SEN. ROGER J. KATZ, SENATE CHAIR
REP. CHUCK KRUGER, HOUSE CHAIR

MEMBERS:

SEN. CHRISTOPHER K. JOHNSON
SEN. DAVID C. BURNS
SEN. PAUL T. DAVIS, SR.
SEN. BILL DIAMOND
SEN. STAN GERZOFSKY
REP. MICHAEL D. MCCLELLAN
REP. RICHARD H. CAMPBELL
REP. ROBERT S. DUCHESNE
REP. ANNE-MARIE MASTRACCIO
REP. DEBORAH J. SANDERSON

MAINE STATE LEGISLATURE
GOVERNMENT OVERSIGHT COMMITTEE

MEETING SUMMARY
September 15, 2016

CALL TO ORDER

The Chair, Senator Katz, called the Government Oversight Committee to order at 9:31 a.m. in the Cross Office Building.

ATTENDANCE

Senators:	Sen. Katz, Sen. Johnson, Sen. Burns and Sen. Gerzofsky Joining the meeting in progress: Sen. Davis and Sen. Diamond
Representatives:	Rep. Kruger, Rep. McClellan, Rep. Campbell and Rep. Mastraccio Joining the meeting in progress: Rep. Duchesne and Rep. Sanderson
Legislative Officers and Staff:	Beth Ashcroft, Director of OPEGA Scott Farwell, Senior Analyst, OPEGA Matthew Kruk, Senior Analyst, OPEGA Kari Hojara, Senior Researcher, OPEGA Etta Connors, Adm. Secretary, OPEGA
Executive Branch Officers and Staff Providing Information to the Committee:	Richard Rosen, Commissioner, Department of Administration and Financial Services Jim Smith, CIO, Office of Information Technology Victor Chakravarty, Associate CIO, Infrastructure, Office of Information Technology Paul Sandin, Associate CIO, Infrastructure, Office of Information Technology
Others Providing Information To the Committee:	James Page, Chancellor, University of Maine System Yellow Breen, President and CEO, Maine Development Foundation Ryan Neale, Program Director, Maine Development Foundation

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INTRODUCTION OF GOVERNMENT OVERSIGHT COMMITTEE MEMBERS

The members of the Government Oversight Committee introduced themselves for the benefit of the listening audience.

SUMMARY OF THE AUGUST 18, 2016 GOC MEETING

Chair Katz asked if there was objection to taking items out of order. Hearing none he moved to **Unfinished Business, Report Backs and Follow-up on Prior OPEGA Reports, Office of Information Technology.**

UNFINISHED BUSINESS

• Report Backs and Follow-up on Prior OPEGA Reports

- Office of Information Technology

› **OIT and DAFS Report Back**

Mr. Smith introduced himself. He summarized the OIT Status Updated September, 2016. (A copy is attached to the Meeting Summary.) The Committee members' questions and comments included:

Mr. Smith said the State of Maine gets hit about 2 million times a day by automated programs that are looking for a weakness to access the State's computer systems. Sen. Burns asked who was hitting the State's computer system and for what purpose. Mr. Smith said they will set up automated programs that keep attacking a network. They are looking for legacy systems that have not been patched. For example, if you have an old version of Word and Microsoft security patches, they are probing to see if you have installed those and if not they use those security weaknesses to attack your system.

Rep. Mastraccio noted that Mr. Smith made reference to the State's strategic goals and direction for information technology - she asked if those were in writing because she would like to know what the State Information Technology Governance (SITG) Committee is going to be working from. Mr. Smith said he sent his five year strategic plan to the Commissioners for review. They will either agree or let him know that something was missed. In this way the agencies' business agenda will be filtered into the IT Technology agenda and he will get an understanding where the agencies at large want to go with technology. He said OIT has been meeting with the SITG Committee members individually to explain what OIT is proposing on the bigger issues such as cyber security or disaster recovery.

Rep. Mastraccio asked if OIT had a timeline for when they anticipated being ready to implement their plans. Mr. Smith said the SITG Committee is an on-going Committee so there will not be an end. The Committee plans to meet sometime this quarter and will continue with on-going meetings, reporting to the Governor four times a year.

Sen. Johnson asked what the status was of the strategic, enterprise-wide plan for the State's IT needs that Mr. Smith referenced. Mr. Smith said OIT has published a five year plan and will use the SITG Committee to validate it.

Chair Katz referred to the two million probes a day on the State's systems and asked if they were looking for Social Security numbers or are just trying to cause havoc and destruction. Mr. Chakravarty said they usually have three objectives. First, to find personal and vital information and monetize it. Second, in the government sector there is the activist who wants to embarrass the government for whatever decision the government has made. Lastly, there are those that just want to prove a point and are looking for glory.

Chair Katz asked how much of OIT's $140 million budget is spent on cyber security. Mr. Smith believes OIT was spending about 2% of their budget on cyber security, noting that he thought that amount was too low.

Senator Burns asked what assurance the State has that they are not finding holes in the computer system and if they do, how do you know and retrieve the information. Mr. Smith said there is no guarantee and it is very hard to find an agency that has not been breached so you just have to keep an eye on it. OIT has tools that look for concerted efforts from bad actors and now are being proactive with what is going on in the network. He said there are seven or eight agencies that have more privately identifiable information and, under Mr. Chakravarty's leadership, OIT worked with those agencies directly and created a three tier approach. The first tier is a base line that is they had better be doing these seven things because it is what we have to do. Second tier measures which cost a little bit more money but it will give us a better feeling of security, and then a third tier. Mr. Smith said OIT tries to meet with the agencies monthly to institute the practices. He noted they have to watch for both internal and external breaches.

Sen. Burns asked if OIT knows when there is a breach. Mr. Chakravarty believes they do. They have automated notification systems that alert them, they have federal partners that monitor what is called the dark net so if somebody is boosting that they have breached the State of Maine or somebody has discovered State of Maine access, the Bureau of Homeland Security lets OIT know when they notice anything. He said the one good thing is Maine has very strong partnerships with the Maine Emergency Management, the Universities, the Public Children's Center, Federal partnerships, etc. so they are all trying to do the same thing which is to watch out for signs, but said there are no absolute guarantees.

Chair Katz asked if OIT determines, or believes, there has been a data breach what is their protocol for informing the public. Mr. Chakravarty said about a year ago the CIO and the Director of Maine Emergency Management put in place the Cyber Security Incidents Response Team. At a minimum, the CIO and Director would convene a team which has two goals. First, that the Governor and the Legislature get consistent and timely information about what is being done and the status. Second they want technicians doing the technical thing and the public information officers doing the public information. He said the current work flow is between the agency that may have been affected, for example, the Department of Labor. Between the agency, OIT, DAFS, Maine Emergency Management and the Governor's Office would come together very fast, no matter who learns of the breach first, and try to answer some basic questions. First, is it really a breach because there are a number of events that do not rise to that level. For example, if a group of hackers just managed to inflict what is called a denial of service where they overwhelm your site and your site just does not have breathing space, it dies. Mr. Chakravarty said that is embarrassing, but there is no breach, all they have done is to bring your site down. The Committee that comes together tries to get a sense of what the incident is and if they think there is a breach they immediately reach out to their insurance provider. He said Maine has $3 million dollar coverage and as part of the condition of the insurance, they absolutely need to talk with the insurance company. He said they cannot talk with anyone prior to that. Once they have done that, assuming the insurance company concurs that there has been a breach, they will have a large part in managing the public messaging. Mr. Chakravarty noted that they would work with the Governor's Office, Public Information Officers, Homeland Security Advisor, and insurance provider for what the public information will be.

Chair Katz asked why the State would be delegating what kind of public response there ought to be to an insurance company. Mr. Smith said maybe delegating is a stronger word than what they would use. He said OIT works with them in a partnership. He said that OIT has talked with other states that have been breached and learned that it was not the insurance money they received, but the expertise they got from people in the insurance company who are dealing with breaches every day. Mr. Smith thought some companies that have been breached held that information too long and he wants to

make sure the State does not do that. Mr. Chakravarty said that part of the terms of the insurance coverage is the State will have to work with them and they will help with the forensics, etc.

Rep. Campbell said OIT appears to be a large portion of each Department's budget and asked how costs look for the future. Are they going to be so grand that the Departments are not going to be able to operate, or are they going to be able to get their IT budget expenses under control? Mr. Smith said technology is expensive and there are some costs that are beyond the control of any technology organization. He said OIT constantly looks for opportunities to reduce and contain costs, but some are beyond their control because of the industry.

Rep. Campbell asked if there was a redistribution of needs throughout the Departments in the last budget that created such a shock for IT costs and is the cost more under control. Mr. Smith said for every budget process OIT goes through a process. Cyber security and disaster recovery are new things and as OIT introduces them there is a cost associated with those.

Sen. Johnson referred to Recommendation 3-C and asked how it related to OIT's executive level group that is setting direction across departments for IT. He said for some level the State needs to be able to say you cannot expose data in this way or cannot isolate this information in this application, however it is structured, because it is not going to be match able with information of other departments when they need to do so. He asked if that is something the executive group is going to look seriously at because he does not think that OIT should be able to just dictate things to other departments, but on the other hand you cannot have a department ignoring what is important to the overall information needs of the State and doing their own thing. Mr. Smith said that Sen. Johnson was right and that is a good example of what the group does. They are charged with looking across agencies and disaster recovery, cyber security, reuse of applications, etc. He said over the years you build a silo approach to data because there was not the need to share it, and although some agencies do share information it is somewhat arduous. He said OIT is trying to use the data analytical group to look at tools, what the industry and other states are doing to determine how the information can be shared.

Sen. Burns asked if Mr. Smith was referring to IT projects not State projects when he referred to projects that do not work. Mr. Smith said he was talking about agency and State projects combined.

Sen. Burns asked how is the State able to keep up with the rapid technology changes with the staff they have. Mr. Smith said what States are looking at is a bifurcation of the workforce so the State will be serving two different components going forward: supporting legacy systems and then the newer technologies that are coming in. OIT has reinstituted an intern program and noted that 75% of their interns have become full-time employees, but he does not think people are going to stay thirty years. He said most states are looking at the baby boom retirement and know these people will be leaving and the workforce coming in will not be the same. He said it is a challenge.

› **Discussion of Possible Alternatives for Legislative Oversight and Support of IT matters**

Chair Katz noted that at a prior GOC meeting there was discussion of the appropriate role of the Legislature in the oversight of OIT. He said there were a couple of GOC members with expertise in the IT area and the rest of the members are generalists and do not feel capable of understanding the technical details. An idea that came up was a special legislative committee whose job it would be to oversee IT issues in the State as opposed to the responsibility being with one of the policy committees as part of everything else they do.

Mr. Smith said OIT and Commissioner Rosen have talked about that possibility and would support having a body that understands IT because when thinking about IT decisions, they are all business decisions not IT decisions. You need to have someone looking at whether the dollars are going in the right place, the strategy is correct, etc. He said beyond the expense for IT, it is strategic because the

decisions made today are going to impact what happens five or ten years from now. There should be an organization to review IT ideas and do brainstorming sessions and work together to decide where the State is going to spend their money and what is the State's strategy. Even though strategies came from OIT that does not mean they are the right strategies, it only means they have industry knowledge, they think they know where States and industry is going, but they could be missing things so there is a need for some sort of vetting body.

Commissioner Rosen said on behalf of OIT and DAFS in general, they appreciate the opportunity the GOC has offered, both with report back and the discussion of how the Legislature wants to embrace, understand and have a discussion regarding IT. He said the current structure in the Legislature does not necessarily provide an effective audience to have such a discussion and then go beyond that. So to have the GOC looking at that and interested in making a recommendation or trying to influence the structure, is much appreciated.

Commissioner Rosen said ,from their view, the Legislature is essentially the board of directors of State government and one of the fundamental issues they are all confronted with is what the expense and strategic plan is as it relates to technology. He said it is not just the expenses, but the public's expectation for the delivery of services. Under the current structure, the State and Local Government (SLG) Committee is the Committee of oversight for all of DAFS. The IT discussion comes up in a piece meal fashion with other Legislative committees and then the AFA Committee, which goes through a lot of work in a very compressed amount of time, there is not opportunity for a strategic discussion. Commissioner Rosen said they were talking to the GOC today about the Executive Branch but the Legislature may be having a different conversation with the Judicial Branch and the Legislative Branch regarding their technology budgets and strategic plans. So it is a broader state strategic view than just the Executive Branch. The Commissioner supported the thought of having some entity in the Legislature interested in embracing the IT subject matter. He personally does not think you need to include a lot of experts in terms of technology on the committee. It is good to have some fundamental information, but it is really an enthusiasm to become a champion of the issue so you are seen among your colleagues and the Legislature as an authoritative voice to weigh in when considering departments' strategic proposals. Commissioner Rosen did not have a specific recommendation on the alternatives the GOC had discussed other than having a membership that is of the body as opposed to having members outside of government. You can bring in any outside expertise to appear before the committee, but the committee itself should be a unit of the Legislative Branch.

Commissioner Rosen referred to the 2% of State budgets spent on IT and said he did not honestly know whether that is too much or too little. He thinks part of the exercise they are going through with the SITG Committee is to determine that. He said everyone knows that the consumption of the services is dramatically increasing and the public's expectation is that it be available so they can perform all the functions on certain devices and that takes a lot of investment and money. He said that is the kind of conversation that is needed - is the State prepared to make that investment, do they, as policy makers, want to make that investment. Based on the consumption of services, they could say the budget should be increasing. The Commissioner said currently they do not have a chance to have that conversation and then look across government to say here is the plan and the approach to execute it.

Rep. Duchesne said members serve on other committees and they often deal with the departments who described OIT with an adjective ahead of it. He said it appears there is a gap between OIT and the Departments themselves and that the Commissioner expressed that IT is a growing expense. He said the departments may be feeling that they are picking up that expense at the cost of eliminating other positions to pay for that and don't know how to pay for IT costs without robbing other capacities they need. He asked if OIT was discussing with individual departments their IT needs.

Commissioner Rosen said that discussion takes place during the budget development process. He said clearly there are some departments that have funding from sources other than the General Fund that will drive technology investment. That funding source says they want certain technology improvements and here is the money to make the investment which has to be completed by a certain time. Another department may only receive General Funds and, although they may like to make that investment, they cannot unless they look at their operation more closely and make a determination as to whether they think a particular technology is going to provide the capacity they are looking for and simply have to find a way to fund it. Commissioner Rosen said what he thinks is difficult is when you are trying to manage a department and your approach is you want to dramatically increase the consumption of technology, but also want to hold on to the budget they currently have. So the interim discussion is that they have to be more disciplined and if there is something you can't afford then you can't afford it. If you do have the capacity within your budget, then we need to sit down and help you identify how those efficiencies can offset the costs.

Rep. Duchesne asked how much discussion there is about each department's IT needs. Mr. Smith said OIT discusses and works with every agency on their IT needs. OIT would not do any project without the agency going into partnership with them, but the problem is there are other things that get expensive like disaster recovery. You could make the point that every agency should have a person in charge of business continuity, but that is another expense. Agencies need someone in charge of privacy because it is not always a technology problem, it is also about protecting against did someone put a social security number on a report that should not have been there. It takes people to review that stuff and that is part of their challenge.

Rep. Campbell asked how much of OIT's expenses and budget are driven by regulatory demands or requirements that are perhaps forced upon them that are redundant or not necessary and is there anything that can be done about it. Commissioner Rosen said that many departments view cost components like cyber security, disaster recovery etc. as a cost that ought to be funded either as a direct appropriation or in a way that does not necessarily need to be recovered through the departments, which is the way it is currently being done. He said a department comes in and says I want "x, y or z" and OIT develops a budget and cost and then it is the Department's business decision on whether to proceed. However, there is more and more of the IT function that will need to be seen as a cost of doing business for the State just like the costs associated with the buildings being heated, lit and functional. Commissioner Rosen said there are some core functions now that are being seen as needing a universal level funding. He said the State does not currently have that kind of model.

Chair Katz said the State now has the enterprise model and asked if the Commissioner was saying there would be a different model. Commissioner Rosen said he thinks the enterprise model works well for the costs he just described that deals directly with the departmental needs. However, it is not working well for those situations for example where some capital is needed to modernize the system, to move out of some of the legacy systems, or to walk into an initiative. The State does not have a good source for that type of additional funding.

The Committee thanked Commissioner Rosen and the OIT staff for their report back and for answering the Committee's questions.

Chair Katz asked Director Ashcroft if there was any other action the GOC needed to take regarding OIT's report back. The Director said for the Committee's next meeting she will have the draft letter the GOC wants to send to the Legislative Council regarding what action they would like to see taken regarding IT.

- **Maine Economic Improvement Fund**

  › **UMS Report Back on Status of Action to Address Report Recommendations and Changes To Allocation Process for MEIF**

  Chancellor Page summarized his Testimony to the GOC. (A copy of Testimony of James H. Page, Chancellor University of Maine System, is attached to the Meeting Summary.)

  Rep. Duchesne referred to the MEIF Task Force Report that was submitted in the Fall of 2014 and asked if the Chancellor knew if good things came out of that Report. Chancellor Page believes the Report did have an influence on the Legislature's decision to increase UMS' funding, but he does not know how the Report was used by the Legislature or others. He hoped the Legislature found the Report a productive and supportive document. He said UMS believes that in the future the Legislature should be looking to increase the number even more.

  Rep. Duchesne noted that there are a number of legislators worried about the forestry industry and he was glad to hear that the University is involved. He asked if there was anything going on now at the University that might help save the forestry industry after the bio mass disappears. Chancellor Page said there were many initiatives underway. Some are in direct research as in bio fuel and some in terms of economic research and studies about how to improve the supply chain and the rest to reduce cost and make the Maine wood basket more financially attractive. He said he was not aware of any silver bullets, but said there are a great number of the University's best people who are actively working with the State and with private industry to try to find a solution because they are well aware that it is a linchpin of our economy and the State will not do well if the natural resources economy doesn't do well. Rep. Duchesne asked if UMS had a source for information where he could stay up to date on that. The Chancellor said he would get that information for him.

  Chair Katz asked if UMS was participating in any way in the federal project on the biomass and forestry industry issues that is going on as well. The Chancellor said there are members of the faculty and research staff who are advising on that work and he will forward their names.

  Chair Katz said that the GOC was going to be discussing the possible need for an overall formal economic development plan and part of that revolves around picking winners or losers and ultimately about where the emphasis will be put. He noted in the Chancellor's comments the limitation of having the MEIF targeting seven sectors and asked if Chancellor Page had any comment about whether continuing to have a limitation to a specific number of sectors is appropriate. Also whether there ought to be some review about the continued viability of it being these seven because he did not know how many years the current seven have been in place. Chancellor Page said some focus number is good so that it is not spent on all things and they become a mile wide and an inch deep, but almost all of the technologies that are on the list and, many UMS could usefully discuss besides, have undergone enormous evolution, and even revolution, in the last ten to twelve years. He thinks a good comprehensive review that looks and says is this the right mix for the Maine economy, for our strengths and for where the economy is going would be welcomed and he would be very pleased if some of UMS' people with their expertise in the economy and the various areas could contribute to that discussion. The Chancellor thinks it is time and would encourage that discussion to happen, but you may emerge from it right back to something very close to what you have now.

  Rep. Campbell said a lot of legislators are frustrated that the only time the Legislature hears from UMS is when it is looking for money. He recently attended an energy conference out of state that had experts from everywhere, but one of the panelists was from UMS and he spoke about what the University is doing in terms of off shore energy. No else there could come close to what is going on in Orono.

Rep. Campbell gave an example of information he received from someone from UMS regarding a bill he had filed in the last session regarding waste. He said UMS is an overlooked resource and with the R&D and technologies in Orono and other campuses the Legislature is overlooking a real asset that could help them with public policy. He thinks the Legislature should be looking to the University for more than just what information they are providing the Legislature because some legislators need help in public policy.

Chancellor Page said UMS has always tried to make clear that it has hundreds of experts in various fields. The overwhelming majority of them are dealing with issues that are relevant to the State and in many instances, are on the cutting edge of economic and social issues having to do with the State. The Chancellor said UMS will try to do a better job in making clear to legislators those kinds of expertise they have available, and hopes there would be no hesitation by any legislator to ask questions or seek help from the University. He said if the University does not have the information they will get it, and part of UMS' job is to serve the Legislature in identifying and evaluating policy, technologies and methods to move the economy forward.

Rep. Duchesne noted the Mitchell Center's researchers and staff have been very helpful with weighing in on solid waste policy.

Rep. McLellean said he also serves on the Education and Cultural Affairs Committee and noted the phenomenal change he has seen in UMS' relationship with the Legislature since Chancellor Page has been at UMS. The Chancellor answers questions when Committee members ask them and he and his staff have been open to getting involved in different things that he did not have time to talk about now, but wanted to say the change since he has been a legislator is incredible.

The GOC thanked Chancellor Page for his report back.

- **Review Status of Open Recommendations From OPEGA's 2006 Report on Economic Development Programs in Maine**

  - **Continued Discussion of Potential Statutory Changes and Resources Needed to Support Development of an Economic Development Strategy**

  - **Continued Discussion of Potentially Tasking OPEGA With Reviews of Individual Economic Development Programs**

Director Ashcroft said the purpose of the GOC's discussion at this meeting was to talk more specifically about what might need to be done, either statutorily or resource wise, to put the Maine Economic Growth Council (MEGC) in a position to develop an economic development strategy or plan and what that might look like. She said since the last GOC meeting both the Maine Development Foundation (MDF) and she has been reviewing what other states have built into their statute and/or their economic development plans and now are ready to talk about some of those details. She reminded them that the GOC is working towards putting together legislation that will ultimately drive economic development program evaluation.

As a follow on from the GOC's discussion with the Chancellor, Mr. Breen wanted the Committee to be aware of MDF's involvement in the forestry industry issues. MDF was asked in May to get involved in supporting the federal delegation and the federal agency family on trying to explore how they could help more with the revitalization of the forestry industry and the hard hit communities. He said UMS has been a core planning partner for getting federal and other support for the forestry industry, and entire Maine economy. They have also been working on a long term road map of where the markets are, where they are going and which markets Maine can be most competitive in. He said with the mills going down and the pressures on biomass there is about 3 million tons of soft wood pulp, primarily in Eastern Maine, that does not have heavy demand. He said there is opportunity there to attract a wave of investment in forest products in Maine, but the questions are what kind of investment should they be seeking, and what has a

chance of being competitive over the next twenty to fifty years. He said MDF will be working with the industry and the University of Maine on a global market assessment in addition to being a technical resource on products that can be created. Mr. Breen said USM will be involved in both of those pieces. In a more direct way, there is a lot of activity around a vision for the reuse of the Old Town mill that involves various partnerships with the University, both as a research partner and maybe even a customer for the combined heat and power for that facility.

Mr. Breen said MDF has looked at approximately twelve to fifteen different states or regions in terms of what they have done for an economic development plan, but they have not delved deeply on exactly what those states did and, in a lot of cases, they could not get the cost of those efforts. He said a well written plan is far different than a well-executed strategy. You may argue that the well written plan is the least important element of actually executing on that strategy with persistence and seeing a payoff for that particular region or state. So bear in mind that the question of which regions are doing well and competing for those next opportunities is a very different question than who has a coherent and thought out plan. He said at the top level they think the MDF and MEGC statutes are adequate to describe the ambition of what they think the Committee is trying to potentially create. Mr. Breen thinks the biggest thing that is missing is the inter-relationship, as the Legislature sees it, between the creation of the plan itself and how you would like the many agencies, including the independent agencies like the higher education systems, to take account of the strategic plan in programming their resource allocations and in their own departmental or systems strategic plans. He thinks the question of operationalization of the strategy might be an area that you have more discussion with the LCRED Committee and other colleagues about how to figure out how it should work so MEGC is not just directed to produce a strategic economic plan and present it to a set of committees, but it is expected that the rest of the Legislature and the Executive Branch will take account of that strategy in defining budgets and initiatives. Mr. Breen said the first big observation they have is about implementation process, setting some kind of broad expectation that it cannot just be a plan.

Mr. Breen said the other thing that MDF keeps coming back to is the point that it needs to have a global perspective. He said a lot of time you only look at the industries and information you currently have, the outlet for preserving or driving marginal growth in those existing industries versus the question of, globally speaking, where you can leverage the next set of opportunities. MDF sees that as one of the big drivers of cost of this strategy development effort. It is a lot cheaper to do a product that lacks that element than one that has it and Mr. Breen believes one or more of the GOC members have said if we do this we should do it right. He said obviously if they reach a place over time in the legislative process where a much less ambitious undertaking is what is really feasible, we would make the most out of that, but we would rather do it right in terms of having something that is a resource to get objective comprehensive global perspective of where Maine can compete.

Mr. Breen referred to Sen. Katz's earlier comments about how having a strategy inherently involves picking winners and losers. He said his experience in having done strategic planning in a private sector organization is that it picks the winners, but not the losers. That is to say you do not stop keeping the lights on because you have a new particular area of strategic investment. There may be many other things that continue to carry their own weight as mature industries or as foundation elements of a business or an economy. He said you are not necessarily picking the losers. What you are trying to do is pick the places where there should be an overemphasis or concentration of future investment and effort. He said that does not mean that you disinvest everything else going on. Mr. Breen said what you are trying to do is figure out where you should concentrate your attention as policy makers, leaders and advocates and the market will pick winners and losers over time based on that.

Mr. Breen said we also have to be realistic that the work to develop a strategy will take time. From the information MDF found for other states, it has taken ten to fourteen months to really do it right and that is a combination of the scoping and, making sure a lot of stakeholders are involved. It's recognized that the strategic planning process is valuable even more than the final plan itself so it is important having your industry, research institutes and others buying into it and having a process that is transparent where

people have a chance to advocate for the visions and strategies that they have. That competition of ideas will likely take place over a period of months. Mr. Breen said ten to fourteen months has been typical of the processes that Mr. Neale has reviewed.

Mr. Breen said MDF has not had the opportunity to dig into how much development of an economic development plan may cost. He said they have not gotten information on what you (the GOC/Legislature) would want to do to build a true budget for these things. He said again this is only based on other examples and the range might be from $200,000 to a million dollars from examples MDF has reviewed. Mr. Breen said probably the median would be around $400,000. MDF looked at a lot of things and came back to what they told the GOC at their July meeting which is that the original budget for the MEGC was about half a million over the biennium and that is probably not far off for a decent estimate. They currently have an allocation of $110,000 over the biennium just to produce Measures of Growth. It costs MDF about $130,000 over the biennium to do that work and that is one piece. Mr. Breen thinks it realistically does take $350,000 to $400,000 to do a very forward, credible statewide economic strategy plan and that figure makes sense from the examples they have been reviewing.

Rep. Mastraccio asked if the $400,000 Mr. Breen referred to was to develop the plan and MDF would need that amount of money or is more upfront and then every five years you spend "X" amount of dollars to see where you are. Mr. Breen said he thinks they ought to figure out the upfront costs of building the plan, which you do not need to do every year, and then the cost of trying to track and create accountability around implementation of the plan. The kind of metrics in Measures of Growth is one piece, but not the whole of it. He said, in fact, Measures of Growth was originally contemplated to track such a plan so they would want to contemplate revising Measures of Growth accordingly. He said it makes a lot of sense to him to do as the statute says a plan that looks out five to seven years and then reviewing your five year plan every couple of years instead of every year. Having a five year horizon with a review every couple of years makes a lot of sense to him based on his experience of doing this in other sectors. You may not revise the plan every two years, but you dig in, report back, identify where some positions are off, acknowledge where strategy would have required more investment than what materialized and you say does that mean we are not committed to that strategy or does it mean it is going to take longer to realize a payoff on that strategy for the State. Checking back every biennium on a long-range plan that transcends the biennium makes sense. Mr. Breen said given that institutional memories are short in the term limits environment, as well as the budgeting process, he would advocate splitting whatever you think the total amount of resource needed is split into even chunks every fiscal year. He said even if the expenses are going to be more in the first year of the first biennium this is undertaken and will be dramatically less in the second year. MDF can probably manage that cash flow issue internally. Then in the third and fourth year you might start out lower and then ramp back up to a full revision of the plan as you go across the four or five year cycle. Again MDF could probably manage that cash flow internally.

Sen. Johnson asked what Mr. Breen saw as the scope of any strategy or plan and how it would be set up such that agencies, including the University, would take into account the economic development plan or strategy in their own efforts.

Mr. Breen said MDF wanted to highlight that for the Committee. Obviously MEGC or MDF has no oversight responsibility over those other agencies so he thinks the question is how you could establish some expectation in the statutory language for other agencies to at least be held accountable for reflecting that economic strategy in their own operating plan. He said DECD will still have to have its own agency plan, the UMS will still have to have its own strategic plan, but writing language in statute about expecting them to take account of the economic strategy that you have paid to produce would at least provide that impetus and hold agencies somewhat accountable for implementation.

Sen. Johnson clarified then that MDF/MEGC is not going to try to suggest to them things they should do, but is going to identify that there is an intersection, interest, opportunities or impacts being proposed in the plan that should be reflected upon. Mr. Breen said MEGC/MDF will deliver whatever the Legislature is seeking, but they would suggest developing a long-range plan and if the long-range plan that also gave

some view of what it would take to get from present state to the desired long-term goal. Mr. Breen would think that the Legislature would want from MDF/MEGC the feathering out of strategies and those would implicate what other agencies are doing. If you want University research to increase by "X" over a ten year period to be competitive with other states, you would want to see that dialogue advanced by the University System and then have the Education and AFA Committees carrying that dialogue.

Mr. Neale said in response to Sen. Johnson's comments he thinks he is talking about where the current Measures of Growth Report leaves off. Mr. Neale has been working on the Measures of Growth Report for five years and every year when they are close to finalizing the Report they have the discussion about how useful is the Report as a tool, and are there next steps they could take. The time and resource limits, however, have kept them from being able to do that. He said with the changes being talked about, whether they are statutory or funding, would allow MEGC to take that next step.

Mr. Neale said with Measures of Growth MEGC looks a lot internally at what Maine is doing, what it is doing well and what it is doing poorly, but they do not do the global piece. Maine may do something extremely well in the State, but it you cannot compete at the national level or international level, that may not be where you want to be spending resources. He thinks that is a critical element that has been missing.

Chair Katz said OPEGA has been looking at other states' statutes related to economic development plans He thought the GOC could get Mr. Breen, Mr. Neale and Director Ashcroft's thoughts about the critical elements that ought to be included as the members of the GOC decide, as a Committee, how to move this matter ahead.

Director Ashcroft said she has looked at what other states had in their statutes and reviewed MEGC's statute to decide where, or if, it might be worthwhile to bolster MEGC's statute and what specifically should go in there. She said it seems there are several phases that are laid out in most of the statutes and in the current MEGC statute the Council is responsible for establishing the development, maintenance and the evaluation of a plan so those three things are already expectations, but she was not sure they were all fully reflected in the rest of the statutory language. Director Ashcroft said what is not in MEGC's statute is any responsibility for implementation of the plan. She had picked up on the same point that Mr. Breen was talking about in terms of getting it operationalized.

Director Ashcroft gave the GOC her observations of what is in MEGC's statute already versus what she saw in other state statutes to highlight where the Committee might want to have discussion about whether statutory change is needed. (A copy of MEGC's Statute is attached to the Meeting Summary.)

Director Ashcroft referred to § 929-B – 2. Process. She said other states have more specifics regarding process in terms of who is to be included and whose viewpoints are to get included. It is her observation that the makeup of the Council itself accomplishes a lot of what the other states might have been after. However, the GOC could add language to specify that there should be some sort of public input process and what the Committee would like that process to look like in terms of whether it is public hearings or it is the kind of work that Mr. Breen described earlier with getting stakeholder input. Director Ashcroft said she did not see those things spelled out specifically in the process piece.

Rep. Mastraccio said when she reviewed what other states were doing it seemed to her that MEGC's statute was lacking specifics about what the expected interactions were with for example, the Governor and legislative committees. She referred to Massachusetts' statute and it says you will meet with the committees, you will have public hearings, you will discuss it, you will bring in stakeholders and she thinks that is what is missing. She said there is no follow through at all built into MEGC's statute and the only way you are going to do that, in her opinion, is say this will happen and it will happen at specific times. Rep. Mastraccio said she did not mean every two years, but noted economic development is specific to Administrations and changes in the Legislature and that is when things go in different directions. She said if you are going to have an economic development plan you have to have some buy

in from whoever is there and if it is going to change, everybody needs to be able to say why it is changing.

Mr. Breen agreed with Rep. Mastraccio about being more specificity on how the cycle is expected to occur. He said he thinks the question you have to ask yourself in designing this process is do you want MEGC and MDF to try to create a plan that a given executive administration has adopted, or will adopt, or is MEGC and MDF expected to develop a plan based on cross sector perspectives that are one step removed from State government and the exercise potentially useful influence with those in State government and elsewhere to get the plan communicated and implemented. He said that will guide how the process should work. Historically he felt the influence of an organization like MDF is most powerful if they are not tied to the change overs of the political cycle but frankly are trying to set the stage for critical strategies and components that they hope candidates would, in various ways, adopt outside the political process itself.

Rep. Mastraccio said what Mr. Breen said sounds good in theory, but in the Legislature it is too easy to ignore that and she wants something that everyone involved agrees on because it so important.

Director Ashcroft said she thinks that is where they were all going and she thinks of it more as implementation of the plan rather than process of developing the plan. Who are the groups that need to be made aware of the plan and what are the expectations that they would somehow weave that into their own thinking. She thinks that includes the Governor, Legislature and the other groups Mr. Breen mentioned. She said she agrees with Rep. Mastraccio and that issue needs to be thought about in terms of who is it going to go to, how often are they going to have the discussions, what are the forums for the discussions going to be and what are the expectations, if there are any, about how people are going to take that and use it. Director Ashcroft said that would be the purpose of continually monitoring through Measures of Growth things like how is Maine doing against the plan and if things are not going well then you have to ask the root cause questions about why not.

Chair Katz noted that in looking at the experiences in other states some have had more continuing buy in than others and the Director might ask in discussions with her colleagues why that is. He said some may be because of personalities and others could be because the statute was designed well enough so that it encouraged continued buy in in a structured way.

Sen. Johnson said one thing they should do is set an expectation as a Legislature that agencies will send us their reflections on the strategy and plan and how what is in will impact their efforts, for example with regard to new opportunities that should be pursued. He thinks that would be a valuable way to leverage and increase the discussion that they need to have around how do we fund initiatives, re-align activities and create opportunities.

Rep. Duchesne thinks the rubber hits the road in the AFA Committee. That is where the Legislature makes up all its priorities and decides where the money is going to be spent. He said this would probably need to be a conversation between the MEGC/MDF and the AFA Committee.

Director Ashcroft said in the Council's statute and also contained in other states' statute are provisions that direct what the content of the plan or things the plan should include that strike her more as areas that should be considered developing the plan. She is not sure that these things need to be talked about directly in the plan so much as the plan should say here is how we took into consideration "X, Y, Z", so looking at it more globally. She said there was one state that said economic development should be thought about broadly. Director Ashcroft said she might propose taking some of the" let's consider" items and put them in a process piece as opposed to setting it up such that the strategy of the plan itself has to talk about every one of those because some are broad statements of things you do not want to lose sight of in developing a plan.

Mr. Breen thought some of the things Director Ashcroft talked about under content are really about the process. She said that was correct. It is about what should be considered and who to get input from and she saw that more logically belonging under process.

Director Ashcroft said in terms of maintaining the plan the current MEGC statute vaguely suggests that the plan is to be regularly updated. She said other states get much more specific about that in terms of there will be an annual review and update or, as Mr. Breen suggested, every couple of years might be the appropriate timeframe to do that. Other states' statutes also talk about what is supposed to happen following that update of the plan. Director Ashcroft said the GOC might think about adding something that is more specific and that would go to Rep. Mastraccio's point of making sure we know what the schedule is so it does not get lost given term limits.

Director Ashcroft said there is a section in MEGC's statute that talks about what the contents of the strategy or plan should include. She did not think it is very specific, but is not sure it needs to be and that is where MDF and MEGC would weigh in. She said there are other states that went to a lot of extremes and have very specific language about what the content of the plan should include. Director Ashcroft gave the example that Mississippi has laid out that there are six parts or sections that should be reflected in the plan. She said the GOC has not started thinking about what they would propose get captured under a plan. It might be helpful to get in something general into statute in terms of what that content should be as this is always helpful for future years to have some reminder about what it is the GOC was trying to accomplish. Director Ashcroft said she would be in favor of advocating for getting something down that says we want to discuss Maine against other states, want goals, measurable objectives and performance measures. She said a lot of states have that and thinks the MEGC is already in position to do that.

Mr. Neale said a lot of other states do have language around some of the specifics. He said for example, New York has ten regional councils and they specify identifying broad goals within strategies and expected outcomes so that is quite a bit different than what MEGC is currently doing. He said that has not been specified in the statute so he thinks something along those lines would be helpful in bringing it down to actionable specific steps by the Legislature, by agencies, or whoever might have a role to play in it.

Director Ashcroft said some of the states have language in their statute that is broader than she thinks would be useful. She likes the idea of adding just a little bit of specificity so that everybody knows what it is we are shooting for, what it is we are trying to fund, etc.

Rep. Sanderson agreed the statute could be more specific, but thought if it got too specific that may hinder the MEGC's ability to be fluid in developing an economic development plan. She asked if Director Ashcroft would caution against that. Director Ashcroft said she would. Mr. Breen said the nature of a strategic plan is that you want it to be able to be broad, especially if it is long range. He thinks that if the legislative dialogue proceeds if it doesn't look like you can resource as ambitious an approach as they are recommending, then being able to get more specific at that point and say what could we do within those resources would be helpful. Mr. Breen did not know if you would have to go super detailed on the front end if you are advancing a pretty ambitious and fairly strategic concept of what you want. But if you don't get back anything useful, then you would want to get more specific about what had to be contained in the plan.

Sen. Johnson said an aspect that might be important is for MEGC to look at opportunities, internationally, regionally and locally, and ask how those relate to or play into Maine's strengths or particular disadvantages.

Director Ashcroft said in terms of who is to implement the plan she thinks that there needs to be something added to statute that speaks to what the GOC has been talking about for making other agencies at least aware of it but also somehow required to actively consider it. She said in some of the other states the organizations like MDF and MEGC that have duties for developing the plan also appear to be the ones

that are set up to implement it and we do not have that situation here. She said MEGC and MDF would be serving the role of setting the plan out there and be responsible for monitoring the progress and how the plan needs to be tweaked. They need to make strong recommendations to others who then need to implement the plan. Subsequently, the evaluation part needs to be done to address things if Maine is not making progress. Director Ashcroft said that for the implementation piece the GOC might want to build in some specifics of who the plan should be submitted to, who it should be presented to, who needs to be having conversations about it and at what intervals. She said it should not be so rigid that you are too tied down, but enough to make an expectation. Current statute, says that the Council shall report to the LCRED Committee, recommend its plan to the Committee biennially at the beginning of each new Legislature and that the recommended plan must be used by an organization that was repealed in 1997. The Director said in order to have the accountability this section will need thought about in terms of who those entities need to be and when.

Rep. Mastraccio thought this was a good example of why naming specific entities in statute could be a problem. She said she never heard from anyone that this organization did not even exist anymore.

Mr. Breen thought there was similar language in DECD's statute about an economic development plan so we should make sure that they are cross referenced to one another. Even if the name of the department changes, presumably there will always be a department with that responsibility. He did think it would be important to set up something to ensure the plan is transmitted not just to the Legislature, but also to the Governor, the Boards of Trustee of the higher education systems and other relevant independent institutions. Also perhaps to direct, or at least ask, all of those entities to take account of that economic strategy in the development of their own strategies and operating plans.

Director Ashcroft said the evaluation piece, which is required in the current MEGC statute, does not say what the scope of that evaluation should be, but it does say MEGC will monitor progress and recommend changes. She thinks that could be done as part of an annual update process, or biennial update. She noted that some other states had more specifics about what those evaluations should include. It seemed natural that at the very least, that evaluation would include taking stock of where we are against the strategies, goals, objectives and performance measures that have been embedded in the plan and having a process for reporting that out. Director Ashcroft said that is possibly a piece of what would be getting done in a macro level evaluation that is currently the responsibility of DECD. She said a macro level type evaluation is to say how are we doing against our own strategy and plan and how is that looking against other states in terms of competitiveness. She thinks more discussion about what makes the most sense for evaluating and what kind of form that takes might be warranted. Director Ashcroft asked the MEGC/MDF to give additional thought to that.

Mr. Breen said the scope and the resources being discussed for MEGC/MDF do not include taking over the million dollars' worth of effort that the State is doing on that broad evaluation. He said as he understands it, the reason they have been to meetings over the last months is to discuss whether this could in fact be the anchor point for that evaluation to make it more effective or more grounded in a set of outcomes that you are evaluating against. He said the two obviously tie together, but his only concern would be is that is a pretty hefty undertaking. Mr. Breen said they would be outsourcing any exercise like that just like DECD does. He is not sure MEGC/MDF is more equipped than DECD and has not consulted with DECD about their vision for this. He said it is very important to have some ongoing impetus from a party with an objective perspective, but you also want the Executive Branch continuing to retain responsibility and ownership for a lot of this stuff. You do not want to shove it all to MEGC's side of the fence and then have it be something that feels like it is being done to them instead of something that they continue to own in a real way. He said there is balance there.

Director Ashcroft agreed and said whatever the scope of the DECD evaluation is or individual program evaluations are, it will need to get fed by whatever you are already doing as part of the updating of the plan. So it could affect the scope of the other review if part of MEGC's updating piece is the benchmarking against where we are in the plan.

Mr. Breen said that is why doing the ongoing maintenance will be a far greater scope than the Measures of Growth is today because Measures of Growth in essence just has to look at data and not look at any kind of qualitative assessment of the types of initiatives and their performance.

Director Ashcroft said there are statutory additions or changes to make to the MEGC statute. She asked whether GOC wanted to include those changes within the larger piece of legislation that the GOC is working toward putting together on the evaluation piece. She said another option is to do it as a stand-alone piece of legislation. She also did not know if for proposed changes to the MEGC statute to be coming from MEGC/MDF as opposed to through the GOC. She said that has not been talked about at all.

Chair Katz asked for a timeline because he assumed they were talking about who is going to be completing this draft legislation. Are we trying to get something done in the next two months so this GOC can have a pride of authorship of what they are coming up with, or are they leaving the task to the next GOC. He noted that there are going to be a lot on new members of the new GOC because of legislators not returning and it would be disappointing if the next Committee had to start the discussion from almost scratch.

Rep. Mastraccio asked how far the Director thought the GOC could get so they might have something they could look at, or at least have a discussion of, in the next month or two so the next GOC can start with something more concrete than this Committee has right now.

Director Ashcroft thought she could commit to bringing back to the GOC a version of the draft legislation that incorporated what they have talked about, and the current thinking around it, at the October meeting.

Chair Katz said from the reaction of the GOC members they would ask that the Director have that information for the October 6th meeting so they will have a good product to pass along to their successors.

Mr. Breen said it was great to have the GOC members so deeply engaged in this matter in a thoughtful way and said that was a rare opportunity for MDF/MEGC and they appreciate it. He said structurally he thinks, in some ways, it is more powerful when many members of the Legislature are really inviting or asking an entity like the MEGC to do this work they want and need done than for MEGC to bring it forward itself. He thinks it should be a collaborative effort however the GOC approaches it. Mr. Breen said he did not know where the Committee was with bouncing this off their colleagues on the LCRED and other key Committees. It is funny in a way that they are having the deepest economic development strategy discussion in a long time in the GOC versus the LCRED Committee and he hoped that they would be equally engaged. Mr. Breen said it is hard to say what the best approach is to any legislative vehicle. It may depend on how sticky the GOC thinks other elements of that bill are going to be. If you think this element is really important to undertake regardless of other elements and it would command some sort of strong consensus then maybe the GOC would want to split it apart, but they have a better sense of that than MDF/MEGC does.

Chair Katz did not think there had been any formal communication with the LCRED Committee.

Rep. Mastraccio, a member of the LCRED Committee, said she has had conversations with various members and they are very glad that the GOC is involved in this because there has been so many other issues before the LCRED Committee they do not get to discuss economic development plans. She said the Committee has had a difficult time trying to engage DECD in these kinds of discussions.

The members of the GOC thanked Mr. Breen and Mr. Neale for being at the meeting and for their input on the discussion of an economic development plan.

RECESS

Chair Katz recessed the Government Oversight Committee at 12:22 p.m.

RECONVENED

Chair Katz reconvened the GOC meeting at 1:02 p.m.

NEW BUSINESS

• Presentation of Northern New England Passenger Rail Authority Information Brief

Director Ashcroft thanked the OPEGA staff who worked on the Information Brief, and the management and staff of NNEPRA who were very cooperative and responsive throughout the review. She also thanked MDOT and DECD for sharing information OPEGA requested of them and spending time with OPEGA staff to help them develop a perspective and context on passenger rail in Maine.

Director Ashcroft and Mr. Kruk summarized the Northern New England Passenger Rail Authority (NNEPRA) Information Brief. (A copy can be found at http://legislature.maine.gov/uploads/originals/final-nnepra-info-brief-9-12-16-1.pdf or by calling OPEGA.)

GOC members' comments and questions included:

Sen. Gerzofsky said his understanding on the track maintenance for the rail ties and those types of things is that NNEPRA does play a role to make sure those tracks are maintained. Pan American is the only ones who work on the tracks so NNEPRA works with them. He asked Mr. Kruk to repeat what he said regarding that.

Mr. Kruk said NNEPRA does not own the tracks, but will work collaboratively to help improve the tracks. NNEPRA might pay for the ties but what they will do is make a plan with Pan Am for needed improvements. He said the last part he mentioned was they do not have complete control over the track conditions. It is a collaborative effort. NNEPRA does not own the line.

Chair Katz asked for clarification on how much track the State owns. Mr. Kruk said the State owns one mile of track.

Sen. Johnson referred to the disruption that occurred in FY15 with the tie replacements and that it had a long impact on the Downeaster's ridership. It appears to him that NNEPRA is not meeting the needs of customers well enough if there are impacts that are preventing people from actually being riders. He was interested in knowing how to address that.

Chair Katz noted that some members of the GOC had other commitments so asked if they would prefer to continue with the Information Brief presentation or have the opportunity to just ask their questions about the Brief.

Sen. Gerzofsky said there are parts of the Brief that he would like to have explained to him better, but he did not think this is the only forum that can happen in. He is going to introduce a motion for a public hearing and at that time he can ask questions to people who he does not believe were involved in the Brief, such as railroad experts, people who have expertise other than the people at NNEPRA. He did not know if OPEGA reached out to talk to citizens or to railroad experts and did not know if this meeting was the time to go into that.

Chair Katz said the Senator could ask Mr. Kruk any questions he would like and it is appropriate to ask who OPEGA spoke to or didn't speak to.

Director Ashcroft said if there are points in the Brief that the GOC would like a better understanding of in terms of what it is that OPEGA is trying to explain or how they arrived at their analysis, she thinks today's meeting would be the appropriate time to ask those questions so OPEGA can clarify what they are saying in the Brief. If one of the questions is who did OPEGA speak to, the answer is no they did not reach out to citizens at large. OPEGA did receive a number of unsolicited communications during the review and did go through all of those, so in that way they did have input from some citizen groups. She said some of those communications included information from some train experts. Director Ashcroft said OPEGA may not be able to answer the questions that members of the Committee have for them, but if there is anything related to the Brief, they would like an opportunity to explain that today before the Committee goes into the public comment period.

Sen. Gerzofsky referred to the scope of the review and to him the Brief addresses operations, the role of the different agencies that are involved, it mentions the role of the Transportation Committee, etc. but the scope also asked for things that are a lot more troubling than where all the dings are. He said the scope was supposed to take into concerns that he had, that constituents had, that they had gotten in touch with him about with regard to NNEPRA. Sen. Gerzofsky said it had to do with how relationships are worked out and that is not addressed in the Brief. He said he asked several times about a contract for a taxi cab service and how that was derived. He said that has been explained to him as being federal and he cannot ask those questions, but he would like to know how relationships played into the scenario when he has a Chair of the Town Council that owns a taxi cab company and gets a sole bid contract. Sen. Gerzofsky said he does not know the relationship that they had together, but NNEPRA was involved. He did not know what they had to do together in order to get that contract when he has twenty-five companies between Portland and Brunswick that never heard of the taxi cab contract. He said that was part of his scope – that he is concerned about not only that the numbers matched up, which he never doubted they wouldn't, but how business is conducted and especially how relationships are at play and the perceived conflict of interest of these relationships. When you start seeing elected government officials profiting by some of these transactions, he thinks that is appropriate to have in the scope. He understands you cannot go in and get the actual contract, which bothers him tremendously, but the perception of a conflict in some of these areas should be reviewed to see if there are actual conflicts. Sen. Gerzofsky said when you are a member of one of the passenger train support groups and you FOAA a state senator's personnel records because that senator brings a concern to the Government Oversight Committee, which the senator is a member of, he finds that disturbing because in his mind that is trying to intimidate a member of the Legislature. He is more concerned about the propriety of how things are being done than knowing the relationship between the Feds and Pan American. We are running passenger rail on tracks in the State of Maine and we are told that we are expecting a certain schedule of trips on a monthly or yearly basis and then all of a sudden we have to shut down the line because thousands of ties that were not right and the excuse given to him was they had a bad winter. He said every year Maine is going to have winter, but now they are looking at closing the Amtrak line in Maine for two months and are going to be transporting passengers by bus to Boston. He thinks that is disturbing and that is the maintenance level they are at. He has been dealing with Pan American for a long time and he knows how they work, which is difficult sometimes, but he thinks it would be NNEPRA's responsibility to have a strong role in maintaining those tracks so they are not only safe, but they are serviceable so you do not have a two month shutdown of services.

Sen. Burns asked Director Ashcroft if it was her opinion that the scope that the GOC agreed to is addressed in OPEGA's NNEPRA Information Brief. Director Ashcroft said yes.

Sen. Burns referred to the unsolicited comments the Director mentioned earlier and asked if the GOC would see those comments at the public hearing. Director Ashcroft said OPEGA would hold comments received from individuals during the review as confidential working papers so if they were going to be shared with the Committee they would be looking for permission from the people who sent them. Sen. Burns wanted to formally request that OPEGA seek permission to share the comments they have received.

Chair Katz commented on the idea of expanded public participation or input beyond what has occurred in the past when NNEPRA has had an expansion or expansion of service. He said one was the expansion of service into Brunswick and the other was the issue about the maintenance facility in Brunswick. He asked if Director

Ashcroft was suggesting that in a perfect world the public participation in the making of those decisions would be more robust. Director Ashcroft said the decision to expand to Brunswick was a legislative process so whatever occurred around the development of the Joint Resolution OPEGA described was the public process but OPEGA did not look into what public hearings around that were. She would assume that there was the normal process.

Chair Katz asked what kind of decisions was Director Ashcroft talking about that perhaps the public participation could have been more robust. Director Ashcroft gave the Brunswick Layover Facility as an example. It had been part of the State wide plans and those plans had a process for public input and they are public documents so it was open for people to know about the facility. Yet is was not until NNEPRA went to start building the facility that public concern was raised. She thinks NNEPRA was relying on the discussions with municipal leaders to be a reflection of the public sentiment at large. Director Ashcroft said it might be an opportunity to proactively think about what the impact is going to be to a community and it might be a good thing to hear everybody's concerns on a more proactive basis before getting into the throes of building something.

Sen. Johnson said the frequency in which the public has awareness and opportunity to weigh in might be an issue. He said it appears that it was about six years ago MDOT began drafting the long term plan so other than the legislative actions that was the last opportunity the public had to weigh in. Director Ashcroft noted that everything is very public on NNEPRA's website and it is not that all of a sudden the layover facility appeared.

Sen. Gerzofsky said he appreciated OPEGA's Information Brief on NNEPRA and, as far as it went, it is fine. He wanted to thank NNEPRA staff for the information they provided, but he wanted to say that the only time there was a public hearing on the maintenance facility, which he was not going to talk about today, was when he called a senatorial public hearing on the maintenance facility. He said he invited the Commissioner of Transportation to sit with him so they could hear from the people who were most affected. He said those were the only hearings held. The Town Council chose not to because they were told by the Authority that they had no role to play. He said he took it upon himself, as a Senator to have a senatorial hearing otherwise there would have been no public hearing at all. Sen. Gerzofsky said there was a rumor that NNEPRA was trying to go before the Zoning Board to get zoning approval to change the zone, but that never happened. He said that was the first time he ever heard of the maintenance facility. Sen. Gerzofsky said he has been working with Amtrak since the late 60's and is a very strong supporter of public transportation, especially with passenger rail. He said it is not that he is an enemy against NNEPRA or Amtrak, it is that he is afraid the services are not being done properly and there are too many cozy relationships which government should not participate in. He said he was not trying to diminish the service, and in fact, wants to expand the service, but the only way there will be an expansion of service is by having the public agree and support the project. Sen. Gerzofsky said the scope the GOC originally talked about had nothing to do with the maintenance facility, it had to do with NNEPRA's relationships, not only with the citizens of his communities, but also the members of the Board.

Director Ashcroft said Sen. Gerzofsky did lay all of the above concerns out in his initial request about NNEPRA. They talked at length about what was, or was not, within a scope that OPEGA thought they could or should review. She said the end result of the discussions with the GOC about the general scope that OPEGA was going to pursue in preliminary research is reflected in OPEGA's Biennial Work Plan for 2015-2016 that is given to the GOC every time they meet. The scope on the Work Plan is "Assessment of use of resources; procurement and contracting; oversight and governance; long and short range planning; and achievement of statutory purpose." Director Ashcroft said the GOC did not agree to look into all different kinds of relationships that may, or may not, exist. She said the Brunswick taxi contract was a specific issue. OPEGA looked at it as part of their contracting piece and it was determined that it was not a contract that NNEPRA holds. Sen. Gerzofsky was advised of that. She said it is a contract between Amtrak and that organization so therefore was not pursued further by OPEGA.

Chair Katz said the investigation of the Brunswick cab contract was not part of OPEGA's scope for the NNEPRA review and if Sen. Gerzofsky wanted to try to make it a part of an expanded scope of the review at the appropriate time, he is free to do that. He said it appears OPEGA staff has thoroughly explored the

admittedly narrow mandate they were given to this point in time. Chair Katz said if members want to go down other roads in the future, the GOC can have that discussion.

Sen. Gerzofsky said public trust was part of his initial concerns.

Motion: That the Government Oversight Committee hold a public comment period on OPEGA's Information Brief on the Northern New England Passenger Rail Authority. (Motion by Sen. Diamond, second by Rep. Campbell.)

Rep. Duchesne wanted to clarify the process question on getting the unsolicited communications raised by Sen. Burns. He said when OPEGA is conducting a review a lot of the information is kept confidential even from the GOC. It is assumed if the Committee had a public comment period on the Brief anyone who wants to make their information available to the Committee could do so without OPEGA getting involved. He asked if that was acceptable or is there a reason the GOC would want to receive documents that are normally kept confidential during the review process.

Sen. Burns said they battle all the time with the public's right to know and to him this is a situation where they have opened a review, there are unsolicited comments that come to OPEGA and now the Committee is going to have a public hearing. He thinks it would be a simple matter of checking with the people that sent the unsolicited comments to see whether or not they want those to be kept confidential which is the reason for having the confidentiality statute. He would ask that the GOC/OPEGA take the simple step and ask permission to see the unsolicited comments and if there is somebody that does not want their information made public that was fine.

Chair Katz asked if there consensus of the members of the Committee to request that information. The members of the GOC agreed to make the request.

Discussion of the above motion: Chair Katz wanted to clarify that the public comment period would not be for all things regarding train services in Maine. He said the public comment period is going to be related to OPEGA's NNEPRA Information Brief. There may be gray areas kind of near the scope of the Brief and you will have to use your discretion, but for those people who may be interested in attending the public comment period it is not a public hearing on the status of rail service in the State of Maine or on all issues involving NNEPRA.

Vote: The above Motion passed by unanimous vote, 8-0.

Chair Katz noted that the public comment period on OPEGA's NNEPRA Information Brief will be at the GOC's meeting on October 6, 2016.

Chair Katz said it is the GOC's practice when reviewing an agency that they give that agency an opportunity to comment on an OPEGA report.

Patricia Quinn, Executive Director, NNEPRA introduced herself and the NNEPRA management staff at the GOC meeting. Ms. Quinn thanked the GOC and OPEGA staff and said NNEPRA goes through a lot of different audits and reviews and they are always time consuming, but they are always an opportunity for NNEPRA to look at themselves and hopefully come out a better organization on the other side. She said OPEGA's approach was straight forward and staff was very professional and thorough. Ms. Quinn said the NNEPRA operation is very complicated, their role is complicated, but they do take their jobs seriously and everyone on NNEPRA's staff and Board works hard. It is a group with extreme integrity and commitment and she thinks they have accomplished a lot.

Ms. Quinn said NNEPRA had a huge bump in the road last year with their ridership and the tie program and wanted to put that in context. She said things need to be replaced every once in a while. Railroad ties have a life span of a couple of decades and a good number of them were replaced in 2000 before the start of

Downeaster services in 2001, but neither Pan Am nor NNEPRA had the financing to continue with that operation. Ties continually need to be upgraded because they are made of wood and continually wear out. She said over the course of a decade there had not been a regular tie replacement program active and they realized that they needed to come up with a program to periodically replace certain ties. Ms. Quinn said if you take all of the ties out at the same time then you have to put them back all at the same time, so that is not good. She said the industry standard is that you periodically go through, pick a section, do every second or third tie, to replace. She said NNEPRA feels that they have been successful in finding a federal funding mechanism and working with Pan Am Railways, who is the owner of the railroad, to be able to finance an ongoing capital tie replacement program that they can implement every other year or so. They can take a certain section of track, and upgrade a number of ties to keep the railroad in good working order. She said NNEPRA had its first project a year and a half ago where 30,000 ties were replaced over a 78 mile span and now they are going back in October and November and will be replacing another 15,000 ties within a 30 mile span.

Ms. Quinn said it is unfortunate that NNEPRA has to provide bus transportation for passengers but said there are a couple of reasons to do that. One is NNEPRA has one track so it is unlike other places or locations where they do construction projects and can keep one lane open and do construction on the other. NNEPRA only has one lane so when it is ripped apart, it is ripped apart. What they found last year was that when you try to run a train through tracks that are under construction it is too disruptive for the passengers, so NNEPRA made a conscious decision this time to provide alternate transportation around where the construction was and to provide bus transportation. Ms. Quinn wanted to address that and have it known that there is no safety issue, it is a maintenance issue and a lot of it has to do with logistics.

Ms. Quinn said NNEPRA saw the GOC/OPEGA review as an opportunity for the Legislature and public to understand a little better the role that NNEPRA plays and some of the things that they do. She thinks the Brief does a good job in outlining that. She said NNEPRA has tried as an organization to maintain a good working relationship with the Transportation Committee. She usually requests a visit before the Transportation Committee once a year to provide NNEPRA's Annual Report. Ms. Quinn said NNEPRA staff is out in the public continually in their station communities. She said they are doing the best that they can with seven staff to try to keep an operation that runs 365 days a year, 22 hours a day, managing about $50 to $60 million in capital projects and transporting a half a million people a year. She said staff try to be out in the public, but there is always room for improvement so they appreciate the recommendations.

Ms. Quinn wanted to stress the integrity issue because as she sat at the GOC meeting and heard the comments regarding relationships and the taxi issue, she was almost appalled. She said the taxi contract was not NNEPRA's, and there was no inappropriate relationship. Whether it is called for or not she is going to tell everyone right now that that is a completely false accusation, and has been from the get go. It was not NNEPRA's contract, and no one from their staff had anything to do with it. Ms. Quinn said Amtrak figures out how to transport its crews, NNEPRA pays a fixed price and she did not know who owned the taxi company until after the taxi was running and service was going. Ms. Quinn said she wanted to say that for the record and maybe put that issue to bed.

Ms. Quinn said NNEPRA has a $20 million a year operating budget, they serve half a million people a year, twelve different communities, and have $60 million in capital projects. They look forward to working with the Legislature, and the people in the State of Maine and Northern New England to try to improve passenger rail service and would like to be before the Legislature again to discuss that issue.

The Committee thanked Ms. Quinn for being at the meeting and providing information.

Sen. Diamond referred to the recommendation in the Brief regarding the Advisory Council where it said the role of the Council will be reevaluated in the near future prefaced by the Council has not met recently. He asked if there were hints that the Council will be done away with or some other information. Director Ashcroft said it was MDOT's indication to OPEGA that they thought they met some of the goals, but they thought there needed to be a reevaluation of the Council's role and that is what that statement is referring to.

Chair Katz reminded everyone that there will be a public comment period at the October 6, 2016 GOC meeting.

UNFINISHED BUSINESS cont'd

- **OPEGA's Recommendations for Tax Expenditure Review Classification and Schedule as Required by 3 MRSA § 998-3**

  - **Report Back on Presentation to Taxation Committee**
  - **Approval of the Classifications and Review Schedule for Tax Expenditures**

Director Ashcroft noted that the GOC had previously agreed to all of OPEGA's recommendations for what review category to put each of the programs in. She wanted to make the Committee aware that OPEGA did update the expected revenue loss column on the document with information for FY17 which was taken from the Red Book. She said OPEGA did not see an area where that made a huge impact on what they would have suggested in terms of full evaluation versus not. Also included in the information was the schedule the GOC reviewed at its last meeting and were in agreement with. Director Ashcroft said she went over the material with the Taxation Committee at their meeting on August 30, 2016. The Taxation Committee liked the format and did not have any problem with anything the GOC members had agreed with.

Director Ashcroft said she had the same conversation with the Taxation Committee that she had had with the GOC as to what was on the 2017 schedule, which currently includes five projects, as to whether that would be doable for OPEGA. One of the members of the Taxation Committee suggested moving the Research Expense Tax Credit and the New Machinery for Experimental Resources both are business incentives for research investment, to a year that OPEGA has less going on. Director Ashcroft would like to propose to the GOC that these evaluations be moved to 2020 where OPEGA has smaller programs scheduled for full evaluations.

Due to the lack of a quorum the GOC could not vote on approving the classifications or amending the schedule as OPEGA proposed. The vote on these matters will be carried over to the October 6, 2016 meeting.

REPORT FROM DIRECTOR

- **Status of Current Projects in Progress**

Director Ashcroft said OPEGA's goal had been to complete the DHHS Licensing and Regulation of Child Care Providers and State Lottery reviews in progress before this GOC stopped meeting. However, it has become clear that they will not be in a position to complete DHHS Licensing and Regulation of Child Care Providers. OPEGA also will not be in a position to have a final written report on State Lottery primarily because of the time it takes to draft and get through the reporting process and the fact that once OPEGA has done that they have to give the agency a fifteen day comment period. She said that backs OPEGA up to far to complete its work in a thorough way. She said what she can commit to for the November 17th meeting is to provide the GOC an interim briefing on the results of the work OPEGA has done to date and she thinks it will be a substantial briefing. OPEGA just will not have a final written report and all of their recommendations put together at that time.

Director Ashcroft said OPEGA is moving along with the Tax Expenditure Reviews and think they have hit the realization there are some of those twelve or thirteen objectives that OPEGA will not be able to cover as thoroughly as was hoped. Consequently, OPEGA will be focusing mostly on what they heard from the GOC and Taxation Committee indicated during the Evaluation Parameters discussions were the more critical objectives to understand. Director Ashcroft said OPEGA expects to have a lot of information to share with the Committees.

She said the objectives that will not get fully addressed are those about what is there in other states for similar programs and how do those compare or what are there for other programs across the state and could there be a better use of funds. She does not think OPEGA will be in a position to answer those questions fully, but they will tell the GOC whatever they have gleaned through the rest of their process.

NEXT GOC MEETING DATE

The next GOC meeting is scheduled for October 6, 2016 at 9:30 a.m.

ADJOURN

Chair Katz adjourned the GOC meeting at 2:27 p.m. on the motion of Rep. Duchesne, seconded by Rep. Campbell, unanimous.

Government Oversight Committee
OPEGA Review of Office of Information Technology, August 2015
OIT Status Update September 2016

OPEGA report: http://legislature.maine.gov/uploads/originals/final-oit-follow-up-report-8-18-15.pdf

BACKGROUND:

Over the past three years, the Office of Information Technology (OIT) has developed a multi-year strategy to improve all facets of information technology delivery. The main components are:

- Business Process Management (BPM) – software tools and practices for operational efficiency
- Agile Delivery – an industry best practice to improve project delivery
- Legacy Modernization – some of our software systems are over 40 years old (expensive to maintain)
- Risk Management – Cyber Security and Disaster Recovery practices
- Workforce Development – ensure we have the right talent

In addition, in 2015, an independent firm, CohnReznick, did an audit of three in-progress areas: Project Management, Disaster Recovery, and Data Analytics. This paper has updates on both the audit topics and the OIT strategy.

COMMUNICATIONS WITH LEGISLATURE:

- The Chief Information Officer (CIO) has appeared in the past year at three Legislature Committees: Appropriations and Financial Affairs (AFA), State and Local Government (SLG), and the Government Oversight Committee (GOC). We have also reached out at various other times.
- Briefings on-site at OIT were given to attendees from State and Local Government (SLG) Committee and from Appropriations and Financial Affairs (AFA) Committee:
  - On February 11, 2015, OIT invited SLG members (http://legislature.maine.gov/house/jt_com/slg.htm) for an OIT site visit. Three of 13 Members attended:
  - On April 17, 2015, OIT invited AFA (http://legislature.maine.gov/house/jt_com/afa.htm) for an OIT site visit. Six of 13 Members attended.
  - Topics covered were: Review of OIT operations, strategy, and risk management.

Digital States Survey 2016

Maine has again achieved an overall grade of B in the 2016 Digital States Survey. Under the Digital States criteria, a grade of B reflects states that are trending up. These states show results in many survey categories, and their leaders use modernization to change entrenched practices to prepare for more sustainable operations. Incentives for collaboration are in place, and performance measures are used in key areas. In addition, Maine is recognized as "Top 5" for its exemplary work in Public Safety (2nd Place).

BACKGROUND – FINDINGS FROM COHNREZNICK REVIEW, AUGUST 2015

1. **To what extent has OIT effectively implemented its 2013 Strategic Improvement Plan for the three areas focused on in this review?**
   OIT made significant progress in implementing actions it could take unilaterally, and continued improvement is expected. CohnReznick [CR] observed that this progress was partially responsible for an upgrade in the State of Maine's current rating on a biennial national survey of technology presence and operations in state governments in the United States.

   However, several actions in OIT's Plan were contingent on the efforts of other State agencies that have not occurred. Consequently, OIT has not fully implemented certain key parts of its Strategic Improvement Plan, particularly with regard to business continuity planning and disaster recovery and support for agency data needs. Progress for the State as a whole in these areas has not been as desired.

2. **To what extent has OIT achieved improvements in Project Management?**
   CR found that OIT made significant progress in developing its IT project management capabilities and converting to the Agile project management methodology. Continued improvement is expected as OIT continues to strengthen its project management function. CR noted several areas where further improvement will better align OIT with industry standard practices.

3. **To what extent has OIT achieved improvements in Business Continuity Planning and Disaster Recovery?**
   OIT has made significant progress addressing previously known gaps in business continuity planning and disaster recovery such as conducting tabletop exercises and supporting agencies as they develop plans on an ad hoc basis. OIT has also hired a BCP/DR manager who is developing the structures necessary to support statewide BCP/DR efforts.

   However, statewide BCP/DR efforts to date have not mitigated risks associated with potential disasters or catastrophic system failures. Business Impact Analyses (BIA) are necessary for sound business continuity and disaster recovery planning within both OIT and individual agencies, but have not been completed for any State agency. Agency participation is critical to BCP/DR efforts and such participation is impacted by broader organizational challenges outside of OIT's control.

4. **To what extent has OIT achieved improvements in its capacity to support the data and analytic needs of analysts, managers and decision makers in all State agencies?**
   Little progress has been made in improving data governance and analytic capabilities for Executive Branch agencies, primarily because this area is impacted by broader organizational challenges and did not receive much focus until late in the two year review period. OIT's new Enterprise Warehouse and Analytics group was only established in 2014. The roles, responsibilities and expectations of OIT and the agencies it supports still need clarification. Advancing data capabilities requires agency commitment and participation, and an executive-level forum for engaging all Executive Branch agencies is still developing.

Recommendation 1: ***The Administration Should Establish an Executive-level, Enterprise-wide IT Governance Function.***

Short Summary:
Technology expenditures (are we investing in the right things for our organization?) requires both strategic and financial oversight. The Maine Office of Information Technology spends about $140 million yearly in software and hardware maintenance, strategic investment, and risk management (cyber security and disaster recovery). It is important that expenditures are reviewed with Agency partners and the office of the Governor to ensure that technology spending aligns with the state's strategic goals and direction.

Current Status:
The Governor issued an Executive Order (2016-006) establishing the State Information Technology Governance Committee. The Committee shall:

a) endorse a strategic, enterprise-wide plan for the State's IT needs;
b) prioritize and make recommendations concerning IT investment;
c) suggest a plan for adoption of tools and practices for operational efficiency;
d) monitor IT performance and benefits across all state agencies;
e) advise IT risk management including the areas of cybersecurity and disaster recovery;
f) review vendor management and IT projects costing over $1 million, or other strategic IT investments as determined by the committee; and
g) review application development and investments to ensure compliance with the enterprise-wide plan for IT needs; and
h) make recommendations regarding the status, recruitment and retention of the State's IT workforce.

The Committee's membership will be:

- The Chief Information Officer, who will chair the Committee
- The Commissioners of:
  - Department of Health and Human Services (DHHS)
  - Department of Labor (DOL)
  - Department of Administrative and Financial Services (DAFS)
- And, two rotating (one year) members from the other Agencies
- And, a member from the Governor's staff

The Committee will report to the Governor and the other Agency Commissioners on decisions made and strategic direction.

<u>Recommendation 2:</u> ***The Administration Should Ensure Business Impact Analyses (BIAs) and Subsequent Business Continuity Plans (BCPs) Are Completed for All Agencies.***

Definitions:

- **Business Continuity:** Business Continuity (BC) is recovery of business processes and operations. BC planning covers how an organization sustains all critical business functions. BC planning ensures maintenance, stability, and recoverability of business functions during and after a disaster. Business Continuity is about business processes and operations; technology (DR) is a subset of BC.

- **Disaster Recovery:** Disaster Recovery (DR) is physical and technology recovery. Disaster Recovery is part of the overall continuity plan that focuses on the technical side of the business, including components such as data backup and recovery.

- **Business Impact Analysis (BIA):** A Business impact analysis (BIA) differentiates critical (urgent) and non-critical (non-urgent) organization functions/activities. Critical functions are those whose disruption is regarded as unacceptable. Perceptions of acceptability are affected by the cost of recovery solutions. A function may also be considered critical if dictated by law. For each critical function, two values are then assigned:
    - **Recovery Time Objective (RTO)** – the acceptable amount of time to restore the function.
    - **Recovery Point Objective (RPO)** – the acceptable latency of data that will not be recovered. For example is it acceptable for the company to lose 2 days of data?

Short summary:

- OPEGA identified incomplete BIAs as a key issue in 2006. BIAs are critical to understanding risks, functional priorities, and resources required for recovery.
- Effective Business Continuity Plans require thorough BIAs in order to implement effective plan recovery procedures that will mitigate disaster related risks.
- Enterprise-wide oversight and governance for Business Continuity Management is needed to ensure BC/DR planning is conducted to standard
- Most Agencies have received informational briefings and overviews from OIT about BIAs and BCP Development based on Disaster Recovery Institute methodology and ISO22301 standards. OIT is continuing to engage agencies on BC/DR management and assist with program development efforts
- Several agencies have completed full BIAs, and most departments are beginning their initial strategy in regards to implementing BC/DR Programs successfully into their organizations.

Current Status:

- Office of Information Technology completed an initial BIA in June 2015 and conducted an annual review August 2016; Business Continuity Planning is ongoing (including policy/procedures/ and exercises).

- The Maine Revenue Service completed an initial BIA in August 2016.
- DAFS initiated a Department wide Business Continuity Management Project in August 2016 which will include BIAs and Business Continuity Planning for all DAFS Bureaus which have not yet completed these tasks (estimated completion Q4 2017)
- While many State agencies have not yet completed BIAs, most of them have begun the early stages of preparation for BC/DR program development or are exploring their options. Every agency is unique in their operation schedules, capabilities, and resources; individual considerations must be made for each agency in order to successfully implement BC/DR management.
- Organizing an agency wide BC/DR initiative is complex and requires a significant amount of education and training for key personnel. OIT is assisting agencies with receiving the necessary training and required to conduct BIAs and BC Planning.
- OIT is working with agencies to find creative ways to conduct coordination, resourcing, and staffing required to facilitate BC/DR project work while avoiding unnecessary burdens and disruptions to agency operations and personnel

Funding Status:

- Funding for BC/DR projects continues to be a challenge; BIAs and BCP development has been self-funded and voluntary for agencies
- Funding for strategically placed Business Continuity Professionals will be needed to manage and maintain Business Continuity Programs
- Some agencies are exploring potential grants or other similar avenues to assist with funding BC/DR projects such as BIAs.
- A lack of subject matter experts within the State is a serious hindrance to wide-scale implementation of BC/DR Projects; experienced and certified contractors and consultants may be necessary to facilitate faster progress until enough state employees are trained and certified to lead BC/DR efforts.

Next Steps:

- OIT will continue to consult and train agencies on Business Continuity Management and assist with coordinating BIA and BCP Projects; more certified personnel will be required to manage, plan, and lead BC/DR projects across the enterprise
- Agencies need to create BC/DR budgets to fund BIA and BCP projects as well as the ongoing maintenance of this data

Related to our BC/DR posture, we have upgraded the State's network as summarized below. For details, see the Appendix on the last five pages of this document.

Network Improvement Over the Last Two Years

Outside Evaluation: A large professional services firm (NTT Data) was invited to conduct a thorough evaluation of the State network (both equipment and personnel), and provide concrete recommendations. This happened over 2015, and the recommendations formed the blueprint for all subsequent action.

Core Upgrade: The routers at the center of the State network were upgraded in January 2016.

Data Center Redundancy: The State has two data centers. Historically, both of them have had several single points-of-failure. One of the data centers was partially remedied of its single points-of-failure in June 2016. The other data center was partially remediated in August 2016.

Augusta Metro Fiber Redundancy: Work is already underway in achieving fiber redundancy in the Augusta metro area, and it is scheduled to be completed by September 2016. What this means is that all Augusta offices will have redundant paths to the two data centers, as well as the Internet.

Internet Redundancy: Right now, all Internet traffic in the Augusta metro is routed through one single spot. This is scheduled to be remedied in September 2016.

All of the above contribute to higher performance, resilience, and redundancy of the State network. Much more work remains to be done.

<u>Recommendation 3:</u> The Administration Should Take Steps to Advance the State's Data Governance and Analytics Capabilities.

Short Summary:

In November of 2014 the Office of Information Technology (OIT) created and staffed the Enterprise Warehousing an Analytics (EWA) group as an initial step to respond to the OPEGA findings regarding data sharing and data analytics. Since then, OIT has partnered with the Governor's Office of Policy and Management (OPM) to encourage departmental participation in the Data Analytics Steering Committee. The Committee has met on four occasions with the goal of identifying obstacles to data sharing in state government. The Enterprise Warehousing and Analytics group has also worked to identify the challenges facing agencies in data analytics by investigating the state of data governance in three distinct areas:

- Department of Administrative and Financial Services
- Department of Marine Resources
- Department of Agriculture, Conservation and Forestry

On page 4 of the OPEGA report the following additional recommendations pertaining to Data Governance and Analytics:

A) Agencies should develop the necessary internal business intelligence capacity to effectively manage and utilize data.

While each agency has appointed a representative to attend the Data Analytics Steering Committee, the internal capacity to manage and utilize data varies greatly across the departments. OIT is positioned to respond to the needs of departments but cannot require agencies to develop or invest in tools or resources.

B) OIT should develop a formal data governance policy with controls to manage data integrity and privacy risks for itself, and a model policy for agencies to use as a basis for their own.

OIT hired a Data Governance Coordinator in June of 2016, and has drafted an internal data governance policy. This policy is still being reviewed and revised prior to adoption.

C) Agencies should develop data governance policies specific to their data with assistance from OIT as necessary.

Again OIT is not empowered to make requirements of the agencies, however the Data Governance Coordinator will be made available to departments for this purpose as requested. The Department of Labor is currently engaged with the EWA group and the Data Governance Coordinator to develop data governance policy for its Workforce Outcomes data warehouse.

D) OIT and Agencies should partner to develop an inventory of data sources in each agency and assed the criticality and quality of data in each source.

OIT and OPM have partnered to lead the Data Analytics Steering Group in the collection of data sharing agreements. By analyzing the documented data sharing which is happening between agencies it is believed that a catalog of data sources can be developed. To date there has been limited progress on this objective, the Director of OPM and the Data Governance Coordinator have renewed this effort over the last 6 weeks and plan to review the outcomes with the steering committee at the next meeting in September.

E) ***OIT should identify and implement standard data query and analytics tools which will be used across agencies and develop capabilities to support agencies in using those tools by providing training and technical assistance.***

As reported to CohnReznick, OIT has conducted a gap analysis on behalf the Office of the State Controller, which analyzes the current status of the state's financial data warehouse. Since that publication OIT and OSC have commissioned a project to satisfy the identified gaps. OIT has identified a standardized toolset, Oracle Business Intelligence Cloud Services, and has assisted OSC in selecting a vendor to implement a Data Analytics Workbench, and an Information Portal utilizing this toolset to replace legacy reporting tools. The Enterprise Warehousing and Analytics group has been involved throughout the project offering expertise and guidance to the project. This projects is expected to empower nearly 1000 state government data consumers to have more immediate access to needed state financial data, as well as enable self-service data analytics capabilities for data analysis, data mashup, and data visualization.

Additionally on page 7 the CohnReznick recommendations for Data Analytics include:

- ***Establish a risk management process for data analytics***

  OIT has developed templates based on the NIST publication 800-53 Security and Privacy Controls for Federal Information Systems and Organizations. Leveraging these tools OIT can guide a data owner through an exercise that will discover the risks associated with data breach or loss. These templates have been exercised in a project involving data sharing with external partners and the Department of Labor.

- ***Prepare a comprehensive data policy***

  The Enterprise Warehousing and Analytics Group, led by the Data Governance Coordinator has developed a draft data governance policy for OIT. This policy outlines a framework for rights and responsibilities surrounding data with the Office. This policy is intended to serve as a model for future agency, or even enterprise data governance policies.

- ***Adopt data governance policies***

At this time the policy is still being reviewed and revised internally.

- ***Establish technical standards***

  OIT has identified the lack of standardized tools as an obstacle to more widespread adoption of data sharing and data analytics in Maine. To that end the CIO has endorsed a new standard for any cloud based data analytics systems which must be supported by OIT, Oracle Business Intelligence Cloud Services. By standardizing on this tool, OIT can create an economy of scale which will help to drive down the cost of entry which was identified as a primary barrier to small agencies. Additionally by standardizing on a single toolset, OIT can invest in developing a more highly specialized workforce to assist the agencies with implementations and training.

- ***Implement data assurance tools***

  In partnership for the Department of Labor, the Office of Information Technology invested in licensing for data quality tools in 2015. The enterprise data quality service is being implemented this month with an initial roll out to support the DOL Workforce outcomes warehouse. Subsequent implementations are planned in support of the State of Maine Human Resources (HRMS) system, and for internal projects such as the OIT Billing system and the OIT Application Inventory.

- ***Monitor business performance metrics***

  OIT has no authority to mandate that agencies identify and monitor key performance indicators. However, using tools such as Oracle Business Intelligence, KPIs can be developed and monitored by the agencies. The Enterprise Warehousing and Analytics group would be happy to participate given the appropriate funding from the agency requesting the service.

Current Status:

OIT is taking steps to address those issues which are directly within its domain, but has specifically pointed out that the technology department does not own the data. As stewards of the data, OIT will provide technical and professional direction on how to implement data governance policy and technology to support the policy.

Current lines of work include:

- Facilitating Data Governance Steering Committee meetings
- Creating / Analyzing a repository of data sharing agreements in partnership with OPM
- Modernization of the DAFS Financial Data Warehouse utilizing our selected standard toolset, Oracle BI Cloud Services
- Implementation of Enterprise Data Quality Services

- Researching Enterprise Service Bus technology in order to implement ESB services in FY18/19
- Drafting / Reviewing OIT Data Governance policy

Funding Status:

There is no general funding available for enterprise data sharing and data analytics in state government. As such OIT has been unable to make more than a modicum of headway in these endeavors. With rate based services being the primary driver of OIT work, the agencies which have larger funding streams have a tendency to obtain the services needed, while smaller agencies muddle through making use of desktop tools and proliferating a 'spread mart' type of environment. Investment in an enterprise warehouse and analytics tools would allow OIT to respond executive and legislative data requirements more thoroughly. The benefits of an investment in an enterprise shared warehouse include:

- A centralized environment that facilitates inter-department data sharing
- Lower cost barriers to entry for an agency because the cost to an agency to consume the service are only for licensing and development.
- Once developed the enterprise model supports self-service ad hoc reporting
- Includes the ability to develop dashboards for self-service information retrieval
- Fully supported by OIT using current technology development best practice
- Highly governed environment with decision processes developed for access rights and change management.

$360,000 in annual funding is required to achieve this goal. This covers the cost of Cloud infrastructure, Business Intelligence tools and two staff to support the enterprise warehouse.

Next Steps:

- September 2016 meeting of Data Analytics Steering Committee
- Completion of phase 1 of the DAFS Data Warehouse Modernization Project
- Production roll out of Data Quality Services for Department of Labor

High-level Timeline:

- Fall 2016: DASC Meeting, first data quality implementation
- Winter 2016: Phase 1 DAFS DW modernization completed
- Spring 2017: Data quality implementation for HRMS
- Summer 2017: Phase 2 DAFS DW modernization completed, data analytics workbench available

Recommendation 4: OIT Should Establish Service Level Agreements with Agencies

Short Summary:
Under this recommendation OIT is urged take responsibility for initiating the development of SLAs for each of its clients and to establish performance measures that foster a climate of customer orientation and continuous improvement. Additionally, with support of the governance group resultant from recommendation 1, OIT is directed the support the development of the above with appropriate representatives from the agencies.

Current Status:
At present OIT leverages its service catalog as a default service level agreement with State agencies. Additionally, OIT develops detailed SLA documents for agencies and programs to address specific needs. Notably OIT has SLAs with agencies handling Federal Tax Information.

Some performance metrics are published in the OIT service catalog at: http://www.maine.gov/oit/services/Measures/Summary_of_Measures.html which track customer call volumes resolution rates. There are numerous other metric collected which are unpublished and focused on monitoring operational performance. Metrics currently tracked include:

- Service calls taken (over 70,000 / year)
- Problems resolved
- First call resolution
- Call resolution timeframes per service level agreement criteria
- Customer satisfaction
- Database of all computer devices

Over the last year OIT has been working with agency assistance to develop key performance indicators for both applications development and applications performance (including bugs counts, up-time metrics, deployment efficiency). The efforts are in a development stage and are currently sustained through manual data collection which results in published results prone to becoming stale. The effort is targeted at specific agency programs and applications. It is a pilot in preparation for undertaking an Enterprise initiative to establish state-wide SLAs and performance measures to support this recommendation.

Funding Status:
There is no general funding available to support this initiative which limits the pace of SLA development and currency of published metrics. OIT is in the process of creating a number of foundational elements to support SLA governed operations such as tools to monitor logs and report on exceptions, application monitoring tools and infrastructural monitoring tools. However to appropriately support this effort OIT requires dedicated oversight the help drive the effort.

An ideal solution involves the creation a SLAs specific to every agency that also include the expectations of both OIT and its clients as well the automated collection of performance measures also automatically published to a dashboard.

Tasks include:

- Research of process in use by other states and other sources of best practices.

- SLA development with some 40 statutory entities as well as the numerous programs supported by OIT.
- Development, collection and analysis of service performance measures to drive the customer orientation and continuous process.
- The establishment of a dashboard that automatically illuminates current and historic performance expectations and outcomes

Resource needs:

- Deputy Director (Grade 32, confidential) to service as SLA program manager
- The establishment of an OIT data warehouse to capture and display performance metrics

Next Steps:
Contingent on funding OIT will hire the SLA program manager to initiate the program and coordinate efforts leveraging other staff within OIT.

High-Level Timeline:
11/2017 – hire SLA program manager

Recommendation 5: DAFS Should Reassess OIT Funding for Core IT Activities Common and Critical to All Agencies.

Short Summary:
The State of Maine technology investment includes support of agency and centralized software, hardware, and telecommunications. Many technology expenditures can be tied directly to an agency need – licensing on mobile devices, internal budget tracking, and citizen services like campgrounds and permits. In order to support these efforts, the State must have a robust technical foundation (network, telecom, internet). These types of expenditures are difficult to recover in individual agency rates.

Currently OIT must recover all costs by directly recovering them from our partner agencies. This can limit OIT's ability to invest in enterprise improvement and innovation and to offer enterprise-level consulting services at a cost that can be accommodated by both small and large agencies.

For example, OIT basic network and infrastructure were built over 20 years ago, before the emphasis on mobile computing, the internet, and cyber security. The network has been under-invested for many years; in addition, a foundation must be built for items like cyber security and disaster recovery.

Over the past six months, OIT has been working with the Office of the Governor to build a new process to recover long term, enterprise types of expenditures. Many states do technology borrowing to build the investment funds for things such as:

- Infrastructure modernization
- Disaster recovery
- Legacy modernization (some State of Maine applications are over 30 years old, some using unsupported technology)
- Cyber security – (the State of Maine is hit with over 2 million outside probes daily)

<u>Recommendation 6:</u> Consistently perform budgeting and cost analysis for projects.
Short Summary: Budgeting and cost analysis are key components to successful projects, but were not performed in the projects selected for sample consistent with best practices of project management. Project managers did not budget and monitor costs during the execution of the project. OIT's billing was handled outside the project team with limited data, regarding project spend and cost allocation of resources, available for tracking and assessment by either the project team or the customer agencies.

Recommended Actions:

- Put tools in place for project managers to perform budget to actual analysis at all times.
- Include project costs analysis as part of the portfolio management tool and balanced scorecard.
- Improve the billing function to better inform customers of variances and predicted challenges that affect budgets.

Current Status: Currently the PMO tracks all IT hours and tasks for each Agency IT project by using basic project tools such as MS Project and MS Excel. At this time, Agency personnel hours are not tracked as part of the project budget. This would have to be done by each Agency.

Verification of actual OIT project resource costs are collected from the state payroll (TAMS) and the contractor payroll system (DOT staff). This allows the PMO to track OIT resource/costs which we then review with Project Sponsors (budget to actuals analysis). For Agile projects this is done on a 3-week cycle.

Insight and the ability to track Agency resource expenditures are difficult as this information is typically not provided nor tracked by the Agency.

Next Steps: The OIT Project Management Office (PMO) will continue the manual budget-to-actuals process and reporting for OIT project costs. The PMO will also discuss with Agencies our commitment to simplify and track Agency project costs. PMO will work with them on their resource management needs and budget/actuals for proper tracking.

To help greater support accurate budgeting, monitoring and reporting, the PMO is currently reviewing Project Portfolio Management solutions (PPMS) to fully meet the needs as identified in the CohnReznick report; such as portfolio management and balanced scorecard. This system will help simplify all project resource and budget tracking and allow the customer to have great visibility in project resource/budget variances. PPM solution will:

- Maximize the value of resource utilization
- Financial management
- Provides visibility into the organization's project portfolio - dashboard/reporting
- Agile component and integration with current project tracking systems
- Agency project portfolio management to include cross project dependency management
- Provides understanding of project interdependence
- Reduce risks of failure to meet project cost, schedule and technical milestones

Recommendation 7: ***OIT Should Implement the CohnReznick Recommendations within Its Authority:***

Recommendation 7.1: Business Processes Analysis

Short Summary: OIT has established Business Process Management (BPM) for evaluating end-to-end business processes and identifying opportunities for improvement beyond initial project requests. However, it was noted that for most projects a thorough evaluation of business processes and identification of key performance factors was not included in the scope of the project. A thorough analysis of business processes and identification of a broad range of opportunities along with key performance metrics should be considered for a wide range of projects.

Current Status: BPM has since been reorganized under the PMO to consolidate efforts and maximize resource efficiency.
BPM currently:

- Conducts operational walkthroughs of business processes to understand opportunities for improvement through automation
- Developing standard practices for all projects to capture key performance metrics.
    - Documented on all new project business definition documents.
    - Used to assess the success of the project and benefit to the Agency
    - Performance metric for PMO's continuous improvement efforts.

Next Steps: To further strengthen our process analysis and improvement efforts, a state Lean/BPM program proposal is currently being drafted by the PMO which, if approved and funded, will allow the State of Maine to further maximize process efficiencies, reduce costs, and save countless FTE hours which can then be redirected toward other priority areas. To fully adopt a Lean/BPM program and to realize the long-term benefits, Agency training on Lean/BPM would be required.

Many other states have invested in a statewide Lean/BPM program and have seen millions of dollars in savings, increased process efficiencies and thousands of FTE hours saved and refocused.

LeanME

Creating a more sustainable, leaner, efficient future for Maine.

Eliminate Waste

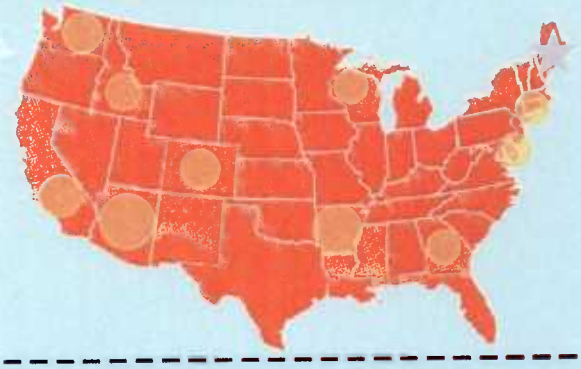
Efficiency

Savings

Continuous Improvement

Multiple states have implemented and benefited from a state-wide Lean Program.

Arizona
Colorado
MAINE?
Rhode Island
Wisconsin
Washington
Connecticut



Efficiency - Cost Savings - Leaner Government: for Maine Citizens

Colorado

$2 Mil

Annual savings from one Lean project

74%

Veterans receiving services from the community re-entry program are being served 74% faster on average, due to a Lean effort involving the Department of Labor and the Department of Social Services.

Connecticut

62,239

hours of employee capacity redirected to higher value-add activities - Arizona

Recommendation 7.2: IT Audit Function - OIT should consider re-establishing an Information Technology audit function.

Short summary: OIT agrees with this recommendation.

Current Status: OIT is subject to multiple audits year-round. They include both Federal and State partners:

- Federal:
  - Internal Revenue Service
  - Social Security Administration
  - Center for Medicare and Medicaid Services (CMS)
  - Health Insurance Portability and Accountability Act (HIPAA) privacy compliance
- State:
  - State Department of Audit
  - Office of Program Evaluation and Government Accountability

Coordinating all such audits is a full-time job. In the absence of a dedicated resource, OIT runs the risk of inadequate response to such audits. Inadequate response to audits may lead to escalating penalties, up to and including, termination of Federal data flows. In the past, OIT had an internal IT Auditor to help coordinate such responses. But due to budget constraints, the position was eliminated in the 14-15 budget, and never replenished.

Funding Status: This is a funding issue.

Next Steps: Depends on funding.

Recommendation 7.3: COBIT Framework - OIT should consider adopting COBIT, or other framework, as a standard against which to evaluate its performance.

Short Summary:
The 2015 report by Cohn Reznick evaluated OIT based with relevant portions of the Control Objectives for Information and Related Technologies (COBIT) framework. The COBIT Framework provides a solid foundation for evaluating an information technology function. COBIT is an industry standard that provides a comprehensive, objective and repeatable assessment of the IT function. OIT has accepted COBIT as a valid industry standard for good IT practices and will adopt it going forward.

Current Status:
OIT has assigned an analyst part-time to research the COBIT standards, and collect information on how the go about implementing it across the Enterprise.

Funding Issue:
This initiative is unbudgeted. Progress will be limited by constraints on staff and the lack of personnel dedicated to pushing this forward. The initial evaluation indicates that for one person

to take all trainings would cost $87,000, and 3-6 months to conduct. However institutionalizing COBIT will require a more strategic approach, targeting training to audiences in a position to make a sustainable impact on IT governance. Below is a rough estimate of training costs needed:

Class	Type of Resource	Duration	Estimated Cost / Individual	Estimated Number	Total Cost
Video Series	Pay Grade 30+	5 Days	$500	50	$25,000
COBIT Foundation	Pay Grade 31+	3 Days	$1,500	25	$37,500
COBIT Implementation	Sr. Managers	3 Days	$1,500	6	$9,000
COBIT Assessor	Analyst	3 Days	$3,200	2	$6,400
COBIT: Strategies for Implementing IT Governance	Sr. Managers	3 Days	$1,500	6	$9,000
Total					$86,900

Next Steps:
Develop the an implementation plan taking into account staff availability, timeline and budget

Recommendation 7.4: BCP/DR – OIT should increase partnership outreach and identify communication mechanisms to formalize reporting for BCP/DR initiatives between OIT and its customers.

Current Status:

- Business Continuity Management Software as a Service has been procured for the enterprise to manage all BCM related data to include BIA's, Risk Assessments, BCP's, Compliance, and Incident Management
- OIT has continues to meet with agencies regarding Business Continuity Program Development utilizing a phased approach to provide awareness, methodology, and a program framework
- The newly formed State Information Technology Governance Committee will be leveraged as a governance body for BC/DR related initiatives throughout the enterprise

Funding Status:

- Agencies BC/DR budgets should account for trained personnel to manage BC/DR efforts and coordinate with other agencies (and OIT) to increase the effectiveness of BC/DR initiatives

Next Steps:

- OIT will continue to train, mentor, and promote BC/DR awareness with agencies

- OIT will develop a modular BC/DR training curriculum which will be available to all interested agencies (to include Disaster Recovery Institute certification prep courses for key personnel)
- OIT will continue to partner with agencies to develop IT Disaster recovery solutions that meet agencies business continuity objectives

High-level Timeline:

- Timeline for BC/DR initiatives is dependent on agency commitment and resourcing
- BCM Program Management is a continuous development and maintenance cycle that does not have a defined end-state

Recommendation 7.5: Data Analytics

See Recommendation 3 above.

Recommendation 7.6 Project Management:

Per the Cohn-Reznick Report, OIT should:

- Continue developing Agile policies, tools and agency partnerships
- Standardize governance for Agile projects
- Standardize Agile project initiation practices
- Improve communication and quality management during project execution
- Develop remediation actions in the case of project failures to support customers in solving their problems
- Consistently conduct project close out meetings
- Enhance oversight of third party providers
- Perform post-implementation goal assessments

Short summary: The PMO has established a continuous improvement (CI) effort with an emphasis on standardization of project artifacts, processes and policies for all projects regardless of methodology[1].

Current Status: Through our continuous improvement efforts, the PMO has:

- Initiated a complete overhaul of our PMO website and SharePoint site making for a better customer experience and easy to find information
- Begun creation of an online Project Management Toolkit which will have
    - Standardized project artifact templates/project plans to include communication/quality management
    - Documented processes/policies/governance for all project methodologies
        - Standardize all project initiation practices
        - Formal closeout practices to include documentation, close out meetings and confirmation of project goals/KPI
        - Standardize post implementation practices

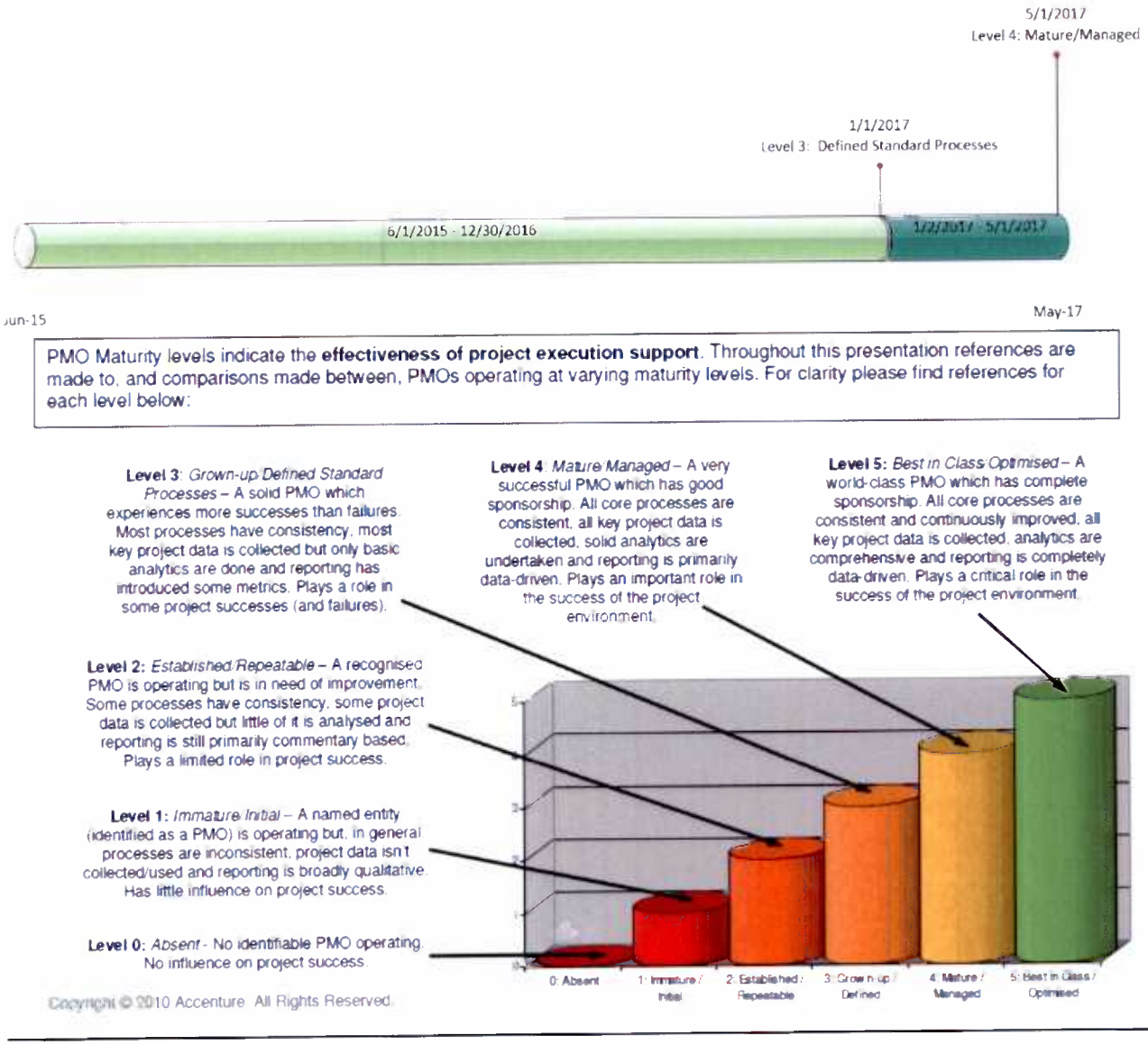
    - Project Management Methodology, training materials
    - General Project Management guidance/FAQ's
- Developed standard project metrics
- Developed surveys to assess project performance after each major milestone

[1] All project management documentation and process standards covers standard project management methodologies which includes Agile.
Testing Practice: The PMO is working with OIT/Application Development to develop a standard testing practice for all application development and project methodologies; including Agile.

Next Steps: Although the PMO has made significant progress in the areas above we recognize that not all the tasks have been completed yet or fully implemented. The PMO will continue our continuous improvement efforts to complete and implement the tasks highlighted above for use on all projects.
Other items PMO is currently planning:

- Enhance oversight of third party providers
    - PMO will work to establish standard practices and project reviews
- Develop remediation actions in the case of project failures to support customers
    - PMO currently works with OIT to ensure proper rollback plans are in place to address any issues when applications are promoted to production
    - PMO is also formalizing risk management plans to help document and remediate potential project risks
- Project Manager/Business Analyst performance surveys
    - Gain insight from key stakeholders on performance of PMO project staff
    - Used to identify skills gaps, fit for certain projects, recognition
- 1 – 10 performance scale on both project and PMO staff surveys allows PMO to conduct trend analysis on overall performance.
    - Information will be displayed on PMO website
    - Improves quality of project staff
- Development of PMO staff training plans

Although achieving project success, the PMO, at the time of the initial CohnReznick report (June 2015), was between Level 1 and 2 on the PMO maturity model in regards to defined standards and processes. Since the report, the PMO has implemented a continuous improvement effort as discussed earlier. This has resulted in significant gains to the maturity of the PMO's defined standards and processes. By the end of 2016, the PMO will have reached a maturity Level 3: Grown-up/Defined Standard Processes as defined below and will have fully complied with all items in recommendation 7.5 on the CohnReznick report. The PMO has established a target of 2017 to reach Level 4: Mature/Managed. Once that is achieved we will conduct a gap analysis to determine the level of effort and establish a target date to achieve our ultimate goal of being maturity Level 5: Best in Class/Optimized.



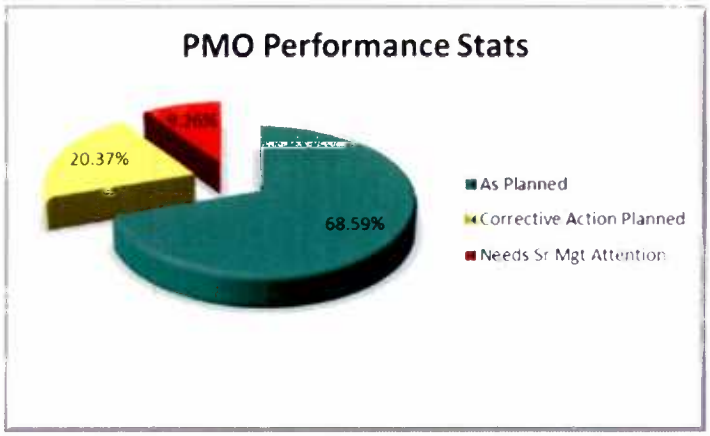
Recommendation 7.7: (Customer Service - Projects):

- In addition to the project performance and staff surveys listed in recommendation 7.6, the PMO also conducts regular project check-ins by our Program Managers and lessons learned post project completion to support continuous improvement by the PMO to our customers.

Additional Information: Metrics - Overall the OIT Project Management Office's project performance continues to exceed industry standards. According to the Standish Group Chaos Report, 39% of all industry projects succeed, 43% were challenged and 18% failed.

Latest IT project performance stats for the State of Maine, as of 8/18/16.

As Planned	Corrective Action Planned	Needs Sr. Management Attention
37	11	5



Appendix

OPEGA Update:
State of Maine Core Network Upgrade

The State of Maine core network was engineered over 10 years ago with 3 very complex data switches, one at CMCC, one at Cross Office Building and one at the East campus, each performing multiple roles. This design was very cost-effective, but as State government became increasingly reliant on IT, the potential negative impact from a failure of one of these devices continued to increase. In addition, because devices could not be taken off-line to perform routine maintenance without disrupting agencies operating in a 24X7X365 environment, risk of a failure only increased further.

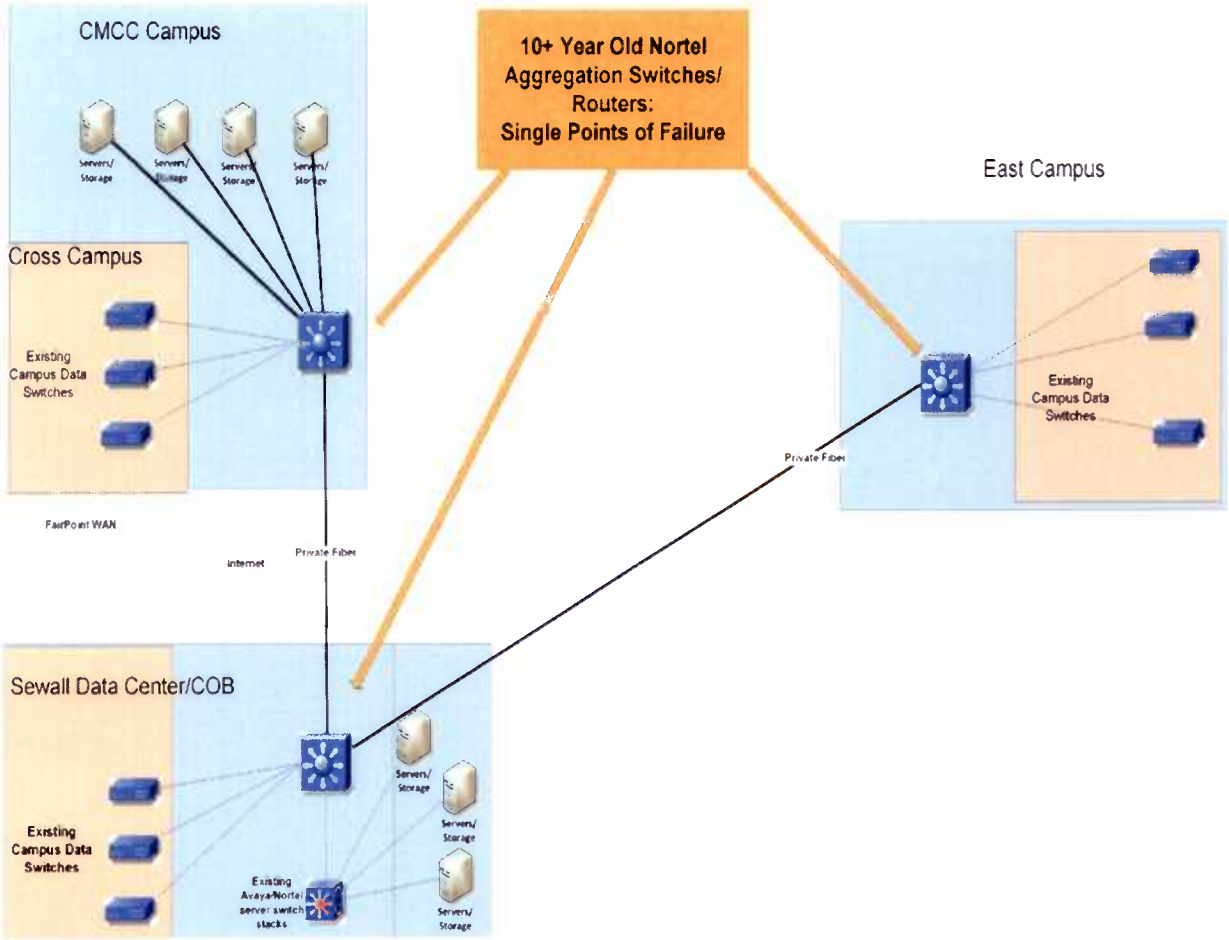
While this problem has been well known for many years, other more urgent IT initiatives took precedence, and OIT did its best to minimize planned and unplanned network outages. Finally, in 2015, commissioned NTTData to redesign the core network to make it more reliable, manageable, scalable and secure.

Today, with the recent completion of the fourth day-long outage of 2016, OIT is both pleased and proud to announce that the new core network has been almost fully installed. The new design replaces 3 devices with 14 and makes all critical core network devices redundant. Going forward, no device failure or maintenance activity will disrupt overall State network services, and additional modernization activities can now be coordinated with specific agencies to meet their business needs.

In addition, a new fiber optic ring has been installed around the August metro area to assure that the 3 major campuses and 2 data centers are interconnected in a manner that provides a redundant pathway in case a car accident or other emergency severs the primary fiber connection.

The diagrams below explain these changes in greater detail.

Diagram 1: The original SOM Core Network

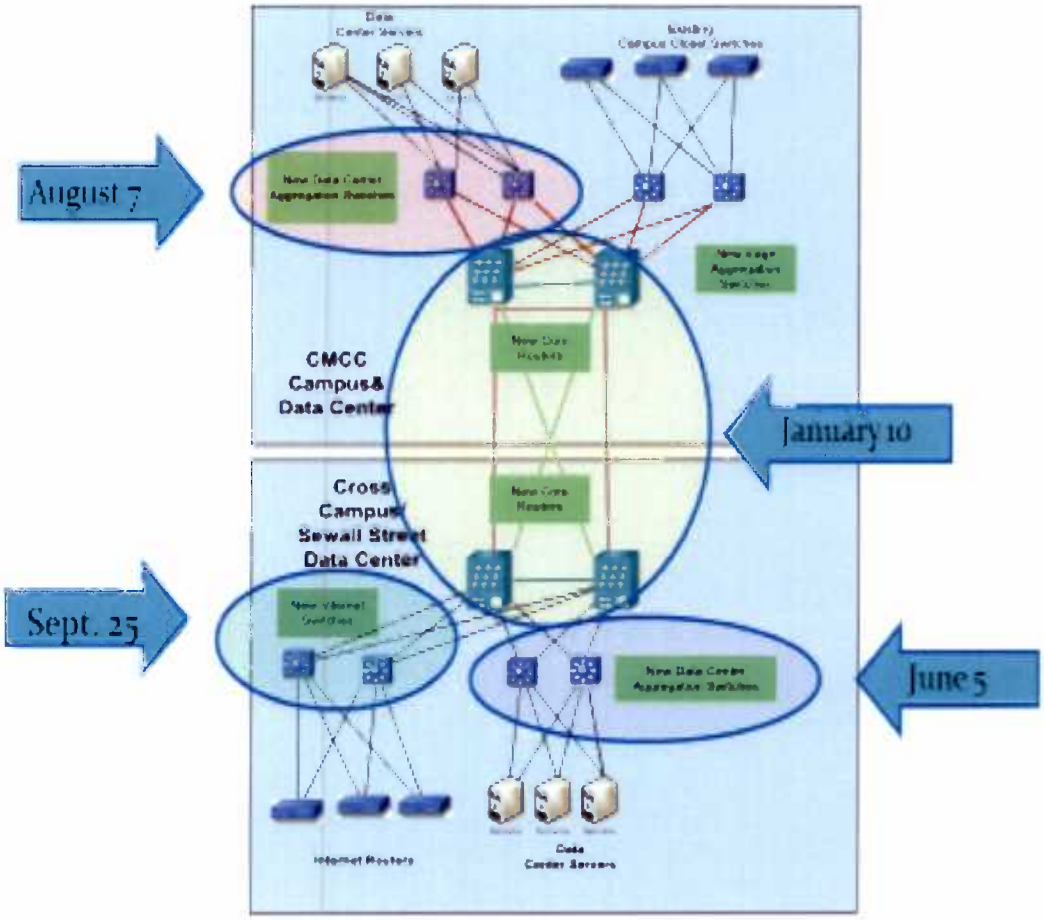


Note that the loss of the CMCC or Sewall Street Data Center Nortel Aggregation Switch would completely cut off that campus and those data center resources from all State IT users for an undetermined length of time.

Also note that the single fiber optic links between the campuses are vulnerable to a single car accident or similar event that could incapacitate inter-campus voice/data communications for an undetermined amount of time.

Diagram 2: The New Core Network Design

This diagram shows which devices were implemented during each of the four day-long outages in 2016. Of the 14 devices to be implemented, the 10 most critical are now in service and the others will follow as resources permit.



9/7/2016 8

Diagram 3: The New Metro-Augusta Fiber Optic Ring

This diagram is oriented with East at the top and the Kennebec River running left to right through the middle. The map shows the major components of the fiber optic ring with one route crossing the low bridge in Augusta (light green) , another route (dark blue) crossing the Kennebec in Gardiner. Note that each of the 3 major campuses is served by separate fiber entrances to assure that service to that site will not be interrupted by a single event such as a car accident that takes out a telephone pole.

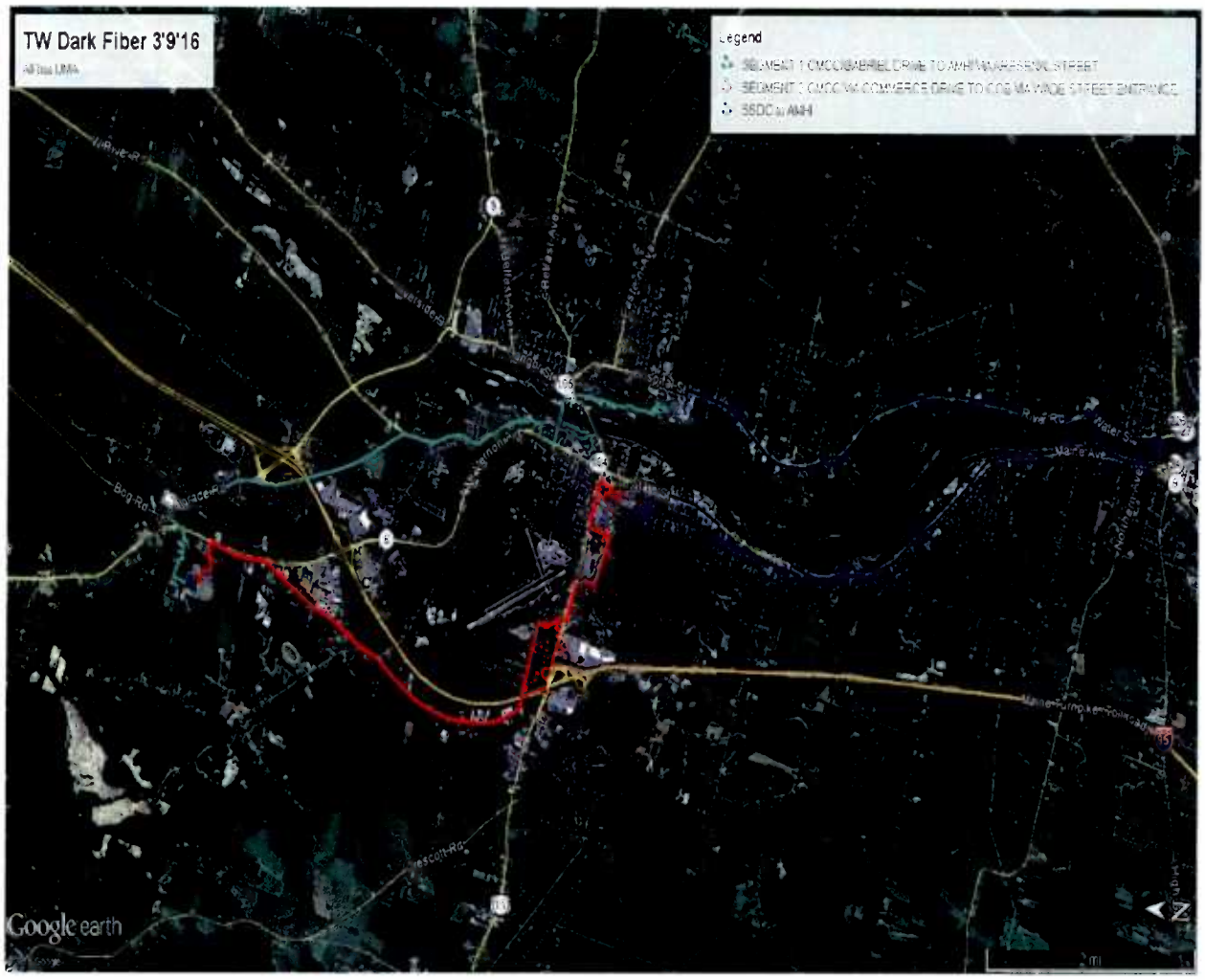


Diagram 4: NTTData Score Card

In 2015, NTTData was asked to score the State of Maine network on five general industry best practice categories. The scores in black are the original NTTData scores and those in green and red reflect the improvements made over the past 18 months.
The scores in red reflect the challenges faced by OIT in attracting and retaining network technicians, but recent progress is being made in this area that will bring further improvements in coming months.

Maine Network – Relative Ranking

NTTData

The table below compares key components in the Maine network environment to other organizations and industry best practices (10 is high).

	Category	Key Drivers	Score (1-10)	Target (1-10)
1	**Network Architecture**	The current network architecture contains several single-points-of-failure and is designed with a collapsed core.	4.5 ->8	8
2	**Technology**	The core routers the state uses are based on 10-12 year old chassis.	4 ->6.5	8
3	**Staffing**	Network staff does not have distinct functions for architecture, project work, and support. Current staff and training are insufficient to fulfill all three functions in a 24x7 environment.	4.25 ->5	6.75
4	**Tools**	The state's network tools are currently providing up/down monitoring and ad-hoc performance reporting.	4.75 ->6	7.25
5	**Processes**	Key ITIL processes need developed. For example the service request process needs refined to better categorize and prioritize tickets.	4.5 ->4.6	7.5

Scores are the average of relevant sub-categories.

Maine's Public Universities

UNIVERSITY OF MAINE SYSTEM

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Orono, ME 04469

Tel: 207-973-3205
www.maine.edu

The University of Maine

University of Maine at Augusta

University of Maine at Farmington

University of Maine at Fort Kent

University of Maine at Machias

University of Maine at Presque Isle

University of Southern Maine

Testimony of James H. Page

Chancellor, University of Maine System

before the

Joint Standing Committee on Government Oversight

September 15, 2016

Senator Katz, Representative Kruger and distinguished members of the Joint Standing Committee on Government Oversight:

My name is James Page, and I am Chancellor of the University of Maine System.

I appreciate the opportunity to update you on how we've used and accounted for the Maine Economic Improvement Fund since I last presented to this committee. Specifically, I'd like to update you today on the University of Maine System's work to address issues identified in OPEGA's June 2014 report on MEIF.

I believe it is important to note at the outset that:

- MEIF R&D is critical to Maine's economy, with national implications. Since its inception in 1997, your investment in MEIF has been Maine's most important investment vehicle for catalyzing economic development around the State through the System's R&D efforts in the MEIF's seven targeted areas.
- MEIF is not a stand-alone program. It is an integral part of the University of Maine System's mission to foster economic development in Maine through our applied research, requiring a collaboration and mix of MEIF, institutional, federal, and private funds, as well as collaborators and public/private partners – all as established in the MEIF Statute.

As you know, MEIF investments are limited to applied research and development activities supporting the seven sectors targeted in the law:

- Advanced Technologies for Forestry and Agriculture
- Aquaculture and Marine Technology
- Biotechnology
- Composites Materials Technology
- Environmental Technology
- Information Technology
- Precision Manufacturing Technology

The University of Maine System has made great progress in addressing critical internal financial challenges over the last several years. The Legislature and the citizens of Maine rightly expect that the UMS Board of Trustees will manage the

System to provide a greater return on Maine's public investment while not duplicating and diluting resources – and we believe we're meeting those expectations.

UMS Board of Trustees management of MEIF resources is focused on building critical capacity to realize the most impact possible from this vital investment. UMS's commitment to applied R&D as an economic development strategy extends beyond the State's MEIF investment, which is demonstrated by our ongoing investment of additional resources in this work both at the System and campus level.

In our initial written response to the OPEGA report we addressed the specific "OBSERVATIONS" identified. Today I'd like to address some key points about the additional work we've undertaken since then.

Generally speaking, we began by implementing those recommendations that could be accomplished within the given financial resources without reducing the intended impact of the MEIF investments. Not surprisingly, perhaps the greatest impact comes from greater collaborations and sharing of existing R&D assets across the System without unnecessary duplication.

More specifically, and first, several of OPEGA's recommendations called for an improvement in the MEIF annual report to establish measurable goals and objectives for MEIF and report on them. As we informed you in 2014, the UMS BOT approved specific MEIF goals and objectives that are now the basis for our Annual Report to the Legislature in January of every year. These MEIF goals and metrics are derived from the UMS BOT Strategic Outcomes and are detailed in the FY15 MEIF Annual Report included with these remarks. Our reported MEIF objectives and metrics now directly align with:

- Our UMS Board of Trustees Strategic Outcomes;
- Individual campus strategic plans;
- The Maine Science and Technology Plan; and
- The selected metrics and data required by the State's annual R&D survey.

I call your attention to the most recent MEIF annual report for FY15. (The FY16 annual report is in preparation now as we just closed the fiscal year in June).

The FY15 report clearly documents progress on the goals, with outcomes for the last three fiscal years, as you'll see in the Tables on pages 3, 4, 5, and 7 of that document. In addition, we've provided narrative stories that show how our projects are directly impacting Maine communities, companies and students.

Second, several of the recommendations from OPEGA were directed at improving the accounting procedures used to monitor MEIF, and to have those procedures available for each campus. All of these recommendations have been implemented. Here are two examples:

- The University of Maine, the University of Southern Maine, and UMS worked together to ensure that metrics reported for MEIF are consistent, complete, and accurate across all reporting areas. We improved the presentation of leveraged data by reporting numbers of undergraduate and graduate students by head count instead of by FTE – as reflected in Table 4, page 7 of our FY15 MEIF Annual Report – eliminating the risk of double counting. The current processes and procedures have been reviewed and approved by all reporting areas and are reviewed each year to ensure consistency in the data reporting format, and all System campuses are therefore able to report such data consistently.
- To enhance the System's ability to monitor and report on MEIF activities and expenditures and match leveraged commitments by linking data with our primary financial systems, we developed a procedure within our accounting systems that links the MEIF source to the project cost share account. We can easily determine if a cost share is supported by MEIF, and its origin, by including the source program code in the general ledger cost share codes. This mechanism allows all campuses to run reports and identify the cost share provided by MEIF. Relatedly, the campuses assign project numbers to fixed length commitments. The project numbers allow access to the associated funds for a fixed length of time and permit us to isolate these types of commitments in our reports.

Third, the University of Maine System was asked to study and report on the overall strategy and approach to utilizing MEIF funds as a system-wide initiative. To this end, we completed the MEIF Task Force Report and submitted it to the legislature in the fall of 2014, as required.

Included in the report is a series of recommendations to the University of Maine System for the use of MEIF funds. Specific recommendations address better and

more consistent policies concerning the use of MEIF funds across the campuses and for individual researchers. Each campus and the Small Campus Initiative have learned, through experience, how to maximize the benefit gained from utilizing MEIF to:

- Leverage additional grants from external sources;
- Build capacity to serve and collaborate with Maine companies and organizations; and
- Strengthen the opportunities for students and staff engaged in these activities to gain valuable workforce development experience and skills.

To illustrate, from our FY15 Annual Report, you'll note from Table 1 on page 3 that we leveraged MEIF funds allocated to Forestry and Agriculture research to obtain nearly $14.2 million in additional grants and contract awards in that sector. Overall, we leveraged the State's $14.7 MEIF investment into an additional $46.8 million dollars in grants and contract awards for sponsored research in the targeted areas.

UMS continues to use MEIF for strategic investment in the seven sectors critical to Maine's economy. These historic investments have helped us build critical mass in many additional important areas.

So with that basic update of how we've addressed the OPEGA recommendations, I'd like to discuss some related matters and close with some specific examples of progress and activity.

One area of concern is the lack of year-over-year growth in MEIF appropriation and the limitations of the seven sectors. In response, in 2014, the UMS BOT created the Research Reinvestment Initiative, a 5-year commitment of system-wide administrative savings reallocated to support research and economic development throughout the System in areas tied to Maine businesses and industries. The program provides investment to individual projects directly supporting Maine industry at any campus, in the MEIF sectors and beyond. The funds are available as planning grants involving multi-campus and other partners, pilot/seed grants, and funding for graduate and undergraduate students to directly participate in economically important research, development and commercialization.

Beginning in FY16, the state increased the Maine Economic Improvement Fund. With this new investment, the UMS began investing in recommendations identified in the MEIF report.

The Small Campus Initiative was automatically increased through the new appropriation. This funding is available to the five smaller campuses and the Maine Maritime Academy. An MEIF report recommendation was to streamline and adjust the SCI RFP and selection criteria. Over the last year UMS has reviewed that process and the fall RFP will include the recommended improvements.

Another area that was identified was the need for support for "special opportunities," those R&D activities/opportunities that arise but need start-up or seed funds to get to the next level. In FY15, UMS provided MEIF funding to the University of Maine at Machias to expand their partnership with the Down East Institute. Last year UMM and DEI completed a comprehensive MOU solidifying the relationship at UMM's Marine Field Station. MEIF investment will help the partnership grow and expand the research, development and commercialization opportunities in aquaculture and marine technologies – an expressly identified MEIF sector – and give UMM students direct exposure to, and field experience in, that vitally important sector for Washington County and all of Coastal Maine. The UMM/DEI partnership has become a powerful resource for Maine's marine economy and DEI's plans for expansion over the next few years should greatly enhance those capabilities.

A final example that is very timely and relevant to much of the State is the challenge Maine's forest economy is facing due to recent mill and powerplant closures. Over the years, through MEIF investments and many leveraged federal grants, UMS has built the capacity in people and facilities to work hand and hand with this sector to solve both short-term problems and look for long-term solutions. Examples include:

- A UMaine scientist collaborating with the Maine Forest Service and industry to complete the Spruce Budworm Report last winter
- UMaine's participation in the ongoing Biomass Commission
- UMS establishing an Economic Development Administration-funded University Center to focus on the forest economy (to support business development and technology transfer)

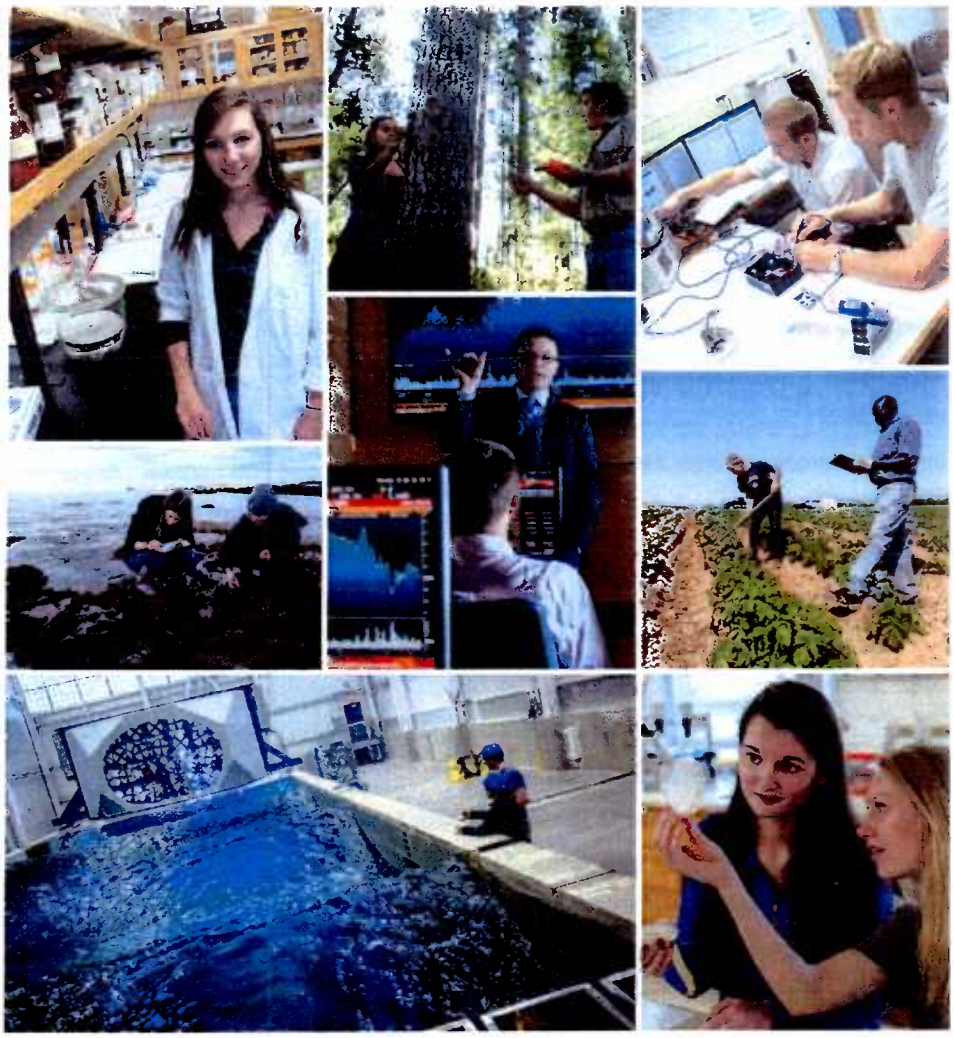
- UMS federally funded research programs supporting efficiencies and improvements for existing businesses and new opportunities/markets and technologies such as:
    - Pulp and Paper grades using biomaterials
    - Cross Laminated Timber Construction
    - Biochemical and biofuels
    - Cellulose based nanomaterials for composites and heavy construction

And finally, UMS faculty and staff have spent the last several months working closely with the Maine forest industry and federal agencies to accelerate and respond to critical immediate issues.

* * * * * * * * * *

Thank you for the opportunity to update you on this critical investment in Maine's economic future. As you've heard, I've provided just a summary of our activities – you'll find more details of our most recent exciting work in our FY15 MEIF Annual Report. We take seriously our mission and responsibility to help move Maine's economy forward, working under our Board's Strategic Outcomes as One University serving all of Maine.

MAINE ECONOMIC IMPROVEMENT FUND



A successful partnership among Maine's government, private sector and public universities to build Maine's economy and future workforce through research and development

Maine's Public Universities

UNIVERSITY OF MAINE SYSTEM

Annual Report FY15 • Presented to Maine State Legislature

Maine's Public Universities

UNIVERSITY OF MAINE SYSTEM

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MAINE ECONOMIC IMPROVEMENT FUND

2015 ANNUAL REPORT

Memo from the Chancellor

The Maine Economic Improvement Fund (MEIF) represents Maine's ongoing commitment between the state and our public universities, working together to advance research and economic development for the benefit of all Maine people. In July 2014, the University of Maine System Board of Trustees (UMS BOT) established Strategic Outcomes and metrics to measure the performance of the University of Maine System and its campuses. Included in these Strategic Outcomes are specific goals for research, economic development and workforce development. UMS BOT has applied these overall Strategic Outcomes to research and development, and has established specific goals and metrics for the Maine Economic Improvement Fund to help achieve these Strategic Outcomes. These metrics were approved at the end of FY14, and are applied to all FY15 MEIF activity and included in this annual report. By statute, MEIF-funded activity is restricted to Maine's seven statutorily established R&D sectors.

- In FY15, the state's $14.7 million MEIF investment was leveraged at a rate of 3:1 by our UMS campuses for an additional $46,784,718 in federal and private-sector grants and contracts in the seven sectors.

- MEIF funds and the external grants and contracts it leverages funded the work of over 400 researchers and technicians, and more than 800 graduate and undergraduate students.

- These grants and contracts provided more than $2 million to purchase major equipment to upgrade and outfit university labs.

- Maine's public universities secured new patents, worked on development projects with large and small businesses and startups, and provided R&D support to over 500 companies and individuals.

As required in the statute that created MEIF 17 years ago, included with this FY15 MEIF report are financial and informational details.

If you have any questions about MEIF projects, this report or other University of Maine System research and economic development programs, please contact me.

Sincerely,

James H. Page
Chancellor
University of Maine System

MEIF Background

The Maine Economic Improvement Fund (MEIF) represents the ongoing commitment between the state, the private sector and our public universities, working together to advance research and economic development for the benefit of all Maine people.

Since the Maine Legislature established MEIF in 1997, MEIF has positioned the University of Maine System (UMS) at the center of statewide efforts to leverage economic development through targeted investment in university-based R&D. MEIF continues to be funded through an annual state appropriation to UMS.

These funds provided through state appropriation to the University of Maine System are dollars specifically to support university-based research, development and commercialization in the state's legislatively designated seven strategic technology areas:

- Advanced Technologies for Forestry and Agriculture
- Aquaculture and Marine Sciences
- Biotechnology
- Composites and Advanced Materials Technologies
- Environmental Technologies
- Information Technologies
- Precision Manufacturing

The University of Maine and the University of Southern Maine have well-established research, development and commercialization activities accounting for 97 percent of the MEIF activity. In 2009, the University of Maine System established the Small Campus Initiative Fund to promote seven-sector research and development activity at the other five UMS campuses and, as of 2013, Maine Maritime Academy (MMA).

Role of MEIF

The role of MEIF is to provide researchers at Maine's public universities with the investment necessary to:

- Attain external grants and contracts to support R&D activities in Maine's seven sectors.
- Attract and retain world-class researchers.
- Provide support for modern laboratories and state-of-the-art equipment.
- Create new products, patents, technologies, companies and exciting job opportunities in Maine.
- Create and sustain economic development and innovation.

MEIF funds often provide the required match to acquire these federal or private sector grants, and this investment in Maine's public university R&D helps faculty and students successfully leverage tens of millions of dollars in grants and contracts annually.

MEIF money also supports equipment purchases or facilities renovations to make the universities more competitive for federal grants.

MEIF increasingly fosters university partnerships with business and industry through economic development collaborations, entrepreneur training programs, business incubators, business research and other programs. These efforts lead to new Maine-based products, technologies, patents and spin-off businesses.

The University of Maine and the University of Southern Maine are the two institutions with established research and graduate programs in all of the seven targeted research sectors and have received MEIF funds, with 77.6 percent to the University of Maine, 19.4 percent to the University of Southern Maine, and 3 percent to the other campuses and Maine Maritime Academy.

Indicators of success show that Maine's MEIF investment is paying dividends by:

- Creating businesses and jobs, including the jobs of more than 400 faculty and staff, and over 800 students working on MEIF-funded projects.
- Boosting Maine's economy by leveraging MEIF funds to bring federal and private-sector grants and contracts to Maine.
- Building capacity and expertise to help Maine companies solve problems and commercialize innovation.
- Helping commercialize patents, innovations and intellectual property.
- Capitalizing on natural resources and core strengths by focusing R&D efforts on economic sectors where Maine can make real gains. University research personnel use MEIF resources to support the staff, equipment and facilities they need to successfully pursue and develop research projects.

Strategic Outcomes, Goals and Metrics

In July 2014, UMS BOT developed and approved Strategic Outcomes to measure the performance of the University of Maine System and its campuses. In October 2014, UMS BOT approved the use these newly developed Strategic Outcomes to create MEIF specific goals and metrics. Several of the UMS Strategic Outcomes are performance targets for all R&D and economic development activity. The MEIF goals recognize that MEIF activity is restricted to Maine's legislatively selected seven R&D sectors and are, therefore, MEIF goals and metrics, and a subset of the overall UMS goals. The UMS Strategic Outcomes that apply to R&D activity are:

- Target 1 — Increase Research Capacity and Activity
- Target 2 — Support New Technologies, Licensing and Commercialization
- Target 4 — Increase Economic Development Partnerships

Overall Goal — Support R&D Workforce Development

This report addresses those goals. In addition, the University of Maine System reports R&D outcomes annually through the statutorily required survey of Maine R&D activity administered by the Maine Department of Economic and Community Development.

R&D Strategic Outcomes and related MEIF goals are:

MEIF Target 1

Derived from UMS BOT Research and Economic Development Target 1

UMS maintains a sponsored programs grant and contracts effort growing greater than 3 percent annually on a three-year rolling average from a 2013 baseline of $45 million and NSF-defined total research expenditures of $45 million in the MEIF sectors. Activity from the seven MEIF sectors will account for 50 percent of the total R&D grants and contracts, with a 3 percent annual growth on a three-year rolling average. The FY13 baseline was a calculated percentage of total activity. Table 1 below shows the actual FY13 baseline.

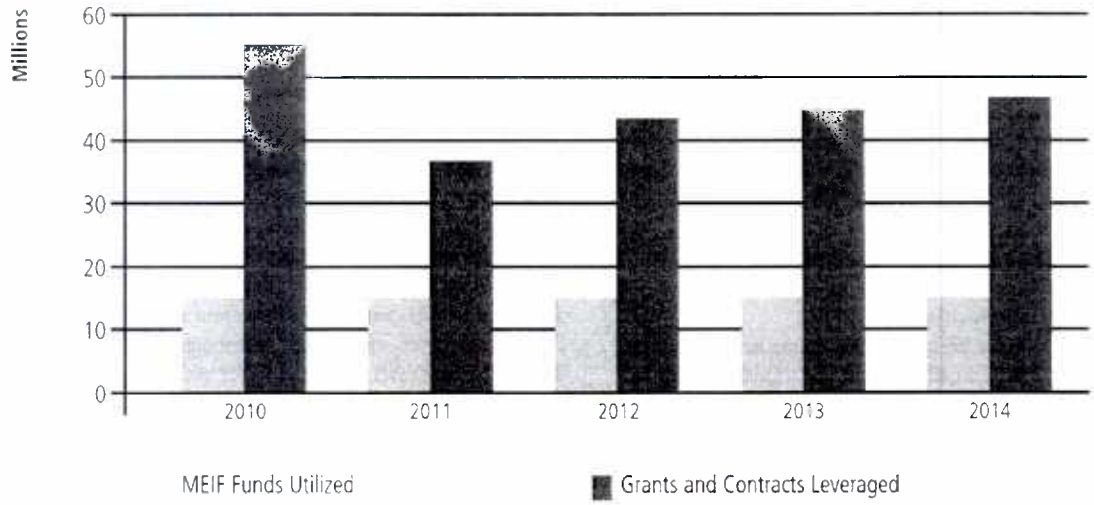
Table 1

FY15 Total Grants and Contracts	Number of Proposals	Total Proposal Value
Total Proposals Submitted	1,257	$203,903,978
Total Proposals Awarded	1,141	$91,423,164

Grants and Contracts Awarded in MEIF Sectors	FY13 MEIF Awards	FY14 MEIF Awards	FY15 MEIF Awards
Forestry and Agriculture	8,642,424	7,654,060	14,194,009
Aquaculture and Marine	7,045,322	9,153,389	15,187,566
Biotechnology	1,985,295	6,353,450	1,524,204
Composites	9,230,715	5,135,033	5,247,712
Environmental	5,781,658	7,959,264	4,349,651
Information Tech	7,422,675	2,520,521	4,473,781
Precision Manufacturing	1,130,746	1,414,700	780,694
Cross Sector	2,290,129	4,681,209	1,018,132
Total	$ 43,528,964	$ 44,871,626	$46,775,749

FY15 Dollar Increase	**$1,904,122**
FY15 Percentage Increase	**4.4%**

Figure 1 MEIF Return on Investment (UMS)
Tens of Millions Leveraged in Grants and Contracts
(Five-Year Snapshot)



In summary, the MEIF Target 1 for increasing external grants and contracts leveraged through MEIF investments saw an increase of 4.4 percent over the previous fiscal year. This favorable trend continues in a positive direction after decreases from FY10 through FY12. This is largely related to changes in the economy, and the federal and private sectors partners that are beginning to slowly increase post-recession funding for R&D. Recognizing the lead time for proposal preparation, sponsor review and selection, and contract activity to begin, there can be a one- to two-year lag in output. Proposal preparation and submission remain steady. For the purpose of this report, a private-sector contract is counted as a single proposal submission.

MEIF Target 2

Derived from UMS BOT Research and Economic Development Target 2

UMS annual revenue from commercialization, including intellectual property licensing, increases at least 20 percent annually on a three-year rolling average from a baseline of $150,000 from MEIF sectors.

Table 2

MEIF Target 2 — Commercialization Activity	FY13	FY14	FY15
Revenue from Commercialization	$121,250	$96,726	$150,094
Number of Patents Filed	15	32	22
Number of Patents Issued	16	12	9
Number of License Agreements and License Options	6	6	16

FY15 percent revenue increase 55%

In summary, revenue from the commercialization of intellectual property has decreased over the last several years. Commercialization in Maine often relies on companies licensing UMS intellectual property to secure private equity investment to advance technology, products and services into markets. General trends in venture capital and private equity investments are slowly rebounding in Maine and companies are starting to see new equity investments. Patents take four to five years from application to issuance. Newly issued UMS patents reported in Table 2 and in Appendix 1 were filed four to five years ago. In addition, UMS technologies generally fall into categories, such as transportation infrastructure, pulp and paper, sensors and biotechnology. These sectors have been slower to rebound post-recession, and timelines from lab to market can take five to 10 years. UMS is focusing additional effort to accelerate the commercialization with private-sector partners and programs, such as the Maine Technology Institute and Maine Venture Fund.

MEIF Target 3

Derived from UMS Research and Economic Development Target 4

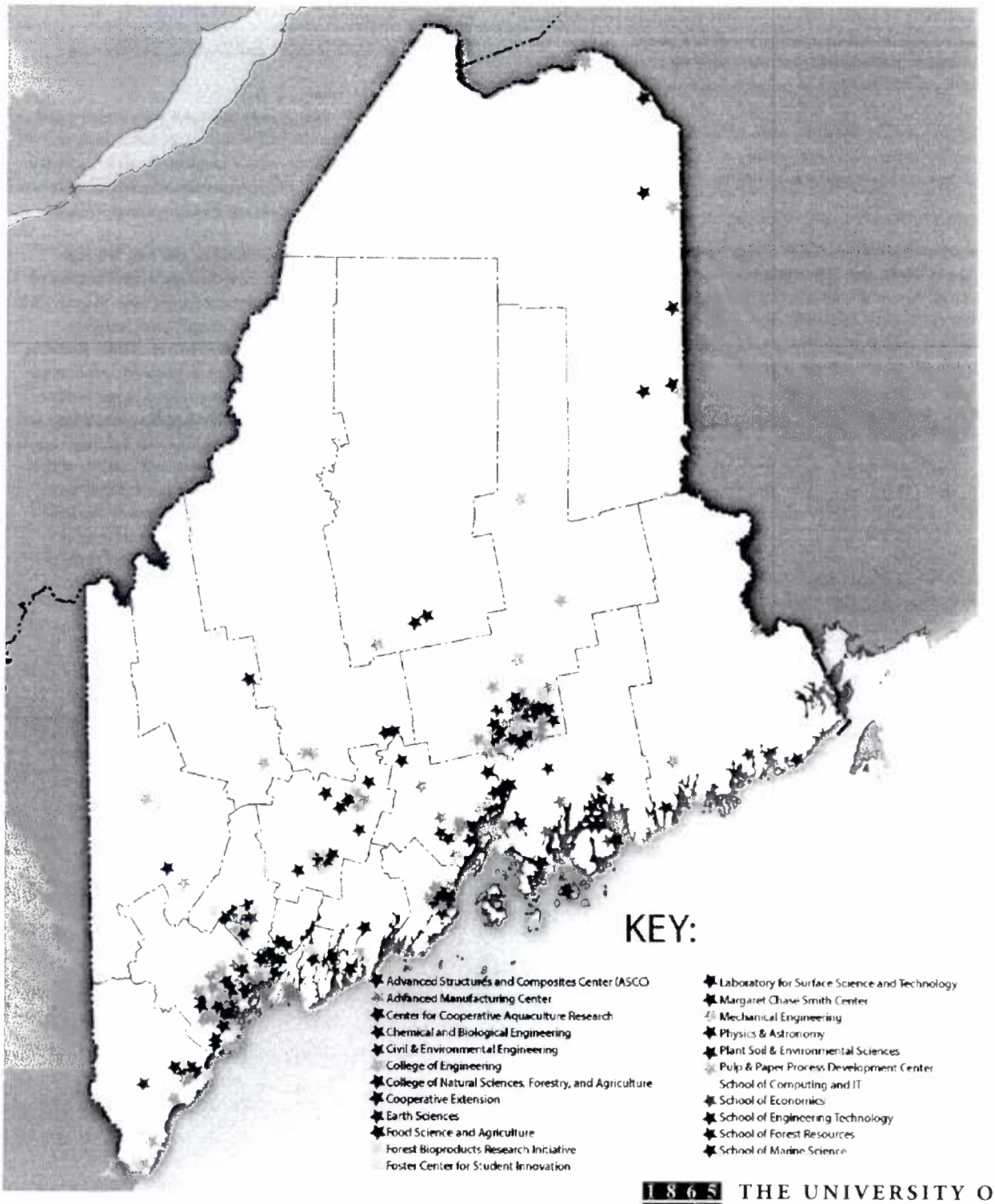
The UMS annual revenue from activities with business and industrial partners in the MEIF sectors increases from an FY13 baseline of $3.15 million to $6.75 million by FY17, and the number of business and industry contracts in MEIF sectors will increase from a baseline of 400 in FY13 to 450 in FY17.

In summary, many MEIF investments not only leverage external grants and contracts, but through a combination of MEIF funds, and grant and contract funds, have helped UMS campuses build capacity to work directly with industry partners. Some industry partners will be companies licensing and commercializing UMS intellectual property, while many companies are working with UMS campuses to get assistance with solving their problems or perfecting their inventions and innovations. UMS projects with business and industry continue to grow, and activity is meeting the goals and metrics of this target. Figure 2 demonstrates the statewide nature of these partnerships for those contracts that are currently tracked. Many additional companies, inventors and entrepreneurs receive advice and guidance, but do not result in formal contracts.

Table 3

MEIF TARGET 3 — Business and Industry Contracts	FY13	FY14	FY15
Revenue from Business and Industrial Contracts	$3,150,000	$4,371,999	$5,759,572
Number of Business and Industrial Contracts	400	500	624

Figure 2 UMS Industry Partnerships



1865 THE UNIVERSITY OF MAINE

MEIF Target 4

Support R&D Workforce Development

UMS shall maintain a concerted effort to involve faculty, staff and student participation in research, development and commercialization, and shall report annually the number of employees directly supported by MEIF funds, and by grants and contracts in the MEIF sectors. As external funding is hard to predict, there is no specific numerical goal for employee count, but UMS shall report the annual number of faculty, staff and students to indicate trends and identify opportunities for growth.

In summary, state economic analysis predicts economic growth in Maine based on an available trained and educated workforce. Growth in the seven MEIF sectors is especially dependent on the available workforce. MEIF seven-sector projects in UMS rely on regular faculty and staff, as well as many "soft money" employees — those hired to work on specific grants and contracts, and paid by those grant and contract funds. UMS employees and students gain valuable on-the-job training and experience, and may then contribute to the employment base within these sectors after completion of the grants or graduation. Grant and contract revenue is a strong contribution to this workforce development. UMS counts employees involved in this activity, and will continue to pursue the growth in employment numbers related to growth in grant and contract activity. Nonstudent employees are tracked as full-time equivalents (FTEs) based on a 40-hour/52-week work year. Student employees, tracked by head count, generally work less than 20 hours per week during the academic year.

Grant and contract revenue also is an important source of funding for students' salary, tuition and other types of support, allowing many research-active students to offset their cost of education while getting valuable skills and on-the-job experience.

Table 4

MEIF Target 4 — Workforce Development	Wages Paid from MEIF	Wages Paid from Grants/Contracts	Totals
Number of Faculty Staff Supported (FTE = Full-Time Equivalent)	123	309.7	432.7
Number of Graduate Students Supported (Headcount)	49	285	334
Number of Undergraduate Students Supported (Headcount)	78	459	537

Student Costs from Grants and Contracts	FY13	FY14	FY15
Student Salaries and Wages from Grants and Contracts	$5,001,942	$4,877,650	$4,603,696
Student Tuition Paid by Grants and Contracts	952,553	857,781	$835,961
Student Fellowships Paid by Grants and Contracts	236,553	199,400	$552,944
Student Health Insurance Paid by Grants and Contracts	167,893	282,848	$62,967
Total Soft Money Student Support	**$6,358,941**	**$6,217,679**	**$6,055,568**

MEIF Success Stories

By leveraging MEIF funds, the University of Maine System has attracted more than $46.8 million in FY15 in federal and private-sector grants and contracts related to the seven strategic research areas. This funding directly results in work solving some of Maine most challenging problems and developing solutions, products and technologies, which benefits Maine's industries, communities and future workforce — our students. Examples of FY15 MEIF seven-sector projects from our campuses follow.

Bottom to top: Easton: released in February 2014 to the french fry industry — named for the town in Aroostook County — is praised for its high yields and its high-quality french fries. Caribou Russet: released in March 2015 — a cross between Silverton Russet and Reeves Kingpin — is a dual-purpose variety that has shown potential for the processing and fresh markets. The potato is named for Caribou, Maine; Sebec: released in February 2014 to the potato chip industry, It was named for a lake in Piscataquis County. The variety has round to slightly oblong tubers, and is lightly textured, with buff-colored skin and white flesh.

ADVANCED TECHNOLOGIES FOR FORESTRY AND AGRICULTURE

■ State's potato breeding program cultivates new varieties to grow the industry

The community of Presque Isle in the northernmost county in Maine is home to Aroostook Research Farm — the largest of five University of Maine experimental research facilities. In the summer months, the 425-acre farm is covered in rows of lush, leafy green plants adorned with tiny white and purple flowers.

Though the expansive fields make for a beautiful scene, researchers and farmers are more interested in the thousands of plump, starchy vegetables just inches below the Earth's surface. Since 1912, the farm has been ground zero for UMaine's potato research programs, serving as the hub for agriculture research and development for the state's potato industry. The university's potato breeding program introduces new varieties with improved disease resistance and marketability for potato growers in the eastern United States. This year, UMaine's breeding program produced 50,000 seedlings, each containing a unique set of genetic material that could hold the key to the next decade's successful potato varieties. In the past decade, the program, in partnership with the Maine Potato Board, has released three new varieties. The three — Easton, Sebec and Caribou Russet — had the competitive yield and quality attributes necessary to move from the research conveyer belt to market shelves.

umainetoday.umaine.edu/archives/fallwinter-2015/from-the-ground-up

■ Think big, go small

University of Maine researchers have been awarded $700,000 to develop eco-friendly particleboard panels with adhesive made of cellulose nanofibrils (CNF), as well as design a commercial-scale plant to manufacture the CNF. With one $350,000 grant, UMaine and the USDA Forest Service (USFS) are tasked with making strong, stiff and fully recyclable particleboard panels that can be used in countertops, door cores and furniture. The adhesive in the particleboard will be made from CNF rather than urea-formaldehyde. To optimize techniques and methodology, UMaine has been awarded another $350,000 to construct a commercial-scale CNF manufacturing plant with a capacity of 2 tons per day. UMaine will collaborate with USFS on the commercial plant project. UMaine researchers taking part in the project have a range of expertise — from forest products to chemistry and biological engineering.

COMPOSITES AND ADVANCED MATERIALS TECHNOLOGIES

■ Sea Trials

The University of Maine's one-eighth scale floating wind turbine successfully operated and collected data related to design capabilities for more than a year, including throughout a Maine winter. VolturnUS 1:8, the scale model of a 6 MW wind turbine featuring floating concrete hull technology, was equipped with more than 50 sensors. Among the yearlong data highlights: VolturnUS successfully withstood 18 severe storms equivalent to 50-year storms, and one 500-year storm, and the maximum tower inclination angle measured was less than 7 degrees. UMaine signed a $3.97 million cooperative research agreement with the U.S. Department of Energy (DOE), of which $3 million is DOE funding and $970,000 is cost share, to continue the design and engineering work of the full-scale VolturnUS floating hull. The full-scale floating hull is a patent-pending technology developed by UMaine's Advanced Structures and Composites Center. In June 2013, VolturnUS became the first grid-connected offshore wind turbine deployed in the Americas, and the first floating turbine in the world designed with a concrete hull and composites material tower.

umainetoday.umaine.edu/archives/fall-2014/sea-trials

AQUACULTURE AND MARINE SCIENCES

■ Advancing marine farming

A $20 million National Science Foundation EPSCoR (Experimental Program to Stimulate Competitive Research) grant established the Sustainable Ecological Aquaculture Network (SEANET) program in Maine. Maine EPSCoR at the University of Maine will use the grant to mobilize the collective capacity of Maine's coastal science resources to establish SEANET, a research network focused on sustainable ecological aquaculture. SEANET will take a multi-institutional research approach to gain a comprehensive understanding of how sustainable ecological aquaculture can interact with coastal communities and ecosystems. This public-private partnership led by UMaine, in collaboration with the University of New England and other institutions in Maine, will use the state's 3,500-mile coastline as a living laboratory to study physical oceanography, biophysical, biogeochemical, socioeconomic and policy interactions that have local, bioregional, national and global implications. Maine has multiple institutions with world-class expertise in marine sciences, engineering, climate change and social sciences. The SEANET research partners include UMaine, University of New England, University of Southern Maine, University of Maine at Machias, Bowdoin College, Maine Maritime Academy, St. Joseph's College, Southern Maine Community College, Bigelow Laboratory for Ocean Sciences and

Nadir Yildirim

Green insulation

In 2014, two University of Maine graduates set out to replace petroleum-based thermal insulation products with more environmentally friendly and sustainable options. Now, with support from several organizations, including the National Science Foundation and Maine Technology Institute, the pair's Orono-based company has created a prototype for the first completely eco-friendly thermal insulation foam board. Nadir Yildirim, a graduate of UMaine's innovation engineering program and a Ph.D. candidate in forest resources, and Alexander Chasse, a civil engineering alumnus, launched Revolution Research Inc. (RRI) to develop recyclable and reusable products using cellulose nanofibrils (CNFs). "I believe RRI will open a new page in the insulation industry," says Yildirim, who has been working with advanced nanocomposites for more than seven years, and conducts his Ph.D. research at UMaine's Advanced Structures and Composites Center. The company's focus is the creation and commercialization of thermal and acoustical insulation foam boards for use in the construction and packaging industries. One of the largest uses of energy is heating and cooling buildings, according to the researchers, which drives companies to search for products that improve insulation performance. RRI aims to use CNFs and green polymers to produce a thermal insulation board with a lower carbon footprint.

the Cobscook Community Learning Center. In addition, dozens of other partners and stakeholder groups will collaborate on the project's research, education, workforce development and economic development activities.

umainetoday.umaine.edu/archives/fall-2014/future-farming

■ Buoying aquaculture

University of Maine scientists have deployed an ocean-observing buoy at the mouth of the Damariscotta River to better understand how different types and scales of aquaculture can fit into Maine's working waterfront. The buoy is part of a National Science Foundation Sustainable Ecological Aquaculture Network (SEANET) project, geared to help the aquaculture sector maintain an environmentally and economically sustainable production path. Professor Neal Pettigrew's Physical Oceanography Group in the School of Marine Sciences will use data gathered by Mooring E0501 to map water circulation at the mouth of the river. The detailed circulation patterns will be integrated into ecosystem models under the supervision of Damian Brady, assistant research professor at the Darling Marine Center. The models will include results of environmental monitoring, field investigations and lab analysis, much of which will be conducted at the Darling Center. The Ocean Data Acquisition System, designed and constructed by Ocean Science and Technology LLC, includes technology developed for the network of deepwater buoys in the Gulf of Maine that are part of the Northeastern Regional Association of Coastal and Ocean Observing Systems.

■ NOAA funds lobster, finfish, mussel projects

Lobsters, fin fish and mussels are the focus of three research projects chosen for more than $850,000 in funding from the National Oceanic and Atmospheric Administration's Saltonstall-Kennedy (S-K) Grant Program to benefit the U.S. fishing industry. One project seeks to determine if increasing ocean temperature is causing the decline in the population of lobsters in southern New England. Another seeks to improve the survival of cusk and Atlantic cod bycatch from lobstering. The third will use the experimental shellfish hatcheries at UMaine's Darling Marine Center in Walpole, Maine and the Marine Biological Laboratory in Woods Hole, Massachusetts to develop technology to cost-effectively produce mussel seed to meet the needs of the Northeastern United States mussel culture industry.

■ Intertidal ecology

Understanding the biodiversity of bacteria associated with marine algae that contribute to ecosystem health in the rocky Atlantic intertidal zone is the focus of a study led by three University of Maine researchers. Susan Brawley, a professor of plant biology in the School of Marine Sciences, heads the three-year project. At UMaine, she is working with John Singer, a professor of microbiology, and Benildo de los Reyes, a professor of biological sciences. The study is a collaborative research project with Hilary Morrison at Marine Biological Laboratory (MBL) and is funded by a more than $1.4 million grant from the National Science Foundation — $986,515 to UMaine and $480,016 to MBL. The research will focus on interactions between microbes and intertidal macroalgae — seaweeds — and how their relationships change in response to natural and human-driven environmental stresses. The study will determine how bacteria change depending on the season, position within the intertidal zone and latitudinal range. The research has the potential to serve as an important trans-Atlantic baseline of the microbiomes' biodiversity.

umainetoday.umaine.edu/archives/springsummer-2015/intertidal-ecology

■ Delivering fresh sea vegetables

The University of Maine is working with a Bristol, Maine company to study the shelf life and nutritional values of aquacultured sea vegetable products. Maine Fresh Sea Farms, a startup based on the Damariscotta River, is one of five Maine companies to share more than $471,000 in Value Added Producer Grants from the U.S. Department of Agriculture's Rural Development Program. The federal grants were awarded in August 2014 to preserve rural jobs at companies that process and add value to agricultural products. Maine Fresh Sea Farms received funding to help create a business plan and study the feasibility of delivering fresh aquacultured sea vegetable products to the marketplace using agricultural produce and seafood distribution systems, the USDA said. The funds also will help the company retain jobs and create more in the next decade.

INFORMATION TECHNOLOGIES

■ Cybersecurity

The Maine Cyber Security Cluster (MCSC) at the University of Southern Maine is the seminal public/private partnership initiative for cybersecurity in Maine. MCSC provides Maine with one-stop shopping for cybersecurity. Due to its outreach efforts with its many partners and collaborators, it has achieved a high level of recognition with business, industry, state, federal and military entities. It exists as the central participant to grow the many facets of cybersecurity education, training, and workforce and economic development in Maine. MCSC has recently received funding from the Maine Technology Institute and the National Science Foundation. MCSC has also received recognition as a National Security Agency Center of Academic

Excellence. With MEIF and MTI funding, MCSC is developing a Critical Infrastructure Protection Research and Operations Cyber Range that will provide a secure virtual environment for businesses, government and military agencies to conduct classified and unclassified research and development, as well as cyber warfare training and education. This cyber range includes the USM Portland Cyber Security Lab, and a Sensitive Compartmented Information Facility at Brunswick Landing, and collaboration with similar facilities in several states. There is also ongoing training of Coast Guard and other state and federal employees using cyber range simulations. The past year has seen the creation of a first of its kind systemwide Cyber Security Bachelor of Science Degree, and a Bachelor of Science in Information Technology at USM, as well as a USM Cyber Security Literacy minor for students in nontechnical fields. Graduates of MCSC, as well as students in externships, have been placed in cybersecurity positions in Maine businesses, including Unum, MaineHealth, Sage Data Security and WEX.

■ Health informatics research

The University of Southern Maine's Health Informatics Research Cluster represents an interdisciplinary team of faculty and staff researchers engaged in strategic partnerships with health care, public health and health data organizations. Its mission is to support health informatics development in the region, while enhancing Maine's capacity to provide efficient, high-quality clinical and population health services. Responding to economic and policy forces driving health system transformation, the team's foci include development of innovative health data resources, health data analytics and mobile health technology. A major collaborative initiative from the Health Informatics Research Cluster, the Tumor Registry Electronic Medical Record (TREMR), will contain data from Maine Medical Center's (MMC) electronic medical record on patients with cancer. It will also contain regional population density, household income, race/ethnicity and data on distance from health care providers. Investigators will use TREMR to generate evidence that informs cancer policies and interventions focused on: 1) modifiable behaviors, such as smoking, diet and physical activity, and cancer screening; 2) care quality and safety; and 3) barriers to cancer care and disparities. The goals of the project are to build TREMR, establish governance that allows it to be used while protecting patient privacy, promote the vibrant use of TREMR among the community of cancer researchers, and define and carry out analyses that inform the policy objectives of the Maine Cancer Consortium. Funding for this project comes in part from the Maine Cancer Foundation.

Get a grip

Developing a noninvasive procedure to determine the viability of lobsters for shipping was the goal of a recent cross-discipline research project led by a University of Maine undergraduate student. Matthew Hodgkin, a fourth-year animal and veterinary sciences major from Colebrook, Connecticut, developed a method to evaluate lobster livelihood based on claw strength. He collaborated with Bob Bayer, executive director of the Lobster Institute at UMaine; Michael Peterson, a mechanical engineering professor; and Thomas McKay, a fourth-year mechanical engineering technology student. Inspiration for Hodgkin's research came from Bayer, who had approached Peterson two years ago as a result of a press inquiry about the strength of lobster claws. Peterson and McKay then built a device to measure the closing strength of a lobster's crusher claw. Hodgkin has since worked with Bayer to determine if the device could be used to predict the viability of lobsters for shipping. Knowing a lobster's viability is relevant to Maine's primary seafood industry because it can determine if the crustacean is most suitable for shipping live or going straight to a processing plant, according to Hodgkin.

umainetoday.umaine.edu/archives/springsummer-2015/get-a-grip

■ Health lifestyle technologies

The efforts of this research cluster to develop an IT prototype for a web-based comprehensive lifestyle management intervention targeted at college students were generally a success. Two pilot studies were conducted as part of the two-year seed development project. In each of the pilot studies, University of Southern Maine residential college students were recruited to participate in a four-week intervention in which they interacted with a newly created comprehensive website containing information and activities related to management of a healthy lifestyle. Much of the qualitative data obtained offered useful insights into aspects of the IT prototype that were most helpful, as well as those that could be made more interactive and engaging. Study participants agreed they gained knowledge in participating in the pilot studies; and they were very forthcoming as to how this knowledge and their interaction and behavior could be delivered in ways that were more interactive and more engaging in real time. A manuscript of this project, with results from the two pilot studies, is being written for submission to a peer-reviewed journal. In addition, two grants have been submitted by research cluster members for federal funding for work related to health management and technology.

B UMaine's Cyber Defense Team

The University of Maine Cyber Defense Team advanced to a regional competition at Syracuse University in March. Members of the team competed at the annual Northeast Collegiate Cyber Defense Competition after placing fifth in a preliminary competition with 13 other schools. According to the National Collegiate Cyber Defense Competition, the contest simulates security operations for a small company. Teams must quickly familiarize themselves with network systems and software before beginning to defend against attacks, while also providing customer service to users. George Markowsky, professor of computer science at UMaine, is the team's faculty adviser.

■ Aging elders

University of Maine seniors in the New Media Department are developing a fall detection device for older adults to use outside their homes. Benjamin Herold-Porter of Biddeford, Maine and Heather Anderson of Jonesboro, Maine have created a prototype that can detect when the person wearing the device has fallen and automatically text a programmed cell phone number without requiring user action. The students, who were enrolled in a new media wearable device class before starting their capstone, were inspired to create technology that would benefit their relatives.

umaine.edu/news/blog/2015/05/01/new-media-students-develop-fall-detection-device-for-older-adults

ENVIRONMENTAL TECHNOLOGIES

■ NASA, UMaine study phytoplankton

University of Maine oceanographer Ivona Cetinic is participating in a NASA project to advance space-based capabilities for monitoring microscopic plants that form the base of the marine food chain. Phytoplankton — tiny ocean plants that absorb carbon dioxide and deliver oxygen to Earth's atmosphere — are key to the planet's health. And NASA wants a clear, global view of them. NASA's Ship-Aircraft Bio-Optical Research (SABOR) mission will bring together marine and atmospheric scientists to tackle optical issues associated with satellite observations of phytoplankton. The goal is to better understand marine ecology and phytoplankton's major role in the global cycling of atmospheric carbon between the ocean and the atmosphere.

umaine.edu/news/blog/2014/07/17/seeing-the-sea

■ Residents support energy efficiency

Fifty-two percent of surveyed Maine adults supported increasing all Mainers' monthly electricity bills to invest in renewable energy options and/or energy efficiency programs to reduce carbon emissions. That's according to a University of Maine study that also found 37 percent of the nearly 400 respondents viewed energy efficiency and renewable energy investments as complementary. They divided the money evenly — giving half to renewable energy investment and half to energy efficiency programs. UMaine economist Caroline Noblet and colleagues conducted the study in 2013, the same year fossil fuels (81 percent) and nuclear energy accounted for more than 90 percent of energy use in the United States. "Energy choice studies generally only gauge support (or not) for a policy; rarely do they take the next step — as we have done here — to look at how people would allocate these investment dollars," Noblet says.

umaine.edu/news/blog/2015/03/24/umaine-study-residents-support-investing-in-energy-efficiency-renewable-energy

BIOTECHNOLOGY

■ Gorham Lamp

The Gorham Lamp, a benchtop and microscope illumination system developed at the University of Southern Maine by Joseph Staples is moving closer to production. The device is a unique product designed to provide circular oblique illumination for users of stereo microscopes. Staples is currently working with three Maine-based companies, Formworks LLC (product development and marketing packet), SPC MicroSystems (electronics engineering and design), and MechArtisans LLC (mechanical engineering and design), to produce a series of prototypes that will be field tested in fall 2015. Feedback from the field tests were incorporated into the final product, along with designs for manufacturing a bill of materials and production estimates for potential licensees. The right to license and manufacture the Gorham Lamp will be up for bid in spring 2016. The Gorham Lamp has drawn interest from major manufacturers around the U.S. and in Europe. If produced in Maine, the first production units of the Gorham Lamp could reach the market as early as the last quarter of 2016.

PRECISION MANUFACTURING

■ On the market

A new device on the market, developed by O'Brien Medical in Orono in collaboration with the University of Maine Advanced Manufacturing Center, has the potential to improve detection of diabetic peripheral neuropathy that can lead to limb loss. ETF128, an electronic tuning fork named one of the Top 10 innovations in podiatry by *Podiatry Today* magazine, was patented last year and is now manufactured by Saunders Electronics in South Portland, Maine. The 128-Hz device offers a significant improvement over current methods used by doctors to detect diabetic peripheral neuropathy, a nervous system disorder with symptoms of pain, sensation loss and weakness in limbs. The development of ETF was made possible through a collaboration with Dr. Todd O'Brien, president and founder of O'Brien Medical, and UMaine's Advanced Manufacturing Center, an engineering support and service center dedicated to promoting manufacturing economic development in Maine.

Photo courtesy of O'Brien Medical

Small Campus Initiative

■ Universty of Maine at Farmington

In collaboration with Ross Hickey, vice provost for research integrity at USM, the University of Maine at Farmington submitted a DEA Schedule I application that recently received preliminary approval. The secondary application also has been submitted. While awaiting DEA approval, UMF has been working on developing the methodologies. Because hops *(Humulus sp)* is a close relative of cannabis, sharing 90 percent of the genome, UMF researchers have been using hops as a model system to develop both the cannabinoid, terpene and DNA barcoding methodology. In the cannabinoid and terpene analysis, the method has been validated and researchers are now using the established method to analyze terpenes in unknowns. In the DNA barcoding project, UMF validated a DNA isolation procedure and is currently working to optimize the PCR reaction. Once DEA permitted, these validated methods will be used to analyze medical cannabis samples.

■ Maine Maritime Academy

In collaboration with Penobscot East Resource Center in Stonington, Maine Maritime Academy has designed a trimaran lobster boat with significant reductions in fuel consumption. The goal of MMA's MEIF project is to complete the final refinements to the design, perform final analysis and testing, and identify and partner with a boatbuilder. These efforts will allow MMA to pursue future grants for construction of a full-scale prototype. The team met with six Maine boatbuilders, and three large and three small yards to discuss the project. Strength analysis has begun using the new geometry model. Tank testing of the final sidehull shape is not complete, as MMA would like to use UMaine's new W^2 Ocean Engineering Lab instead of traveling out of state again. The W^2 Lab is up and running, but the tow carriage portion needed for MMA tests is still under construction. MMA will likely need an extension on this part of the project.

■ University of Maine at Augusta

A University of Maine at Augusta project has focused on understanding the complexity of aircraft simulation and its potential application for improving flight training education, while potentially reducing cost. UMA has invested in a Full Motion Redbird FMX Flight Simulator, and work has begun presenting simulation training to every private pilot student this year. This simulator is an FAA-approved Advanced Aircraft Training Device. With such an FAA designation, students can credit some time flown in this device toward time required for instrument and commercial flight ratings. System software on the Redbird simulator includes a series of modules set up as gaming tasks. This "gaming" software provides coaching queues for pilots, then evaluates performance and provides a score sheet on selected aspects of the maneuver. The effectiveness of this training has been discussed with training experts at the Aircraft Owners and Pilots Association (AOPA) and has been received with great interest. UMA will provide an evaluation of the effectiveness of this simulator training at the completion of this grant.

In addition, UMA has partnered with United Technologies Center (UTC) in Bangor, Maine to develop science, technology, engineering and math (STEM) modules for use in grades K–12 in flight simulation, particularly flight dynamics. Flight dynamics will cover such topics as basic math and physics for students across a broad range of educational experiences, while making these topics fun and applicable. UTC has a strong gaming programming center and UMA will leverage this capability to develop a set of STEM modules for use in local schools. UMA is building these partnerships now.

UMA looks forward to successful completion of this grant in May 2016. It is expected that the results of this grant will positively impact the training of pilots in the UMA Aviation Program by reducing costs, keeping course completion rates in the allocated time frame, and elevating the UMA Aviation Program to be the top Aviation Training Program in the Northeast in five years.

■ University of Maine at Machias and Downeast Institute

With lessons learned about routine monitoring and maintenance of field plots, and the necessity to hire skilled labor, the University of Maine at Machias and the Downeast Institute devised a six-pronged project to investigate green crabs and their effects on softshell clams. The NOAA-SK award of $348,767 is for the project: "Demonstrating Shellfish Aquaculture Technology in Pilot and Commercial Scale Projects: Creating New Opportunities for Maine's Coastal Communities." Other collaborators are Stewards of the Sea, LLC in Freeport. Two progress reports are online.

(downeastinstitute.org/2014-field-trials.htm).

■ University of Maine at Machias

The University of Maine at Machias is examining factors affecting the hatchery, nursery and growout phases of the Arctic surfclam, *Mactromeris polynyma*, to create new economic opportunities for businesses and entrepreneurs in Down East Maine. Arctic surfclams are a $50 million fishery in Atlantic Canada, where the species is harvested by large factory ships that dredge surfclams from sandy/muddy bottoms at depths of up to 200 feet. The foot of the bivalve is processed to produce hokkigai for sushi- and sashimi-style dishes, and Asian cuisine. Although the species exists in the Gulf of Maine, it does not occur at commercial densities. UMM has obtained broodstock animals from Canada with permits from Maine's Department of Marine Resources, and has begun to investigate the hatchery, nursery and growout phases of the Arctic surfclam as a possible new culture fishery in eastern Maine. Early studies in the hatchery production and research center of UMM's Marine Science Field Station informed UMM researchers of the importance of cold (< 10°C) temperature and various phytoplankton (single-celled marine algae) species to bring adults into a spawning condition. It is possible to spawn the same adults three to four times a year to produce larvae and juveniles. The nursery phase is intermediate between the hatchery and growout phase, and one that takes animals that have reached 2-3 mm from the hatchery where they have fed primarily on cultured phytoplankton to a highly controlled field scenario, where thousands are grouped in cages or floating trays with the goal of attaining sizes of 8–15 mm in shell length. UMM researchers have found that juvenile surfclams grow/survive very well in trays lined with small aperture mesh (i.e., window screening), as long as the trays are submerged. Floating trays result in poor survival and surfclams with stunted/disfigured shells; completely submerged trays result in relatively high survival and excellent growth to the target size (over a six-month period). The most important phase is the growout, where juveniles are moved from nursery trays to field plots. The most significant growout result obtained to date has been excellent survival of post-nursery juveniles planted in the lower intertidal. Normally, *M. polynyma* is a subtidal species in its native habitat; however, determining that it can survive in the lower intertidal opens a new line of thinking about how to culture this species that does not involve large, subtidal tracts (such as for blue mussels, oysters or salmon). In addition, equipment to plant, protect and harvest intertidal surfclams becomes less complicated and costly compared to what it would be if the species were grown subtidally. To date, UMM field experiments have shown that growing animals to 1¼– to 1½–inch (32–38 mm) in the lower intertidal is possible after two years post-planting. Planting size is critical, and so, too, is protecting vulnerable juveniles from crustacean predators, such as crabs and lobsters. Protective netting can be applied to intertidal tracts to deter predators, although the effectiveness of the netting is clam size-dependent, with best results in clams of an initial size of 15–20 mm in length, and sub-par results for clams of an initial size of < 10 mm in length. Because the cost of growing clams to a 15–20 mm size in a nursery setting adds an additional year to bringing them to a commercial size, studies are continuing to examine methods of deterring predators on the smallest sizes of cultured surfclam seed.

✓ SUCCESS

By leveraging MEIF funds, UMS has attracted more than $46.8 million in FY15 in federal and private-sector grants and contracts related to the seven strategic research areas. This funding directly results in Maine products and technologies, such as biofuels, pulp and paper products, new potato varieties, aquaculture technologies and software, which lead to improvements in Maine's industries.

✓ RETURN ON INVESTMENT

Each year, the state's MEIF appropriation is matched by tens of millions of dollars in federal and private funds for important university research. The University of Maine as the state's land grant institution utilizes its long-established research capacity and infrastructure to attract the majority of these matching funds. Other UMS schools continue to build and partner within federal and private-sector grants and contracts.

✓ STRATEGIC IMPACT

In MEIF's most recent five-year period, $341 million was received to perform research and development related to the targeted areas.

✓ CREATING JOBS

More than 400 full-time equivalent jobs are funded annually in Maine through the funds leveraged and expended related to MEIF. These positions include faculty, technicians and research staff. Over 800 graduate and undergraduate students are funded for their involvement in research, development and commercialization.

Appendix 1 — UMS Intellectual Property

Table A1-1

University of Maine System New Patent Applications Filed FY15

Title	Application	Type Filing Date
PROCESS FOR RECOVERY OF ACETIC ACID FROM BIOMASS	US – PROVISIONAL	7/3/2014
SYSTEM AND APPARATUS FOR ILLUMINATING A SPECIMEN (USM Campus)	US	7/18/2014
COMPOSITE BUILDING PRODUCTS BOUND WITH CELLULOSE NANOFIBERS	US, Canada	7/30/2014
REMOTE WIND RESOURCE ASSESSMENT	US – PROVISIONAL	8/12/2014
DANDY MAN PURPLE RHODODENDRON (USM Campus)	US	8/27/2014
METHOD AND SYSTEM FOR COMPLETE INTERFERENCE MITIGATION IN PASSIVE WIRELESS SENSORS AND RFID TAGS	US	8/28/2014
COMPOSITE WELDABLE PANEL WITH EMBEDDED DEVICES	US	9/12/2014
CONTAINER HAVING COMPOSITE WELDABLE PANEL WITH EMBEDDED DEVICES	US	9/12/2014
FLOATING WIND TURBINE SUPPORT SYSTEM	PCT	9/24/2014
STYLIZED ADAPTIVE MOBILITY DEVICE	US – PROVISIONAL	10/1/2014
TRANSGENIC ALGAE ENGINEERED FOR HIGHER PERFORMANCE (USM)	US	10/16/2014
SOFT TISSUE IN-GROWTH OF POROUS, THREE-DIMENSIONALLY PRINTED, TRANSCUTANEOUS IMPLANTS OF VARYING MATERIAL AND PORE GEOMETRY	US – PROVISIONAL	2/3/2015
METHOD OF ASSEMBLING A FLOATING WIND TURBINE PLATFORM	PCT	2/6/2015
METHOD OF MOORING ONE OR MORE FLOATING WIND TURBINE PLATFORMS	PCT	2/6/2015
METHODS OF CONSTRUCTION, ASSEMBLY AND LAUNCH OF A FLOATING WIND TURBINE	US – PROVISIONAL	2/24/2015
HYBRID CONCRETE — COMPOSITE TOWER FOR A WIND TURBINE AND METHOD OF MANUFACTURING	PCT	3/2/2015
RADIO-FREQUENCY IONIZATION OF CHEMICALS	US	3/6/2015
CHEMOENZYMATIC SYNTHESIS OF TREHALOSE ANALOGUES (USM)	US	3/6/2015
PLANT GLUTAMINE PHENYLPYRUVATE TRANSAMINASE GENE AND TRANSGENIC PLANTS (USM)	Japan	3/11/2015
FLOATING CONCRETE WIND TURBINE DESIGN AND METHOD FOR MODULAR CONSTRUCTION AND LAUNCH	US – PROVISIONAL	4/20/2015
METHODS FOR THE PRODUCTION OF HIGH SOLIDS NANOCELLULOSE	US – PROVISIONAL	4/23/2015
FLOATING PLATFORM DESIGN TO SUPPORT A WIND ENERGY KITE OFFSHORE	US – PROVISIONAL	5/6/2015
HIGH EFFICIENCY PRODUCTION OF NANOFIBRILLATED CELLULOSE	PCT	5/6/2015
A METHOD TO CONTROL THE HYDROPHILICITY OF CELLULOSE	US – PROVISIONAL	5/14/2015
INCREASING PLANT GROWTH BY MODULATIN OMEGA — AMIDASE EXPRESSION IN PLANTS (USM)	US	6/19/2015

Table A1-2

University of Maine System — Patents Issued FY15

Title	Patent No.	Issue Date
RECOVERY OF ACETIC ACID FROM WOOD EXTRACTS — US	8,785,688	7/22/2014
RAPIDLY DEPLOYABLE LIGHTWEIGHT LOAD RESISTING ARCH SYSTEM — Canada	2,595,432	8/5/2014
RAPIDLY DEPLOYABLE LIGHTWEIGHT LOAD RESISTING ARCH SYSTEM — US	8,850,750	10/7/2014
TRANSGENIC ALGAE ENGINEERED FOR HIGHER PERFORMANCE	8,865,451	10/20/2014
COMPOSITE WELDABLE PANEL WITH EMBEDDED DEVICES — US	8,865,285	10/21/2014
CARGO CONTAINER INTRUSION MONITORING — US	8,866,655	10/28/2014
COMPOSITE STRUCTURAL MEMBER — US	8,935,888	1/20/2015
INCREASING PLANT GROWTH BY MODULATING OMEGA-AMIDASE EXPRESSION IN PLANTS - China	CN 102884195	2/25/2015
SHEET PILING PANELS WITH ELONGATED VOIDS — France, UK, Germany	1,706,546	5/13/2015
OPEN CIRCUIT GRATING FOR HITH TEMPERATURE ENVIRONMENTS — US	9,048,807	6/15/2015
RECOVERY OF ACETIC ACID FROM WOOD EXTRACTS — Canada	2,704,414,	6/16/2015
INCREASING PLANT GROWTH BY MODULATION OMEGA-AMIDASE EXPRESSION IN PLANTS	9,068,194	6/30/2015
PROCESS FOR IMPROVING THE ENERGY DENSITY OF FEEDSTOCKS USING FORMATE SALTS — China	ZL 201180068513.0	9/1/2015

Table A2-1

A History of Legislative Actions on Appropriating State Research Funds

The following is a summary of the actions of the 118th–127th (first regular session) Maine Legislature with regard to appropriating research and development funds to the University of Maine System

118th LEGISLATURE

March 26, 1997: Governor signed into law the Economic Improvement Strategy (Chapter 24) that appropriated $500,000 to UMS for research.

April 1, 1998: Governor signed into law the Economic Improvement Strategy (Chapter 643, Part LL, Sec. S-3) that appropriated $4 million to UMS for research. These funds were allocated from the FY98 year-end state surplus for use in FY99.

119th LEGISLATURE

March 15, 1999: Governor signed into law the Part I Current Services budget (Chapter 16) that appropriated $4 million in 1999–2000 and 2000–01 to UMS on a "base budget" basis for research. This extends the one-time FY99 $4 million research appropriation that was funded from the FY98 year-end state surplus.

June 4, 1999: Governor signed into law the Part II Supplemental Appropriation budget (Chapter 401) that appropriated an additional $5.55 million in 1999–2000 and an additional $50,000 in 2000–01 to UMS on a "base budget" basis for research.

April 25, 2000: Governor signed into law the Part II Supplemental Appropriation budget (Chapter 731) that appropriated $300,000 in 2000–01 to UMS on a "base budget" basis for the Maine Patent Program.

120th LEGISLATURE

June 21, 2001: Governor signed into law the Part II Supplemental Appropriation budget (Chapter 439) that appropriated an additional $2 million in 2002–03 to UMS on a "base budget" basis for research.

March 25, 2002: Governor signed into law a deappropriation (Chapter 559) that reduced the FY03 $2 million Supplemental Appropriation by $1 million.

July 1, 2002: Governor signed a Financial Order that curtailed the FY03 $2 million Supplemental Appropriation by an additional $1 million. This eliminated the FY03 increase of $2 million for research, bringing the FY03 research and development appropriation back to the FY02 level of $10.1 million.

November 18, 2002: Governor signed into law a Supplemental Appropriation budget (Chapter 714) that deappropriated the $1 million curtailment that was signed July 1, 2002.

121st LEGISLATURE

March 27, 2003: Governor signed into law the Part I Current Services budget (Chapter 20, Part RR) that appropriated $100,000 in 2003–04 and 2004–05 on a "base budget" basis for research.

January 30, 2004: Governor signed into law a Supplemental Appropriation budget (Chapter 513, Part P, Sec. P-2) that includes a provision to transfer to MEIF up to $2 million of any unbudgeted State revenue remaining at the close of FY04. The full amount was subsequently transferred to UMS. This same Chapter 513, Part P, Sec. P-3 made the $2 million part of the MEIF FY05 base appropriation.

122nd LEGISLATURE

March 29, 2006: Governor signed into law a Supplemental Appropriations budget (Chapter 519, Part A, Sec. A-1) that includes providing one-time funding of $600,000 in FY07 for the commercialization of research and development activity, and for the Gulf of Maine Ocean Observing System.

123rd LEGISLATURE

June 7, 2007: Governor signed into law a budget (Chapter 240, Part A, Sec. A-68) that provides an increase of $1.5 million in FY08 and an additional $1 million in FY09 on a "base budget" basis for research.

124th LEGISLATURE

May 28, 2009: Governor signed into law a budget (Chapter 213, Part A, Sec. A-67) that maintains the annual funding at the FY09 level of $14.7 million.

125th LEGISLATURE

June 15, 2011: Governor signed into law a budget (Chapter 380) that maintains the annual funding at $14.7 million. May 29, 2012: PUBLIC Law (Chapter 698) creates the formula funding for the Small Campus Initiative, reserving a percentage of MEIF exclusively for the five smaller campuses of the University of Maine System.

126th LEGISLATURE

June 10, 2013: Governor signed into law (Chapter 225) an amendment to the MEIF statute to include Maine Maritime Academy as a MEIF-eligible small campus.

June 26, 2013: Legislature approved into law a budget (Chapter 368) that maintains the annual funding at $14.7 million.

127th LEGISLATURE

June 30, 2015: Legislature approved into law a budget (Chapter 267) that increases the annual funding by $2.65 million in each year of the biennium.

Table A2-2

Legislative History of MEIF New Appropriations

118th LEGISLATURE

	FY98	FY99	Total 2-Year
UM	$400,000	$3,200,000	$3,600,000
USM	100,000	800,000	900,000
Total	$500,000	$4,000,000	$4,500,000

119th LEGISLATURE

	FY00	FY01	Total 2-Year
UM	$4,440,000	$40,000	$4,480,000
USM	1,110,000	10,000	1,120,000
Total	$5,550,000	$50,000	$5,600,000

120th LEGISLATURE

	FY02	FY03	Total 2-Year
UM	$0	$0	$0
USM	0	0	0
Total	$0	$0	$0

121st LEGISLATURE

	FY04	FY05	Total 2-Year
UM	$80,000	$1,600,000	$1,680,000
USM	20,000	400,000	420,000
Total	$100,000	$2,000,000	$2,100,000

122nd LEGISLATURE

	FY06	FY07	Total 2-Year
UM	$0	$540,000	$540,000
USM	0	60,000	60,000
Total	$0	$600,000	$600,000

*One-time funding

123rd LEGISLATURE

	FY08	FY09	Total 2-Year
UM	$1,200,000	$720,000	$1,920,000
USM	300,000	180,000	480,000
S.C. INITIATIVES	0	100,000	100,000
Total	$1,500,000	$1,000,000	$2,500,000

124th LEGISLATURE

	FY10	FY11	Total 2-Year
UM	$0	$0	$0
USM	0	0	0
S.C. INITIATIVES	0	0	0
Total	$0	$0	$0

125th LEGISLATURE

	FY12	FY13	Total 2-Year
UM	$0	$0	$0
USM	0	0	0
S.C. INITIATIVES	0	0	0
Total	$0	$0	$0

126th LEGISLATURE

	FY14	FY15	Total 2-Year
UM	$0	$0	$0
USM	0	0	0
S.C. INITIATIVES	0	0	0
Total	$0	$0	$0

127th LEGISLATURE

	FY16	FY17	Total 2-Year
UM	$2,056,400	$0	$2,056,400
USM	514,100	0	514,100
S.C. INITIATIVES	79,500	0	79,500
Total	$2,650,000	$0	$2,650,000

Total Yearly Research Appropriation for FY15

	FY15 Appropriation
UM	$11,466,000
USM	2,886,500
UMM	200,000
UMFK	0
UMF	0
UMA	92,196
UMPI	0
MMA	75,304
Total	$14,700,000

S.C. Initiives = Small Campus Initiatives

University of Maine at Augusta	UMA
University of Maine at Farmington	UMF
University of Maine at Fort Kent	UMFK
University of Maine at Machias	UMM
University of Maine at Presque Isle	UMPI
Maine Maritime Academy	MMA

Table A2-3

Utilization of FY15 Operating Research Appropriation by Targeted Research Areas

UMAINE	Source of R&D Funds				
Targeted Research Area	FY2015 R&D Base Budget	Unused R&D Funds from Prior Years As Reported	Adjustment to Prior Years Unused R&D Funds	Adjusted Unused R&D Funds from Prior Years	FY2015 Total R&D Funds Available
Adv. Technology Forestry & Agriculture	$ 1,611,540	$ 307,707	$ -	$ 307,707	$ 1,919,247
Aquaculture & Marine Science	1,504,919	(1,061,905)	-	(1,061,905)	443,014
Biotechnology	1,208,291	281,081	-	281,081	1,489,372
Composites	1,187,935	19,254	-	19,254	1,207,189
Environmental	2,044,287	208,160	-	208,160	2,252,447
Information Technology	2,291,789	(827,459)	-	(827,459)	1,464,330
Precision Manufacturing	1,274,576	59,334	-	59,334	1,333,910
Cross Sector	342,663	31,690	-	31,690	374,353
Total State Funding	[1] $ 11,466,000	[1] $ (982,138)	[1] $ -	[1] $ (982,138)	[1] $ 10,483,862
UM Cost Sharing Funding [2]	5,352,382	-	-	-	5,352,382
Total Funding	$ 16,818,382	$ (982,138)	$ -	$ (982,138)	$ 15,836,244

[1] Includes year-end equipment carry-over funds (equipment ordered, not received, and not paid).
[2] Salary and benefits from University.

USM	Source of R&D Funds				
Targeted Research Area	FY2015 R&D Base Budget	Unused R&D Funds from Prior Years As Reported	Adjustment to Prior Years Unused R&D Funds	Adjusted Unused R&D Funds from Prior Years	FY2015 Total R&D Funds Available
Biotechnology	$ 1,445,825	$ 1,748,819	$ (1,428,135)	$ 320,684	$ 1,766,509
Information Technology	276,182	458,781	(308,804)	149,977	426,159
Environmental	-	-	-	-	-
Unassigned - reallocated by System	1,144,493	159,146	1,736,939	1,896,085	3,040,578
Total State Funding	$ 2,866,500	$ 2,366,746	$ -	$ 2,366,746	$ 5,233,246

[1] Includes year-end equipment carry-over funds (equipment ordered, not received, and not paid).

Table A2-4

FY15 Summary Utilization of Operating Research Appropriation by University

	Source of R&D Funds				
	FY2015 R&D Base Budget	Unused R&D Funds from Prior Years As Reported	Adjustment to Prior Years Unused R&D Funds	Adjusted Unused R&D Funds from Prior Years	FY2015 Total R&D Funds Available
UMAINE	$ 11,466,000	$ (982,138)	$ -	$ (982,138)	$ 10,483,862
USM	2,866,500	2,366,746	-	2,366,746	5,233,246
UMM	200,000	46,462	-	46,462	246,462
UMFK	-	2	-	2	2
UMPI	-	2,202	-	2,202	2,202
UMA	92,196	-	-	-	92,196
UMF	-	-	-	-	-
UMS	-	61,953	-	61,953	61,953
MMA	75,304	79,110	-	79,110	154,414
Total State Funding	$ 14,700,000	$ 1,574,337	$ -	$ 1,574,337	$ 16,274,337

FY2015 R&D Actual Expenditures	Transferred To Match Grants & Contracts	Transferred Between R&D Accounts	Total R&D Funds Utilized	Unused Funds Carried Forward To FY2016
$ 2,698,742	$ 170,906	$ (893,520)	$ 1,976,128	$ (56,881)
2,748,548	1,183,259	(1,105,558)	2,826,249	(2,383,235)
1,448,399	(10,324)	(309,874)	1,128,201	361,171
1,961,880	(688,479)	(889,929)	383,472	823,717
2,006,013	147,911	(630,193)	1,523,731	728,716
2,332,834	444,554	(743,245)	2,034,143	(569,813)
2,095,408	-	(697,841)	1,397,567	(63,657)
641,570	6	(82,222)	559,354	(185,001)
$ 15,933,394	$ 1,247,833	$ (5,352,382)	$ 11,828,845	$ (1,344,983)
-	-	5,352,382	5,352,382	-
$ 15,933,394	$ 1,247,833	$ -	$ 17,181,227	$ (1,344,983)

Utilization of R&D Funds				Balance
FY2015 R&D Actual Expenditures	Transferred To Match Grants & Contracts	Transferred Between R&D Accounts	Total R&D Funds Utilized	Unused Funds Carried Forward To FY2016
$ 1,315,864	$ (1,084)	$ (1,241,432)	$ 73,348	$ 1,693,161
311,967	19,356	(1,276,889)	(945,566)	1,371,725
4,511	-	(84,775)	(80,264)	80,264
-	(87,308)	2,603,096	2,515,788	524,790
$ 1,632,342	$ (69,036)	$ -	$ 1,563,306	$ 3,669,940

Utilization of R&D Funds				Balance
FY2015 R&D Actual Expenditures	Transferred To Match Grants & Contracts	Transferred Between R&D Accounts	Total R&D Funds Utilized	Unused Funds Carried Forward To FY2016
$ 15,933,394	$ 1,247,833	$ (5,352,382)	$ 11,828,845	$ (1,344,983)
1,632,342	(69,036)	-	1,563,306	3,669,940
184,034	-	-	184,034	62,428
2	-	-	2	-
2,100	-	93	2,193	9
1,298	-	-	1,298	90,898
-	-	(40,000)	(40,000)	40,000
12,554	-	39,915	52,469	9,484
61,070	-	(8)	61,062	93,352
$ 17,826,794	$ 1,178,797	$ (5,352,382)	$ 13,653,209	$ 2,621,128

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Maine Revised Statutes

Title 10: COMMERCE AND TRADE

Chapter 107: MAINE DEVELOPMENT FOUNDATION; MAINE ECONOMIC GROWTH COUNCIL

§929-A. MAINE ECONOMIC GROWTH COUNCIL

1. The Maine Economic Growth Council; establishment. The Maine Economic Growth Council, referred to in this section and section 929-B as "the council," is established to develop, maintain and evaluate a long-term economic plan for the State.

[1993, c. 410, Pt. MMM, §1 (NEW) .]

2. Membership. The council consists of 19 members. The Governor, President of the Senate and Speaker of the House of Representatives shall jointly appoint the following 18 members, 2 of whom shall serve as cochairs of the council:

A. Thirteen members having a broad range of expertise in areas including but not limited to: labor, environment, business and education; [2007, c. 420, §5 (AMD).]

B. Two members of the Senate with a demonstrated interest in economic development, one of whom belongs to the political party holding the largest number of seats in the Senate and one of whom belongs to the political party holding the 2nd largest number of seats in the Senate; [2013, c. 102, §1 (AMD); 2013, c. 102, §3 (AFF).]

B-1. Two members of the House of Representatives with a demonstrated interest in economic development, one of whom belongs to the political party holding the largest number of seats in the House of Representatives and one of whom belongs to the political party holding the 2nd largest number of seats in the House of Representatives; and [2013, c. 102, §1 (NEW); 2013, c. 102, §3 (AFF).]

C. One member from the Maine Innovation Economy Advisory Board under section 949. [2007, c. 420, §5 (NEW).]

The Commissioner of Economic and Community Development or the commissioner's designee is a member of the council.

[2013, c. 102, §1 (AMD); 2013, c. 102, §3 (AFF) .]

3. Appointments; terms. This subsection governs the appointment and terms of members.

A. A member appointed pursuant to subsection 2, paragraph A or C serves a 3-year term and serves until a successor is appointed. [2013, c. 102, §2 (NEW); 2013, c. 102, §3 (AFF).]

B. A member appointed pursuant to subsection 2, paragraph B or B-1 must be appointed no later than March 15th of the first year of the legislative biennium in which appointment is made and serves a 2-year term that begins on March 15th of the first year of the legislative biennium in which appointment is made, regardless of whether by the end of the term the member remains a Senator or a member of the House of Representatives. [2013, c. 102, §2 (NEW); 2013, c. 102, §3 (AFF).]

[2013, c. 102, §3 (AFF); 2013, c. 102, §2 (RPR) .]

4. Quorum. Ten members of the council constitute a quorum.

[1993, c. 410, Pt. MMM, §1 (NEW) .]

5. Compensation. Members of the council are not entitled to compensation for their services, except for those members of the Legislature appointed to the council who receive the legislative per diem.

[1993, c. 410, Pt. MMM, §1 (NEW) .]

SECTION HISTORY
1993, c. 410, §MMM1 (NEW). 1995, c. 688, §9 (AMD). 1997, c. 425, §1 (AMD). 2007, c. 420, §5 (AMD). 2013, c. 102, §§1, 2 (AMD). 2013, c. 102, §3 (AFF).

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§929-B. POWERS AND DUTIES

1. **Develop a long-term plan for the State's economy.** The council shall:

A. Develop and recommend a long-range plan, goals, benchmarks and alternative strategies for a sustainable state economy; [1993, c. 410, Pt. MMM, §1 (NEW).]

B. Monitor progress in accomplishing the plan's vision, goals and benchmarks; and [1993, c. 410, Pt. MMM, §1 (NEW).]

C. Recommend changes in the plan to reflect the dynamics of the international, national and state economy. [1993, c. 410, Pt. MMM, §1 (NEW).]

[1993, c. 410, Pt. MMM, §1 (NEW) .]

2. **Process.** The council shall use the following guidelines when developing the plan described in subsection 1.

A. The process must be long-term and continuous with a 5-to-7-year planning horizon. It must include clear authority for monitoring and evaluating on a regular basis. [1993, c. 410, Pt. MMM, §1 (NEW).]

B. The process must have a strategic focus and measurable outcomes, with clear goal-setting and performance indicators. [1993, c. 410, Pt. MMM, §1 (NEW).]

C. The council may appoint working groups and advisory committees as necessary, representing key concerned parties to accomplish the goals outlined in this section. [1993, c. 410, Pt. MMM, §1 (NEW).]

D. The process must be statewide in scope, using available technology to ensure that all areas of the State have accessibility to the work of the council. [1993, c. 410, Pt. MMM, §1 (NEW).]

E. Preparation and maintenance of the plan must be through a public and private partnership approach that is objective and nonpartisan. [1993, c. 410, Pt. MMM, §1 (NEW).]

[1993, c. 410, Pt. MMM, §1 (NEW) .]

3. **Contents.** The plan developed by the council must consist of:

A. A plan for the State's economy based on economic opportunity for all citizens and a shared commitment to sustainable development that recognizes that new forms of cooperation among government, business and society are required to achieve the goals; [1993, c. 410, Pt. MMM, §1 (NEW).]

B. Benchmarks for accomplishing the plan that are specific, quantifiable performance indicators against which each of the goals that have been set forth to accomplish the vision can be measured; [1993, c. 410, Pt. MMM, §1 (NEW).]

C. Alternative strategies to accomplish the benchmarks based upon the best practices in Maine, other states and other countries; [1993, c. 410, Pt. MMM, §1 (NEW).]

D. A strategy for the overall economy, broadly defined and not limited to what is traditionally termed "economic development." The plan must include consideration of education and training, redeployment of state resources, investments in science and technology and infrastructure; and [1993, c. 410, Pt. MMM, §1 (NEW).]

E. Identification of:

(1) The types of industries and jobs with significant growth potential in the State;

(2) The State's evolving industrial base;

(3) The dynamic national and international markets;

(4) Existing efforts to convert military economies to civilian economics;

(5) Other relevant studies and evaluations in the private and public sector dealing with the long-term economic growth of the State;

(6) The work force challenges faced by welfare recipients and strategies to address their economic and related needs; and

(7) Other relevant studies and evaluations in the private and public sector concerning the availability of child care. [1999, c. 272, §3 (AMD).]

[1999, c. 272, §3 (AMD) .]

4. Fiscal agent. The Department of Economic and Community Development shall serve as the council's fiscal agent providing regular financial reports to the council on funds received and expended and an annual audit. The council shall seek funds and accept gifts, if necessary, to support the council's objectives.

[1997, c. 48, §2 (AMD) .]

5. Staff support. The council shall contract with the Maine Development Foundation for staff support to fulfill the requirements for carrying out the purposes of this section.

[1993, c. 410, Pt. MMM, §1 (NEW) .]

6. Report. The council shall report to the joint standing committee of the Legislature having jurisdiction over housing and economic development matters. The council shall recommend its plan to the committee biennially at the beginning of each new Legislature, except that the first plan must be presented by January 1, 1995. The recommended plan must be used by the Economic Development and Business Assistance Coordinating Council as a guide to deliver economic development services.

[1993, c. 725, §3 (AMD) .]

SECTION HISTORY
1993, c. 410, §MMM1 (NEW). 1993, c. 709, §1 (AMD). 1993, c. 725, §3 (AMD). 1997, c. 48, §2 (AMD). 1999, c. 272, §3 (AMD).

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Maine Revised Statutes

Title 10: COMMERCE AND TRADE

Chapter 107: MAINE DEVELOPMENT FOUNDATION; MAINE ECONOMIC GROWTH COUNCIL

§929-C. RESEARCH AND DEVELOPMENT BUDGETARY RECOMMENDATIONS

The Maine Economic Growth Council, established in section 929-A, with input from the Office of Innovation, established pursuant to Title 5, section 13105, and the Maine Innovation Economy Advisory Board, under section 949, shall review the innovation economy action plan, as described in Title 10, chapter 107-D, and develop specific annual budgetary recommendations to support the plan's vision and goals. These recommendations must include specific bonding and General Fund appropriations investment levels. By June 1st of each year, the council shall submit its recommendations, along with an annual accountability update that summarizes the State's commitment to research and development investments in the prior year, to the Governor, the Legislature and the joint standing committee of the Legislature having jurisdiction over business, research and economic development issues. [2007, c. 420, §6 (NEW).]

SECTION HISTORY
2007, c. 420, §6 (NEW).

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