Maine Department of Education
Report on New CTE Funding Model
February, 2019

Executive Summary

The Maine Department of Education (MDOE) School Finance and Compliance Team sought to discover systemic gaps and misalignments of the newly implemented (for FY19) CTE Funding cost model. Based on two years of utilizing the new CTE cost model, the model is working as described in the 2017 MEPRI report https://www.maine.gov/doe/sites/maine.gov.doe/files/inline-files/CTEModel_2017Final_Updated.pdf. with some CTE schools expending above the model and others expending below the model allocations.

For FY20 and for FY19 funding, the CTE model as described in the 2017 MEPRI report calculated an allocation of $51.4 million and $51.0 million respectively. For FY 20 and FY 19 funding, the CTE model as enacted via LD 1843 calculated an allocation of $49.6 and $50.8 million, respectively, prior to the addition of allocation for new programs. The addition of new programs, plus the addition of one-time funds in FY 2019, created allocations of $51.2 M (FY20) and $53.5 M (FY19).

There are four major contributors to the reduced allocation for FY 2020:

- In FY19, there was a legislatively enacted one-time additional appropriation of $2 million;
- The FY 18 actual expenditures used in the calculation of the FY20 "hold harmless" are lower than the actual expenditures of FY 17, which were used to calculate the FY19 "hold harmless"
- The FY20 inflation factor used to calculate the "hold harmless" is lower than the FY 19 inflation factor
- The FY20 student enrollment (3-year average) is lower than FY19

When the MDOE school finance team interviewed CTE schools, several with model amounts above inflated actual expenditures cited "hold harmless" as an imbalance. "Hold harmless" is outside the model and adjusts allocations calculated by the model. For those schools with expenditures in excess of the model allocation, they are "held harmless," to the prior expenditure driven model, and receive all amounts expended above their model amount up to their inflated actual amounts. In FY20, that total amount equals $2,081,506.80. However, those schools with expenditures under their model amount receive their inflated expenditures plus up to an additional 5% not to exceed their model amount. In FY20, this total amount equals $1,205,499.55.

The MDOE school finance team also sought to determine gaps and misalignments within the model that could account for the need to "hold harmless" to the prior funding formula. While some unique and singular reasons for misalignments in individual schools were found, a few more general areas of potential misalignment were identified. These general areas of potential misalignment are:

1. Data issues - The CTE cost model relies heavily on more data. Thus miscoded, missing, or inconsistently defined data for enrollment, staff, facilities, and expenditures influences allocation. In the prior formula data record keeping was not as critical as the prior formula simply used the total expenditures for a CTE school to calculate allocation.
2. Model parameter values – Many CTE Directors indicated that salary values in the model were too low and did not reflect actual salaries needed to attract appropriate professionals to CTE, especially for teachers and ed techs.
3. Operations and Maintenance – The cost model uses square footage data which may not be measured the same across CTE schools, and did not include agricultural areas. Additionally, many CTE Directors felt that the use of square footage in the model may not reflect reality.
4. Program Categories (new, split, unsuspended, non-state funded, unassigned)- For new, split, and unsuspended programs that are approved, there is reliance on estimated student enrollments and these categories of programs may need to be treated differently than new programs which are treated as an addition to the model allocation. Similarly, initially non-state funded approved programs, though they have actual enrollment need to be treated as such and not be regarded as a new program.
   Some unassigned cipcode cluster programs, 99.####, have requirement hours that are less than the 350 required of assigned programs, such as CNA program. However, for the model staff FTE allocation unassigned cipcode program enrollment is weighted the same as assigned cipcode program enrollment.
5. Revenue and Resource Decisions – As a subset of the EPS model for K-12 education, the CTE cost model is used to distribute funds based on adequate resources to achieve the Learning Results. The model does not consider other sources of revenue that may be available to CTE schools to support programming and does not dictate how or what resource decisions are made by CTE school administrators. CTE schools retain the ability to request local only funding to support initiatives that are outside of the cost model.
6. Retirement – Normalized cost of teacher retirement is treated differently in regions than centers. CTE regions do not have a local share of this cost but, CTE centers, as part of a school administrative unit, do.
7. Model Calculation – The CTE model is still new, complex, and being refined. It has yet to be programmed for automation so is being manually calculated and susceptible to human error.

8. Additional Allocations Requested by CTE schools – CTE regions have requested a higher salary allocation for region directors from that of center directors, citing work more comparable to that of a SAU Superintendent. CTE centers have requested an FTE allocation for a business manager. Both CTE regions and centers indicated an increase in IEP identified students and requested an allocation for a Special Education Integrator position.

From its analysis, MDOE identified two areas where the model did not align with expenditures; these are Operations & Maintenance (O&M) and Supplies (see Table 1). For all areas except for O&M and Supplies, the model allocates more than actual expenditures, in general. As stated above, the current calculation for O&M may not be the most effective at addressing O& M expenses. Further professional study and research would be required to identify other possible allocation methods for this cost category. Supply expenditures are also higher than model allocations and may reflect coding issues with equipment, which is not included in the CTE cost model as a separate funding opportunity is available for equipment.

Table 1. FY20 Allocations vs. FY18 Actual Expenditures by Model Categories and CTE Type										
CTE	**A) Direct Instruction**	**Direct Instruction Expenditures FY18**	**B) Central Administration**	**Central Admin Expenditures FY18**	**C) Supplies**	**Supplies Expenditures FY18**	**D) Operations & Maintenance**	**O&M Expenditures FY18**	**E) Other Student & Staff Support**	**Other Student & Staff Support Expenditures FY18**
Regions	$9,347,692.33	$8,812,935.81	$2,328,086.97	$2,321,035.69	$817,875.19	$1,017,405.82	$2,991,216.15	$3,231,486.84	$1,833,091.71	$1,447,169.59
Centers	$18,203,894.38	$16,873,853.01	$4,123,632.96	$3,978,201.48	$1,611,949.96	$2,079,948.22	$5,998,329.73	$5,061,513.72	$4,188,570.83	$2,717,063.26
State	**$27,551,586.71**	**$25,686,788.82**	**$6,451,719.93**	**$6,299,237.17**	**$2,429,825.15**	**$3,097,354.04**	**$8,989,545.88**	**$8,293,000.56**	**$6,021,662.53**	**$4,164,232.85**

Possible policy considerations include:

Given that the model has only be in place for 2 years, the expenditures used in analysis reflect practices under the previous CTE expenditure model, as expenditure data is two years old at the time of allocation. We have yet to see how the cost model interacts with expenditures made under the new cost model, as FY 19 is the first opportunity to provide that comparison and analysis in preparation for FY 21 funding allocations. Also because of the newness of the model, CTE leadership is experiencing a learning curve on all the changes and data responsibilities required of the new model. For these reasons, it may be advantageous to wait and see how the model performs on the FY21 allocations before enacting any changes to the cost model parameters and components.

Further research is needed to assess the alignment of Operations & Maintenance and Supplies. While MEPRI is scheduled to review the CTE model in FY20, moving the review to FY21 would allow for two years' worth of expenditure data under the new model in order to create a more thorough analysis.

Consideration to sunset the "hold harmless" component could be achieved by gradually funding less than 100% inflated expenditures for those spending above the model. This would gradually eliminate the "hold harmless" and allow for gradually increasing the cap on CTE allocations for those CTE schools with expenditures below the model.

To protect against allocation decreases due to sudden enrollment changes, use the higher amount of either the 3-year average enrollment or the most recent year enrollment.

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Purpose:

The 128th Maine Legislature passed LD 1843, *An Act To Amend Career and Technical Education Statutes.* This law formalized the Funding Year(FY) 2019 Career and Technical Education (CTE) allocation model change from an expenditure driven model to a cost driven model. The implementation of the new CTE cost driven funding model for CTE was based on two extensive reviews and studies of CTE funding within the state by Maine Education Policy Research Institute (MEPRI) from 2007- 2017. This work included input from CTE stakeholders, Maine Administrators of Career and Technical Education (MACTE), and was encouraged by a Governor's initiative in 2017 to expand student opportunity for CTE programming across the state.

This report was requested of the Maine Department of Education (MDOE) School Finance and Compliance Team by the 128th legislature to ascertain systemic CTE Funding cost model gaps and misalignments based on anticipated allocations as reported in the 2017 MEPRI report and actual FY 2019 allocations. MDOE reviewed and analyzed FY2019 model allocations and FY2017 inflated expenditure and met with a sample of CTE organizations with expenditures that exceeded model allocations to discuss components of the model, the allocation, and areas of recommendation from the field stakeholders.

Premise of the new funding model

Like the Essential Programs and Services (EPS) cost model utilized for funding regular education, the new CTE cost funding model was developed to provide adequate funding for the type and size programs CTE schools operate. Table 1. Shows some basic information on Maine CTE schools. For more information on how CTE centers and regions are defined, see Maine statute, MRSA Title 20-A Chapter 313.

Table 1. Maine CTE Basic Information

27 schools
- 8 regions
- 19 centers
7475 students (Oct 2018)
327 programs (Oct 2018)
360.9 FTE Teachers (2018)
$47.6 million Actual Expenditures (2018)

Note: Actual General Fund operating expenditures excluding transportation to and from school, debt service, and major capital. Federal Perkins Grants totaled an additional $1.83 M.

The state total CTE allocation for FY 2018 under the old expenditure model was $46,980,996 which was raised between both the state and a local share. The CTE expenditure model calculated allocations by two methods, one for centers and one for regions and primarily relied on two forms of information, expenditure data and assessment data. For school administrative units (SAUs) that were part of CTE centers, net expenditures for approved programs were used to calculate the allocation. For CTE regions, the regions would make assessments for each of its member SAUs that would be reported to MDOE and the assessments would be compared to actual expenditures, whichever was less would be what was allocated.

The new CTE allocation cost model relies heavily on student enrollment data, the approved program list, and as developed by MEPRI, staff data. MDOE adopted most of the recommendations outlined in the MEPRI report, Recommendations for a Cost Model to Fund Career and Technical Education in Maine 2017, https://www.maine.gov/doe/sites/maine.gov.doe/files/inline-files/CTEModel_2017Final_Updated.pdf. However, modifications were made based on feedback from the field and policy decisions made by the 128th Legislature. The new CTE allocation cost model includes for all approved programs within CTE centers and Regions, https://mainedoenews.net/wp-content/uploads/2018/01/CTEModel_ExecSummary.pdf:

A) Direct instruction, which includes personnel costs for teachers, and education technicians for approved programs, and clinical supervisors for approved healthcare programs. In addition, an allocation for substitutes and program transportation was also provided.

B) Central administration, which includes personnel costs for directors, assistant directors, and clerical staff working in career and technical education centers and career and technical education regions, as well as business managers working in career and technical education regions. In addition, an allocation for central administration non-personnel costs will be based upon the relationship of the most recent available career and technical education expenditures for non-personnel costs to personnel costs.

C) Supplies, which includes supplies, purchased services, dues, and fee costs for instructional programs. Supply allocation will be the sum of a per program allocation for supplies, and a per pupil supply allocation for each student.

D) Operation and Maintenance of Plant, which includes all costs for operating and maintaining buildings and grounds. The allocation for operation and maintenance will be based on a calculation utilizing the square footage of a career and technical school building and grounds times an amount per square foot.

E) Other student and staff support, which includes costs for student services coordination, career preparation, instructional technology, professional development, student assessment and program safety. This allocation includes one (1.0) FTE (full time equivalent) counselor; an allocation based on student enrollment for a career and technical school student

services coordinator with a minimum of one 1.0 FTE per school; and a per pupil allocation based upon student enrollment for instructional technology, staff professional development, student assessment and program safety.

F) Funding for new programs in the year in which the program will begin, provided the program is approved by November 1st.

G) The model does not address:

- Equipment - funds are provided via GPA for equipment grants which were increased to $2,000,000 in FY 2019
- School Transportation – funding support is provided through the transportation operating model to the student's SAU, based on an assessment from the CTE school
- Debt Service – funding is provided for approved school construction projects only; other projects are local only, which is the same as the CTE expenditure model.

All student enrollment data used in the model is a three-year average of October 1 attending counts by approved program or plan, so fluctuations in enrollments are not heavy influences on allocations. Estimated enrollments reported by the CTEs as part of the program approval application are used for new programs.

The cost model components include items A-E, however CTE allocation, based on LD 1843, includes a "hold harmless" provision for CTEs that have expenditures (inflated for the allocation year) greater than the cumulative amount of cost model components. The CTE state allocation is based on meeting one of the following two conditions:

1. For CTEs with CTE cost model estimates less than or equal to inflated expenditures then CTE allocations = inflated expenditures + any new approved program costs; or
2. For CTEs with CTE cost model estimates greater than inflated expenditures then CTE allocations = no more than inflated expenditures plus 5% + any new approved program costs.

Moreover, the new CTE cost model was implemented with the complete CTE allocations to be subsidized by the state and to be exclusively used for CTE. This mitigated the need for CTEs to assess tuition for publicly funded students. CTEs may request to raise local only funds for expenditures not covered in the base or that exceed the base allocation amount. Furthermore, CTE subsidy payments are now directly paid to SAUs with CTE centers and CTE regions with the responsibility, based on 20-A MRSA, Chapter 313, of the CTE center or region to provide the state support for the approved satellite program to the school administrative unit which hosts the approved satellite program.

For FY 2019, initial CTE Total allocations totaled $51.3 million inclusive of $403 thousand for approved new programs. See Table 2 for FY19 Initial Allocations.

Table 2. Initial FY19 CTE Allocations

CTE School	3-year Average Enrollment	Model Allocation	FY17 Actual Expenditures Inflated by 3%	Calculated Allocation	School Year 2018-19 Approved New Programs	Total Allocation
Region 2 School of Applied Technology	200.00	$1,747,910.01	$1,581,494.39	$1,660,569.11		$1,660,569.11
Region 3 No Penobscot Tech	201.00	$1,560,991.60	$1,895,647.11	$1,895,647.11		$1,895,647.11
Region 4 United Technologies Ctr	562.00	$2,908,460.87	$2,331,214.29	$2,447,775.00		$2,447,775.00
Region 7 Waldo County Tech Ctr	188.67	$1,788,737.36	$1,762,082.91	$1,850,187.06		$1,850,187.06
Region 8 Mid-Coast School of Technology	399.00	$2,811,994.85	$2,846,499.52	$2,846,499.52		$2,846,499.52
Region 9 School of Applied Technology	162.67	$1,470,907.28	$1,820,911.17	$1,820,911.17		$1,820,911.17
Region 10 Technical High School	212.67	$1,696,395.31	$2,196,408.41	$2,196,408.41		$2,196,408.41
Region 11 Oxford Hills Technical School	437.67	$2,938,934.65	$3,316,949.61	$3,316,949.61		$3,316,949.61
Augusta - Capital Area Technical Center	381.00	$2,128,067.26	$2,438,768.43	$2,438,768.43		$2,438,768.43
Biddeford - Biddeford Regional Ctr of Tech	278.00	$2,744,263.88	$2,515,232.54	$2,640,994.17		$2,640,994.17
Calais - St Croix Regional Technical Center	131.33	$1,025,840.34	$854,198.54	$896,908.47		$896,908.47
Ellsworth Hancock County Technical Center	193.33	$1,410,326.55	$1,182,348.99	$1,241,466.44		$1,241,466.44
Lewiston - Lewiston Regional Technology Ctr	642.33	$3,190,117.12	$3,186,960.65	$3,190,117.12		$3,190,117.12
Machias - Coastal Wash Cty Inst of Tech	74.33	$638,072.03	$265,867.95	$279,161.34		$279,161.34
MSAD 46 - Tri-County Technical Center	229.33	$1,376,219.63	$1,612,445.92	$1,612,445.92	$148,157.17	$1,760,603.10
Portland- Portland Arts & Technology H S	468.00	$3,195,668.07	$3,141,779.98	$3,298,868.98		$3,298,868.98
RSU 1 Bath Regional Vocational Center	180.67	$1,376,542.28	$1,239,945.53	$1,301,942.80		$1,301,942.80
RSU 33 - St John Valley Technology Center	118.33	$1,121,740.71	$792,966.10	$832,614.41		$832,614.41
RSU 39 - Caribou Regional Technology Ctr	167.33	$1,490,832.06	$1,504,095.49	$1,504,095.49		$1,504,095.49
RSU 54 - Somerset Career & Technical Center	279.67	$1,695,431.19	$1,463,725.78	$1,536,912.07	$4,800.00	$1,541,712.07
RSU 61 - Lake Region Vocational Center	194.33	$1,239,056.31	$1,593,583.61	$1,593,583.61	$74,454.00	$1,668,037.61
RSU 79/MSAD 01 - Presque Isle Reg Career & Tech Ctr	126.33	$1,261,534.52	$1,605,976.18	$1,605,976.18		$1,605,976.18
RSU 88/MSAD 24 - Van Buren Regional Technology Ctr	23.33	$547,163.85	$327,132.24	$343,488.86		$343,488.86
RSU 9 - Foster Regional Applied Tech Ctr	343.67	$2,440,984.62	$1,632,784.62	$1,714,423.85		$1,714,423.85
Sanford - Sanford Regional Technical Center	463.33	$2,691,656.98	$2,292,920.74	$2,407,566.78	$176,391.17	$2,583,957.95
Waterville - Mid-Maine Technical Center	361.33	$2,373,881.57	$1,895,587.84	$1,990,367.23		$1,990,367.23
Westbrook - Westbrook Regional Vocational Center	390.67	$2,128,570.63	$2,432,686.27	$2,432,686.27		$2,432,686.27
State	**7,410.33**	**$51,000,301.52**	**$49,730,214.81**	**$50,897,335.41**	**$403,802.34**	**$51,301,137.75**

As can be seen in Table 2, 16 CTE schools had Model amounts above inflated actual expenditures and 11 CTE schools were "held harmless" with Model amounts below inflated actual expenditures. For the state to meet the obligation of holding the 11 CTEs harmless ($3.2 million), a ceiling was placed (no more than 5% above actual expenditures) on those CTEs with Model amounts above inflated actual expenditures. Debate was had as to the correctness of "holding harmless' as opposed to fully funding the model allocations for those spending less than the model. While many understood the finiteness of state funds and the need to transition scaffold those being "held harmless", several advocates for CTEs underspending the model believed that the cap of no more than 5% above actual expenditures was a penalty for being responsibly frugal with their financial resources. The legislature provided additional funds, PL 2017 Chapter 446, in FY19 that they requested be used to further fund those CTEs with Model allocation amounts above inflated actual expenditures to more than 5%, an additional $2.2 million added for a Grand Total State subsidy for CTE of $53.5 million. See Table 3 for final CTE Allocations for FY19.

To see how FY19 allocations compare to FY20 allocations compare Table 3 information with Table 4. FY20 allocations show, once again, 11 CTE schools, most the same schools as the previous year, were "held harmless' with model amounts below inflated actuals. FY20 allocations $51.2 million were lower than in FY 19 $53.5 million.

There are four major contributors to the reduced allocation for FY 2020:

- In FY19, there was a legislatively enacted one-time additional appropriation of $2 million;
- The FY 18 actual expenditures used in the calculation of the FY20 "hold harmless" are lower than the actual expenditures of FY 17, which were used to calculate the FY19 "hold harmless"
- The FY20 inflation factor used to calculate the "hold harmless" is lower than the FY 19 inflation factor
- The FY20 student enrollment (3-year average) is lower than FY19

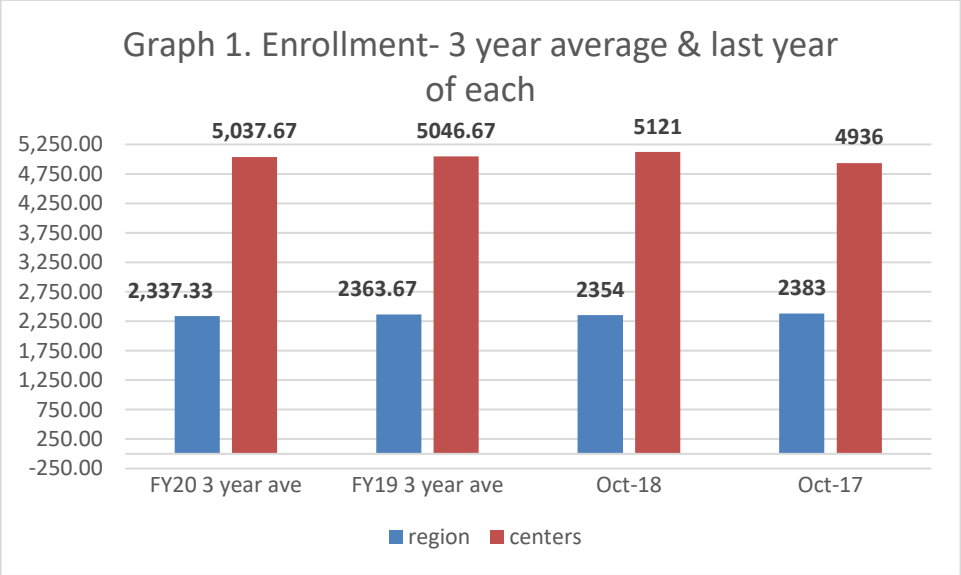
Table 3. FY19 Enacted CTE Allocations CTE School	Model Amount Below Inflated Actual	Model Amount Above Inflated Actual	Calculated Allocation	School Year 2018-19 Approved New Programs	Total Allocation	Adjustment per PL 2017 Chapter 446	Grand Total with Adjustment per PL 2017 Chapter 446
Region 2 School of Applied Technology	-	166,415.61	$1,660,569.11		$1,660,569.11	$56,022.71	$1,716,591.83
Region 3 No Penobscot Tech	(334,655.51)	-	$1,895,647.11		$1,895,647.11	$0.00	$1,895,647.11
Region 4 United Technologies Ctr	-	577,246.58	$2,447,775.00		$2,447,775.00	$295,495.87	$2,743,270.87
Region 7 Waldo County Tech Ctr	-	26,654.44	$1,850,187.06		$1,850,187.06	$0.00	$1,850,187.06
Region 8 Mid-Coast School of Technology	(34,504.68)	-	$2,846,499.52		$2,846,499.52	$0.00	$2,846,499.52
Region 9 School of Applied Technology	(350,003.89)	-	$1,820,911.17		$1,820,911.17	$0.00	$1,820,911.17
Region 10 Technical High School	(500,013.10)	-	$2,196,408.41		$2,196,408.41	$0.00	$2,196,408.41
Region 11 Oxford Hills Technical School	(378,014.96)	-	$3,316,949.61		$3,316,949.61	$0.00	$3,316,949.61
Augusta - Capital Area Technical Center	(310,701.17)	-	$2,438,768.43		$2,438,768.43	$0.00	$2,438,768.43
Biddeford - Biddeford Regional Ctr of Tech	-	229,031.34	$2,640,994.17		$2,640,994.17	$66,239.87	$2,707,234.04
Calais - St Croix Regional Technical Center	-	171,641.80	$896,908.47		$896,908.47	$82,700.25	$979,608.72
Ellsworth Hancock County Technical Center	-	227,977.56	$1,241,466.44		$1,241,466.44	$108,311.26	$1,349,777.69
Lewiston - Lewiston Regional Technology Ctr	-	3,156.48	$3,190,117.12		$3,190,117.12	$0.00	$3,190,117.12
Machias - Coastal Wash Cty Inst of Tech	-	372,204.08	$279,161.34		$279,161.34	$230,214.63	$509,375.97
MSAD 46 - Tri-County Technical Center	(236,226.29)	-	$1,612,445.92	$148,157.17	$1,760,603.10	$0.00	$1,760,603.10
Portland- Portland Arts & Technology H S	-	53,888.09	$3,298,868.98		$3,298,868.98	$0.00	$3,298,868.98
RSU 1 Bath Regional Vocational Center	-	136,596.75	$1,301,942.80		$1,301,942.80	$47,850.04	$1,349,792.84
RSU 33 - St John Valley Technology Center	-	328,774.61	$832,614.41		$832,614.41	$185,453.12	$1,018,067.52
RSU 39 - Caribou Regional Technology Ctr	(13,263.42)	-	$1,504,095.49		$1,504,095.49	$0.00	$1,504,095.49
RSU 54 - Somerset Career & Technical Center	-	231,705.41	$1,536,912.07	$4,800.00	$1,541,712.07	$101,678.28	$1,643,390.35
RSU 61 - Lake Region Vocational Center	(354,527.30)	-	$1,593,583.61	$74,454.00	$1,668,037.61	$0.00	$1,668,037.61
RSU 79/MSAD 01 - Presque Isle Reg Career & Tech Ctr	(344,441.65)	-	$1,605,976.18		$1,605,976.18	$0.00	$1,605,976.18
RSU 88/MSAD 24 - Van Buren Regional Technology Ctr	-	220,031.60	$343,488.86		$343,488.86	$130,642.42	$474,131.28
RSU 9 - Foster Regional Applied Tech Ctr	-	808,199.99	$1,714,423.85		$1,714,423.85	$466,034.93	$2,180,458.78
Sanford - Sanford Regional Technical Center	-	398,736.24	$2,407,566.78	$176,391.17	$2,583,957.95	$182,222.83	$2,766,180.78
Waterville - Mid-Maine Technical Center	-	478,293.74	$1,990,367.23		$1,990,367.23	$245,996.05	$2,236,363.28
Westbrook - Westbrook Regional Vocational Center	(304,115.64)	-	$2,432,686.27		$2,432,686.27	$0.00	$2,432,686.27
State	**(3,160,467.61)**	**4,430,554.32**	**$50,897,335.41**	**$403,802.34**	**$51,301,137.75**	**$2,198,862.25**	**$53,500,000.00**

Table 4. FY20 Initial CTE Allocations CTE School	3-year Average Enrollment	Model Allocation	FY 18 Actual Expenditures Inflated by 1.7%	Model Amount Below Inflated Actual	Model Amount Above Inflated Actual	Calculated Allocation	School Year 2019-20 Approved New Programs	Total Allocation
Region 2 School of Applied Technology	186.00	$1,814,591.41	$1,351,456.47	-	463,134.95	$1,419,029.29	$55,938.00	$1,474,967.29
Region 3 No Penobscot Tech	195.33	$1,570,364.40	$1,795,762.92	(225,398.52)	-	$1,795,762.92	$0.00	$1,795,762.92
Region 4 United Technologies Ctr	572.33	$3,117,706.79	$2,350,925.57	-	766,781.22	$2,468,471.85	$275,888.56	$2,744,360.41
Region 7 Waldo County Tech Ctr	189.67	$1,916,398.43	$1,800,000.92	-	116,397.51	$1,890,000.97	$0.00	$1,890,000.97
Region 8 Mid-Coast School of Technology	380.67	$2,700,677.46	$2,759,107.28	(58,429.82)	-	$2,759,107.28	$152,450.18	$2,911,557.46
Region 9 School of Applied Technology	146.00	$1,425,566.08	$1,704,808.85	(279,242.77)	-	$1,704,808.85	$48,155.00	$1,752,963.85
Region 10 Technical High School	215.00	$1,718,592.50	$2,093,556.67	(374,964.17)	-	$2,093,556.67	$141,731.70	$2,235,288.36
Region 11 Oxford Hills Technical School	452.33	$3,054,065.27	$3,260,525.65	(206,460.38)	-	$3,260,525.65	$0.00	$3,260,525.65
Augusta - Capital Area Technical Center	387.67	$2,189,431.54	$2,193,948.00	(4,516.47)	-	$2,193,948.00	$0.00	$2,193,948.00
Biddeford - Biddeford Regional Ctr of Tech	268.00	$1,904,042.51	$2,308,091.14	(404,048.63)	-	$2,308,091.14	$293,052.96	$2,601,144.10
Calais - St Croix Regional Technical Center	130.33	$1,003,514.08	$780,504.86	-	223,009.23	$819,530.10	$40,667.99	$860,198.09
Ellsworth Hancock County Technical Center	210.33	$1,523,062.53	$1,425,770.41	-	97,292.13	$1,497,058.93	$0.00	$1,497,058.93
Lewiston - Lewiston Regional Technology Ctr	685.33	$3,357,498.20	$3,147,748.02	-	209,750.18	$3,305,135.42	$0.00	$3,305,135.42
Machias - Coastal Wash Cty Inst of Tech	68.33	$699,352.47	$260,045.38	-	439,307.08	$273,047.65	$41,840.00	$314,887.65
MSAD 46 - Tri-County Technical Center	218.33	$1,425,128.38	$1,470,355.53	(45,227.16)	-	$1,470,355.53	$0.00	$1,470,355.53
Portland- Portland Arts & Technology H S	441.00	$3,195,427.26	$3,082,895.24	-	112,532.02	$3,195,427.26	$114,925.00	$3,310,352.26
RSU 1 Bath Regional Vocational Center	170.67	$1,391,938.09	$1,188,415.02	-	203,523.06	$1,247,835.78	$106,162.53	$1,353,998.31
RSU 33 - St John Valley Technology Center	112.33	$1,076,782.73	$780,344.10	-	296,438.63	$819,361.31	$41,691.92	$861,053.23
RSU 39 - Caribou RegionalTechnology Ctr	164.67	$1,432,465.24	$1,458,419.69	(25,954.44)	-	$1,458,419.69	$0.00	$1,458,419.69
RSU 54 - Somerset Career & Technical Center	268.67	$1,682,978.97	$1,439,475.77	-	243,503.19	$1,511,449.56	$50,500.00	$1,561,949.56
RSU 61 - Lake Region Vocational Center	198.00	$1,378,597.17	$1,330,395.48	-	48,201.70	$1,378,597.17	$74,260.00	$1,452,857.17
RSU 79/MSAD 01 - Presque Isle Reg Career & Tech Ctr	144.67	$1,359,024.84	$1,548,739.56	(189,714.72)	-	$1,548,739.56	$0.00	$1,548,739.56
RSU 88/MSAD 24 - Van Buren Regional Technology Ctr	20.67	$517,024.11	$264,542.17	-	252,481.94	$277,769.28	$0.00	$277,769.28
RSU 9 - Foster Regional Applied Tech Ctr	329.00	$2,271,263.29	$1,702,035.61	-	569,227.68	$1,787,137.39	$0.00	$1,787,137.39
Sanford - Sanford Regional Technical Center	477.33	$3,189,753.96	$2,497,853.13	-	691,900.83	$2,622,745.79	$171,700.61	$2,794,446.39
Waterville - Mid-Maine Technical Center	366.00	$2,268,931.37	$1,906,199.22	-	362,732.14	$2,001,509.19	$0.00	$2,001,509.19
Westbrook - Westbrook Regional Vocational Center	376.33	$2,260,161.11	$2,527,710.85	(267,549.73)	-	$2,527,710.85	$0.00	$2,527,710.85
State	**7,375.00**	**$51,444,340.21**	**$48,429,633.51**	**(2,081,506.80)**	**5,096,213.49**	**$49,635,133.07**	**$1,608,964.45**	**$51,244,097.52**

Analysis was done to see if there were differences in allocations between CTE regions and centers across the two years of funding under the new model, see Table 5. Model and allocation behave was similar across the two funding years. For both years model allocations were higher than inflated expenditures; regions had higher amounts in Model amount below inflated expenditures; and region total allocation was higher than both inflated actuals expenditures and model allocations.

Table 5 FY20 & FY 19 Allocations by Type of CTE School							
FY20 Allocations							
	Model Allocation	**FY 18 Actual Expenditures Inflated by 1.7%**	**Model Amount Below Inflated Actual**	**Model Amount Above Inflated Actual**	**Calculated Allocation**	**School Year 2019-20 Approved New Programs**	**Total Allocation**
Regions N=8	$17,317,962.36	$17,116,144.32	(1,144,495.65)	$1,346,313.68	$17,391,263.47	$674,163.43	$18,065,426.90
Centers N=19	$34,126,377.85	$31,313,489.19	(937,011.15)	$3,749,899.81	$32,243,869.60	$934,801.02	$33,178,670.61
State	**$51,444,340.21**	**$48,429,633.51**	**(2,081,506.80)**	**5,096,213.49**	**$49,635,133.07**	**$1,608,964.45**	**$51,244,097.52**
FY19 Allocations Prior to Legislative adjustment							
	Model Allocation	**FY 17 Actual Expenditures Inflated by 3%**	**Model Amount Below Inflated Actual**	**Model Amount Above Inflated Actual**	**Calculated Allocation**	**School Year 2018-19 Approved New Programs**	**Total Allocation**
Regions N=8	$16,924,331.92	$17,751,207.42	(1,597,192.13)	770,316.64	$18,034,947.00	$0.00	$18,034,947.00
Centers N=19	$34,075,969.60	$31,979,007.39	(1,563,275.47)	3,660,237.68	$32,862,388.41	$403,802.34	$33,266,190.75
State	**$51,000,301.52**	**$49,730,214.81**	**(3,160,467.61)**	**4,430,554.32**	**$50,897,335.41**	**$403,802.34**	**$51,301,137.75**

A large driver of the cost model is enrollment. Graph 2 shows the 3-year average enrollment used for both FY20 and FY 19 allocations, plus the last two years of enrollment, not averaged. FY20 3-year average enrollment was less then FY19 3-year average even though one of the years, the most recent year in the 3-year average, added in was Oct 2018 enrollment which was high.



MDOE identified two areas where the model did not align with expenditures; these are Operations & Maintenance (O&M) and Supplies (see Table 6). For all areas except for O&M and Supplies, the model allocates more than actual expenditures, in general. As stated above, the current calculation for O&M may not be the most effective at addressing O& M expenses. Further professional study and research would be required to identify other possible allocation methods for this cost category. Supply expenditures are also higher than model allocations and may reflect coding issues with equipment, which is not included in the CTE cost model as a separate funding opportunity is available for equipment.

Table 6. FY20 Allocations vs. FY18 Actual Expenditures by Model Categories And CTE Type										
CTE	**A) Direct Instruction**	**Direct Instruction Expenditures FY18**	**B) Central Administration**	**Central Admin Expenditures FY18**	**C) Supplies**	**Supplies Expenditures FY18**	**D) Operations & Maintenance**	**O&M Expenditures FY18**	**E) Other Student & Staff Support**	**Other Student & Staff Support Expenditures FY18**
Regions	$9,347,692.33	$8,812,935.81	$2,328,086.97	$2,321,035.69	$817,875.19	$1,017,405.82	$2,991,216.15	$3,231,486.84	$1,833,091.71	$1,447,169.59
Centers	$18,203,894.38	$16,873,853.01	$4,123,632.96	$3,978,201.48	$1,611,949.96	$2,079,948.22	$5,998,329.73	$5,061,513.72	$4,188,570.83	$2,717,063.26
State	**$27,551,586.71**	**$25,686,788.82**	**$6,451,719.93**	**$6,299,237.17**	**$2,429,825.15**	**$3,097,354.04**	**$8,989,545.88**	**$8,293,000.56**	**$6,021,662.53**	**$4,164,232.85**

After the passing of LD1843 (now Title 20-A Chapter 606-B §15688) and the request for more information by the 128th legislature, the MDOE sought to find explanation for the model – expenditure gap. First observed was FY19 Model amount comparisons to expenditure data are similar to the MEPRI report finding of CTE schools that would have model amounts below expenditures based on the new cost model. In confirming and investigating the organizations held harmless, some clear singular explanations were found that explained why expenditures were higher than model amounts:

- Region 3 has a federal loan repayment;
- Presque Isle operates a unique farm program which operates through the summer
- Region 11 has a cost sharing agreement with RSU 17 for shared space and services, which does not align to the EPS in terms of costs assessed.

To assess if systematic cost model issues were attributable to the mismatch between model amounts and expenditures more analysis of the data was done and interviews with 9 CTEs was done. Below is a section on topics that arose based on MDOE analysis and response from the field.

Discussion Topics:

1) Data Issues

Deeper analysis into the data revealed some data that was inaccurately coded, for example supplies coded as equipment. Model charts have been developed and posted on the MDOE website as resources for business managers in coding transactions as the new CTE funding model requires more detailed data than the older expenditure driven model. The new model requires the use of three years of enrollment data, for both school and program (CIPcode) levels, and because of the stipulation in LD 1843 to hold harmless, expenditure data. Current year staff data was also intended to be used within the CTE cost model but cannot be used to its full potential due to inaccuracies in recording years of experience.

a) Enrollment Data

For the new funding model, enrollment is limited to traditional CTE students in approved programs. This information is used to calculate the amount of FTE human resources (teachers, ed techs, clinical supervisors, guidance, and administrative support) necessary with in the school as well as student and staff support items. This lead to MDOE requiring CTE schools verify and certify student enrollment counts. During the verification & certification process several points arose that need addressing and could impact allocation.

1. Several CTE schools have middle school and/or non-traditional secondary students/programs. Because the model is for traditional approved CTE programs, the students & resources utilized for programs other than those in traditional approved programs are not factored into the cost model. In the old expenditure model there would be no distinction in expenses for these programs.
2. Schools using inaccurate or not approved program CIPcodes with their enrollment. CIPcodes are associated to families of code, for example Health occupations start in the CIPcode family 51.#### and throughout time similar programs have been given distinctly different codes, see the table below. Also occurring in the data, CTE schools have unofficially combined classes under one CIPcode or added students to CIPcodes that are not offered in their school. All of these scenarios may impact official enrollment numbers and therefore financial resources allocated to them.

Table 7. Example of Similar Programs with Unique CIPcodes

CIPcode	Program
51.1614	Nurse/Nursing Assistant/Aide and Patient Care Assistant
51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide

b) Financial Data

As previously stated, because it was known based on the MEPRI analysis that some CTE schools had expenditures greater than model amounts, a provision to hold CTE schools meeting that condition "held harmless" was place in LD 1843. This requires utilizing financial data at a granular level consistent to the categories calculated in the CTE cost model. While reviewing the data within the five categories outlined in the cost model (direct instruction, central administration, operations & maintenance of plant, supplies, and student & staff support) inconsistencies in coding were observed and discussed with the field. These included miscoding of program assessments and technology, differences in coding of supplies versus equipment, and administrators coded to programs rather than central administration as examples of a few of the coding anomalies found.

c) Staff Data

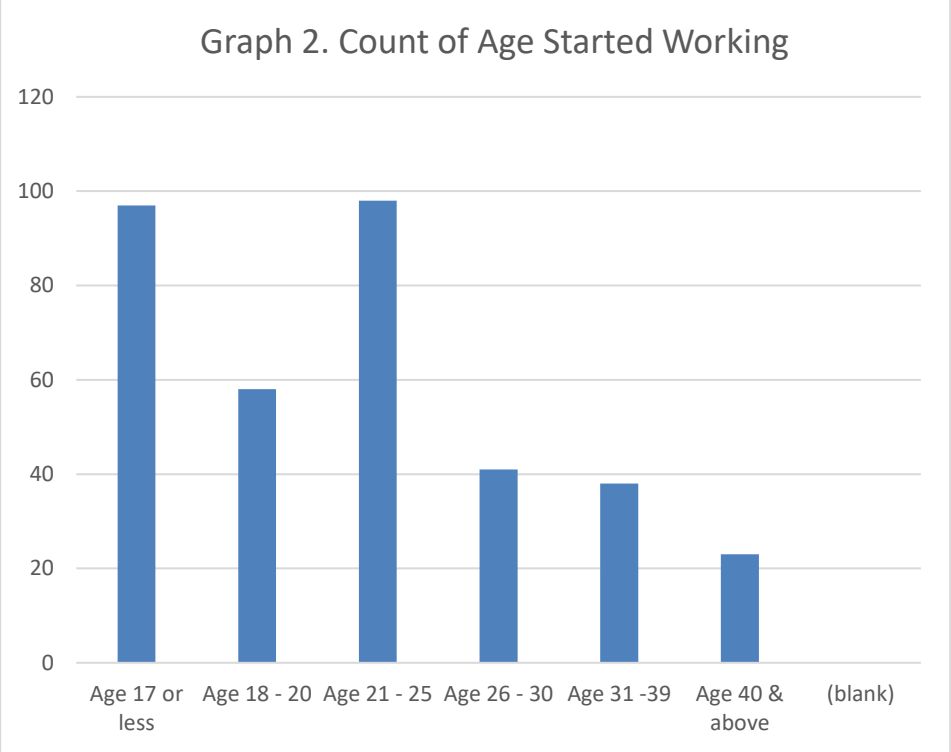
Staff data was not used in the old CTE expenditure data and when MEPRI utilized the staff data they found that more information would be necessary to appropriately create a teacher salary matrix. Prior to the calculation of the FY19 CTE allocation we asked all CTE schools to include in their staff records for classroom teachers the number of years the CTE teacher worked in the profession that they were teaching in (if teaching Plumbing give the number of years as a plumber prior to teaching). Staffing data already included information on number of years teaching experience. Years of professional experience was scaled to be 2 years equating to 1 year of teaching experience. The recommendation from MEPRI was to include years of teaching experience with the years of professional experience to better assess the level of salary given the years of experience and educational attainment, which are the two factors used in the EPS model to allocate salaries to regular education teachers.

Several observations were made which are illustrated in Table 8. Maine CTE classroom teachers have a high percentage of teachers with other less than Baccalaureate degrees (BA). The majority of regular education teachers have at least a BA based on minimum certification requirements. Levels of years of experience for CTE teachers was on average high, especially the combined years of experience.

Table 8. Credentials and Years of experience for CTE Teachers

		Averages			
Degree Level	**Count (%)**	**Salary Amount**	**Years of Teaching Experience**	**Years of Professional Experience**	**Years of Combined Experience**
Other	161 (44.7)	$48,211	13	16	21
BA	116 (32.2)	$50,770	14	12	20
Masters	79 (21.9)	$54,213	16	12	22
Advance Study	3 (<1)	$42,690	13	22	24
PhD	1 (<1)	$72,163	36	0	36
Grand Total	360	$50,373	14	14	21

To assess the validity of the data an analysis was created to assess the age CTE teachers would have had to start working to have the levels of experience listed in the staff data. Graph 1 illustrates that more than 27% (97) of the CTE teachers would have started their professional work experience below the age of 18 with 35 of the teachers having work experience below the age of 10, making the data highly suspect.



Also seen within the staff data was incomplete data and incorrect data, such as staff paid with federal funds. When attempting to compare model staffing resources for central administration compared with actual staffing issues were had in defining comparable roles. The list of positions included in CTE administrations were directors, assistant directors, business manager, administrative assistant, book keeper, dean, evaluator, principal, assistant principal, curriculum coordinator, and supervisor of instruction.

d) Other Data

One last piece of data was needed to implement the new CTE cost model which was the facilities square footage for calculation of operations and maintenance of plant. MDOE did not have this data. To obtain this information CTE directors were contacted and asked for the square footage of their instructional space. CTE schools respond with several questions as to what was to be included in that figure, storage, outdoor spaces, outdoor instructional spaces, agriculture spaces, out buildings. Clarification of a standard for CTE schools was sought from MDOE school construction. They provided some guidance and acknowledged that a robust inventory assessment was needed to fully assess mandatory components of CTE facilities. Facility square footage measurements may not be consistent as to what was included in the measurement across CTE schools.

2) Monetary Values used within the Cost Model

Some monetary values were recommended and utilized as specified in the MEPRI 2017 report, especially per pupil amounts. MDOE attempted to use CTE staff data with the EPS matrix for salaries. However, as stated earlier, data was suspect and more importantly CTE staff data did not fit distribution for matrices used for regular instruction in EPS, especially with teachers. State EPS amounts were used to calculate average salaries. Additionally, a weighted average per pupil amount was calculated based on research of costs of all possible standard assessments offered within in a program area. Table 9 shows the values used within the CTE cost model. Many of the CTE schools we interviewed contended that the average salary amounts were too low, especially for teachers and ed techs, because they generally have to start CTE teachers on the high end of the pay scale to attract and retain them and the ed techs needed in CTE also had to be more skilled than ed techs in regular education and therefore required more compensation. For FY19 the CTE model allocated out per FTE teacher $52,915.27 which is in keeping with Regular teacher EPS matrix for teachers with either a BA +30 & 11-15 years of experience ($50,599) or a Masters +30 and & 6 -10 years of experience ($51,653). While, as expressed earlier, see Table 8, most CTE teachers have less than a BA and an average salary of $50,343.

Table 9. CTE Model Parameter Values

Parameter	FY19 Allocation Parameter Value
Clinical Supervisor	$2,700.00
Teachers	**$52,915.27**
Ed Techs	$20,603.36
Counselor/ Coordinator	$54,329.31
Director	$84,736.34
Assistant Director	$69,483.79
Business Manager	$54,770.00
Secretary	$33,466.35
Substitutes	$42.00
O&M	$5.36
Assessment	$58.60
Technology	$106
Co-Curricular	$41
PD	$21
Safety	$40
Supplies per pupil	$69

3) Operations & Maintenance (O&M)

The parameter amount calculated for O&M was based on expenditure data because little to no consistent information is available on CTE facilities. Besides the lack of standards as to what should be included in a CTE facility and the associated lack of consistency across CTE schools on the square footage measurement, it is especially hard to distinguish space and resources utilized in CTE centers where the CTE schools are in or attached to the high school. Several CTE centers pay a historically derived percentage of the high school's O&M. Therefore, the EPS model for CTE calculated an amount per square foot, based on expenditures divided by square footage. For FY 2020, the amount is $5.45 per square foot. When an actual amount is calculated, based on the square footage reported by the CTE schools, the cost to CTE schools is actually $5.03 so the OMP EPS amount per square foot is greater than actual cost.

The CTE schools with agricultural programs did not include the acreage used for the program in their square footage. However, they believe a "per acre" amount should be derived because there is a cost to maintain the land. The general question of how to account for outdoor spaces is still viable. In addition, there are questions regarding whether leasing space for instruction should be funded; there is currently statutory authority to do that through a program operated by the DOE School Facilities Team. Funds for approved instructional space leases would not be part of the EPS CTE model, but would be separate, as they are for other schools. Many in the field suggested that other methods may be more appropriate for funding CTE O&M. Some suggested methods were cubic footage, and weighted amounts based on the age of the facility, assuming older facilities are less cost effective to upkeep and maintain.

4) Programs

Decisions need to be made in how to incorporate approved programs initially funded under non-state funds, programs that split and become multiple approved programs, and reinstated suspended programs. Currently, schools have existing programs with actual enrollment counts or new programs with estimated counts. The above-mentioned types of programs have the possibility of having both actual and estimated enrollment counts.

Maine cipcodes 99.#### are an unassigned cluster, not federally reported, used by Maine for programs that have unique requirements not specifically classified in other cipcodes by the U.S. Department of Education's National Center for Education Statistics (NCES). Some of the programs under the unassigned cluster are such programs as cooperatives, career exploration and labs.

With the exception of cooperative programs, these programs may have requirement hours that are less than the 350 hours required by assigned programs, usually between 175 – 200 hours. For fiscal year 2019, 11% of Maine CTE program enrollment (total 8,026) was in unassigned programs (excluding cooperatives). Currently in the CTE model these unassigned enrollments are funded at equal pupil weight to assigned program enrollments.

5) Revenues and Resource Decisions

The new CTE cost model ignores all revenues that CTE schools generate. Besides, the CTE cost model, like the EPS model, is a model for distributing funds based on adequate resources needed within a CTE school offering specific programs. It is not intended to dictate how or what resource decisions are made.

Some of the creative decision we heard included: utilizing staff for multiple roles; utilizing skilled ed techs; scavenging materials from failed businesses; developing strong partnerships with local and national businesses for donations and internship placement; marketing CTE programs to feeder elementary schools and the community; and contracting services such as IT support from municipalities through arrangements with the high school to take advantage of economies of scale.

6) Retirement

The normalized cost of teacher retirement is treated differently for CTE Regions – currently, the state pays on their behalf. This is different than CTE Centers because a Center is part of a SAU. For CTE center, the SAU receives and pays MePERS for the normalized cost and then receives subsidy through the funding formula to support that. Which means that there is a "Local Share" to the normalized cost for Centers.

7) Model Calculation

Because the CTE model allocation was new and being refined, the allocation was and is manually calculated. With that said, two CTE schools received allocations greater than both model amounts and inflated expenditures due to an error, (lack of capping as directed by statute), made by MDOE. Further review in expenditure data also revealed some error in items included in expenditures that should have been excluded (transportation, equipment, and debt service) as well as difficulty in categorizing expenditures within the CTE Cost Model categories, especially with items intended for other student and Staff support, such as assessment and technology. For these reasons of human error, the model components need to be solidified in statute so that a program may be written to calculate the allocations and minimize manual manipulation.

8) Additional Allocations Requested

CTE Directors are requesting the model reflect additional allocations, based on their experiences:

a) CTE Region Directors feel there should be a higher allocation for their position, over a CTE Center Director as it is felt that Region Directors have more responsibility to operate/manage their school, similar to that of a SAU Superintendent.
b) CTE Centers feel they should be allocated some FTE amount for a Business Manager. Though they are affiliated with an SAU that has a Business Manager, the operations of the CTE center are distinct and separate and require additional duties for the SAU Business Manager.
c) CTE Schools have indicated that they are experiencing more IEP identified students coming to their schools. In many instances, the sending schools are not providing resources for these students at the CTE school, especially when it comes to integrating the student into the CTE curriculum. Therefore, CTE schools would like an allocation added to the model for a Special Education Integrator.

Recommendations for the Department:

- MDOE identify and correct data inconsistencies and incongruities.
- Clarify data needs to the field and train them on appropriate coding.
- With better data, model out more robust salary parameters
- Review staff positions included in the model compared to those actually in the field
- Further research needed to assess O&M methodology
- Figure out how to calculate a local share for the normalized cost of teacher retirement that CTE regions would have to raise through their cost sharing formula.
- Solidify the model so that the calculation can be automated (programmed)

Possible policy considerations include:

Given that the model has only be in place for 2 years, the expenditures used in analysis reflect practices under the previous CTE expenditure model, as expenditure data is two years old at the time of allocation. We have yet to see how the cost model interacts with expenditures made under the new cost model, as FY 19 is the first opportunity to provide that comparison and analysis in preparation for FY 21 funding allocations. Also because of the newness of the model, CTE leadership is experiencing a learning curve on all the changes and data responsibilities required of the new model. For these reasons, it may be advantageous to wait and see how the model performs on the FY21 allocations before enacting any changes to the cost model parameters and components.

Further research is needed to assess the alignment of Operations & Maintenance and Supplies. While MEPRI is scheduled to review the CTE model in FY20, moving the review to FY21 would allow for two years' worth of expenditure data under the new model in order to create a more thorough analysis.

Consideration to sunset the "hold harmless" component could be achieved by gradually funding less than 100% inflated expenditures for those spending above the model. This would gradually eliminate the "hold harmless" and allow for gradually increasing the cap on CTE allocations for those CTE schools with expenditures below the model.

To protect against allocation decreases due to sudden enrollment changes, use the higher amount of either the 3-year average enrollment or the most recent year enrollment.