### Proposed Efficiency Maine Trust and University of Maine System Energy Projects

#### Electricity

<table>
<thead>
<tr>
<th>Campus</th>
<th>Project</th>
<th>Total cost</th>
<th>Trust investment</th>
<th>Additional trust incentives</th>
<th>Estimated savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMA</td>
<td>Exterior lighting</td>
<td>$41,200</td>
<td>$41,200</td>
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<td>$7,374</td>
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<tr>
<td>UMFK</td>
<td>Exterior lighting</td>
<td>$51,400</td>
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<td>UMM</td>
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<td>$9,724</td>
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<td>UM</td>
<td>Exterior lighting</td>
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<td>$29,967</td>
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<td>UMPI</td>
<td>Exterior lighting</td>
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<td>$13,705</td>
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<td>USM</td>
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<td>$7,988</td>
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<td>UMM</td>
<td>Variable Frequency Drives</td>
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<td>UMM</td>
<td>Heating pumps</td>
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<td>USM</td>
<td>Interior lighting and controls</td>
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<td>USM</td>
<td>Heat exchanger at ice rink</td>
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<td><strong>Subtotal electrical</strong></td>
<td><strong>$1,368,000</strong></td>
<td><strong>$1,368,000</strong></td>
<td><strong>$363,297</strong></td>
<td><strong>$155,888</strong></td>
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#### Thermal

<table>
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<tr>
<th>Campus</th>
<th>Project</th>
<th>Total cost</th>
<th>Trust investment</th>
<th>Additional trust incentives</th>
<th>Estimated savings</th>
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</thead>
<tbody>
<tr>
<td>USM</td>
<td>Fieldhouse stratification fans</td>
<td>$37,500</td>
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<td>UMFK</td>
<td>District biomass heating project</td>
<td>$5,500,000</td>
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<td>UMF</td>
<td>Geothermal extension</td>
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<td>UMF</td>
<td>Boiler upgrade/replacement (Scott)</td>
<td>$1,310,000</td>
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<td><strong>Subtotal thermal</strong></td>
<td><strong>$7,609,500</strong></td>
<td><strong>$4,709,500</strong></td>
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<td><strong>$449,300</strong></td>
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</table>

Total electrical and thermal $8,977,500 $6,077,500 $363,297 $605,188

Estimated simple payback on Electrical projects on Trust funds (years) after incentives 6.4
Estimated simple payback on Thermal projects on Trust funds (years) after incentives 10.5
Estimated simple payback on all projects on Trust funds (years) after incentives 9.4
Estimated simple payback on total project cost including Trust funds and incentives 14.2

*Includes savings of all project participants. UMF savings estimated at $234,000 per annum.
Overview of UMFK Biomass Project

- Grant awarded from USDA to fund construction of a new central biomass heating fuel plant to offset the high costs of heating in this rural area
- Includes the UMFK campus, SAD 27 High School and SAD 27 Grammar School
- Total BTUs consumed (yearly): 19.9B
- Total Gallons of Heating Fuel (yearly): 144,000
Overview of Project

- New project is 25% more efficient operationally for the same BTUs as compared to the current system
- Projected yearly fuel savings of approximately $322,000
- System is designed to accommodate 80% of the peak heating demand of all the buildings it serves
Project Timeline and Progress

- **September 2012** – Dirigo A/E retained as the project's Owner's Representative
- **October 2012** – Building Committee is formed from UMFK, SAD 27 and community stakeholders
- **December 2013** – Building Committee puts forth a solicitation for Design Services
- **February 2013** – A solicitation for a Design Services was awarded to Harriman Architects + Engineers from Auburn, ME.
- **May 2013** – Building Committee puts forth a solicitation for a Construction Manager-at-Risk, and retains PC Construction from Portland, ME
- **June 2013** – Fort Kent voters approve a Bond Referendum to expand the heating district system to include the Elementary School
- **July 2013** – Project Team solicits and initiates purchase orders for 2 EA, 4 MMBTU/Hr biomass boilers and 5600 LF of underground piping.
- **September 2013** – UMS Trustees consider change in project scope and funding
- **September 2013** – Project to mobilize and start site work
- **January 2014** – Boiler startup date
- **August 2014** – Anticipated Substantial Completion date
Base Project Costs

Total Project Costs: $5.5M
Simple payback, after USDA grant: 9 years
Simple payback, without grant: 17 years

USDA Grant Funding: $2.6M
Funding from other Sources: $2.9M

Anticipated System Life: 40 Years
AGENDA ITEM SUMMARY

1. NAME OF ITEM: Approval of Biomass District Heating Plant and Internal UMS Loan, UMFK

2. INITIATED BY: Norman L. Fournier, Chair

3. BOARD INFORMATION:

4. BACKGROUND:

The University of Maine Fort Kent ("UMFK") seeks approval to construct a biomass-fueled district heating plant on campus to provide thermal energy to nine campus buildings and two nearby Maine School Administrative District 27 ("MSAD 27") buildings. This collaboration is an extension of a UMFK-MSAD 27 partnership known as the Pleasant Street Academy.

Approximately $2.62 million or 87 percent of the cost of this project is funded by a competitive grant awarded to the University of Maine System in 2011 by the USDA Rural Development High Energy Cost Grant Program.

UMFK expects the project will reduce its fuel costs by approximately $200,000 annually, making the estimated simple payback of UMFK’s cash and in-kind investments less than two years. Most of the savings is generated by the relatively advantageous cost of biomass compared with the cost of heating oil. The estimated simple payback of the total $3 million project cost is approximately 10 to 11 years pending further engineering and analysis. Redundant oil systems are expected to remain in place as back-up systems at UMFK. An agreement to ensure and to document an equitable arrangement between MSAD 27 and UMFK will be part of the project.

UMFK will be the fiscal agent for the project and as required matching on the USDA grant, will contribute $291,000 in cash to be funded by an internal-loan from the System Office. The internal loan is to be repaid over 8 years from E&G funds with the first payment due on 7/1/14. The interest rate is variable in accordance with APL Section III-C (reset annually based on the 26 week Treasury bill rate as of May 1 plus 50 basis points). The initial interest rate is .62% and the initial annual payment is $37,494.

The project is expected to begin in calendar year 2012 and to conclude in calendar year 2013.

5. TEXT OF PROPOSED RESOLUTION:

That the Finance/Facilities Committee forward this item to the Consent Agenda for Board of Trustee approval at its May 20-21, 2012 meeting for authorization of the following resolution:

That the Board of Trustees authorize the University of Maine at Fort Kent to expend up to $3,000,724 to construct a biomass-fueled district heating plant for certain of its own and nearby educational facilities to be funded by a $2.62 million grant, in-kind contributions and an internal UMS loan. Further, that the Board of Trustees authorize an internal UMS loan of up to $291,000 for this purpose.