The Pennsylvania Department of Education

**Proposal to the US Department of Education for Participation in the
No Child Left Behind (NCLB) Growth Model Pilot Program**

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Table of Contents

Introduction

The No Child Left Behind Act (NCLB) has clearly stressed the expectation that all students must be proficient in reading and math by the year 2014. As part of this expectation, each state has been given the task of developing an accountability workbook that outlines how it will monitor progress toward this goal. The U.S. Department of Education (USDOE) has also offered states the opportunity to submit a proposal to participate in a pilot program that uses measures of student longitudinal growth as part of the adequate yearly progress (AYP) calculations. These growth models must not delay the expectations of NCLB. Instead, states were invited to propose metrics that would provide an additional way to identify and recognize schools that had placed all of their students on a trajectory to proficiency.

The Commonwealth of Pennsylvania and the Pennsylvania Department of Education (PDE) currently provide two growth models for school districts. The first, a value-added model, used for school improvement purposes, allows schools to compare themselves to a growth standard, and provides valuable insights regarding whether or not their students *as a group* made one year's worth of progress. This is NOT the model Pennsylvania is proposing in this plan. In contrast, the second model uses a projection methodology that allows schools to determine if individual students are on a trajectory to achieve and maintain proficiency according to state standards. Pennsylvania believes that the *projection to proficiency* methodology, with its emphasis on individual student projection to proficiency, offers great promise as a potential addition to the cadre of tools available to monitor movement toward NCLB goals. This methodology has been previously peer-reviewed and has been approved for use in other states. Therefore, the Pennsylvania Department of Education proposes that an amendment to Pennsylvania's present Accountability Workbook be accepted for the determination of Adequate Yearly Progress (AYP) for students enrolled in Pennsylvania public schools during academic year 2007-08.

The proposed amendment specifies the inclusion of a projection to proficiency/growth metric – NOT a value-added metric – to assess the effectiveness of including a longitudinal analysis of student achievement data for determination of AYP status. The inclusion of this amendment will recognize schools in which students have not yet achieved proficiency but have demonstrated significant growth towards proficiency in a time frame aligned to Pennsylvania's Annual Measurable Objective (AMO) targets. It will also inform Pennsylvania schools that they should address the growth of students who are presently rated as proficient so that these students will continue to perform in the proficient range in the future. The Pennsylvania Department of Education strongly believes that its proposed projection to proficiency growth model supports the goals of NCLB and that it will encourage school districts to place at-risk students on an accelerated path to proficiency in both reading and math through the targeted use of resources, interventions, professional development and high standards. A projection to proficiency model is a rigorous application of a growth metric as it looks beyond proficiency today. It applies rigorous statistical methodologies to ensure students are on a trajectory to proficiency in the future.

Proposed Accountability Plan Amendment

Pennsylvania proposes to apply an individual student "projection to proficiency" metric as a method for schools and districts to meet AYP in addition to the methods presently defined and accepted in the USDOE approved Pennsylvania Accountability Workbook.

Pennsylvania's Current Accountability Workbook: Status Measures

Currently, Pennsylvania's Accountability Workbook outlines the process to measure schools' AYP through status targets that increase toward the No Child Left Behind (NCLB) goal of 100% proficient by 2014. Hill, Gong, Marion, DePascale, Dunn, and Simpson (2005) define status models as the performance of a school at any given time. Pennsylvania uses student performance on the Pennsylvania System of School Assessment (PSSA) in Grades 3 through 8 and 11 in reading and math as the "status indicator" for NCLB proficiency targets. AYP is accomplished by achieving designated yearly NCLB performance targets in reading and math at the district, school, and subgroup levels, attendance, and graduation and participation rates. Pennsylvania also uses USDOE's flexibility of two-year averaging. USDOE approved confidence intervals are applied to these status measures to account for any statistical error in Pennsylvania's metric.

Pennsylvania's Current Accountability Workbook: Improvement Measures

Pennsylvania also includes "improvement indicators" in its Accountability Workbook. These improvement measures look at status relative to the prior status of a previous cohort of students at the same grade level (Hill et al., 2005) and include Safe Harbor calculations and the Pennsylvania Performance Index (PPI). Page eight of the proposal offers a visual representation of the current status and improvement measures in use. Currently, if schools do not achieve AYP status targets, they may use USDOE approved improvement measures in Pennsylvania's current Accountability Workbook.

Pennsylvania's Proposed Accountability Workbook Amendment: Growth Measures

While many of Pennsylvania's schools have been able to achieve the designated AYP targets through the current status and improvement measures, there remain a number of schools that are accelerating student growth toward proficiency, but are not recognized for this accomplishment. Therefore, Pennsylvania is proposing the use of a "growth measure," specifically the projection to proficiency metric of the Pennsylvania Value-Added Assessment System (PVAAS), as another option for schools to meet AYP. By recognizing the importance of accelerated student progress to proficiency through the use of a growth measure, Pennsylvania seeks to recognize schools that have made progress that is aligned to the USDOE approved proficiency target but whose current level of achievement may not yet reflect the designated benchmarks of the Accountability Workbook.

Proposed Pennsylvania Growth Model as an Additional AYP Method

Under the proposed accountability system, districts, schools and subgroups will have three options for meeting AYP proficiency targets in reading and math: (1) status, (2) improvement, or (3) growth, i.e. projection to proficiency. Pennsylvania proposes to use the **_projection to proficiency_** metric of PVAAS to estimate the score of a particular student on a future state assessment that will then be used as part of the AYP determination. Using all available achievement data on the students, the projection calculation estimates a student's performance on a future assessment based on the student's test performance history and the histories of students with similar performance patterns. The individual student projection data will be used to determine the percent of students by district, school, subgroup and subject areas whom are projected to attain proficiency on a future Pennsylvania System of School Assessment (PSSA) examination as specified in Table 1:

Table 1: Present and Projected Grades

Present Grade	4	5	6	7	8
Projected to Proficiency in Grade	6	7	8	8	11

The grades chosen for the projection to proficiency are based on the varied school configurations presently utilized in Pennsylvania. The current-year scores of 3rd grade students and students new to the State will be used in the projection to proficiency model. The State will include current-year scores of Grade 11 students. Additionally, the state will include current year scores of students with significant cognitive disabilities assessed under the Pennsylvania Alternate System of Assessment (PASA). This data represents all of the statewide assessments that are administered in Pennsylvania.

Sufficient data has been collected by Pennsylvania to calculate projections to proficiencies in all of the grades listed in Table 1. Pennsylvania has a complete longitudinal history for this analysis. Table 2 displays the history of collection of state assessment data since academic year 2003-04:

Table 2: History of state assessment

Year	3rd	4th	5th	6th	7th	8th	11th
2003-04	X		X			X	X
2004-05	X		X			X	X
2005-06	X	X	X	X	X	X	X
2006-07	X	X	X	X	X	X	X
2007-08	X	X	X	X	X	X	X

Demographic data are <u>not</u> used in the analyses. Because the calculation uses longitudinal data from students with similar test patterns and uses all available test data in the database of performance measures, the projection model produces reliable estimates of projected performance on future state assessments. In addition, the model

is adjusted for the growth pattern of the student's most likely future school by utilizing the most recent growth performance of that receiving school up to the grade level of the projection. For example, if the projection is for a 5th grader to 7th grade, the model will adjust the projected score to reflect the effect of the future school based on growth history of the school up through the 7th grade. Growth data beyond 7th grade are not relevant to that projection.

Appendix A details the projection methodology and includes examples of the calculation of student projections. Appendix B addresses the issue of the validity of projections by including the correlations between projected scores and later observed scores using results from the Tennessee Department of Education who have addressed these questions to USDOE.

Based on the students' projection calculations, schools will be assigned credit for all students who are projected to be proficient in a specified grade in the future, whether they are currently below proficient or are currently proficient. It does not assign schools any credit for students who are currently proficient but are projected to score below proficient on the future assessment. It does not assign schools any additional credit for students who score at the advanced level. For example, based on the projection calculations, Student A in 4th grade who scored below the 4th grade proficiency standard is projected to be proficient if the projected 6th grade score for that student is greater than or equal to the Grade 6 proficient standard. Similarly, Student B in 4th grade who scored above the 4th Grade proficiency standard would be projected to be non-proficient if the projected 6th grade score for that student is less than the Grade 6 proficient standard. These projected student scores are then used to determine the number of students projected to be proficient at the district, school and subgroup level. The projection model will apply to all students in the school or subgroup of interest regardless of the proficiency determination of the students based on status measures. The percent of students projected to be proficient on a future PSSA examination will then be used to determine AYP status based on the presently accepted Annual Measurable Objectives (AMO) status targets using the following rule:

Districts and schools meet AYP proficiency requirements if *the district and school and all subgroups* meet the annual measurable objective in *both reading and mathematics* either by meeting the status or improvement measures in the current approved Pennsylvania Accountability Workbook or through the proposed projection to proficiency model. The proposed projection model will be applied for either mathematics or reading subject areas or both depending on the outcome of the status and improvement measure AYP determination. When using the proposed projection to proficiency model to determine AYP:

1. Each district, school or subgroup's percentage of students who are projected to score at a proficient level or higher on reading meets the approved annual measurable objective for reading; or

2. Each district, school, or subgroup's percentage of students who are projected to score at a proficient level or higher on mathematics meets the approved annual measurable objective for mathematics.

All students who qualify for AYP proficiency determinations based on the NCLB criteria for full academic year, as detailed in the Pennsylvania Accountability Workbook, will be included in the projection to proficiency model. If a student does not have a previous PSSA score, his/her current score will be used instead of a projected score. The current-year scores of 3rd grade students and students new to the State will be used in the projection to proficiency model. The State will include current-year scores of Grade 11 students. Additionally, the state will include current year scores of students with significant cognitive disabilities assessed under the Pennsylvania Alternate System of Assessment (PASA). In all cases, projections to performance on a future PSSA examination will be calculated when sufficient data to calculate the projection is available. If sufficient data does not exist on a student, the student's current score will be used in the calculation of the percent of students who are projected to perform at a proficient level.

Pennsylvania's projection to proficiency model keeps schools on target of 100% of students reaching proficiency by 2013-14 by incorporating the already approved AYP proficiency targets. The AMO's have been approved in Pennsylvania's Accountability Workbook and increase over time until they reach the goal of 100% proficiency in 2013-14. Pennsylvania recognizes that projection to proficiency and attainment of proficiency are different conditions. However, Pennsylvania believes strongly that the efforts of schools that have provided programs for students to be on meaningful trajectories to proficiency should be recognized and supported. Information regarding projections to proficiency that is provided to parents makes clear the distinction between the attainment of proficiency and the projection to proficiency.

Scope of Proposed Pennsylvania Pilot

Pennsylvania has implemented a Growth Model since School Year (SY) 2001-2002 involving 100 school districts initially, with statewide implementation including all 501 school districts in SY05-06. The Commonwealth intends to implement its amendment, if approved, with all 501 school districts for AYP determinations in the current school year (SY07-08).

High Standards in Pennsylvania

By incorporating the proposed projection to proficiency growth model into AYP calculations, Pennsylvania is creating an opportunity to reinforce the goals of NCLB by acknowledging schools that are heading in the direction of meeting AYP targets, while still maintaining high expectations for all students. The amended accountability system will encourage schools and districts to improve student achievement and close achievement gaps by focusing resources on students who have yet to attain proficiency or are at risk of falling below proficiency. It will give schools and districts an immediate incentive to identify students who start out far behind and launch them on an accelerated path to proficiency in later grades. It will also compel schools and districts to catch proficient and advanced students whose performance is declining over time. Schools will be encouraged to differentiate instruction and interventions based on individual student needs as well as to provide professional development and technical assistance to educators to assist them with these tasks. Without the use of this growth measure, schools may receive an inaccurate picture of student achievement. The collective use of "status," "improvement"

and "growth" measures yields a comprehensive and complete picture of achievement in today's schools for students/parents, community members, school districts, the Pennsylvania Department of Education and the United States Department of Education.

Pennsylvania Growth Model Amendment Scheme

Currently Approved	Proposed
STATUS Measures: ○ AYP Performance Target Current Year ○ Performance Target 2 Year Average ○ Performance Target with Confidence Interval ○ Performance Target 2 Year Average with Confidence Interval	**STATUS Measures:** ○ AYP Performance Target Current Year ○ Performance Target 2 Year Average ○ Performance Target with Confidence Interval ○ Performance Target 2 Year Average with Confidence Interval

IMPROVEMENT Measures:
○ Safe Harbor (Proficiency defined by status)
   ○ Reduce the # of students not-proficient from previous year by 10%
○ Safe Harbor with Confidence Interval
○ Pennsylvania Performance Index (PPI)
	IMPROVEMENT Measures:
	○ Safe Harbor (Proficiency defined by status)
	   ○ Reduce the # of students not-proficient from previous year by 10%
	○ Safe Harbor with Confidence Interval
	○ Pennsylvania Performance Index (PPI)

	GROWTH Measure: PROPOSED ○ AYP Performance Target Current Year using proficiency via projection to proficiency model

See Appendix G for details on each AYP calculation

Timeline for Implementation of Proposed Amendment

If approved, this growth model amendment would be available to determine the AYP status for all Pennsylvania districts and schools for academic year 2007-08.

Growth Model Integrity

The Pennsylvania Value-Added Assessment System (PVAAS) is a secure, web-based data tool that provides accurate measures of the growth of cohorts of students within the district, school or subgroups. PVAAS is based on a high quality statistical analysis of the Pennsylvania System of School Assessment (PSSA) scores for all

students in the Commonwealth. This methodology has been independently reviewed and validated by research institutions such as the RAND Corporation (2003) and Tucker and Stronge (2005). The projection to proficiency metric yielded from PVAAS analysis operates only on student-level achievement data and does NOT bias the analyses with any student demographics or school characteristic data.

The projection to proficiency feature of PVAAS provides an analytical estimate of each student's trajectory to proficiency. Since the projection targets the goal of proficiency, it focuses on sufficient growth to achieve proficiency. This reinforces and supports the understanding of USDOE that "one year progress for one year of instruction" is <u>not</u> sufficient unless the trajectory to proficiency is confirmed (Spellings, 2005). In fact, this is a very rigorous application of a longitudinal data structure to ensure proficiency by 2014. Pennsylvania's model supports Secretary Spellings' higher standards for achievement as defined in No Child Left Behind.

Conclusion

NCLB requires that "adequate yearly progress shall be defined by the State in a manner that "… results in continuous and substantial progress for all." Pennsylvania believes that a growth measure like the PVAAS projection to proficiency metric to measure and document progress toward proficiency is consistent with this requirement and philosophy as a further option for meeting AYP for all schools and districts in Pennsylvania. By measuring the growth of students currently scoring below proficient, especially in mathematics and reading, the efforts of the teachers and administrators who strive to provide access to proficiency are recognized. Acceptance of this proposal not only validates this recognition but also publishes a strong message to educational professionals that growth coupled with status measures is critical for ensuring the success of all of Pennsylvania's students. The Pennsylvania Department of Education believes that its strong history of commitment, both fiscally and philosophically, to the use of a growth model as a tool for school improvement establishes Pennsylvania as a leading candidate for participation in the USDOE pilot program of growth models for AYP. The remainder of this proposal specifically addresses USDOE's Core Principles for a growth model and Pennsylvania's plan to comply and fully implement these principles.

Response to USDOE Seven Core Principles

Core Principle 1: 100% Proficiency by 2014 and Incorporating Decisions about Student Growth into School Accountability
"The accountability model must ensure that all students are proficient by 2013-14 and set annual goals to ensure that the achievement gap is closing for all groups of students." (Secretary Spellings' letter, 11/21/05)

Peer Review Questions	Pennsylvania Response

1.1 How does the State accountability model hold schools accountable for universal proficiency by 2013-14?
 	
 1.1 Peer Review Probe Questions
 	
 1.1.1 Does the State use growth alone to hold schools accountable for 100% proficiency by 2013-14? If not, does the State propose a sound method of incorporating its growth model into an overall accountability model that gets students to 100% proficiency by 2013-14? What combination of status, safe harbor, and growth is proposed?
 	
 Indicate which of the four options listed below is proposed to determine whether a school makes adequate yearly progress (AYP) and for identifying schools that are in need of improvement, and explain how they are combined to determine AYP:
     1. Growth alone
     2. Status and growth
     3. Status, safe harbor, and growth
     4. Safe harbor and growth
 	
 The Department is planning to evaluate the use of growth models. Once implemented, States participating in the
	1.1
	
	 1.1.1 Pennsylvania proposes to use status, improvement *and* growth to hold subgroups, schools and districts accountable for meeting the goal of 100% proficiency in mathematics and reading by 2013-14. Presently the Pennsylvania Accountability Workbook includes status and improvement measures. As an additional alternative for meeting AYP proficiency requirements, the state proposes to use a projection to proficiency model, rather than a value-added or other form of growth model to evaluate the academic progress of all students in reading and math towards state standards.
	 Pennsylvania understands that if approved for the growth model AYP pilot, the state will provide data, as directed by USDOE, showing how the model compares to the current AYP methods. See page 8 of this proposal for Accountability Workbook methods for AYP.

growth model pilot project will be expected to provide data showing how the model compares to the current AYP status and safe harbor approaches.

➢ What are the grade levels and content areas for which the State proposes to measure growth (e.g., from 2004-05 to 2005-06 in reading and mathematics for grade levels 3-8)?

➢ If the State does not propose to implement its Growth model in all grade levels 3-8 and high school and for both subjects, where are the gaps in Growth Model decisions and what are the implications of those gaps for school accountability?

➢ The State will apply its projection to proficiency model to both reading and mathematics for students in grades 4-8 beginning SY07-08. Status measures would be used for grades 3 and 11.

➢ Pennsylvania will not apply its projection to proficiency model to grades 3 and 11 since in both cases there will not be two consecutive years of data with which to complete the projection calculation. For grades 3 and 11, current observed test scores will be used for AYP determination.

1.2 Has the State proposed technically and educationally sound criteria for "growth targets"[1] for schools and subgroups?

1.2 Peer Review Probe Questions

1.2.1   What are the State's "growth targets" relative to the goal of 100% of students proficient by 2013-14? Examine carefully what the growth targets are and what the implications are for school accountability and student achievement.

1.2 Under the projection to proficiency model, a student is considered "proficient" in math or reading if the student is projected to be proficient in the subject in the grades specified in Table 1. Pennsylvania's only targets are the AMO targets.

Table 1: Present and Projected Grades

Present Grade	4	5	6	7	8
Projection to Grade	6	7	8	8	11

The projection to proficiency model will include all students

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[1] "Growth target" denotes the level of performance required in order to meet Apothem State may propose different "growth targets" for reading/language arts and mathematics, different grade spans, etc. This document uses the term "growth target" to try to minimize confusion with "expected growth," "projected growth," "growth expectations," and other terms used in Value-Added and other student longitudinal growth approaches that denote an empirically derived student performance score not necessarily related to the NCLB policy goals of proficiency.

> ➢ The State should note if its definition of proficiency includes "on track to be proficient" or a related growth concept. For example, a State may propose that a student who is not proficient in the current grade must be on track to proficiency within three years or by the end of the grade span (e.g., elementary).
>
> ➢ A growth model that only expects "one year of progress for one year of instruction" will not suffice, as it would not be rigorous enough to close the achievement gap as the law requires.

tested under the Pennsylvania System of School Assessment (PSSA), as well as other currently administered statewide alternate assessments.

➢ A 4th or 5th grade student will be considered proficient if the student is projected to score above the proficiency standard on the PSSA assessment two years into the future. A 4th or 5th grade student will be considered below proficient if the student is projected to score below the proficiency standard on the PSSA assessment two years in the future.

➢ A 6th or 7th grade student will be considered proficient if the student is projected to score above the proficiency standard on the Grade 8 PSSA assessment. A 6th or 7th grade student will be considered below proficient if the student is projected to score below the proficiency standard on the Grade 8 PSSA assessment.

➢ An 8th grade student will be considered proficient if the student is projected to score above the proficiency standard on the Grade 11 PSSA assessment. An 8th grade student will be considered below proficient if the student is projected to score below the proficiency standard on the Grade 11 PSSA assessment.

➢ Current scores will be used for students in their first tested year in Pennsylvania, including 3rd grade students and students with no prior test score. They will be considered proficient if they score above the proficiency standard in the current year and considered below proficient if they score below the proficiency standard in the current year.

	➤ Current scores will be used for 11th grade students. They will be considered proficient if they score above the proficiency standard in the current year and considered below proficient if they score below the proficiency standard in the current year.
	➤ Current scores will be used for students with significant cognitive disabilities assessed under the Pennsylvania Alternate System of Assessment (PASA). They will be considered proficient if they score above the proficiency standard in the current year and considered below proficient if they score below the proficiency standard in the current year.
	➤ Pennsylvania has been approved to develop a modified 2% alternate assessment as per USDOE. Once developed this assessment would be integrated into Pennsylvania's growth model.
1.2.2 Has the State adequately described the rules and procedures for establishing and calculating "growth targets"?	These criteria set a rigorous horizon for students to attain proficiency. The model expects that each student will make more than one year's worth of progress. By expecting students in greatest need to make the most progress, the proposed model will drive the elimination of student achievement gaps.
	1.2.2 The previously designated Annual Measurable Objectives and Intermediate Goals for mathematics and reading outlined in the USDOE approved Accountability Workbook will continue to set the proficiency targets for all of Pennsylvania's students. These targeted progressions are

	designed to keep Pennsylvania on track to meet the NCLB 100% proficiency goals for 2013-14.
1.3 Has the State proposed a technically and educationally sound method of making annual judgments about school performance using growth? **1.3 Peer Review Probe Questions**	
1.3.1 1.3.1 Has the State adequately described how annual accountability determinations will incorporate student growth?	1.3.1 Schools and districts meet AYP proficiency requirements if *the district and school and all subgroups* meet the annual measurable objective in *both reading and mathematics* either by meeting the status or improvement measures in the current approved Pennsylvania Accountability Workbook or through the proposed projection model. The proposed projection to proficiency model will be applied for either mathematics or reading, or both subject areas depending on the outcome of the status and improvement measure AYP determination. When using the proposed projection model to determine AYP: 1. Each district, school or subgroup's projected percentage of students who score at a proficient level or higher on reading meets the approved annual measurable objective for reading; or 2. Each district, school, or subgroup's projected percentage of students who score at a proficient level or higher on mathematics meets the approved annual measurable objective for mathematics.

A. Has the State adequately described and provided a rationale for how Annual Measurable Objectives (AMOs) or other criteria for growth would be determined? Has the State provided a table giving the values for the AMOs from the first year the growth model will be applied (e.g., 2005-06) through 2013-14 that includes rigorous increases in school performance throughout that time? Does the model set reasonable, challenging, and continuously improving annual expectations for student growth?

➤ "Growth models that rely on substantial increases in the growth rates of students or schools in the last few years are not acceptable, but the Department is open to models that set a point in time as the goal (e.g., end of grade in a particular school; within four years). In setting these standards, the State should demonstrate how accountability is distributed among all the grades and not postponed to this point in time. The Department is concerned that if the State's Growth Model allows attainment of the proficiency standard by individual students to be delayed or is tied to standards that are not considerably more rigorous with each consecutive grade, then it becomes too easy to minimize or delay the importance of accelerated growth" (Secretary Spellings' letter, 11/21/05).

B. For any proposed confidence intervals or other

A. The table below specifies those USDOE approved AMO targets. These targets are not changed because of this proposed amendment.

Year	2002-2004	2005-2007	2008-2010	2011	2012	2013	2014
Percent Proficient in Reading	45	54	63	72	81	91	100
Percent Proficient in Math	35	45	56	67	78	89	100

B. Pennsylvania's accountability system values making accurate

statistical methods to be applied to the decision about meeting the AMO for growth, has the State clearly described the rationale for the use of the specific statistical method (including minimum group size and any multi-year averaging), and the procedures for applying the method?	decisions about schools. An accountability system that makes accurate, fair and equitable decisions reflects the values of Pennsylvania educators, parents, business partners and community persons by relating accountability to teaching and learning. This value does not change with the implementation of a growth model. Statistical safeguards, such as minimum N, and confidence intervals are used to promote consistency, fairness, and equity in accountability decisions for schools by balancing reliable and valid decision making with inclusion. The projection to proficiency model will use all current rules approved by USDOE under Pennsylvania's Accountability Workbook, including disaggregating by subgroup, counting only students with full academic year status, and applying a minimum subgroup size of 40.
C. For future evaluation purposes, does the State's proposal provide evidence of the validity and reliability of the proposed growth model, including impact of use/non-use of the growth model on validity and reliability of overall school accountability judgments?	C. Pennsylvania uses a longitudinal data structure with a USDOE accepted, peer-reviewed and recognized statistical methodology to calculate its projections (mixed effect multivariate longitudinal modeling). This methodology has been validated and widely used throughout the country for more than a decade. Independent review of the methodology is included in the references in Appendix E.
1.3.2 Has the State adequately described how it will create a unified AYP judgment considering growth and other	1.3.2

measures of school performance at the subgroup, school, district, and state level? A. Has the State proposed a sound method for how the overall AYP judgment (met/not met) for the school will be made, incorporating judgment of student growth?	A. The AYP Calculation Progression Table on page 8 of the proposal outlines the proposed methods of meeting AYP. A school or district will make AYP if it meets all proficiency requirements of the status, improvement or growth/projection to proficiency model, meets the 95% participation rate for all subgroups, and meets the additional indicators.
B. Has the State proposed a sound method for how the overall AYP judgment for the school will incorporate growth in subgroup performance? ➢ Are the method and criteria for determining subgroup performance on growth the same as for students in the school as a whole?	B. A subgroup will make AYP if it meets the proficiency requirements of the status, improvement or growth/projection to proficiency model and meets the 95% participation rate. The method and criteria for determining subgroup performance with growth are the same as for students in the school as a whole, with n=40.
C. Has the State proposed categories for understanding student achievement at the school level and reports for growth performance and AYP judgments that are clear and understandable to the public?	C. Pennsylvania will report the results of the status, improvement, and the growth/projection to proficiency model for all schools and districts in a manner that is clear and understandable to the public. These results will be reported in table and graphic forms to the public via a PDE website. Additional material detailing the projection to proficiency model will be added to the PDE website to provide parents with the opportunity to use the information to inform their educational decisions.
1.4 Does the State proposed growth model include a relationship between consequences and rate of student growth consistent with Section 1116 of ESEA?	

1.4 Peer Review Probe Questions

1.4.1 Has the State clearly described consequences the State/LEA will apply to schools? Do the consequences meaningfully reflect the results of student growth?

> The proposed interventions must comply with the Section 1116 requirements for public school choice, supplemental educational services, and so on.

> If proposed, the State should explain how it plans to focus its school intervention efforts by incorporating the results from a growth model. For instance, a State should be prepared to explain how a school that does not meet either traditional AYP goals or growth-based accountability goals might be subject to more rigorous intervention efforts than schools not making AYP on only one accountability measure.

1.4.1 Currently, Pennsylvania's Accountability Workbook designates a school improvement process for those schools not meeting AYP targets. The process complies with the Sec. 1116 requirements. Under the proposed amendment, the present process for school improvement and consequences for districts and schools would continue. Intervention efforts would proceed as outlined in the current Pennsylvania Accountability Workbook.

> The projection to proficiency model will allow Pennsylvania to focus interventions and support for districts and schools that are not on accelerated paths to proficiency. By reporting the results of the projection model for all districts, schools and subgroups in elementary/middle schools, the state will recognize schools and districts that are successfully placing individual students on accelerated paths to proficiency and catching students at-risk of falling out of the proficient range in the future. Schools not on this path to success will be identified for support and technical assistance.

Core Principle 2: Establishing Appropriate Growth Targets at the Student Level

"The accountability model must establish high expectations for low-achieving students, while not setting expectations for annual achievement based upon student demographic characteristics or school characteristics." (Secretary Spellings' letter, 11/21/05)

Peer Review Questions	Pennsylvania Response
2.1 Has the State proposed a technically and educationally sound method of depicting annual student growth in relation to	2.1

growth targets?

2.1 Peer Review Probe Questions

2.1.1   Has the State adequately described a sound method of determining student growth over time?

A.   Is the State's proposed method of measuring student growth valid and reliable?
1.   Are the "pre-" and "post-" test scores appropriately defined and adequately measured?
2.   If the State will not use a single score for pre- and/or post- test scores (e.g., using an aggregation of multiple scores from multiple years), does the State adequately explain and justify how the scores would be combined, what the weights are for each score, and how and whether the scores are/are not comparable across students and across time?
3.   Information about the availability and technical quality of proposed data will be considered in Core Principle 5. The probes associated with Principle 2 are focused on how the change in achievement is measured and valued.

2.1.1

A. Pennsylvania's proposed projection to proficiency model relies on a robust methodology that uses all of a student's prior achievement scores to estimate the student's achievement level at a future point in time. The model estimates a student's performance on a future assessment based on the student's test performance history and the histories of students with similar performance patterns. All available achievement data on the student are used to yield the projection. The only predictor variables are the student's prior test scores. Demographic data are <u>not</u> used in the analyses. The model adjusts the projection for the effect of the future schooling experience by utilizing the pattern of the most likely receiving school based on historical data of student patterns of advancement through the grades. The coefficients of the model are updated each year to reflect new student cohort test scores at the projection endpoints. This proven model, by using all available achievement data, provides more robust projections than simple pre- and/or post- test models.

For example, to achieve a 6th grade student's projected score to his/her 8th grade score on the reading test, the statistical methodology uses scores from students who took the exam in the current year who have the same historical pattern of test scores as

the 6th grade student. If the student has 3rd, 5th, and 6th grade scores (but no 4th grade scores) the methodology estimates regression coefficients for these scores based on the subset of students who took the reading test in the current year who also had 3rd, 5th, and 6th grade scores, but no 4th grade scores. These coefficients are then applied to the individual student's 3rd, 5th, and 6th grade scores to calculate the student's projected score on the 8th grade reading test. If the student has made progress between 3rd and 6th grade, the model will show if this progress has been sufficient to predict that the student will reach proficiency by the time he or she takes the 8th grade exam.

B. Has the State established sound criteria for growth targets at the student level, and provided an adequate rationale?
If the State is assigning a value determination at the student level annually with regard to each student's growth, has it used a sound process and assigned specific values for those growth targets?
For example, if a State has four performance categories, would movement between each category be weighted equally or would some categories be weighted more heavily than others?
If the State would only calculate "difference" or "change" scores for each student, and then aggregating to the subgroup and/or school levels, then the State should clearly give its rationale in this section.
Would the model ensure that student growth expectations are not set or moderated based on student

B. The nature of the Pennsylvania amendment precludes the necessity of growth targets since it uses the projection capability of the longitudinal data structure of student achievement data focusing on Pennsylvania's AMO targets. The longitudinal data structure includes only student achievement data and does not include any data regarding student demographics or school characteristics. Pennsylvania's model does not allow for excuses based on demographics.

➢ Each student is assigned the designation of proficient or non-proficient based on his/her individual projection to proficiency, independent of the projections of all other students. There is no aggregation of these projections. This analysis is NOT biased by student demographics or school characteristics. Since the projections are determined by a student's past scores compared to students who have the same pattern of test scores, students with similar test performances will have the same

demographics or school characteristics? The model must have the same proficiency expectations for all students, while setting individual growth expectations for students to enable them to meet grade level standards.

- If the State proposes a regression or multivariate/multi-level model, the independent variables may not include race/ethnicity, socio-economic status, school AYP status, or any other non-academic covariate.
- Does the model establish growth targets in relation to achievement standards and not in relation to "typical" growth patterns or previous improvement, unless there is evidence and a clear rationale that those factors are related to the overall goal of achieving proficiency for all students?
- Would gains of high performing students compensate for lack of growth among other students?

projected score.

➢ Students' testing histories will be updated each year as additional test scores become available. This new information will be considered as projections are re-determined and updated.

➢ The proposed projection to proficiency metric does not moderate its expectations for students based on student demographics or school characteristics. Projections are determined by comparing each individual student's testing history to students with similar testing histories, NOT those with like demographics. Using information from all students with similar testing histories helps to provide more robust projections for each student.

- Growth targets are aligned with those achievement standards established in Pennsylvania's Accountability Workbook. The AMO targets are the only targets.
- Since the projection is calculated for each individual student, the effect of either a high performing or low performing student will not be an issue. The projection to proficiency for each student is the calculation for this amendment.

4. Does the State have a plan for periodically evaluating the appropriateness of the student-level growth targets criteria?

4. Pennsylvania plans to validate both the model and growth targets on an ongoing basis using simulations and analyses performed by the statistical vendor that Pennsylvania currently uses to calculate the growth projections.

Core Principle 3: Accountability for Reading/Language Arts and Mathematics Separately
"The accountability model must produce separate accountability decisions about student achievement in reading/language arts and in mathematics." (Secretary Spellings' letter, 11/21/05)

Peer Review Questions	Pennsylvania Response
3.1 Has the State proposed a technically and educationally sound method of holding schools accountable for student growth separately in reading/language arts and mathematics? **3.1 Peer Reviewer Probe Questions**	3.1
3.1.1 Are there any considerations in addition to the evidence presented for Core Principle 1? ➢ The growth model proposal must include separate decisions for reading/language arts and mathematics, and maintain validity and reliability, minimize measurement error, and support empirical integrity in the accountability system. How does the model achieve these specifications, especially in small schools or schools with high mobility? • Does the model include assessments for other content areas (e.g., covariance matrices to estimate student	3.1.1 ➢ Under the projection to proficiency model, Pennsylvania will calculate projected scores separately for reading and mathematics and will base these projections on data from both reading and mathematics content areas. For example, to determine whether a school/district/subgroup met the annual proficiency target in reading/language arts, it will use student projected scores in reading and math. Pennsylvania's projection methodology is very flexible. It does not require vertically-equated test score scales nor does it assume a specific growth function (see Appendix A). In order to increase reliability and dampen natural measurement error, the projection methodology uses all of a student's prior achievement scores from all PSSA reading and math assessments to project future scores. In small schools and schools with high mobility, projected scores are more valid measures of school performance than current-

performance or projected performance in a content area)? If so, the State should demonstrate that achievement on those other assessments does not compensate for failure to achieve proficiency in reading/language arts or mathematics.	year scores because they incorporate all of a student's prior achievement data. Pennsylvania's longitudinal database follows students across time and across the Commonwealth, maximizing the reliability of the projections for these schools.

Core Principle 4: Inclusion of All Students

"The accountability model must ensure that all students in the tested grades are included in the assessment and accountability system. Schools and districts must be held accountable for the performance of student subgroups. The accountability model, applied statewide, must include all schools and districts." (Secretary Spellings' letter, 11/21/05)

Peer Review Questions	Pennsylvania Response
4.1 Does the State's growth model proposal address the inclusion of all students, subgroups and schools appropriately? **4.1 Peer Review Probe Questions** 4.1.1 Does the State's growth model address the inclusion of all students appropriately?	4.1 4.1.1 All students who qualify for AYP proficiency determinations based on the NCLB criteria for full academic year, as detailed in the Pennsylvania Accountability Workbook, will be included in the projection to proficiency model. If a student does not have a previous PSSA score, his/her current score will be used instead of a projected score. The current-year scores of 3rd grade students and students new to the State will be used in the projection to proficiency

A. Ideally, every student will have a pre- and a post-score, and a school will be clearly accountable for all students' achievement even when applying the "full academic year" parameters. However, there will be situations in which this is not the case. Are the State's proposed rules for determining how to include student achievement results (when data are missing) in the growth model technically and educationally sound?

➢ For example, if a State proposes to "impute" missing data, it should provide a rationale and evidence that its proposed imputation procedures are valid. A State proposing such a growth model must address how many students would be excluded from its calculations of growth because they lack a score, and provide an acceptable explanation of how these exclusions would not yield invalid or misleading judgments about school performance.

➢ Does the State have an appropriate proposal for including students who participate with alternate assessments and/or alternate/modified achievement standards (in one or more years for calculating growth)?

➢ Does the State's definition of FAY include students

model. The State will include current-year scores of Grade 11 students. Additionally, the state will include current year scores of students assessed under the PASA.

A. Pennsylvania does not impute missing data in the projection to proficiency model. The model uses all available data on student test performance history to project future performance even when a student does not have a test score in every subject in every year. The PAsecureID system (Pennsylvania's state-wide student identifier) will allow Pennsylvania to track students' assessment information across time, across districts and across the state. This will allow Pennsylvania to maximize the number of student projections used in the projection to proficiency model. For students who do not have sufficient data to calculate a projected score, their current observed score will be used in the calculation of the percent of students projected to perform at the proficient level. In this way, all students will be included in the calculation of the percent projected to proficiency.

o Students with severe cognitive disabilities who take the Pennsylvania Alternate System of Assessment (PASA) will use the current score. In the future when Pennsylvania implements assessments, such as the modified 2% alternate assessment as approved by USDOE in 2007, Pennsylvania will implement these assessments as part of the statewide growth model.

appropriately when applied in the growth model context? For example, a State that defines FAY as "participating in the assessment in the same school the previous year" will need to modify that definition for its growth proposal to include students who cross school boundaries over time. ➢ What does the State propose to do to measure academic growth for students in grade three or the initial grade tested? ➢ How does the State propose to distinguish between growth for a student who moves from one grade level to another and growth for a student who is retained in a grade level for two years or is promoted at mid-year? B. What other strategies will the State use to include, in its NCLB accountability system, students who might be excluded from the growth model calculations?	For the growth model the student will be attributed to the same grade they are attributed for other AYP determinations as defined in PA's USDOE Accountability Workbook. B. If a student does not have a previous PSSA score, his/her current score will be used instead of a projected score.
4.1.2 Does the State's growth model address the inclusion of all subgroups appropriately? A. States must ensure that student subgroups are neither systematically nor inadvertently excluded from participation in the growth model; the model cannot eliminate or minimize the contribution of each subgroup. Are the State's proposed rules for determining how to include subgroup accountability in the growth model technically and educationally sound? ➢ Has the State adequately addressed implications of	4.1.2 A. The projection to proficiency model holds schools accountable for the achievement of ALL subgroups in both reading and math. All subgroups must meet the AMO in the content area for that year.

its proposed growth model for subgroup inclusion in addition to that in Core Principle 1? (For example, has it addressed "minimum group-size" requirements for subgroups?) ➤ Does the State have an appropriate proposal for including students who change subgroup classification over the time period when growth is calculated (e.g., LEP to non-LEP)? ➤ If applicable, how does the State proposal address the needs of students displaced by Hurricanes Katrina and Rita? For example, how does the proposal interact with State plans, if any, to develop a separate subgroup of displaced students, consistent with the Secretary's guidance of Sept. 29, 2005?	➤ Since AYP determination occurs each year for students as identified on the current state assessment, a change in subgroup status will not affect the calculation of individual student projections. Student scores, whether current or projected, will be assigned to the subgroup to which the student belongs in the current year. ➤ There is no subgroup in Pennsylvania to address the needs of students displaced by Katrina or Rita.

4.1.3   Does the State's growth model address the inclusion of all schools appropriately?
 	
    A. Does the State provide an adequate plan and rationale for how the system will be applied to all schools consistently across the State to yield an AYP determination each year? Has the State adequately described and provided a rationale for any proposed exceptions?
 	
      ➤ The State may propose to apply the growth model only to schools with adequate assessment data. If that is the case, it should propose how other schools, such as K-2 schools, single-grade
	4.1.3
	
	 A. All Pennsylvania schools and districts receive an AYP determination each year. The projection to proficiency model will be included as an additional AYP measure applied to all students in these determinations.
	
	 ➤ Beginning in 2007-08, the proposed amendment will be implemented for all districts in Pennsylvania. Pennsylvania's uniform statewide identifier (PAsecureID) for students addresses the issues of mobility and changes in district/school conditions. The data for each student will be archived in a

schools, and high schools, will be held accountable (e.g., through continuing its approved statutory AYP/safe harbor accountability system for those schools). ➢ The State should propose how it will deal with common conditions that would preclude the calculation of a growth score (e.g., school boundary changes, school closings, new schools, grade reconfiguration). ➢ How would the model ensure that all schools are accountable for student achievement, even when the number of tested students in the school is small or constantly changing?	unique test history record that is independent of school attendance or school changes. ➢ The projection to proficiency model will adhere to the existing provisions outlined in the Accountability Workbook; specifically AYP proficiency determinations will not be calculated for subgroups with fewer than 40 students. In addition, the statistical methodology for projecting performance on a future assessment requires a minimum of 10 students per grade level. Projections will not be calculated for schools that do not meet this criterion. In these very rare cases or for schools that do not contain any of the PSSA tested grades, accountability determinations will be determined as specified in the USDOE approved Accountability Workbook.

Core Principle 5: State Assessment System and Methodology	
"The State's NCLB assessment system, the basis for the accountability model, must include annual assessments in each of grades three through eight and high school in both reading/language arts and mathematics, must have been operational for more than one year, and must receive approval through the NCLB peer review process for the 2005-06 school year. The assessment system must also produce comparable results from grade to grade and year to year." (Secretary Spellings' letter, 11/21/05)	
Peer Review Questions	**Pennsylvania Response**
5.1 Has the State designed and implemented a Statewide assessment system that measures all students annually in grades 3-8 and one high school grade in reading/language arts and mathematics in accordance with NCLB requirements for 2005-06, and have the annual assessments been in place since the 2004-05 school year?	5.1

5.1 Peer Review Probe Questions

5.1.1 Provide a summary description of the Statewide assessment
    system with regard to the above criteria.

  ➤ For both 2004-05 and 2005-06, did the State implement an
    assessment system that measures State adopted content
    standards in reading/language arts and mathematics?

  ➤ Did the State produce individual student, school, and district
    test results for both years?

5.1.2 Has the State submitted its statewide assessment system for
    NCLB Peer Review and, if so, was it approved for 2005-06?

  ➤ If it was not fully approved, what are the deficiencies and to
    what extent will they affect the State's ability to measure
    growth in each subject?

  ➤ If the State has not yet received approval of its assessment
    system, when does the State plan to submit evidence of

5.1.1

  ➤ Pennsylvania fully implemented its state system of assessment
    called the Pennsylvania System of School Assessment
    (PSSA), in grades 3-8 and 11, in 2005-2006. Mathematics and
    reading have been assessed in grades 5, 8 and 11 for many
    years and the State was compliant with the assessment
    requirements of Improving America's School Act (IASA).
    Mathematics and reading assessments in grade 3 have been
    in place for four years. All of the state assessments are
    aligned with the Pennsylvania State Academic Content
    Standards for reading and math. The spring of 2008 will mark
    the 3rd administration of PSSA in all grades. The State
    produces student, school and district reports for all state
    assessments. The alignment and rigor of the PSSA was
    independently verified by HumRRO in 2004 and ACHIEVE in
    2004 and 2005.

5.1.2   Pennsylvania submitted its statewide assessment system
    for NCLB Peer Review in May 2006 and received the
    classification "Approval Pending – 2 Issues". However,
    PDE has addressed all peer review findings as outlined in
    Dr. Johnson's letter and submitted this evidence in
    January, 2007 after incorporating the comments and
    suggestions from the State's technical advisory committee
    at the conclusion of the November 30-December 1, 2006
    meeting. Pennsylvania's assessment system was

compliance with the NCLB standards and assessment requirements?	approved by USDOE on August 28, 2007.
5.2 How will the State report individual student growth to parents? **5.2 Peer Review Probe Questions** 5.2.1 How will an individual student's academic status be reported to his or her parents in any given year? What information will be provided about academic growth to parents? Will the student's status compared to the State's academic achievement standards also be reported?	5.2 5.2.1 Each school district in Pennsylvania receives information on student projections linked to future assessments via a secure reporting system. A printable version of each student's projection information is available for schools to share with parents along with their student's status measures. Communication with parents regarding their child's projection to proficiency includes a clear distinction between the attainment of proficiency and the projection to proficiency. Pennsylvania will continue to support local districts in their communication with their constituencies through a variety of resources and professional development opportunities. Other methods currently in place to provide parents with information about an individual student's, school's, or district's status in relationship to Pennsylvania standards and AYP targets will continue to be provided to the parents via methods such as Pennsylvania's online AYP reporting system and Pennsylvania's individual student and summary print reporting system.
5.3 Does the Statewide assessment system produce comparable information on each student as he/she moves from one grade level to the next?	5.3 In SY05-06, Pennsylvania instituted PAsecureID, a unique student identifier that enables the Department of Education to produce comparable and longitudinal information on each

individual student. A variety of methods are utilized to track and compare student achievement levels from year to year, including but not limited to the online interactive data analysis and state assessment report website.

5.3 Peer Review Probe Questions

The State assessment system – that is the achievement levels and content expectations – needs to make sense from one grade to the next, and even within achievement levels for it to support a growth model. These probes will help the peers understand the assessment system's capability for use in growth models.

Pennsylvania has established a carefully articulated system of content expectations and achievement standards to support content-based inferences of student progress across grade levels. In June, 2006, the PA State Board adopted the Performance Level Descriptors and the PSSA Performance Level Cut Scores for grades 4, 6, and 7 in mathematics and reading to be used with previously established Performance Level Descriptors and Cut Scores for grades 3, 5, 8 and 11. An up-to-date technical guide on the state assessment is published each year and is available for further information.

5.3.1 Does the State provide evidence that the achievement score scales have been equated appropriately to represent growth accurately between grades 3-8 and high school? If appropriate, how does the State adjust scaling to compensate for any grades that might be omitted in the testing sequence (e.g., grade 9)?

Did the State provide technical and statistical information to document the procedures and results? Is this information current?

5.3.1 PSSA does not use a vertically-equated score scale across grades. There are many legitimate criticisms of vertical score scales (e.g., Hill, et al., Lissitz & Huynh, 2003) and PDE felt that a system of vertically-articulated achievement standards would lead to more valid inferences about growth than vertical score scales.
Pennsylvania publishes and makes available on the Department of Education website, technical statistical information on the PSSA for each year of its administration. Technical documents are produced immediately after release of scores. Technical analyses are available at http://www.pde.state.pa.us/

5.3.2 If the State uses a variety of end-of-course tests to count as the high school level NCLB test, how would the State ensure that comparable results are obtained across tests?[Note: This question is only relevant for States proposing a growth model for high schools and that use different end-of-course tests for AYP.]	5.3.2 Pennsylvania does NOT currently use end of course tests for AYP determinations. If these are implemented in the future, Pennsylvania will implement them as a part of its statewide growth model.
5.3.3 How has the State determined that the cut-scores that define the various achievement levels have been aligned across the grade levels? What procedures were used and what were the results?	5.3.3 PDE and its test contractor with advice from a neutral technical advisory committee designed the standards validation procedure to maximize the likelihood that the content and normative interpretations will lead to valid inferences about student progress across grades relative to the underlying content demands. An extensive set of methods, based on a modified Bookmark procedure, were used to ensure that the meaning of the various cut scores across grades, particularly the proficient score, were well articulated in terms of the content standards. Among other strategies, the technical consultants suggested "starting points" to focus the Bookmark deliberations and relied on cross-grade level discussions to help articulate the cut scores across grades.
5.3.4 Has the State used any "smoothing techniques" to make the achievement levels comparable and, if so, what were the procedures?	5.3.4 Statistical smoothing approaches—approved by the technical advisory committee—were used to ensure the comparability of the achievement levels. Details are available in the technical analyses available on the Department of Education website at http://www.pde.state.pa.us/

5.4 Is the Statewide assessment system stable in its design?	5.4
5.4 Peer Review Probe Questions	
5.4.1 To what extent has the statewide assessment system been stable in its overall design during at least the 2004-05 and 2005-06 academic terms with regard to grades assessed, content assessed, assessment instruments, and scoring procedures?	5.4.1 Statewide assessments in mathematics and reading for grades 3, 5, 8 and 11 have been stable for several years. Assessments in grades 4, 6, and 7 were field tested in 2004-05 and are now fully operational. No changes are anticipated for the testing system in the foreseeable future.
5.4.2 What changes in the statewide assessment system's overall design does the State anticipate for the next two academic years with regard to grades assessed, content assessed, assessment instruments, scoring procedures, and achievement level cut-scores? ➤ What impact will these changes have on the State's proposed growth model? How does the State plan to address the assessment design changes and maintain the consistency of the proposed growth model?	5.4.2 Pennsylvania will continue with its current statewide assessment system regarding mathematics and reading for the foreseeable future. No changes are anticipated to Pennsylvania's assessment system that would require adjustments to be made in the proposed growth model.

Core Principle 6: Tracking Student Progress	
"The accountability model and related State data system must track student progress." (Secretary Spellings' letter, 11/21/05)	
Peer Review Questions	**Pennsylvania Response**
6.1 Has the State designed and implemented a technically and educationally sound system for accurately matching student data from one year to the next?	6.1

6.1 Peer Review Probe Questions

6.1.1   Does the State utilize a student identification number system or does it use an alternative method for matching student assessment information across two or more years? If a numeric system is not used, what is the process for matching students?

6.1.1 Pennsylvania received a three-year, $4 million USDOE grant to implement a longitudinal student data system. This includes the implementation of a unique statewide student identifier-PAsecureID. Pennsylvania implemented a growth model in 2002 that uses district-level identifiers. The PAsecureID was implemented in SY05-06 ensuring the integrity of longitudinal merging needed to yield a data metric for AYP.

6.1.2   Is the system proposed by the State capable of keeping track of students as they move between schools or school districts over time? What evidence will the State provide to ensure that match rates are sufficiently high and also not significantly different by subgroup?

6.1.2 The PAsecureID system will enable accurate tracking of students across districts. Match rates are contained in Appendix H.

6.1.3   What quality assurance procedures are used to maintain accuracy of the student matching system?

6.1.3 The PAsecureID system includes quality assurance checks and validation protocols.

6.1.4   What studies have been conducted to demonstrate the percentage of students who can be "matched" between two academic years? Three years or more years?

6.1.4 Pennsylvania's experience with using district-level identifiers demonstrates its capacity to yield growth measures and track students over time. SAS, Inc., does a multi-field merge of historical student data to yield reporting (see Appendix H). PAsecureID ensures the highest levels of match rates at a state level.

6.1.5 Does the State student data system include information indicating demographic characteristics (e.g., ethnic/race category), disability status, and socio-economic status (e.g., participation in free/reduced price lunch)?	6.1.5 The Pennsylvania longitudinal data structure will contain data regarding all NCLB student demographic characteristics. These data are used for the purposes of merging student records and reporting results for AYP. Demographic variables are not used in the growth model methodology.
6.1.6 How does the proposed State growth accountability model adjust for student data that are missing because of the inability to match a student across time or because a student moves out of a school, district, or the State before completing the testing sequence?	6.1.6 The projection methodology used in Pennsylvania is remarkable in that it utilizes student records with similar testing performance histories in its modeling process. Therefore, the issue of "fractured records" or missing data is NOT of any consequence. If a student does not have the minimum number of PSSA data points (three), the projection to proficiency model will use the student's current-year score in the calculation of the percent of students projected to perform at the proficient level. In this way, ALL students will be included in the calculation. For a further discussion of the projection methodology, see Appendix A.
6.2 Does the State data infrastructure have the capacity to implement the proposed growth model? **6.2 Peer Review Probe Questions**	6.2 The capacity for storage, merging and analyses for the proposed growth model exceeds the requirements for this proposal now and for the future. A statewide longitudinal data structure was established for PVAAS in 2002.
6.2.1 What is the State's capability with regard to a data warehouse system for entering, storing, retrieving, and analyzing the large number of records that will be accumulated over time?	6.2.1 Pennsylvania has demonstrated its capability of managing longitudinal data structures. Since 2002, Pennsylvania has been building a longitudinal student level data warehouse system. For the past two years, this system has been utilized to calculate projections to proficiency for all students in the system.

6.2.2	What experience does the State have in analyzing longitudinal data on student performance?	6.2.2 Pennsylvania has been involved with longitudinal data structures and their analyses for growth since 2002 with 100 pilot districts and since SY05-06 with all 501 school districts. These analyses included value-added reports for school improvement and student projections of performance on future assessments, the proposed metric for this proposal.
6.2.3	How does the proposed growth model take into account or otherwise adjust for decreasing student match rates over three or more years? How will this affect the school accountability criteria?	6.2.3 Pennsylvania believes that the successful implementation of PAsecureID will adequately address the issue of decreasing match rates. Pennsylvania's four-year experience with the 100 pilot districts and recent expansion to all 501 school districts verifies that a unique identifier will be effective in this regard. This will be reassessed annually. Should decreasing match rates disable the option of calculating projections for a particular student, the student's current status measures will be used for AYP purposes.

Core Principle 7: Participation Rates and Additional Academic Indicator	
The accountability model must include student participation rates in the State's assessment system and student achievement on an additional academic indicator. (Secretary Spellings' letter, 11/21/05)	
Peer Review Questions	**Pennsylvania Response**
7.1 Has the State designed and implemented a Statewide accountability system that incorporates the rate of participation as one of the criteria?	7.1 The projection to proficiency model only applies to reading and math proficiency. Schools and districts with subgroups that do not meet the 95% participation rate or the other indicator requirements will not make AYP.

7.1 Peer Review Probe Questions

7.1.1   How do the participation rates enter into and affect the growth model proposed by the State?

7.1.1   Pennsylvania currently has "participation" as one variable in its accountability plan and will continue to include this data as a measure of accountability as defined in the current approved Pennsylvania Accountability Workbook.

7.1.2   Does the calculation of a State's participation rate change as a result of the implementation of a growth model?

7.1.2   The proposed amendment does not change the participation policy accepted in the current approved Accountability Workbook by USDOE.

7.2 Does the proposed State growth accountability model incorporate the additional academic indicator?

7.2 Peer Review Probe Questions

7.2.1   What are the "additional academic indicators" used by the State in its accountability model? What are the specific data elements that will be used and for which grade levels will they apply?

7.2   All academic indicators included in Pennsylvania's approved Accountability Workbook will continue to be followed. Pennsylvania's proposed amendment incorporates no additional academic indicators.

7.2.2   How are the data from the additional academic indicators incorporated into accountability determinations under the proposed growth model?

Appendix A – Rationale for the Projection Model

The intent of the NCLB Growth Model Pilot Program is to explore how schools, which have not met the existing AYP standards, are to be given credit for having created a learning environment which has sufficiently accelerated student academic progress.   Ensuring that students who are not currently proficient are on performance trajectories to proficiency gives all students a high likelihood of being proficient in the future, with the ultimate goal of 100% of students being proficient by 2014.   There are many different growth models that have been proposed by other states to be vehicles to provide a measurement to evaluate if schools, which have not met AYP with either the status or the safe harbor option, have accelerated student progress sufficiently to be given credit for meeting AYP.   Pennsylvania is proposing a model that has been rigorously reviewed by USDOE and is 100% aligned to the NCLB goal of 100% proficiency by 2014.

Pennsylvania chose to use the projection to proficiency model developed initially by William Sanders and colleagues for the following reasons:

- Unlike some proposed growth curve models, there is no requirement that the tests scores (Ys and Xs) be vertically linked; indeed, they need not even have to be from the same test company or even in the same subject! The important feature is that the X-values be good predictors of the Y-value. This provides an enormous amount of flexibility in the choice of what could be projected and which predictors (Xs) to use in making the projections and avoids many of the psychometric issues raised as criticisms of other growth models. This also provides Pennsylvania with flexibility if adjustments are ever needed in the state's assessment system.

- Even if vertically linked scales are deployed, there is no assumption required about the overall shape of the growth curve.

- Missing values are easily handled so that different students can have different sets of predictors.

- This unique methodology allows each student in the state to have individual projections because of the efficiency of the computational strategy deployed.

Model and computational details

The basic methodology is simply to use a student's past scores to project a future score. At first glance, the model used to obtain the projections appears to be no more complex than "ordinary multiple regression," the basic formula being:

$$\text{Projected\_Score} = M_Y + b_1(X_1 - M_1) + b_2(X_2 - M_2) + ... = M_Y + \mathbf{x}_i^T \mathbf{b}$$

where M_Y, M_1, etc. are estimated mean scores for the response variable (Y) and the predictor variables (Xs). However, several circumstances cause this to be other than a straightforward regression problem.

1. Not every student will have the same set of predictors; that is, there is a substantial amount of "missing data."

2. The data are hierarchical: students are nested within schools and districts, and the regression coefficients need to be calculated in such a way as to properly reflect this.

3. The mean scores that are substituted into the regression equation also must be chosen to reflect the interpretation that will be given to the projections.

The missing data problem can be solved by finding the covariance matrix of all the predictors plus the response, call it $\mathbf{C}$, with submatrices $\mathbf{C_{XX}}$, $\mathbf{C_{XY}}$ (and $\mathbf{C_{YX}} = \mathbf{C_{XY}}^T$), and $\mathbf{C_{YY}}$. The regression coefficients (slopes) can then be obtained as $\mathbf{b} = \mathbf{C_{XX}}^{-1}\mathbf{C_{XY}}$. For any given student, one can use the subset of $\mathbf{C}$ corresponding to that student's set of scores to obtain the regression coefficients for projecting that student's Y value. Because of the hierarchical nature of the data, the covariance matrix $\mathbf{C}$ must be a pooled-within-school covariance matrix.

The covariance matrix of these centered scores may be obtained by maximum likelihood (ML) estimation using the EM algorithm implemented in the MI procedure in SAS/STAT, or similar commercially available software. ML is used because of the pervasiveness of missing data which makes estimation with complete cases only (listwise deletion) or with available cases (pairwise deletion) inadvisable. See R. J. A. Little (1992), Regression with Missing X's: A Review, *Journal of the American Statistical Association*, vol. 87, pp. 1227-1237; or P. T. von Hippel (2004), Biases in SPSS 12.0 Missing Value Analysis, *The American Statistician*, vol. 58, pp. 160-164.

Because the variances and covariances are ML estimates, the resulting regression coefficients are ML estimates, with all their desirable properties. Under the MAR assumption (which is much less stringent than the MCAR assumption), ML estimates are unbiased, and they use all the information available in the data rather than excluding scores of students with incomplete data. Because the ML estimates already use all the information available in the data, there is nothing to be gained by imputation. Imputed values would simply be re-using information that has already been used to obtain the ML estimates.

Once the C matrix is obtained, then the projection parameters for individual students can be obtained as outlined above and utilized for the projections for subsequent cohorts. This can be programmed with various commercially available software tools that allow matrix language programming. The following is a simple numeric example of how the projections are calculated.

Examples of Projection Calculations

In these examples, the projected value of the response variable Y (6th grade math) is based on values of predictor variables X1 to X6: 3rd grade math, 3rd grade reading, 4th grade math, 4th grade reading, 5th grade math, 5th grade reading. The scores have all been converted to the NCE scale with (approximately) a mean of 50 and a standard deviation of 21.06 in the chosen reference population.

Assume that, using data from an earlier cohort of students, we have estimated the following.

The pooled within-schools correlation matrix with rows/columns representing 3rd grade math, 3rd grade reading, 4th grade math, 4th grade reading, 5th grade math, 5th grade reading, and 6th grade math is:

$$
\begin{array}{c}
\text{Math.3} \\
\text{Read.3} \\
\text{Math.4} \\
\text{Read.4} \\
\text{Math.5} \\
\text{Read.5} \\
\text{Math.6}
\end{array}
\begin{bmatrix}
1.0 & 0.72 & 0.75 & 0.64 & 0.71 & 0.62 & 0.70 \\
0.72 & 1.0 & 0.69 & 0.72 & 0.63 & 0.73 & 0.60 \\
0.75 & 0.69 & 1.0 & 0.70 & 0.76 & 0.66 & 0.72 \\
0.64 & 0.72 & 0.70 & 1.0 & 0.67 & 0.75 & 0.63 \\
0.71 & 0.63 & 0.76 & 0.67 & 1.0 & 0.70 & 0.76 \\
0.62 & 0.73 & 0.66 & 0.75 & 0.70 & 1.0 & 0.70 \\
0.70 & 0.60 & 0.72 & 0.63 & 0.76 & 0.70 & 1.0
\end{bmatrix}.
$$

The pooled within-schools standard deviations for are: 22, 20, 19, 18, 23, 22, and 24.

Then the pooled within-schools covariance matrix is:

$$
\mathbf{C} = \begin{bmatrix} \mathbf{C}_{XX} & \mathbf{c}_{XY} \\ \mathbf{c}_{YX} & c_{YY} \end{bmatrix} =
\begin{bmatrix}
484.0 & 316.8 & 313.5 & 253.4 & 359.3 & 300.1 & | & 369.6 \\
316.8 & 400.0 & 262.2 & 259.2 & 289.8 & 321.2 & | & 288.0 \\
313.5 & 262.2 & 361.0 & 239.4 & 332.1 & 275.9 & | & 328.3 \\
253.4 & 259.2 & 239.4 & 324.0 & 277.4 & 297.0 & | & 272.2 \\
359.3 & 289.8 & 332.1 & 277.4 & 529.0 & 354.2 & | & 419.5 \\
300.1 & 321.2 & 275.9 & 297.0 & 354.2 & 484.0 & | & 369.6 \\
- & - & - & - & - & - & + & - \\
369.6 & 288.0 & 328.3 & 272.2 & 419.5 & 369.6 & | & 576.0
\end{bmatrix}.
$$

The estimated population mean scores (averaged over all schools) are: 52, 49, 51, 50, 53, 52, 54.

Student #1. Consider a student with scores Math.3 = 35, Read.3 = 32, Math.4 = 36, Read.4 = 30, Math.5 = 41, Read.5 = 37 (Math.6 is unknown, of course). The projected value of Math.6, using all six predictors, uses the pooled within-schools regression coefficients obtained from the above pooled within-schools covariance matrix:

$$
\mathbf{b} \;=\; \mathbf{C}_{XX}^{-1}\mathbf{c}_{XY} \;=\;
\begin{bmatrix}
484.0 & 316.8 & 313.5 & 253.4 & 359.3 & 300.1 \\
316.8 & 400.0 & 262.2 & 259.2 & 289.8 & 321.2 \\
313.5 & 262.2 & 361.0 & 239.4 & 332.1 & 275.9 \\
253.4 & 259.2 & 239.4 & 324.0 & 277.4 & 297.0 \\
359.3 & 289.8 & 332.1 & 277.4 & 529 & 354.2 \\
300.1 & 321.2 & 275.9 & 297.0 & 354.2 & 484.0
\end{bmatrix}^{-1}
\begin{bmatrix}
369.6 \\ 288.0 \\ 328.3 \\ 272.2 \\ 419.5 \\ 369.6
\end{bmatrix}
\;=\;
\begin{bmatrix}
0.2523 \\ -0.1270 \\ 0.2397 \\ -0.0076 \\ 0.3335 \\ 0.3154
\end{bmatrix}.
$$

The projected Math.6 score is therefore:

$$
\begin{aligned}
\text{Projected} \;&=\; \hat{\mu}_Y + \mathbf{b}'(\mathbf{x} - \hat{\mu}_X) \\
&= 54 + (0.2523)(35\text{–}52) - (0.1270)(32\text{–}49) + (0.2397)(36\text{–}51) \\
&\quad - (0.0076)(30\text{–}50) + (0.3335)(41\text{–}53) + (0.3154)(37\text{–}52) \\
&= 39.6914.
\end{aligned}
$$

Student #2. Consider another student with scores Math.4 = 43, Read.4 = 48, Math.5 = 36, Read.5=42, but no scores for Math.3 or Read.3. In this case only those parts of $\mathbf{C}_{XX}$ and $\mathbf{c}_{XY}$ corresponding to Math.4, Read.4, Math.5 and Read.5 are used:

$$
\mathbf{b} \;=\;
\begin{bmatrix}
361.0 & 239.4 & 332.1 & 275.9 \\
239.4 & 324.0 & 277.4 & 297.0 \\
332.1 & 277.4 & 529.0 & 354.2 \\
275.9 & 297.0 & 354.2 & 484.0
\end{bmatrix}^{-1}
\begin{bmatrix}
328.3 \\ 272.2 \\ 419.5 \\ 369.6
\end{bmatrix}
\;=\;
\begin{bmatrix}
0.3273 \\ -0.0099 \\ 0.3966 \\ 0.2929
\end{bmatrix}.
$$

The projected Math.6 score is

$$
54 + (0.3272)(43\text{–}51) - (0.0099)(48\text{–}50) + (0.3966)(36\text{–}53) + (0.2929)(42\text{–}52) \;=\; 41.7299.
$$

In like manner, projections for any student regardless of the number of prior scores could be obtained by using the appropriate subset of the covariance structure that would conform to the existence of that particular student's data vector. However, projections are made only for those students who have at least three prior scores. In the event that three prior scores are not available, then that student's status proficiency determination is used in the percent proficiency calculation.

Appendix B – Projected Validity Results

Once the projected values for each student are obtained, the question becomes (raised by the previous peer reviewers) "do these projections have appropriate reliabilities and are there innate biases which would either over or under project students in certain schools and with various levels of prior attainment?" The following results were obtained from the Tennessee Department of Education as these questions have been previously addressed with that Department's data and validated by USDOE peer reviewers.

What is the relationship between the projected scores and the observed scores in the future? Table 3 displays the multiple correlation coefficients between the projected scores and the subsequent observed scores in the future. With four prior scores, the multiple correlation is higher three years in advance than the simple correlation between adjacent years (not shown). The projected scores came from models that were developed on a pooled within school basis for all schools in Tennessee using computational methods as outlined above.

Table 3. Relationship Between Projected Scores and Later Observed Scores

Without Future School Effects Added					
Multiple Correlation Between Prior Projected Score and Current Score					
Subject	**Grade**	**Years in Advance**	**No. of Prior Scores**	**Prior Grades**	**Multiple Correlation**
Math	8	1	20	Grades 3-7	0.879
Math	8	1	12	Grades 5-7	0.877
Math	8	1	8	Grades 6-7	0.873
Math	8	1	4	Grades 7-7	0.862
Math	8	2	12	Grades 4-6	0.847
Math	8	2	8	Grades 5-6	0.843
Math	8	2	4	Grades 6-6	0.827
Math	8	3	12	Grades 3-5	0.817
Math	8	3	8	Grades 4-5	0.814
Math	8	3	4	Grades 5-5	0.802
Reading/Lang. Arts	8	1	20	Grades 3-7	0.854
Reading/Lang. Arts	8	1	12	Grades 5-7	0.853
Reading/Lang. Arts	8	1	8	Grades 6-7	0.849
Reading/Lang. Arts	8	1	4	Grades 7-7	0.835

Reading/Lang. Arts	8	2	12	Grades 4-6	0.830
Reading/Lang. Arts	8	2	8	Grades 5-6	0.828
Reading/Lang. Arts	8	2	4	Grades 6-6	0.813
Reading/Lang. Arts	8	3	12	Grades 3-5	0.804
Reading/Lang. Arts	8	3	8	Grades 4-5	0.803
Reading/Lang. Arts	8	3	4	Grades 5-5	0.795

This table clearly displays that the correlation between projected scores and observed score (for the year of the projection) exceeded 0.80 even when projecting 3 years in advance.

Appendix C – History of Growth Models in Pennsylvania

While the use of a growth model as a part of a state's accountability plan for NCLB has only recently become open for national discussion, Pennsylvania has been implementing the use of a growth metric at a state level for the past four years. The Pennsylvania Department of Education has taken a national lead in the use of a growth model as part of its ongoing statewide school improvement process. The Pennsylvania Value-Added Assessment System (PVAAS), the Pennsylvania Department of Education's proposed growth model, is a system that began pilot implementation in 2002 and has evolved to statewide implementation during the 2005-2006 school year. One of the unique features of PVAAS is the capability of calculating projections to proficiency for students in the longitudinal database without bias for student demographics or school characteristics, unlike other value-added models.

Initially recommended to PDE by the Pennsylvania League of Urban Schools (PLUS) in 2002, it was reviewed by a No Child Left Behind statewide committee of practitioners who recommended it as part of the Pennsylvania Accountability Workbook for NCLB. The Pennsylvania State Board of Education subsequently passed a resolution to adopt "a value-added approach across the Commonwealth." In 2002, the PVAAS model was selected because of the rigorous statistical methodology used to yield value-added analysis. The PVAAS model uses all available student data as part of its analysis and does not allow schools or districts to "make excuses" about achievement due to demographics and/or school characteristics. The excuses for low achievement are removed with the PVAAS model of growth analyses.

Initially, PVAAS operated as a pilot with 100 participating school districts, including the Pittsburgh Public School District and the School District of Philadelphia. These districts supplied archived data from standardized testing from past years to yield growth reports. As Pennsylvania moved into its statewide implementation, school districts received a value-added analysis using the PSSA performances of their students in grades 3 through 8 and projections to performance in future grades. In the fall of 2007, all 501 districts received value-added reports at the district, school, subgroup and student level for grades 4 through 8, and student projection reports projecting to grades 4 through 8 and 11. These reports are web-based via a secure password for the superintendent and easily accessible to the designated school personnel to use as part of a continuous school improvement process. In addition, beginning in the fall of 2006, projections of future performance using the PVAAS data were available to all districts and schools.

Pennsylvania has consistently sought to include a wide range of stakeholders as it developed its plan for the use of PVAAS statewide. In October 2004, the Pennsylvania Secretary of Education, Gerald L. Zahorchak, D.Ed., formed a statewide work group of over 50 education, legislative, association, parent advocacy, and business leaders to assist with the implementation of PVAAS in Pennsylvania (See Appendix F for a list of workgroup members). This group provides ongoing advisement to the Department regarding communications about PVAAS, as well as statewide implementation and professional development. This group provided support and feedback in

the development of Pennsylvania's proposal to USDOE for a growth model as a part of its Accountability Workbook. Through the use of this powerful partnership, the Pennsylvania Department of Education has sought to strengthen the use of PVAAS in accomplishing their shared goals of improved student achievement and progress.

Successful implementation of a growth measure is much more than the provision of a growth metric. Communications, professional development and technical assistance are essential components for successful implementation. Pennsylvania has three years of experience of providing statewide communications, extensive statewide professional development and district/school-level technical assistance to its schools as part of the PVAAS pilot program. Pennsylvania had resources allocated and committed to support these areas for statewide implementation for SY02-03, SY03-04, SY04-05, as well as SY05-06 and SY06-07 through SY09-10.

- ➢ Communication Materials: The Pennsylvania Department of Education has produced a series of communication materials designed to provide an overview of PVAAS. This communication kit is available on the PDE website to stakeholders across the Commonwealth. These materials have been disseminated to all 501 district superintendents, curriculum directors, special education coordinators, over 3,000 building principals, and intermediate units, as well as statewide organizations. The communication kit includes the following materials: *Introductory Guide for Pennsylvania Educators, PVAAS History, Intent and Timeline for Implementation Tri-fold, PVAAS Pilot Districts/Map, Educator Testimonials, Value-Added FAQ, PVAAS FAQ, Press Release for Districts, Tips on Communicating with Your School Board and Community about PVAAS, Benefits for District Administrators, Benefits for Building Principals, Benefits for Teachers and Pilot District Stories*

- ➢ Professional Development: A cadre of materials that assist with navigation of the PVAAS website, interpretation of PVAAS reports and the integration of PVAAS with other statewide initiatives were provided to all districts/school in Pennsylvania.

- ➢ Technical Assistance: A statewide core team of consultants was extensively trained in the methodology of PVAAS and the interpretation of PVAAS reports. This team has provided district/school level technical assistance in the interpretation and use of the PVAAS growth measures. In Fall 2007, this core team provided "train the trainer" workshops to intermediate units and school districts in the principles and use of the PVAAS model. These trainings included 64 separate trainings and 1,800 educational professionals across the entire Commonwealth.

- ➢ Communications: In addition to supporting those participating in the PVAAS pilot, the core team has presented extensively at national, state and local conferences sponsored by professional organizations on the principles of PVAAS.

This extensive commitment to the understanding and use of a growth model allows Pennsylvania a unique "head start" in formalizing the concept of growth paired with its accountability plan. Pennsylvania is poised and willing to serve as a national model for the comprehensive use of a growth model as a part of NCLB.

Appendix D – Integration of Growth Model

Pennsylvania has actively been pursuing the integration of assessment data for instructional decision-making since 2001. Through the Pennsylvania Department of Education's efforts, the following data tools continue to be implemented throughout the Commonwealth:

➢ PVAAS – The Pennsylvania Value-Added Assessment System provides insight into the academic growth of students in addition to the status measures provided by the PSSA and provides projections to proficiency of future performance for all students. (Established in 2002; Statewide Implementation 2006)

➢ Pennsylvania Benchmark Assessment System –Benchmark assessments focusing on achievement of proficiency on the Pennsylvania State Standards in mathematics and reading have been implemented in over 400 districts (approximately 18,000 classrooms) in grades 3 through 11.

➢ Pennsylvania's online data analysis and report website– A sophisticated, secure web-based data tool for analyzing status measures from the PSSA has been available to districts.

➢ Pennsylvania online AYP reporting system – This web-based tool allows access to AYP data for all educators and the general public for all districts and schools in the Commonwealth.

➢ Pennsylvania Achievement Reports –A secure web-based data tool available to educators containing status data with recommendations and support materials for school use. A non-secure version can be accessed by the general public and includes information for parents and the community.

Pennsylvania is striving to support districts in using an integrated implementation of all of these sources of status, improvement and growth data to inform curricular and instructional decision-making focused on the achievement of proficiency of all students. Pennsylvania has identified that PVAAS is an established and reliable measure of academic growth that provides an important complement to status measures in this regard. The use of both status and growth measures has demonstrated benefits in deliberations for educational improvements for all students at all levels and stages of development. Pennsylvania is integrating PVAAS into the following statewide improvement efforts:

➢ School Improvement Planning process and documents required by AYP determinations

➢ Strategic Planning Processes

➢ Educational Assistance Programs (EAP) to support efforts with students in need of additional support - Tutoring

➢ Statewide Benchmark Assessment Implementation

➢ Statewide Progress Monitoring Initiatives

➢ Statewide Mathematics Initiatives

➢ Statewide Reading Initiatives

➢ Distinguished Educator Supports - Technical assistance supports to schools in Corrective Action

➢ Governor's Institutes: Professional Development Institutes on Accountability and School Improvement

➢ Higher Education

➢ Pennsylvania Inspired Leadership (PIL)– a leadership program for school principals

Appendix E – References

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Appendix F – Members of the Pennsylvania Value-Added Assessment System Statewide Work Group

Ms. Bonita Allen, Title I State Parent Advisory Council
Ms. Caroline Allen, State PTA
Dr. Joseph Bard, PA Association of Rural and Small Schools (PARSS)
Dr. James Barker, Erie City SD
Ms. Esther Bush, Urban League of Pittsburgh
Dr. Robert Cormany, PA Association of Pupil Services Administrators (PAPSA)
Mr. Ronald Cowell, Education Policy and Leadership Center (EPLC)
Ms. Linda Croushore, Mon Valley Education Consortium
Mr. Thomas Gentzel, PA School Boards Association (PSBA)
Dr. James Goodhart, PA League of Urban Schools
Mr. Rodney Green, Everett Area SD
Dr. William Hartman, PA Association of Elementary and Secondary School Principals (PAESSP)
Dr. Robert Hendrickson, Penn State University
Dr. Stanley, Herman, University of Pittsburgh
Mr. Jay Himes, PA Association of School Business Officials
Dr. Linda Hippert, South Fayette SD
Ms. Sharon Kirk, DuBois Area SD
Mr. Michael McCarthy, PA Business Roundtable
Mr. Stephen Mitchell, Allegheny Conference on Community Development
Dr. David Monk, College of Education
Mr. Harold Ohnmeis, Association for Charter Schools
Mr. Tim Potts, PA School Reform Network
Mrs. Cynthia Goldsworthy, Derry Township School District
Ms. Deb Rodes, Learning Disability Association
Dr. Jim Shields, PA Association of Intermediate Units (PAIU)
Mr. Kevin Shivers, National Federation of Independent Business
Dr. Frederick Smeigh, Distinguished Educator
Ms. Janet Stotland, Education Law Center
Dr. Walter Vicinelly, Albert Gallatin SD
Dr. Harris Zwerling, PA State Education Association (PSEA)

Appendix G – Definitions of Current Approved AYP Methods

Method	AYP is met if

Status Measure
 	
    Performance Target
 	
        Current Year
	Students meet or exceed the following percentages of proficient students:
	
	<table><tr><td>Year</td><td>2002-2004</td><td>2005-2007</td><td>2008-2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr><tr><td>Percent Proficient in Reading</td><td>45</td><td>54</td><td>63</td><td>72</td><td>81</td><td>91</td><td>100</td></tr><tr><td>Percent Proficient in Math</td><td>35</td><td>45</td><td>56</td><td>67</td><td>78</td><td>89</td><td>100</td></tr></table>

Status Measure
 	
    Performance Target
 	
        Two-year Average
	Students meet or exceed the above listed percentages using a two-year average of student performance.

Status Measure
 	
    Performance Target
 	
        Confidence Interval
	The 75% confidence interval of the percentage of proficient students contains the percentages listed in the table.

Status Measures
 	
    Performance Targets
 	
        Two-year Average
 	
            Confidence Intervals
	The confidence interval of the percentage of proficient students from the two-year average contains the percentages listed in the table.

Improvement Measures Safe Harbor	The percentage of non-proficient students in the current year is a minimum of 10% less than the percentage of non-proficient students in the previous year.

Improvement Measures
 	
    Safe Harbor
 	
        Confidence Intervals
	The confidence interval of the percentage of non-proficient students in the current year contains values that represent a reduction in the non-proficient students by a minimum of 10% from the percentage in the previous year.

Improvement Measure
 	
    Pennsylvania Performance
 	
    Index (PPI)
	Meeting PPI targets. PPI is a continuous improvement measure that detects, acknowledges, encourages, and rewards changes across the full range and continuum of academic achievement – not limited solely to the proficient level.

Appendix H – Merge Rates

Category	Grades 4-8		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8	
	Number Returning Students in 2006-2007SY	Merge Rate	Number Returning Students in 2006-2007SY	Merge Rate	Number Returning Students in 2006-2007SY	Merge Rate	Number Returning Students in 2006-2007SY	Merge Rate	Number Returning Students in 2006-2007SY	Merge Rate	Number Returning Students in 2006-2007SY	Merge Rate
Overall	638,832	97.9	102,221	94.9	127,323	98.6	131,265	98.7	136,468	98.6	141,555	98.0
Special Ed	105,442	96.8	17,033	91.9	21,347	97.8	21,663	98.1	22,269	98.1	23,130	97.0
American Indian/Alaskan Native	1,010	96.1	141	90.8	228	98.7	203	96.6	220	97.7	218	95.0
Asian/Pacific Islander	16,084	97.7	2,892	95.4	3,345	98.4	3,269	98.7	3,308	99.0	3,270	96.7
Black (not Hispanic)	100,585	96.7	16,606	92.2	19,466	97.7	20,406	97.9	21,833	98.0	22,274	97.0
Hispanic	41,321	96.2	7,049	91.9	8,404	97.2	8,509	97.4	8,663	97.2	8,696	96.3
Multi-Racial	3,443	93.6	680	89.0	822	96.1	618	96.6	676	94.7	647	91.5
White (not Hispanic)	475,093	98.5	74,669	95.9	94,881	99.1	97,973	99.1	101,479	99.1	106,091	98.6
LEP	16,144	96.8	3,406	93.3	3,661	98.2	3,182	98.0	3,046	98.1	2,849	96.6
Free Reduced Price Lunch	224,841	97.4	37,340	93.4	46,113	98.3	46,872	98.5	47,432	98.4	47,084	97.7