.maine.edu/about-the-system/board-of-trustees/meeting-agendas/finance-facilities-committee/) by December 10th. If you have questions about the meeting materials please call me at 973-3234.

If you have any questions or desire additional information about the agenda items, please call Rebecca Wyke at 973-3351.

Encl.

cc: James Page, Chancellor  
    Presidents  
    Rebecca Wyke  
    David Stevens  
    Dick Thompson  
    Tracy Elliott  
    Chip Gavin  
    Miriam White
Board of Trustees

Finance/Facilities & Technology Committee

Friday, December 19, 2014
9:00 a.m. – 11:00 a.m.
University of Maine System Office
Rudman Board Room, 3rd Floor
16 Central Street, Bangor

AGENDA

Finance Items
- Establishment of the Edward Sturgis Grew Professorship Of Petrology and Mineralogy, UM……………………… TAB 1
- Approval of 2014 Maine Economic Improvement Fund Annual Report…………………………………………… TAB 2

Technology Item
- Review of projects with a value of $250,000 or greater ….. TAB 3

Facilities Items
- Capital Project Status Report………………………………… TAB 4
- Updated Authorization for Central Heating Plant, UMF…… TAB 5
- Updated Authorization for Heating Plant Replacement, USM TAB 6

Items for Committee decisions and recommendations are noted in red.

Note: Times are estimated based upon the anticipated length for presentation or discussion of a particular topic. An item may be brought up earlier or the order of items changed for effective deliberation of matters before the Committee.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Establishment of the Edward Sturgis Grew Professorship of Petrology and Mineralogy, UM

2. INITIATED BY: James H. Page, Chancellor

3. BOARD INFORMATION: BOARD ACTION: X

4. BACKGROUND:

The Edward Sturgis Grew Professorship in Petrology and Mineralology was established at the University of Maine in 2014 with a generous gift of $250,000 to be paid in five annual installments from Dr. Edward Sturgis Grew.

This gift enables the College of Natural Sciences, Forestry, and Agriculture to recruit a tenure-eligible faculty member in the School of Earth and Climate Sciences. This new faculty member will have a demonstrated ability to teach as well as conduct and publish outstanding research in igneous and/or metamorphic petrology, geochemistry and mineralogy, and will be part of the Geodynamics, Crustal Studies and Earth Rheology research group (or its successor entity) at the University of Maine.

The Grew Professorship shall support salaries, benefits, travel expenses, and other needs related to the teaching, research, and service activities of the holder of the professorship.

Nominations for the Edward Sturgis Grew Professorship shall be submitted to the Provost and then forwarded to the President of the University. The appointment shall be for a term of five years starting in the 2016 academic year.

The fund shall be administered by the Dean of the College of Natural Sciences, Forestry, and Agriculture.

5. TEXT OF PROPOSED RESOLUTION:

That the Finance/Facilities and Technology Committee forward this item to the Consent Agenda at the January 26, 2015 Board of Trustees meeting for approval of the following resolution:
That the Board of Trustees approve the establishment of the Edward Sturgis Grew Professorship in Petrology and Mineralogy.
November 21, 2014

Dr. James Page, Chancellor
University of Maine System
16 Central Street
Bangor, ME 04401

Dear Chancellor Page:

I respectfully request that the University of Maine System approve establishment of the Edward Sturgis Grew Professorship of Petrology and Mineralogy.

This fixed-length professorship enables College of Natural Sciences, Forestry, and Agriculture to recruit a tenure-eligible faculty member in the School of Earth and Climate Sciences to teach and conduct research in igneous and/or metamorphic petrology, geochemistry and mineralogy.

Funding:  In November 2014, Edward S. Grew signed a gift agreement for $250,000 to be paid in five installments of $50,000 per year in the years 2015 through 2019 to fund a position known as the Grew Professor of Petrology and Mineralogy. This is a non-endowed, expendable fund over a five-year period. Upon completion of this term professorship, the Donor could renew funding for another term, the duration of which will be determined between the Donor and the University of Maine at that time.

Criteria:  The holder of the Grew Professorship of Petrology and Mineralogy will have a demonstrated ability to teach as well as conduct and publish outstanding research in igneous and/or metamorphic petrology, geochemistry and mineralogy, and will be part of the Geodynamics, Crustal Studies and Earth Rheology research group (or its successor entity) at the University of Maine.

Procedures for Appointment:  Nominations for the Grew Professorship of Petrology and Mineralogy shall be made by the Dean of the College of Natural Sciences, Forestry, and Agriculture to the Provost, who shall forward the recommendation to the President of the University of Maine for approval. Initial appointment to the named professorship shall be for five years. The President shall forward the name of the Grew Professor to the Board of Trustees on an annual basis.

Thank you for consideration of the Grew Professorship of Petrology and Mineralogy.

Sincerely,

[Signature]
Susan J. Hunter, Ph.D.
President

cc: B. LaPlante, Development Office
GIFT AGREEMENT BETWEEN

Edward Sturgis Grew
and
The University of Maine

The purpose of this Agreement is to summarize the mutual understanding of Edward S. Grew, Ph.D. (the "Donor") and the University of Maine regarding a gift as described by this document.

1. THE GIFT
   a. The Donor hereby pledges to give $250,000 to the University of Maine in Orono. It is also hereby acknowledged that the intention of this gift is to establish a named professorship, the Edward Sturgis Grew Professorship of Petrology and Mineralogy for a five-year period from Academic Year 2015-2016 through Academic Year 2019-2020. Upon completion of this term professorship, the Donor could renew funding for another term, the duration of which will be determined between the Donor and the University of Maine at that time. Dr. Grew is responsible for all funding aspects of this Agreement and will coordinate all external communications with the University of Maine's Development Office (or its successor entity). The Donor agrees to make installment payments according to the following schedule and agrees that the entire unpaid balance of the pledge shall be payable on or before December 31, 2019.

   $50,000 in 2015
   $50,000 in 2016
   $50,000 in 2017
   $50,000 in 2018
   $50,000 in 2019

   b. These gifts shall be expendable and the Dean of the College of Natural Sciences, Forestry, and Agriculture shall administer the monies received annually to this Fund for the purpose stated in Article B of this Agreement.

2. STATEMENT OF PURPOSE
   a. In consideration of Dr. Grew's generosity as evidenced by this gift, the University of Maine agrees to do the following:

   Recruit a tenure-eligible faculty member in the School of Earth and Climate Sciences. This individual will teach and conduct research in igneous and/or metamorphic petrology, geochemistry and mineralogy. Moreover, this faculty member will have a demonstrated
ability to conduct and publish outstanding research, and will be part of the Geodynamics, Crustal Studies and Earth Rheology research group (or its successor entity) at the University of Maine.

C. FUTURE CONSIDERATIONS

Nominations for the Grew Professorship shall be submitted to the Provost and then forwarded to the President of the University of Maine. The appointment shall be for a term of five years.

Should this Agreement regarding the Edward Sturgis Grew Professorship of Petrology and Mineralogy be renewed through ongoing term agreements, the name of the fund shall be retained by the University of Maine for the duration of annual gifts in the amount of $50,000. Should this fund be fully endowed through outright gifts and/or a planned gift (in the amount of $1,000,000), the name of this professorship shall be the Edward Sturgis Grew Professorship of Petrology and Mineralogy in perpetuity. Should the donor wish to establish an endowment, and should there be a period of time when annual gifts cannot be continued until the endowment is funded through the realization of a planned gift, the University of Maine will honor and retain the established naming of the Edward Sturgis Grew Professorship during the interim.

Should the Donor wish to establish an endowment and should there be any gap in funding between the time of the annual donations in support of this professorship and the time when the endowment is realized through a planned gift, the University of Maine will retain the name of the Edward Sturgis Grew Professorship

This gift agreement shall be governed by the laws of the State of Maine. It may be amended at any time by written agreement signed by each party. The Agreement shall be irrevocable and the effective date shall be the date it is fully executed.

For the Donor:

Edward S. Grew, Ph.D.

November 20, 2014

For the University of Maine:

Susan J. Hunter, President

21 November 2014
EDWARD STURGIS GREW PROFESSORSHIP
IN PETROLOGY AND MINERALOGY

The Edward Sturgis Grew Professorship in Petrology and Mineralogy was established at the University of Maine in 2014 with a generous gift from Dr. Edward Sturgis Grew. Dr. Grew came to the University of Maine in 1984 as a research faculty member in what was then the Department of Geological Sciences. A native of Andover, Massachusetts, he received a Bachelor of Arts degree in Geology from Dartmouth College in 1965 and a Ph.D. degree in Geology from Harvard University in 1971. His research interest and publications relate to mineralogy and petrology with a focus on beryllium and boron minerals and on the Precambrian rocks of East Antarctica.

This gift enables the College of Natural Sciences, Forestry, and Agriculture to recruit a tenure-eligible faculty member in the School of Earth and Climate Sciences. This new faculty member will have a demonstrated ability to teach as well as conduct and publish outstanding research in igneous and/or metamorphic petrology, geochemistry and mineralogy, and will be part of the Geodynamics, Crustal Studies and Earth Rheology research group (or its successor entity) at the University of Maine.

The fund shall be used to support the Grew Professor, including but not limited to salary, benefits, travel expenses, and other needs related to the teaching, research, and service activities of the holder of the professorship.

Nominations for the Edward Sturgis Grew Professorship shall be submitted to the Provost and then forwarded to the President of the University. The appointment shall be for a term of five years starting in the 2016 academic year.

Should it ever become impossible or impractical to carry out the purpose of this fund as described above, an alternative purpose that best fits the donor’s intent and wishes shall be designated by the President of the University in consultation with the Executive Vice President for Academic Affairs & Provost.

The fund shall be administered by the Dean of the College of Natural Sciences, Forestry, and Agriculture.

Edward S. Grew
Edward Sturgis Grew, Research Professor of Earth Sciences

November 20, 2014
Date

Susan J. Hunter, Ph.D., President, University of Maine

21 November 2014
Date
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Approval of 2014 Maine Economic Improvement Fund Annual Report

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION: BOARD ACTION: X

4. BACKGROUND:

Maine statute requires the University of Maine System to provide an annual report to the Governor and Legislature by January 1st of each year. In addition to listing the annual financial data, we also include an assessment of the achievement of the annual goals and objectives, and a summary of the research and development projects that have been funded.

The Board of Trustees approved the MEIF Goals and Objectives at its November 16-17, 2014 Board of Trustees meeting. The 2014 MEIF Annual Report will be provided by email under separate cover.

5. TEXT OF PROPOSED RESOLUTION:

That the Finance, Facilities and Technology Committee forward this item to the Consent Agenda at the January 26, 2015 Board of Trustees meeting for approval of the following resolution:

That the Board of Trustees approves the 2014 MEIF Annual Report as presented.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Review of projects with a value of $250,000 or greater

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION: X

4. BACKGROUND:

   On December 19, 2014, Dick Thompson will provide an update on the Facilities Software Project – IWMS.
Status Update

IWMS Facilities Project

Overall status: None  
Change from previous report: None
Budget status: None  
Change from previous report: None
Schedule status: None  
Change from previous report: None

Overview

The purpose of this project is to acquire and implement an integrated workplace management system to replace the current UMS work management, space management, utility management, asset management and, ultimately, capital planning systems to support facility management activities, planning and decision-making statewide. The system must be able to interface with existing MaineStreet systems.

Outcomes will include a solution scalable enough for the smallest and largest of campuses to use efficiently, better integration between general ledger, procurement and human resources, and provide standards and a system in several systems in varying, inconsistent, ways.

<table>
<thead>
<tr>
<th>Initiation Date</th>
<th>Sponsor</th>
<th>Original Estimated Completion Date</th>
<th>Current Estimated Completion Date</th>
<th>Estimated Budget</th>
<th>Budget Expended to Date</th>
<th>Project % Complete</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/11</td>
<td>Chip Gavin</td>
<td>12/31/12</td>
<td>09/07/15</td>
<td>$2,220,000</td>
<td>$1,111,024</td>
<td>60%</td>
<td>Implemented AiM Operations &amp; Maintenance modules for UM, USM, &amp; University Services in October 2014.</td>
</tr>
</tbody>
</table>

Status

The go-live of the AiM operations and maintenance modules for UM, USM, and University Services during the week of 10/20 was a success. Work continues on finalizing the work order billing and purchasing interfaces, and converting UM & USM Inventory module data into AiM. A major recent accomplishment was USM’s complete move off of the MP2 work management system. When UM inventory data is converted into AiM by the end of December, UM will be positioned to discontinue use of MP2, as well. Given the decreasing dependency on MP2, the UM, USM, and UMF Facilities Directors recently decided to not renew the MP2 annual maintenance agreement that was due in November. This resulted in a total savings of $29,301 for the UMS.

Prior to the large campus go-live, the project Core Team contracted with Barkley Group Associates to conduct a go-live readiness assessment that examined key success factors for project execution. The assessment report indicated the project is well organized, well executed and proceeding on plan.

The AiM implementation for UMA and UMF kicked-off on 10/27. To date, UMF and UMA have completed Conceptual Training and Business Process Analysis sessions, and their initial set of data has been converted into the AiM Test database. Work over the next few weeks will focus on converting and testing remaining data, and on becoming familiar with how AiM will support their operations after go-live, scheduled for early March 2015.

Risks

- The project is currently on track, but it has an aggressive timeline that requires continual time and effort from UMS facilities leaders and staff members. Given their dedication to the project and to their credit, they are going above and beyond to participate in project planning and to accomplish project tasks. Competing demands on their time do pose a risk to the project schedule, however. To mitigate this risk, the project Core Team regularly reviews the timeline with campus facilities leaders to help them prepare for the project work ahead and assess staffing requirements.
• Barkley Group’s readiness assessment noted potential risks in regards to governance and business-related Change Management. The project Core Team and FMPATT are reviewing the recommendations to determine what adjustments to governance and change management are necessary in order to address the risks.
ITEM SUMMARY

1. NAME OF ITEM: Capital Project Status Report

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION: X  BOARD ACTION:

4. BACKGROUND:

Attached is the Capital Project Status Report for the December 19, 2014 meeting of the Finance/Facilities/Technology Committee.

The report reflects a total of 23 projects, a net reduction of one project since the last report due to removal of the Aquaculture Research Center Fish Lab, UM (5100277). This project was removed prior to completion for reconsideration by program.

As indicated in the report, three current projects are completed and will be removed from the next report. They are: Planetarium and Observatory, UM (5100146); Field House/Memorial Gym Complex, UM (5100255); and Morse Field Scoreboard Upgrade, UM (5100364).

Two projects approved by the Finance/Facilities/Technology Committee (at their October 31, 2014 meeting) are not yet reflected in this report because the Board of Trustee took final action in November after the date of preparation for this report. Those projects will be included in future reports. Those two projects are: Aubert Hall STEM Classroom Renovations, UM (5100357); and Estabrooke 3rd and 4th Floor Renovation, UM (5100379).

Other updates are as noted on the list.
# Capital Project Status Report

**Board Approved Projects**

**December, 2014 -- Finance, Facilities and Technology Committee**

With Grand Totals and % of Current Approved Estimates

<table>
<thead>
<tr>
<th>Campus, Project Name (Project ID)</th>
<th>Funding Source(s) &amp; each source’s share of expenditures to date</th>
<th>Status</th>
<th>Original Estimated Completion</th>
<th>Current Est. Completion</th>
<th>Original Approved Estimate</th>
<th>Current Approved Estimate</th>
<th>% Expended of Current Approved Estimate</th>
<th>Prior Actions, Information &amp; Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>***Planetarium and Observatory (5100146)</td>
<td>Gift and Fund Raising (83%), Campus Funds: E&amp;G Funds (17%)</td>
<td>Construction Complete</td>
<td>2014</td>
<td>2014</td>
<td>$5,200,000</td>
<td>$5,200,000</td>
<td>95%</td>
<td>Board approved $5.2M in July 2011</td>
</tr>
<tr>
<td>***Field House/Memorial Gym Complex (5100255)</td>
<td>2012 Revenue Bond (50%), Gifts and Fund Raising (43%), E&amp;G Funds (7%)</td>
<td>Construction Complete</td>
<td>2014</td>
<td>2014</td>
<td>$14,000,000</td>
<td>$15,665,000</td>
<td>93%</td>
<td>Board approved $14M in November 2011. Board approved additional $1M in March 2013. Finance Facilities &amp; Technology Committee approved $665K in March 2014.</td>
</tr>
<tr>
<td>Advanced Structures and Composites Center Expansion (5100316)</td>
<td>U.S. EDA Grant (91%), E&amp;G Funds (0%), 2010 State Energy Bond (9%)</td>
<td>Construction in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$6,400,000</td>
<td>$8,000,000</td>
<td>15%</td>
<td>Board Approved $6.4M in November, 2012. Board approved $1.6M in March 2014.</td>
</tr>
<tr>
<td>***Morse Field Scoreboard Upgrade (5100364)</td>
<td>Gift and Fund Raising (100%)</td>
<td>Construction Complete</td>
<td>2015</td>
<td>2015</td>
<td>$800,000</td>
<td>$800,000</td>
<td>99%</td>
<td>Finance/Facilities/Technology Committee approved $800K in January 2014.</td>
</tr>
<tr>
<td>Wells Commons Dish Room Renovation (5100358)</td>
<td>E&amp;G Funds (100%)</td>
<td>Design in Progress</td>
<td>2015</td>
<td>2015</td>
<td>$1,300,000</td>
<td>$1,300,000</td>
<td>3%</td>
<td>BOT approved $1.3M in September, 2014.</td>
</tr>
<tr>
<td>Boardman Hall STEM Laboratory Renovation (5100361)</td>
<td>2013 State Bond (100%)</td>
<td>Design in Progress</td>
<td>2015</td>
<td>2015</td>
<td>$610,000</td>
<td>$610,000</td>
<td>1%</td>
<td>Finance/Facilities/Technology Committee approved $610K in September 2014.</td>
</tr>
<tr>
<td>Little Hall STEM Classroom Renovation (5100362)</td>
<td>2013 State Bond (100%)</td>
<td>Design in Progress</td>
<td>2015</td>
<td>2015</td>
<td>$1,740,000</td>
<td>$1,740,000</td>
<td>2%</td>
<td>BOT approved $1.74M in September, 2014.</td>
</tr>
<tr>
<td>**Merrill Hall Heating Boiler Replacement (2100039)</td>
<td>Campus Funds: E&amp;G Funds (100 %)</td>
<td>Construction in Progress</td>
<td>2012</td>
<td>2014</td>
<td>$650,000</td>
<td>$710,666</td>
<td>96%</td>
<td>Board approved $650K in January 2013. Total current approved estimated to $710,666 to accurately report pre-existing feasibility costs.</td>
</tr>
<tr>
<td>Mantor Green Geothermal Well Field (2100046)</td>
<td>Campus Funds: E&amp;G Funds (100 %)</td>
<td>Construction in Progress</td>
<td>2013</td>
<td>2014</td>
<td>$1,550,000</td>
<td>$1,550,000</td>
<td>96%</td>
<td>Board approved $1.55M in January 2013.</td>
</tr>
<tr>
<td>**Dearborn Gymnasium Renovation (2100035)</td>
<td>Campus Funds: E&amp;G Funds (100 %)</td>
<td>Construction in Progress</td>
<td>2014</td>
<td>2014</td>
<td>$1,200,000</td>
<td>$1,200,000</td>
<td>57%</td>
<td>Board approved $1.2M in March 2014.</td>
</tr>
<tr>
<td>Science Labs Renovations (Preble &amp; Ricker (2100065, 2100068)</td>
<td>2013 Lab &amp; Class State Bond (0%), Campus Funds: E&amp;G Funds (0%)</td>
<td>Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,377,000</td>
<td>$1,377,000</td>
<td>0%</td>
<td>Board approved $1.377M in July 2014.</td>
</tr>
<tr>
<td>Natural Gas Central Heating Plant (2100066)</td>
<td>Revenue Bond (100%)</td>
<td>Design in Progress</td>
<td>2014</td>
<td>2017</td>
<td>$11,000,000</td>
<td>$11,000,000</td>
<td>0%</td>
<td>Board approved $11M in July 2014.</td>
</tr>
<tr>
<td>Campus, Project Name (Project ID)</td>
<td>Funding Source(s) &amp; each source’s share of expenditures to date</td>
<td>Status</td>
<td>Original Estimated Completion</td>
<td>Current Est. Completion</td>
<td>Original Approved Estimate</td>
<td>Current Approved Estimate</td>
<td>% Expended of Current Approved Estimate</td>
<td>Prior Actions, Information &amp; Notes</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>--------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
<td>-------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>UMFK</td>
<td><strong>Powers Hall Exterior and Masonry (4100026)</strong>&lt;br&gt;2013 Lab &amp; Class State Bond (100%)&lt;br&gt;Construction in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,200,000</td>
<td>$1,200,000</td>
<td>15%</td>
<td>Board approved $1.2M in May 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Science Building Laboratory Upgrades (4100027)</strong>&lt;br&gt;2013 Lab &amp; Class State Bond (97%)&lt;br&gt;E&amp;G Funds (3%)&lt;br&gt;Construction in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,800,000</td>
<td>$1,800,000</td>
<td>0%</td>
<td>Finance &amp; Facilities Committee Approved $600K in January, 2014. Board approved increase to $1,508,221 in May 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compressed Natural Gas Heating Conversion (4100028)&lt;br&gt;Revenue Bonds (100%)&lt;br&gt;Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,800,000</td>
<td>$1,800,000</td>
<td>0%</td>
<td>Board approved $1.8M in July 2014.</td>
<td></td>
</tr>
<tr>
<td>Folsom/Pullen Science Classroom &amp; Laboratory Upgrades (7100009)</td>
<td>2013 Lab &amp; Class State Bond (100%)&lt;br&gt;Design in Progress</td>
<td>2015</td>
<td>2015</td>
<td>$1,200,000</td>
<td>$1,200,000</td>
<td>10%</td>
<td>Board approved $1.2M in March 2014.</td>
<td></td>
</tr>
<tr>
<td>USM</td>
<td>Central Heat Plant Replacement - Portland (6100195)&lt;br&gt;Campus E&amp;G Funds (100%)&lt;br&gt;Design in Progress</td>
<td>2015</td>
<td>2015</td>
<td>$3,000,000</td>
<td>$3,000,000</td>
<td>4%</td>
<td>Board approved $3M in September, 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Payson Smith Lab Renovation (6100236)&lt;br&gt;2013 Lab &amp; Class State Bond (100%)&lt;br&gt;Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,250,000</td>
<td>$1,250,000</td>
<td>0%</td>
<td>Board approved $1.25M in May 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bailey Hall Lab Renovation (6100237)&lt;br&gt;2013 Lab &amp; Class State Bond (100%)&lt;br&gt;Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$1,250,000</td>
<td>$1,250,000</td>
<td>0%</td>
<td>Board approved $1.25M in May 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LAC Nursing Lab Renovation (6100238)&lt;br&gt;2013 Lab &amp; Class State Bond (100%)&lt;br&gt;Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$600,000</td>
<td>$600,000</td>
<td>1%</td>
<td>Board approved $600K in May, 2014.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science Building Lab Upgrade (6100240)&lt;br&gt;2013 Lab &amp; Class State Bond (0%)&lt;br&gt;Design in Progress</td>
<td>2014</td>
<td>2015</td>
<td>$700,000</td>
<td>$700,000</td>
<td>0%</td>
<td>Board approved $700K in May, 2014.</td>
<td></td>
</tr>
</tbody>
</table>

Explanatory Notes:
* Project is new as of this report.
** Details of this project include updates since the last report.
*** This project has been completed since the last report and is not expected to appear on the next report.
Funding source(s) reflects primary source(s) for project.
Calendar Year unless otherwise noted.
Percentage expended reflects total expended as of October 31, 2014, as a percentage of the current approved project estimate.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Updated Authorization for Central Heating Plant, UMF

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION: BOARD ACTION: X

4. BACKGROUND:

This is a request pursuant to Board of Trustees Policy 701 and other applicable policies to update the authorization for the already approved Central Heating Plant project (#2100066) at the University of Maine at Farmington, including to allow the project to use biomass as its energy source rather than natural gas.

The updated project is expected to: reduce energy costs in the first year by approximately $830,000; be cash flow positive starting in the first year; have a simple payback of 9.4 years; and, reduce carbon emissions by an estimated 3,400 tons annually compared with the status quo. This update does not include any change in the authorized total budget.

This request for updated authorization follows the determination by the project’s natural gas partner that it will be unable to commit to the delivery of natural gas on which the project had been reliant. A copy of the recent notice to the University is included as Attachment I.

This notice to the University followed the July 21, 2014, approval by the Board to increase the scope and cost of the project, and to authorize financing for the project. At that time, the University was very much still working toward a natural gas solution. The Board at that time “authorized the University of Maine System, on behalf of the University of Maine at Farmington, to increase the scope and approved maximum expenditure of $11 million to build a central plant and distribution system that is dual-fuel, which is natural gas with a #2 oil backup. Until the natural gas line is constructed, a bridge fuel will be engaged on a short-term basis. There will be capacity to add a biomass boiler after five years. The final term, including rate, associated costs and other terms, shall be negotiated by the University of Maine at Farmington in the best economic interest of the University, subject to review and approval by the University of Maine System Treasurer and General Counsel.”

With the notice that natural gas would not be available as anticipated, UMF reevaluated its plan to advance the goals of improving energy efficiency, reducing energy costs and gaining other benefits such as carbon emission improvements.
UMF engaged its Project Team - consisting of Dirigo A/E (project management), Competitive Energy Services (energy consultant), Trane (RFP award contractor), UMF’s Sustainability Coalition and the UMF Energy Committee - to build on the already completed and still applicable engineering and designs for the project, including building energy models, equipment sizing, and piping system for a central heating plant fueled per the BOT approval.

With the collaborative effort of this Project Team and stakeholders, and following a recent campus dialogue initiative around this project, UMF now recommends and seeks approval to implement this project as a biomass (woodchips) solution, with liquid propane gas as a backup alternative fuel.

This recommendation is based on:
- Cost analysis of biomass and other fuels to determine savings and simple payback
- Operating costs and site logistics
- Engagement of local community members
- Examination of carbon footprint reduction and emissions permitting
- Fuel flexibility to accommodate future commodity market changes
- Tours and interviews with other operators of biomass central heating plants

The Project Team’s analysis as summarized above and detailed in Attachment II confirms that a biomass-fueled central heating plant for UMF is a viable and cost-effective investment for the University that will reduce heating oil consumption at Farmington by an estimated 360,000 gallons annually. Utilizing liquid propane gas as a backup fuel in the project will provide the capacity to accept natural gas should it ever become a viable energy source in this location.

The project team will be reviewing a schematic design-level cost estimate before the end of the year December, with a final confirmation of project cost due by the end of January to take advantage of a currently planned round of financing. The total project cost is expected to remain within the current Trustee-approved limit. Any further updates or changes would be re-visited with Trustees at the Board’s meeting in January if necessary.

Biomass woodchips present a cost-effective alternative to natural gas as a primary fuel, although the capital costs associated with utilizing biomass wood chips are substantially more than natural gas. Capital items such as a larger central heating plant footprint, chip handling systems, below grade chip storage bins and ash removal systems increase the bare cost of the fuel reflected in this table. When the substantially lower fuel costs are calculated along with the greater capital costs, the team has estimated that the simple payback and annual cash flow benefits are nearly the same as the previously approved natural gas option.

Lastly, UMF is committed to seeking alternative funding sources to offset the cost of the project and is working with Efficiency Maine, the United States Department of Agriculture, Northern Forests, and other organizations regarding grant options that could lessen the debt service burden of the project and further improve cash flows. No such funding is yet secured, but there does appear to be potentially greater opportunities for alternative funding to support a biomass project than would be the case with natural gas.
5. TEXT OF PROPOSED RESOLUTION:

That the Finance, Facilities and Technology Committee approve this recommendation to be forwarded to the Consent Agenda for Board of Trustee approval of the following resolution:

That the Board of Trustees authorizes the University of Maine System to enter such agreements as may be necessary to utilize biomass (wood chips) at the University of Maine at Farmington as a primary fuel source at the pending central heat plant project, with liquid propane gas as a backup energy source, subject to review and approval by the University of Maine System Treasurer of all terms and conditions, including all costs.
October 28, 2014

Ms. Laurie A Gardner
Executive Director for Finance and Administration
University of Maine Farmington
Merrill Hall
224 Main Street
Farmington, Maine  04938

Dear Ms. Gardner:

Please accept this letter as official notification that Summit Natural Gas of Maine, Inc. will be unable to make a decision prior to October 31, 2014 as to whether or not it can commit to providing natural gas to the University of Maine at Farmington by the end of 2016. Although we believe that this project would otherwise be viable, we are simply unable to secure the required approvals from our funding sources within the time frame that you have specified.

I would like to personally thank you and the University administration for the level of professionalism that was extended to my staff and I during this difficult process. I understand the level of disappointment that this decision may be met with, knowing the arduous process that the University undertook in coming to its conclusion to move toward natural gas as its primary heating fuel.

Although it is uncertain as to the time frame in which we might be able to make a commitment to move forward with providing natural gas to Farmington, we will keep the University informed of our development plans. The University remains a significant component in a plan to bring natural gas to the Farmington area.

Sincerely,

Michael M. Minkos
President

Cc: Ms. Rachel Piper
**MEMORANDUM**

**PROJECT:**  14-001 UMF Energy Upgrades  
**DATE:**  December 1, 2014  
**SUBJECT:**  Thermal Energy Alternative

Over the past decade, the University of Maine at Farmington, like many other university campuses, has found itself continually hamstrung by the ever increasing costs of heating fuel for its campus. With nearly 400,000 gallons consumed each year, the expense of heating UMF’s many campus buildings has more than tripled since 2001, with oil prices rising from just over $1/gallon to between $3-4/gallon. UMF has been forced to pay whatever price for heating fuel that the market dictates, as nearly all of its buildings are configured to solely burn heating oil. There is no easy, readily available conversion solution to circumvent the fuel costs without excessive cost to the university.

Coupling this escalation with reduced overall operating funds and no foreseeable cap on oil prices, UMF embarked on mission to not only reduce the direct cost of heating fuel, but to also provide a solution with flexibility for future unknown market conditions.

The first step in this process was to ask, “If we were to start over and construct the UMF campus today, what system would we use to heat it?” Through research, outreach and collaboration with industry experts, it was determined that a *central heating plant* would easily win out as a way to heat the campus buildings rather than by the individual heating plants in each of the buildings now. The following table outlines the benefits of both scenarios.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Central Heating Plant</th>
<th>Individual Heating Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Storage</td>
<td>Centralized, single set of tanks or bins (biomass)</td>
<td>Most buildings have a buried tank, or share with one other building. More tanks means more to maintain and keep up to date with DEP requirements</td>
</tr>
<tr>
<td>Fuel Capacity</td>
<td>One location for fuel makes maintaining fill levels straightforward. One full tank means every campus building will be heated. Single point of fueling allows for bulk delivery and lower per-unit costs.</td>
<td>Multiple tanks to track, fill and monitor.</td>
</tr>
<tr>
<td>Multi-Fuel Redundancy</td>
<td>Larger boilers can run on either LP gas, natural gas, or biomass. One swap-out of burner type means entire campus can be converted over to another fuel type.</td>
<td>Capability exists with most equipment by changing the burner type and making some code-requirement modifications to each building. Time-consuming to switch, and have to add second fuel storage or piping to each building.</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Will gain 12-15% heating efficiency per BTU compared to the individual plants</td>
<td>Efficiency is limited to the boiler rating, which diminishes over time.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Less equipment, although larger and therefore the parts are comparatively more expensive. Anticipate at least 1 FTE reduction in labor force possible.</td>
<td>More equipment to maintain in numerous locations, meaning more labor hours annually to maintain heating capability.</td>
</tr>
<tr>
<td>Operations</td>
<td>Centralized control system provides a single-source of heating to satisfy multiple buildings through remote monitoring. Redundancy in the injection points and fuel source provide ability to make universal changes from a centralized point. Sophisticated monitoring system provides automated operations and system-fault messaging ability.</td>
<td>Several boilers are small, residential-type units with little automated control ability. Problems are typically reported through occupant report rather than early system warnings.</td>
</tr>
<tr>
<td>Anticipated Useful Life</td>
<td>Industrial-grade equipment is designed for lifespan under intense and prolonged operating conditions, and can have major components overhauled rather than replaced. 40+ years is expected.</td>
<td>Equipment is maintainable but it is more cost-effective to replace than overhaul. 15-20 years is typical for commercial-grade equipment, 10-15 years for residential-grade equipment.</td>
</tr>
</tbody>
</table>
Going hand-in-hand with central heating vs. distributed heating is fuel selection. There have been several options looked at in great detail, and those are summarized below:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>LP Gas</th>
<th>Natural Gas (Piped)</th>
<th>Wood Chips</th>
<th>Wood Pellets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Cost $ \textsuperscript{1}</td>
<td>$18.41</td>
<td>$15.19</td>
<td>$5.23</td>
<td>$12.20</td>
</tr>
<tr>
<td>Fuel Availability</td>
<td>Readily available from local vendors for competitive pricing</td>
<td>Not yet available</td>
<td>Available from local suppliers in bulk quantities</td>
<td>Available from a few Maine-based plants in bulk quantities. At times pellet production has lagged peak-demand times creating short-term market shortages</td>
</tr>
<tr>
<td>Fuel Storage</td>
<td>Large steel tanks, preferably installed underground</td>
<td>None</td>
<td>Large concrete bunkers/bins installed below grade</td>
<td>Silo system</td>
</tr>
<tr>
<td>Emissions $ \textsuperscript{3}</td>
<td>Emits greenhouse gases that adds to the global warming effect</td>
<td>Emits greenhouse gases that adds to the global warming effect</td>
<td>Particulates in ash exhaust are mechanically removed and deposited in ash bins, which can be used for fertilizer. The carbon that is emitted during combustion is not more than what the biomass would otherwise release during decomposition in the forest. Carbon footprint value is due to the fossil fuels burned during harvest and processing.</td>
<td>Similar emissions as wood chips</td>
</tr>
<tr>
<td>Renewable Resource</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Capital Equipment Cost

Aside from tanks and fuel lines, a relatively small building is required to house the boilers and circulation pumps. A relatively small building is required to house the boilers and circulation pumps. Requires the largest building to accommodate the bins storage, chip handling equipment, and exhaust treatment equipment. Requires a slightly smaller building than wood chips that houses the silos, pellet conveyor augers, and exhaust treatment equipment. Also, dust from pellet residue creates a fire-safety concern that must be incorporated into the design.

<table>
<thead>
<tr>
<th>Carbon Footprint</th>
<th>139.0</th>
<th>117.0</th>
<th>42.3</th>
<th>50.0</th>
</tr>
</thead>
</table>

### Community perception

This is a common fuel to most households for heating and/or cooking use. It is generally perceived as more eco-friendly than heating oil. Due to its low cost, there is a large push to use natural gas where available. It is a domestic product but hydro-fracking practices in the extraction process have been alleged to have negative impacts on the surrounding environment. Maine-based product growing in popularity, proportional to the increase of widespread existing fossil-fuel based heating appliances. Wood chips present a less refined fuel product, with less heating capacity per unit but at a reduced price. Less processing leads to lower carbon footprint due to means of getting product from forest to boiler. Similar to wood chips. On a consumer level, pellets are sold in 40# bags that typically suffice for daily fuel needs. That ease of product use has lead to widespread conversion of residential dwellings to fully or partially heat with wood pellets, resulting in a general understanding and acceptance of the fuel type.

**Notes:**

1. Fuel cost is expressed in dollars per 1 million BTUs or dekatherms
2. Carbon Footprint is expressed in pounds of CO₂ per 1 million BTUs or dekatherms
3. Emission concerns here are relevant to greenhouse gases, which when released into the atmosphere combine with other naturally occurring greenhouse gases and inhibit the release of heat back into the atmosphere. These gases include carbon dioxide (CO₂), nitrous oxide (NO₂), and sulfur dioxide (SO₂). Additionally, carcinogenic volatile organic compounds (VOCs) are also released into the atmosphere.
Recommendation
Due to the reduced carbon footprint, added efficiency, reasonable availability, and competitive cost structure, we recommend that a central heating plant be installed at UMF, using wood chip biomass as its primary fuel, with LP gas as a backup or alternative fuel. This gives the campus a pivotal position to lower fuel heating costs and has much greater flexibility in heating fuel choices in the future should market conditions warrant, including the adoption of piped natural gas should it become available in the future.
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Updated Authorization for Heating Plant Replacement, USM

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION: BOARD ACTION: X

4. BACKGROUND:

This is a request pursuant to Board of Trustees Policy 701 to update the authorization for the already approved Central Heating Plant Replacement project (#6100195) at the University of Southern Maine in Portland.

The project is unchanged from the approval granted by the Board of Trustees on September 21-22, 2014, per the recommendation of its Finance, Facilities and Technology Committee as shown in the attached prior agenda sheet, except the funding source for the project now is being updated.

As part of the proposed FY16 budget package at the University of Southern Maine, the University proposes to use internal financing rather than reserves to fund this project. That mechanism will allow the University to have those reserves available instead to ensure a balanced budget in FY16 and also still pursue the needed energy project.

Pursuant to Board Policy and to Administrative Practice Letter II-C, the University currently has the capacity to permit this $3 million internal loan. The internal rate to USM would be 1.69% APR for a total of five annual payments of $630,759.81, one each in FY17 through FY21.

5. TEXT OF PROPOSED RESOLUTION:

That the Finance, Facilities and Technology Committee approve this recommendation to be forwarded to the Consent Agenda for Board of Trustee approval of the following resolution:

That the Board of Trustees approves the recommendation of the Finance, Facilities and Technology Committee to authorize the University of Southern Maine to expend up to $3,000,000 via an internal University loan to fund replacement of the Portland Central Heat Plant and related equipment.

12/09/14
AGENDA ITEM SUMMARY

1. **NAME OF ITEM:** Central Heat Plant Replacement, USM

2. **INITIATED BY:** James H. Page, Chancellor

3. **BOARD INFORMATION:**
   - **BOARD ACTION:** X

4. **BACKGROUND:**

   This is a request pursuant to Board of Trustees Policy 701 and other applicable policies to replace the dual-fuel-fired central heating plant on Portland campus.

   The University of Southern Maine requests approval for the expenditure of up to $3 million to replace the existing Portland Central Heat Plant boilers, related boiler room equipment switch gear, the main distribution panel and the transformer serving the Central Heat Plant and the adjacent Woodbury Campus Center.

   The main buildings on the USM Portland campus are heated by a low pressure steam generation and distribution system that supplies steam and returns condensate to the central heat plant. Boilers 1 and 2 burn #6 fuel oil and were installed in 1964. Boiler 3 has dual fuel capacity as a result of replacing the burners in 2010 and was installed in 1970. Either natural gas or #2 fuel oil is burned, depending on which fuel is more cost effective at any given time.

   The American Society of Heating, Refrigerating and Air Conditioning Engineers, (ASHRAE) estimates the service life of these types of boilers to be 30 years. USM’s have been in service for 44-50 years. A condition assessment done in 2012 concluded that the boilers’ critical components have undergone thermal stress cycles beyond the expected service life, thereby making it impracticable for any type of further life extension. There should be no expectation of continued reliable service for these boilers and a complete catastrophic equipment failure is possible. A life extension, though financially impractical, would require replacement of all major components consisting of burner, tubes and tube sheets, refractory, insulation, boiler jacket and controls.

   USM retained an engineering firm to prepare a central heat plant assessment, study options, and make recommendations. This study was informed by information in the 2010 Utility Master Plan and the goals of the President’s Council on Climate Neutrality.

   Several options were presented and considered for replacement of the existing boilers at the plant. Considering many factors, including efficiency, carbon footprint, capital and operating costs, and available space, the decision was made to replace the existing boilers with dual fuel boilers of like size utilizing natural gas and #2 fuel oil. This project will
also include building improvements to adhere to current codes and accommodate the three replacement boilers.

The following scope will be included in the overall Central Heat Plant Replacement and infrastructure improvements project.

- Replace three existing low pressure steam boilers and all associated piping and equipment. Include solar preheated hot water make up water, stack economizers, full system automation and coordination with the building automation system, ventilation and combustion air make up, and an environmentally controlled control room.
- Installation of a permanent standby emergency generator to provide reliable full power requirements to operate the central heat plant during an extended electrical outage. This will maintain the ability to provide steam distribution throughout the campus during an extended electrical outage.
- Building exterior upgrades include new windows and doors, masonry repointing, roof replacement, chimney removal, and refurbishing the existing oil tank for #2 oil.
- Building interior upgrades to include a new control room, bathroom facility, maintenance area, and mechanical area.
- Electrical upgrades include new switch gear, main distribution panel, and transformer for the Central Heat Plant and Woodbury Campus Center.

This project will improve efficiency resulting in an approximate fuel savings of 11%; in FY ’14 that would have reduced costs by $63,000. Additional savings will be realized by equipment reliability, significantly reduced repair costs, and reduced overtime labor for emergency repairs. While savings are significant, this project is not being undertaken for energy savings. Rather, the purpose is the fundamental need to reliably heat and operate the involved facilities as cost-effectively as possible.

USM has accumulated approximately $3 million in University E&G funds for this project. Because of the lead time necessary to order the specialized equipment, construction is estimated to start at the end of the 2014-2015 heating season to be in operation by October 1, 2015. There will be no increase in square footage from this project. The estimated renovation age and net asset value of the plant currently stand at 49 years and 36 percent respectively. The project will re-set the renovation age to the equivalent of a new building and the net asset value is expected to increase to 100 percent, new status.

The Finance, Facilities and Technology Committee approved this recommendation to be sent to the Consent Agenda for Board of Trustees approval.

5. TEXT OF PROPOSED RESOLUTION:

That the Board of Trustees approve the recommendation of the Finance, Facilities and Technology Committee to authorize the University of Southern Maine to expend up to $3,000,000 in University E&G funds to replace the Portland Central Heat Plant and related equipment.