

Improving Data Use

August 30, 2011

State goal: To provide tools along with a technical and cultural environment that informs policies and decisions to support effective data use towards improving student achievement.

State Strategy: The mission of the Massachusetts Department of Elementary and Secondary Education (Department) is to *“improve the quality of the public education system so that students are adequately prepared for higher education, rewarding employment, continued education, and responsible citizenship.”* An essential component of this mission is to provide educators at all levels of the education system the tools that are needed to prepare students for their future. The effective and efficient use of technology, data and information is critical to ensuring the success of our students. The Department will utilize a three-part strategy to meet this goal and the ten priority projects that have been chosen are a reflection of this strategy.

Strategy #1: Data Infrastructure

Provide the technological tools to stakeholders so data and information may be appropriately used.

The Department must provide the tools to utilize the relevant data in an effective and efficient manner.

- Timely and accurate data
- Instant results no waiting
- Easy to access and get information quickly where necessary
- Some decision making for users (EWIS – risk assessment)

Strategy #2: User Experience

Provide the most relevant data and information to stakeholders ranging from the state to the classroom.

The introduction of longitudinal data systems into the field of education has produced an abundance of data related to students, educators, administrators and education institutions. This sharp increase has occurred while the amount of classroom instruction time has remained essentially the same. The Department must commit to providing the pieces of data and information that will be the most effective in improving student achievement. A system that simply provides all of the data and information known on a particular student or school will be overwhelming and less successful than a system that is targeted in its approach to data delivery.

Strategy #3: Culture of Data Use

Promote the culture of effective data-driven decision-making at all levels of the education spectrum.

The Department cannot simply provide data to school districts and expect that its capabilities will be maximized. Data use in the classroom needs to be routine and not the exception so it is critical that the Department promote the culture of data use through its policies and practices. To that end, the Department must continue its commitment to Data-Driven Decision-Making by integrating data into its accountability and assistance efforts while turning data into actionable information. High quality data are essential to this theory of action and the Department must continue to stress to importance and benefits of timely and accurate data submissions. Lastly, the Department must ensure that its prospective educators in preparation programs are properly trained in data use when they enter the profession.

Targets:

Data Infrastructure	On budget, on-time rollout of projects, within scope
User Experience	<ul style="list-style-type: none"> 80,000 educators with access by 2014 (100% of LEAs) 50,000 teachers with access by 2013 (75% of LEAs) 8,000 teachers using during 2013-2014 school year (90% of LEAs) X% improvement in user satisfaction from baseline
Culture of Data Use	<ul style="list-style-type: none"> Train ~2,000 educators/trainers when Early Warning Indicator System is rolled out Train 25,000 educators/trainers when Teaching and Learning System is rolled out Data leader licensure endorsement available by 2012 Improvement in educator evaluation info on data use

Priority projects, leadership, and management: The Executive Sponsor for the Data goal is Deputy Commissioner Jeff Wulfson. The following table includes the “priority projects” of this Delivery Plan and the Project Managers responsible for each.

Priority Projects	Business Managers	IT Managers
1. P20—Expand Educator Report Delivery and Access	Andrea Condit	Vladimir Hyppolite
2. P20—Integrated Data System (includes SMARTT, Pre-K and Higher Ed)	Robert Curtin	Vladimir Hyppolite
3. Teaching and Learning System (includes vocational competency tracking)	Bob Bickerton & Julia Phelps	Suzan Kinaci
4. School Interoperability Framework	Robert Curtin	Valentin Torres
5. Common Education Data Standards	Robert Curtin	Vladimir Hyppolite
6. Early Warning Indicator System	Jenny Curtin	Harry Hart
7. Educator Evaluation (collection of 7 data points)	Maryanne Donie	Jessica Perez-Rossello
8. Create a data team leader endorsement for licensure in ELAR (RTTT)	Liz Losee*	Jessica Perez-Rossello
9. Educator Training on Data	Andrea Condit & PD Coordinator	Jessica Perez-Rossello
10. Professional Learning Community Expansion	David Parker*	

Timeframe for changes among priority projects: The following table shows the time periods of implementing substantive policy or programmatic changes at the Department. After the shaded time period is complete it is expected the project will be operating as “business as usual.”

Project Timeline and Anticipated Impact

Priority Projects	2011		2012				2013				2014			
	Jul-Sept	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sept	Oct-Dec
P20: Integrated Data Systems (includes SMARTT, etc.)							X							
P20: Expand Educator Report Delivery & Access							X							
Teaching and Learning System (includes Competency Tracking System)		procure		pilot			X							
Early Warning Indicator System				X										
Educator Training on Data					X									
SIF		1	2	3		4								
Create a Data Team Leader Endorsement for Licensure in ELAR									X					
Educator Evaluation (Collecting 7 Data Points)				X										
PLC Expansion				pilot								X		
CEDS									X					

1) P20—Expand Educator Report Delivery and Access

Project Description	<p>Provide a re-architected data system with role-specific information that provides rapid, relevant and timely reports to teachers, school leaders, district administrators, and state analysts, while ensuring that user access to data meet state and Family Educational Rights and Privacy Act (FERPA) regulations.</p> <p>Massachusetts’ students are outperforming their peers nationally and are competitive in math and science with students from the top performing nations. Yet proficiency gaps among subgroups persist and the advantages that accrue to students performing at even higher levels (advanced) are increasingly apparent. A broad consensus has emerged that we can and must use data more effectively to inform decisions and support continuous improvement, e.g., including support for strategies like differentiated instruction. This requires easy and fast access to up-to-date data that is relevant to the task and delivered in ways that each user can readily comprehend and translate into action. Several deficiencies in the current system justify the work laid out here:</p> <ul style="list-style-type: none">• The original design and additional development to date of the data warehouse has focused on data and reports of interest at the district and school levels. A major goal of LDS is to shift the functionality of the data warehouse to be of greater use to the thousands of classroom-level educators across the state, as well as to ESE’s internal customers. The utility and form of EDW resources must be confirmed with a larger group of district and school leaders. New data and reports will need to be conceived of and delivered for teachers and the differential needs of ESE staff/teams working on different strategies.• A threefold increase in users of the Education Data Warehouse in just the past two years (to 8,000) has revealed shortcomings in its architecture: some of the reports are taking too long to run. This situation will only get worse as the number of total and simultaneous users continues to increase.• Teachers would like to have access to student performance information, but how they want to view the data is different from administrators and analysts. They will need different reports in a user-friendly user interface designed for teachers.• For the data system to be useful to teachers it must provide very up-to-date information, e.g., it will not be useful if it provides a snapshot of students in her class created in October when 2 students have left and 3 joined her class by the 1st week of December.• Some districts and schools are interested in uploading other data sets into the “EDW/Data Mart;” this has proven difficult and at times problematic. Through focus groups, school districts will identify high-priority data sets that are candidates to be uploaded.• ESE staff has information needs that differ from that of administrators, educators and school leaders.
Project Leadership	Vladimir Hyppolite and Andrea Condit
Project Scope and Activities	<ul style="list-style-type: none">• Provide “up to 100,000 users” access to user defined reports. A specific list of user roles needs to be defined to identify all those whose information and access needs should be determined and whether any roles are excluded from this project’s assumed users; those roles are expected to include district administrators, teachers, school leaders and ESE staff. At a category level, this project must provide requirements that reflect the following categories of users and information needs:<ul style="list-style-type: none">○ Teachers and other classroom educators: User report and access requirements for daily and weekly use by K-12 public and teachers based on MCAS, SIMS and daily SIS data; estimated to be up to 70,000 users.○ Principals and other school administrators: User report and access requirements for daily, weekly, and monthly use by K-12 school leaders (Principals, Assistant Principals, etc.)

based on MCAS, SIMS and daily SIS data as well as added EDW data sets for Finance, ELAR, SSDR and NCH. Estimated to be 5000 – 10,000 users.

- Superintendents and other district leaders: User report and access requirements for weekly and monthly use by K-12 district leaders (Superintendents, school district central office staff, etc.) based on MCAS, SIMS and daily SIS data as well as added EDW data sets for Finance, ELAR, SSDR and NCH. Estimated to be 5000 - 10,000 users.
 - ESE staff: ESE agency users at all levels need a range of data on a weekly, monthly, and periodic basis to inform their work with districts based on MCAS, SIMS and daily SIS data as well as added EDW data sets for Finance, ELAR, SSDR and NCH. Estimated to be less than 1000 users.
 - Other agencies: User report and access requirements for PK-20 analytical reports on periodic basis for policymakers and agency staff at EEC, ESE and DHE; estimated to be up to 10,000 users.
- Identify primary, secondary, and tertiary users for decision-making analysis who will be accessing and applying the information. (e.g. ESE, districts, other policy makers). This includes determining the degree to which state and private educational institutions will be served by the upgraded data system.
 - Solicit input from stakeholders via surveys and focus groups to identify their primary, secondary, and tertiary data needs. Stakeholders will identify the questions they most often ask in relation to improving teaching and learning, the data they need to answer these questions, how often, and in what form. Stakeholders will also identify any high-priority local (district) data they would like to upload to the state's EDW.
 - Make a determination regarding the extent to which any other state and/or private entities will have access to the data.
 - Solicit input from teachers about the particular information and reports that will provide them the best day-to-day information to inform instruction.
 - Create use cases to demonstrate what information is needed for each role.
 - Detailed analysis of information stakeholders currently use today as well as the vision for what information will be sought in the future and the most effective way to access it. This includes collecting data on which EDW and online reports (e.g. school/district profiles) are most commonly accessed, and by what types of users, as well as feedback on the value of current EDW training modules.
 - The visioning for what information will be sought in the future should be supported by providing stakeholder focus groups with examples of potential reports and information utilization that helps them to "think outside the box" (e.g. the reporting functionality provided by the Los Angeles Unified School District (LAUSD)).
 - Formulate data requirements that will be the basis for determining what data storage architecture is needed for each use case (e.g. EDW or another vehicle). It must take into account not only the expected number of users (capacity), but also the types of information expected to be asked, the frequency of use, and the most likely questions the information should answer. Requirements will specify what information is best delivered by canned reports vs. ad hoc queries, and which of these will be made available for online access. Goal might be 80% of users use these canned or simple ad hoc reports.
 - Research the approaches / options for storing, accessing, and reporting data, including alignment with data dashboard, utilization training, and other work that may emerge from the Race to the

	<p>Top initiatives (Teaching and Learning System, dashboard, and data use training)</p> <ul style="list-style-type: none"> Define the education and training requirements that define a means to maximize user adoption of developed systems and effective use of available information. Definition of requirements will not be limited to training on how to use system tools, but also how to accurately interpret available data, and what types of decisions can or cannot be informed by available data. Ease of creating queries and how quickly people can get the information sought should be considerations as well. The goal is to design a system that requires minimal training (e.g. 30 minutes or less) for the majority of users to access data, so the majority of training can focus on utilization. Note that the development of trainings to <u>access</u> data falls within the scope of this charter. However the development of training for <u>utilization and application</u> of data is outside the scope (Race to the Top has funds to develop 10 new trainings as well as revising the existing six EDW trainings) Determine and document the required hardware and software specifications for required systems and procure. Pilot proposed reports and associated delivery mechanisms with different user groups. Document satisfaction and recommendations for changes/additions, determine scope for changes, and (re)develop in preparation for going to scale. Analyze the capabilities as well as the pros and cons of enabling districts, schools and teachers to upload other appropriately-prioritized data into the “EDW” and determine whether enabling these options is feasible at this time. Design and build a process to allow districts to generate their own reports, including for assessments, based on their own district data, and combine district-specific data with state-level data (MCAS, MEPA, MELA-O). Determine an efficient architecture and capability, along with considering and defining the level of support that ESE can provide for doing this to the districts.
Project Timeline	<p>4/30/11 Requirements 7/30/11 Design - system architecture (including security) 8/30/11 Procure - hardware & software 4/30/12 Build – system for educator access 6/30/12 Testing 7/30/12 Training for educator access system Pilot 9/30/12 Rollout - Pilot 3/30/13 Training Delivered - Statewide: educator data access system pilot 3/30/13 Rollout - Statewide</p>
Project Stakeholders	Teachers and Administrators
Effects on the Target	<ul style="list-style-type: none"> P-12 data is available to the defined base of users in a manner that meets their information needs in terms of usefulness of content as well as performance. <ul style="list-style-type: none"> It is critical the project result in strong performance for both a significantly increased total body of users as well as a significantly greater number of simultaneous users. Information is available through a combination of pre-set reports as well as ad hoc reporting and query capability to meet the needs of specified user roles. User access to data and reports are compliant with FERPA as well as any state or federal regulations applicable within the Commonwealth. The user trainings for how-to access information is very straightforward and delivered in a limited period of time for the majority of user roles. (NB: the online portion of the training will be built as part of the RTTT initiatives.) See “Educator Training on Data” project. System design enables the capacity for local school districts to upload data (based on a

	<p>determination of priority and reasonableness to be uploaded).</p> <ul style="list-style-type: none"> • A flexible architecture and design that allows for response to new learnings and changing information needs. • A plan for sustainability, maintenance, and upgrades is established.
Performance Management	<ul style="list-style-type: none"> • Project is delivered on schedule and within scope • User needs met in terms of data content and system performance • Pre-set reports are delivered with accuracy and timeliness

Risks	Solutions
More needs are identified by users in focus groups than this project has the capacity to address.	
The P-20 Data project does not fully integrate the data from DEEC, DESE and DHE into a data system that provides the information required by the expanded base of users identified for this project, or does not make that information accessible in a timeframe compatible with the needs of this project.	
The information needs of the expanded base of educators and district personnel are not satisfactorily defined by using a representative sampling of the various user roles throughout the state.	
Standardized pre-set reports can not be defined that will meet the majority of the stakeholder/user needs.	
Accessing the required information from the data system is more complex than desired, requiring unexpected training or specialized knowledge.	
Given the large number of dependencies with multiple other projects, coordinating milestones and deliverables will be challenging; timelines and budget could be impacted.	
Security controls are not adequate to protect the data from users who should not have access to it.	

2) P20—Integrated Data System (includes SMARTT, integrate Pre-K and Higher Ed data)

Project Description	Comprehensively link and integrate data from DEEC, DESE and DHE into a re-architected data system with role specific data marts that provide rapid, relevant, timely and Family Educational Rights and Privacy Act (FERPA) compliant data reports to users.
Project Leadership	Bob Bickerton, Executive Sponsor Tom Weber, Sponsor Rob Curtin, Lead Customer Representative
Project Scope	<ol style="list-style-type: none"> 1. All design specifications will conform to FERPA requirements; these include data storage, access, reporting and security. Documentation being developed as part of LDS1 should be referenced and used to the greatest degree applicable. 2. State-assigned student identifiers (SASIDs) are assigned as the key to linking DEEC, DESE and DHE records thus providing a means for longitudinal analyses. SASIDs will be assigned to students under the purview of any/all of the three agencies – as existing students move from one population to another, the SASID should follow them. New students coming into any of the levels/populations in the Commonwealth should have SASIDs assigned to them at the point of entry. 3. The appropriate architecture of the “data system” for collecting and storing data from the three agencies will be determined as part of this project – such architecture will be based on data, reporting, security, FERPA and performance requirements. The data system will be flexible enough such that if FERPA changes, the system can readily adapt or be adapted while also meeting the applicable legal requirements. The architecture must also be scalable and able to accept data from additional sources beyond those provided by educational agencies (e.g. EOLWD - Executive Office of Labor and Workforce Development) 4. Design and build data systems that meet P-20 data, user access, and report requirements. The project will be supported by the work of the Education Agency Data Sharing Workgroup (EDSAG) which is charged with maximizing interagency access and use of education data that supports policy development, decision making and continuous improvement within a FERPA-compliant Massachusetts legal framework. The design of the data system will also take into account the requirements of the associated LDS-2 project ‘Expand Delivery & Access to Educators’. 5. Include and integrate ABE data into the longitudinal data system. 6. Include and integrate National Student Clearinghouse data into the longitudinal data system. 7. The following items should be assessed as to their feasibility and a determination made as to whether they should be “in scope” for this project:¹ <ul style="list-style-type: none"> ○ Can and should we include data that DHE collects from private institutions ○ Should there be a common link/identifier for <u>all</u> educators including those in areas such as Adult Education so that they can be tracked as they move from one agency/program to another ○ Should all students, broadly defined to include all those in the purview of any education entity (e.g. Adult Ed, private schools, SPED, DYS), be assigned SASIDs ○ In addition to DHE agency staff access to integrated data, can/should access be available to specified personnel at the campuses
Project Activities & Timeline	<p>What is New or Improved: (The entire project is a new initiative)</p> <ul style="list-style-type: none"> • The milestones and the associated target dates reflect rough estimates identified during high level planning. After the charters are approved, project schedules will be re-assessed and revised, and subsequently submitted to the Sponsor for approval. New dates will be based on

¹ An added area of concern to be resolved: Does any provision needs to be made for public access to the data?

	<p>interdependencies between other SLDS projects and availability of department and contracted resources.</p> <p>4/30/11 Requirements 1/30/12 Interagency Integrated SASID Assignment (DESE, DEEC, DHE) 7/30/11 Design - system architecture (including security) 8/30/11 Procure - hardware & software 4/30/12 Build 6/30/12 Testing 3/30/13 Rollout</p>
Project Stakeholders	Teachers and Administrators
Performance Management	<ul style="list-style-type: none"> SASIDs are implemented and used in all three agencies A data system has been built and tested which includes integrated data from EEC, ESE and DHE that conforms to the agreed-upon basis for sharing of data. Tools are designed, tested and provided to designated agency staff that enable queries to be run and reports generated that do not disclose any private/confidential information that use data from more than one agency. Such queries and reports are subject to the provisions and permissions detailed in the EOE Data Sharing MOU. Reporting functionality (whether in the form of reports, cubes, dashboards etc.) is in place which meets the information needs of the policymakers in all three agencies. The developed system provides a flexible means of configuring user access to keep up with potential changes in FERPA regulations.
Effects on the Target	<ul style="list-style-type: none"> Project is delivered on schedule and within scope

Risks	Solutions
Unique SASIDs must be adopted and assigned by each agency no later than "dates TBD".	
EEC and DHE must be able to use the xDUID routine to match and request SASIDs.	
The EEC warehouse to be developed, ECIS, and the Unified System need to be available to interface with the new Data System – dates TBD – current estimate is no later than April 2012.	
Training for agency staff in use of the P-20 system is dependent upon RTTT for part of its funding.	

3) Teaching and Learning System

Project Description	<p>As part of the Race to the Top (RTTT) proposal, ESE will develop and implement “a statewide PreK-12 Teaching and Learning System that allows every educator to provide individualized instruction to meet the needs of our diverse student population.” ESE plans to “build, modify available open source solutions and/or subscribe to systems that together will provide teachers and instructional leaders with a comprehensive, well integrated teaching and learning system.”</p> <p>The Teaching and Learning System (T&L System) will begin with the 258 RTTT districts and ultimately provide meaningful information and curricular resources to 80,000 educators in all public school districts across Massachusetts. The goal of this system will be to “enable more students to meet high standards” (p 53). The system will be used by classroom teachers, educational specialists, principals, other district and school administrators (such as curriculum directors), and superintendents. Districts will be able to use individual components of the T&L System or the system as a whole. In order to use the system as a whole the districts must be SIF compliant, but this won’t be required for those choosing to use individual components of the system.</p> <p>The system will include four components that will be integrated with each other, and also with other ESE data systems. Because the integration is such a significant and important aspect of the T&L system, it will be discussed as a fifth component of the system. Specifically the T&L system will include:</p> <ol style="list-style-type: none">1. Model Curriculum Units<ol style="list-style-type: none">a. Including Curriculum Embedded Performance Assessments2. Digital Resources / “Library”3. Online Interim and Formative Assessment System4. Vocational Technical Competency Tracking System5. Seamless integration with the Department’s Data and I.T. Systems<ol style="list-style-type: none">a. Including near real-time data exchange and dashboards to access and navigate the T&L and Data Systems Components <p>The Teaching and Learning System (TLS) will be a comprehensive system with integrated curriculum, assessment and digital library components. Massachusetts educators will have access to the system through a single-sign-on process. Students will sign on and utilize relevant components as directed. However, outside content providers, such as those providing Professional Development content, will be able to provide materials without the need to sign on. This will be made possible through a federated search process used by the Teaching and Learning System to categorize and locate relevant content.</p> <p>These systems are envisioned to provide resources that Massachusetts school districts need to support and improve instruction; and improving instruction is expected to improve student outcomes.</p>
Project Leadership	<p>Bob Bickerton and Julia Phelps (Executive Sponsors) Suzan Kinaci (Project Manager)</p> <p>(Lead Customer Reps) Model Curriculum Units: Lori DiGisi CEPA: Katie Bowler Digital Library: Connie Louie Online Interim and Formative Assessment: Kathleen Flanagan</p>

	Vocational Technology Competency Tracking: Maura Russell
Project Scope	<p>The system will provide a wide array of capabilities for educators. A number of these capabilities have been defined and are described below. Others need to be defined based on input/requirements of school district personnel. IT and “business”/program staff will gather information on district requirements through a series of efforts, including:</p> <ul style="list-style-type: none">• Online District Survey – To identify the number of RTTT participating districts that have T&L software, relevant costs, key capabilities, needs, and other input• Site visits to selected districts – To develop an understanding of how existing tools are used, which features they find most and least useful/used, what the limitations are, and any “wish list” items. This information will be used in part to evaluate functionality needed for the system, and also to inform questions for stakeholder groups.• Stakeholder groups – To develop a more detailed understanding of what users in a variety of roles want from a new T&L system and to help prioritize the requirements. <p><u>ATTRIBUTES/CAPABILITIES OF THE T&L SYSTEM</u></p> <p>Users – the T&L system is designed to be used by a variety of stakeholders for a variety of purposes, including:</p> <ul style="list-style-type: none">• Teachers, Teacher aides• School Principals, assistant principals and other administrators• Superintendents, and other district level personnel (e.g., curriculum coordinators)• Students (for the purpose of taking assessments)• Professional Support Personnel (by providing them with relevant reports) <p>Teachers should be able to access the integrated system as a whole, which will require SIF compliance, or individual components of the system separately.</p> <p>The Scope of the T&L System’s capabilities is further described as follows:</p> <p>MODEL CURRICULUM UNITS TOOLS</p> <p>The T&L system must provide:</p> <ul style="list-style-type: none">• Intuitive access to Massachusetts Curriculum Standards and Related Resources• A way to display, link to and extract from ESE’s model curriculum units including a way to include usage statistics for model units• A tool for districts to download a copy of model units• Tools, including an equation editor with drag and drop capabilities, for districts to modify and save a district-specific version of model units and a tool for districts to create their own curriculum units at district level.<ul style="list-style-type: none">○ The Unit Planning tool must include the capability to search for related content in the Digital Library and incorporate those resources into the unit (e.g. link to the content) and should be backward design compatible based on the template provided by the state for this purpose.

DIGITAL LIBRARY

The Digital Library component of the T&L system will provide links to a variety of online resources. All resources must be:

- High quality resources
- Coded to the Massachusetts Curriculum Framework Standards

Digital Library resources will include:

- Model Curriculum Units
- High Quality Lesson Plans (developed by outside parties such as WGBH or Thinkfinity) – and a tool to develop lesson plans
- Resources that can be used to develop Unit and Lesson plans
 - Text resources
 - Video resources
 - Audio clips
 - Exercises and problem sets
- Instructional videos used for professional development purposes (e.g. videos of effective standards-based instruction)

“Resources will not be limited to those in PBS/Massachusetts Teachers’ Domain (MTD). MTD will have the capability to perform metadata exchange, cataloguing, and integrated search with other digital libraries” (Digital Library business charter, p2).

Volume – It will be important to define the expected volume of objects to be stored in the ESE Digital Resource Library. Many digital resources, particularly video, require significant system resources (space) and it will be critical to plan sufficient capacity. In addition to resources hosted by ESE, The Digital Resources Library/platform will link to a large number of resources available through other online collections.

Object Standards – It is critical to identify the standard to be employed for the Digital Resource Library. In order to link to/share and up/down load resources, various content holders (including ESE) must use a common object standard.

Search Tool - “A key feature of the digital library system will be a search tool which will allow users to easily search for and find teaching resources based on:

- Current Massachusetts Standards,
- Organizing ideas,
- Keywords and grade levels

Resource Rating – The Library will provide the ability to rate and leave comments related to particular resource.

ONLINE FORMATIVE AND INTERIM ASSESSMENT SYSTEM

The Online Formative and Interim Assessment System will include 5 central capabilities:

1. The ability to generate formative assessments
2. The ability to generate interim assessments – see Glossary for definitions for interim and formative assessments
3. Guidance on building formative and interim assessments with instructions for

teachers on how to create assessments

4. The ability to administer assessments to students online, as well as the ability print out hard copy versions of the test (with scannable answer documents and related work generated by students in response to constructed response items and performance assessments).
5. The ability to generate thorough reports that provide teachers information about students' mastery of content.

Formative Assessments - The Formative Assessment component will:

- Enable users to select test items based on a number of criteria and create formative assessments comprised of test questions that meet the criteria. Criteria will include:
 - Number of questions
 - Subject
 - Grade level(s)
 - Educational standard(s)
 - Item type
 - Cognitive demand
 - Difficulty
 - Vetted/non-vetted
- Score machine scorable items in near real time and provide results back to users (see Data/Reports);
- Provide an easy to use utility to enter scores for non-machine scorable items

Interim Assessments – The test builder will also enable the creation of Interim Assessments based on all the functionalities listed above under “formative assessments”, with the following differences:

- Only vetted items will be able to be selected for interim assessments; a district level over-ride of this limitation will likely be necessary
- A subset of the bank of released items will be designated as “secure”. These secure items will only be available for use on interim assessments. Therefore, a district creating an interim assessment can be sure that items they select were not also used by teachers in their district for formative assessment.
- Online guidance will be available to support the development of Interim Assessments

Reports/Data – The OIF will have a comprehensive set of reports that will support teachers and administrators in using the results of assessments to target future instruction. Some reports that will be needed include

- Detailed reports of prior and new performance and other related information for each student at granular (i.e., item and standard levels)
- Detailed reports for each class:
 - Assessment results by students and item/standard
 - Results by student across multiple assessments
- Reports by school/grade/district
 - Assessment results by class/school and item/standard
 - Results by class across multiple assessments
- Report of standards tested
- Report of test quality for Users
 - Classical item test statistics included (TEST: alpha, test mean and standard deviation, dimensionality; ITEM: mean/difficulty, standard deviation, pbis or related measure of discrimination)

- Test quality rating based on the above: Excellent, Good, Fair, Poor
- May want option to remove problematic items to re-evaluate test quality from the same administration
- Report of test quality statistics for Administrators (LCR and OIF team)
 - Report provides data on:
 - District/School/Classroom(s)
 - Grade(s)
 - Number of students
 - Number of items
 - Content Areas by Item (Standards)
 - Cognitive Demands by Item (if collected)
 - A Priori Test quality measures (as estimated by the system (mostly MCAS) measures, 3-Parameter test and item measures and classical test and item measures)
 - Post Hoc Test quality measures (as estimated in the test administration, classical test and item statistics)

Items

Within the OIF system, the test builder engine will draw on a bank of test items. This bank will include:

- Previously released MCAS items
- “Items related to subjects and grades for which we do not have released MCAS items, e.g., grades 1 & 2 reading and math, foreign languages, music, art, etc. These items available to districts, along with the test builder engine, can be used to construct additional assessments and related measures of growth (p80).”
 - Possible collaboration efforts with other states may allow sharing of released items that could fulfill this requirement
- Items uploaded by educators
- Items acquired from other sources

There will be multiple sources for test items:

- The system will be pre-loaded with previously released MCAS questions. These items will include statistics and are known to be high quality.
- The system will allow the upload of batches of items (rather than single items). This capability can be used by ESE to upload items developed for non-MCAS grades and subjects and also for items developed by other trusted parties (e.g. other states and, potentially publishers and other commercial vendors)

ESE is exploring the possibility of sharing test items with other states as a way to increase the pool of available items. The ability to upload batches of items would be essential for this activity.

- The system should allow permissions for users to upload questions
 - The system should be able to display uploaded questions as non-vetted
 - Districts should be able to upload questions in bulk
 - The system may need the capability to collect, store and update statistics for these questions as they are used as part of tests (“We will also evaluate the feasibility of collecting item statistics for the non-vetted items, with the expectation that some will ultimately meet our criteria for acceptance into the vetted item bank p 80”)

- The system should provide the capability for designated reviewers to review and vet questions uploaded
 - If suitable, item status can be updated to “vetted”

The Item bank must be able to store a variety of information about each item, including:

- Massachusetts Curriculum Framework Standard
- Coding to both a primary and secondary standard, if applicable
- p-value (a measure of item difficulty)
- discrimination
- cognitive level
- a/b/c parameters
- text summary of item (where relevant)
- usage statistics

Scoring – The OIF will provide automated scoring of assessments to the greatest extent possible. Specifically, the OIF will:

- Provide automated scoring of all multiple choice questions
- Automated scoring of constructed response items and innovative machine scorable items (e.g., through artificial intelligence and other mechanisms), as much as possible
- Diagnostic scoring for diagnostic item types
- When automated scoring is not possible (e.g., for extended-response items), scoring materials (rubrics, scoring notes, and student exemplars) will be provided for teachers to score student responses. There will be a user-friendly process for teachers to manually enter scores for these items. These manually entered scores will be integrated with automated scores – resulting in a comprehensive student report that should be available soon (almost immediately vs. within 24-72 hours) after item scoring is complete.
- When using paper based testing the hard copy capabilities of the system could include “gridded response” sheets for students to provide short answers and have them scanned then machine scored.

Format – The OIF must accept a variety of inputs to accommodate the full range of technology that exists in Massachusetts school districts. Assessments must be available online for districts/school/classrooms that have the ability to administer tests online. The OIF must also have the ability to print hard copy versions of the tests, including scannable formats that allow for automated scoring. (see p 80)

“We will build an online assessment delivery system for LEA use with hard copy backup (including scannable answer sheets), along with tools to automate scoring (including constructed response items) to the maximum feasible extent and to support additional hand scoring as needed.

- **INTEGRATION OF SYSTEM COMPONENTS** – The integration of system components will be critical to the effectiveness of the system, and is in itself a key capability of the system. Key integration points will include:
- The ability for the state and/or districts to upload new “model units” to fill gaps in their curriculum map; when entered by districts, only teachers in that district would have access to these additional “model units;” it would be beneficial to also provide support for the state (ESE) to have access to these additional district generated

	<p>models in order to vet them for possible dissemination statewide</p> <ul style="list-style-type: none"> • The ability to link curriculum resources from the Digital Library to curriculum units and make these easily available to teachers preparing instruction for a given unit • The ability to move easily from a curriculum unit to the test builder to develop an assessment that is relevant to the unit, • The ability for districts and teachers to upload items to the item banks; districts should be able to “append” items to the “secure” item bank (that will not be available to other districts unless released statewide by ESE); teachers should be able to add items directly into the non-vetted item bank; the system should be able to generate and aggregate item statistics each time an item is used and provide reports to ESE and users related to these item statistics • The ability to suggest refresher resources/materials based upon the results of formative and interim assessments to individual or groups of students • The ability to point to the next curriculum unit based upon the district curriculum map; these will include associated model units to the extent they are available • Comprehensive integration with the P-20 data system and reporting • Lesson Planning Tool - Teachers will be provided with a lesson planning tool that is context sensitive, i.e., “aware” of the standards covered by the curriculum unit that it has been developed for. The lesson planning tool will be standards-based and will identify the objectives of the lesson, the materials and resources necessary for the lesson and the various assessments associated with the lesson. The tool will also identify the sequence in which the lessons should be taught, closure activities for students, and possible homework assignments. There will also be a place for teachers to reflect on the lesson and evidence of student learning. This reflection will be used as they review and revise the lesson to modify instruction going forward. <p>“THE LOGON and accompanying role-specific dashboards will be common across all resources (p79).” Clearly the logon process for T&L and other systems (e.g. Moodle/MassOne/EPIMS) must be consolidated so that users can utilize a single sign-on.</p> <p><i>*NOTE: In addition to the scope described above, there are lists of potential system features for both Digital Curriculum and Assessment attached as appendices. Some of the features described in these lists are included the Scope, above; others have not yet been determined to be essential to the system. These lists will be updated when these features are reviewed and prioritized.</i></p>
<p>Project Activities & Timeline</p>	<p>What is New or Improved: (The entire project is a new initiative)</p> <ul style="list-style-type: none"> • The full Communication Plan for the LDS2 program and projects is documented in more detail elsewhere. For the P-20 Data project sponsors and LCR, the key points are as follows: • The project manager will produce a Project Status report each week. The report is expected to include accomplishments for the period being reporting, activities planned for the coming week, overall schedule status, change request activity, and project issues (including risks that have ‘happened’). • The status report will be distributed to the Sponsors, the LCR and the Agency Reps; the LCR will bring to the sponsors’ attention any item or concern he judges necessary to do so. • The project manager will meet with the LCR to review the status report and to discuss any project issues, newly-identified risks, or concerns. • A Monthly Dashboard depicting the overall project status and information will be produced each month by the project manager. • The Dashboard will be distributed to the Sponsors and the LCR as part of a monthly Project Review Meeting. • The specific distribution of the status report and the dashboard, as well as the attendees at the

	<p>update meetings, can be varied at the discretion of the sponsors.</p> <p>4/30/11 Requirements 1/30/12 Interagency Integrated SASID Assignment (DESE,DEEC,DHE) 7/30/11 Design - system architecture (including security) 8/30/11 Procure - hardware & software 4/30/12 Build 6/30/12 Testing 3/30/13 Rollout</p>					
Project Stakeholders	<p>Bob Bickerton, Senior Associate Commissioner: Executive sponsor who provides executive oversight and evaluates and signs off on policy decisions.</p> <p>Jessica Perez-Rossello, CIO: Project director and sponsor who provides executive oversight, evaluates and signs off on policy, technical and budget decisions</p> <p>Tom Weber, Project Sponsor: Approves project charter; approve other key deliverables as determined by Sponsor and LCR. Approves change requests with a significant impact on the project scope, budget or schedule.</p> <p>Rob Curtin, Lead Customer Representative (LCR): Approve deliverables as agreed to with the sponsor; approve change requests, participate in resolution of escalated issues.</p> <p>Joan Clark, EEC Agency Representative: Represents EEC in assisting with project definition, serves as a contact point for EEC in working with the LCR and Project Manager.</p> <p>Jonathan Keller,DHE Agency Representative: Represents DHE in assisting with project definition, serves as a contact point for DHE in working with the LCR and Project Manager.</p>					
Performance Management	Performance Measures	Actual Data: Baseline (Current school year or most recent)	End of SY 2010-2011	End of SY 2011-2012	End of SY 2012-2013	End of SY 2013-2014
	% of participating LEAs participating in the teaching and learning system project that are using one or more components of the system, other than the EDW (<i>also a performance measure for B3</i>)	n/a	n/a	n/a	20%	90%
	Percentage of user visits during which the teaching & learning system meets published service level agreements for:					
	• Availability: continuously available other than at scheduled maintenance times	n/a	n/a	n/a	99%	99%
	• Responsiveness: loads pages in less than 3 seconds	n/a	n/a	n/a	95%	99%
	• Usability: easy to use and navigate	n/a	n/a	n/a	95%	100%
Effects on the Target	<ul style="list-style-type: none"> Project is delivered on schedule and within scope 					

Risks	Solutions
<p>Ongoing Support, Maintenance and Updates – As mentioned above, the system will require ongoing support, maintenance and updates. There is currently no budget available for these activities in I.T. and only limited attention to date, re, how programmatic offices (e.g., C&I, SAS, etc.) will provide ongoing support post the RTTT grant period. The system can only be successful if it is supported and used over the longer term; this cannot be an exercise in “ice sculpture.” If either ESE, or district, cannot support these ongoing activities, use of the system will likely be limited.</p>	
<p>There may be some tools/features that district personnel would like, but that are not part of the RTTT proposal, vision, or budget for the T&L system. Some educators may be less inclined to use the system if it does not contain capabilities that they hoped for. ESE will need to help districts understand the T&L system, manage expectations and create a positive view of the system.</p>	
<p>Approximately 3000 released items for English Language Arts items are passage-based items. In order to include these in the test-builder, ESE will need to determine whether the Department has relevant rights for the text. It may be necessary for ESE to obtain rights to use/publish these questions. Cost of securing relevant rights are currently unknown. Relevant items cannot be used without appropriate rights/permission. A complicating factor is that some publishers and/or authors deny permissions for web release, meaning acquiring web permission for some passages will be impossible (irrespective of cost).</p>	
<p>There are subjects and grades for which ESE does not have many/any test items. Because the Interim and Formative Assessment system will rely on a bank of questions, this system will only be usable by teachers teaching grades/subjects for which there is an adequate number of questions. If the system is not used by groups of teachers, it will not meet the desired goals and objectives. It is possible that ESE will partner with other states to share test items. Such sharing could enable Massachusetts to obtain test items for some grades and subjects for which items are currently not available, thereby reducing/eliminating gaps in the Massachusetts item bank. WE NEED TO INCORPORATE THE POSSIBILITY THAT</p>	

PARTNERHIPS WITH NY, RI (and other states) COULD ENABLE US TO FILL IN THESE GAPS.	
It is possible that some items administered on previous MCAS tests are only suitable to paper/pencil administration and not easily adapted to online testing.	
Further, the extent to which we anticipated (and budget for) the kinds of innovative item types that computer based testing (CBT) enables is unclear.	
By the time the OIF system is fully functional we may be in the beginning stages of operational PARCC testing. If we are planning on using a state summative measure to indicate student improvement it may be difficult to set performance goals or milestones.	
Ongoing costs – Whether ESE opts to buy or build the T&L System, there will be costs associated with maintaining and updating the system beyond 2014. Because the RTTT funding ends in August 2014, it will be important to identify alternative funding, either from the State or districts, to support the system after this date.	
Due to district skepticism from years of struggle with the data warehouse, we have to be sure what we roll out works and lives up to the expectations we set.	
The approach to tagging is still not confirmed, and hence it is not clear that the standards that PBS uses will be in sync with that of CCSSO. Also the tagging of the items cannot begin until this is confirmed.	

4) Schools Interoperability Framework (SIF) Implementation

Project Description	With demands for and uses of data escalating rapidly at the district and state level, districts have been asking for data collection and submission methods that are less costly, less staff intensive and at the same time provide more accurate, timely and actionable data. To meet this need, ESE will implement the <i>Schools Interoperability Framework (SIF)</i> infrastructure throughout Massachusetts districts and at the state level, ESE. Adopting the SIF protocol will take advantage of updated technology to automate the data transfer process from the districts to ESE and provide “near real time” data to school districts and the state. The new data collection system will include new dash boards and query tools which will provide robust reporting capabilities.
Project Leadership	Bob Bickerton (Executive Sponsor), Valentin Torres (Project Manager)
Project Scope	SLDS-1 <ul style="list-style-type: none">• Development of a MA SIF profile that provides SIS and other vendors SIF data standards that must be met.• Development of the ESE SIF infrastructure to receive data from LEAs.• Implementation of LEA SIF infrastructure (ZIS and agent configuration) in at least 40 districts to send data to ESE.• Data management tools that assist ESE or LEA users to resolve errors and ensure the quality of data being sent to ESE.• Data validation rules that ensure accurate data is published to ESE target systems.• SIF integration with the ESE SASID assignment systems will be accomplished by the xUID project.• Student Claiming to be automated using SIF standard.• Collection of Student Data, EPIMS, SCS data from districts via the SIF infrastructure.• Support for EDW Local Data collections via SIF.• Integration and loading of data from SIF Operational Data Store (ODS) to the EDW.• Technical assistance for school and district staff users.
	SLDS-2 <ul style="list-style-type: none">• Implementation of LEA SIF infrastructure (ZIS and agent configuration) in at least 40 districts to send data to ESE.• SIS agent development using the SIF data model for agents not part of SLDS-1.• Evaluate strategies to leverage SIF collected data and the integration whit existing systems, reporting tools and databases.• Technical assistance for school and district staff users in the use of collected student data.
	Race to the Top <ul style="list-style-type: none">• Implement the SIF infrastructure so that after the end of four years an additional 230 districts send data to ESE.• The collection of data from the SIS, HR, and other LEA data systems to ESE through SIF at the end of four years.• The integration of School Safety and Discipline Report (SSDR) collections through the SIF infrastructure.• Evaluate strategies to leverage SIF collected data and the integration whit existing systems, reporting tools and databases.• Technical assistance for school and district staff users in the use of collected student data.
	Funding: <div><div>SLDS-1</div><div>SLDS-2</div><div>RTTT</div></div>

	<p>FY 2010: \$1,731,670</p> <p>FY 2011: \$2,412,642 \$263,575 \$2,426,130</p> <p>FY 2012: \$823,725 \$634,723 \$2,091,472</p> <p>FY 2013: \$574,723 \$1,238,146</p> <p>FY 2014: \$4,968,038 \$1,473,021 \$5,755,748</p>
Project Activities & Timeline	<p>What is New or Improved: (The entire project is a new initiative)</p> <ul style="list-style-type: none"> The project manager will produce a Project Status report each week. The report is expected to include accomplishments for the period being reporting, activities planned for the coming week, overall schedule status, change request activity, and project issues (including risks that have 'happened'). The status report will be distributed to the Sponsors, the LCR and the Agency Reps. The project manager will meet with the LCR to review the status report and to discuss any project issues, newly-identified risks, or concerns. A Monthly Dashboard depicting the overall project status and information will be produced each month by the project manager. The Dashboard will be distributed to the Sponsors and the LCR as part of a monthly Project Review Meeting. <p>The specific distribution of the status report and the dashboard, as well as the attendees at the update meetings, can be varied at the discretion of the sponsors.</p> <p>December 2009: Project charter sign-off</p> <p>January 2010: SIF vendor procurement</p> <p>March 2010: Develop communication plan and risk management plan; SIF prime vendor kickoff meeting</p> <p>April 2010: District prime vendor kickoff meeting</p> <p>June 2010: State SIF profile documented; design ESE and LEA SIF architecture</p> <p>September 2010: ESE SIF Infrastructure completed</p> <p>October 2010: District SIF infrastructure fully operational (group 1 districts)</p> <p>December 2010: First SIF district grants awarded</p> <p>March 2011: District SIF infrastructure fully operational (group 2 districts)</p> <p>October 2011: Race to the Top (group 1, 50 districts)</p> <p>January 2012: Race to the Top (group 2, 75 districts)</p> <p>March 2012: Race to the Top (group 3, 75 districts)</p> <p>October 2012: Race to the Top (group 4, 75 districts)</p> <p>August 2013: Non RTTT (75 districts)</p> <p>August 2014: Remainder of districts (approximately 50)</p>
Project Stakeholders	<p>Sponsor: Be a champion for the project from an agency perspective; communicate project status and importance to internal and external stakeholders; ensure alignment of project outcomes to strategic and business operation requirements; resolve high-level issues related to project scope, budget, resources, or policy decisions as appropriate.</p> <p>Lead Customer Representative: Own the project vision and objectives; ensure the project supports strategic business objectives; resolve high-level issues; oversee the preparation and presentation of Business Case; ensure the project achieves stated benefits; assist in identifying and defining tasks, WBS, early estimates, and project schedule.</p> <p>Project Manager: Manage the day-to-day tasks of the project; support development of the project charter, management plan, and project plan; monitor and control; measure progress, secure</p>

	<p>materials produced, manage issues, change requests; facilitate and promote stakeholder communication; manage SharePoint site project page; ensure contractor compliance; plan and lead team meetings; escalate high-level issues to the project sponsor; ensure that all team members understand their roles and responsibilities and are fulfilling those duties.</p> <p>ESE Program SMEs: Support testing activities, including defect identification, resolution, and testing; provide subject matter expertise as needed throughout the project; participate as super-users during implementation planning and represent all appropriate categories of end-users; facilitate the resolution of business and technical issues; assist in identifying, tracking, and resolve project issues, risks, changes, and problems</p>
Performance Management	
Effects on the Target	

Risks	Solutions
Insufficient staff.	
Integration of SIF and non-SIF Districts for SIMS, EPIMS, and SCS not fully mapped.	
Not enough knowledge about the district Student Information System.	
Existing vendor SIS agents do not meet ESE (SIF) functional requirements.	
Contracted vendors (CPSI and Agent vendors) do not meet established deadlines.	
Changes in state and federal requirements.	
Transition from as is to new state not fully understood or mapped.	
As is technical and business flows not fully mapped.	
Requirements and or a clear understanding of HR agent needs.	
In- adequate funding for HR agent development.	
Funding is reduced or eliminated.	
The possibility of needing to re-start the procurement process for the primary SIF vendor.	

5) Common Education Data Standards (CEDS)

Project Description	<p>The Department of Education (USED) and the Council of Chief State School Officers (CCSSO) recently released version two of the Common Education Data Standards (CEDS). These data standards are an attempt to identify a common data language for all education stakeholders to use as they move towards the development and use of P-20 data systems. The adoption of these standards by all states would allow consortia of states to work on initiatives together and leverage a collective buying power with vendors.</p> <p>The adoption of these standards will require states to “map” their current data systems to the CEDS initiative. This project will require extensive work on the part of state staff and perhaps additional data collection requirements from school districts. This work will fit under the larger umbrella of the P-20 data project as the data layer for that system will be CEDS compliant.</p>
Project Leadership	<p>The project will be lead by three ESE managers:</p> <ol style="list-style-type: none"> 1. Robert Curtin, the administrator of the Education Data Services unit 2. Jessica Perez-Rossello - Chief Information Officer 3. Jen Goree – IT Director
Project Scope	The scope of the project will be to have the ESE data system become CEDS compliant. The mapping of current elements, changing current values within existing variables and adding new elements to the data system are all within scope for this project.
Project Activities	<ol style="list-style-type: none"> 1. Gap analysis between our current data system and the proposed version of CEDS v.2 – Fall 2011 2. Prioritization of gaps between the current ESE system and CEDS – Fall 2011. The ESE will not be able to make the conversion to full CEDS compliance at once because of the ramifications on ESE and school district resources. The specific elements need to be prioritized and project plan needs to be developed. Full compliance with the CEDS should take place in time for the 2013-2014 school year.
Project Timeline	The project will begin with a gap analysis and requirements gathering activities in the fall of 2011. A more detailed project plan will be developed based on those results. The ESE should be in full compliance by the 2013-14 school year.
Project Stakeholders	ESE staff, School Districts, researchers, USED, CCSSO.
Effects on the Target	
Performance Management	

Risks	Solutions
Significant gaps between the current system and the CEDS could result in a large need for resources both at the ESE and school districts.	
Value of project needs to be communicated well since there is no tangible product.	

6) Early Warning Indicator System

Project Description	The Early Warning Indicator System (EWIS) is a data-driven system to identify students K-12 that are potentially “off-track” for grade-level or developmental age, including those students that are off-track for high school graduation (potential dropouts). This project is funded through the federal Longitudinal Data System Grant Program (LDS-2) and will build off of the current Early Warning Indicator Index (EWII) developed by the Department.
Project Scope	\$633,289 of the LDS-2 grant is budgeted for this project. The new version of the EWIS is expected to impact all school districts, and all grade levels (K-12).
Project Activities	The new EWIS will build-off of the current, internally developed EWII that is based on middle school data and is made available to districts at a single point in time. The Department will hire an outside expert in the field of early indicators to review the current system and propose a methodology to incorporate data from EEC and ESE (across all grade levels). The new system will provide K-12 student-level data to schools and districts and indicate students’ risk level for becoming “off track” for developmental age or grade level. The new system will also provide the data in a more user-friendly technical format.
Project Timeline	<p>Begin – August 2010</p> <ul style="list-style-type: none"> Fall 2010 – initial release of current EWII to all districts Fall/winter 2010 – development of project charter and RFR for a researcher Winter/spring 2011 – researcher begins review of current system and development of expanded system Winter 2012 – initial release of new EWIS, pilot technical solution for data delivery Spring /summer 2012 – release of final version of EWIS and training for educators on use <p>End – Fall 2012 (business as usual)</p> <p><i>Note: the LDS project ends in 2013</i></p>
Effects on the Target	<p>5-Year Graduation Rate: 2013-14: 660 additional graduates from where we are now (660 more than the previous year)</p> <p>MassCore Completion Rate: 2013-14: 528 additional completers from where we are now (528 more than the previous year)</p> <p>~2,000 educators/trainers trained to use the system by end of SY 2013.</p>
Risks in the Delivery Process	<ol style="list-style-type: none"> 1. Lack of internal communication and collaboration with all ESE units on the use of the EWIS data to inform all types of state and local level programming efforts, including creating incentives for districts to use the EWIS. 2. Lack of communication, training, and ongoing support of school and district level staff on the technical use of the EWIS. 3. Lack of communication, training, and ongoing support of school- and district-level staff on the use of the EWIS to inform and implement student interventions. 4. Failure to provide timely, user-friendly EWIS data through an appropriate technical solution.

7) Educator Evaluation System: Collection of 7 Data Points

Project Description	The requirement to collect data from district evaluation systems is a result of the final regulations passed by the Board of Elementary and Secondary Education on June 28, 2011. The regulations call for the Department to collect data on (a) the educator's performance rating on each of the four standards and the overall rating, (b) an indicator of the whether the educator has professional teaching status and (c) a rating of the educator's impact on student learning, growth and achievement. The collection of these seven data points is going to require either changes to the current Education Personnel Information Management System (EPIMS) or the development of a new collection tool to specifically collect educator evaluation data.
Project Leadership	The implementation of the overall educator evaluation project is being led by Karla Baehr and David Haselkorn. The collection of the seven educator evaluation data points will be led by Robert Curtin, Craig Weller and Maryann Donie of the Education Data Services unit.
Project Scope	This project will need to collect the seven educator evaluation data points from districts in three phases: (1) districts with level four schools must submit data beginning in the 2011-12 school year, (2) all Race to the Top districts must begin to submit data in the 2012-13 school year and (3) all remaining school districts must submit data by the 2013-14 school year.
Project Activities	Beginning in September 2011, the Education Data Services unit, will work with the educator evaluation team to begin discussions about the 2011-12 collection from districts with level four schools. A concurrent discussion will be happen in regards to an analysis of using EPIMS vs. building a separate collection tool.
Project Timeline	<p>Begin September 2011</p> <ul style="list-style-type: none"> • Fall 2011 - Engage ESE policy-makers to determine project direction and resource allocation • Fall 2011 - Engage districts to begin discussions of collection of districts • Fall 2011 – Document requirements for data collection • Fall 2011 – Decision point around EPIMS or new system as tool • Winter/Spring 2011 – Design, development and testing • June 2011 – Release of collection tool
Project Stakeholders	ESE staff, district staff, researchers
Effects on the Target	
Performance Management	

Risks	Solutions
1. Adequate funding for IT development	
2. District capacity to submit data	

8) Develop Career Ladder with Performance-Based Endorsements: D2g2

Project Description	To further develop effective educators, the ESE will develop and implement a career ladder that includes performance-based teacher leader endorsements. The state will develop a new career ladder to recognize and compensate a variety of new teacher leader roles. ESE will develop endorsements to licensure for at least five of these roles, e.g. mentor, instructional coach, parent outreach coordinator, instructional team leader, and data team leader. In addition, the state will encourage high need districts to provide additional compensation to recruit and retain highly effective teachers in leadership roles.
Project Leadership	The project manager and team own the delivery. – Liz Losee, Claudia Bach, licensure staff, policy staff, EPP staff
Project Scope	<p>Determine what endorsements (mentor, instructional coach, parent outreach coordinator, instructional team leader, data team leader, etc.) will want to have, determine the competencies for each endorsement, create the assessments for those competencies, then develop a system to roll the program out through the licensure system and in schools.</p> <p>Our new policy analyst will be conducting a review of what other states are doing and the research that is out there about teacher leader roles and programs to support.</p> <p>This work assumes the ESE has the capacity to develop and execute this system, and that districts will be well equipped to implement the system with fidelity.</p>
Project Activities	<p>Summer 2011 - Research use of teacher leader endorsements and programs to support.</p> <p>Fall 2011 - Identify current models</p> <p>Fall/Winter 2012 - Determine the licenses/endorsements</p> <p>Fall/Winter 2011/2012 - Determine competencies/standards</p> <p>Fall 2012 - Rollout in Regulations</p> <p>Fall 2012/Winter 2013 - Develop assessments</p> <p>Spring 2013 – Pilot Assessments</p> <p>Fall 2013 - Rollout in Districts</p>
Project Timeline	See project activities above.
Project Stakeholders	<p>Key Stakeholders:</p> <ul style="list-style-type: none"> • MASS • MESPA • MASPA • MSSAA • MASC

	<ul style="list-style-type: none"> • MTA • AFT-Mass • MACTE • Subject matter groups • IHEs <p>Another promising effort to develop a teacher leader program is already under development at the Harvard Graduate School of Education (HGSE), and the state will work with HGSE faculty.</p> <p>The team will seek input from the field as well as the licensure office throughout the process. The team will work to gain consensus from all involved stakeholders through a transparent and comprehensive program development process.</p> <p>As the licenses and their competencies and assessments are defined by ESE, we will send the descriptions for stakeholder feedback. If changes need to be made, the team will amend before going to the Commissioner and then BESE. The Commissioner and the BESE may recommend changes that team will also attend to as needed. There will also be a period of public comment that may require changes.</p>
Effects on the Target	<p>2011 – no impact</p> <p>2012 – no impact</p> <p>2013 – no impact</p> <p>2014 – low impact</p>
Performance Management	<p>Implementation Milestones:</p> <ul style="list-style-type: none"> • Regulations have been promulgated and leaders and teachers are taking advantage of these endorsements • Assessments have been developed and piloted for endorsement area.

Risks	Solutions
Assumes evaluation framework is implemented with fidelity by districts	We will have the model evaluation system with tools and assistance, and possible professional development (informational sessions) and training on new the regulation framework
We will only get math and English teachers as teacher leaders because they are the subjects we best understand how they assess student growth.	We need to develop plans to disseminate best practices in assessing growth in non-tested subject areas.

9) Educator Training on Data

Project Description	<p>Three different types of training and support must be provided to educators in order for available data to be incorporated into daily workflow patterns and add value to decision making:</p> <ol style="list-style-type: none"> 1. <u>Access</u> – on a technical level, how to access data systems and view, manipulate, print, and save relevant reports. This includes trainings on how to provide and/or access user accounts, log in, and navigate common features of the data system(s). 2. <u>Understanding</u> – Educators need to understand the source and meaning of various commonly-used forms of data, such as MCAS proficiency, MCAS student growth percentile, mobility (3 different measures), graduation vs. dropout rates, early warning indicators. Educators must have an accurate and robust understanding of how key measures are arrived at and what they do and do not represent in order to be poised to then make meaning of the information and apply it to their work. 3. <u>Analysis & Application</u> – Once educators know how to find, access, and understand different data sets, they need support in knowing how to fully analyze what the data is saying, and subsequently applying that meaning to their work. The most effective data analysis takes place when it is driven by a focus of inquiry, underscoring the importance of conducting analysis within the context of the questions educators ask on a regular basis. <p>Ideally the majority of ESE training resources will be focused on ‘analysis and application,’ with data systems being intuitive enough to require minimal ‘access’ training.</p>
Project Leadership	<p>Bob Bickerton and Julia Phelps are the Executive Sponsors for this project, however, it is currently unclear which ESE division or office will ultimately lead and coordinate data training efforts across the ESE. Regardless, the following group has begun convening to discuss data training needs Department-wide: Kinaci, Suzan; Bickerton, Robert P (DOE); Phelps, Julia; Perez-Rossello, Jessica; Curtin, Robert (DOE); Bettencourt, Helene H (DOE); Foster, Jacob (DOE); Klein, Deborah; 'paula.osullivan@dsacma.org'</p>
Project Scope	<p>Project scope is not yet defined since the training needs related to the different systems have not been fully vetted at this time. Some training needs around the Teaching and Learning System (TLS) have begun emerging now that the system charter is complete, however, in order to fully flesh out the training needs it will be necessary to have a better understanding of the system capabilities. Stakeholder meetings will also add information around developing the training and professional development requirements for our users in the field.</p> <p>On a high level there is an expectation that the training related to <i>Access</i> may be included in the scope of the TLS system implementation. However, training related to <i>Understanding</i> and <i>Analysis & Application</i> will require a custom development and delivery method. Currently there has been some level of success with both online and face-to-face training in place for the EDW users. The intention is to improve upon these existing training modules and develop a sustainable training program that users will be able to utilize on their own beyond the grant period and without having time and place restrictions whenever possible. This can be achieved through several online training modules.</p> <p>However, it is clear that educators will need and benefit greatly from in person training, especially around <i>Analysis and Application</i> uses of data. The Data Team Leaders who will be identified via a new licensure endorsement (see Project XX) will be tasked with helping to foster an environment in their schools and districts that makes it possible for their fellow educators to understand the data that is available to them and how best to make use of this data in their daily work to improve education. This culture shift cannot be achieved through online training and will require ongoing commitment and interactive, in-person professional development that will need to be part of this project effort.</p>
Project	<p>Solicit feedback from stakeholders on training needed. (Leverage wisdom gained from DSAC Data</p>

Activities	Specialists and vendors who have implemented existing EDW trainings).
	Solicit input from system developers on training needed for access, understanding, and application.
	Draft sequence/menu of training topics needed with goals/outcomes for each. Identify which can be delivered via various means: eg online, in-person but off-site, and in-person but on-site/job-embedded.
	Review existing trainings (e.g. DW101) for alignment with current needs and desired sequence/menu. Review existing human capital capacity (internal and with vendors) to implement and support training and application.
	Revise and create trainings as needed, with feedback from stakeholders throughout.
	Hire and/or increase capacity of ESE and vendors to support districts with data use.
Project Timeline	Keeping within the RTTT constraints the intent is to develop as much training that is sustainable beyond the grant period as possible.
Project Stakeholders	District educators at all levels, e.g. Superintendents, assistant superintendents, principals, directors, teachers, coaches, etc; also staff at ESE, EEC, and DHE. ???
Effects on the Target	This component is fundamental to reaching the target.
Performance Management	Several indicators will be used to assess the impact of the various trainings.
	Access: Data on number of users accessing the system, frequency of use, and most used pages and reports.
	Understanding: Harder to measure. Might emerge in grant applications and reports; district reviews by Accountability
	Analysis and Application: again might emerge in grants and reviews
	Also, feedback will be requested at the end of each training. Could also do follow-up feedback e.g. a few months later.

Risks	Solutions
Lack of central coordination/oversight at ESE results in different offices sending different messages around data use, and different approaches to data analysis and application.	
The first two types of training are more technical and can be done individually; however the third one – analysis and application – is best done in person and with teams. There’s a risk that in the name of efficiency and on-going access, these trainings will be developed online and not be provided the in-person coaching necessary (e.g. DSAC specialists). Harder to fund people over time than the creation of guidebooks or online trainings.	
Expectations are high – can we meet them?	

10) Professional Learning Community Expansion

Project Description	<p>The Department of Elementary and Secondary Education is committed to providing high quality professional development opportunities for Massachusetts educators, and to supporting implementation of professional learning. Professional Learning Communities are a necessary vehicle for effective, sustained implementation of PD and numerous other programs and initiatives targeted to the improvement of teaching and learning. The expansion project supports Great Teachers Great Leaders, Structures for Collaboration as identified in the Conditions for School Effectiveness (CSE), fidelity of implementation of specific PD content and pedagogy, and provides a structure for authentic professional learning and growth of all educators. PLCs promote equity: ensuring that the intended curriculum is also the taught curriculum, and that all students have access to rigorous curriculum. Richard DuFour notes: “The professional learning community model is a powerful new way of working together that profoundly affects the practices of schooling. But initiating and sustaining the concept requires hard work. It requires the school staff to focus on learning rather than teaching, work collaboratively on matters related to learning, and hold itself accountable for the kind of results that fuel continual improvement.”² Numerous MA school districts have incorporated common planning and other variations of PLCs into their schedules, but many are not savvy about using the time with optimal effectiveness. This Race to the Top (RTTT) project provides a well defined process for systemically building content knowledge and instructional practice. Failure to support professional collaboration on a broad scale would result in severely diminished results on a variety of ESE, DSAC and district initiatives, and would represent a loss of some unique opportunities made possible by the RTTT grant.</p>
Project Leader-ship	<p>Julia Phelps (Executive Sponsor), David Parker (Project Manager)</p>
Project Scope	<p>ESE staff will work with a consultant who has expertise and capacity to support PLC expansion. An RFR will be developed to attract a high quality vendor to partner in the project.</p> <ol style="list-style-type: none"> A process will be developed to inventory existing ESE tools related to PLCs and to identify relevant research in the field that can inform the project. District input will be gathered from a sample of districts identified through: <ul style="list-style-type: none"> DSAC staff, based on results of the CSE self-assessment, Urban District Assistance staff based on identified school and district needs. Districts that express a high level of interest in PLC expansion. District needs and available resources will be analyzed to determine what gaps exist between the needs of MA school districts and currently available resources. Gaps may be identified where resources do not seem to exist, or where existing resources are inaccessible to MA districts due to funding or scalability issues. A PLC toolkit will be developed to target needs and issues as identified by research and district input, with particular emphasis on addressing currently existing gaps. The toolkit will include a range of practical planning and facilitation tools as well as references to high quality research. A training process for use of all components of the toolkit will be developed. Training will include exposure to the complete toolkit and opportunity for facilitators to plan PLC experiences and test-drive some protocols. Emphasis will be on the systemic implementation of PLCs. Training will be developed in both a face to face version and a web-based version. Training will be piloted for ESE and DSAC staff and for districts participating in the project. Issues specific to cross-district learning communities will be identified and guidance will be developed to support that particular PLC manifestation. Characteristics of the most successful PLC networks will be documented and included in the toolkit. All tools and training components will be evaluated for effectiveness and ease of use. The toolkit will be universally available, and direct assistance will be targeted to Level 3 and Level 4

² DuFour, Richard, Robert Eaker and Rebecca DuFour, Editors, *On Common Ground: The Power of Professional Learning Communities* (Bloomington: Solution Tree, 2005), 42.

	<p>(and potentially Level 5) schools.</p> <p>Interaction with other RTTT projects where PLC implementation would enhance effectiveness will be monitored.</p>
Project Activities	<p>Educators will increase their professional capacity through the use of a PLC toolkit. Project activities include:</p> <ol style="list-style-type: none"> Creation of a toolkit for educators to create PLCs that embed professional development in regular professional practice. Components of the toolkit will include rationale for PLC implementation, development of a theory of action specific to a given PLC, guidance for facilitators, a variety of protocols, and support for participants to reflect upon and evaluate PLC effectiveness. A training process for use of the PLC toolkit that addresses the need to create a shift of emphasis from teachers to learners will be developed, piloted, revised and made accessible to districts. Guidance will be developed for cross-district learning that is designed to develop district capacity in specific domains.
Project Timeline	<p>Spring 2011</p> <ul style="list-style-type: none"> Create project charter. Assemble leadership team. Discuss project scope of work and deliverables. <p>Summer 2011</p> <ul style="list-style-type: none"> Consensus on scope of work. Draft of project RFR. Complete and post RFR. <p>Fall 2011</p> <ul style="list-style-type: none"> Select vendor; develop contract. Existing ESE PLC tools reviewed; recommendations for updates made. Training process proposed Implementation process proposed <p>Winter 2012</p> <ul style="list-style-type: none"> ESE PLC Tools updated Training process developed Piloting districts identified <p>Spring 2012</p> <ul style="list-style-type: none"> ESE and DSAC staff trained for PLC implementation support Early adopting districts participate in first pilot training and implementation <p>Summer 2012</p> <ul style="list-style-type: none"> Pilot training and implementation evaluated, with tools revision based on findings <p>Fall 2012</p> <ul style="list-style-type: none"> Remaining pilot districts are trained Remaining pilot districts implement PLCs using ESE tools and training <p>Winter/Spring 2013</p> <ul style="list-style-type: none"> PLC Implementation in all pilot sites is monitored and supported. <p>Fall 2013 – Spring 2014</p> <ul style="list-style-type: none"> PLC resources (tools and training) are promoted to all MA districts. Targeted support provided for highest needs districts <p>Summer 2014</p>

	<ul style="list-style-type: none"> Project evaluation completed
Project Stakeholders	
Effects on the Target	
Performance Management	<p>Measurement of Success</p> <ol style="list-style-type: none"> A toolkit is developed that contains a variety of vetted and tested PLC tools that are responsive to identified district needs. The toolkit is publically accessible in digital form. The toolkit is being used and is impacting school practice. Training for use of the PLC toolkit has been run, feedback has been documented, and revisions have been made. Feedback indicates that participants find the training helpful, and they have documented changes in district and school practices due to implementation of PLCs. <p>Guidance identifying unique elements of cross-district learning communities is developed and is being used in cross-district contexts. Feedback indicates that the guidance is helpful.</p>

Risks	Solutions
The tools in the toolkit are not comprehensive and do not address all identified gaps, leaving users with insufficient resources.	The process of surveying existing tools must be comprehensive enough to determine the range of tools and support currently available. Input from districts will help identify gaps. Piloting tools with detailed documentation and feedback will ensure that the toolkit provides a full range of resources for establishing and facilitating effective PLCs.
Tools are not targeted and specific and do not expect users to focus on real teaching and learning issues in their own context.	Data from common planning sessions and classroom practice will determine whether PLCs are impacting the instructional core (teacher-student-content).
Local scheduling challenges prevent schools and districts from implementing PLCs at a scale that will produce significant professional learning.	Districts will be provided with sample schedules and options to support PLC implementation. Funding sources that may support PLC implementation will be identified (e.g., RTTT, DSAC Targeted Assistance, Title I, Title IIA).
Planning and facilitation is not adequately supported, especially in early stages, limiting the value of the PLC experience for participants.	A training process will be developed and piloted and will address issues of fidelity of implementation and practical application of resources. Reflection and evaluation tools for facilitators and PLC teams will be piloted and included in the toolkit.
Tools and trainings are not well promoted, limiting the scope and impact of PLC expansion.	Resources developed through the PLC Expansion project will be available on the ESE website, and will be disseminated through existing networks, DSACs and other targeted assistance structures.