

Colorado's Race to the Top and the American Recovery and Reinvestment Act (ARRA): Data Systems to Support Instruction

Section I: Overview

On Feb. 17, 2009 President Obama enacted the American Recovery and Reinvestment Act of 2009. This legislation was primarily designed to stimulate the economy through federal investments in critical state services such as transportation, health care, renewable energy, critical government services, and education. These funds were and remain critically important to the provision of government services. However, it is important to keep in mind that the Recovery Act is as much about reform and renewal as it is about providing a financial safety net.

The Recovery Act contains a variety of reform oriented initiatives. The education reforms are expressed in the form of four state-level assurances:¹

- To improve the collection and use of data through longitudinal data systems;
- To enhance the quality of standards and assessments;
- To provide support for chronically low performing schools; and
- To achieve equity in the distribution of highly effective teachers and leaders.

Though every state in the nation is required to pursue the above-mentioned assurances as a condition of receiving State Fiscal Stabilization Funds (the primary source of education funds in the Recovery Act), an additional \$4.35 billion was earmarked by Congress for the purpose of establishing an unprecedented national competition among states that show promise in successfully implementing the Recovery Act's assurances. This competition has been called Race to the Top.

On July 24, 2009, the U.S. Department of Education issued notice of proposed priorities, requirements, and selection criteria for the Race to the Top and solicited public comment to those. In October 2009, the U.S. Department of Education will issue the official Race to the Top Request for Proposals. In the first of a two-phase sequence, all eligible and interested states will submit proposals to the U.S. Department of Education. These will be due by the end of 2009. Phase I awards will be announced in March 2010. States may also apply in Phase II which opens in mid-late spring 2010. A copy of the

priorities, requirements, and selection criteria, including information on how to submit comments is available online at <http://www.ed.gov/programs/racetothetop/index.html>.

Colorado will submit a proposal for the Race to the Top competition in Phase I.

In coming months, the Ritter Administration, by way of Lt. Governor O'Brien's office, will join the Colorado Department of Education and the Colorado Department of Higher Education to facilitate a series of statewide conversations regarding the Colorado Race to the Top proposal. This process will culminate in the delivery of recommendations to Governor Ritter who – in conjunction with the State Commissioner of Education Dwight Jones and the State Board of Education – will prepare and submit the Colorado application for Race to the Top funding.

This paper provides a common starting point for conversations that will take place regarding the preparation of Colorado's Race to the Top proposal. In other words, it represents a point of departure for the impending statewide discussions and not the conclusion of a previously determined outcome.

This paper provides background and explains progress Colorado has made in this area and the challenges and opportunities that lie ahead. It also illustrates that Colorado's reform agenda closely matches the agenda that is outlined in the Recovery Act for the country at large. Finally, it is intended to help participants in the Race to the Top effort in Colorado consider how Race to the Top funds could help accelerate the state's progress toward realizing the goals for improved student achievement that are embedded in the data assurance.

*American Recovery and Reinvestment Act Assurance: Establishing a Longitudinal Data System*²

- A. With respect to preschool through grade 12 education and postsecondary education, establish:
- A unique statewide student identifier that does not permit a student to be individually identified by users of the system;
 - Student level enrollment, demographic and program participation information;
 - Student level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs;

- The capacity to communicate with higher education data systems; and
- State data audit system assessing data quality, validity, and reliability.

B. With respect to preschool through grade 12 education, provide:

- Yearly test records of individual students with respect to assessments called for under section 1111(b) of the Elementary and Secondary Education Act of 1965;³
- Information on students not tested by grade and subject;
- A teacher identifier system with the ability to match teachers to students;
- Student level transcript information, including information on courses completed and grades earned; and
- Student level college readiness test scores.

C. With respect to postsecondary education data, provide:

- Information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- Other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

Proposed Priorities, Requirements and Selection Criteria for the Race to the Top Proposal

The proposed guidelines published on July 24, 2009 state that, with respect to each assurance, the State will need to demonstrate compliance with certain “State Reform Conditions Criteria” (evidence of progress made to date) as well as include certain “Reform Plan Criteria” (the components of the reform efforts proposed to be implemented as a result of a grant award). Following is a summary of those criteria. It is important to remember that components of the criteria, as well as their structure, may change substantially before the final proposal is published.

State Reform Conditions Criteria refer to the extent to which a State has a statewide longitudinal data system that fully includes all 12 of the elements specified in section 6401(e)(2)(D) of the America COMPETES Act of 2007:

Reform Plan Criteria are used to gauge the extent to which a state has a high-quality plan and ambitious but achievable annual targets to accomplish each of the following:

- ❑ Ensure that data from the state's statewide longitudinal data system are accessible to, and are used to inform and engage, as appropriate, different types of stakeholders (e.g. parents, students, teachers, principals, school/district leaders, community members, unions, researchers and policymakers) in compliance with FERPA, the Family Education Rights & Privacy Act (use of data criteria);
- ❑ Increase the use of assessment systems, including formative and interim assessments, together with rapid-time reporting so that teachers and principals can use this information to inform and improve their instructional practices, decision-making and overall effectiveness (instructional improvement criteria); and
- ❑ In collaboration with participating Local Educational Agencies (LEAs), provide education researchers and practitioners with access to both instructional improvement and state longitudinal data systems so they have the detailed information they need to evaluate the effectiveness of instructional materials, strategies and approaches for different types of students (research criteria).

Proposed Invitational Priority

The U.S. Department of Education's proposed regulations for Race to the Top also include an invitational priority that Colorado is well positioned to meet. It pertains to extensions of statewide longitudinal data systems, something we are ready to do following many years of experience with a unique student identifier. The Secretary is particularly interested in applications in which the state plans to extend statewide longitudinal data systems so that they include or integrate data from special education, early childhood, human resources, finance, and other relevant areas, with the purpose of allowing users to ask and answer important questions related to policy or practice.

Section II: Background and National Perspective ⁴

States have made remarkable progress in developing longitudinal data systems that can track student progress over time, from pre-kindergarten through 12th grade and into postsecondary education. In 2005, no state had all 10 essential elements of a high-quality longitudinal data system. ⁵ In 2008, six states had all 10 elements, and 48 had five or more elements in place. Within the next three years, 47 states plan to have eight or more elements.

10 Elements of a Statewide Data System

- A unique statewide student identifier that connects student data across key databases and across years
- Student-level enrollment, demographic and program participation information
- Ability to match individual students' test records from year-to-year to measure academic growth
- Information on untested students and the reasons they were not tested
- A teacher identifier system with the ability to match teachers to students
- Student-level transcript data, including information on courses completed and grades earned
- Student-level college readiness test scores
- Student-level graduation and dropout data
- The ability to match student records between the P–12 and higher education systems
- A state data audit system assessing data quality, validity and reliability

States not only need the right data infrastructure, but also need to make sure the data is used to improve student and system performance by:

- Expanding the ability of state longitudinal data systems to link across the P-20 education pipeline and across state agencies;
- Ensuring that data can be accessed, analyzed, used, and communicated to all stakeholders to promote continuous improvement; and
- Building the capacity of all stakeholders to use longitudinal data for effective decision making.

The ARRA gives states the opportunity to enhance their data systems. Three components of the ARRA support states' efforts around improving the collection, analysis, and use of longitudinal data: inclusion

of data systems in the assurances for State Stabilization Funds; competitive Institute of Education Sciences State Longitudinal Data Grants (\$250 million); and inclusion of data systems in the assurances for Race to the Top (\$4.35 billion).

Although states have made impressive progress on implementing their longitudinal data systems, too few have taken the necessary steps to ensure that the information produced by these data systems is harnessed to inform and improve the processes and outcomes of states' education efforts. This shift requires building the political will and taking the practical steps to remove current barriers to accessing, sharing, and using these data. ARRA provides a strategic opportunity for states to do this by funding actions to:

- Further build their P-20 longitudinal data systems and ensure data can be shared across other agencies, especially workforce;
- Ensure that data collected through these data systems are accessible, analyzed, and communicated in user-friendly ways to all stakeholders – especially educators, parents, and policymakers; and
- Build the capacity of all of these stakeholders to use longitudinal data for effective decision making.

When states have longitudinal data that can be shared, are user friendly and timely, and are tailored to users' needs, stakeholders can do more than just gather data, they can act on the information to:

- Better define student success with transparent, well understood, and broadly accepted performance indicators;
- Accurately forecast a student's readiness for key transitions from preschool through high school and into college and careers and take action as needed;
- Allocate resources (e.g., time, money, and staff) based on returns on investment; and
- Use data for continuous improvement, rather than solely for compliance with federal and states performance indicators.

Building Political Will and a Context for Using Longitudinal Data

Developing these systems and linkages requires political leadership, a shared statewide vision for the state's human capital development system, interagency collaboration, and a strategic plan for developing new data governance and management systems. The ARRA provides a unique opportunity to galvanize political focus and action while also providing critical funding to make these changes possible.

Longitudinal Data and the State Stabilization Fund Assurances:

In return for increased funding through ARRA, states are asked to “collect, publish, analyze, and act on basic information about how our schools educate our children, evaluate our teachers, and measure our success – information that will reveal both strengths and underlying challenges.” While an increasing number of states report the capacity to collect this information, the metrics that states must report to demonstrate progress on meeting the assurances will force states to move from merely collecting data to publicly reporting information that will provide transparency and inform decision making in ways that heretofore were rare.

Assurance #1: Teacher effectiveness and ensuring that all schools have highly qualified teachers:

A robust longitudinal data system, which includes assigning a unique identifier to teachers and students and collecting course and assessment information, makes it possible to determine which forms of teacher training and certification have the greatest effect on students' academic growth in the classroom. Such a match makes it possible to evaluate the effectiveness of teacher preparation programs, pre- and in-service professional development, and of teachers themselves. Currently, 21 states report having the ability to link teacher and student data; however, we know that fewer states are connecting these data and using them for research purposes or to make decisions on teacher effectiveness. The challenge in states implementing data elements, and especially this teacher-student link, is not technical but rather a lack of political priority. This first assurance, and the political will and leadership it will generate, has the potential to change the conversation from why and if we can connect teacher and student information systems to how and when.

Assurance #2: Higher standards and rigorous assessments that will improve both teaching and learning:

To ensure all students leave high school ready for college and the demands of the knowledge economy, states need to collect and use valuable longitudinal data. Data on course taking and grades, college readiness test scores, and feedback from postsecondary institutions can help determine whether high school courses, assessments, and graduation standards are aligned with college and workplace expectations. As the chart below highlights, these “college/career readiness” elements are the elements least developed across the nation. Governors and other policymakers need to make it a political priority to build the capacity of states to collect, link, and analyze this data to ensure that K-12 standards and assessments are aligned to real world expectations.

Assurance #3: Intense support, effective interventions and improved achievement in schools needing it most:

Without data systems, interventions and supports for low-performing schools have often been selected based on limited research studies and usually too late to make a difference for kids caught in a failing system. Longitudinal studies have identified specific factors, including attendance, course success, and achievement levels by the end of 9th grade, that are predictors of a student’s risk of dropping out or being on track to be college and career ready. Due to their data system infrastructure investments, most states are now able to develop “early warning systems” that can help identify students in a timely manner for appropriate and tailored interventions to help individual students graduate prepared for postsecondary success.

Assurance #4: Better data to address individual student needs and improve teacher performance:

Creating state longitudinal data systems and having the information to answer key questions about system performance is a vital first step, but collecting data alone will not lead to continuous improvement and, ultimately, student success. States must have policies and practices in place so that stakeholders throughout the education system can have access to, understand, and be able to use the information effectively. Web-based portals can provide information in ready-to-use, easy to understand presentations to parents, educators, advocates, and policymakers. Educators especially need greater training on how to use this new information to continuously improve their teaching and results.

Actions to Consider

This list offers priority actions for governors and other state policymakers to consider as they position their state to take advantage of new funding sources and promote effective data use in their state.

Expand the ability of state longitudinal data systems to link across the P-20 education pipeline and across state agencies by:

- Establishing an interagency data committee with both policy leaders and technical/data staff; use this committee to not only draft proposals to apply for ARRA funding, but to manage the implementation of those grants and serve as a standing committee;⁶
- Creating a governance structure and implementing the necessary agreements (political, legal, and practical) among various agencies to ensure data can be shared across and among the P-12, postsecondary, and workforce systems;
- Clarifying state policies that ensure the protection of personally identifiable information while also authorizing the state longitudinal data system to collect, share, and link data from multiple systems for the purposes of evaluation and continuous improvement;
- Emphasizing interoperability across systems and states (e.g. standard definitions, specifications); consider partnering with other states to apply for ARRA funds;⁷
- Creating the political demand for sharing data – fostering a conversation about the need for information to follow student progress, even across state and district lines, and to break down the traditional silos.

Section III: The Colorado Context: Progress on the Promise

This is an overview of state policies and laws that are designed to improve longitudinal data systems. It summarizes recent state progress in this area.

The Recovery Act puts a strong emphasis on state longitudinal data systems, articulating clear criteria within the Act's assurances (see below), which are applicable to both Race to the Top and State Longitudinal Data Systems Grants. In addition, the Data Quality Campaign has issued a set of essential

elements of a longitudinal data system and a set of action steps necessary for states to use data for improvement. These recommendations will be used as benchmark criteria for state reporting under the Recovery Act.

Colorado has made strong progress in meeting the Recovery Act assurances but still has important work to do. Notably, Colorado has among the most capable longitudinal data systems in the country for tracking individual student progress and measuring and reporting it using the Colorado Growth Model. However, adding pre-school, early learning, and teacher information, as well as postsecondary and workforce information remain as important tasks—as do the need for major improvements in collections and storage. In 2006, the North Highland Company, an integrated management and technology consulting firm, prepared a report on the Colorado Department of Education’s data infrastructure. An executive summary of the report is referred to in Attachments section.

While the state has one of the most advanced systems for trapping and reporting the changes in student academic performance over time (Colorado Growth Model), Colorado faces an enormous challenge. The state has strong vision, capable leadership, a policy context that facilitates changes that are needed, momentum in developing breakthrough data tools, and a track record of sharing its open source solutions with other states. At the same time Colorado lacks the infrastructure needed to fully realize and execute its vision.

Recently enacted state legislation directly addresses the Recovery Act assurances and the priorities above specifically. These pieces of legislation include:

- ❑ SB-08-212 (Colorado Achievement Plan for Kids Act) requires the State Board of Education to adopt standards of the knowledge and skills that students should acquire from preschool through elementary and secondary education, as well as a system of assessments that are aligned with these standards. The act also requires CDE to implement a pilot program to evaluate standards and collect data regarding student performance on postsecondary and workforce planning, preparation and readiness assessments. The state board is to apply the data in creating standards for grades 9-12 and in creating the description of postsecondary and workforce readiness and in selecting the postsecondary and workforce planning, preparation and readiness assessments that will be administered statewide.

- ❑ SB 09-163 (Education Accountability Act) directs CDE to deploy a Web-based portal (known as SchoolView) that displays information on student performance and postsecondary readiness. The portal also must report school-level information about student enrollment, completion rates and mobility rates. Additionally, the portal must deliver instructional advice and content supported by formative assessment data to directly connect teachers across the state to enhance educators' collaboration, use of data, instruction, and professional accountability.
- ❑ HB 09-1065 (Educator Identifier System Act) directs CDE to develop the state's first system to assign unique identifiers for all educators, which can be used to match teachers with student outcomes. The teacher system provides the ability to link teachers, students, and educator preparation programs. Information gathered by the system will be used to study the "teacher gap," to evaluate teacher training and development programs, to study teacher mobility and retention issues, and to recognize and reward individual teachers. See attached summary of HB 09-1065.
- ❑ SB 09-1285 (Creation of a Data Advisory Board) creates the state's first Government Data Advisory Board and a 15-member Education Data Subcommittee to implement the state's interdepartmental data sharing protocol and improve data sharing practices between and among state departments, school districts, postsecondary institutions, non-profit organizations, and professional researchers.
- ❑ HB 1364 authorized the state's executive branch departments to share unit-level records and charged the Office of Information Technology with creating a state-level interdepartmental data sharing protocol. The bill also charged the state with assigning "state assigned student IDs or SASIDs" to students enrolled in publicly funded preschool programs.

Considerable progress regarding the implementation of these bills has been made. For instance, with respect to the 10 elements of the Data Quality Campaign, Colorado's current data system has successfully included all but three of those elements: (1) a teacher identifier system with the ability to match teachers to students; (2) student-level transcript information, including information on courses

completed and grades earned; and (3) the ability to match student-level P-12 and higher education data. With implementation of Colorado laws enacted in 2009 the state is poised to have all 10 elements in place within the year.

Section IV: Guiding Principles and Related Materials for Race to the Top Subcommittee Participants

Goal for Colorado

Establish a system of high quality information that allows educators to improve practice, students to understand progress, and the public to make informed judgments about the adequacy of their schools. Accomplish this by developing an integrated P-20 longitudinal data system that (1) provides high quality and useful information to support student achievement, and (2) unprecedented transparency of information to all stakeholders about school, district, and state educational performance.

Guiding Questions for Race to the Top Subcommittees

1. How can these funds advance this reform vision and accelerate Colorado's efforts to achieve its goal?
2. What will we gauge that our data system is improving against the competition we care about most?
3. How will changes alter teaching practice and student learning in ways that improve student performance?
4. How is attention in this arena addressing the unique needs of our youngest learners?

Resources

Attachment I: *North Highland Report Executive Summary*

<http://www.cde.state.co.us/cdegen/downloads/NorthHighlandExecSummary.pdf>

Attachment II: *Summary of HB 09-1065* (Statewide Educator Identifier System)

<http://www.cde.state.co.us/cdegen/downloads/HB09-1065EducatorIDbill.pdf>

Attachment III: *Data Quality Campaign Overview of Actions for Policymakers*

<http://www.dataqualitycampaign.org/using-data-systems/roadmap-for-states>

Section V: Race to the Top Committee Contacts

Committee Co-Chairs

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Colorado's Race to the Top

<http://www.colorado.gov/cs/Satellite/LeftLtGov/LLG/Page/1240228831801/1187340344163>

Section VI: Conclusion

Colorado is in a providential position as it begins the process of assembling its proposal for Race to the Top funds. Assurances spelled out in the Recovery Act are directionally consistent with the state's established reform agendas, in particular Governor Ritter's Colorado Promise and The Department of Education's "Forward Thinking" document. More importantly, the state has made noteworthy progress in all of the assurance areas. In other words, the Race to the Top competition provides an unprecedented opportunity for the state to think big while maintaining a clear focus on its existing agenda.

Nonetheless, for Colorado to remain competitive, regardless of whether the state receives Race to the Top funds in the coming year, the communities of the state must collectively embrace the belief that transformational reform is both necessary and possible. To this end, innovation is essential. But innovation is not just change for the sake of change. It must lead to improved processes and results—and, ultimately, dramatic, measurable improvements in student achievement. The courage to move forward and envision a system in which all students realize their own God given potential is our covenant to the future generations of Coloradans.

Produced by Colorado Department of Education, Office of Governor Bill Ritter, Jr. and Office of Lt. Governor Barbara O'Brien

It's an exciting time. Outcomes of the work taking place in the next five months have the potential to change Colorado's future educational and economic outcomes. Children deserve our best efforts and most innovative thinking, and we welcome all who wish to engage in this process. With the help of the entire Colorado community, we will realize our collective goals while moving boldly into the 21st century.

¹ The American Recovery and Reinvestment Act, Title XIV, Section 14006 (Public Law 111-5) at www.ed.gov/programs/racetothetop/legislation.html

² Section 6401(e)(2)(D) of the America COMPETES Act of 2007 (20 U.S.C. 9871). Public Law 110-69 at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_cong_public_laws&docid=f:publ069.110.pdf

Sec. 6401. Alignment of secondary school graduation requirements with the demands of 21st century postsecondary endeavors and support for P-16 education data systems.

(a) Purpose.—It is the purpose of this section—(1) to promote more accountability with respect to preparation for higher education, the 21st century workforce, and the Armed Forces, by aligning—

(A) student knowledge, student skills, State academic content standards and assessments, and curricula, in Elementary and secondary education, especially with respect to mathematics, science, reading, and, where applicable, engineering and technology; with (B) the demands of higher education, the 21st century workforce, and the Armed Forces; (2) to support the establishment or improvement of statewide P–16 education data systems that—

(A) assist States in improving the rigor and quality of State academic content standards and assessments;

(B) ensure students are prepared to succeed in—

(i) academic credit-bearing coursework in higher education without the need for remediation;

(ii) the 21st century workforce; or

(iii) the Armed Forces; and

(3) enable States to have valid and reliable information to inform education policy and practice.

Further, the assurances section from the Nelson-Collins Amendment to the ARRA makes reference to the America COMPETES Act of 2007 and stipulates the following (this was adopted on or about February 10, 2009).

(3) Improving collection and use of data.—The State will establish a longitudinal data system that includes the elements described in section 6401(e)(2)(D) of the America COMPETES Act (20 U.S.C. 9871).

(4) Standards and assessments.—The State—(A) will enhance the quality of academic assessments described in section 1111(b)(3) of ESEA (20 U.S.C. 6311(b)(3)) through activities such as those described in section 6112(a) of such Act (20 U.S.C. 7301a(a)); (B) will comply with the requirements of paragraphs (3)(C)(ix) and (6) of section 1111(b) of ESEA (20 U.S.C. 6311(b)) and section 612(a)(16) of IDEA (20 U.S.C. 12(a)(16)) related to the inclusion of children with disabilities and limited English proficient students in State assessments, the development of valid and reliable assessments for those students, and the provision of accommodations that enable their participation in State assessments; and (C) will take steps to improve State academic content standards and student academic achievement standards consistent with 6401(e)(1)(A)(ii) of the America COMPETES Act.

³ Elementary and Secondary Education Act of 1965, 20 U.S.C. 6311(b)

⁴ Aimee Guidera, “State Longitudinal Data Systems” from *A Briefing for the National Governors, Perfecting the Formula Effective Strategies = Educational Success*, June 14-15, 2009, James B. Hunt Jr. Institute for Educational Leadership and Policy, Issue Brief IV

⁵ Data Quality Campaign

⁶ This work is being undertaken by representatives from the Colorado Department of Education (Chief Information Officer) and the Department of Higher Education (Chief Academic Officer).

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