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Exhibit 8

FISCAL ANALYSIS ON IMPACT OF COMMON CORE STANDARDS FOR MATHEMATICS AND LANGUAGE ARTS

A Report Prepared for the

Education and Local Government Interim Committee

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- New textbooks and supplemental materials for all grade levels in both mathematics and English
- Additional mathematics teachers to implement an additional third year of high school instruction for all high school students
- Additional computers to conduct both interim adaptive assessments throughout the school year and summative assessments at the end of the school year

The fiscal analysis showed that, at a minimum, the estimated annual cost to implement the common core standards in Montana will be about $6.5 million. Figure 1 provides the estimated costs for each of the identified cost components of implementing the standards. Estimated costs are classified as one-time-only or ongoing based upon component characteristics. It should be noted the costs at each school district will vary depending on local decisions concerning:

- Years of mathematics currently needed for graduation
- Current ratio of computers per student within each school district
- Need for additional professional development above those contained in the estimates
- Variation between school districts on the cost of reimbursements to teachers for work not included in their contract
- Variations in reimbursements between school districts for substitute teachers
- Additional hours for curriculum work above those contained in the estimates
- Variations in curriculum committee membership from those contained in the estimates

Figure 1

Montana Common Core Standards
Annual Cost Estimates to Implement

Cost Component	Estimated Cost	One-Time-Only	Ongoing Cost
Professional Development	$954,017	$954,017	$0
Curriculum Development	914,112	914,112	0
Textbooks and Supplemental Materials	1,126,084	1,126,084	0
Mathematics Teachers	2,323,432	0	2,323,432
Assessments and Computer Costs	967,505	444,150	523,355
Total Estimated Cost	$6,285,150	$3,438,363	$2,846,787

As shown, the vast majority of the estimated costs are considered one-time-only costs that will not recur in future school district budgets. Only $2.8 million of the estimated costs are considered ongoing, the cost associated with additional mathematics instructors and the fee for testing included as part of the assessment and computer costs component.

The remainder of the report provides:

- The methodology and assumptions used to develop the cost estimates for each cost component of the overall estimate
- An analysis of the overall fiscal impact to the school districts to determine if the costs are substantial

METHODOLOGY AND ASSUMPTIONS

Additional Data Used to Establish Methodology

To further refine the assumptions related to additional costs resulting from the common core standards the LFD:

- Solicited input from all school districts across Montana as to their perceptions on what additional costs to implement the new standards they might incur. 16 school districts of 419 responded to the request including six of seven AA school districts that develop their own cost estimates at the district level for

implementation of the common core. Schools responding have a total of 54,849 of the 140,818 total students attending school in the fall of 2011 or 39.0% of all Montana students

- Surveyed 28 school districts of various sizes, including seven that had responded to the request for estimated costs, as to the number of years of mathematics required for graduation and the ratio of computers to students within their district. Schools surveyed have a total of 64,129 of the 140,818 total students attending school in the fall of 2011 or 45.5% of all Montana students
- Interviewed school superintendents, textbook publishers, and university book stores to establish a cost for new textbooks and supplemental materials
- Requested from the Office of Public Instruction (OPI) the FY 2011 expenditures for textbooks and supplemental materials submitted on school district trustee reports and the number of computers available for student use by school
- Interviewed OPI staff, teachers, counselors, and school district superintendents on various components relating to the cost assumptions
- Interviewed AA school district superintendents and/or curriculum specialists on the district's ability to easily absorb the costs of implementing the common core standards within their school budgets

Professional Development

The BPE has adopted a five year cycle of revision for the Montana content standards. The BPE last adopted mathematics and English language arts in July 2010. This means that new standards for these areas would not normally have been adopted until July 2015. The adoption of the common core standards for both mathematics and English language arts are off cycle and put an additional burden on schools to provide increased professional and curriculum development. In addition, the English language arts standards place an additional requirement for teachers of other subjects such as science to incorporate literacy into their instruction.

Cost Assumptions

Costs the LFD identified for providing professional development for teachers are comprised of the following components:

- Number of days needed for professional development for each subject
- Costs of providing for substitute teachers above those normally included in the district budget
- Costs to reimburse teachers if training is considered outside of the teachers contract

The legislature has provided appropriations for regional training and forums on local curriculum development for school personnel. These appropriations support the training of the curriculum specialists or lead facilitators at each school.

The curriculum specialists then train the various impacted teachers within each school on the changes included in the common core standards. However, the cost of training all teachers within an elementary school, and the middle school and high school math and English teachers are off cycle and are not fully funded within the school district budgets.

Teachers are provided seven P.I.R. (pupil instruction related) days with three of the days to be used for professional development and current school budgeting provides for this cost. The use of the remaining four P.I.R. days is often defined in teacher contracts and includes:

- Teacher parent conferences
- Preparation of pupil instruction materials
- Setting up the classrooms at the beginning of the year and closing them at the end of the year
- Additional professional development

The vast majority of teachers use two of the three days dedicated to professional development to attend conferences in October leaving one P.I.R. day for professional development on curriculum changes. As one curriculum coordinator noted: "We currently provide professional development, but the time allotted in current

budgets is not enough to provide planning and instructional training for the common core standards implementation. The common core standards have an emphasis on teachers and districts developing how the content will be taught and the instructional strategies needed. This requires a full understanding of the rigor embedded in the standards. In addition, the standards include a credible infusion of standards in all curriculum areas in a shortened time frame."

Cost estimates submitted by school districts throughout Montana included estimates of between zero to three days per subject for the period of time needed for professional development above that contained in school district budgets. Based on the number of P.I.R. days for professional development currently included in school district budgets, the need to implement two new rigorous academic areas of standards by the beginning of the 2013-2014 school year, and the changes to the learning expectations at every grade level, the LFD selected a total of two days of professional development per subject as the estimate of the training needed to ensure teachers statewide are fully versed in the changes to student learning expectations contained in the common core standards. School districts have one day dedicated to professional development already included in the budget. The assumption the LFD uses estimates an additional day of professional development will need to be funded for each subject.

As elementary school teachers teach students both mathematics and English language arts, this would mean that elementary school teachers would need an additional three days of professional development on the common core standards. Both middle school and high school teachers in mathematics and English language arts each need an additional day of professional development. Based on the response from school districts across the state, it is not estimated that literacy requirements in other subject areas included in the common core standards for English language arts will require additional professional development for other school teachers beyond what is already provided. The LFD assumes professional development will be provided during the regular school year and as such will be included as part of the teachers' contracts. However, this will require districts to cover the cost of substitute teachers while the teachers are being trained in the new standards.

Substitute pay is estimated to be $70 per day paid to the substitute teacher and an employer cost of 8% for social security, Medicare, unemployment insurance, and worker's compensation.

Methodology

Costs associated with providing professional development includes the cost of substitute pay while elementary, mathematics, and English teachers receive training. Figure 2 provides the FTE as of FY 2011 for elementary school teachers, middle and high school mathematics teachers, middle and high school English language teachers, and the estimated costs of providing for professional development.

Figure 2

Montana Common Core Standards
Professional Development

School Level	FTE	Hours	Daily Rate	Sustitutute Costs
Elementary	3,806.50	24	$75.60	$863,321
Middle School	536.70	8	75.60	40,575
High School	663.00	8	75.60	50,121
Total Professional Development	5,006.20			$954,017

The estimated costs associated with providing substitute teachers are calculated using the days of professional development for the teachers at each district at $70/day plus the employer costs. The actual reimbursement will vary by school district depending on the pool of substitutes available and the amount of reimbursement provided at the district level. These costs would be considered one-time-only as the need to provide professional development for the new standards will not be ongoing.

CURRICULUM DEVELOPMENT

The estimated costs of training the teachers on the concepts included in the common core standards are included in professional development, while the costs associated with applying the concepts learned in the professional development into the lesson plans are considered curriculum development. A major benefit of participation in the assessment consortium is the development of a digital library with curriculum materials adapted to common core requirements for all grade levels, professional development modules for training teachers on examples of formative assessment tasks and tools, and supplementary materials for curriculums. These costs are supported by the SMARTER Balanced assessment consortium grant and made available to teachers throughout Montana without charge.

Cost Assumptions

The analysis identified the costs associated with curriculum development as:

- Reimbursement of teachers for curriculum committee work that is not included as part of their negotiated contract agreement
- Substitute teacher pay while teachers are in curriculum committees

Schools develop curriculums utilizing committees made up of teachers who serve as curriculum specialists at each grade level. Curriculum development is an ongoing process that is conducted by the schools each year. However, in the normal cycle, only one subject is considered during the year. The implementation of new standards for both mathematics and English language arts concurrently will result in costs above those normally budgeted for curriculum development for the second subject, either mathematics or English language arts as the analysis assumes that current school district budgets already contain funding for ongoing curriculum development as required by the current BPE standards.

Based on the timeline for common core implementation, the curriculum work will need to be completed by the end of FY 2013. We assume this curriculum work would not be included as part of a teacher's contract as it is above current expectations. During interviews with school superintendents and curriculum coordinators, and from cost estimates submitted by various schools, we found that the school district staff's perception of the number of hours needed to complete the curriculum work ranged between 14 hours and 42 hours. The LFD selected an estimate of 16 hours per curriculum specialist per subject to complete the work needed to implement the changes incorporated in the common core standards.

School enrollment varies across school districts and drives the number of teachers needed for each district. The LFD used the total number of teachers in each district to establish an estimate of those that could be utilized to conduct curriculum work. The number of curriculum committee members was based on the total number of teachers working in the school district. The LFD assumes for elementary school districts:

- Up to two teachers - one curriculum committee member
- Between two and 25 teachers – five committee members
- Between 26 and 50 teachers - 10 committee members
- Above 50 teachers – 12 committee members

The assumptions for English language arts and mathematics teachers at the middle school and high school level use the same stratification for committee membership but use only the number of teachers assigned to those subjects to establish the number of committee members needed. In districts with only one curriculum committee member it is assumed the member will participate in regional or statewide curriculum consortiums with other small schools.

The average annual salary for Montana teachers is $46,674 or an hourly rate of $29.47. The actual salary varies by school district, teacher experience and performance. Reimbursement for curriculum development above the amount currently contained in teacher contracts is estimated at $20 an hour with 8% for employer costs such as social security and Medicare.

Additional costs for substitute teachers could be incurred if committee work is scheduled during regular school hours. However, this is at the discretion of the committee members. The committee has the ability to schedule its work during the school day when active instruction is not occurring and thus eliminate the need for substitute teachers. The analysis does not include substitute teachers costs in the estimate for curriculum committee work.

The LFD estimates that the schools will be able to absorb the curriculum development costs for one of the changes as this is ongoing work already included in school district budgets.

Methodology

The LFD estimates schools will require additional resources for the development of the curriculum for the second subject. The analysis calculates the costs for both subjects as shown in Figure 3.

Figure 3

Montana Common Core
Curriculum Development

	Teachers	Curriculum Committee Members	Hours	Cost per Hour	Total
ENGLISH					
Elementary Educators by District					
(< or = to 2)	114	1	16	$21.60	$39,398
(> 2 < or = 25)	338	5	16	21.60	584,064
(> 25)	3	10	16	21.60	10,368
	455				$633,830
English Educators by District					
(< or = to 2)	376	1	16	21.60	$129,946
(> 2 < or = 25)	87	5	16	21.60	150,336
(> 25 < or = 50)	0	10	16	21.60	0
Total	463				$280,282
Total for English Curriculum Development					$914,112
MATHEMATICS					
Elementary Educators by District					
(< or = to 2)	114	1	16	$21.60	$39,398
(> 2 < or = 25)	338	5	16	21.60	584,064
(> 25)	3	10	16	21.60	10,368
	455				$633,830
Math Educators by District					
(< or = to 2)	371	1	16	21.60	$128,218
(> 2 < or = 25)	69	5	16	21.60	119,232
(> 25)	0	10	16	21.60	0
	440				$247,450
Total for Mathematics Curriculum Development					$881,280
Total Curriculum Development Costs					$1,795,392
Less Mathematics already included in school district budgets					(881,280)
Estimated Curriculum Development for Implementing Common Core					$914,112

As shown the estimated cost for implementing curriculum development is:

- $914,112 for English language arts

- $881,280 for mathematics

To establish this cost estimate, the analysis used 16 hours as the time it would require for curriculum work to be conducted over the school year. The number of teachers making up each committee is derived from the number of teachers providing student instruction as of the fall of FY 2012. The number of committee members is based on the cost assumptions discussed above. Actual costs at the district level will vary from this estimate depending on the actual number of hours for curriculum committee work and the number of teachers making up each committee. Teacher reimbursement is estimated at $20 an hour plus 8% for employer costs. These costs would be considered one-time-only as the need to develop curriculum for the new standards will not be ongoing.

TEXTBOOKS AND SUPPLEMENTAL MATERIALS

Changes to the learning expectations for each grade level are incorporated into both the mathematics and English language arts common core standards. Children are expected to have a greater understanding of both subjects at younger ages. However, this does not mean that what children learn in 8th grade is previously what was taught in 9th grade. Learning expectations will change under common core, and are a combination of new expectations not previously taught, expectations that children will learn some concepts earlier, and will learn some of the same concepts at the same grade level as previously. These changes result in a need for new textbooks and supplemental materials for all grades within the elementary and high school education system in both mathematics and English language arts. In addition, the shortened implementation timeline requires that schools begin teaching to the new standards using new textbooks and supplemental materials in September of 2013, giving schools the next school year to purchase the necessary materials.

Cost Assumptions

The estimated costs identified that would be associated with textbooks and supplemental materials include:

- Replacing mathematics texts for kindergarten through grade 11
- Replacing English language arts for all kindergarten through grade 12 students
- Supplementary materials for each text at each grade level

Based on interviews with district school superintendants and cost estimates submitted by various schools around Montana, the cost of textbooks increases as the grade level of the student increases so that elementary school textbooks cost less than those for high school students. District estimates for new textbook costs ranged from $100 to $150 per textbook for high school textbooks. Through interviews with publishing companies, university bookstores, and internet web searches the LFD established an estimate for the cost of textbooks for both subjects as follows:

- Elementary — English language arts $47.00 — Mathematics $ 83.00
- Middle School — English language arts $56.00 — Mathematics $ 96.00
- High School — English language arts $70.00 — Mathematics $120.00

The analysis assumes that all students from kindergarten through high school will require new textbooks to address the changes in the learning expectations for both subjects incorporated in the new standards. New mathematics textbooks for high school seniors were not included as the number of students taking a fourth year of mathematics is significantly less than other grade levels and the LFD does not foresee the number of seniors taking these classes increasing above the current level.

School district budgets currently include funding to provide for new textbooks. Through interviews with school district personnel LFD found that the replacement cycle for textbooks varies by district, ranging between 5 to 10 years. To establish the resources currently provided in district budgets the analysis determined the average amount of district spending on textbooks and other printed materials over the most recently completed seven years. The LFD found that the average spending statewide on textbooks was $9.0 million annually. The LFD assumes school districts will be able to purchase half of the textbooks in FY 2013 and the other half in the first few months of FY 2014. This allows all students to receive new textbooks at the beginning of FY 2014 when common core standard elements are required by the standards to be implemented. The LFD assumes that school

districts will allocate textbook costs over two budget years. The potential exists that splitting the costs and orders between budget years will reduce the publishing discount offered to schools for large purchases. The LFD has not assumed a reduction in the discount in the analysis.

If BPE had adopted the standards as of July 1, 2012, the assumptions for the estimated costs for textbooks would change as all the textbooks would need to be purchased in FY 2013. Purchasing all textbooks in FY 2013 increases the estimated costs for textbooks to $11.3 million.

According to the textbook publishers, supplementary materials are provided as part of the purchase of the textbook. In addition, teachers will have access to additional supplementary materials as part of the digital library provided though the assessment consortium. Thus, the analysis does not estimate that providing these resources will generate additional estimated costs.

Methodology

Figure 4 presents the costs of the textbooks for each school level, each subject, and the number of students requiring new textbooks as of the fall of FY 2012. These components were used to determine the estimated costs to provide new textbooks to Montana students statewide. In addition, the analysis deducted the seven year average of school district spending on textbooks and other materials to account for the amount of funding already included within the district's budget that could be used for textbook purchases.

Figure 4

Montana Common Core Standards
Textbook Estimated Costs

Grade Level	Enrollment	Textbook	Mathematics	Textbook	English	Total
Elementary	76,621	$83	$6,359,543	$47	$3,601,187	$9,960,730
Middle School	21,611	96	2,074,656	56	1,210,216	3,284,872
High School						
Grade 9-11	32,402	120	4,050,250			4,050,250
Grades 9-12	42,586		0	70	2,981,020	2,981,020
Total	140,818		$12,484,449		$7,792,423	$20,276,872
Less Average Budgeted Expenditures for 2 years						(18,024,704)
Textbook Estimated Costs over 2 years						2,252,168
Additional Resources						$1,126,084

Estimated costs for new textbooks are $1.13 million. Actual costs will vary by district as the actual textbook purchase decisions are made at the local level and may not be the same for every school district. Districts may also decide to purchase additional supplementary materials above those provided by the assessment consortium and textbook publishers. The estimated costs for textbooks are considered one-time-only as the need to provide new textbooks in future periods can be incorporated into the school district replacement cycles.

MATHEMATICS TEACHERS FOR HIGH SCHOOL JUNIORS

One of the requirements embedded in the common core standards for mathematics is that all high school juniors will be expected to take a third year of mathematics. The LFD survey of schools showed that 53.85% of the schools surveyed currently required 2 years of mathematics for high school graduation. The remainder had 3 or 4 year requirements. In some schools this will require an additional instructor.

Cost Assumptions

The analysis identified the cost for additional mathematics teachers as:

- Number of new teachers required
- Personal service costs associated with the new positions

While a large number of schools do not require a third year of mathematics instruction for students to graduate, a number of students take mathematics classes above the requirements which means that these costs are already included in the school district budgets. In addition, schools may have excess capacity in junior mathematics classes that do not require additional resources.

BPE standards for class room size allow up to 30 students per teacher in a class at the high school level.
To determine the estimated cost of providing additional instructors, the LFD determined, the number of mathematics instructors teaching within each high school and the number of students in the high schools in the fall of 2011. To establish the estimates the LFD assumed that the students are evenly distributed throughout the four grades. The analysis then determined the total number of students requiring 3 years of mathematics and divided this number by 30 students to determine the total number of mathematics classes each school would need to offer. The analysis assumes that each teacher would conduct 4 classes of mathematics each day or instruct 120 students. This gave the schools that did not currently have the capacity to offer a third year of mathematics to all high school juniors within their current budgets. The analysis assumes that classes between 2 and 15 students would require an additional 0.50 FTE and classes between 15 and 30 students would require an additional 1.00 FTE.

MEA-MFT collects information on the average teacher salaries in the United States and in Montana. The LFD used the estimated average salary in FY 2011 for Montana teachers to establish the cost of each new mathematics position. Benefit costs for teachers include social security, Medicare, retirement, health insurance, and miscellaneous costs such as federal unemployment insurance and workers' compensation. The analysis estimates the benefit costs for each position would increase the costs another 31%.

Methodology

Using these assumptions discussed above the LFD estimates 27 schools do not currently have sufficient teacher resources to allow all freshmen, sophomores, and juniors to take high school mathematics. Figure 5 shows the FTE needed for mathematics that results from implementing the common core standards in Montana. To calculate the costs of the new positions the LFD used the estimate average teacher salary in Montana in FY 2011 with employer provided benefits of 31% of the salary.

Figure 5

Montana Common Core Estimated New Mathematics Teachers		
Additional FTE	Average Salary/Benefits	District Cost
38.00	$61,143	$2,323,434

The estimated cost for new mathematics teachers is $2.3 million a year. The actual costs will vary due to local decisions on classroom size, the salaries negotiated with the new teachers, and the FTE the districts hire. These costs are considered ongoing. For a listing of additional FTE costs by school district see Appendix C.

STUDENT ASSESSMENT

The LFD identified the costs for the student assessment component to be:

- Costs of providing sufficient computers for students to be assessed throughout the year and at the school year end
- Fees for adaptive online learning assessments conducted throughout the year

Under the common core standards testing of students occurs throughout the school year using adaptive online interim assessments and at the school year end for summative assessments. Adaptive online assessments adjust

to student's answers, and the answer to a question determines the next question that a student is presented to answer. The continued testing throughout the year and the required testing of grades 3 through 8 and 11 at the school year end is to all be conducted on a computer.

Cost Assumptions

A number of school districts estimated that common core adoption necessitated the purchase of mobile computer laboratories for each school in the district. However, the LFD determined through a school survey that the current ratio of computers to students varies from district to district, from one computer for every student to one computer for every eight students. The cost of the computers already available for student testing is included in the school district budgets.

Under common core standards, elementary school districts are expected to assess student learning five times a year, four interim online adaptive assessments and one summative test at year end. About half of the student body is assessed. The LFD selected a ratio of one computer for every four students using the following assumptions:

- Grades 3 through 5 or 6 would be assessed one at a time
- A ratio of one computer for every four students provides enough computers for a single grade to use the computers and test all of the students in the grade

School districts statewide report to OPI on the number of computers available to students at each school. In FY 2012, at the elementary and middle school level 27 schools reported they do not have computers. For these schools the analysis assumes the number of computers needed to conduct summative tests based a ratio of one computer for every four students. For those schools with computer resources available for testing, the analysis determined the cost of providing additional computers for those schools that did not have a ratio of one computer for every four students.

Based on interviews conducted with district superintendents, school counselors, information technology specialists, and teachers the student use of computers increases at the higher grade levels. For example, high schools offer classes in keyboarding and computer programming, and provide computers in the libraries for research purposes. At the high school level the analysis determined four schools did not have a ratio of four students for every computer. For those schools the analysis assumes the schools would require a computer laboratory of 30 computers to allow for summative assessments with 11th grade students while maintaining other students' usage of computers for classes.

Under common core standards the summative assessments are required to be conducted beginning in FY 2015, giving the school districts at least two budget years to pay for the purchase of computers. Using this assumption the LFD calculated the total district costs for computer purchases and used 50% of the cost as the annual estimated cost of implementing this component of the standards.

The LFD consulted with the Legislative Services Information Technology staff to determine a reasonable cost to provide computers, software licenses, and antivirus protection services. Based on this discussion, the analysis assumes that a reasonable estimated cost for each computer would be $940.

In addition, a $7 per student annual charge will be assessed to states in the assessment consortium to participate in the adaptive online interim assessments. This charge provides four assessments per student per year. To establish this cost we used the fall 2011 enrollment for grades kindergarten through 12th grade.

Methodology

Using the assumptions discussed, the LFD estimates that 26 schools do not have computers to conduct student assessments under the common core standards. An additional 47 schools do not have sufficient computers at the ratio of one computer for every four students. Figure 6 provides the schools that are estimated to require additional computers to assess student learning under the common core standards.

Figure 6

Montana Common Core Estimated Costs for Computer Purchases			
Number of Computers	Price per Computer	Total Estimated Cost	Additional Resouces
945	$940	$888,300	$444,150

The total estimated costs are $1.4 million of which $0.5 million would be considered ongoing as the $7 fee for the interim online assessments is annual. Actual costs will vary by district based on local decisions on the student testing schedules, costs of computers, and number of computers the district wishes to remain available to other students during the assessment periods. For a listing of schools districts with estimated costs for computers see Appendix D.

ARE COSTS SUBSTANTIAL?

The total estimated cost for implementing common core standards for mathematics and English language arts is about $6.5 million as shown in Figure 1 on page 3. To determine if these costs are substantial, the LFD determined the applicable cost estimates applied to each school district. The LFD then compared the district implementation costs to the general fund budget of the district in FY 2011 to determine what percentage of the budget the implementation costs would be and how readily the school district could absorb the costs within its current resources. The LFD also compared the implementation costs to the total of the district reserves for the general fund, flex fund, impact aid fund, and technology fund to determine the percentage of available reserves as of FYE 2011and if the district would be able to pay for the costs from available reserves.

If the implementation costs are less than 1% of the general fund budget for the district the LFD estimates the school district can readily absorb the costs within the school district budget. If implementation costs are between 1 and 2% of the general fund budget and more than 10% of the overall reserves or if the implementation cost is more than 2% of the general fund budget and more than 5% of the reserves, the LFD estimates that the school district cannot readily absorb the costs within its budget. Figure 7 shows a comparison of the number of school districts that have substantial costs for implementation of the common core standards using these assumptions and those that do not have substantial costs.

Figure 7

Substantial Costs to Districts			
Substantial	Yes	No	Total
School Districts	25	389	414
Estimated Costs	$2,136,679	$4,148,471	$6,285,150
Percent of Total Estimated Costs	34%	66%	100%

As shown, 25 of the districts have costs for implementing the common core standards that are substantial using these criteria, while 389 or almost 94% of the school districts will be able to easily absorb the estimated costs. The estimated costs for the districts that have substantial costs are $2.14 million or 34% of the total estimated costs for implementing the common core standard. Based on this analysis the LFD has determined that overall the costs of implementing the common core standards are not substantial and as such do not require the Board of Public Education to delay implementation until July 1, 2013.

It should be again noted, however, that BPE has delayed the implementation until July 1, 2013, which factors into the LFD analysis of textbook costs. Without the delay in the implementation, the additional costs of textbooks would increase the overall estimated costs to almost $16.5 million and number of school districts with substantial costs from 25 school districts to 178 districts.

APPENDIX A

BACKGROUND INFORMATION ON THE MONTANA COMMON CORE STANDARDS

Common Core

Montana common core standards include the national common core standards with the addition of Indian education statements embedded into grade level standards to as aprt of continuation of the work on Indian education for all required in the Montana constitution.

The common core standards:

- Are targets at each grade level for what students need to know, understand, and be able to do
- Help teachers ensure their students have the skills and knowledge needed to be ready for college or careers at graduation
- Ensure consistency from school to school and state to state

Changes to previously adopted Montana standards that are incorporated in the common core standards for English language arts include:

- Informational text is now included and balanced with literature
- Writing requirements increase, including using information and persuasion based on evidence and additional use of writing
- Literacy is included in history, social studies, science, and technical subjects

Changes incorporated in the standards for mathematics include:

- Specific mathematical practices that are key to learning and applying mathematics required at lower grade levels
- A set of critical areas of learning (2-4) to bring focus as students progress at each grade level
- Progression of mathematical practices and content from concrete to abstract application as grade levels increase
- Third year of high school mathematics required for all students

Timeline

Full implementation of the standards and accountability at the classroom level begins in FY 2013 with testing on the new standards to begin in FY 2015.

Figure 8

Montana Common Core Standards
Implementation Timeline Mathematics and English Language Arts

Fiscal Year	Area of Implementation
2012	Planning and awareness of common core standards
2013	Purchase instructional materials, curriculum and professional development to prepare for teaching
2014	Teaching under new standards using new common core standards, formative and interim assessments
2015	Continued instruction, first year of summative assessments

Figure 8 shows the Office of Public Instruction's estimated timeline for implementing the new standards including purchasing new textbooks and supplementary materials, teaching students based on increased learning at each grade level, and testing using adaptive online assessments (discussed in detail under the SMARTER Balanced Assessment Consortium) during the points through the school year and a summative test at the end of the school year.

SMARTER Balanced Assessment Consortium

Montana is part of the SMARTER Balanced Assessment Consortium (assessment consortium), a group of 30 states working on common core standards, curriculum, and assessments. The assessment consortium received a $160 million grant under the American Recovery and Reinvestment Act, Race to the Top Program. The purpose of the assessment consortium is to:

- Develop a set of comprehensive and innovative assessments for grades 3 – 8 and grade 11 in English language arts and mathematics on the requirements of the common core standards
- Ensure all students leave high school prepared for college success or a career though increased student learning and improved teaching at the kindergarten through high school grades

All states in the assessment consortium will conduct assessments of student learning during the 2014-15 school year.

As envisioned, the assessments developed by the consortium and funded by the grant will be open-source with accommodations and administrative procedures for students with special needs built into the systems at the outset. The assessment process includes a balance approach of integrated formative, interim, and summative assessments. [1] Included as part of the support provided by the grant are:

- Online sites with formative tools and practices aligned to the common core standards. Teachers will use this site for professional development
- Interim assessments that occur after a segment of learning that are adaptive and administered online. Adaptive online assessments adjust to student's answers, and the answer to a question determines the next question that a student is presented to answer. Current estimates for this service are $7 per student for four assessments per student per school year in both English language arts and mathematics
- Summative assessments will be required for grade 3 through 8 and all 11th grade students and must be conducted in the last 12 weeks of the school year. The results will be collected by the Office of Public Instruction to provide comprehensive data on student achievement

It should be noted that current requirement is for schools to conduct criteria reference tests (CRT) that will be administered until FY 2015 when new summative tests on the common core standards will replace the CRTs.

[1] Formation assessments is a process of systematically checking on the learning and understanding of students and adjusting their instruction based on the assessment. Formative assessment requires processes and tools for continuously monitoring student progress at a detailed grade specific level.
Interim assessments are more traditional tests that occur after a segment of learning, such as at the end of a unit or chapter. Summative assessments occur after learning, toward the end of the school year.

APPENDIX B

Cost Analysis for Implementation of the Montana Common Core English Language Arts Content Standards Assumptions

November 1, 2011

The following assumptions are based on the expectation that the current level of state funding will remain stable.

1. The Board of Public Education (BPE) has established a recurring cycle of revision for the Montana Content Standards. In 2011, the BPE will adopt the new Montana K-12 Common Core Content Standards in English Language Arts and Literacy in History/Social Studies, Science, and Technical Studies. These adopted standards will replace the previous standards in Communication Arts.

2. The Administrative Rules of Montana (ARM) 10.55.603(1) requires local school districts to "incorporate all content ... standards into their curriculum, implementing them sequentially and developmentally."

3. ARM 10.55.603(2)(b) requires school districts to review curricula at intervals not exceeding five years and modify as needed to meet educational goals of the [district's] continuous school improvement plan. ARM 10.55.603(2)(c) requires school districts to regularly review and select materials and resources necessary for implementation of the curriculum and assessment that are consistent with the goals of the continuous school improvement plan.

4. The new Montana Common Core Content Standards shall be used by school districts to develop local curriculum and assessment aligned with the English Language Arts and Literacy in History/Social Studies, Science, and Technical Studies Standards. The K-12 content standards describe what students shall know, understand, and be able to do in these content areas at each grade level. These K-12 grade-specific standards define end-of-year expectations and a cumulative progression designed to enable students to meet college and career readiness expectations no later than the end of high school. This change from benchmarks at three grade levels (4th, 8th, and upon high school graduation) to grade-specific standards will require school districts to realign curriculum. Because the new Montana common core English Language Arts standards are more rigorous than the previous state communication arts standards, target college and career readiness for each Montana student, and include grade-by-grade learning progressions, the curriculum realignment will necessitate an extensive process that will result in additional costs.

5. The Montana Legislature appropriated funding to the Office of Public Instruction to provide regional trainings, workshops, and forums on local curriculum development for school personnel. This funding supports training, materials, travel costs, substitute pay, and other expenses associated with educators attending training outside of the school district.

6. For the school year 2013-14, the English Language Arts Curriculum Specialist at the OPI will

work with Montana educators to align their local English Language Arts curriculum and provide model curriculum for use by all school districts. The OPI developed an implementation support structure to provide regional training to educators across the state. The Montana implementation support structure will include K-college videoconferences, webinars, and other digital and online venues to reach broad audiences of educators throughout the state.

7. School districts may need to purchase additional or new standards-based instructional materials, including technology and supplies.

8. The Montana K-12 Common Core Content Standards in English Language Arts and Literacy in History/Social Studies, Science, and Technical Studies are projected to increase school district costs. However, the added costs are currently indeterminate. These district costs will depend on:

    - The curriculum realignment with the new standards;
    - The alignment of existing instructional materials with the new standards, thus dictating whether new instructional materials need to be purchased, or if existing materials can be supplemented; and
    - The availability of online and minimal cost supplementary materials.

APPENDIX B

Cost Analysis for Implementation of the Montana Common Core Mathematics Content Standards Assumptions

November 1, 2011

The following assumptions are based on the expectation that the current level of state funding will remain stable.

1. The Board of Public Education (BPE) has established a recurring cycle of revision for the Montana Content Standards. In 2011, the BPE will adopt the new Montana K-12 Common Core Mathematical Practices and Content Standards. These adopted standards will replace the previous standards in Mathematics.

2. The Administrative Rules of Montana (ARM) 10.55.603(1) requires local school districts to "incorporate all content ... standards into their curriculum, implementing them sequentially and developmentally."

3. ARM 10.55.603(2)(b) requires school districts to review curricula at intervals not exceeding five years and modify as needed to meet educational goals of the [district's] continuous school improvement plan. ARM 10.55.603(2)(c) requires school districts to regularly review and select materials and resources necessary for implementation of the curriculum and assessment that are consistent with the goals of the continuous school improvement plan.

4. The new Montana Common Core Content Standards shall be used by school districts to develop local curriculum and assessment aligned with the Mathematical Practices and Content Standards. The K-12 content standards describe what students shall know, understand, and be able to do in these content areas at each grade level. These K-12 grade-specific standards define end-of-year expectations and a cumulative progression designed to enable students to meet college and career readiness expectations no later than the end of high school. This change from benchmarks at three grade levels (4th, 8th, and upon high school graduation) to grade-specific standards will require school districts to realign curriculum. Because the new common core mathematics standards are more rigorous than the previous math standards, target college and career readiness for each Montana student, and include grade-by-grade learning progressions, the curriculum realignment will necessitate an extensive process that will result in additional costs.

5. The Montana Legislature appropriated funding to the Office of Public Instruction to provide regional trainings, workshops, and forums on local curriculum development for school personnel. This funding supports training, materials, travel costs, substitute pay, and other expenses associated with educators attending training outside of the school district.

6. For the school year 2013-14, the Mathematics Curriculum Specialist at the OPI will work with Montana educators to align their local mathematics curriculum and provide model curriculum for use by all school districts. The OPI has developed an implementation support structure

to provide regional training to educators across the state. The Montana implementation support structure will include K-college videoconferences, webinars, and other digital and online venues to reach broad audiences of educators throughout the state.

7. Currently ARM 10.55.905 Graduation Requirements includes two units of math instruction for all students to graduate from high school. Implementation of the new Montana K-12 Common Core Mathematical Practices and Content Standards will require an additional unit of mathematics instruction. Some Montana school districts already currently require 3 years of math instruction for graduation. Therefore, school districts currently requiring only 2 years as a graduation requirement may need to hire additional staff in order to meet the required increase in essential mathematics instruction at the high school level.

8. School districts may need to purchase additional or new standards-based instructional materials, including technology and supplies.

9. The Montana Common Core Mathematical Practices and Content Standards are projected to increase school district costs. However, the added costs are currently indeterminate. These district costs will depend on:

    - The curriculum realignment with the new standards;
    - The alignment of existing instructional materials with the new standards, thus dictating whether new instructional materials need to be purchased, or if existing materials can be supplemented;
    - The availability of online and minimal cost supplementary materials; and
    - The need to hire additional teachers.

APPENDIX C

Figure 5a

Montana Common Core Standards Estimated New Mathematics Teachers			
School	Additional FTE	Average Salary/Benefits	District Cost
Skyview High School	0.50	$61,143	$30,572
Florence-Carlton HS	0.50	61,143	30,572
Belgrade High School	0.50	61,143	30,572
Twin Bridges High School	0.50	61,143	30,572
Powell County High School	0.50	61,143	30,572
Libby High School	0.50	61,143	30,572
Browning High School	0.50	61,143	30,572
Billings West High School	1.00	61,143	61,143
Frenchtown High School	0.50	61,143	30,572
Great Falls High School	2.00	61,143	122,286
Glacier High School	1.50	61,143	91,715
Anaconda High School	0.50	61,143	30,572
Stevensville High School	0.50	61,143	30,572
Corvallis High School	1.00	61,143	61,143
Park High School	1.00	61,143	61,143
Rocky Boy High School	0.50	61,143	30,572
Havre High School	1.00	61,143	61,143
Helena High School	2.50	61,143	152,858
C M Russell High School	3.00	61,143	183,429
Lincoln Co High School	1.00	61,143	61,143
Big Sky High School	2.00	61,143	122,286
Hamilton High School	1.00	61,143	61,143
Hellgate High School	2.50	61,143	152,858
Sentinel High School	2.50	61,143	152,858
Bozeman High School	3.50	61,143	214,001
Flathead High School	3.50	61,143	214,001
Capital High School	3.00	61,143	183,429
Lodge Grass High School	0.50	61,143	30,572
Total	38.00		$2,323,434

APPENDIX D

Figure 6a

Montana Common Core Estimated Costs for Computer Purchases		
School	Number of Computers	Estimated Cost
Schools without Computers		
Barbara Gilligan 7-8	4	$ 3,760
Barbara Gilligan School	16	$ 15,040
Biddle School	1	$ 940
Bridger 7-8	8	$ 7,520
Brockton High School	2	$ 1,880
Ennis School	30	$ 28,200
Fishtail School	1	$ 940
Fred Moodry 7-8	30	$ 28,200
Glacier Elementary School	10	$ 9,400
Granite High School	4	$ 3,760
Hidden Lake Elementary	1	$ 940
Huntley Project Elem K-6	90	$ 84,600
Huntley Project High Schl	30	$ 28,200
Hysham School	9	$ 8,460
Hysham 7-8	5	$ 4,700
Hysham High School	2	$ 1,880
Jordan 7-8	8	$ 7,520
K W Bergan School	30	$ 28,200
Lame Deer 7-8	19	$ 17,860
Midway Colony	3	$ 2,820
Molt School	1	$ 940
Nye School	1	$ 940
Philipsburg School	21	$ 19,740
Philipsburg 7-8	8	$ 7,520
Swan River 7-8	9	$ 8,460
Vina Chattin School	30	$ 28,200
Elementary and Middle Schools with less than 1 computer for 4 students		
Big Stone School	1	$ 940
Big Timber School	1	$ 940
Bigfork Elementary	14	$ 13,160
C R Anderson Middle Schl	6	$ 5,640
Charlo Elementary	1	$ 940
Cornelius Hedges School	2	$ 1,880
Cut Bank Elementary	42	$ 39,480
Eureka Elementary School	37	$ 34,780
Fairhaven Colony	1	$ 940
Fair-Mont-Egan 7-8	1	$ 940
Fairview School	2	$ 1,880
Florence-Carlton El Schl	36	$ 33,840
Frazer Elementary	3	$ 2,820

Figure 6a continued on the following page

Montana Common Core Estimated Costs for Computer Purchases		
School	Number of Computers	Estimated Cost
Glacier Gateway Elem	5	$ 4,700
Huntley Project 7-8	9	$ 8,460
Independent School	9	$ 8,460
Jefferson School(Miles City	6	$ 5,640
Joliet School	11	$ 10,340
Kingsbury Colony Attn Ctr	1	$ 940
Knees School	1	$ 940
Libby Elementary School	18	$ 16,920
Liberty Elementary School	1	$ 940
Lincoln School (Baker K-12	14	$ 13,160
Lincoln School (Anaconda)	30	$ 28,200
Lodge Grass School	23	$ 21,620
Lolo Elementary	19	$ 17,860
Moore School	1	$ 940
Morning Star School	2	$ 1,880
Napi School	12	$ 11,280
Parkview School	30	$ 28,200
Plains 7-8	1	$ 940
Pleasant Valley School	7	$ 6,580
Pleasant Valley School	6	$ 5,640
Ridge View Elementary	4	$ 3,760
Sheridan Elementary Schl	1	$ 940
Smith Valley Primary Schl	16	$ 15,040
Stevensville K-6	8	$ 7,520
Three Forks Elem School	15	$ 14,100
Turner School	1	$ 940
W K Dwyer School	2	$ 1,880
West School	10	$ 9,400
Whitehall Elementary	11	$ 10,340
Zurich School	1	$ 940
High Schools with less than 1 computer for every 4 students		
Flathead High School	30	$ 28,200
Joliet High School	30	$ 28,200
Park High School	60	$ 56,400
Whitehall High School	30	$ 28,200
	150	
Total Estimated Computer Costs		$ 888,300