MARYLAND STATE DEPARTMENT OF EDUCATION
Preparing World-Class Students

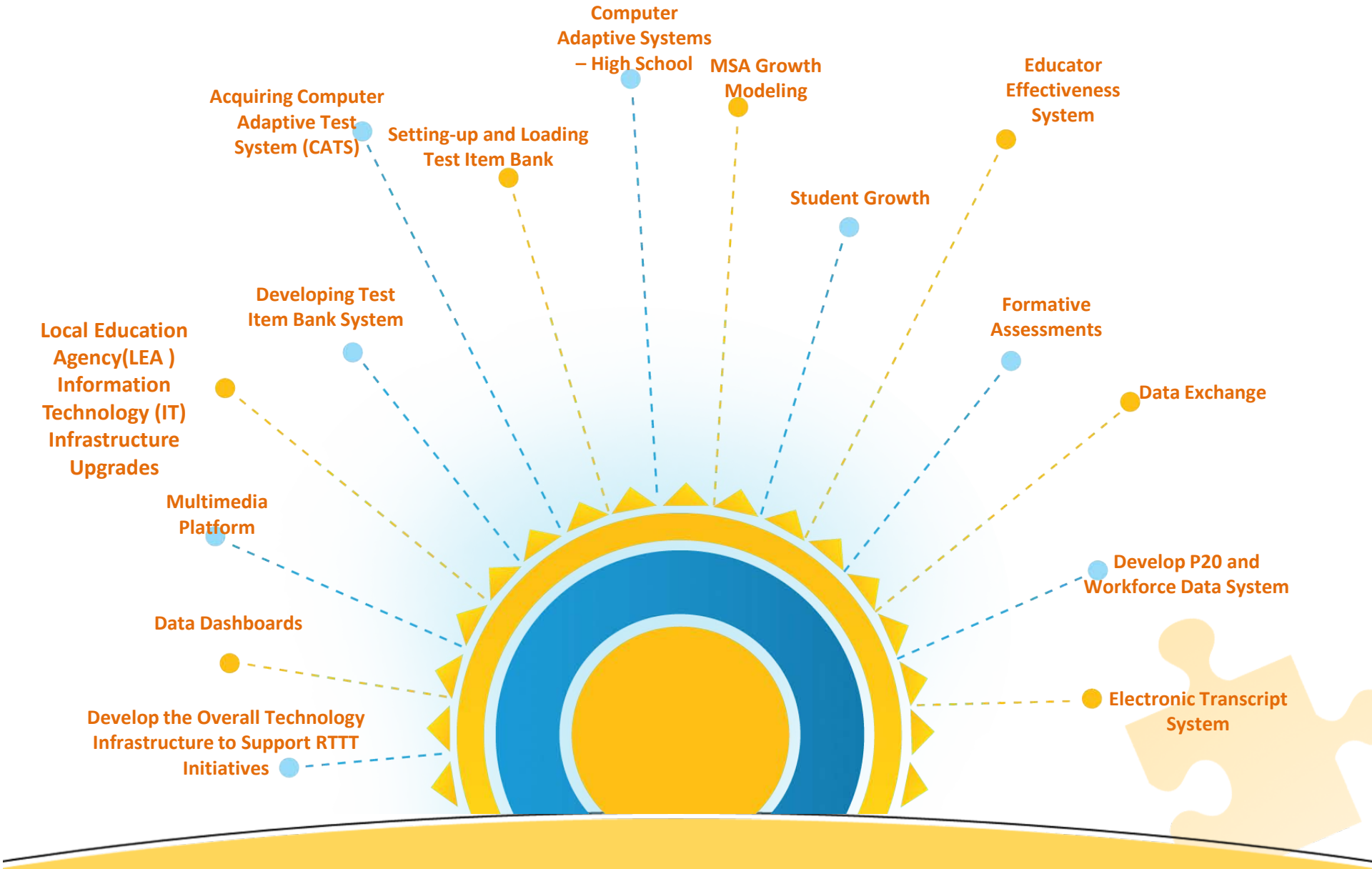
Race To The Top (RttT) Technology Projects

Report to the Board of Education

September 27, 2011

Division of Accountability, Assessment and Data Systems (DAADS)

Projects Overview



Project Name	Description
1. Develop the Overall Technology Infrastructure to Support RTTT Initiatives (P8/11)	To build an infrastructure of hardware and software that expands the existing business intelligence reporting and analysis system for both teachers and students.
2. Data Dashboards (P9/27)	To build thirty-six Effectiveness, Accountability and Performance (EAP) dashboards to provide visibility into student performance. Each dashboard will provide information for data driven decision making for policy makers and educational administrators and teachers and students to improve student learning in the classroom.
3. Multimedia Platform P(10/28)	To design Multimedia Projects which will provide a cost-effective, web-based, multimedia training vehicle that train educators how to use data and the MLDS and MLDS-EAP systems for educational improvement.
4. Local Education Agency(LEA) Information Technology (IT) Infrastructure Upgrades P(11/29)	To provide the LEAs with the necessary Infrastructures to support RttT data collection, processing, and reporting.
5. Developing Test Item Bank System (P(17/32)	To provide teachers with a test item bank system to create interim, formative, and benchmark assessments giving students the options of taking assessments online or with paper and pencil.

Project Name	Description
6. Computer Adaptive Test System (CATS) P(18/33)	To provide an online computer adaptive test system for reading/English language arts and mathematics. Students will be able to take these assessments online and provide teachers diagnostic information enabling them to track growth over a testing cycle.
7. Setting-up and Loading Test Item Bank P(19/34)	To load the test item bank system with items from grades 3 – 11 in reading/English language arts and mathematics which teachers will utilize to assess student learning and growth. Each LEA will have the ability to incorporate local items into the system.
8. Computer Adaptive Systems – High School P(20/35)	To provide classroom sets of WIFI computer adaptive testing units to high schools which are interoperable with the test item bank system and computer adaptive test system. High school students will utilize these tools to take the online assessments.
9. MSA Growth Modeling P(27/46)	To provide a recommended growth model(s) that can be used with MSA test score data which will then be shared with the seven LEAs participating in the pilot educator evaluation system. The National Psychometric Council(NPC) will conduct research on the various growth measure models currently being used nationally. The Maryland Assessment Research Center for Education Success (MARCES) will analyze the various models using MSA test score data.
10. Growth Model P(28/47)	To develop, test and implement a new growth calculation predicated on student growth and educator effectiveness. The intended outcome is to maximize student achievement through data knowledge of what skills students are learning, and to improve the statewide cadre of educators through retaining effective educators and increasing their effectiveness through professional development.

Project Name	Description
11. Educator Effectiveness System P(29/48)	To develop, procure, and implement an Educator Evaluation System which will provide an effectiveness rating for each educator. The data will then be used for incentives and professional development.
12. Formative Assessments P(3/2)	To provide resources, tools, strategies, professional learning opportunities and guidance for schools and district level personnel with a comprehensive online formative assessment resources system.
13. Data Exchange P(12/60)	To provide a system for collecting and distributing data from each LEA, the Maryland State Department of Education, and Maryland higher education institutions for reporting and distribution. The Maryland Longitudinal Data System(MLDS) will replace and reduce duplicate and costly data transfer and translation programming that would otherwise be performed if individual educational organizations write their own data send/receive data transfer programs.
14. Develop P20 and Workforce Data System P(13/61)	To create a new, higher education data warehouse that is integrated with the existing P-12 data warehouse and Maryland's Department of labor, Licensing and Regulation's labor workforce data warehouse. Alignment of K12 curriculum and student readiness skills with post-secondary education institution expectations. Identification of programs and policies that improve transition success between K12, higher education and workforce.
15. Electronic Transcript System P(54/79)	To provide resources to each LEA by implementing the University of Maryland's (USM) electronic transcript system. Create a LEA transcript collaboration group and provide resources to implement electronic system and integrate into existing Student Information Systems (SIS).

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Maryland State Longitudinal Data Center and Data Warehouse

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Director of Solutions Architecture

Division of Accountability, Assessment and Data Systems (DAADS)

Overview of Project

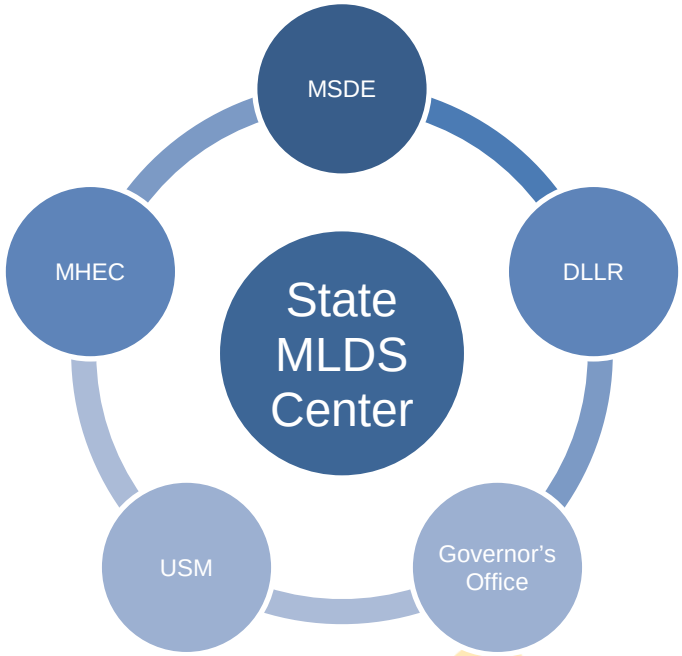
1. SB 275 created the MLDS Center and the MLDS data warehouse

2. RttT project 61 for the MLDS data warehouse was included in the RttT grant as a re-bid for funds not secured from a P20 grant application

3. RttT grant is funding $5 million dollars for MLDS hardware, software and development.

4. $2 million of the $5 million dollars has been reserved for MHEC to rebuild their higher education data collection and data warehouse

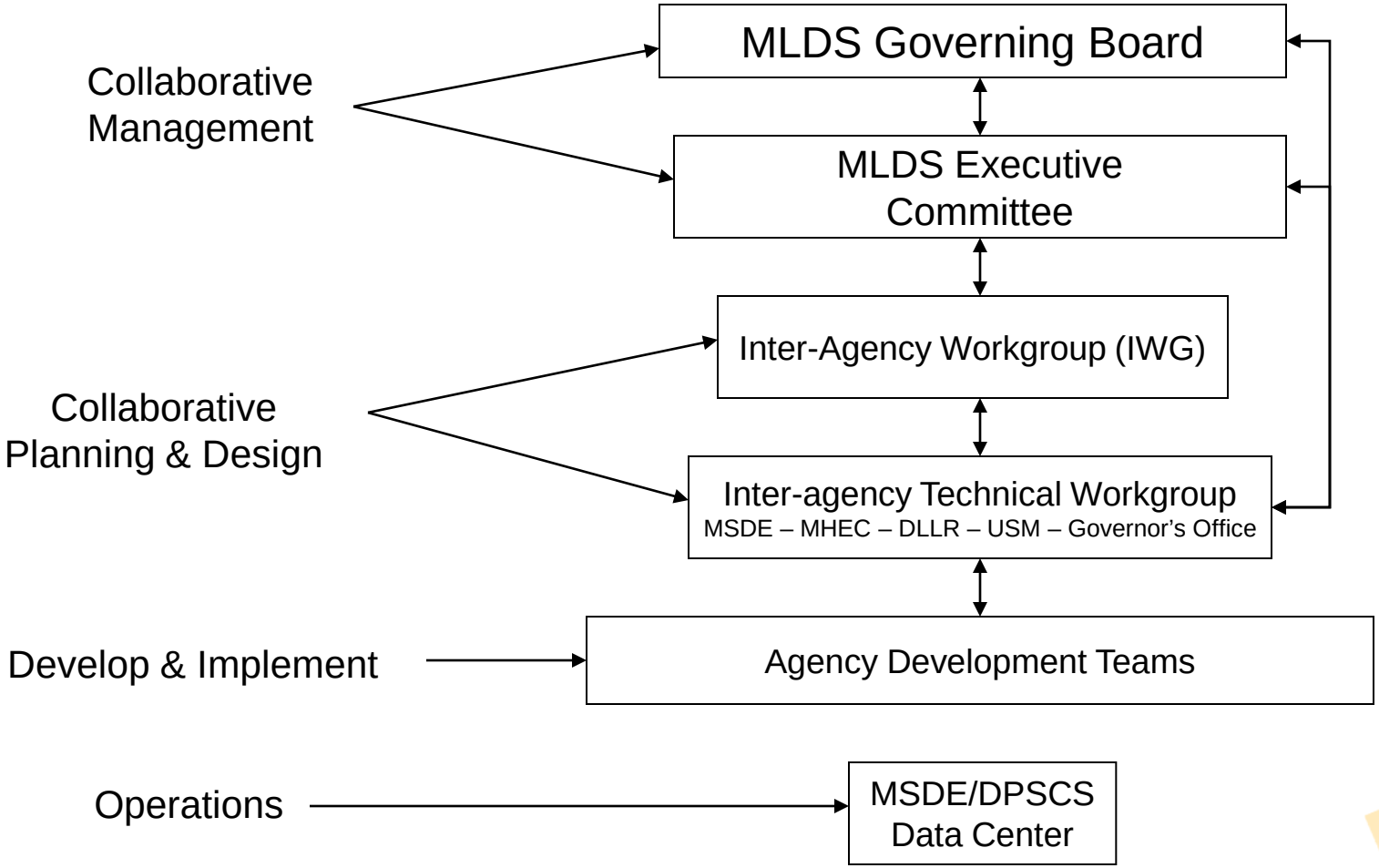
5. MSDE, in collaboration with DPSCS, is providing the developing MLDS Center with data center support at the DPSC data center



LDS is Policy Based System

The state longitudinal data warehouse is a policy based system designed to answer 15 education-to-education and education-to-work transition, readiness, and effectiveness preparation policy questions.

Inter-Agency Collaborative Project Organization



High-Level System Architecture

End User

MLDS Analyst performs research, prepares reports and dashboards

Security and Access Subsystems

Portal

Business Intelligence Analytics System

Store, Process, Aggregate

Data Mart for Policy Makers

LDS Database

Data Marts For External Researchers

Data Exchange

Other Systems

MSDE P12 Data

MHEC Data

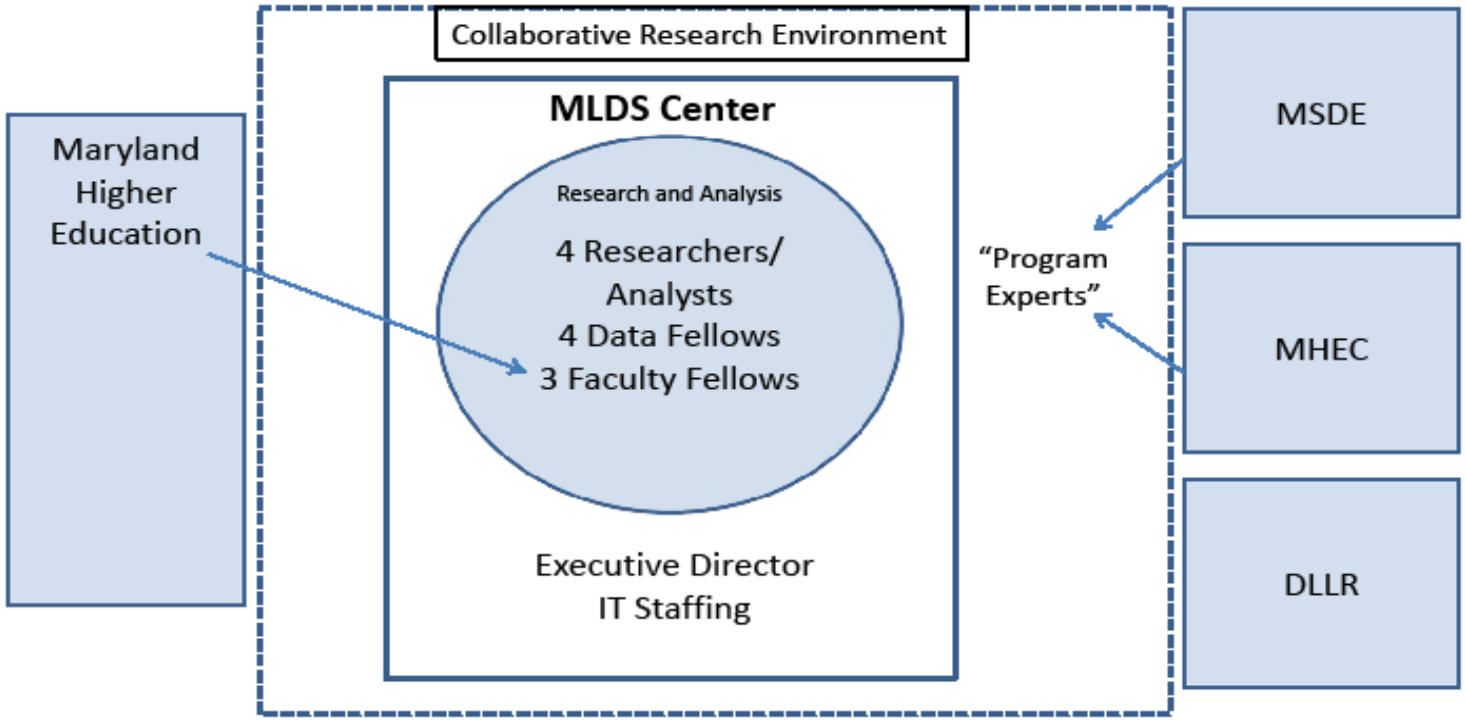
DLLR Data

Other Systems

Feeder Systems

Figure 4

Phase 3: Full Research Center



Research and Analysis Function

- Resident research staff and Faculty Fellow overseeing Data Fellows in research projects
- Executive Director brings in part-time Associated Faculty to expand research agenda
- Expanded web-based and other remote access tools for broader population of users
- Research staff carries out Public and Government data requests

Supporting Materials

1. List of 14 MLDS Development Projects
2. SB 275 MLDS Center Requirements
3. 15 Policy Questions

14 MLDS Development Projects

1. Creation of MLDS higher education DWH DB kernel
2. Creation of multi-agency student crosswalk ID table
3. Creation of ETLs to load data into higher education DWH
4. Perform data and gap analysis for 15 policy questions
5. Design data modeling and physical database
6. Provide a test and production hardware environment
7. Provide an Oracle 11g portal, system and security software
8. Provide software installation and technical operations
9. Provide OBIEE dashboard design and development
10. Identify, procure and install multi-agency LDS dictionary
11. Provide security software and technical security policies
12. Provide Oracle 11g external and internal portal pages
13. Upgrade MHEC data system and data collections
14. LEA support for e-transcripts

SB 275 – Key Requirements for MLDS Center

Category	Chapter 190 Provision	Proposed Approach
Data Management	Serve as a central repository of the data student data and workforce data in the Maryland Longitudinal Data System	Oversight of DPSCS MLDS and Database Management
Data Management	Oversee and maintain the warehouse of the MLDS Data Sets	Oversight of DPSCS MLDS
Data Management / Data Policy	Create an inventory of the individual student data	Database management
Data Policy	Develop and implement policies to comply with FERPA and privacy act and any other privacy measures	Combination of center-specific policies and existing policies at State agencies
Data Management / Data Policy	Ensure routine and ongoing compliance with FERPA and other relevant privacy laws and policies	Oversight of DPSCS MLDS, and Center compliance management
Data Policy	Providing for performance of regular audits	Auditing
Data Policy	Develop a detailed data security and safeguarding plan	Combination of center-specific policies and existing policies at DPSCS
Data Policy	Designate a standard and compliance timeline for Electronic Transcripts	USM, LEAs and MSDE cooperatively establishing
Data Policy	Set policies for the approval of data requests from state and local agencies, the Md. General Assembly, and the public	Proposal by Interagency Working Group and Executive Director to GB
Research	Conduct research using timely and accurate student data and workforce data to improve the state's education system and guide decision making	Combination of resident analysts, researchers, and university researchers
Research	Conduct research relating to…state and federal education programs… educator preparation programs; and best practices regarding classroom instruction, education programs and curriculum, and segment alignment	Combination of resident analysts, researchers, and university researchers
Data Management / Research	Fulfill Information And Data Requests To Facilitate State And Federal Education Reporting With Existing State Agencies	Oversight of automated data set delivery
Research	Fulfill Approved Public Information Requests	Resident analysts
Research	Establish the policy and research agenda of the center	Proposal by Interagency Working Group and Executive Director to GB

15 Phase 1 MLDS Policy Questions

1. Are Maryland students academically prepared to enter postsecondary institutions and complete their programs in a timely manner?
2. What percentage of Maryland high school exiters go on to enroll in Maryland postsecondary education?
3. What percentage of Maryland high school exiters entering college are assessed to need to take developmental courses and in what content areas?
4. How likely are students placed in developmental courses to persist in postsecondary education and transfer and/or graduate?
5. Are community college students able to transfer within state to 4-year institutions successfully and without loss of credit?
6. What happens to students who start at community colleges and do not go on to 4-year institutions?
7. What are the differences in performance, retention, and graduation, including time to degree, of students who initially matriculate at a Maryland community college and transfer to a Maryland 4-year institution versus those who initially matriculate at a Maryland 4-year?
8. What are the differences in performance, retention and graduation, including time to degree, of students beginning in dual enrollment programs, at 2-year institutions and at 4-year institutions?
9. Which financial aid programs are most effective in improving access and success (i.e., retention and graduation) for Maryland students?
10. What are the characteristics of 2-year institutions that are allowing students to persist most effectively and either graduate or transfer?
11. Which 4- year institutions are graduating students most effectively and in the timeliest fashion?
12. What are the educational and labor market outcomes for individuals who use federal and state resources to obtain training at community colleges or other postsecondary institutions?
13. What economic value do noncredit community college credentials have in the workplace?
14. Are exiters of Maryland colleges successful in the workforce?
15. How do all of the policy questions vary by different critical subgroups* and backgrounds?

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Questions and Discussion