

An Analysis of Harford County Education Budgeting and Expenditures on Wages and Salaries for Fiscal Years 2009 to 2014 and the Implication for No “New Money” Needed to Fund Increments

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April 15, 2015

Executive Summary

This writer has analyzed the question of progressive pay for teachers and other public employees (also referred to as the increment system) and placed that analysis in several postings at his website at www.complexpolitics.wordpress.com including a detailed paper titled:

“The Mathematics of Budgeting for Experience Increments, Longevity and Lane Changes in a Teaching System or Other Workforce [The Fallacy of Required “New Money ”]”

The fundamental thesis advanced in that paper and related postings, based on the results of detailed mathematical modeling, analogies, and examination of changes in average teacher salaries, was that school districts misrepresent the “new money” costs associated with progressive pay. This fact was shown to be endemic¹ in many school districts throughout the country but was and is especially true in the Maryland Harford County School System (HCPS), this writer's resident school district. What was found and documented to be especially egregious was the fact that the HCPS routinely negotiates increases for COLAs and Progressive pay in legally mandated collective bargaining but, after formal contract agreement for COLAs and/or Increments, HCPS stipulates in the agreement that neither the COLA or Increments will be paid unless the County Executive provides a stipulated “new money” level in addition to prior year budget for salaries. The egregiousness occurs in the wholly false level of required new money stated in the contract agreements, purportedly needed to fund the provision of the increment. This has been shown conclusively in the postings cited above. This paper, through analysis of historic HCPS budget data for Fiscal Years 2009 through 2014, confirms the thesis advanced by the earlier writings that progressive pay needs little or no “new money” from prior year salary budgets to routinely provide progressive pay to employee groups such as HCPS staff and other public employees.

Introduction

This paper adds to prior analysis cited above by performing a detailed review and analysis of historic HCPS budget and actual spending along with a characterization of budget components for Fiscal Years 2009 through 2014. It should be noted at the outset that only once in five of the last six years has the HCPS provided either a COLA or increment pay adjustment. In 2013 HCPS provided a 1% COLA and an increment and in its budget documents referred to that fiscal year increase as costing HCPS \$10 million—a figure that equated to 3% of purported “new money” for the increment alone. Throughout the multi-year public discussions of this pay dynamic, the position has been posited that the withholding of the pay adjustments has been the refusal of the County Executive to provide the purportedly needed “new money” to fund the negotiated pay increases. Accordingly, the resolution of the author's thesis (proof

¹ OEA Collective Bargaining & Research Bulletin, “The Single Salary Schedule and Teacher Salaries”, June 2009 <https://www.ohea.org/Document/Get/15133> Quote contained therein: “For a typical school district overall teacher salary costs will grow 1.5% to 2.0% annually due too step increases alone”.

or rebuttal) is of paramount interest to the Public Trust in Harford County for the following reason: The press has chronicled the large number of teachers that have been a.) retiring b.) leaving the teaching profession c.) moving to neighboring counties that have honored the increment system resulting in neighboring school districts having salary differences exceeding Harford County by \$8,100 to \$11,100 per year². While there are many applicants for vacant positions, the HCPS is suffering from its inability to hire the best and brightest, in particular for math and science, special education, and foreign languages. Additionally, the excessive turnover has robbed the system of the broader benefit that has been proven to arise from a broad cross section of experienced teachers. Simply put, year after year, too many teachers on the staff are inexperienced. The cost to the nation of this phenomena, excessive turnover, has been estimated to cost the nation more than \$7 billion annually³- certainly a loss shared by Harford County.

Analysis of the HCPS Budgeting Practices

Annually the HCPS works the budget process by first providing to the County Executive and the County Council a Proposed Budget. In the annual proposed budget the HCPS explicitly lists an amount that is proposed for increases in “Wages and Salaries”. The annually requested “new money” for salaries may or may not consist of the following:

- 1.) A potential COLA
- 2.) A potential granting (or not) of the progressive pay or increment system
- 3.) Added fixed charges arising from the estimated cost increases in salaries for the ensuing year that ensue from 1.) and 2.) above.

The HCPS adds 20% to the budgeted salary increases for “fixed charges” associated with social security, Medicare, unemployment insurance etc. These charges are valid for COLA increases but as noted in Appendix B of the paper referenced above (and the Bilodeaux correspondence described in Table 1 below), the HCPS adds the 20% fixed charge to their erroneous estimate of the increment cost.

This writer’s thesis is that the HCPS uses a methodology which overstates the cost of providing the increment, a fact which is qualitatively validated by Professor Hartman, a noted Penn State Education Finance Authority. The flaw in the HCPS methodology is shown specifically in the Appendix to this paper by comparison with what Hartman describes as a “short cut” method – the method used by HCPS..

Additionally, even in years when the increment is not granted, the HCPS overstates the required funds for salaries because it continuously underestimates the reduced funding needed when accounting for turnover. In fact the budget practices are such that the full impact of reduction in salary cost, due to turnover and/or foregoing the increment, are essentially disguised or hidden so that this on-going misperception of increment costs is continually maintained. It was shown, page 39 in the above referenced paper, that in 2013, when the increment and a 1% COLA was granted, the actual average teacher salary in the HCPS increased by only .17% meaning that the increment cost, adjusted for

²HCPS Proposed 2016 Budget, page 90 Budget archives at www.hcps.org/boe/

³ PRLOG Press Release , “NCTAF Policy Brief Says Teacher Dropouts Cost Nation More than \$7 Billion Annually, June 20, 2007.<http://www.prlog.org/10021133-nctaf-policy-brief-says-teacher-dropouts-cost-nation-more-than-7-billion-annually.html>

turnover, was a negative .83% (.17% - 1%), further proof of the author’s thesis. This paper provides an analysis of the HCPS budget documents for the six year period 2009 to 2014. The analysis shows conclusively how the budget and actual expense data validates the author’s thesis.

The HCPS Procedure for Estimating “New Money” Costs for Providing the Increment.

The structure of HCPS progressive pay system is identical to what is known nationally as the “Single Salary System” which came into prominence around World War I. This is somewhat of a misnomer in that the Single Salary System, generally unique to each school district, is characterized by a two dimensional matrix of salary levels where the rows represent years of experience and the columns or lanes represent varying levels of certification. See Table 5, page 33 in the writers paper referenced above. For the HCPS, typical increases for experience are 3% of prior salary. After 15 years of experience the 3% no longer applies and is replaced by a nominal \$2000 a year longevity increase that is provided every five years. Effectively there are thus many positions in the matrix where no progressive pay is due even when it is otherwise granted to eligible staff. In the paper referenced above this writer has chronicled how Harford County and the HCPS have historically described and officially budgeted for the increment using a “rule of thumb” characterized by claiming and budgeting 3% of new money needed if progressive pay was to be granted. Effectively this assumes that all staff members are being given a 3% increment. For example both the HCPS and the County Executive, in budget documents and press accounts were reported to claim that the fiscal year 2013 HCPS raises of 1% COLA and an increment cost \$10 million on a nominal \$240 to \$250 million budget. This equated to 1% for the COLA and 3% for the Increment. In succeeding years the HCPS has seemingly altered its estimation process to allow for the above described voids in the salary matrix, i.e., for the staff members not eligible for the increment. In e-mail correspondence with the author, an HCPS staff member provided the following information, Table 1, on the procedure used for the then proposed 2014 wage adjustment.

Table1– Data Provided by HCPS* on the cost estimate for the proposed (but later rejected) Fiscal Year 2014 pay raise for the 5000 + HCPS staff		
FTE Positions for Staff	\$240,087,470	
Step for Eligible Staff (& related fixed charges)	\$4,,830,093	2%
1% COLA (& related fixed charges)	\$2,895,286	1.2%
Negotiated Wage	\$7,725,378	3.2%
*Lindsay Bilodeaux, HCPS Communications Specialist, Private Communication, July 8, 2013, Response to query by the author on the sums budgeted for the COLA and the Increment for Fiscal Year 2014		

From the above table one observes the following. The cost of the increment with added fixed charges of 20 % is 2.0% of claimed new money needed. From the numbers in Table 1 one calculates that the HCPS estimate of the "Step for Eligible Staff" or increment , before the added fixed charge, was 1.67% of the unrestricted payroll. While this is a slightly more accurate estimate of the increment cost (compared to the previously described rule of thumb seemingly used in a prior year) it is still seriously in error due to the following. This estimate tracks the projected pay increase of "individuals" and not "positions" as shown in the model in the author's referenced Internet paper and in the procedure described by Professor Hartman in the Appendix to this paper. The correct procedure is based on the observation that the staffing is a dynamic situation, with three characteristics of staff movement in pay levels.

- 1.) A large portion of the staff remain employed in the ensuing year with some, as described above, moving to higher pay levels in the increment or step system- progressive pay.
- 2.) Some staff members leave the system.
- 3.) Replacement staff members are hired to replace departing staff (generally at lower salary levels)

Collectively these three components determine the offset or reduction in the projected year payroll with the latter two combined creating a budget reduction for salaries characterized as "turnover". As will be shown it is very important to characterize and evaluate the effect of all three components – as will be done in a later section. A fourth component, a change in the number of FTE's also changes the payroll, but should be calculated and budgeted as a separate entity so as to permit a correct understanding of costs tied to providing the increment.

Where is the Mischaracterization in the HCPS Methodology

The mischaracterization occurs in that Harford County, and numerous school districts, use a methodology described by Professor Hartman as a "shortcut " method. In the shortcut method all eligible staff members are projected to receive the increment but no offset adjustment is made for turnover, where higher paid staff leave or retire and are replaced with lower paid new hires. Professor Hartman describes this method as leading to overstating the projected year budget costs. This is and has been the author's basic thesis as documented in the above described internet posts with quantitative analysis of how turnover offsets progressive pay. In particular see Appendix B, page 76, of the above referenced paper, which shows how one retiree (when accounting for replacement) offsets the entire path of increment increases (in current dollars) through which the retiree has progressed during his/her career.

The HCPS does make a simplified or partial estimate and accounting of turnover but reports this underestimated turnover estimate as a "Cost Savings Measure" and then requests "new money" to fund the increment without adjusting or acknowledging the real cost of required

new money. The purported “new money” costs of the increment are then overstated because a.) the salary reductions from turnover are underestimated (as will be described herein) b.) the salary reductions from turnover are listed in the budget as a cost saving measure and the requested “new money” is made with no adjustment for either the true value of turnover or even the underestimated value of turnover. Using their methodology, HCPS is using the “shortcut method” described by Professor Hartman.

The HCPS budget data listed in Tables 6 and 8 is analyzed using the following definitions and formulas.

BR= Reference Year Budget for salaries in year y

BP = Projected Year Budget for salaries in year y + 1

BCOLA=Change in salaries for an across the board Cost of Living Adjustment (COLA)

BILL= Change in salaries to pay for the *Increment, Longevity and Lane Change* for all projected year employees eligible for progressive pay (assuming the staff from reference year all remain) no one leaves, assuming the unchanged single salary schedule

BFTE- Change in salaries due to the increase or decrease in Full Time Equivalentents (FTE’s)

BTO = Turnover value (in yearly dollars) computed by the sum of all salaries for departing staff minus sum of all salaries for replacement staff . Depending on the district, this calculation may include payouts for unused sick leave or related type of benefits at separation.

BTO1= The turnover value as estimated by HCPS in its yearly budgets (listed as Cost Savings Measure)

BTO2= The remaining turnover value not captured in the HCPS estimate for BTO (BTO2= BTO – BTO1)

With these definitions, a budget for salaries in the projected year, be it the component known as “Education Services-Salaries”, or “Salaries and Wages” (nominally the entire HCPS staff of 5000 +) can be represented as follows:

$$(1) \text{ BPA} = \text{BR} + \text{BCOLA} + \text{BILL} + \text{BFTE} - \text{BTO}$$

where the letter “A” has been added to “BP” to indicate the “actual”, real expenditure.

In its budget documents the HCPS estimates BTO (yielding BTO1) by multiplying an average number of yearly certificated teacher retirees (based on the last several years data) times an average salary and subtracts a quantity obtained by multiplying an equal number of replacements times an average replacement salary (with possible adjustments as stated above). The actual turnover, BTO, however, is composed of five categories listed in Table 2 below.

Table 2- Turnover categories in any Typical Education System such as HCPS
1. Retirement of Certificated Teachers
2. Drop out of Certificated Teachers*
3. Retirement of Non-Certificated Staff
4. Drop out of Non-certificated Staff*
5. Leaves of Absence [Fewer returnees from Leave than the number who go on Leave]
*In its monthly personnel reports dropouts are categorized as "separations"

For the component of HCPS staff known as "Education Services-Salaries" the two categories 1. and 2. are the dominant contributors with lesser contribution from category 5. For the entire staff of 5000+ , under "Wages and Salaries", all five of the categories in Table 2 apply.

Using the HCPS projection for BTO, namely BTO1, one obtains the following equation.

$$(2) \text{ BPH} = \text{BR} + \text{BCOLA} + \text{BILL} + \text{BFTE} - \text{BTO1}$$

Here the letter "H" has been added to BP to indicate the estimate for BP that would occur with the described HCPS estimate for BTO where

$$(3) \text{ BTO1} = \text{BTO} - \text{BTO2} \quad \text{or} \quad \text{BTO2} = \text{BTO} - \text{BTO1}$$

The quantity BTO2, by definition of Equation (3), is equal to the remaining value of turnover that is not represented by the HCPS expression of Equation (2) in the salary cost estimate for the projected year. The categories of staff (and related turnover) leading to components of BTO2 are listed in Tables 3 and 4 below for the categories of staff budget delineation known in HCPS as "Education Services" and "Salaries and Wages".

Table 3- Categories of Turnover Leading to Component Contributions to BTO2 [For Staff under "Education Services-Salaries"]	
A	The HCPS underestimates the turnover dollars in category 1. In Table 2.
B	HCPS does not include any turnover for category 2., drop out of certificated staff
C	HCPS does not include any turnover variance associated with category 5, Leaves of Absence for certificated staff

Table 4. Categories of Turnover Leading to Contributions to BTO2 [For Staff Under “Salaries and Wages (Staff of 5000+)”]	
A	All categories a, b and c in Table 3 above
B	HCPS does not include any turnover for category 3, Table 2, Retirement of Non-Certificated staff
C	HCPS does not include any turnover for category 4, Table 2, Drop out of Non-Certificated staff
D	HCPS does not include any turnover variance associated with category 5, Leaves of Absence for Non-Certificated staff

The value of BTO2 is thus the quantity represented by the turnover associated with the above defined omissions in Tables 3 and 4 and is dependent on which salary budget category is being analyzed.

The HCPS, however, in either “Education Services-Salaries”, “ or “Wages and Salaries” categories treats the quantity BTO1 as a “Cost Savings Measure” (as will be shown herein) and requests “new money” for salaries expressed by the quantity NMR where:

$$(4) \text{ NMR} = \text{BILL} + \text{BCOLA}$$

and when expressed as a percentage increase, PNMR is given by

$$(5) \text{ PNMR} = 100 \times \text{NMR}/\text{BR}$$

Ultimately, as indicated, a 20% fixed charge is erroneously added to this estimated new money requirement. See Appendix B, pages 80 and 81 for a description of this error in the paper referenced at the outset.

In the author’s paper, page 44, referenced above, the quantity HCPS requested of the County Executive in 2013 as new money was $\text{NMR} = \$10$ million to pay for a 1% COLA (BCOLA) plus providing the Increment, longevity and lane change (BILL) payments. This amounted to 4% of the nominal \$240 to \$250 million for wages and salaries (the quantity BR), and was presumably estimated as 1% for the COLA and 3% for the ILL. This conclusion is drawn from the following extract from the HCPS budget archives⁴

⁴ HCPS budget archives at www.hcps.org/boe/ Fiscal Year 2013, page 97

Table 5- Extract From Operating Budget Changes FY 2012 to FY 2013			
HCPS Budget Archives, FY 2013 Budget page 97 Note () Indicates negatives			
FTE's	Base Budget Changes		
	<u>Salary and Benefits:</u>		
	Salary		10,000,000
	Pension		5,529,741
	Turnover		(2,915,780)
	Net Health/Dental Insurance Adjustment		(1,511,633)
	<u>Other Adjustments</u>		
6.0	Transportation	614,265	
	Other Cost of Doing Business	343,180	
-1.0	Special Education	(1,514,015)	
-13.0	General Cost Reductions	(6,409,489)	(6,966,059)
	<u>Position Reductions</u>		
-66.0	Cost Reductions-Positions		(3,900,000)

The entries in Table 5 that are shaded apply to Salaries and Wages for the 5000+ HCPS staff. Accordingly the relationship between BR and BPH for FY 2013 can be expressed as follows⁵:

$$(6) \text{ BPH} = \text{BR} + \$10,000,000 - \$3,900,000 - 2,915,780$$

The quantity BPH for 2013 Salaries and Wages in the HCPS Fiscal Year 2013 budget document, page 95, is given as \$260,157,122. Accordingly the reference budget, BR, for Salaries and Wages (for the full staff of 5000+) can be inferred to be \$256,972,902. Accordingly, the figure of \$10,000,000 listed in Table 5 above for the 1% COLA and ILL is 3.9 % of the reference value of BP, verifying the fact that the HCPS essentially used a “rule of thumb” to estimate the ILL and COLA cost, namely, 1% for the COLA and 3% (calculated 2.9% herein) for the ILL.

As shown in data provided by HCPS, Table 1, above, the HCPS estimated that the quantity BILL (without the 20% fixed charge adjustment) for FY 2014 was actually 1.67% of the reference payroll BR. The reduction of the purported increment costs from that requested in FY 2013 is likely due to the fact that the HCPS was now allowing for the gaps in the HCPS pay schedule associated with the portion of staff not eligible for increments or longevity pay-as opposed to using the 3% rule of thumb. See, for example, the red entries in Table 5, page 33 in the

⁵⁵ These figures are assumed to be prior to any addition of “fixed charges”. This is based on the HCPS budget document for FY 2013, page 95, Table labeled “Current Expense Fund-By State Category”. Amongst the entries in this table is an explicit listing of a salary category “Instructional Salaries” plus a separate expense for “fixed charges” amounting to \$98.9 million or 23.1% of the total unrestricted budget. From this data the conclusion is drawn that budget entries for salaries are listed without the 20% fixed charge and the fixed charges are thereafter added on as a separate entity.

author's paper. Accordingly, assuming that the same percentage of BR should have applied in 2013 to pay for the 2013 increment , best estimate is that the 2013 increment cost, BILL, was

$$(7) \text{ Bill (FY 2013)} = .0167 \times 257.0 \text{ million} = \$4.29 \text{ million}$$

Best estimate for the 1% COLA was

$$(8) \text{ BCOLA (2013)} = .01 \times 257.0 \text{ million} = \$2.57 \text{ million}$$

The true cost of the increment, TILL, however is

$$(9) \text{ Till} = \text{BILL} - \text{BTO}$$

Even in the case of underestimating BTO with the value BTO1, TILL would have been

$$(10) \quad \text{TILL (2013)} = \$4.29 - \$2.92 = \$1.37 \text{ million}$$

Accordingly, an overestimated "new money" cost, NMH) (using the HCPS underestimate for BTO) for both the COLA and the ILL should have been

$$(11) \quad \text{NMH (2013)} = \$2.57 + \$1.37 = \$3.94 \text{ million.}$$

With a 20% added fixed charge , the needed new money would be \$4.73 (1.2 x \$3.94) million. This estimated cost is less than half the \$10 million that was claimed and which led to the reduction of 66 positions to pay for the purported need for the \$10 million in new money.

However, as noted in Tables 3 and 4, the HCPS underestimates the true value of BTO because it does not include turnover occurring in the various staff categories that are delineated therein. The fundamental thesis of the authors work is that the quantity [BILL –BTO] is essentially zero and is generally bounded (in steady state staff situations) by + or – one half percent of reference budget BR. In the current HCPS situation with large number of retirees and dropouts the six year sum for the quantity [BILL – BTO] is negative for the certificated staff as will be shown by the analysis of the HCPS budget data for FY 2009 through 2014.

The cost data of this example is a testimony to how the Harford County process is broken. Despite the fact that the new money needed was limited to that associated with the COLA (\$3.08 million with the 20% fixed charge) the County Executive was asked to fund \$10 million in "new money". Upon receiving that request in the form of the HCPS FY 2013 proposed budget , the then County Executive, David Craig, on June 12, 2012 was reported by the Baltimore Sun to state:

"The proposed 1 percent pay raise, plus step and longevity pay will cost the Board of Education approximately \$10 Million. Although our teachers undoubtedly deserve a fair pay

aise, this proposal also comes with a cost – the loss of both administrative and teaching positions.”

Most ironically, the HCPS and County Executive were part of a collective process, as shown in Table 5 above, and referred to by the County Executive, which rationalized falsely that a purported \$10 million pay raise was the cause of the need to reduce the teaching staff by 66 individuals.

The Fiscal Year 2015 HCPS Budgeting and Collective Bargaining Process

In Fiscal Year 2015, the HCPS requested \$8.5 million in new money and ,as chronicled on page 43 of the author’s paper, placed the following requirement in the bargaining agreement reached with the teacher’s union.

“ Each teacher shall be afforded a step increment, as appropriate. The Board of Education will provide \$2,000 additional salary per year to teachers who have achieved National Board Certification.

FY-2015. The Board and the Association agree to the following salary enhancements subject to the County funding authorities providing \$8.5 million in the budget categories from which salaries and benefits for teachers are paid, which \$8.5 million shall be in excess of the total funding received by the Board from the County funding authorities for FY14.⁶

a) Cost of Living – All teachers shall receive a 1% salary increase on July 1, 2014

b) Step Increment – All eligible teachers shall receive a step increment beginning July 1, 2014

c) Longevity Increases – All eligible teachers shall receive a longevity increase beginning July 1, 2014”

The \$8.5 million was the amount HCPS stipulated as the new money needed to pay increments plus the 1% COLA for the entire 5000+ staff as a result of so called “me-too” agreements with the various unions representing the non-certificated staff. The \$8.5 million of new money was not provided by the County Executive leading to the fifth year in six that the HCPS school system did not provide a COLA or an increment. As shown for Fiscal Year 2013, the needed new money for providing the 1% COLA, BCOLA was \$ 3.08 million (after the 20% fixed charge) and even with the underestimated turnover BTO1, the estimated cost of providing the ILL (after the 20% fixed charge) was \$1.64 million for a total of \$4.72 million. However, with a full accounting of turnover, providing the increment would have cost zero or negative dollars. Accordingly , the increment could have been provided with no new money. This circumstance, plus that listed above for FY 2013, is what has caused this writer to use the word “egregiousness” at the outset of this paper.

Examination of How the HCPS Historic Budget Numbers (FY 2009 thru FY 2014) Additionally Validate the Thesis Of Cost Misrepresentation

⁶ The Negotiated agreement described in footnote 7 for Administrators and Supervisors contains the stipulation: *“The items which require fiscal support shall be valid and binding to the extent that sufficient funds are granted and or made available by the Harford County fiscal authorities to fully implement said items.”*

The thesis of the paper rests on the fact that turnover is an integral part of the progressive pay system and that when proper budgeting accounts for the turnover factor, providing progressive pay does not lead to an inherently increasing payroll as claimed by HCPS and numerous other school district Financial Officers and pundits. This was shown in the author's paper using data from a Kentucky school district, page 38 and data from the HCPS, page 39.

Extensive examination of the HCPS budget documents for the period Fiscal Year 2009 through 2014 shows the yearly values that HCPS estimated for the "Cost Savings" from turnover, the quantity BTO1. The analysis below provides estimates of the additional turnover BTO2 described in this paper, Tables 2 and 3.

In its annual budget reports the HCPS provides data on the budget category "Education Services-Salaries". This category was chosen for extensive analysis because historic budget documentation has the following features:

- a.) Budget data for this category was listed for each year in the budget execution years 2009 thru 2014
- b.) Actual expense data was listed in subsequent years (after the year of execution) listing the actual true cost from which the quantity BTO2 can be inferred.
- c.) The category is dominated by salary costs consisting primarily of certificated teachers. In FY 2013 the total salary budget for this category was \$173.08 M of which \$152.30 M was for Instructional Salaries and \$21.78 M was for salaries for Mid-Level administrators.⁷

The preferable category (for the extensive analysis) would have been "Salaries and Wages" which represent the total payroll for the entire 5000+ HCPS staff. Unfortunately the HCPS does not document actual expenses (after the year of execution) for this category after 2009. For the category analyzed in Tables 6 the data listed is that for the annual updated budget, the Actual Expenses incurred along with the difference between the budget and the expenses incurred. Additionally, the amount the HCPS estimated in its category of "Cost Saving Measure" due to estimated turnover savings, BTO1, is listed. In the discussion above and Table 3 it was observed that the HCPS accounts for only one category, retiring teachers, (out of five) in estimating the turnover component. The second category BTO2 can be estimated from the historic budget data by the following process. If one subtracts Equation (1) from Equation (2) one obtains the expression

$$(12) \text{ BTO} = \text{BTO1} + \text{BPH} - \text{BPA}$$

⁷ Mid-Level Administrators progressive pay in HCPS is tied to that for certificated teachers. The Negotiated Agreement between the HCPS and the Association of Public School Administrators and Supervisors of Harford County, July 1, 201 –June 30 2014 has the following provision:

"Teachers' Salary. The Administrative and Supervisory (A&S) scale is grounded in and tied to the teachers' scale. The A&S scale will be adjusted to reflect percentage increases applied to the teachers' scale times 125%. Grade 1 of the 12 month salary schedule will be tied directly to the highest step and educational level on the teacher's scale. Grades 2-8 will be adjusted to maintain the integrity of the 3 x 1 salary schedule.

The longevity for 12-month administrative and supervisory personnel will be calculated at 125% of the rate established for teachers at the conclusion of every five years of experience beyond the salary schedule to determine total salary."

where BPH is the “projected” budget for the salary category and BPA is the “actual” expense determined after the year of execution. The components of turnover that HCPS does not account for in its budget projection, BTO2, is thus seen to be estimated by the difference

$$(12) \text{ BTO2} = \text{BPH} - \text{BPA}$$

Tables 6 below contains HCPS budget data for the Fiscal Years 2009 through 2014 for the category Educational Services (Salaries). Column A, lists the Fiscal Year, Column B is the Fiscal Year Budget, column C is the Actual Fiscal Year expense accounted for after the year of Execution, Column D is the difference of the two, column E is the value BTO1 as reported in the HCPS annual budget documents. Column F is the calculation of BTO (the estimated turnover offset) for each of the six years. Column G lists the estimated funds needed to fund the increment before inclusion of the turnover offset.

Results of the Budget Analysis for Education Services- Salaries

From Table 6 below one can see that in three of the six years in this analysis the estimated

Table 6-Multi Year HCPS Budget Data for HCPS “Educational Services-Salaries”*						
All Data in \$ Millions						
A	B	C	D	E	F	G
Fiscal Year	Updated Budget# BPH	Actual Expenses# BPA	Updated Budget minus Actual Expenses [BPH – BPA]	Turnover Budgeted by HCPS BTO1	Aggregate Turnover BTO = BTO1 +BPH – BPA	Funds Needed for Increment BILL **
2009	173.83	172.46	1.37	1.46	2.83	3.14
2010	170.98	169.68	1.30	1.46	2.76	3.09
2011	175.58	175.59	-.001	1.61	1.60	3.20
2012	174.66	173.71	.96	2.52@	3.48	3.16
2013	173.08	171.51	1.58	2.92	4.50	3.12
2014	167.05	165.46	1.60	2.88	4.48	3.01
	Six Year	Totals	6.80	12.85	19.65	18.72
	Complete	Data Not	Available	for 2015	and 2016	
2015	171.54	?	?	2.85	2.85 +?	?
2016		?	?	3.57	3.57 + ?	?

*Data was taken from the HCPS budget archives at www.hcps.org/boe/
For each Fiscal Year y the HCPS (in the following years y+1 and y+2) updates the budget values for earlier fiscal year y (BPH above) and lists the actual expenses for that fiscal year (BPA). This is the data used for this table.
** Computed as 1.82% of BPA based on analysis in the referenced paper. This is the quantity BILL for the increment cost without adjustment for turnover. See the result for PCILL, Table ML-4 page 54 in the referenced paper.
@Includes a salary variance of -. \$43 million added by HCPS after the initial estimate

turnover values, BTO, exceeded the increment cost, BILL and that the six year total for turnover exceeded the total six year estimated increment cost. Since the data of Tables 6 applies to the certificated staff (Education Services) the conclusion is drawn that over the six year period an aggregate sum of turnover offsets was more than enough to provide the increment (for certificated staff) throughout the six year period.

The data for FY 2011 is an anomaly implying that there was no additional turnover beyond that estimated by HCPS in their very conservative estimate listed as a “Cost Savings Measure” due to accounting solely for retiring teachers. Table 7 below examines the data for 2011 seeking to understand this anomaly. The table shows that the Fiscal year 2011 budget figure of \$170 million for Instructional Salaries was actually reported to have increased by over \$5 million (in the executed budget) .

Accordingly, this data is suspect (based on the FY 2012 data) and is quite likely the cause of the fact that BPH – BPA for 2011 differed so significantly from the general trend observed in Table 6 for the other five years. From the general trend one can conclude that the true value of BPH- BPA for 2011 was really in the range between \$1.3 million and \$1.6 million which would increase the sum (\$19.65 million) in Table 6, column F by that amount.

Table 7 -Contrast of FY2011 Budget vs 2012 Restated Entries for Educational Services-Salaries		
	FY 2011 Budget	Restated 2011 Budget Entries in FY 2012 Budget Document
Instructional Salaries	\$148.186	\$153.437
Salaries for Mid-Level Administration	\$22.140	\$22.142
Total Salaries for Educational Services	\$170.326	\$175.579

Because of the “me to” agreements described earlier, however, the HCPS makes decisions on pay adjustments (and needed new money) for the 5000+ staff as a whole which HCPS budget documents categorize as “Salaries and Wages”- nominally \$250 million to \$265 million. As noted the HCPS did not report the comparable data for Salaries and Wages “Actual;” in the year following the year of execution except for the fiscal year 2009.⁸

To determine whether new money is needed (or not) to provide progressive pay to the whole staff of 5000+ one is led to constructing and examining the data in Table 8 below.

The Increment Cost and Turnover Offset for 5000+ HCPS Staff

To estimate the six year increment cost and the offset provided by turnover the data provided by the HCPS in Table 1 is utilized. As noted the increment cost BILL from that data was estimated to cost 1.67%

⁸ For the Fiscal Year 2009 the quantity [BPH – BPA =BTo2] for Salaries and Wages was \$4.8 million. [HCPS Budget Archives, FY 2010, p. 140] This data point would be the first entry in column D for FY 2009 if a Table similar to Table 6 were constructed for Salaries and Wages (5000+ staff) if the data was available in the archives.

of the payroll BP which in 2014 was \$240 million. For this estimate we assume the six year effective (unrestricted) payroll to average \$250M. Taking 1.67 % of this figure, the total for six years would be

$$\text{Total Six Year Increment Cost} = 6 \times \$250 \times .0167 = \$25.05 \text{ million}$$

From Table 5 one observes that the turnover estimate arising from the certificated staff alone over the six years totaled \$19.65. From the HCPS monthly personnel reports one observes that on average over 45 non certificated staff retire⁹, generally averaging over 20 or more years of service, yielding an estimated \$12,000 or more difference in salary between the retirees and their replacement. This yields

$$\text{Turnover from non-certificated staff retirements} = 6 \times 45 \times \$12,000 = \$3.24 \text{ million}$$

Also from the monthly reports one finds an average of over 110 non certificated staff are listed as separations or dropouts. Assuming an average salary difference of \$2500 offset from reduced replacement salary this leads to an additional estimated six year total offset of

$$\text{Turnover for non-certificated separations (dropouts)} = 6 \times 120 \times \$2500 = \$1.80 \text{ million}$$

Table 8 lists an estimate of the component sources and six year total for turnover contrasted with the estimated six year cost of providing the increment.

Table 8- Turnover Offsets by Category vs. Increment Cost (in Million Dollars) Over Six Year Period 2009 to 2014		
	Turnover (BTO) For Six Years	Increment Cost (BILL) For 6 Years [6 x \$250 x .0167]
Certificated Staff (Retirements and Dropouts)	\$19.65	
Non Certificated Staff (Retirements)	\$3.24	
Non Certificated Staff (Dropouts)	\$1.80	
Leaves of Absence (Not Estimated)		
Estimated Total Over Six Years	\$24.69*	\$25.05
*If one adds \$1 million or more to the \$19.65 million (for certificated staff) due to the anomaly for the FY 2011, the BTO sum for the six years exceeds the BILL sum for the 5000+ staff.		

By contrasting these estimates of the six year turnover offset vs. the 6 year increment costs one concludes that the historic HCPS budget data confirms the thesis that providing progressive pay (for the 5000+ staff) essentially leads to no new money costs. Additionally, as shown in Appendix B of the referenced paper, the 20% fixed charge should be applied to the difference between the increment cost and the turnover offset (BILL-BTO), a difference which is essentially zero.

Conclusion:

Analysis of the HCPS budget and expense data for the six year period 2009 through 2014 validates the author's thesis that in general little or no new money is needed to routinely provide the increment,

⁹ From August 2012 through July 2013 there were 138 non certificated dropouts and 62 non certificated retirees. From August 2011 through July 2012 there were 130 non-certificated dropouts and 39 non certificated retirees.

longevity and lane change provision to the HCPS staff. The author has chronicled the dynamic that occurs between the Board of Education and the County Executive and County Council, where providing progressive pay, has been the victim of a mischaracterization of required “new money” and has led to the County Executive decisions not to fund the mischaracterized costs. This can only be described as an incredibly broken process that is in dire need of fixing because of the havoc that has been created with droves of teachers leaving Harford County.

The budgeting and decision iterations, associated with HCPS for Fiscal Years 2013 and 2015, summarized below and analyzed above, stand out as sad examples of a broken process.

- a.) In Fiscal year 2013 the false claim that \$10 million was needed for a 1% COLA plus the increment led to the claim that 66 staff members needed to be separated to offset the purported cost.
- b.) In Fiscal Year 2015 a caveat was placed on the HCEA negotiated agreement, which, as shown on page 10, led to the withholding the increment because of the misrepresentation of costs.

These facts should lead all elected Harford County Officials, HCPS and Board of Education Officials, to ponder their role in the past and what they will do in the future to fix this broken process. Care for the Public Trust demands that this process be fixed.

This writer’s effort to engage the HCPS staff (including the HCPS Superintendent, Financial Officer, Personnel Officer and the Board of Education Members) has drawn little to no direct feedback except for one meeting where key Officers (Mr. Jewell, Ms Mantegna, and Mr. Licata) sought to focus only on the fact that “financial times have been tough” on the HCPS budget. There has been no direct feedback on the author’s claim of misrepresented increment costs. Recent feedback through the County Executive’s Office has suggested that the HCPS has countered (to the Executive’s Office) that one should consider total compensation to include, for example, budget pressures from increasing pension costs, health insurance premium increases and reduced state funding. To this point this writer suggests that such a broad comment cannot be an excuse for the misrepresentation that has been documented by this writer’s analysis. Logic suggests that the normal process of budgeting, iteration and ultimate funding, and its input and role from collective bargaining must seek to accurately portray specific cost areas to include salary costs, progressive pay costs, health insurance costs, pension costs (each as separate but accurately estimated entities) so that a rationale process can be bargained, agreed upon and means employed for funding each component. It is grossly unfair to simply suggest to County employees and the HCPS staff that when all benefits are considered they should have no quarrel with having had a single 1% COLA and one increment in six years (eight years for other county employees) because of considerations associated with total compensation.

Consider for example the following scenario, fictitious but illustrative. Suppose that it were true that HCPS (and other County) employees in the last six years had not lost ground in total compensation (despite the only one year pay adjustment) when allowing for increased pension costs and health insurance paid on their behalf. As noted some teachers have had salaries lag by \$8,100 to \$11,100 per year as a result of the HCPS and Harford County process. These teachers (as will other County employees) eventually will count on a pension and Social Security for retirement income. Social Security benefits are based on the AIME (Average Indexed Monthly Earnings) formula applied to the employees 35 year “highest indexed” earnings. For many, health insurance premiums are partly tax deductible and

employee pension contribution payments made over a career are deductible on federal income (during the pension phase) based on a prorated schedule. Similarly, the Maryland State Teachers Pension (as most pensions) is also proportional to a formula based on earnings history. Accordingly, there is a major tax and future retirement benefit consequence to the distribution of components of total compensation. Years of reduced pay along with the tradeoff in tax consequences, as described above, will be of immense future impact to Harford County teachers and other employees. As they grasp this additional fact, the departure of staff can only worsen. From this one can easily see that there can be no rationale for corrupting the process of progressive pay with erroneous budget claims, seemingly excused by the generalized observations of increased ancillary costs effecting total compensation. Employees have a right to expect their employer to provide accurate information on component costs of total compensation so that they and their representatives can make rational decisions during the legally mandated collective bargaining process. This could include bargaining agreements for actually paying increased contributions for health insurance and pension costs. Similarly the Board of Education, the County School Superintendent, the County Council and the County Executive should mandate that the HCPS Financial Officials provide them a correct accounting of the component costs so that the decision process on tradeoffs and how and what to fund can be made in a rational manner.

Appendix

Material in this Appendix is reproduced from the paper titled:

“The Mathematics of Budgeting for Experience Increments, Longevity and Lane Changes in a Teaching System or Other Workforce [The Fallacy of Required “New Money”] on the Internet at www.complexpolitics.wordpress.com and begins on page 41 of the paper.

8.(f) Validation of the Model Components and Structure

Dr. William T. Hartman is the Director of the Penn State Center for Total Quality Schools, is a Professor of Education in the Education Leadership Program and teaches courses in financial management and decision making. He is author of the book titled “School District Budgeting” [37]. His Curriculum Vitae is listed in reference [38]. On page 124 of his book he describes two processes for estimating a school district budget.

A. *"a first step in developing salary expenditure estimates is to update the salary schedule for the upcoming year. The next step is to project the number of personnel at each salary level in the schedule for the next year. The salary schedule format can also be used for the personnel schedule, with years of experience and educational level again as the dimensions, and the number of people at each particular experience/education combination in the respective cells of the matrix. Using this format, the number of people currently in each cell of the matrix is determined—the present location matrix. These numbers are then adjusted by 1.) eliminating any persons who will be retiring, moving, resigning, or going on leave; 2.) adding any persons expecting to be returning to the district payroll next year, 3.) advancing those remaining in the matrix by one year of experience 4.) estimating the number of those who will qualify for*

a higher educational level next year, usually based on historical records and 5.) estimating who will be entering the district next year and their placement in the matrix, at the initial cell or elsewhere. The resultant matrix provides an estimate of the numbers of persons to be employed according to their salary category.”

B. “A shortcut for districts with fairly stable enrollments and personnel requirements is to advance all eligible teachers currently in the district one year in experience (taking care not to advance those already at the maximum experience level). This procedure generally overestimates total salary costs somewhat since retiring teachers at the higher end of the salary schedule will likely be replaced by new teachers at lower salary levels.”

C. “The projected number of teachers at each point on the salary schedule is multiplied by the corresponding amounts in the updated salary schedule. Overall salary expenditure estimates for instructional personnel are then obtained by summing the results of each calculation.”

The procedure developed herein (summarized in Table 1 of the paper) differs from Hartman in that it is computing payroll in both a reference year and projected year assuming that the salary schedule is unchanged. Additionally the procedure is a slight modification of the two steps described by Hartman in A. and C., above. The two, two dimensional matrices $S(z,y)$ and $T(z,y)$ described on page 24 of this paper are the two matrices described above for the salary schedule and number of people currently in each cell. The author’s procedure augments and deviates slightly from Hartman’s suggested procedure as follows: First the payroll for the reference year, P_1 , is computed where it is assumed that the salary schedule and number of FTE’s remain the same for both the reference year and the projected year. This is done using Eq. 6 which is identical to Hartman’s C. above. The author then advances all staff members one year in experience (assuming all staff remain and there are no new hires). This computes the intermediate quantity P_{2i} in Equation (9). This step is similar to Hartman’s B. and C. except that it has not removed projected staff departures nor added projected staff gains. it is an intermediate step in that the projected year payroll P_2 is computed from P_{2i} by separately computing and subtracting the turnover dollars described by Hartman in A. above. Since the projected retirees, dropouts and those on leave were included in P_{2i} at the salaries advanced by one year their removal salaries are similarly based on their projected salaries had they remained. The author then computes the budget difference due to turnover, $P_{to} = A_2 - A_1$ of the paper(section 4.(a) and then computes the projected year payroll $P_2 = P_{2i} - P_{to}$. P_2 , computed this way, while done differently , is identical to the procedure described by Hartman when combining A. and C. above.

The procedure used by HCPS is identical to Hartman’s shortcut, B. and C., and as he describes:

“This procedure generally overestimates total salary costs somewhat since retiring teachers at the higher end of the salary schedule will likely be replaced by new teachers at lower salary levels.”

This paper shows the level of such HCPS overestimation of total salary costs which arises by treating turnover as a “Cost Savings Measure” as opposed to being an integral part of the progressive pay system.