



Massachusetts Department of
ELEMENTARY & SECONDARY
EDUCATION

**TECHNOLOGY FOR DATA-DRIVEN
DECISIONS (TD³)**

YEAR 1 MID-YEAR PROJECT SCORECARDS



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EXECUTIVE SUMMARY

This document provides an executive overview of the nine grant recipient’s mid-term evaluation reports on the progress of their data warehouse projects, funded by the U.S. Department of Education and the Massachusetts Department of Elementary and Secondary Education (ESE) through a Title II-D Enhancing Education Through Technology grant. This report is based on data collected over a three-month period. Data sources include qualitative data collected through initial proposal review, coordinator interview, logic model development, and document examination.

This progress report uses the following simple scoring rubric to depict project status in three key areas: 1) ESE Data Warehouse Implementation Objectives; 2) 164 Grant Expenditure Requirements; and, 3) Individual Project Outcomes.

Scoring Legend




Rating	Description
Complete	Project has completed the activity/task
	Project is on target to meet objectives
	Some progress in meeting objective has been made to date
	Little / No Progress has been made to date
n/a	Not applicable

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1. BOSTON PUBLIC SCHOOLS

Project Status

This project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following short-term (year 1) project outcomes delineated in its grant proposal:

Project Outcome 1: Deployment of Data Warehouse to end users begins in Fall 2008 to TSTs, principals, teachers, and district administrators.

BPS has revised some of milestones outlined in its grant proposal due to the delay in hiring a database administrator due to circumstances outside of the project's control. The district has conducted ongoing project planning and worked towards the completion of a number of activities including a readiness assessment, requirements definition, analysis of data sources, selection of tools and hardware, and interviews of prospective DBA candidates. A revised set of milestones have been developed as well as a very detailed project plan. During the second half of this grant period, BPS intends to convene the data warehouse steering committee in March and purchase, install, and deploy the servers.

Project Outcome 2: Attendance data in data warehouse (year 1) and for use by end users beginning with the TSTs (year 2); Automated data cleansing and multiple source system processes for attendance data.

BPS plans to hire a DBA contractor and engage consultants to begin work this month. The district expects to install and configure hardware, operating system, SQL server and Cognos by the end of March, 2008. It anticipates completing the ETL processes, data models, analytical and reporting requirements and create the database and reporting for attendance.




Project Outcome 3: Capacity in-house to write reports using Cognos.













BPS intends to provide the following professional development opportunities to the DBA and report writers over 448 hours of technical training. To build in-house capacity, BPS plans to have the contractor/consultants train internal staff.







Project Outcome 4: User-friendly tools available to design and generate reports for analysis.

At the end of year 1, BPS plans to have 6 pre-formatted attendance reports available to users.

Project Scorecard

BOSTON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
<ul style="list-style-type: none"> ▪ Identify your warehouse team members and roles. 	Complete
<ul style="list-style-type: none"> ▪ Join the MassONE Data Warehouse work group. 	Complete
<ul style="list-style-type: none"> ▪ Download the data extract guides (optional). 	Complete
<ul style="list-style-type: none"> ▪ Download the ESE Access Use Policy. 	Complete
<ul style="list-style-type: none"> ▪ Download browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Complete the readiness survey. 	Complete
<ul style="list-style-type: none"> ▪ Contact your SIS vendor (optional). 	n/a
<ul style="list-style-type: none"> ▪ Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> ▪ Complete the district's users sheet. 	Complete
<ul style="list-style-type: none"> ▪ Have the Directory Administrator assign warehouse roles to your users. 	Complete
<ul style="list-style-type: none"> ▪ Define your district's warehouse goals. 	Complete
<ul style="list-style-type: none"> ▪ Create your timeline and assign responsibilities. 	Complete
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	n/a
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	n/a
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. 	
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	

BOSTON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
2. Software Purchases	n/a
3. Database Administration	
4. Grant Administration	
5. Professional Development	
C. BPS Project Outcomes	
1. Deployment of Data Warehouse to end users begins in Fall 2008 to TSTs, principals, teachers, and district administrators	
<ul style="list-style-type: none"> ▪ Update implementation plan. 	
<ul style="list-style-type: none"> ▪ Form project steering committee. 	complete
<ul style="list-style-type: none"> ▪ Convene regular data warehouse steering committee meetings and 3 leadership teams. 	
<ul style="list-style-type: none"> ▪ Complete readiness assessment. 	complete
<ul style="list-style-type: none"> ▪ Select product. 	complete
<ul style="list-style-type: none"> ▪ Purchase one staging server and one Web front end server with SQL 2005 licenses. 	
2. Attendance data in data warehouse in year 1 and automated data cleansing and multiple source system processes for attendance data.	
<ul style="list-style-type: none"> ▪ Conduct hiring process for DBA contractor and consultants. 	
<ul style="list-style-type: none"> ▪ Hire 1 DBA contractor to implement attendance data mart. 	
<ul style="list-style-type: none"> ▪ Consultant begins work on project. 	
<ul style="list-style-type: none"> ▪ Set up, configure, and implement locally hosted data warehouse. 	
<ul style="list-style-type: none"> ▪ Complete dimensional modeling (April, 2008). 	
<ul style="list-style-type: none"> ▪ Complete database design (April 2008). 	

BOSTON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> Design and develop ETL (April 2008 – June, 2008). 	
<ul style="list-style-type: none"> Implement database design (May 2008). 	
<ul style="list-style-type: none"> Populate, validate, and tune database (June 2008). 	
3. Capacity in-house to write reports using Cognos.	
<ul style="list-style-type: none"> Professional development determined for DBA and report writers. 	
<ul style="list-style-type: none"> DBA and report writers attend training. 	
<ul style="list-style-type: none"> Consultants train internal staff. 	

BPS Data Warehouse Project Challenges

BPS' locally hosted Data Warehouse solution is built on a strong local foundation that includes a high level of district commitment to using data to drive educational decisions plus a great deal of work already done by the data warehouse project at the ESE. The project has executive-level sponsorship and is an integral component of the district's three-year technology plan, LINC III, to "provide a strategic blueprint to strengthen the district's technology foundation in support of BPS' efforts to encourage all partners to engage in data-driven decision-making." It is important to note that a new superintendent came on board this current school year. It is advisable to consider the benefit of briefing the new superintendent about this project.

At this time, the project faces several challenges as follows:

Challenge 1—Delay in hiring database administrator: This project has made considerable progress in the areas over which it has direct control; however, the unforeseen delay in hiring the database administrator due to a district-wide hiring freeze presents it with a major challenge. The DBA is critical to the successful implementation and deployment of BPS' data warehouse and will be filled initially by a contractor, instead of a district employee. BPS hopes to have both the highly qualified DBA and consultants on board by the end of February, 2008. In order to meet its revised and now very aggressive milestone schedule, the DBA must be experienced with a strong knowledge of data warehouse principles, designs, and ETL. This person must be able to hit the ground running with minimal additional training.

Although plans are in place to have the DBA and consultants train district staff to build internal capacity, the district is assuming some risk by hiring outside assistance. BPS must be vigilant in ensuring that the contractor/consultant imparts critical institutional knowledge to BPS staff before completing his/her contract.

Challenge 2—Time constraints of steering committee: Another challenge to the project is the steering committee members' time constraints. The team has yet to meet as a group although they are scheduled to meet in March. The project coordinator does communicate with members regularly; however, a project of this importance and magnitude would benefit from their collective wisdom and commitment in monthly project meetings.

Challenge 3—Potential competing priorities: Since the four data report writers are currently working on other projects there may be competing priorities for their time and expertise. Assuming they will have time to attend training, will they be able to devote enough of their time to the data warehouse without being pulled off on other projects?

Challenge 4—Aggressive schedule: If any of the technical milestones outlined for the second half of year 1 slip, it is recommended that BPS examine the possibility of using the ESE data warehouse while it works towards implementing the district's locally hosted solution. The supplemental student data, including attendance, could be uploaded to the ESE data warehouse on an interim basis and reports developed in it until the local data warehouse is fully operational.

Conclusion

BPS' Data Warehouse project has made substantial progress over those factors which it has control. The project is on track towards meeting the ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. With the hiring of a highly experienced Database Administrator and consultants, the project may be on target to meet BPS' short-term outcomes.

It is anticipated that in the second half of this year, the newly hired DBA and consultants will work with project team members to deploy a fully functioning locally hosted data warehouse, with frequent updates from the student system, that can be used by educators to generate student attendance reports. Once this proof of concept has been achieved, the project will be well poised to make progress on its long-term outcomes and meet its project goal of having internal capacity to maintain a BPS data warehouse that advances the district's *Six Essentials of Whole School Improvement*.

2. CRISTAL CLEAR PROJECT

Project Status

The CRISTAL CLEAR project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the CRISTAL CLEAR Project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Successful implementation of the Data Warehouse that builds upon past successes in data warehouse pilots, CRISTAL, and CRISTAL LITE.

- The project is following both the implementation plan that was outlined in its proposal and the ESE Data Warehouse Plan. The status and requirements of this project are discussed at monthly TEP Collaborative meetings which highlights its importance to member districts.
- Project leaders demonstrate a strong commitment to the success of this project by participating in required ESE data warehouse user group and status meetings as well as having a significant number of people attend ESE-sponsored training.
- It is expected that the internal data inventory for the new districts will be mostly complete by the end of February, 2008.
- Districts are in the process of forming data teams. Twelve of fourteen districts have completed this activity while others are just beginning this task. Data teams will be in place in every district by March, 2008.
- Districts are continuing the process of data loading prior to creating reports for data analysis. The CRISTAL CLEAR Data Engineering Specialist has reported that in talks with district staff, a strategy is emerging to focus on short-term wins, demonstrating the viability of the data warehouse. This would include reports based on state data already in the warehouse such as MCAS and SIMS. The reports would duplicate and augment existing reports from other programs such as TestWiz. All districts are loading MCAS, SIMS, and EPIMs data.

Project Outcome 2: A central report writer to create reports using Report Studio and other data warehouse tools to analyze and interpret local data.

- The districts hired a centralized report writer data specialist for the project. David Olsson was hired as the CRISTAL CLEAR Data Engineering Specialist in December 2007.
- The Data Engineering Specialist is currently in the process of determining the data and types of reports needed by the districts to drive instruction. (Refer to next outcome for more details.)








Project Outcome 3: Tools, training, and technical support for informed-decision making.












- Project staff are in the process of conducting a needs assessment for each district that includes determining the data teams' training needs. The needs assessment has been conducted with at least seven of the fourteen districts. This activity has












been delayed slightly due to inclement weather. It is anticipated that it will be complete by the end of March, 2008.

- Project staff plan to develop a professional development plan that is based on data from the needs assessment. They are in the process of updating the initial plan from the project proposal. As stated in the grant proposal, they are planning to hire Nancy Love from Research for Better Teaching (Nancy Love worked with CRISTAL LITE project) to provide training and ongoing support in using data to improve student performance. Ms. Love is to provide cost estimates this week. The updated professional development plan will be completed by end of March, 2008.
- Initial training that includes a data warehouse demonstration will be provided by the CRISTAL CLEAR Data Engineering Specialist during his second set of visits to each district. This activity will be completed by May, 2008.
- Additional training will be specified in the professional development plan. The project is still on target to have all data team members participate in training. Thirteen team members from at least seven districts attended the Fall training from the ESE. At least eleven people from seven districts attended the January, 2008 training. In addition, the data warehouse specialist is providing an overview of the data warehouse to interested districts at the time of the needs assessment.

Project Scorecard

CRISTAL CLEAR PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
<ul style="list-style-type: none"> ▪ Identify your warehouse team members and roles. 	
<ul style="list-style-type: none"> ▪ Join the MassONE Data Warehouse work group. 	
<ul style="list-style-type: none"> ▪ Download the data extract guides (optional). 	
<ul style="list-style-type: none"> ▪ Download the ESE Access Use Policy. 	
<ul style="list-style-type: none"> ▪ Download browser settings document. 	
<ul style="list-style-type: none"> ▪ Complete the readiness survey. 	
<ul style="list-style-type: none"> ▪ Contact your SIS vendor (optional). 	

CRISTAL CLEAR PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> Complete the district's users sheet. 	
<ul style="list-style-type: none"> Have the Directory Administrator assign warehouse roles to your users. 	
<ul style="list-style-type: none"> Define your district's warehouse goals. 	
<ul style="list-style-type: none"> Create your timeline and assign responsibilities. 	
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> Distribute the user guide. 	
<ul style="list-style-type: none"> Distribute browser settings document. 	
<ul style="list-style-type: none"> Schedule and attend end-user training. 	
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	n/a
2. Software Purchases	n/a
3. Database Administration	
4. Grant Administration	
5. Professional Development	

CRISTAL CLEAR PROJECT SCORECARD	
Objectives	Rating
C. CRISTAL CLEAR Project Outcomes	
1. Successful implementation of the Data Warehouse that builds upon past successes in data warehouse pilots, CRISTAL, and CRISTAL LITE	
<ul style="list-style-type: none"> ▪ Develop implementation plan; set up project communications. 	
<ul style="list-style-type: none"> ▪ Participate in ESE DW User Group and Status Meetings; attend ESE-sponsored trainings. 	
<ul style="list-style-type: none"> ▪ Complete internal data inventory for districts not part of prior DW initiatives. 	
<ul style="list-style-type: none"> ▪ Form district data teams. 	
<ul style="list-style-type: none"> ▪ Interface with SIS vendors for data extraction, if necessary 	
<ul style="list-style-type: none"> ▪ Continue process of data loading, report writing, and data analysis. 	
2. A centralized report writer to create reports using Report Studio and other data warehouse tools to analyze and interpret local data.	
<ul style="list-style-type: none"> ▪ Hire a centralized report writer / data specialist. 	Complete
<ul style="list-style-type: none"> ▪ Conduct needs assess to determine what reports used, who using, what need to use of data to drive instruction. 	
3. Tools, training, and technical support for informed decisionmaking	
<ul style="list-style-type: none"> ▪ Assess data teams' training needs. 	
<ul style="list-style-type: none"> ▪ Develop a professional development plan based on needs assessment. 	
<ul style="list-style-type: none"> ▪ Conduct training for data teams. 	
<ul style="list-style-type: none"> ▪ Identify Teachers who are participating and take TSAT. 	

CRISTAL CLEAR Project Challenges

Project CRISTAL CLEAR is built on a strong foundation that includes a number of successful technology and data warehouse initiatives and a commitment to expanding the existing culture of using data to inform educational decisionmaking. The project has an experienced core leadership team that has been augmented by the recently hired Data Engineering Specialist who is an integral part of this team.

This project does not appear to have any insurmountable barriers to a successful implementation at this time. However, it faces some challenges that stem from the fact that there are fourteen different districts participating in this endeavor, each with varying stages of readiness and different student information system vendors. The majority of the districts have data teams in place who have been working together on previous projects. A couple of districts have yet to form their teams completely. Most of the districts are small and rural with limited technology staff. In some instances, the district is so small that the person overseeing technology wears many hats.

The Data Engineering Specialist is coming up to speed very quickly on the project. However, he is charged with gaining the cooperation and support from a number of SIS vendors and working with fourteen different districts (and their unique cultures) to determine their requirements for training, data analysis, and reporting.

The success of this project for each district is dependent on the experience and commitment of its data teams. It is recommended that an instrument be developed by the project leadership team that specifies the recommended roles and responsibilities for team members.

Conclusion

Project CRISTAL CLEAR has made substantial progress in the short time since receiving its TD³ grant, especially since the project started late. The project is on track towards meeting the ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. The project is also on target to meet three of its four short-term outcomes:

- Successful implementation of the Data Warehouse that builds upon past successes in data warehouse pilots, CRISTAL, and CRISTAL LITE
- A central report writer to create reports using Report Studio and other data warehouse tools to analyze and interpret local data
- Tools, training, and technical support for informed-decision making

In the second half of this grant year, the project will work with the ESE data warehouse group to meet its last short-term outcome of effective collection, recording, and management of test results.

The project is now well poised to make progress on its long-term outcomes and meeting its project goal of using research-based practices and data-analysis to close the achievement gap of at-risk populations and to drive instruction to raise achievement of all students.

3. HAVERHILL PUBLIC SCHOOLS

Project Status

In brief, this project has made some progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Successful implementation of DW.

In the first phase of the project, the detailed project plan was largely ignored by the project coordinator and, as a result, activities slipped. It is anticipated that the newly appointed project coordinator, with assistance from the Director of Education Technology (who is also the Project Advisor) and the Database Consultant, will use the project plan to ensure that project activities stay on task.

The district has had to overcome a couple of obstacles with personnel including the replacement of the project coordinator and the temporary loss of the project leader due to medical leave. However, with the addition of the project advisor and a new project coordinator, coupled with the ongoing assistance from the data coordinator and consultant, we anticipate that the project will gather momentum and have a successful year 1.

HPS is making progress in getting its data ready for the data warehouse. The district has identified source systems and data elements. It is in the process of: mapping data elements to the data warehouse; extracting, transforming, and loading (ETL) into data warehouse; and, cleaning the data. The timeline for these activities have slipped slightly due to a delay by the SIS vendor; however, the data coordinator is working closely with the vendor to ensure that these activities do not slip further.

Project Outcome 2: Enhanced and more stable network.

A network performance assessment was completed in January, 2008. The District is in the process of implementing the recommendations. HPS has also upgraded the high school's WAN connection.




Project Outcome 3: Teachers / administrators understand data analysis fundamentals.

In spite of the considerable delay in providing professional development to end users, HPS is making up for lost time. As noted in the previous section, the *Making Sense of Data* class that was held on January 16, 2008 will not be considered as a legitimate professional development offering in terms of this grant. However, now that the original professional development plan is being followed, this activity is back on track. For example, the first workshop (which should have taken place on January 16, 2008) was held on March 12, 2008.

Project Outcome 4: Build capacity within District to create custom reports.

HPS is now just beginning to grapple with developing custom reports due to the change in project staff. No one from Haverhill attended the two-day report authoring training sponsored by the ESE because they did not know about it when they re-scheduled the first workshop. Now that the project team knows about this workshop, they will be sending two people to the April session to learn how to develop reports in Cognos. During workshop held on March 12th, a number of reports were modeled. The project consultant is exploring outside resources for Cognos expertise to assist with report development.

Project Scorecard

ROADMAP to EXCELLENCE PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
▪ Identify your warehouse team members and roles.	Complete
▪ Join the MassONE Data Warehouse work group.	Complete
▪ Download the data extract guides (optional).	Complete
▪ Download the ESE Access Use Policy.	Complete
▪ Download browser settings document.	Complete
▪ Complete the readiness survey.	Complete
▪ Contact your SIS vendor (optional).	Complete
▪ Develop an awareness and understanding of the warehouse within your district. *	
2. Develop a Data Warehouse Plan	
▪ Complete the district’s users sheet.	Complete
▪ Have the Directory Administrator assign warehouse roles to your users.	Complete
▪ Define your district’s warehouse goals. *	
▪ Create your timeline and assign responsibilities. *	
3. Rollout Warehouse to District Users	

ROADMAP to EXCELLENCE PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	Complete
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. * 	Y
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	G
2. Software Purchases	n/a
3. Database Administration	G
4. Grant Administration	G
5. Professional Development	Y
C. Roadmap to Excellence Project Outcomes	
1. Project Outcome 1: Successful implementation of DW.	
<ul style="list-style-type: none"> ▪ Form District DW planning team. 	Y
<ul style="list-style-type: none"> ▪ Develop implementation plan. 	Y
<ul style="list-style-type: none"> ▪ Participate in Data Warehouse User Group and Status Meetings 	Y
<ul style="list-style-type: none"> ▪ Perform Data Readiness. 	G
2. Project Outcome 2: Enhanced and more stable network.	
<ul style="list-style-type: none"> ▪ Perform network assessment and implement recommendations 	G
<ul style="list-style-type: none"> ▪ Upgrade HS WAN connection. 	G
3. Project Outcome 3: Teachers / administrators understand data analysis fundamentals.	
<ul style="list-style-type: none"> ▪ Provide End-user Readiness 	Y

ROADMAP to EXCELLENCE PROJECT SCORECARD	
Objectives	Rating
4. Build capacity within District to create custom reports.	
<ul style="list-style-type: none"> ▪ Attend all ESE-sponsored training sessions. 	Y
<ul style="list-style-type: none"> ▪ Choose standard ESE reports; design and implement custom reports; establish how reports will be used; measure results. 	Y

* NOTE: This report reflects Haverhill’s grant at the end of January, 2008. At this point in time (March 2008), many of these objectives would be green instead of yellow or red.

ROADMAP to Excellence Challenges

Had this progress report been written a month ago, we would have had grave concerns about the district’s ability to fulfill the objectives and goals set forth in its grant proposal. At this time, there are no significant barriers to implementation. However, the project still faces a number of challenges as follows:

Challenge 1—Project staffing changes: This project experienced turnover in staffing and changes in project roles. The project leader had to take a leave of absence for health reasons during a critical time in the project. The director of education technology stepped in and became the project advisor. Since she was not involved in the grant since its inception, it took time to get up to speed on all facets of the project. The initial project coordinator was recently replaced. The new coordinator also had to come up to speed on project activities. Both of these new team members were fortunate to have guidance from Richard Kesner, the project consultant.

The evaluators feel that the staffing changes strengthen the project and that the ROADMAP to Excellence now has a good chance of being well implemented.

Challenge 2—Project coordinator is a teacher: The new project coordinator has a thorough understanding and appreciation for the project’s possibilities. He has been working very closely with the database coordinator and project consultant. It is obvious from feedback that this person is very strong in project management and knowledge of data. The recent momentum in this project is due to the positive relationship between the new project coordinator and the consultant.

However, since he is a teacher, his classes are naturally his first priority and due to his schedule, he may not always be available for project activities. The evaluators recognize that the new coordinator is making a very positive impact on the project. It is recommended that project staff without teaching responsibilities assist the coordinator when he has a conflict due to his teaching schedule.

Challenge 3—Professional development delays: Another challenge to the project has been the delays in providing professional development opportunities to the targeted teachers. For example, the initial internal workshop that was delivered in January was off target and confusing to attendees. Based on feedback after the March 12th workshop was delivered, it appears that the professional development plan is now being followed.

Challenge 4—Data availability and report writing expertise: During the successful March 12th workshop, attendees modeled a set of reports. Some of the data needed for these reports will not be available in the data warehouse until next year (e.g., MAP, attendance, etc.). In addition, HPS does not at this time have the capacity to develop these reports in Cognos in time for the two Spring workshops.

Project staff members are solution-oriented and are not allowing these perceived roadblocks to hold them back. Since the data required for the reports is kept in the student information system, project staff will ask X2 to create some of these reports to be used during the workshops.

Conclusion

The *ROADMAP* to Excellence project had a very rocky start. However, since the appointment of a new project coordinator, coupled with assistance and mentoring from the project advisor and project consultant, the project has gathered momentum and made considerable progress recently.

The project is on track towards meeting the ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. The project is also on target to meet four of the five short-term outcomes:

- Successful implementation of the Data Warehouse
- Enhanced and more stable network
- Teachers / administrators understand data analysis fundamentals
- Build capacity within District to create custom reports

The fifth short-term outcome, “Teachers / administrators use performance data to examine individual work and use performance and demographic data to analyze groups of students” will be addressed in year 2 of the grant when MAP data can be uploaded to the data warehouse

The project is now poised to make progress on its long-term outcomes and meet its project goal of having a “self-sustaining process of employing data-informed decision making within Haverhill Public Schools.”

4. HOLYOKE PUBLIC SCHOOLS

Project Status

This project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1 (short-term): Uploaded student and teacher data to data warehouse.

The district is following its plan and is on target to meet its timeline for having a data warehouse available to stakeholders. In preparation to meet this outcome, Holyoke conducted an internal audit of student data elements for inclusion in the data warehouse. Holyoke is in the process of completing the extraction of local data for uploading to Cognos.

Project Outcome 2 (short-term): Data team members and IT teachers have been introduced to the DW and received initial instruction.

Power Users have and continue to attend all ESE-sponsored Cognos trainings. Between September 2007 and January 31, 2008, 3 people attended the ESE's Cognos Data Warehouse training in October, 2007 and 5 people attended the ESE's Data Warehouse training in January, 2008. The district is on track for sending 3 people to report authoring training in the second half of the grant period.

In addition, power users have and continue to provide in-depth training to designated staff. Between September 2007 and January 31, 2008, 11 staff attended Cognos Data Warehouse Introduction, 40 participants attended MAP Report training, and 29 staff attended TestWiz training. Between February 1, 2008 through August 31, 2008, Holyoke anticipates that 111 people will attend Cognos Power Users Training, 3 people will attend Tech Management training, 12 people will attend Admin Plus training for School Leaders training, 1 person will attend attendance training, 27 people will attend Grade Quick training, and 13 people will attend Scheduling and Report Card training.

Project Outcome 3 (short-term): Staff use Student Data handbook to design reports.

Holyoke has published its Holyoke Public Schools Student Data Handbook, Version 2.0 in January, 2008 which includes all of the student data fields that are tracked through the district's student information system, Rediker. The document also contains instructions on running reports as well as step-by-step instructions for new or infrequent users. The district redesigned version 1.0 of the handbook to be a cornerstone piece in its data warehouse initiative. The data handbook, coupled with the training of 28 data clerks in inputting data properly, will ensure that the district meets its longer-term outcome of: *"All critical data will be entered uniformly thereby improving data quality and facilitating easy*

report generation.”

Project Outcome 4 (short-term): Access by stakeholders to critical student data (demographic, assessment, discipline, etc.) for analysis.

The district is providing professional development opportunities for staff to work with other assessment tools to streamline use at classroom level (i.e., know which reports are most helpful for MAP and Testwiz). MAP data will be uploaded to the data warehouse in addition to demographic and discipline data. Outcomes 1, 2, and 3 will contribute to the attainment of this outcome since the district:

- is on target for meeting its goal of uploading student and teacher data to the data warehouse
- is conducting intensive training for power users, IT teachers, and clerical staff
- has completed its data handbook








Longer-term Outcomes

When short-term have been attained, the district will be in the position of meeting longer-term outcomes of:

- generating meaningful reports which will be the basis for programmatic evaluation/revision and for longitudinal growth studies to impact student achievement
- using Cognos as key assessment tool for analyzing student demographic and assessment data

Project Scorecard

HOLYOKE PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
▪ Identify your warehouse team members and roles.	Complete
▪ Join the MassONE Data Warehouse work group.	Complete
▪ Download the data extract guides (optional).	Complete
▪ Download the ESE Access Use Policy.	Complete
▪ Download browser settings document.	Complete
▪ Complete the readiness survey.	Complete
▪ Contact your SIS vendor (optional).	Complete

HOLYOKE PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> ▪ Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> ▪ Complete the district's users sheet. 	Complete
<ul style="list-style-type: none"> ▪ Have the Directory Administrator assign warehouse roles to your users. 	Complete
<ul style="list-style-type: none"> ▪ Define your district's warehouse goals. 	Complete
<ul style="list-style-type: none"> ▪ Create your timeline and assign responsibilities. 	
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	Complete
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. 	Complete
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	n/a
2. Software Purchases	Complete
3. Database Administration	
4. Grant Administration	
5. Professional Development	
C. Holyoke Project Outcomes	
1. Uploaded student and teacher data to data warehouse	
<ul style="list-style-type: none"> ▪ Develop implementation plan. 	
<ul style="list-style-type: none"> ▪ Extract local database information to Cognos. 	

HOLYOKE PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> Participate in data warehouse user group and status meetings. 	G
<ul style="list-style-type: none"> Complete data cleansing project. 	G
<ul style="list-style-type: none"> Continue to re-organize staff data responsibilities. 	G
2. Data team members and IT teachers have been introduced to the DW and received initial instruction	
<ul style="list-style-type: none"> Power users attend all ESE-sponsored training. 	G
<ul style="list-style-type: none"> Power users provide in-depth training to designated staff. 	G
3. Staff use student data handbook to design reports.	
<ul style="list-style-type: none"> Publish student data handbook. 	Complete
4. Access by stakeholders to critical student data (demographic, assessment, discipline, etc.) for analysis	
<ul style="list-style-type: none"> Develop District Data Team's strategic plan and flowchart for data transmissions. 	G
<ul style="list-style-type: none"> Identify school-based data leadership team members and recommend school-based data coordinators. 	G
<ul style="list-style-type: none"> Work with other assessment tools to streamline use at classroom level (i.e., know which reports are most helpful for MAP and Testwiz). 	G

Holyoke Public Schools' Data Warehouse Project Challenges

Holyoke Public Schools is in the second year of its two-year grant. The district has demonstrated a commitment to implementing the data warehouse by allocating resources to personnel, professional development, and technology. It has put procedures in place to standardize data collection practices and has developed a series of assessment and demographic reports using its current systems. The district hopes to eventually use Cognos for all of its reporting instead of the disparate systems it is currently using.

In short, Holyoke's data warehouse project has a solid foundation and does not appear to have any insurmountable barriers to a successful implementation at this time. The district seems to have overcome an initial challenge of a delay in hiring the assistant data coordinator. This position was posted in January, 2007 but did not start until mid-

April, 2007. Once on board, the assistant data coordinator made up for lost time. She attended two Cognos training sessions that enabled her to develop the draft of the Data Handbook version 2.

One immediate challenge facing the district is the lack of funding available to pay stipends to the school-based data teams. Holyoke is in the process of establishing a *data wall* in each school that uniformly depicts assessment and demographic data across the district by school. The school-based data teams will be charged with assisting their schools to first understand how they fit into the district picture and then how to use data for improvement. The district is in the process of appointing these teams but needs a mechanism to pay them. Perhaps the newly allocated funds can be used for these stipends.

Another potential challenge is the upcoming extraction of local data to the data warehouse. Project staff believe that the data is clean and hope that the extraction runs smoothly. However, they will not really know what they are dealing with in terms of errors until they receive the validation reports from the first data submission.

Conclusion

Holyoke's project has made substantial progress on its data warehouse initiative, especially since the assistant data coordinator came on board in April, 2007. The project is on track towards meeting the ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. The project is also on target to meet all four short-term outcomes:

- Uploaded student and teacher data to data warehouse
- Data team members and IT teachers have been introduced to the data warehouse and received initial instruction
- Access by stakeholder to critical student data
- Staff use student data handbook to design reports

It is anticipated that by the end of the second year of its grant, the project will meet its longer-term outcomes:

- Staff will be able to generate meaningful reports that will be the basis for programmatic evaluation/revision and for longitudinal growth studies to impact student achievement
- All critical data will be entered uniformly thereby improving data quality and facilitating easy report generation
- Staff use Cognos as the key assessment tool for analyzing student demographic and assessment data
- Staff are trained on creating electronic cumulative folders based on data from the data warehouse.

This well-organized project is now poised to meet its goal of providing stakeholders with assessment information in a timely and efficient manner to inform instructional practice in order to improve student achievement.

5. PITTSFIELD PUBLIC SCHOOLS

Project Status

In brief, this project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Upload local data to the data warehouse .

As part of its grant proposal, Pittsfield developed a detailed project timeline with project outcomes. It seems to be following its plan and appears to be on target for completing many of its year 1 activities. The focus of year 1 will be primarily on familiarizing staff with cube manipulation and creating reports and hopes to upload local attendance data to the warehouse. However, this last activity will have to be delayed until the data warehouse group at the ESE has created a structure for attendance data.

Pittsfield has completed identifying and cataloguing its current data systems. It developed a very detailed FileMaker Pro database which includes an analysis of which data sources might contribute to the data warehouse, interrelationships of systems, lists of data fields, data tables, and current reports. It also identifies the owner of the data. The district is also in the process of identifying transformation tools and cleaning the attendance data. Once the ESE has created a fact table for attendance; defined the mandatory, optional, and recommended fields for the extract format; and, written scripts to import and validate the data, Pittsfield will be able to upload the data. The district will be able to write reports. For dynamic, in-depth analysis, the district will have to wait for the ESE to create cubes that include attendance data.

Project Outcome 2: Improved sharing of data (in both input, extraction, and reporting) and access to historical information.

Pittsfield has aligned its data warehouse goals with district strategic goals. District goals include a major emphasis on the analysis of data for decisions. In addition the district is utilizing formative assessments for improving teaching strategies and both formative and summative assessments for progress monitoring. These goals dovetail directly with the goals of the project.

The project organizational structure appears to be well thought out. The leadership team has diverse representation that includes executive sponsors and technical staff. The creation of a core data team and data user teams is designed to elicit constant feedback. The core data team consists of technology staff, principals, the deputy superintendent, curriculum leaders, and other district-level administrators. District teachers will be chosen/recommended by building principals. The data user teams will include the administrative council, all principals, selected teachers, and school data teams. Administrative Council members include principals, curriculum leaders and other department heads (e.g. School Psychologists, Title One, etc). One of the main

responsibility of these teams will be to determine the type of reports the district needs. They will provide critical feedback to the project leaders who will be designing and building the reports.

Outcome 3: Enhanced data analysis and reporting capability.









Pittsfield intends for the data warehouse to empower education stakeholders with critical, current information about students and schools to impact teaching, learning, and management. In order to effect this outcome, technical staff and end users need to have a variety of professional development activities that are tailored to their specific roles. Pittsfield has developed a professional development plan for this grant and is currently implementing it. The district has identified the following cohort groups for professional development:

- Project Team Leaders: attend ESE sponsored professional development activities/trainings; with the addition of the \$20,000 extra there should be additional training offerings.
- Project Team Members: trained by leadership team and will include training similar to what ESE offers. If more end user opportunities arise from ESE they can attend.
- Principals and Curriculum Directors: similar to team training, done in-house, but focusing on individual school data and MCAS progress for teachers and other stakeholders. The scope of this training is still being defined and will depend on security and confidentiality guidelines as determined by state regulations.

A number of professional development sessions continue to be conducted in-house for end users. Project team leaders have attended the sessions offered by the ESE.

Project Scorecard

WEAVING THE FABRIC OF DATA AND INSTRUCTION PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
▪ Identify your warehouse team members and roles.	Complete
▪ Join the MassONE Data Warehouse work group.	Complete
▪ Download the data extract guides (optional).	Complete
▪ Download the ESE Access Use Policy.	Complete
▪ Download browser settings document.	Complete

WEAVING THE FABRIC OF DATA AND INSTRUCTION PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> ▪ Complete the readiness survey. 	Complete
<ul style="list-style-type: none"> ▪ Contact your SIS vendor (optional). 	Complete
<ul style="list-style-type: none"> ▪ Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> ▪ Complete the district’s users sheet. 	Complete
<ul style="list-style-type: none"> ▪ Have the Directory Administrator assign warehouse roles to your users. 	Complete
<ul style="list-style-type: none"> ▪ Define your district’s warehouse goals. 	
<ul style="list-style-type: none"> ▪ Create your timeline and assign responsibilities. 	
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	Complete
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. 	
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	
2. Software Purchases	n/a
3. Database Administration	
4. Grant Administration	
5. Professional Development	
C. Weaving the Fabric of Data and Instruction Project Outcomes	
1. Upload local data to the data warehouse.	

WEAVING THE FABRIC OF DATA AND INSTRUCTION PROJECT SCORECARD	
Objectives	Rating
<ul style="list-style-type: none"> Develop implementation plan. 	G
<ul style="list-style-type: none"> Participate in data warehouse user group and status meetings. 	G
<ul style="list-style-type: none"> Determine scope of data warehouse including what local data to upload. 	Y
<ul style="list-style-type: none"> Define, extract, and load local data. 	Y
2. Improved sharing of data (in both input, extraction, and reporting) and access to historical information.	
<ul style="list-style-type: none"> Align data warehouse goals with district goals. 	G
<ul style="list-style-type: none"> Choose core data team members and data user team participants. 	G
<ul style="list-style-type: none"> Determine which reports will be built from the data warehouse. 	Y
<ul style="list-style-type: none"> Work with core data team members and data user team participants to design reports. 	Y
3. Enhanced data analysis and reporting capability.	
<ul style="list-style-type: none"> Develop training plan. 	Complete
<ul style="list-style-type: none"> Conduct professional development sessions and attend ESE sessions. 	G

Weaving the Fabric Of Data and Instruction Project Challenges

Pittsfield Public Schools faces many challenges. The Commonwealth of Massachusetts has deemed it a high needs district with regard to Adequate Yearly Progress (AYP). Both of its middle schools have failed to make AYP and are in danger of being declared as underperforming. Other challenges include a high poverty rate, an influx in non-English speaking residents, and the loss of over \$500,000 in tuition transfers to other districts through School Choice.

The deputy superintendent, project coordinator, and leadership team members are committed to implementing a data warehouse to address many of these problems. It is envisioned that access to local student data (e.g., grade, attendance, assessment, discipline etc.) from disparate sources will help: a) inform instruction; b) keep students

on grade level with age-appropriate peers through high-school graduation; and, c) impact student achievement.

In addition to assessment data, the district identified student attendance data as a critical variable in increasing student learning. However, Pittsfield will not be able to upload its attendance data and create reports during year 1 of the grant because the ESE has not created a fact table for attendance; defined the mandatory, optional, and recommended fields for the extract format; and, written scripts to import and validate the data. For dynamic, in-depth analysis, the district will have to wait for the ESE to create cubes that include attendance data as well.

As a Macintosh district, a potential barrier to fully deploying the data warehouse in Pittsfield is the inability of Cognos to fully support Macintosh browsers. The Cognos Web-based editor uses Microsoft proprietary ActiveX controls which are only supported in the Windows versions of Internet Explorer.

Conclusion

Pittsfield Public Schools has made substantial progress on its TD³ grant. The project is on track towards meeting the appropriate ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements.

The project is also making progress towards meeting its short-term outcomes:

- Uploading local data to the data warehouse
- Improved sharing of data (in both input, extraction, and reporting) and access to historical information
- Enhanced data analysis and reporting capability

The focus of year 1 will be primarily on familiarizing staff with cube manipulation and creating reports. The district technical staff members have completed identifying and cataloging the district's current data systems. The project organizational structure appears to be well thought out. The leadership team has diverse representation that includes executive sponsors and technical staff. The creation of a core data team and data user teams is designed to elicit constant feedback especially on the priorities, schedule, design, and development of data warehouse reports. The district is on track to implement the professional development plan for the identified cohort groups.

This well-organized and well-supported project is poised to make progress on its goals of using the data warehouse as a tool to:

- empower education stakeholders with critical, current information to drive instructional practice that will positively impact AYP
- keep students on grade level with age-appropriate peers through high-school graduation

The availability and use of the data warehouse will ultimately lead to the District's long-term goal of fostering a pervasive change in the culture of teaching and learning where technology integration and the use of data to assist in fostering change is the norm.

6. SPRINGFIELD PUBLIC SCHOOLS

Project Status

This project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Successful installation and implementation of the data warehouse.








The district has developed a Microsoft Project plan and is following the plan. Specifically, SPS: a) has ordered the hardware; b) has met with a representative from Cognos who will be providing consulting services; c) has hired a DBA; d) is planning to acquire the Cognos dashboard/scorecard software; e) has participated in ESE-sponsored training in Fall 2007 and January 2008; f) has begun training for technical staff; g) is utilizing the ESE data warehouse while the locally hosted data warehouse is being implemented; and, h) has produced “wire frames” of the initial role-based dashboards which will be reviewed by the SPS Data Tools group. SPS has aligned its professional development with the ESE data warehouse implementation and staff have attended all Cognos sessions.








Project Outcome 2: Updated Compliance Database.

The district has developed and continues to update its Compliance Listing spreadsheet which keeps track of mandated items such as reports and applications, due dates, whether or not the information must be submitted to the ESE, associated websites and most importantly, it designates ownership and location of critical district data.

Project Scorecard

S²D³T² PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
▪ Identify your warehouse team members and roles.	Complete
▪ Join the MassONE Data Warehouse work group.	Complete
▪ Download the data extract guides (optional).	Complete

S²D³T² PROJECT SCORECARD	
Objectives	Rating
▪ Download the ESE Access Use Policy.	Complete
▪ Download browser settings document.	Complete
▪ Complete the readiness survey.	Complete
▪ Contact your SIS vendor (optional).	n/a
▪ Develop an awareness and understanding of the warehouse within your district.	
2. Develop a Data Warehouse Plan	
▪ Complete the district's users sheet.	Complete
▪ Have the Directory Administrator assign warehouse roles to your users.	Complete
▪ Define your district's warehouse goals.	
▪ Create your timeline and assign responsibilities.	
3. Rollout Warehouse to District Users	
▪ Distribute the user guide.	Complete
▪ Distribute browser settings document.	Complete
▪ Schedule and attend end-user training.	Complete
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	
2. Software Purchases	n/a
3. Database Administration	
4. Grant Administration	
5. Professional Development	

S²D³T² PROJECT SCORECARD	
Objectives	Rating
C. S²D³T² Project Outcomes	
1. Successful installation and implementation of the data warehouse	
<ul style="list-style-type: none"> ▪ Conduct ongoing project management – The project plan is in the process of being updated with the most recent input from Cognos. 	
<ul style="list-style-type: none"> ▪ Purchase necessary equipment for data warehouse. The hardware has been received. 	
<ul style="list-style-type: none"> ▪ Hire a Database Administrator (DBA) – SPS has hired a DBA for the data warehouse. 	Complete
<ul style="list-style-type: none"> ▪ Meet with Cognos representative to enlist assistance in configuring and implementing the data warehouse. 	Complete
<ul style="list-style-type: none"> ▪ Acquire dashboard/scorecard software. 	
<ul style="list-style-type: none"> ▪ Participate in data tools training in Fall 2007 – 22 people participated in this training. 	Complete
<ul style="list-style-type: none"> ▪ Attend second data tools training conducted by the ESE in January 2008 – 24 people participated in this training. 	Complete
<ul style="list-style-type: none"> ▪ Utilize the ESE data warehouse while the locally hosted data warehouse is being implemented. 	
<ul style="list-style-type: none"> ▪ Begin training for data warehouse technical staff and ARA. 	
<ul style="list-style-type: none"> ▪ Produce “wire frames” of the initial role-based dashboard. 	Complete
<ul style="list-style-type: none"> ▪ Schedule meeting to have data tools group select initial dashboards 	
2. Updated Compliance Database	
<ul style="list-style-type: none"> ▪ This database continues to be updated. 	

S²D³T² Project Challenges

Project S²D³T², Springfield's locally hosted Data Warehouse solution, is built on a solid foundation that includes a commitment to using data for continuous improvement for all students, faculty and administrators. At project inception, the district had already put many key components in place to ensure project success including: implementing a robust infrastructure, documenting key processes, demonstrating staff technical readiness, providing laptops to teachers and administrators, and deploying an initial, SPS-designed the Intranet Portal. The project is endorsed by key leadership including

the Superintendent of Schools, who is also a member of the ESE Data Warehouse Steering Committee, and is managed by an experienced core project team. SPS is further demonstrating its commitment by augmenting the project with additional district funds and hiring a full-time DBA for the data warehouse.

This project has made considerable progress in the areas over which it has direct control; however, the unforeseen delay in purchasing the hardware and a new UPS (Uninterruptible Power Supply) has set the implementation of the local data warehouse back a couple of months. Since the UPS must be installed first, the District had to schedule the Dell installation after it knew the date of the UPS installation. Both installations are scheduled for March, 2008. In addition, the District needed to revise its training schedule to coincide with the data warehouse installation so that training would be just-in-time rather than months in advance.

A hallmark of good project management is the ability to handle contingencies. SPS has demonstrated agility in dealing with the hardware delay, which is not holding back the project's momentum. The district is using the ESE's data warehouse in parallel with the local implementation. The Data Tools Team, principals, and other stakeholders are in the process of numerous data-gathering meetings to determine the metrics for the initial dashboards. The second end-user training is scheduled for February 28, 2008 with a minimum of two trainings per month thereafter. Assistance is now in place from Cognos to implement the local solution. Cognos will be training the SPS technical team in how to install the solution. Thus, SPS staff will have on the job training instead of attending a course.

Conclusion

The S²D³T² Data Warehouse project has made substantial progress on its TD³ grant. The project is on track towards meeting the appropriate ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. The project is also on target to meet two of its four short-term outcomes:

- Successful installation and implementation of the data warehouse
- Updated compliance database and documented processes

It is anticipated that in the second half of this grant year, the newly hired database administrator and Cognos consultants will work with project team members to deploy a fully functioning locally hosted data warehouse, with frequent updates from the student system, that can be used by educators to generate student reports. At this point, the project will meet its two remaining short-term outcomes:

- Users build baseline metrics utilizing several data points to measure student progress and make curricular/process changes
- Assessment data available to end users within 5 working days of receipt of data

This well-planned, well-executed, and well-supported project is now poised to make progress on its long-term outcomes and meeting its project goal providing stakeholders with an operational data warehouse that contains valid, accurate, and reliable information.

7. WAREHAM PUBLIC SCHOOLS

Project Status

In brief, this project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Local data uploaded by end of year 1.

The district is on target for completing the timeline and schedule set forth in its grant proposal. The Project Leadership Team (known as the Point Persons) meet every three weeks to discuss project status. The districts have completed a data audit to identify major applications and local assessments and have identified the mandatory and optional fields in the District Extract Guide required for uploading source data to the data warehouse. The districts are in the process of identifying and resolving data discrepancies and continuing the process of data collection, cleansing, and reporting. These activities are further along in Wareham.

Seven people from Wareham attended the Educational Data Warehouse Power User training in October as part of the last grant. Twenty-six people from Wareham and Sliver Lake attended the February 1, 2008 Power User training conducted by the ESE. It is anticipated that four people will attend the ESE Report Author training.




Project Outcome 2: Data Discovery Team teachers and administrators have access to internal and external student assessment results in order to identify and analyze students' learning needs to make instructional decisions for improved student achievement.












A professional development plan for the Wareham Public Schools and Silver Lake Regional School District/Union #31 data discovery teams was developed in Fall 2007. On October 15, 2007, Wareham held the first full day in service workshop on "Data Analysis for Data-driven Decision Making" in which 300+ participants worked in small groups to look at the MCAS results of their students and identify trends. The districts are also training administrators in necessary supervision and support to assist staff in reaching project goals in monthly administrative meetings.


Project Outcome 3: Policies and procedures established for the collection and maintenance of data.

The districts are in the process of formulating standards and procedures for data collection, storage, and use.

Project Scorecard

“THE BRIDGE” - INFORMING INSTRUCTION WITH TD³ PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
<ul style="list-style-type: none"> ▪ Identify your warehouse team members and roles. 	Complete
<ul style="list-style-type: none"> ▪ Join the MassONE Data Warehouse work group. 	Complete
<ul style="list-style-type: none"> ▪ Download the data extract guides (optional). 	Complete
<ul style="list-style-type: none"> ▪ Download the ESE Access Use Policy. 	Complete
<ul style="list-style-type: none"> ▪ Download browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Complete the readiness survey. 	Complete
<ul style="list-style-type: none"> ▪ Contact your SIS vendor (optional). 	Complete
<ul style="list-style-type: none"> ▪ Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> ▪ Complete the district’s users sheet. 	Complete
<ul style="list-style-type: none"> ▪ Have the Directory Administrator assign warehouse roles to your users. 	Complete
<ul style="list-style-type: none"> ▪ Define your district’s warehouse goals. 	
<ul style="list-style-type: none"> ▪ Create your timeline and assign responsibilities. 	
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	Complete
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. 	Complete
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	n/a

“THE BRIDGE” - INFORMING INSTRUCTION WITH TD³ PROJECT SCORECARD	
Objectives	Rating
2. Software Purchases	
3. Database Administration	
4. Grant Administration	
5. Professional Development	
C. “The Bridge” Project Outcomes	
1. Local data uploaded by end of year 1	
<ul style="list-style-type: none"> ▪ Develop implementation plan – Project plan is process of being updated. 	
<ul style="list-style-type: none"> ▪ Participate in ESE DW User Group and Status Meetings; attend ESE-sponsored trainings. 	
<ul style="list-style-type: none"> ▪ Conduct data audit. 	
<ul style="list-style-type: none"> ▪ Identify and resolve data discrepancies 	Complete
<ul style="list-style-type: none"> ▪ Begin/Continue processes of: data collection, cleansing, and reporting . 	
2. Data Discovery Team teachers and administrators have access to internal and external student assessment results in order to identify and analyze students’ learning needs to make instructional decisions for improved student achievement.	
<ul style="list-style-type: none"> ▪ Select district Data Discovery Team members. 	Complete
<ul style="list-style-type: none"> ▪ Develop/implement professional development plan using train-the-trainer model, in 3 focus areas to include workshops, coaching, and school-based groups 	
<ul style="list-style-type: none"> ▪ Train administrators in necessary supervision and support to assist staff in reaching project goals in monthly administrative meetings 	
<ul style="list-style-type: none"> ▪ Take TSAT again in Spring '08. 	

"THE BRIDGE" - INFORMING INSTRUCTION WITH TD ³ PROJECT SCORECARD	
Objectives	Rating
3. Policies and procedures established for the collection and maintenance of data	
<ul style="list-style-type: none"> ▪ Formulate standards and procedures for data collection, storage, and use. 	

The Bridge Project Challenges

As indicated in Chapter 2, *The Bridge* project is making good progress in reaching its objectives. Both districts have committed financial and personnel resources to ensure the data warehouse implementation is successful. The project has an experienced leadership team with representatives from Wareham and Silver Lake. Both districts have reliable infrastructures and robust student information systems. They are compatible in that they have similar AYP issues. This project does not appear to have any barriers to a successful implementation at this time. However, it faces a few challenges.

Challenge 1—Size: Both districts are small which means that project staff must wear many different hats. This challenge has not seemed to impact the project adversely; however, people have to juggle many competing priorities.

Challenge 2—Differing levels of readiness: This particular challenge can also be viewed as an opportunity. Prior to this grant, Wareham had participated in the data warehouse pilot for 2.5 years with a different partner. Thus, it is further along than Sliver Lake. Wareham seems to be mentoring Sliver Lake instead of being held back.

Challenge 3—Wareham’s financial situation: Wareham is facing a budget crisis this year. Special education expenditures have increased substantially and the town provides the district with slightly above the minimum chapter 70 support. In addition, as a result of the legislature changing the property appraisal formula, the district has lost a million dollars in its budget over a four-year period.

Challenge 4—Sliver Lake is a region and a union: Silver Lake has to contend with 6 school committees and is also in the process of hiring a new superintendent.

The positive outcome of this project is dependent on the continuing cooperation and collaboration between the two partners. Based on current performance, we expect that this relationship will yield a successful data warehouse implementation.

Conclusion

The Bridge project has made substantial progress since receiving the TD³ grant. The project is on track towards meeting the appropriate ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. The project is also on target to meet all three of its year one short-term outcomes:

- Local data uploaded by end of year 1
- Data Discovery Team teachers and administrators have access to internal and external student assessment results in order to identify and analyze students' learning needs to make instructional decisions for improved student achievement
- Policies and procedures established for the collection and maintenance of data

The districts have completed a data audit to identify major applications and local assessments and have identified the mandatory and optional fields in the District Extract Guide required for uploading source data to the data warehouse. The districts are in the process of identifying and resolving data discrepancies and continuing the process of data collection, cleansing, and reporting. These activities are further along in Wareham.

A professional development plan for the Wareham Public Schools and Silver Lake Regional School District/Union #31 data discovery teams was developed in Fall 2007. Project participants continue to take advantage of the ESE-sponsored training. The districts are also training administrators in necessary supervision and support to assist staff in reaching project goals in monthly administrative meetings.

Both districts are in the process of formulating standards and procedures for data collection, storage, and use.

This well-managed project is poised to make progress on its goal to embed training, access, and implementation of technology for data-driven decision making in all aspects of the educational process (i.e., instruction as well as budget planning), resulting in improved student achievement.

8. WINCHENDON PUBLIC SCHOOLS

Project Status

In brief, this project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1 (short-term): Uploaded local student and teacher data to data warehouse.

The district is following its plan and is on target to meet its timeline for uploading local student and teacher data to the data warehouse. In preparation to meet this outcome, Winchendon has contracted with Rediker to assist them in the extraction of local data for uploading to Cognos.

Project Outcome 2 (short-term): Test Wizards have capacity to utilize Cognos to disaggregate data and 3 central office staff are able to create reports that impact student achievement.

Winchendon test wizards and 3 central office staff continue to attend all ESE-sponsored Cognos trainings. Five people participated in Power Play Web Course at Worcester Technical High School provided by the ESE in October, 2007. Ten people attended the January 29th session that was held in Winchendon. Professional development courses include:

- “Getting Started” – Overview of Power Play
- Power Play Web Course
- User of Web Version of Report Cards
- Power Play Web Course Part II
- Training in to pulling data from the schools so that it can be uploaded to the data warehouse

Project Outcome 3 (long-term): Data available electronically for ISSPs, SIPs, and to monitor Turn Around Plan in one place.





A major goal of this project is to have accurate and reliable information available electronically in one place (the data warehouse). Once the activities in Project Outcome 1 have been achieved, all critical student and teacher data will be available in the data warehouse to be used for district reports.














Project Outcome 4 (longer-term): Test Wizards will create reports and use data and analysis gleaned from these reports to drive instruction.



The attainment of Outcome 4 will be a direct result of the successful completion of Project Outcome 2 activities. Once test wizards have the ability to use Cognos for data

analysis, they will then be able to use these data to inform instruction.

Project Scorecard

WINCHENDON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
▪ Identify your warehouse team members and roles.	Complete
▪ Join the MassONE Data Warehouse work group.	Complete
▪ Download the data extract guides (optional).	Complete
▪ Download the ESE Access Use Policy.	Complete
▪ Download browser settings document.	Complete
▪ Complete the readiness survey.	Complete
▪ Contact your SIS vendor (optional).	
▪ Develop an awareness and understanding of the warehouse within your district.	
2. Develop a Data Warehouse Plan	
▪ Complete the district's users sheet.	Complete
▪ Have the Directory Administrator assign warehouse roles to your users.	Complete
▪ Define your district's warehouse goals.	
▪ Create your timeline and assign responsibilities.	
3. Rollout Warehouse to District Users	
▪ Distribute the user guide.	Complete
▪ Distribute browser settings document.	Complete
▪ Schedule and attend end-user training.	Complete

WINCHENDON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	n/a
1. Software Purchases	
3. Database Administration	
4. Grant Administration	
5. Professional Development	
C. Project Outcomes	
1. Uploaded local student and teacher data to data warehouse.	
<ul style="list-style-type: none"> ▪ Develop/update implementation plan. 	
<ul style="list-style-type: none"> ▪ Participate in data warehouse user group and status meetings. 	
<ul style="list-style-type: none"> ▪ Implement Rediker District Module 	
<ul style="list-style-type: none"> ▪ Contract with Rediker to write extract routines to get data into data warehouse. 	
<ul style="list-style-type: none"> ▪ Convert and upload to data warehouse GRADE, DIBELS, and student grades (7-12) 	
2. Test Wizards have capacity to utilize Cognos to disaggregate data and 3 central office staff are able to create reports that impact student achievement.	
<ul style="list-style-type: none"> ▪ Attend all ESE-sponsored training. 	
<ul style="list-style-type: none"> ▪ Train 10 wizards and 3 central office staff in data warehouse. 	
<ul style="list-style-type: none"> ▪ Set up report cards using Edline and train staff. 	
<ul style="list-style-type: none"> ▪ Train elementary / middle / high school teachers in Grade Quick. 	

WINCHENDON PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
3. Data available electronically for ISSPs, SIPs, and to monitor Turn Around Plan in one place.	
<ul style="list-style-type: none"> ▪ Outcome 3 will be a direct result of the successful completion of activities 1 through 5. 	
4. Test Wizards will create reports and use data and analysis gleaned from these reports to drive instruction.	
<ul style="list-style-type: none"> ▪ Outcome 4 will be a direct result of the successful completion of activities 6 through 9. 	

Winchendon Public Schools' Data Warehouse Project Challenges

Winchendon Public Schools is in the second year of its two-year grant. The district has accomplished many of the activities it outlined in its original grant proposal. The district provided professional development in the first year to its ten “test wizards” and three central office staff. These project participants began year 2 of the grant with a solid foundation. Through its work with EDC and the Massachusetts Department of Elementary and Secondary Education, Winchendon has used the PIM process to inform the district’s Turn Around Plan. Through the PIM process, staff demonstrate knowledge in analyzing data to impact teaching, learning, and management.

Thus, Winchendon’s data warehouse project has made significant progress and does not appear to have any insurmountable barriers to a successful implementation at this time. However, the district does have five challenges.

Challenge 1—Size of District: Winchendon is a small rural district. As a small district, its project coordinators and project leaders must wear many different hats. This challenge has not seemed to impact the project adversely; however, people have to juggle many competing priorities. For example, the EPIMS project took a tremendous time for some project participants. In a larger district, data warehouse grant project leaders were not as involved in the labor intensive EPIMS activities. Another example is that the grant required meetings often in conflict with other ESE grant required meetings/trainings. However, the two co-coordinators are organized and dedicated which helps to overcome this challenge.

Challenge 2—District does not have a Wide Area Network (WAN): The Rediker Student Information System is building-based. At the beginning of the project, Winchendon did not have the Rediker District module which would allow them to directly access student data electronically from all the buildings. Instead, data collection was handled individually school-by-school. The manual process will adversely impact the district’s ability to automate a process to pull data from the schools so that it can be uploaded to the data warehouse. At this time, Winchendon has purchased Rediker’s District module that will allow the automated collection of student data from the schools; however, full implementation of the District module is planned for Spring, 2008. The district has budgeted \$2,000 for Rediker to train staff in how to pull data from the schools

and extract it from the district-wide module so that it can be uploaded to the data warehouse.

Challenge 3—Evolving nature of the ESE’s data warehouse initiative:

Winchendon’s project implementation is occurring at the same time the ESE is tailoring and refining the data warehouse to meet the needs of school districts. Although, Winchendon is excited to be able to have an impact on this evolving project, it has also presented some challenges in terms of getting local data into the warehouse. When the district wrote its proposal, it had expected to buy additional software for data extraction. While the district is pleased that it can re-allocated these funds, it also is concerned that uploading GRADE and DIBELS data will necessitate some manual processes. In addition, the district has to file budget amendments because of the evolving nature of the project.

Challenge 4—Courses provided by the ESE without charge: The district is certainly grateful to the ESE for providing the Cognos courses at no charge and has taken advantage of sending project participants to all trainings. However, Winchendon set aside a certain amount of money to meet its 25% minimum training requirement and it now it has to find another way to utilize the funding for training. Of course the district recognizes that this is a good challenge.

The free ESE data warehouse report author training for the “Test Wizards” will probably occur before the local supplemental data is loaded into the data warehouse. As a result, they may not be able to immediately put their training to use to create the reports needed to help drive instruction.

Challenge 5—A few critical technical activities are planned for Spring 2008 and are in the process of being scheduled: The district has planned the following activities for Spring 2008:

- A meeting will be scheduled with Rediker by March 7, 2008
- Implementation of Rediker District module to collect data from the school modules
- Use extraction routines written by Rediker so local student and teacher data can be uploaded to the data warehouse
- Conversion and uploading of GRADE and DIBELS data to the data warehouse

The delay of these activities could potentially impact the success of the project. It is recommended that the district immediate get a firm commitment from Rediker on the start date of the these critical activities.

Conclusion

Since receiving the TD³ grant, Winchendon’s Data Warehouse project has made progress in meeting its objectives. The project is on track towards meeting the appropriate ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements. Professional Development activities are on schedule. Once Rediker begins working with the district to implement the student information system’s District module and extract local data, the district will be on target to meet many of its outcomes:

- Uploaded local student and teacher data to data warehouse
- Test Wizards have capacity to utilize Cognos to disaggregate data and 3 central office staff are able to create reports that impact student achievement
- Data available electronically for ISSPs, SIPs, and to monitor Turn Around Plan in one place
- Test Wizards will create reports and use data and analysis gleaned from these reports to drive instruction

It is anticipated that in the second half of this grant year, Rediker will work with the leadership team to implement the process for collection and extraction of data to the data warehouse. Once these technical activities have occurred, the project will be well poised to make progress on its long-term outcome of all teachers having the capacity and access to online student achievement data and meet its project goal of making AYP in English/Language Arts and Mathematics for the aggregate and the subgroups.

9. WORCESTER PUBLIC SCHOOLS

Project Status

In brief, this project has made progress in meeting all of the ESE Data Warehouse Implementation Objectives for the time period and has complied with the 164 Grant Expenditure Requirements. Specifically, in the three-month period since receiving the TD³ grant, the project has made progress toward achieving the following project outcomes delineated in its grant proposal:

Project Outcome 1: Getting appropriate data into the data warehouse.

The district is following its plan and is on target for completing year 1 activities. It is in the process of defining, extracting, and loading local data. The expected completion date is May, 2008. WPS is also increasing its data storage capacity to centrally aggregate all data to be exported to the Data Warehouse. The district has already purchased and installed the EMC NS20 storage solution. It anticipates purchasing an additional EMC NS20 storage drawer and 20 EMC NS20 hard drives to increase capacity in the second half of this grant year.






Outcome 2: Continue to focus efforts on decision framework – planning, implementation, data analysis and using results.

The district plans to hire a consultant to analyze and define “high quality data coherence” in the next month and anticipates completing this activity in late Spring, 2008. However, currently there is no scope or work or contract for this project.

Outcome 3: Prepare to roll out the data warehouse to end users over a two year period starting year 2.

In preparation for rolling out the data warehouse to end users, the three Data Analysts (and Information Systems Specialist) are attending training on using Cognos tools. The district is actually ahead of its training schedule and should be commended. In addition to focusing on the training of technical staff in year 1, the district plans to deliver professional development to principals and administrators this year. Initial Data Training and Train the Trainer courses have been delivered. The district plans to train 60 principals/administrators this Spring, 2008 as depicted in Table 2.6 in the previous section. The MCAS specialists and coaches have attended their first training. It is anticipated that 6 reports will be developed in the July/August 2008 timeframe.

Project Scorecard

WORCESTER PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
A. ESE Data Warehouse Implementation Objectives	
1. Form a District-based Planning Team	
<ul style="list-style-type: none"> ▪ Identify your warehouse team members and roles. 	Complete
<ul style="list-style-type: none"> ▪ Join the MassONE Data Warehouse work group. 	Complete
<ul style="list-style-type: none"> ▪ Download the data extract guides (optional). 	Complete
<ul style="list-style-type: none"> ▪ Download the ESE Access Use Policy. 	Complete
<ul style="list-style-type: none"> ▪ Download browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Complete the readiness survey. 	Complete
<ul style="list-style-type: none"> ▪ Contact your SIS vendor (optional). 	n/a
<ul style="list-style-type: none"> ▪ Develop an awareness and understanding of the warehouse within your district. 	
2. Develop a Data Warehouse Plan	
<ul style="list-style-type: none"> ▪ Complete the district's users sheet. 	Complete
<ul style="list-style-type: none"> ▪ Have the Directory Administrator assign warehouse roles to your users. 	Complete
<ul style="list-style-type: none"> ▪ Define your district's warehouse goals. 	
<ul style="list-style-type: none"> ▪ Create your timeline and assign responsibilities. 	
3. Rollout Warehouse to District Users	
<ul style="list-style-type: none"> ▪ Distribute the user guide. 	Complete
<ul style="list-style-type: none"> ▪ Distribute browser settings document. 	Complete
<ul style="list-style-type: none"> ▪ Schedule and attend end-user training. 	
B. 164 Grant Expenditure Requirements	
1. Hardware Purchases	

WORCESTER PUBLIC SCHOOLS' DATA WAREHOUSE PROJECT SCORECARD	
Objectives	Rating
2. Software Purchases	n/a
3. Database Administration	G
4. Grant Administration	G
5. Professional Development	G
C. Data Miner Project Outcomes	
1. Getting appropriate data into the data warehouse.	
<ul style="list-style-type: none"> Develop implementation plan. The district is following its plan and is on target for completing year 1 activities. 	G
<ul style="list-style-type: none"> Participate in Data Warehouse User Group and Status Meetings. 	G
<ul style="list-style-type: none"> Define, extract, and load local data. The activity is in process. The expected completion date is May, 2008. 	G
<ul style="list-style-type: none"> Increase data storage capacity to centrally aggregate all data to be exported to Data Warehouse. 	G
2. Continue to focus efforts on decision framework – planning, implementation, data analysis and using results.	
<ul style="list-style-type: none"> Hire a consultant to analyze and define “high quality data coherence.” 	Y
3. Prepare to roll out the data warehouse to end users over a two year period starting year 2.	
<ul style="list-style-type: none"> Attend Cognos training for technical staff. 	G
<ul style="list-style-type: none"> Develop training schedule (year 1 focuses on technical staff, year 2 principals, and year 3 teachers). 	G
<ul style="list-style-type: none"> SAGE Specialist develop and deliver end user/ train-the-trainer courses. 	G
<ul style="list-style-type: none"> Design WPS-specific reports in Cognos. 	G
<ul style="list-style-type: none"> Develop Web-based tutorial for using data warehouse to train staff (year 2) 	G

Worcester Public Schools' Data Warehouse Project Challenges

WPS has many challenges. The Commonwealth of Massachusetts has deemed it a high needs district with regard to Adequate Yearly Progress (AYP). Thirteen of the district's 42 schools have been identified with a Needs Improvement status, eight have received a Corrective Action status, and eight have been defined as in need of Restructuring. More than half of the student population receives free or reduced priced lunch, 18.1% are in special education, 15.7% are English Language Learners, and 55.6% are ethnic minorities. District educators are challenged to provide differentiated instruction to such a diverse student population.

The district is to be commended for implementing strategies to help it overcome these challenges. For example, through its participation in the ExEL project at Harvard University, WPS is using the PELP Coherence Framework to "identify the key elements that support a district-wide improvement strategy and to bring these elements into a coherent and integrated relationship. School district leaders [will] leverage this framework to develop strategies that work towards improving student performance throughout the district." Strategies such as the PELP Coherence Framework require that integrated data be available to administrators and instructional personnel to positively impact student attendance, suspensions, expulsions, dropouts, Advanced Placement and honors course enrollments, and overall student achievement. Through its *Data Miner* project, WPS is striving to build on its existing groundwork in mining data for improved teaching and learning. This foundation includes: a solid infrastructure, experienced project personnel, staff technical readiness, and above all, a strong commitment from the district's executive leadership in making the data warehouse a success for Worcester Public Schools, other Massachusetts school districts, and the ESE.

However, WPS also recognizes that making data available is only part of the solution. Data coherence requires not only having the right data, but asking the right questions and implementing the right intervention for the right individual. Project staff are comfortable with the technical aspects of implementing a data warehouse solution. However, there is a need for guidance in asking the right questions. Many districts the size of Worcester have a well-staffed research and evaluation department that can guide the technical staff in writing reports that will inform teaching and learning. To address this limitation, WPS plans to hire an outside consultant to analyze and define "high quality data coherence." Although the staff anticipate completing this activity in late Spring, 2008, there is currently no scope of work and no contract for this project. In order to complete six reports in the July/August 2008 timeframe, WPS needs to be more aggressive in determining the right questions to be asked.

Conclusion

The *Data Miner* project has made substantial progress since receiving the TD³ grant. The project is on track towards meeting the appropriate ESE Data Warehouse implementation timeline and Grant 164 expenditure requirements.

The project is also on target to meet two of its three year one short-term outcomes.

- Getting appropriate data into the data warehouse
- Roll out data warehouse to end users over a two year period starting in year 2

WPS is in the process of defining, extracting, and loading local data. The expected completion date is May, 2008. WPS is also increasing its data storage capacity to centrally aggregate all data to be exported to the Data Warehouse.

In preparation for rolling out the data warehouse to end users, the three Data Analysts and Information Systems Officer are attending training on using Cognos tools. The district is actually ahead of its training schedule and should be commended. In addition to focusing on the training of technical staff in year 1, the district plans to deliver professional development to principals, administrators, and MCAS specialists and coaches this year. It is anticipated that 6 reports will be developed in the July/August 2008 timeframe.

In the second half of this grant year, the district plans to meet its third short-term objective by hiring a consultant to help it define “data coherence.” It is anticipated that the consultant will coach WPS in understanding the type of reports that end users need to impact teaching and learning. This contract needs to be secured quickly so that the six reports can be developed on schedule.

This well-supported project is poised to make progress on its goal to enhance data mining and reporting functionality through the deployment of the data warehouse. The availability and use of the data warehouse will ultimately lead to the District’s long-term goal of increased student attendance rates and decreased dropout rates.