

# National Assessment Governing Board

## Assessment Development Committee

February 28 - March 1, 2019

### AGENDA

#### Thursday, February 28

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10:00 am – 1:30 pm	Welcome and Introductions	
	<b>Closed Session</b> Review of NAEP Reading and Technology and Engineering Literacy (TEL) Cognitive Items: Concept Sketches <i>Carol Jago, ADC Chair</i>	Secure material provided under separate cover
1:30 – 2:00 pm	NAEP Contextual Questionnaires: Development Update <i>James Deaton, NCES</i>	Attachment A
2:00 – 4:00 pm	Review of NAEP Reading, Mathematics, and Science Questionnaires: Existing Item Pool <i>Carol Jago, ADC Chair</i>	Material provided under separate cover

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#### Friday, March 1

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10:20 – 11:20 am	NAEP Mathematics Framework Update: Progress Update <i>Mark Loveland and Ann Edwards, WestEd</i>	Attachment B
11:20 am – 12:20 pm	Review of NAEP Reading, Mathematics, and Science Questionnaires: Existing Item Pool ( <i>Continued</i> ) <i>Carol Jago, ADC Chair</i>	Material provided under separate cover
12:20 – 12:50 pm	Next Steps <i>Carol Jago, ADC Chair</i>	
Information Items	Implementation of ADC Strategic Vision Activities	Attachment C
	Item Review Schedule	Attachment D

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## NAEP Contextual Questionnaire: Development Update

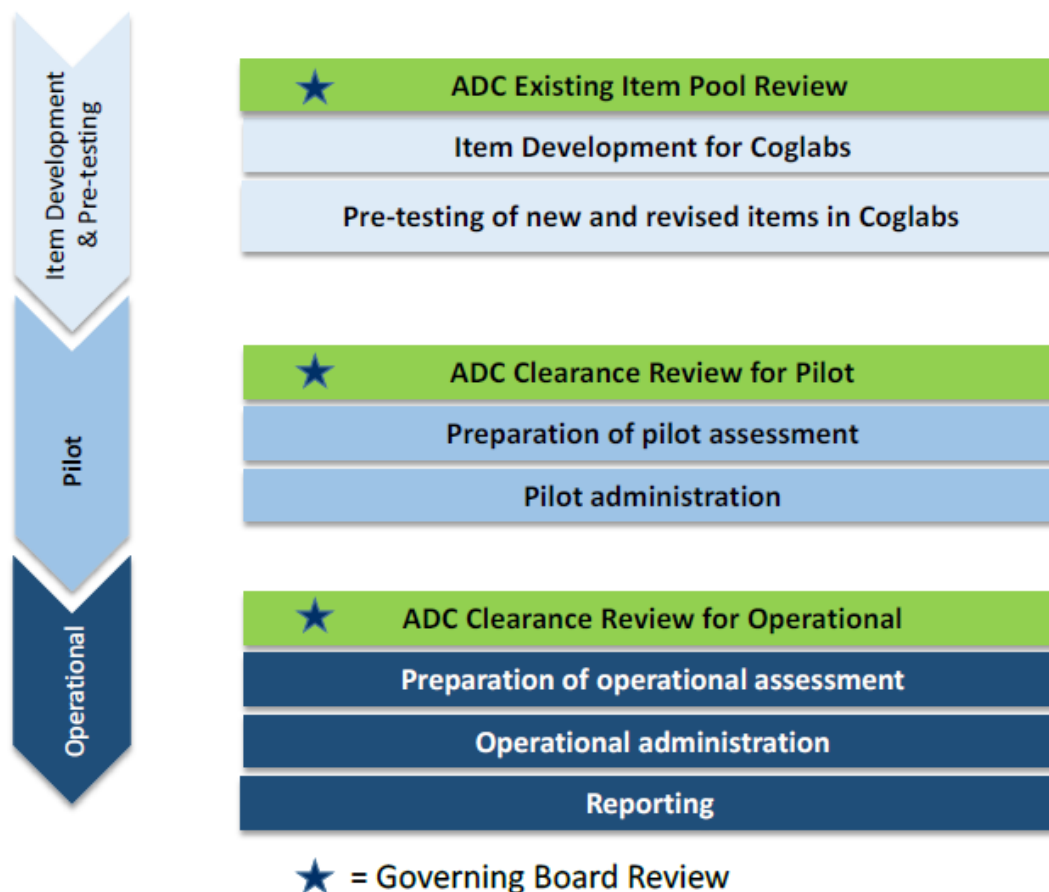
NAEP contextual questionnaires are administered to three respondent groups: students, teachers, and school administrators. For each respondent group, contextual questions can be classified into one of two categories: subject-specific and “core” (i.e., questions that are not subject-specific such as number of days absent and that are asked across different NAEP assessments). The Assessment Development Committee (ADC) reviews the subject-specific questions. For each subject, there is a questionnaire that asks about experiences related to that subject. The Reporting & Dissemination (R&D) reviews core questions.

During this session, NCES will give a presentation to the Committee that includes: 1) a description of core and subject-specific questionnaires, 2) an overview of the current stage of questionnaire development for reading, mathematics, and science, and 3) examples of how questionnaire results are eventually reported (including the reporting of indices). While NAEP has long reported results from individual contextual questions, NCES began reporting with indices (i.e., questionnaire data comprised of multiple questions related to a given construct) for the 2014 subject-area assessments. NCES has also since applied this indices-based approach to reporting data from “core” questionnaires.

This presentation will be followed by ADC’s review of the existing subject-specific questionnaires for reading, mathematics, and science. This review marks the beginning of 2023 development for these three subjects.

Figure 1, below, illustrates the development timeline.

**Figure 1. High-Level Overview of Subject-specific Survey Questionnaires Development Timeline**





# Quarterly Report

2025 NAEP MATHEMATICS FRAMEWORK UPDATE

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**WestEd**

**February 2019**

**Contract #91995918C0001**

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# Quarterly Progress Report

## Project Overview

In September 2018, the Governing Board awarded a contract to WestEd to conduct an update of the NAEP Mathematics and Reading Assessment Frameworks, Assessment and Item Specifications, and Contextual Variables. The goal of the first year of the project is to update the Mathematics Framework documents through the work of a 30-person Visioning Panel, a 15-person Development Panel, and an 8-person Technical Advisory Committee (TAC). This will be accomplished through an initial Visioning Panel meeting, three subsequent Development Panel meetings, conducting outreach efforts to gather public comment on draft versions of the documents, and production of a final updated Assessment Framework, Assessment and Item Specifications, and Contextual Variables for Mathematics to submit to the Governing Board by July 2019. The NAEP Reading Assessment Framework, Assessment and Item Specifications, and Contextual Variables will be updated in Year 2 of the project.

The work is to be conducted using a combination of external experts and mathematics specialists within WestEd. WestEd's considerable experience with NAEP and the Governing Board comes from having led two previous Framework projects: 1) the update of the 2009 NAEP Science Assessment Framework, and 2) the development of an assessment framework for a new 2014 NAEP assessment in Technology and Engineering Literacy (TEL). To complete this work, WestEd is also partnering with the Council of Chief State School Officers (CCSSO), who will assist in compiling resources for the Framework panels and in securing feedback on the updated Framework documents.

## Project Team

The Project Management Team consists of Steve Schneider, Mark Loveland, Ann Edwards, Shandy Hauk, Matt Gaertner, and Kellie Kim. As project director, Steve Schneider provides day-to-day leadership, guidance, and liaising with the Governing Board. Dr. Schneider has over 40 years of science, mathematics, and technology education experience and led WestEd's two previous Framework development projects. Project co-director, Mark Loveland, and Mathematics Content Experts, Ann Edwards and Shandy Hauk, have oversight for all programmatic activities. Dr. Loveland was project coordinator for the TEL Framework development project; Dr. Edwards has over 20 years of experience in research, curriculum development, and professional development in mathematics education spanning elementary to post-secondary levels; Dr. Hauk conducts research with student and teacher learning in mathematics, has taught K-20 mathematics, and has 15 years of experience in mathematics assessment development and standards alignment. Suzanne Wilson, Professor in the Department of Curriculum and

Instruction, University of Connecticut is the Mathematics Panel Chair. She works with Dr. Edwards and Dr. Hauk to lead the Visioning and Development Panel activities. Measurement Expert, Dr. Gaertner, along with the TAC Chair, Guillermo Solano-Flores, Professor of Education at the Stanford University Graduate School of Education, lead the TAC. Dr. Kim serves as Process Manager, documenting all project activities. In addition to the project leaders, the broader project team includes a mathematics subject matter expert, a project coordinator, and research assistants.

## Project Plan

The project plan involves WestEd project management and coordination of panel and TAC activities to update the NAEP Mathematics Assessment Framework, Assessment and Item Specifications, and Contextual Variables. The Framework update work will be led by the Visioning and Development Panels. Comprised of 30 individuals representing various stakeholder groups, the Visioning Panel was tasked with formulating guidelines for updating the Framework, based on the state of the field. Fifteen members of the Visioning Panel were identified to constitute the Development Panel. The Development Panel is charged with developing the drafts of the three project documents and engaging in the detailed deliberations to determine how to reflect the Visioning Panel guidelines in an updated Framework. Dates for the Visioning Panel and Development Panel meetings have been set; the Visioning Panel met on November 7-8, 2018, and the three Development Panel meetings were scheduled for December 5-6, 2018, January 9-10, 2019, and February 12-13, 2019. The TAC will meet regularly in between panel meetings to respond to technical issues raised during panel deliberations.

Upon completion of draft versions of the Framework documents in April 2019, the project will transition into an outreach phase, to be conducted primarily by WestEd and CCSSO, with assistance from collaborating organizations. Feedback on the draft documents will come from member organizations represented on the two panels, other stakeholder organizations, and the public. WestEd staff will tabulate feedback, make recommendations for revisions addressing the feedback, and coordinate the development of final versions of the framework documents, to be submitted to the Governing Board by July 2019.

## Progress to Date

### Initial Deliverables

Prior to engaging the Visioning and Development Panels, WestEd prepared a Project Plan, which describes the process and schedule for updating the framework documents, and a project Design Document, which serves as the blueprint for the project processes, describing outcomes and metrics, and as the touchstone for quality assurance monitoring. Concurrently, WestEd worked in consultation with Governing Board staff and Governing Board members to identify a broadly-representative final list of 30 members of the Visioning and Development Panels, along with a final list of 8 technical experts specializing in educational measurement to comprise the TAC. The work of the panels and TAC has been informed by a review of the issues and a compilation of resources. An issues report served as a

springboard for discussion by the Framework panels and addressed specific issues that are likely to be engaged in the update process. The resource compilation has been a “living document,” with additional resources added throughout the panel activities as they have been identified.

## Panel Activities

Panel activities have been successfully conducted around the Visioning Panel meeting and the first two Development Panel meetings. The Visioning Panel meeting and pre-meeting activities focused primarily on orienting panelists to the project and to the current state of mathematics education and assessment, followed by the generation of guidelines for the subsequent work to be done by the Development Panel. The guidelines provided recommendations on: 1) broadening attention to student reasoning, mathematical practices, and mathematical domains and competencies, 2) revisions to the test design and the strategic use of technology, and 3) being attentive to a broad range of opportunities to learn and designing accessible assessments for all students. The first Development Panel meeting, using the Visioning Panel guidelines and the issues report, identified broad areas of the current Framework that would serve as the starting point for the update process. Working in small groups in the first meeting and in between meetings, the Development Panel conducted a thorough examination of the current Framework and provided targeted recommendations for the update of the Framework and the Contextual Variables. The second Development Panel meeting took those recommendations, came to consensus on a revised table of contents for the Framework, and pivoted the small groups’ attention to either updating existing chapters or writing new chapters. An additional small group of panelists commenced work on updating the Achievement Level Descriptions (ALDs), which are typically included as an appendix to each framework.

## TAC Activities

The TAC has met on three occasions, in November 2018 to respond to questions from the Visioning Panel and again in December 2018 and January 2019 to respond to questions from the first two Development Panel meetings. The first TAC meeting addressed issues related to Visioning Panel questions around testing accommodations and accessibility features; balancing assessment innovation, requirements, and constraints; cognitive complexity; impact versus bias; and maintaining trend lines.

TAC responses to these questions were reported at the first Development Panel meeting. The second TAC meeting focused on issues related to Development Panel questions around cognitive complexity, NAEP Achievement Level Descriptions, and the assessment of mathematics collaboration and mathematics communication. Responses were again reported back to the Development Panel at the next meeting, along with general guidelines for writing achievement level descriptions. The most recent TAC meeting addressed issues related to Development Panel questions on assessment balance, collaborative problem solving in mathematics, and mathematical literacy as a new content area in the Framework. Responses to these questions will be reported back to the final Development Panel meeting in February.

## Next Steps

### Panel Activities

The third and final face-to-face Developmental Panel meeting will be conducted on February 12-13, 2019 in Washington, DC. The focus of this meeting will be to come to consensus on critical decisions needed to complete draft versions of each Framework chapter and the ALDs, and then work to complete and review those pieces of the Framework. The Panel will also review draft recommendations on the Contextual Variables and discuss the process, timelines, and writing assignments for completing final drafts of the Framework documents, along with project outreach activities intended to gather public comment on the draft Framework documents.

### Drafts of the Updated Framework

WestEd has developed a timeline and process for generating final drafts of the Framework documents. Draft 1 will be crafted by assigned panelists in the month following the final Development Panel meeting, with a series of internal (project staff) and external (Governing Board staff, TAC, Development Panel) reviews. Draft 2 will incorporate the feedback from these reviews in preparation for an interim review by Governing Board staff. Based on feedback from the interim review, a final draft of the updated Framework and recommended Contextual Variables will be prepared in mid-April 2019 for public comment and review by the Governing Board.

### Outreach

Planning for outreach activities is underway. Outreach activities will be conducted through early June 2019 and will serve multiple purposes: raise awareness of the Mathematics Framework update, engage with stakeholders, and gather external feedback and public comment on the draft Framework documents. Outreach will aim to solicit substantive feedback in significant numbers from each of the stakeholder constituencies: teachers, curriculum specialists, content experts, assessment specialists, state administrators, local school administrators, policymakers, business representatives, parents, users of assessment data, researchers and technical experts, and members of the public.

Members of the Visioning and Development Panels will solicit feedback from their member organizations through in-person and virtual meetings, while WestEd will actively solicit feedback from additional stakeholder organizations through a variety of meeting formats. In all instances, groups will follow procedures for securing input and ensuring representation of diverse views. WestEd staff will tabulate feedback and prepare summary documents for the Governing Board. CCSSO will lead a series of outreach efforts to solicit feedback on draft versions of the Framework documents through its extensive membership network.

Collaborating representatives (e.g., organizational representatives on the Visioning Panel) will be given ample resources and support in order to host feedback forums with stakeholder constituents. Whenever possible, project staff will attend and support feedback forum hosts with materials, such as draft Framework documents, slide presentations, background information, and feedback forms.

Final versions of the Framework documents will be developed for submission to the Governing Board on July 1, 2019. Along with the Framework documents, an annotated summary document will be developed describing the most significant and broad ranging changes to the Framework. Any changes made to the Mathematics Framework documents will be carefully documented for transparency so the Governing Board can see all decision points with rationales.

## Milestones

The major milestones of the project are summarized below.

Milestone	Estimated Timing
Project Kickoff Meeting	9/20/18
Project Plan Development	9/27/18 – 10/07/18
Design Document Development	10/11/18 – 10/24/18
Identification of Visioning and Development Panelists and TAC Members	9/20/18 – 10/10/18
Issues Paper and Resource Compilation Development	9/20/18 – 11/1/18
Visioning Panel Meeting	11/7-8/18
Development Panel Meetings	12/5-6/18 1/9-10/19 2/12-13/19
Convene TAC	Two weeks after each panel meeting and prior to submission of draft framework documents
Draft Versions of Framework Documents	4/17/19
Gather Public Comment	4/16/19 – 6/7/19
Develop Final Versions of Framework Documents	4/17/18 – 6/28/19
Submit Final Framework Documents to Governing Board	7/1/19
Submit Final Process Report	9/16/19



## IMPLEMENTATION OF ADC STRATEGIC VISION ACTIVITIES

The ADC develops recommendations for what NAEP should assess and exercises final authority over all NAEP items. Each framework development and update process uses broadly representative panels of stakeholders to develop detailed recommendations as a draft NAEP assessment framework. Each Board-adopted NAEP framework describes what students should know and be able to do in a subject area and what will be tested on NAEP.

Several activities in the Governing Board Strategic Vision call for ADC's leadership. These projects involve informing educators, updating policies, and exploring new approaches to framework updating, as well as projects to review and update frameworks as needed. A working draft of ADC's project plans is attached, along with a summary of common elements for each framework project. For a detailed timeline of the NAEP Mathematics Framework Update process, see Attachment B.

### Ongoing Committee Discussions

Recent ADC discussions have raised several issues for ongoing discussion as the Committee leads Strategic Vision activities and prepares content recommendations for Board deliberation and action:

- The optimal role of NAEP for each content area.
- How Board and Committee priorities should be reflected in upcoming framework updates.
- Expected gains and losses for each NAEP assessment decision.
- Extent to which current frameworks are flexible enough to adapt as needed.
- The level of specificity in assessment results that is most useful to policymakers, researchers, and educators.
- How future NAEP items will be a resource for the field.
- How to establish and maintain partnerships that highlight actionable aspects of results, e.g., teacher access to released NAEP items and contextual information.
- How to develop viable options for new configurations of NAEP assessment content in ways that balance expertise, outreach, research, and trends in curricular standards.
- How to incorporate how other countries think about changing what they assess.
- Whether to more deeply assess an existing content area or add new content areas.
- Whether streamlining of NAEP frameworks is an appropriate goal.
- How to be intentional about content overlap between different assessments, while fulfilling statutory requirements, e.g., biennial reading and mathematics assessment.

**WORKING DRAFT\* PLAN: ALL ADC STRATEGIC VISION (SV) ACTIVITIES**UPDATES SINCE NOVEMBER 2018 ARE **HIGHLIGHTED**

ACTIVITY	START	FINISH	STATUS
Identify NAEP Resources & Information for Educators (SV #3 Expanding NAEP Resources and SV #6 Contextual Variables)	May 2017	Nov 2021	ADC discussed NAEP Questions Tool and contextual variables in 2017. Suggestions for new or refined NAEP resources can be shared with R&D for Board outreach. To be determined: when/how to develop ADC recommendations.
Update Framework Development Policy	Jun 2017	Mar 2018	ADC began revising policy in Summer 2017. Board discussion continued in November 2017. Board adopted the revised policy in March 2018.
Review & Update <b>Mathematics</b> Framework for 2025 Assessment	Aug 2017	Mar 2025 <sup>1</sup>	State math standards review began in August 2017. Results were shared in May 2018 ADC Framework Review, which also engaged external expert commentary. ADC prepared a framework recommendation for Board action, and it was unanimously adopted in August 2018. The framework contractor <sup>2</sup> for the Math Framework Update project was secured in Summer 2018. The Board will review a draft framework when public comment is being collected in Spring 2019. Board action is slated for Summer/Fall 2019, allowing NCES to conduct development leading to a 2025 administration of the updated assessment.
Review & Update <b>Reading</b> Framework for 2025 Assessment	Oct 2017	Mar 2025 <sup>1</sup>	ADC Framework Review was held in March 2018 to inform development of recommendations for a Fall 2019 framework update project launch. In August 2018, the ADC prepared a draft framework recommendation for Board action. Discussion will continue at the November 2018 Board meeting, so the recommendation can be finalized for Board action in March 2019.
Explore New Approaches to Framework Update Processes (also SV #8 International Assessments)	Nov 2017	Aug 2023	The Board's Technical Services contractor is developing several resources to assist in exploring innovations in how NAEP assessment updates are implemented. Framework Update Projects will review other countries' assessment programs to inform frameworks, framework processes, contextual data, and reporting.

\* All timelines are estimated. This draft will be updated based on Board policy decisions. All activities address Strategic Vision Priority #5 Updating Frameworks, unless otherwise noted.

<sup>1</sup> Timeline includes administering the assessment.

<sup>2</sup> The mathematics framework project will be implemented by the same contractor as the reading framework project, on staggered schedules so that most of the mathematics project is completed by the time the reading project begins.

**WORKING DRAFT\* PLAN: ALL ADC STRATEGIC VISION (SV) ACTIVITIES**UPDATES SINCE NOVEMBER 2018 ARE **HIGHLIGHTED**

ACTIVITY	START	FINISH	STATUS
Update Item Development Policy	Aug 2018	Aug 2020	The ADC began discussing goals for the policy revision in August 2018. In 2019, an expert panel will be convened to gather insights from the field regarding best practices in assessment development.
Review & Update <b>Civics, Geography, and U.S. History</b> Frameworks	Mar 2018	Dec 2021	Discussion of outreach began in March 2018, with suggestions to develop options for the ADC to consider. In August 2018, ADC review of the current NAEP item pools indicated that framework revisions did not need to be fast-tracked. Framework reviews will begin in 2019, which will include external expert commentary.
Review & Update <b>Economics</b> Framework (Depends on NAEP Schedule)	TBD	TBD	Depending on ADC recommendations and Board Assessment Schedule decisions, Economics may or may not be a standalone project.
Review & Update <b>Science and Technology &amp; Engineering Literacy (TEL)</b> Frameworks (Depends on NAEP Schedule)	TBD	TBD	Discussion of outreach began in March 2018, Tentative next steps: learn more about standards in NGSS non-adopter states and learn whether stakeholders view that some or all of the TEL subarea on Technology & Society addresses student achievement goals in Civics, Geography, U.S. History, or Economics.
Review & Update <b>Writing</b> Framework (Depends on NAEP Schedule)	TBD	TBD	Initial discussion regarding the Writing Framework slated for 2021.
Develop Content Descriptions for the Long-Term Trend (LTT) Mathematics and Reading Assessments (SV #7 Long-Term Trend)	TBD	TBD	March 2018 Executive Committee deliberations on LTT called for ADC to develop content descriptions of the assessments to support LTT item development, as well as updates to the Governing Board LTT policy and improved explanations of LTT assessment goals. ADC requested these descriptions also illuminate knowledge and skills of lower performing students, if possible. NCES has already developed a list of measurement objectives for LTT Mathematics, and similar work may be possible for Reading. Board staff is using these inputs to begin development of the LTT content descriptions.

## Common Elements of Each Framework Update Project

Based on the revised [Framework Development Policy](#), several milestones address all NAEP assessment framework projects. Framework update projects engage stakeholders and content experts to identify needed revisions, via subject-specific factors including:

- Evolution of discipline and implications for NAEP frameworks
- Relevance to students' postsecondary endeavors
- Student achievement trends in terms of contextual factors
- Digital-based assessment issues
- International content and measurement trends

### MILESTONES: ALL FRAMEWORK PROJECTS

ADC Discussion with External Experts in the Subject Area(s)
ADC Recommendation for Updating Assessment
Board Action on Charge
Framework Contractor Selection
Trend Scan & Resource Compilation
Panel Meetings (3 to 6)
Full Board Review & Public Comment
Framework Draft Finalized
ADC Final Review of Framework
Board Action
Assessment Administered

As a first step, the ADC conducts a framework review, where content experts are invited to a Committee session to provide reflections on the state of the discipline and the extent to which the relevant NAEP framework should be updated. Studies and additional outreach is pursued, as needed, to inform the ADC's recommendation about the type of framework update that is required. Next, the ADC brings its recommendation to the full Board for approval. In the case of an anticipated framework update, the recommendation includes a charge to stakeholders who will serve on the panels convened to draft recommendations for the ADC's consideration.

After Board discussion of the ADC recommendation, the Board will take action on the charge. Concurrently, Board staff will identify a contractor to execute the framework update process.

The framework contractor will launch the project by identifying individuals to serve on the framework panels and by compiling and developing resources to support the meetings of these stakeholders. A subset of these resources will include the Governing Board's charge

to the framework panels as well as documents used to inform the Board's development of the charge. The first meeting of stakeholders will be for the *Visioning Panel* to discuss the major issues to be addressed in the framework. A subset of the Visioning Panel will continue on as the *Development Panel* to develop an updated framework. This panel will also develop the recommended updates to the Test and Item Specifications, as well as the Contextual Variables.

The ADC monitors the framework contractor's work via regular project updates. A draft of the panels' recommended framework will be shared for full Board review and public comment, as well as review by the Board's Committee on Standards, Design and Methodology. This feedback will allow the Development Panel to address concerns and finalize the draft framework, specifications, and contextual variables for the ADC's final review and Board action. The adopted framework, specifications, and contextual variables are given to NCES to begin assessment development, piloting, and finally administration of the operational assessment based on the new framework.

**Assessment Development Committee  
Item Review Schedule  
February 2018 – May 2019  
Updated January 30, 2019**

Review Package to Board	Board Comments to NCES	Survey/Cognitive	Review Task	Approx. Number Items	Status
2/13/2019	3/8/2019	Cognitive	TBD TEL (12) Pilot Concept Sketches	18	
2/13/2019	3/8/2019	Survey	2023 Reading (4, 8, 12) Existing Pool Review	106	
2/13/2019	3/8/2019	Survey	2023 Mathematics (4, 8, 12) Existing Pool Review	135	
2/13/2019	3/8/2019	Survey	2023 Science (4, 8, 12) Existing Pool Review	100	
2/21/2019	3/8/2019	Cognitive	2023 Reading (4, 8, 12) Pilot (SBT) Concept Sketches	8-10	

*NOTE: "SBT" indicates Scenario-Based Task  
"DI" indicates Discrete Item.*