

**A Proposal to Administer  
An Academic Achievement Growth Model  
For Accountability Reporting for  
North Dakota Schools and Districts:**

**Addendum Clarification**

**Submitted by the**

**North Dakota Department of Public Instruction**

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**North Dakota Department of Public Instruction  
Dr. Wayne G. Sanstead, State Superintendent  
600 East Boulevard Avenue, Dept. 201  
Bismarck, ND 58505-0440  
[www.dpi.state.nd.us](http://www.dpi.state.nd.us)**

## Overview

The North Dakota Department of Public Instruction (NDDPI) seeks authorization to incorporate a growth-to-standard model of student achievement within its current state accountability system. This growth-to-standard achievement model will provide an additional means of measuring student growth in relation to the state's challenging achievement standards and reporting overall student proficiency and growth-to-proficiency for every public school, school district, and the state.

The NDDPI submits this growth-to-standard model proposal pursuant to current peer review guidance provided by the U.S. Department of Education (ED). This proposal is consistent with the principles and practices of the State's currently approved federal accountability workbook rules. Additionally, this proposal employs student achievement and demographic data derived from the North Dakota State Assessment System, which received a *Fully Approved* status from the ED in June 2007. This proposal has been adopted based on its simple and straightforward design, its transparent and verifiable metrics, and its ready accessibility to educators, parents, and the public.

On October 29, 2008, the ED requested that the NDDPI provide additional information regarding certain indicators within the North Dakota growth-to-standard model proposal. The NDDPI has prepared the following clarification narrative to clarify further the state's efforts to meet those indicators specifically identified by the ED.

### Principle 1: Universal proficiency

*Principle 1.3.1. Please provide additional justification for applying a 99 percent confidence interval to the growth model calculations. Please note that the Department has not approved the application of a confidence interval with the growth model in any state that has been approved to include a growth model in its accountability system. Please see the concerns regarding confidence intervals cited in the peers' 2006 cross-cutting document (please see <http://www.ed.gov/admins/lead/account/growthmodel/cc.doc>).*

Within its October 15, 2008 growth model proposal submission, the NDDPI provided extensive narrative and supporting data analysis within *Appendix A*, regarding the state's proposal to include a 99 percent confidence interval into the growth model proposal. The NDDPI stipulated to the current ED unofficial cross-cutting guidance regarding the use of confidence intervals within its narrative and specifically referenced language from the guidance to support the appropriateness and legitimacy of the state's proposal. The NDDPI stands by its original submission in all regards.

It is the expressed aim of the NDDPI to build parity, in design and effect, between the state's status and growth-to-standard AYP determination processes. To accomplish this aim, the NDDPI declares its intent to apply a 99 percent confidence interval within the growth-to-standard AYP determination process that is commensurate to the application of the 99 percent confidence interval used currently within the state's status AYP determination process. Confidence intervals are not used in the calculation of Safe Harbor.

The state's current use of a 99 percent confidence interval within status AYP determinations is recognized as consistent with federal regulations, has received general acceptance for its

appropriateness as a measure of assurance, and has been officially reviewed and approved by the ED for its inclusion within various states' accountability workbooks. The ED, following an extended validation process in 2003 and reaffirmed annually, has recognized the appropriate use of a 99 percent confidence interval within the North Dakota accountability plan. The use of a 99 percent confidence interval constitutes official public policy, without condition.

**It must be noted for clarity that the state's growth-to-standard model proposal asserts the use of confidence intervals only at the school-, school district-, state-, and subgroup-level. This is in keeping with the reliability measures employed within the state's current and approved accountability workbook. The state's growth-to-standard model neither states nor implies the use of confidence intervals at the individual student-level. Confidence intervals are not applied to individual student scale scores for any purpose whatsoever.**

The use of confidence intervals is designed to provide confidence that any determinations of adequate yearly progress include considerations for the sample size of individual schools, school districts, and subgroups. This is a proper and necessary component of ensuring a reliable determination process, especially considering that the state employs a minimal N-value of 10 to all aggregated and subgroup calculations and reporting. **The state does not employ any additional N-value threshold calculations within its adequate yearly progress determinations.**

Within the North Dakota accountability workbook, the confidence interval provides a universally applied statistical means of ensuring that all AYP determinations are objectively and proportionally applied to all public schools, school districts, and subgroups. The state selected a base N-value of 10 to provide protections against student identification, pursuant to the privacy provisions of the *Family Education Rights and Privacy Act* (FERPA). The state intentionally rejected the inclusion of any additional N value at the school or subgroup level (e.g., setting a value of 30 or 40 students) for the purposes of limiting the application of accountability reporting under the guise of reliability. The state eliminated the prospects of these higher limits to allow for a complete accounting of all schools and subgroups, while honoring FERPA privacy considerations. In establishing a higher N limit, the state would have effectively removed a large number of smaller schools or subgroups from the state's accountability system. Disparity in accountability would emerge: schools or subgroups immediately above the N value would undergo reporting while those schools or subgroups below the N value would remain exempt.

To mitigate the effects of these unfair reporting disparities, the NDDPI proposed and successfully defended the use of a 99 percent confidence interval. A confidence interval uniformly applies to all settings and provides appropriate and proportional protections to all. Additionally, as the state's intermediate achievement targets incrementally increase every three years, the mathematical properties of confidence intervals commensurately reduce the degree of protections afforded to schools, districts, and subgroups. Such incremental decreases in protections allow schools and districts to prepare for the inevitable and universal impact of 100 percent proficiency by 2014. The use of confidence intervals provides greater transparency in public reporting and constitutes a widely accepted means of measuring and confidently reporting school, district, and subgroup performance rates. The confidence interval is an integral component of the state's accountability rules and has been embraced as a critical public policy assurance.

The state's AYP process still references current and multiple-year achievement data to calculate determinations. The AYP process compares cohort populations as before, as it must. In every

regard, the determination process is the same. The state is still obligated to determine if a school or subgroup, regardless of its size, has made sufficient achievement in terms of the state's intermediate achievement target. This still requires a confidence interval. To not employ a confidence interval would deny schools and subgroups and the public sufficient reliability safeguards. The use of confidence intervals is required to properly conduct any AYP determination process. It is untenable to conduct any AYP determination process, within the state's system, without employing a confidence interval.

The NDDPI has faithfully administered all provisions of the state's accountability workbook and, in so doing, the law's directives. The NDDPI has placed before the peer review committee evidence of a good faith proposal to administer a reasoned and responsible growth-to-standard model. The NDDPI has been forthright in explaining the operation of the model and its relative impact on student achievement rates and public school AYP identification rates. The model displays simple and straightforward design, transparent and verifiable metrics, and ready accessibility to educators, parents, and the public. The model blends with the state's policy goals and adheres to the seven principles of accountability espoused by the ED.

## **Principle 2: Establishing appropriate growth targets at the student level**

### *Principle 2.1.1*

*(a) Please explain how the model could account for what might be random error in the difference in the scale score from one year to the next.*

The possibility of random error is inherent within any recurrent measurement activity. The NDDPI provided extensive narrative and supporting documentation regarding its efforts to measure and monitor error within the state's various assessments, as documented within the peer review submissions for the North Dakota State Assessments (NDSA). In light of the state's extensive documentation, the ED has awarded the state a *Fully Approved* status for the state general and alternate assessments in reading and mathematics.

Within section 1.4.6 of the state's growth-to-standard model proposal, the NDDPI provides narrative and supporting data analysis tables that identify the state's efforts to measure and monitor error. The data indicate that the state's assessments are designed and perform accordingly to minimize the effects of measurement error. These data indicate that the NDSA provides comparable information as students move from one grade to the next. This is a critical issue that supports the vertically-equated design of the NDSA, which further supports its use within a longitudinal analysis of growth. The NDSA has performed in a stable manner since the state moved into its current grade-level assessment regimen with the 2004-05 academic year. The NDSA provides reliable information and has done so with a sufficient number of annual administrations, such that it can legitimately be referenced for the purposes of conducting a growth-to-standard model.

The state's growth-to-standard model proposal refers to the specific scale scores for any student reported through the state's reliable assessments, without further statistical attenuation. **The state does not alter any scale score reported by the state's assessments by any statistical means to arrive at a final, ameliorated value. The presence of possible error may be evidenced at any grade-level; however, the data indicate that the measurement error is reasonable and comparable among grade levels. Specifically, when a growth target is calculated for a specific student, that student's future growth must meet the**

**projection originally defined without regard to any statistical attenuation for possible error effect.**

*(b) Please provide several examples of students under different conditions and with different levels of achievement and how growth would be calculated and the student would be included in the accountability system. Pay particular attention to the creation of the trajectory: when it is created, the annual growth necessary, when it is reset, and when proficiency is required.*

The NDDPI has provided within section 2.3 extensive narrative and supporting documentation regarding the process for determining growth target projections for a variety of students. Table 2.3(a) documents for a prospective student how an expected annual growth target would be calculated, what annual growth would be minimally required, and when proficiency must be met. Table 2.3(b) and Table 2.3(c) provide a variety of example students, each with different levels of achievement, and how their respective growth patterns might produce different projections and subsequent outcomes and how the growth model would monitor such growth. Since the state proposes to limit any growth projections to three years and since the state proposal does not allow for resetting projections within those three years, the final proficiency target year would be identical to the method and target year documented in Table 2.3(a). These three tables present the state’s capacity to set projection dates, the projection target, the annual growth required to meet the projection target, and the monitoring of student progression in subsequent years. These tables present a variety of scenarios that represent different students with varying growth patterns.

*(c) Please provide evidence of the state’s plan to periodically evaluate the appropriateness of the student-level growth targets criteria.*

The NDDPI stipulates that the state’s growth-to-standard model proposal constitutes a new component to the state’s accountability system. As such, any newly devised accountability provision must periodically undergo evaluation to discern if it is meeting the legal requirements of a valid and reliable system.

The NDDPI anticipates convening the state’s Technical Advisory Committee (TAC) to review the working rules and impact data of the growth-to-standards model. The TAC is comprised of nationally recognized assessment and accountability experts and is charged with the objective study of the state’s assessment system and accountability system. The NDDPI proposes to convene the TAC according to the following schedule for the expressed purpose of analyzing the growth-to-standard model, assuming the approval of the model by ED.

|               |   |
|---------------|---|
| December 2008 | ED issues approval for the state’s growth-to-standard model.  |
| January 2009  | NDDPI forwards terms of the approval of the state’s growth-to-standards model to TAC members for study.   |
| January 2009  | NDDPI convenes conference call meeting of TAC members to review current rules, data system construct, and reporting mechanics of growth-to-standard model to allow for complete and accurate monitoring of model performance. |
| February 2009 | NDDPI submits annual accountability workbook amendments, including provisions for the administration of a growth-to-standard model.   |

|                    |  |
|--------------------|--|
| March 2009         | NDDPI compiles 2008-09 adequate yearly progress tentative results, including the newly-approved growth-to-standard model, and forwards results to TAC members for analysis.  |
| April 2009         | NDDPI convenes TAC members to review 2008-09 adequate yearly progress impact data and the performance of the growth-to-standard model. Specific components of the model are analyzed for their unique performance and overall impact to model performance. TAC members identify components that might require additional study and establish a study timeline in anticipation of future amendments, prior to November 2009. NDDPI works with ED to report findings of growth-to-standard model performance to ED for ongoing analysis. |
| April 2009         | NDDPI issues statewide adequate yearly progress results and reports on effect of the state's overall accountability system performance, including the growth-to-standard component.  |
| May – October 2009 | NDDPI conducts study of growth-to-standard model, based on TAC recommendations, in anticipation of final TAC review.   |
| November 2009      | NDDPI convenes TAC members to analyze the results of the growth-to-standard model study. Results are reviewed and final alterations proposed to NDDPI regarding future amendments to growth-to-standard model.   |
| December 2009      | NDDPI compiles TAC recommendations regarding the growth-to-standard model study and prepares final policy recommendations for State Superintendent.  |
| February 2010      | NDDPI prepares final accountability workbook amendments for the administration of the growth-to-standard model. NDDPI works with ED to submit final amendments for peer review and for accountability workbook approval.   |
| March 2010         | NDDPI establishes longer-term annual reviews of the state's growth-to-standards model with TAC members to replicate previous year's study cycle. NDDPI works with ED to report findings of growth-to-standard model performance to ED for ongoing analysis.  |

The NDDPI states its willingness to work closely with the ED to establish a timeline for the review and reporting of the performance of the growth-to-standard model. The NDDPI will fully disclose all aspects of the state's accountability system for periodic review in addition to current monitoring.

*(d) Please give an example of what a growth target would be for a student that had a wide difference in scale score from one year to the next.*

The NDDPI has provided within section 2.3 extensive narrative and supporting documentation regarding the process for determining growth target projections for a variety of students. Table 2.3(a) documents for a prospective student how an expected annual growth target would be calculated, what annual growth would be minimally required, and when proficiency must be met. Table 2.3(b) and Table 2.3(c) provide a variety of example students, each with different levels of achievement, and how their respective growth patterns might produce different projections and subsequent outcomes and how the growth model would monitor such growth. Since the state proposes to limit any growth projections to three years and since the state proposal does not allow for resetting projections within those three years, the final proficiency target year would be identical to the method and target year documented in Table 2.3(a). These three tables present the state's capacity to set projection dates, the projection target, the annual growth required to meet the projection target, and the monitoring of student progression in subsequent years. These tables present a variety of scenarios that represent different students with varying growth patterns.

The various student scenarios presented above provide evidence the growth-to-standard model's capacity to accommodate a wide variety of student growth patterns. The same holds true for a student who might demonstrate a wide difference in scale score from one year to the next.

For instance, assume that a fourth grade student recorded a mathematics scale score of 580. Based on a three-year growth projection expectation, this student must meet or exceed 670 scale points by the administration of the seventh grade assessment. This difference of 90 scale points equals an average annual gain of 30 scale points. If, however, the student exceeded this annual growth in the fifth grade assessment and scored 630 points (a 50-point gain that far surpassed the 30-point annual projected gain), then the student would be identified as exceeding the 30-point gain and achieving a proficient-by-growth status for accountability purposes. The student's original projection is not altered for the next year's administration of the state assessment. If this student achieves minimally a 640 point score in the sixth grade such that the student remains on-target with the original projection expectation, then the student will also receive a proficient-by-growth status for accountability in the sixth grade, as well. This student must minimally meet the 670 scale point in the seventh grade to meet proficiency.

Regardless what an individual student achieves in any given year, as long as this student meets or exceeds their growth expectation then they will be credited as making proficiency-by-growth.

#### **Principle 4: Inclusion of all students**

*(a) Principle 4.1.1. Please clarify the minimum group size that North Dakota uses for its subgroups and for the student population as a whole proposes to use a minimum group size of 10 when calculating the growth model.*

Pursuant to the state's accountability workbook and all operational accountability rules, the state has established a minimum number of 10 students for reporting purposes, to ensure proper student identification safeguards as required under the *Family Education Rights and Privacy Act*. There exist no additional minimum number rules for composite or subgroup reporting. The state

applies a confidence interval, set at 99 percent, to provide for reliable determinations among settings of different sampling sizes that exceed an N of 10. Safe Harbor is determined as prescribed within federal law without the application of a confidence interval.

Within the North Dakota accountability workbook, the confidence interval provides a universally applied statistical means of ensuring that all AYP determinations are objectively and proportionally applied to all public schools, school districts, and subgroups. The state selected a base N-value of 10 to provide protections against student identification, pursuant to the privacy provisions of the *Family Education Rights and Privacy Act* (FERPA). The state intentionally rejected the inclusion of any additional N value at the school or subgroup level (e.g., setting a value of 30 or 40 students) for the purposes of limiting the application of accountability reporting under the guise of reliability. The state eliminated the prospects of these higher limits to allow for a complete accounting of all schools and subgroups, while honoring FERPA privacy considerations. In establishing a higher N limit, the state would have effectively removed a large number of smaller schools or subgroups from the state's accountability system. Disparity in accountability would emerge: schools or subgroups immediately above the N value would undergo reporting while those schools or subgroups below the N value would remain exempt.

To mitigate the effects of these unfair reporting disparities, the NDDPI proposed and successfully defended the use of a 99 percent confidence interval. A confidence interval uniformly applies to all settings and provides appropriate and proportional protections to all. Additionally, as the state's intermediate achievement targets incrementally increase every three years, the mathematical properties of confidence intervals commensurately reduce the degree of protections afforded to schools, districts, and subgroups. Such incremental decreases in protections allow schools and districts to prepare for the inevitable and universal impact of 100 percent proficiency by 2014. The use of confidence intervals provides greater transparency in public reporting and constitutes a widely accepted means of measuring and confidently reporting school, district, and subgroup performance rates. The confidence interval is an integral component of the state's accountability rules and has been embraced as a critical public policy assurance.

The state's AYP process still references current and multiple-year achievement data to calculate determinations. The AYP process compares cohort populations as before, as it must. In every regard, the determination process is the same. The state is still obligated to determine if a school or subgroup, regardless of its size, has made sufficient achievement in terms of the state's intermediate achievement target. This still requires a confidence interval. To not employ a confidence interval would deny schools and subgroups and the public sufficient reliability safeguards. The use of confidence intervals is required to properly conduct any AYP determination process. It is untenable to conduct any AYP determination process, within the state's system, without employing a confidence interval.

*(b) Principle 4.1.3. Please provide evidence of how North Dakota will deal with common conditions that preclude the calculation of a growth score.*

The NDDPI stipulates that the state's accountability system and this proposed growth-to-standard model includes all students in all tested grades, including both the NDSA and the NDAA, and that the NDDPI can account for all public schools, school districts, and student subgroups. The growth-to-standard model's operational inclusion rules, presented in sections 1.4 and 2.2, demonstrate that the state has established common conditions for the

administration of the growth determinations and that identify when such determinations will not be applicable for accountability reporting.

Section 1.4 and section 2.2 present in detail the manner in which the state's enrollment rules and longitudinal data system identify and track individual students across grades and accommodates enrollment movement across district lines. The proposal includes a variety of tables that demonstrate the capacity of the longitudinal data system to match and track individual students across multiple years. When student matching is not possible, the student will not be included into any growth determinations. The state's full academic year policies set the general method for reporting district- and school-based growth. Students who remain within a school district will have their growth data included into any accountability determinations; students who transfer to a new school district will not have their growth included into accountability reporting, but the growth will be reported for school improvement and instructional purposes.

The state's model includes and fully accounts for all student subgroups. The state's model employs a confidence interval to optimize the full-inclusion of subgroups, while ensuring systemic reliability. The NDDPI will recognize a student's most current subgroup classification, if the student's classification were to change during the tracking time period.

The state's model includes all public schools and school districts into accountability determinations. Since the growth-to-standard model represents the sixth, and final, phase in the AYP determination process, all schools and districts will be reviewed for growth and any appropriate findings will be applied to the final determination. No schools or districts will be excluded from growth determinations; the manner in which this determination process unfolds is outlined in section 2. The state's accountability workbook provides the operational rules that guide all AYP determinations.

The NDDPI will monitor through its student achievement database any instances when conditions preclude the calculation of student's growth projections or their application for accountability reporting. Such instances might include the following:

- third grade students where calculations must wait until the fourth grade;
- eleventh grade students must indicate achievement of proficiency and no growth projections will be administered;
- non-full academic year students (e.g., transfer students) whose projections are not applicable for current accountability reporting but whose projections can be used future reporting or for current school improvement;
- unmatched students who indicate new entries to the state accountability system will be scrutinized for unacknowledged duplication or errant entry.

The NDDPI will analyze the inclusion of all students as a component of its annual study of the growth-to-standard model by the NDDPI and its TAC members.

## **Principle 5: State assessment system and methodology**

*(a) Principle 5.2.1. Please clarify how the results of the growth model will be reported to parents and the public at large.*

The design and capacity of the NDSA and NDAA to meet fully the requirements of a growth-to-standard model is presented throughout section 1 and section 2 of this proposal. The NDDPI administers the NDSA and the NDAA in reading and mathematics in grades 3-8 and 11 and references multiple years of data to produce the state's current AYP determinations. The state assessment system produces achievement reports for individual students, schools, school districts, and the state.

*1. School, school district, and public reporting.* Student achievement data are disaggregated and reported for student subgroups. These data are reported on annual adequate yearly progress reports and report cards for every public school, public school district, and the state. The NDDPI provides comprehensive, multiple-year reports for all schools, districts, and the state on the NDDPI official website: <http://www.dpi.state.nd.us/dpi/reports/Profile/index.shtm>. The NDDPI mandates and monitors for compliance that every public school and school district likewise release their accountability reports to all parents and the public within their jurisdiction.

The NDDPI plans to amend its annual school profile (i.e., report card) to include respective school and district growth impact data as presented in Table 2.3(d), Table 2.3(e), Table 2.3(f), Table 2.5(a), and Table 2.(b). Within the school profile reports, the NDDPI will present summary information that identifies the impact of growth model determinations on the calculation of adequate yearly progress, where achievement by the status model versus achievement by the growth model are compared. Furthermore, the NDDPI may also include additional tables that provide specific insight to the performance of the state's growth model following a review of the system by the state's TAC members.

Tables 2.3(d-f), presented in the Appendix, provide actual student growth rate impact data generated from the 2007 NDSA and NDAA. Table 2.3(d) presents the number and percent of students tested in fall 2007 whose scale score increased by at least the targeted amount, thereby making sufficient growth. Table 2.3(e) presents the number and percent of students tested in fall 2007 whose scale score increased by at least the targeted amount, thereby making sufficient growth, by achievement level. Table 2.3(f) presents the number and percent of students tested in fall 2007 whose scale score increased by at least the targeted amount, thereby making sufficient growth, by subgroup classification. Table 2.5 provides a comparison of the number of AYP failures between the state's current status model and the proposed growth-to-standard model, by individual composite and subgroup indicator for math and reading.

These data indicate that representative students across all grades, achievement levels, and subgroups evidence growth-to-proficiency patterns and that the state's longitudinal data system can successfully track such projections.

*2. Individual student reporting to teachers and parents.* Within the growth-to-standard model, as specified in section 2.3 and its supporting tables, individual student growth information will be provided to the school and the school will be required to distribute the results to parents. These student reports identify each student's base achievement level, projected target, expected annualized growth, and trending data.

The state's growth-to-standard model calculates every student's respective growth to determine if that growth is sufficient to meet or exceed proficiency within three years. Every student's growth target and target progression is calculated. A below-proficient student's achievement level is reassigned as *proficient* if his/her actual measured growth equals or exceeds that of the student's expected annualized growth. These data indicate that the state's system can identify and track growth progressions of students both above and below proficiency. This ability builds

instructional value into the system, thereby enabling teachers to accurately monitor the overall trending of specific students and informing parents of their students' respective growth pattern. If students are collectively identified as being at risk for dropping out of proficiency, preventive strategies can be employed thereby forestalling and reversing any downward movement. Table 2.3(b) and Table 2.3(c), presented in the Appendix, provide a prototypic school report that lists the student-specific growth progressions within a given grade 4 mathematics class, following a cross-year growth analysis. Such a tool as this offers schools additional information to build instructional plans to aid students at risk for learning setbacks.

The NDDPI proposes to develop individual student reports that incorporate the information presented in Table 2.3(c) for each individual student. The school would be responsible for the distribution of these reports to each student's parents. The NDDPI will work with its statewide practitioner advisory committees to devise individual student reports that will incorporate this information into a common format and that will provide background instructions regarding the meaning and application of growth gains and growth projections.

*(b) Principle 5.3.3. Please provide the conditional standard errors of measurement for each performance level in reading/language arts and mathematics for grades 3-8 and 11, particularly for the alternate assessments based on alternate academic achievement standards or modified academic achievement standards.*

1. *NDSA*. Following the completion of the Bookmark Standard Setting process conducted on the NDSA, CTB/McGraw-Hill, LLC, produced a comprehensive technical report that presented the process' method and resulting impact data, titled *North Dakota State Assessment: Bookmark Standard Setting Technical Report 2005 for Grades 3, 4, 5, 6, 7, 8, and 11, Reading and Mathematics*. This document was included as Appendix 46 within the 2006 NDSA peer review submission to the ED from the NDDPI. This peer review ultimately resulted in a *Full Approval* status designation from the ED. Within the *Standard Setting Technical Report 2005*, Section F presents the conditional standard errors of measurement for each respective achievement level. In the interests of providing comprehensive documentation to the growth peer reviewers and transmitting the best quality of copy available, please reference Section F of the *Standard Setting Technical Report 2005* at the following website: <http://www.dpi.state.nd.us/testing/assess/standard/secF-1.pdf>. Page F43 presents the method used to determine the conditional standard errors of measurement.

Additional information regarding the Bookmark Standard Setting procedures employed during the 2005 process can be accessed at the following website: <http://www.dpi.state.nd.us/testing/assess/standard/secA-E.pdf>.

2. *NDAA1 based on alternate achievement standards*. During the process that established cut scores for the NDAA1 based on alternate achievement standards, the NDDPI employed a consensus model standard setting process to meet the unique measurement design of the assessment. This standard setting process was documented in Appendix 31 and supporting narrative within the 2006 NDSA peer review submission to the ED from the NDDPI. This peer review ultimately resulted in a *Full Approval* status designation from the ED. The NDDPI did not generate conditional standard errors of measurement for the NDAA1 based on alternate achievement standards, in light of the consensus model of determining cut scores.

3. *NDAA2 based on modified achievement standards*. During the process that established cut scores for the NDAA2 based on modified achievement standards, the NDDPI employed a bookmark standard setting process to replicate that method employed within the NDSA. This

standard setting process has been documented in Appendix 112, Section 3 and its supporting narrative within the 2008 NDAA2 peer review submission to the ED from the NDDPI. The NDAA2 peer review process is currently ongoing. The NDDPI did produce conditional standard errors of measurement based on this bookmark standard setting process. The NDDPI has prepared a statistical summary of the conditional standard errors of measurement within the *North Dakota Alternate Assessment-2 2007-08 Technical Report*, which was included as Appendix 112, Section 4 and its supporting narrative within the 2008 NDAA2 peer review submission to the ED from the NDDPI. Please refer the conditional standard error of measurements for each of the respective content areas attached to this Addendum: Table 2.3(g) for reading and Table 2.3(h) for mathematics.

**Table 2.3(g): Conditional Standard Error of Measurement, Reading, Referenced as Logit Scores**

| <b>Grade</b> | <b>Cut</b> | <b>Scale Score</b> | <b>SE</b> |
|--------------|------------|--------------------|-----------|
| 3            | PP         | -0.11              | 0.68      |
|              | P          | 1.3                | 0.73      |
|              | A          | 4.1                | 1.87      |
| 4            | PP         | -0.38              | 0.61      |
|              | P          | 0.35               | 0.61      |
|              | A          | 3.93               | 1.86      |
| 5            | PP         | 0.03               | 0.68      |
|              | P          | 0.98               | 0.72      |
|              | A          | 4.55               | 1.9       |
| 6            | PP         | 0.33               | 0.63      |
|              | P          | 1.62               | 0.71      |
|              | A          | 4.36               | 1.87      |
| 7            | PP         | -0.64              | 0.6       |
|              | P          | 0.05               | 0.58      |
|              | A          | 2.77               | 1.04      |
| 8            | PP         | -0.07              | 0.85      |
|              | P          | 1.38               | 0.87      |
|              | A          | 4.84               | 1.94      |
| 11           | PP         | -0.37              | 0.69      |
|              | P          | 1.85               | 0.87      |
|              | A          | 3.93               | 1.23      |

**Table 2.3(h): Conditional Standard Error of Measurement, Mathematics,  
Referenced as Logit Scores**

| <b>Grade</b> | <b>Cut</b> | <b>Scale<br/>Score</b> | <b>SE</b> |
|--------------|------------|------------------------|-----------|
| 3            | PP         | -0.04                  | 0.42      |
|              | P          | 0.71                   | 0.44      |
|              | A          | 2.89                   | 0.68      |
| 4            | PP         | 0.03                   | 0.43      |
|              | P          | 0.98                   | 0.45      |
|              | A          | 3.02                   | 0.75      |
| 5            | PP         | -0.64                  | 0.38      |
|              | P          | 0.58                   | 0.38      |
|              | A          | 3.31                   | 0.8       |
| 6            | PP         | -0.76                  | 0.45      |
|              | P          | 0.4                    | 0.44      |
|              | A          | 2.63                   | 0.74      |
| 7            | PP         | -0.86                  | 0.5       |
|              | P          | 0.49                   | 0.47      |
|              | A          | 2.45                   | 0.66      |
| 8            | PP         | -0.55                  | 0.48      |
|              | P          | 0.53                   | 0.46      |
|              | A          | 2.91                   | 0.77      |
| 11           | PP         | -0.15                  | 0.45      |
|              | P          | 1.74                   | 0.56      |
|              | A          | 3.83                   | 1.06      |