Washington State
Institute for
Public Policy

110 Fifth Avenue Southeast, Suite 214 • PO Box 40999 • Olympia, WA 98504-0999 • (360) 586-2677 • FAX (360) 586-2793 • www.wsipp.wa.gov

September 2008

SEPTEMBER 15, 2008, REPORT TO THE JOINT TASK FORCE ON BASIC EDUCATION FINANCE

The 2007 Washington State Legislature created the Joint Task Force on Basic Education Finance (Task Force) to:

- ✓ *"Review the definition of basic education and all current basic education funding formulas,*
- ✓ *Develop options for a new funding structure and all necessary formulas, and*
- ✓ *Propose a new definition of basic education that is realigned with the new expectations of the state's education system."*[1]

The Legislature also directed the Washington State Institute for Public Policy (Institute) to provide staff support to the Task Force. In addition to general staff services, the legislation requires the Institute to provide three reports to the Task Force: an initial report by September 15, 2007, a second report by December 1, 2007, and a third report by September 15, 2008.[2]

The legislation directs the Task Force's work to conclude in December 2008. It is important to note that the Legislature directed the Task Force, not the Institute, to propose a new definition of basic education and to develop alternative funding structures. Therefore, the information in this legislatively required report should be regarded as a staff report intended to assist the Task Force as it develops, discusses, and adopts specific policy proposals during the remaining months of 2008. The schedule of Task Force meetings can be found at: http://www.leg.wa.gov/Joint/Committees/BEF/.

This report summarizes the four comprehensive funding options presented to the Task Force to date, including proposed timelines for phasing in new funding structures. **The Task Force is still considering proposals, and it is likely that others are under development; check the Task Force website[3] for additional submissions.** This report also describes the methodology the Institute is developing to project impacts on student outcomes under alternative funding structures.

Overview of This Report

The 2007 Washington State Legislature created the Joint Task Force on Basic Education Finance (Task Force). The Task Force must review and propose changes to the definition of basic education and current funding formulas. The legislative goals include: (a) realigning the basic education definition with the "new expectations of the state's education system," (b) developing a funding structure "linked to accountability for student outcomes and performance," and (c) proposing policies that are "to the maximum extent possible…based on research-proven education programs and activities with demonstrated cost benefits."

The legislation directs the Washington State Institute for Public Policy to provide staff support to the Task Force and to produce reports on policy options for school employee compensation and other funding-related matters. This report to the Task Force contains the following information.

Suggested citation: Annie Pennucci, Steve Aos, Irene Ngugi. (2008). *September 15, 2008, Report to the Joint Task Force on Basic Education Finance.* Olympia: Washington State Institute for Public Policy, Document No. 08-09-2201.

Contact email: pennuccia@wsipp.wa.gov.

[1] E2SSB 5627, § 2(1), Chapter 399, Laws of 2007, amended as SSB 6879, Chapter 177, Laws of 2008.

[2] The Institute's first two reports are available at http://www.wsipp.wa.gov/series.asp?seriesid=3

[3] http://www.leg.wa.gov/Joint/Committees/BEF/

Summary of Comprehensive Funding Proposals

The options summarized in this report are the comprehensive funding proposals brought before the Task Force to date from Dr. Terry Bergeson (the Superintendent of Public Instruction and a Task Force member), the League of Education Voters (LEV) Foundation, the Full Funding Coalition (FFC),[4] and Representative Skip Priest (a Task Force member). To view the full text of the proposals, visit: http://www.leg.wa.gov/joint/committees/bef/task%20force%20meetings.htm#June.

For each comprehensive proposal received by the Task Force as of September 15, 2008, the following components are summarized below, with additional details in Exhibit 1 (which begins on page 5):

- Definition of basic education;
- Resource allocation methods;
- School employee compensation;
- Staffing patterns;
- Professional development;
- Accountability;
- Implementation timelines;
- Revenues; and
- Total estimated costs.

Definition of Basic Education

Case law and statute establish which programs are included in the definition of basic education. The four comprehensive proposals received by the Task Force to date all retain the programs currently defined as basic education:

- ✓ General apportionment (salaries and benefits);
- ✓ Special education;
- ✓ Transitional Bilingual Instructional Program;
- ✓ Learning Assistance Program;
- ✓ Career and technical education; and
- ✓ Some transportation.[5]

The LEV and FFC proposals both suggest that, for simplicity, the funding categories listed above should be combined into a single allocation, with some exceptions for logistical purposes (e.g., transportation and the special education safety net).

All four proposals recommend that other categorical programs be added to the statutory definition of basic education, including I-728 funds, I-732 cost-of-living adjustments, all-day kindergarten, and K-4 staffing enhancements.

Capital facilities are not considered part of the definition of basic education. The LEV proposes that the state examine whether school construction should become part of the basic education foundation formula.

Resource Allocation Methods

Currently, the state uses a salary allocation model (SAM) to allocate the majority (approximately 80 percent) of K–12 funding. Two proposals, from Dr. Bergeson and Representative Priest, recommend modifying the SAM—discussed in more detail in the next section—and continue its use as the primary means to allocate K–12 basic education funding.

The LEV and FFC both propose a per-student weighted funding formula. Under these proposals, the amount of per-student funding is determined by models of costs at typical (or "prototype") elementary, middle, and high schools, and the allocation amounts are adjusted for certain types of students (e.g., those eligible for free and reduced price meals). For implementation, the LEV proposes a K–12 Expenditure Forecast Council modeled after existing state forecast councils. The Council would build and maintain a K–12 Resource Model to determine resource allocations.

Regarding non-employee related costs (NERCs), Dr. Bergeson, the FFC, and Representative Priest suggest increases in NERC funding, including adding funding for technology. The FFC specifically recommends a 10 percent increase in NERC allocations per year in the 2009-11 biennium and further increases in subsequent biennia to ultimately achieve a 232 percent increase.

[4] The Full Funding Coalition includes: Washington Education Association, Washington State School Directors' Association, Washington Association of School Administrators, Association of Washington School Principals, and Public School Employees of Washington.

[5] Transportation "to and from" school is considered part of basic education. Transportation for activities such as extended day programs is not considered basic education. RCW 28A.160.160.

Each of the four comprehensive proposals received by the Task Force to date maintains enhanced funding for small schools. Also, the assumptions used to determine funding levels are not considered mandates for school district compliance in the four proposals.

School Employee Compensation

The school employee compensation proposals include recommendations for salary increases as well as changes in the structure of salary allocations.

Salary Levels. All four proposals call for across-the-board increases in teacher base salaries; the amount of the increase would be based on an analysis of comparative wages and/or a salary survey. The LEV proposal also suggests targeted pay increases for hard-to-staff positions.

Salary Allocation Model. Dr. Bergeson's proposal modifies the SAM in three ways: it adds a career ladder for entry, career, and leader teachers; expands the experience wing; and compresses the education wing. Dr. Bergeson also suggests that the SAM be aligned with professional certification and other teacher-development requirements.

The LEV and Representative Priest both recommend establishing pilot projects to test the effectiveness of knowledge-, skills-, and performance-based salary schedules.

The LEV also proposes that the state, rather than local school districts, bargain state-funded compensation.

For classified and administrative staff, all four comprehensive proposals received to date recommend that salary increases be based on labor market analyses and/or compensation surveys. The FFC calls for phased-in, across-the-board salary increases for all K–12 staff as a first step. Dr. Bergeson proposes that the staff funding formula identify employees by category (e.g., instructional aides, secretaries, grounds workers, and central administration).

Staffing Patterns

Staffing levels are increased under each of the four comprehensive proposals received by the Task Force to date.

Dr. Bergeson's proposal makes detailed recommendations for reduced class sizes for all students, as well as special staffing models for struggling students, English language learners, and career and technical education. The LEV and FFC proposals each indicate that their respective prototype school models will eventually determine staffing pattern increases, although the LEV recommends an initial K-1 class size reduction. Representative Priest and the FFC suggest that class size reductions be phased in over time, starting with K-3 students.

For classified and administrative staff, the FFC, Dr. Bergeson, and Representative Priest recommend increases in the number of classified staff allocated to each district. Each of these proposals also suggests that types of staff—classified as well as librarians, nurses, counselors, and social workers—be identified by category to determine the quantity of each as well as average salary levels.

Professional Development

Proposals for professional development focus on support for new teachers and an increase in state-funded training days for all teachers.

The FFC and Dr. Bergeson propose the state allocate eight additional professional development days for teachers and increase funding for instructional coaches. Both proposals also contain provisions for teacher mentors, release time, and extra professional development for teachers. Dr. Bergeson's proposal focuses these efforts in teachers' first two years on the job. The LEV recommends a rigorous induction program for new teachers.

The LEV also proposes that the probationary period for new teachers be extended to five years, and that tenure be replace with three-year renewable contracts for both teachers and principals.

Accountability

Each proposal includes provisions for accountability. The LEV's accountability proposal is the most detailed and includes a uniform financial accounting system for all districts, an integrated P-20 data system that links teachers with students and tracks students between schools and levels of education (e.g., from K–12 to college), and school-based performance awards for successful schools. Under the LEV's proposal, state-level inspectors would examine and provide advice to struggling schools.

The FFC proposes the creation of the Commission for Quality Education in Washington (CQEW) to

participate in budget development and accountability monitoring. The CQEW would calculate the expected performance of Washington schools relative to the amount of funding provided using multiple measures, including, but not limited to, student achievement outcomes. The FFC suggests that struggling schools and districts receive progressive levels of state support for improvement in student outcomes.

Representative Priest proposes that options be developed for a combined local/state system of quality assurance for teacher performance. Dr. Bergeson's proposal does not directly address accountability, but a central theme of the proposal is enhancing transparency by separating funding allocations into detailed categories; Legislative Evaluation and Accountability Program (LEAP) committee documents would outline funding assumptions. Dr. Bergeson's proposal also includes a provision for a school-based monetary award for meeting student achievement growth targets.

The LEV and FFC proposals both recommend that state and local revenues and expenditures be clearly delineated with separate accounting systems to increase the transparency of K–12 finance.

Implementation Timelines

Dr. Bergeson's proposal contains specific timelines for phasing in each of its funding components, ranging from one to multiple biennia. The FFC sets a six-year phase-in timeline, starting with smaller class sizes in K-3, full-day kindergarten, and salary increases. Representative Priest's proposal indicates a need for phase-in but does not set a specific timeline. The LEV proposes three-year cycles for achievement/spending plans.

Revenue

The FFC identifies two potential strategies for additional revenue: (1) assign a portion of state revenue increases to basic education; and (2) restructure the uncollected state property tax for schools.

Regarding local levy revenues, the LEV assumes that the state would absorb a large portion of local levy funding and suggests that the state then consider eliminating the levy cap. The LEV, FFC, and Representative Priest proposals all note that levies are not considered part of basic education.

Total Estimated Costs

Only one proposal provides an estimate of the potential fiscal impact on the state; other cost estimates are pending. The FFC estimates that its funding package would cost the state an additional $1.2 billion in the 2009-11 biennium. The LEV does not provide a direct estimate of costs but notes that if Washington's per-pupil funding were set at the U.S. average, the additional cost would be $1.4 billion.

Additional details about the comprehensive proposals received by the Task Force to date are in Exhibit 1, starting on the next page.

How to read Exhibit 1. The first column lists proposal topics, and the second column describes current state policy. The next four columns summarize each proposal. Blank boxes indicate that the proposal does not cover that topic. If the proposal includes a phase-in timeline for implementation for a topic, a graphic appears: .

Exhibit 2 lists proposals received by the Task Force to date from other individuals and groups that focus on a particular topic, such as core social emotional learning skills.

Exhibit 1

Summary of Comprehensive Proposals to the Basic Education Finance Joint Task Force as of September 15, 2008

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Definition of Basic Education					
Do current basic education programs remain in the definition of basic education?	Current basic education programs: • General apportionment (primarily salaries and benefits) • Special education • Bilingual (TBIP) • Learning Assistance Program (LAP) • Career and technical education • Some transportation	Yes	Yes. Dissolve categorical programs into a larger and simpler basic education allocation that includes existing basic education funding. Maintain transportation in a separate formula.	Yes. Combine programs into a single "foundation formula," with special education safety net, skill centers, transportation, institutions, and capital funded separately. Basic education is "all the educational programs necessary to address all expectations, goals, requirements, practices, and policies included in state and federal legislation, rules, and regulations."	Yes
Add categorical programs to definition?					
I-728		Yes	Yes	Yes	
I-732 cost of living adjustment		Yes	Yes	Yes ➲	
All-day kindergarten		Yes	Yes	Yes ➲	Yes ➲
K-4 enhancement		Yes	Yes	Yes	Yes
5-12 enhancement		Yes		Yes	
Technology		Yes	Yes	Yes	
Safety & security		Yes	Yes	Yes ➲	
School nutrition			Yes		
Highly capable			Yes	Yes	
World languages					
Music/fine arts				Yes	
Extracurriculars				Yes	
PreK/early learning			Yes, Early Learning Fund		Yes (targeted)
Postsecondary			Yes, 13th Year Fund		

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Capital	Not part of basic education			Examine whether state aid for school construction should become part of the foundation formula. Consider capital impacts of full-day kindergarten, lower class sizes, and special needs students.	Coordinate proposals and possible solutions with the School Construction Task Force. Identify the degree to which existing facilities can accommodate full-day kindergarten.
Resource Allocations					
Primary method	General Apportionment (Teacher Salary Allocation Model)	Modified Salary Allocation Model (see "Teacher compensation: salary schedule structure" below). Generally, allocate resources to districts mirroring current structure. Create LEAP documents to disaggregate assumptions into common sense categories.	K–12 Resource Model: Prototype schools for budgeting (allocations based on typical elementary, middle, and high school costs). A K–12 Expenditure Forecast Council makes budget-related forecasts. Core K–12 Education Fund: a per-student weighted funding formula adjusted for free and reduced price meals, special education, ELL, CTE. Targeted K–12 Intervention Fund: K–12 intervention pilots & research.	➲ Quality Education Model (QEM): Prototype schools for budgeting (based on the Washington Adequacy Funding (WAF) study, at least initially). Per-student weighted funding formula, based on the QEM, adjusted for concentration of low income families and small schools.	Modified Salary Allocation Model (see "Teacher compensation: salary schedule structure" below).

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Funding structure is for allocation purposes, not a mandate for compliance	Yes	Yes	Yes	Yes	
Enhanced funding for small schools?	Yes	Yes	Yes	Yes	
Non-employee related costs (NERCs)	$10,178 per certificated staff unit (or approximately $500 per student) in 2008-09 (with enhanced allocations for career and technical education programs).	➲ Allocate $1,383 per student (within General Apportionment). In a LEAP document, break allocation into commonsense categories, including new funding for technology and curriculum ($126/student).	Include as part of general basic education funding.	➲ Increase funding by 10% per biennium and revisit in 2011-13.	Examine average expenditures and revise allocations to more accurately reflect costs. Include technology.
School Employee Compensation					
Teacher compensation: Base salaries	Minimum salaries set for teachers with zero years of experience and a BA or MA. In 2008, these amounts were: $34,426 and $41,274. (Excluding salaries in grandfathered districts, where the base is higher).	Increase base and top salaries using comparable wage index. Equalize salaries across districts. Grandfather existing teachers in the current system (or, allow individual teachers to transfer with no penalty).	Increase base salaries using compensation survey. Offer higher pay for hard-to-staff positions, subject areas (math, science, special education), and certain schools (high poverty, high cost urban, and remote rural).	➲ Increase base salaries using comparative wage analysis. The increases would be approximately 3% in 2009-10 and 2% in 2010-11. Other compensation changes would be based on findings from the Washington Adequacy Funding (WAF) study (which recommended adjusting teacher salaries by 18.25%).	Increase base salaries using comparable wage analysis or on pay for teachers in other states. Include geographic cost adjustment factor. ➲ Phase out grandfathering (higher base salaries in some districts based on historical levels).

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Teacher compensation: Salary schedule design	Salary Allocation Model: • Individual teacher's education level (9 columns) and experience (17 rows) determines allocation amount. • Average salary in district cannot exceed average salary as calculated on the schedule.	Modify the Salary Allocation Model: • Pay for experience consistent with growth curve, with more rows. • Pay for teacher educational levels with fewer columns. • Add three-level career ladder: entry, career, and leader. • Align with professional certification, clock hours, endorsement, and collective bargaining laws.	Pilot an alternative salary schedule based on three levels of teacher responsibility and skill (entry, professional, and lead). Inform the schedule with a compensation survey.	Retain salary allocation model for allocation purposes.	Require education credited on the salary allocation model be related to certification/ endorsement. Pilot knowledge-, skills-, and performance-based salary schedules.
Teacher compensation: bonuses	National Board for Professional Teaching Standards (NBPTS) bonus: $5,000 annually, adjusted for inflation in 2009 and beyond. Additional $5,000 for NBPTS teachers in high-poverty schools.	Continue NBPTS and challenging schools bonuses. Provide loan forgiveness for teachers in shortage areas.	Continue NBPTS bonus. Add performance-based school-wide bonuses.		Maintain NBPTS bonus and create a one-time bonus for professional certification. Explore use of Conditional High Demand Recruitment Bonuses.
Teacher compensation: supplemental pay	Supplemental pay for additional time, responsibilities, and incentives (TRI) can be paid from local revenue. TRI pay cannot cover basic education expenses.				Craft firm policy that TRI is only for additional responsibilities.

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Teacher compensation: collective bargaining	School districts bargain state-funded compensation.		State should bargain state-funded compensation.		
Classified staff compensation	No state salary allocation schedule; each district receives an allocation based on historical salary allocations adjusted for cost of living.	➲ Break out staff into categories (e.g., instructional aides, secretaries, grounds workers, central administration) and base salary allocations on the weighted average salaries of classified state employees.	Salaries set by the state compensation survey and updated annually.	➲ As a first step, increase average salaries beyond I-732 COLA amounts by 3% in 2009-10 and 2% in 2010-11. Base salary levels on comparative wage analysis in the future.	Examine current average salaries by district/labor market. Revise allocations using these findings. Include geographic cost adjustment factor. ➲ Phase out grandfathering (higher base salaries in some districts based on historical levels).
Administrator compensation	No state salary allocation schedule; each district receives an allocation based on historical salary allocations adjusted for cost of living.	➲ Equalize salary allocations. Next, identify appropriate method to allocate salaries based on what districts pay for qualified administrators.	Replace tenure with three year rolling renewable contracts for principals.	➲ As a first step, increase average salaries beyond I-732 COLA amounts by 3% in 2009-10 and 2% in 2010-11. Base salary levels on comparative wage analysis in the future.	Examine current average salaries by district/labor market. Revise allocations using these findings. Include geographic cost adjustment factor. ➲ Phase out grandfathering (higher base salaries in some districts based on historical levels).

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Staffing Patterns					
Class size	No class sizes set. Ratios are set as: 46 teachers per 1,000 students. (K-4 enhancements of additional 7 teachers per 1,000 students are not part of basic ed.)	Decrease students per teacher in all grades for small class sizes to match national average: K-5: 21.2 6-12: 25.5	Initial reduction in class size for grades K and 1. Other reductions to be specified by the K–12 Resource Model.	➲ As specified in the WAF study prototype school allocations (e.g., 17 K-3 students per teacher). Phase in class size reductions starting with K-3.	Identify a target class size, focusing on K-3 and disadvantaged students.
Classified and administrative staff	1 classified staff per 58.75 student FTEs. 4 certified administrative staff per 1,000 student FTEs.	➲ Separate staff into categories (e.g., instructional aides, secretaries, grounds workers, central administration). Increase ratio of classified staff per 1,000 students (amount varies by category and totals 25.1 per 1,000).	To be specified by the K–12 Resource Model.	1 classified staff per 54.8 students.	Increase classified staffing ratios to better approximate district needs.
Struggling students	$265.08 per eligible Learning Assistance Program (LAP) student in 2008-09 for staffing and materials.	Small group tutoring with 1 teacher per 3-15 students for 30-50 minutes per day (equates to 1 teacher per 80 eligible students). Enhancements for higher school district poverty. Specific funding formula to replace current LAP per student allocation. $72 per struggling student for instructional materials.	To be specified by the K–12 Resource Model.	➲ 1 teacher per 50 struggling students. $287/per struggling student for instructional materials. Provide additional summer school or other extended learning opportunities.	Develop a methodology for providing remediation for students needing extra assistance.

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
English language learners	$840.64 per eligible student in 2008-09 for staffing and materials.	1 teacher per 18 ELL students. $144/ELL student for instructional materials. Additional funding for interpreters, community outreach, and enhancements for students in poverty and older students. Specific funding formula to replace current ELL per student allocation.	To be specified by the K–12 Resource Model.	1 additional teacher per 25 ELL students. $170/ELL student for instructional materials.	Develop a methodology for providing remediation for students needing extra assistance.
Career and technical education	CTE programs: 0.92 certified instructional staff and .08 certified administrative staff per 19.5 CTE student FTEs. Skills centers: .092 certified instructional staff and .08 admin per 16.67 student FTEs.	Provide in grades 7-12 (replaces 9-12) and increase staffing to 1 teacher per 18.5 students (up from 19.5). Include $75 for equipment replacement in NERC (total CTE NERC is $2,191). Fund summer school for math, science, and technology CTE programs. $1.7 million for high demand program grants.	To be specified by the K–12 Resource Model.	CTE is part of the basic education Foundation Formula, costed out by the QEM. Skills centers are funded separately.	Fully fund the recently enacted Career and Technical Education legislation (2SSB 6377).

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Staffing patterns: libraries, health, pupil support	Staffing levels not broken out by employee category.	Libraries: 1 librarian to 750 students and $25 per student for library materials. Health: 1 nurse to 750 students, ESD-based School Nurse Corps, coordinated school health grants ($6/student). Pupil support: 1 guidance counselor to 350 middle and high school students, 1 other pupil support (psych, social worker) to 500 elementary students.	To be specified by the K–12 Resource Model.	➲ As specified in the WAF study prototype school resource allocations (e.g., 1 Educational Staff Associate per 94.8 K–12 students, with additional staffing for campus security, libraries, social workers, etc.).	Develop a simple but rational basis for allocating various types of staff, including separate allocations for librarians, counselors, nurses, and other health services staff.
Professional Development					
Teacher professional development	Two state-funded learning improvement days (LID) per year.	10 days rather than two. 1 mentor per 15 new teachers; 1 per 20 teachers for 2nd year. 1 instructional coach per 1,000 students. 1 day release time for first two years teaching. 3 additional days for new teachers; 1 for 2nd year teachers.	Rigorous induction program with mentors. Extend probationary period to five years and replace tenure with three-year rolling renewable contracts.	➲10 days rather than two. Increase funding for instructional coaches.	Ask Institute to summarize research on effective professional development. Consider Picus & Odden, professional judgment studies, and current practices in funding quality professional development.

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Accountability					
Accountability design	The State Board of Education has authority to develop a state accountability system (in process).	Not addressed generally. One-time school-wide awards ($20-$50 per FTE student) for meeting certain student achievement growth targets.	Develop a new accounting system and build a P-20 data system to track student progress. Institute to conduct program effectiveness research. Provide school-based performance awards ($100 per FTE student). External, state-level inspectors to examine and advise struggling schools.	➲ Commission for Quality Education in Washington (CQEW) provides oversight using multiple measures of student achievement for accountability. Districts are "responsible for providing effective educational opportunities to students in proportion to the state funding provided." Struggling schools/districts receive progressive levels of support.	Develop options for a local/state system of quality assurance and accountability for teacher performance.
Provisions for transparency		Break out staffing and NERCs into detailed categories. Create LEAP documents that summarize funding assumptions.	Clearly delineate state and local responsibilities. Simplify state revenue distribution by combining basic education programs into one allocation. Develop on-line tools for public access to budget information. K–12 Expenditure Forecast Council would make explicit assumptions about resource needs and revenues.	Distribute most state funding through a simpler formula that allocates dollars based on demographic characteristics and each district's compensation factors. Prototype schools model outlines detailed resource needs.	

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Data needs			Tie spending decisions at school, district and state level to student academic outcomes. Build an integrated P-20 data system to track student progress, including transfer of student records and credits among schools and education systems. Link student records to individual teachers. Support principals and teachers in using achievement data.	Accounting systems must separate state and local costs and expenditures. Increase classified support staff in principal's office to coordinate accountability-related assessment analysis.	
Implementation Timeline					
➲ **Implementation timeline**		➲ Phase in over several years; specific timing for each component is detailed in the proposal.	➲ Three-year achievement/spending plans for state and districts.	➲ Phase in over six years, beginning with smaller class sizes in K-3, full-day kindergarten, and increased compensation. In years 3-6 the CQEW recommends further phase-in.	➲ Phase in, no set timeline.

➲ indicates the proposal includes an implementation timeline for this component.

	Current State Policy *where applicable*	Dr. Terry Bergeson	League of Education Voters	Full Funding Coalition	Representative Skip Priest
Revenue					
Levies	Levy lid: 24% for 204 districts; lid varies, up to 34%, for 91 grandfathered districts. In 2008, $1.5 billion in levy funds were raised (91% of levy authority statewide). State also provides local effort assistance (state matching money for high tax rate/low property value districts); $210 million in 2008.		State absorbs a "large portion" of local levy funding. Levies are to be used only for educational supplements approved by local voters (e.g., lower class size, athletics, fine arts, and extended learning). Consider eliminating the levy cap but maintain equalization.	Design a Local Levy Program to account for levy expenditures to prevent co-mingling of local levy funds and use of local funds for state-funded basic education requirements.	Levies are not part of basic education. Fully fund basic education before discussing levies and equalization.
Other sources of revenue				Two potential sources: assign a portion of state revenue increases to basic education funding; and restructure the uncollected state property tax for schools.	
Total Estimated Costs (note: comparable cost analyses are pending)					
Total costs	$12.1 billion in state general funds for the 2007-09 biennium.		No total additional costs indicated. Suggests $1.4 billion additional if funded at the U.S. per-student average.	Proposal estimates $1.2 billion additional in the 2009-11 biennium.	

➲ indicates the proposal includes an implementation timeline for this component.

Exhibit 2

Other Proposals Submitted to the Joint Task Force on Basic Education Finance as of September 15, 2008

Group/Individual	Proposal
Representative Mary Lou Dickerson, Washington State House of Representatives and Sheryl Harmer, SLPH & Associates	Include core social emotional learning skills such as behavioral and emotional management, positive relationships, conflict resolution, interpersonal communication, cooperation, decision-making, and planning in the definition of Basic Education and learning goals. Incorporate resources to support social emotional skills into state funding formulas.
Center for Strengthening the Teaching Profession	Invest in high-quality, comprehensive induction programs for new teachers.
School District Alliance for Adequate Funding for Special Education	For special education funding, multiply the .9309 factor by expenditures rather than allocations. (In other words, multiply by the sum of basic education dollars and I-728, I-732, COLAs, levies, and other funding).
Washington Coalition for Gifted Education	Increase state funding for gifted and highly capable students and make the funding stream part of basic education.
Washington Association of Head Start and ECEAP	Define early learning as part of basic education and increase funding to high-quality programs. Specifically: fund ECEAP at Head Start levels ($17 million/year) and allow ECEAP to serve all eligible children ($109 million/year).
Association of Educational Service Districts	Align ESD funding allocations with staffing and resource needs. Add a few key positions to funding model (including fiscal support personnel and subject-area coordinators). Increase NERCs based on 2002-03 funding levels. Total cost of proposal: $11 million/biennium in additional funding
Washington School Nutrition Association	Add nutrition to revised definition of basic education. Eliminate the lunch co-pay for preK and grade 4-12 students.
Washington Association of School Business Officials	Redefine and fully fund basic education. Identify priorities for funding in the first biennium following the Task Force's work. State allocations to school districts should give them flexibility to respond to local needs. Examine collective bargaining in comparison with practices in other types of organizations.
Washington State Parent-Teacher Association	Add the following to the definition of basic education: school nutrition, nursing, social services, counseling, targeted preK programs, highly capable programs, world languages, technology, Advanced Placement, International Baccalaureate, and security and emergency preparedness. Fund staffing levels for a seven-period school day.
Equitable Opportunity Caucus	Create a student-driven funding system that allows students to work toward becoming global citizens.
Washington State Special Education Coalition	Increase basic education funding dollars per student.
Barbara Billinghurst (PTA)	Equalize local effort assistance so that districts receive the same amount per pupil. Set levy authorizations as a fixed percentage of the state's average funding per pupil.

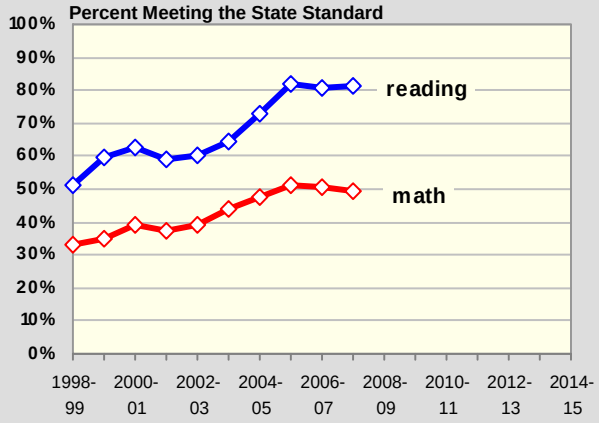
Projecting and Monitoring Statewide Student Outcomes: A Preliminary Model

To support the work of the Joint Task Force on Basic Education Finance and the recommendations it will make to the Governor and 2009 Legislature, the 2007 Legislature directed the Institute to project *"the expected effect of the investment made under the new funding structure."* [6]

The purpose of this analytical effort is, broadly, to quantify how resource recommendations adopted by the Task Force could affect key statewide student outcomes in the years ahead.

At this writing—September, 2008—the Task Force has not yet adopted a formal set of recommendations; the Task Force is scheduled to complete its work by the end of 2008. Therefore, this report does not contain a projection. Rather, a technical appendix, beginning on page 19, describes the construction of a model that will be used by the Institute to project the effect of the proposals the Task Force ultimately adopts later in 2008.

Exhibit 3
10th Grade WASL Met-Standard Rates: 1998-99 to 2007-08 School Years
(Source: OSPI*)



* Note: The denominator for these OSPI-defined met-standard rates includes both 10th grade students who took the WASL as well as those who did not take the test because of an unexcused absence.

Statewide Student Outcomes

The analytical tool the Institute is constructing is designed to project certain statewide student outcomes. Policymakers have expressed interest in a variety of outcomes, including student test scores on standardized tests such as the National Assessment of Educational Progress and the Washington Assessment of Student Learning (WASL); high school graduation rates; outcomes for non-tested K–12 subjects; higher education participation; labor market outcomes; and certain non-cognitive skills such as motivation and self-discipline.

The projection model under development concentrates on two outcomes for which some statewide data are routinely available: WASL "met-standard" rates and high school graduation. For example, Exhibit 3 highlights trends in statewide met-standard rates on the reading and math 10th grade WASL.

Analytical Considerations

The assignment for the Institute is to develop an analytical tool that projects key statewide student outcomes given the resource recommendations to be adopted by the Task Force. Considerable uncertainty exists for a number of factors, including the current state of knowledge about the "research-proven" effectiveness of school resources.[7] Nonetheless, most large businesses and many governments attempt to project—with the best information available at the time—the expected effect of policy decisions on future outcomes. The Institute is constructing the projection model with this goal in mind.

As described in detail in the Appendix, the Institute's modeling approach is based on these concepts:

- **An Investment Portfolio.** The Task Force is likely to propose a number of resource options that, together, are adopted with the intention of improving overall student outcomes in Washington. From a modeling standpoint, this implies employing some of the same analytical tools that financial and other analysts use to

[6] E2SSB 5627, § 2(5)(c), as amended in 2008.

[7] The bill that created the Task Force, E2SSB 5627, directs the Task Force to propose policies that are, *"to the maximum extent possible…based on research-proven education programs and activities with demonstrated cost benefits."*

project the expected effect of any portfolio of investments on outcomes of interest.

The model is being constructed based on 14 separate, but related, investment portfolios—one for each of the 14 years in a student's academic career: from preK investments, to kindergarten, to grades one through twelve.[8] These 14 separate investment portfolios can then be projected to have an expected cumulative effect on the achievement of students.

- **Risk and Uncertainty.** Central to the analysis of investment portfolios are the twin concepts of risk and uncertainty. All projections will be wrong to some degree since few things are known for certain. The Institute's modeling approach incorporates risk by explicitly modeling the known riskiness of some policy options, and positing a wide range of uncertainty for those options where there are voids in the current state of knowledge. Examining risk and uncertainty means that that the Institute's projection of how the Task Force's resource decisions will affect future student outcomes will be presented as a range of high and low estimates, rather than a single point estimate. Thus, the projection made to the two lines shown in Exhibit 3 will be a band of estimates rather than a single forecast line.
- **"Other Things Being Equal."** The Institute's model projects the range of expected gains in outcomes that can be traced to the estimated effectiveness of the educational resource inputs. In the real world, of course, there are many factors that affect the overall level of student performance, including a host of factors outside the educational system. Parental, family, community, and many other influences affect student performance.

  The model we are constructing does not attempt to project trends in these other important factors and how they could influence future student outcomes. Instead, we invoke what forecasters call *ceteris paribus* conditions—the Latin phrase meaning "with other things the same." That is, we hold all of the other things that influence student outcomes constant in this model, and we only attempt to isolate the particular effects that educational resources recommended by the Task Force can be expected to have on student outcomes. Thus, while the model produces projections of certain student outcomes, these forecasts are not meant to be predictions of actual future statewide outcomes; rather, the more narrow purpose is to project the cumulative effect on student outcomes of the education resource choices recommended by the Task Force.

Comments Invited

The Institute seeks comments from interested parties on the model it is developing. The model is implemented in a Microsoft Excel spreadsheet. The current version of the spreadsheet will be posted on the websites of the Institute and the Basic Education Task Force so that reviewers can see how these calculations are carried out and submit constructive comments. The websites are www.leg.wa.gov/Joint/Committees/BEF and www.wsipp.wa.gov.

[8] The preK years, of course, may be longer than a single year of investment; for the purposes of this model, however, the preK investment is thought to occur in a single year.

Technical Appendix A: A Model to Project the Estimated Linkage Between Changes to PreK–12 Resources and Student Outcomes

A1. Introduction

To support the work of the Joint Task Force on Basic Education Finance (Task Force) and the recommendations it will make to the 2009 Legislature and Governor, the 2007 Legislature directed the Washington State Institute for Public Policy (Institute) to project *"the expected effect of the investment made under the new funding structure."* [9]

This technical appendix describes the forecasting model the Institute is developing for this assignment. The model is being designed to project how key student outcomes (e.g. WASL test scores) could be affected by the resource choices recommended by the Task Force.

At this writing—September, 2008—the Task Force has not yet adopted a formal set of recommendations; the Task Force is scheduled to complete its work by the end of 2008. Thus, this Appendix does not contain a projection. Rather, it describes the construction of a model that will be used by the Institute to project the effect of the proposals the Task Force ultimately adopts later in 2008. Beyond the immediate work of the Task Force, the analytical tool we describe here could be of use to the state in its future planning for the public education system in Washington.

The purpose of this Appendix is to describe the model as it exists today and to solicit comments from interested parties. The Institute is interested in developing the best model it can to carry out this legislative assignment, and constructive suggestions are welcome.

The model described in this Appendix is implemented in a Microsoft Excel spreadsheet. The current version of the spreadsheet will be posted on the websites of the Institute and the Basic Education Task Force so that reviewers can see how these calculations are carried out.[10]

A2. Overall Model Characteristics

This section describes five general characteristics of the model the Institute is constructing.

1) **The Student Outcomes in the Model.** The first decision in constructing the model is selecting the particular student outcomes to project. The Legislature's directive for this assignment is for the Institute to project the expected effect of the investment made by the Task Force's (yet-to-be) adopted funding structure. This implies modeling the Task Force's proposed changes to funded inputs (the "investment") as they affect student outcomes (the "expected effect").

   The initial version of the model focuses on two student outcomes in particular: the 10th grade statewide met-standard rates for the mathematics and reading Washington Assessment of Student Learning (WASL).

   There are, of course, other student outcomes beyond the 10th grade math and reading WASL tests that are of keen interest to policymakers. The WASL tests in writing and science are two examples as are WASL results for other grades than 10th.

   Policymakers are also interested in student outcomes such as high school graduation rates, music and the arts, higher education participation, and the development of certain non-cognitive skills such as self-discipline and motivation. Some of these other outcomes, particularly high school graduation, will be included in upcoming versions of the model described here. For this initial model, however, the focus is on 10th grade met-standard rates on the math and reading WASL.

2) **Student Outcomes by Subgroups.** The model that we are constructing analyzes how K–12 resources affect two groups of students: those who are eligible for free and reduced price meal (FRPM) and those who do not. The rationale for this modeling choice stems from several factors. First, as we show below, current student performance on the WASL is related to FRPM status; students eligible for free and reduced price meal achieve at lower levels than non-free and reduced price meal students. Thus, in order for statewide met-standard rates to be improved, it will be important to explicitly test how resource decisions are likely to affect both FRPM and non-FRPM students.

   Additionally, there may be evidence from rigorous program evaluations that lower income groups benefit more than higher income groups from certain educational resources. If this is true, then it is important to structure the model to accommodate this finding. Finally, some current educational policies and programs use FRPM status as a means to allocate federal, state, and local funding, and this budget driver could continue to be used to focus resources on those most in need of effective educational resources. For these reasons, the Institute's approach analyzes statewide student outcomes by separately modeling how resource decisions are likely to affect FRPM and non-FRPM students.

3) **Portfolio Analysis and Modeling the "Resource Year."** As will be described, the Institute's model is built on the concept of an investment portfolio. Ultimately, the Task Force is likely to propose a combination of educational options. These options can be thought of as separate resources that, together, form a portfolio intended to improve overall student outcomes in Washington. From a modeling standpoint, this implies employing some of the same analytical tools that financial and other analysts use to project the expected effect of any portfolio of investments. We use modern portfolio theory as an analytical tool to estimate the average effect, and the degree of uncertainty, for an array of policy options. Each year, state and local preK–12 money is spent on a variety of resources: teachers, non-teaching staff, transportation, professional development, equipment and materials, capital, and other operating costs. These educational inputs can be thought of as separate (but related) elements of an overall portfolio of resources designed to provide students with the opportunity to succeed in school.

   A concept used in this model is that of the "resource year." The model is built on the idea that public policies have 14 separate time-dimensioned opportunities to affect student outcomes: from preK investments, to

[9] E2SSB 5627, § 2(5)(b), Chapter 399, Laws of 2007.
[10] http://www.leg.wa.gov/Joint/Committees/BEF/

kindergarten, to grades one to twelve. There are thus 14 "resource years" in which to study the possible cumulative effect of educational resources on the achievement of students.[11] The model that we describe below estimates a cumulative educational production function measured by the outcome of 10th grade WASL met-standard rates.

4) **Risk and Uncertainty.** Any forecast in any field involves uncertainty and, since the world is inherently uncertain, this means that all projections will almost certainly be wrong. Making a projection of how K–12 investments are likely to affect student outcomes is no exception. A good deal of this uncertainty in education stems from the lack of clear consensus among researchers on what works to improve student outcomes. Goldhaber (1999) and (2002) notes that researchers generally know more about what doesn't work in K–12 education than what does, and this uncertainty makes any projection inherently risk prone.[12] Nonetheless, some research-based upper and lower bounds can be established for some resource decisions, and these bounds can be used to help inform the projection of student outcomes. In the Institute's model, the general approach is to forecast an expected "research-based" or posited effect of a series of resource choices with explicit assumptions about the high and low error bands. While the model produces a mean forecast, because of the level of uncertainty in these estimates, the projected range of forecasts is the more interesting result of the modeling process described here.

5) **Ceteris Paribus.** As noted, the model presented projects the estimated effect of educational resources on certain student outcomes such as test scores. It does this by projecting the gains in outcomes that can be traced to the estimated effectiveness of the resource inputs. In the real world there are many factors that affect the overall level of student performance including factors outside the educational system. Parental, family, community, cultural, and many other factors affect the overall level of student performance. The model that we present here does not project trends in these other important factors. Instead, we invoke what forecasters call *ceteris paribus* conditions—the Latin phrase meaning "with other things the same." That is, we hold all of the other things that influence student outcomes constant in this model, and we only attempt to isolate the particular effect that preK-12 educational resources have on student outcomes. Thus, while the model here produces projections of certain student outcomes, these forecasts are not meant as predictions of actual future statewide outcomes; rather, the purpose is to model the cumulative effect on student outcomes of the education resource choices available to the Task Force.

[11] The preK years, of course, may be longer than a single year of investment; for the purposes of this model, however, the preK investment is thought to occur in a single year.

[12] D. Goldhaber, D. J. Brewer, & D. J. Anderson. (1999). A three-way components analysis of educational productivity. *Education Economics, 7*(3), 199-208. D. Goldhaber. (2002). The mystery of good teaching. *Education Next*. Downloaded at: <http://www.nuatc.org/articles/pdf/mystery_goodteaching.pdf>

A3. Model Structure

Near-Term Portfolio Effect Sizes. The Institute's projection model is designed to estimate the effect of changes in educational resources on student outcomes. The model is structured to represent these changes as 14 separate investment opportunities, one for each year in a student's preK to 12th grade career.[13] Each of these 14 academic years, in turn, can involve the application of changes to several different types of educational resources. For example, for students in grade two, teacher salaries may be raised, class sizes may be lowered, and tutoring for struggling students may be funded. Each of these resources could have an effect on the academic progress that 2nd grade students exhibit by the end of 2nd grade. Together, these individual resources can be thought of as a portfolio of actions taken to improve student outcomes during a given school year. Since education is a cumulative process,[14] and since there are 14 annual opportunities (preK to 12th grade) to affect student outcomes, the Institute's model is designed to estimate the cumulative effects of this annual production process.

The model begins with the statistical concept of the "effect size." Researchers routinely calculate effect sizes as a way to summarize the degree to which a program or policy is estimated to affect an outcome such as student test scores. The projection model described here starts with estimated or assumed effect sizes for different types of preK–12 resources. In some cases, the existing research literature allows reasonable estimates to be produced for certain types of educational policies.[15] In many other cases, however, there is an insufficient research base on which to draw firm conclusions about what works and what does not to improve certain measurable student outcomes. The Task Force may propose new policies or changes to existing policies for which little research evidence exists to indicate efficacy. One of the purposes of developing this forecasting model is that explicit assumptions, bounded by high and low informed guesses, can be modeled to estimate likely effects under optimistic or pessimistic assumptions. If the proposals are subsequently funded by the legislature, then those policies can be evaluated to determine if initial assumptions were met.

Later in this Appendix, equations (A.5a) through (A.5p) describe the specific procedures the Institute uses to calculate "research-based" effect sizes for individual options. To begin this discussion of the forecasting model, however, we will simply posit that an effect size is estimated for a particular resource.

(A.3a) ES_{rofg}

(A.3a) represents a mean effect size for resource r that affects outcome o for students with or without a free and reduced priced

[13] Again, preK resources may occur over more that one year.

[14] P. E. Todd, & K. I. Wolpin. (2007). The production of cognitive achievement in children: Home, school and racial test score gaps. *Journal of Human Capital, 1*(1), 91-136. See also, P. E. Todd, & K. I. Wolpin. (2003). On the specification and estimation of the production function for cognitive achievement. *Economic Journal, 113*(485), F3-F33.

[15] See, for example, S. Aos, M. Miller, & A. Pennucci. (2007). *Report to the Joint Task Force on Basic Education Finance: School employee compensation and student outcomes.* Olympia: Washington State Institute for Public Policy.
See also, S. Aos, M. Miller, & J. Mayfield. (2007). *Benefits and costs of K–12 educational policies: Evidence-based effects of class size reductions and full-day kindergarten*, Olympia: Washington State Institute for Public Policy.

meal status f who are in grade g. The effect size measures the gain in student test scores, denominated in standard deviation test score units. The resource r could be any kind of educational resource—changing class sizes, paying teachers more, increased professional development, a lengthened school day or school year, and so on. The outcome o for the current Institute model is the change in test scores on a math or reading standardized student test. The resource is applied to students in any particular grade g, from preKindergarten, to kindergarten, to grades 1 to 12—fourteen "resource years" in all.

(A.3b) SE_ES_{rofg}

(A.3b) represents the standard error of the mean effect size for a resource. This statistical measure reflects the uncertainty that exists around the average effect posited in equation (A.3a). The standard error may be obtained from a formal statistical analysis (see below) or a range of uncertainty may simply be assumed to exist for any given (A.3a) estimate. As we describe later, these uncertainties for individual resources can then be modeled in a portfolio analysis to test the overall probability of outcomes.

To compute the expected effect of a portfolio of resources, equation (A.3c) sums up the individual resource effect sizes.

(A.3c) $$PES_{ofg} = \sum_{r=1}^{R} \left(ES_{rofg} \times W_{rofg} \right)$$

In this equation, PES_{ofg} is the portfolio effect size for outcome o, for students with FRPM status f, for the resources expended in grade g. The portfolio effect size, PES_{ofg}, is defined as the sum of R individual resource effect sizes, ES_{rofg}. These individual resources are multiplied by a weight, W_{rofg}. The weights measure the percentage of total resources consumed by an individual resource in the portfolio, for each combination of outcomes, FRPM status, and grade level.

Just as there are expected errors for individual resources as specified in (A.3b), there will be a range of errors expected for the portfolios of resources described in (A.3c). Modern portfolio theory provides procedures to estimate portfolio risk calculated as the standard deviation of a portfolio of investments. Error variances for portfolios with R number of resources can be modeled with equation (A.3d).

(A.3d) $$\sigma_p = \sqrt{\sum_{r=1}^{R} w_r^2 \sigma_r^2 + \sum_{j=1}^{R} \sum_{k \neq j} w_j w_k \rho_{j,k} \sigma_j \sigma k}$$

In equation (A.3d), the standard deviation of the portfolio of resources, $PES_{ofg,}$ is represented as σ_p; the weights for each resource in each portfolio as w_r; and the standard errors of each resource as σ_r. The correlation between any two resources in the portfolio is represented as $\rho_{j,k.}$ Thus the standard error of the portfolio of resources applied for each outcome, FRPM status, and grade is measured as:

(A.3e) $SE\_PES_{ofg} = \sigma_p$ for each o, f, and g.

Longer-Term Portfolio Effect Sizes. The initial purpose of this projection model is to estimate the probability that a student will meet standard on 10th grade WASL tests. Thus far, the PES_{ofg} variable defined in (A.3c) is the effect size of a portfolio of resources on near-term test scores. For example, a PES_{ofg} of .02 for math outcomes for free and reduced price meal students in grade 4, would indicate that the portfolio of 4th grade resources is estimated to raise end-of-fourth grade math test scores for FRPM students by .02 standard deviation units. The reason that these effect sizes must be regarded as near-term is that most of the research studies that estimate how educational resources affect student outcomes estimate test score results that are quite close in time to when resources were applied. That is, there are very few studies in the credible research literature that measure how a resource applied, say, in 2nd grade affects 10th grade test scores. Rather, most of the studies measure how a second grade resource will affect 2nd, 3rd, or perhaps 4th grade test scores. Thus, research-based effect sizes as used in this model are regarded as measuring the effect of a resource on near-term student outcomes.

There is some evidence, however, that the near-term effect sizes may decay over the longer term.[16] That is, an effect size of a resource on near-term scores may diminish as the years go by. To account for this in the projection model, equation (A.3f) applies an estimated annual rate of growth (or decay) to near-term effect sizes to provide an estimate of the effect of a portfolio of resources spent in any grade on 10th grade WASL test scores.

(A.3f) $$PES_{of\,(g=10)} = PES_{ofg} \times \left(1 + AARG_{ofg}\right)^{(10-g)}$$

In this equation, near term effect sizes, PES_{ofg}, are multiplied by an estimated annual rate of growth (or decay), $AARG_{ofg}$, raised to the 10th grade minus the grade of the near term portfolio effect size, g. For example, if the near-term effect size of a portfolio of resources is .0500 standard deviation units in 2nd grade, and if the estimated annual rate of decay is 6.0 percent, then the estimated effect size of those 2nd grade resources on 10th grade test scores is .0305 standard deviation units.

To develop baseline estimates of $AARG_{ofg}$, the Institute conducted a series of regression studies. We analyzed WASL data for several cohorts of students. Since the math and reading WASL tests have been administered longitudinally to 10th, 7th, and 4th graders, we ran student-level regressions to estimate the relationship between a student's 10th grade math or reading score (the dependent variable) and his or her 7th grade math or reading score (the key independent variable), controlling for a basic set of demographic variables. We then ran the same regression models with the 10th grade math or reading score as the dependent variable and the student's 4th grade math or reading score as the key independent variable. In all of these regressions, to allow for better comparability of tests administered at different grade levels, we first standardized each student's WASL scale score to have a mean of zero and a standard deviation of one.

[16] See, for example, B. A. Jacob, L. Lefgren, & D. Sims. (2008). The persistence of teacher-induced learning gains. NBER Working Paper, June 2008, #14065.
See also, S. Aos, R. Lieb, J. Mayfield, M. Miller, & A. Pennucci. (2004). Benefits and costs of prevention and early intervention programs for youth. Olympia: Washington State Institute for Public Policy. In this study, we reported in the Technical Appendix at pages 30-31 an analysis we conducted of the effect size results of 58 well-researched longitudinal early childhood educational programs that offered enhanced pre-school to low income 3 and 4 year olds. These studies contributed 188 test score effect size estimates comparing the test scores of youth who received the pre-school to those that did not. In this group of studies, test scores were initially measured right after the preschool and then several or many years after the intervention. Our regression analysis of these longitudinal effect sizes revealed that the initial early age test score effect sizes did decay over time (they remained, however, significant by the end of high school) at a 7 to 8 percent annual rate of decay.

In these regressions, if the coefficient on the student's prior test score were one, it would provide an indication that an educational resource that affected a change in the prior score would also have a one-to-one effect on the 10th grade score. If the coefficient on the prior score is less than one, however, then it would indicate that a resource that was able to change the prior score would likely have a reduced effect on 10th grade scores, all else being equal.

For example, in one regression,10th grade standardized WASL math scores for non-free and reduced price meal students was estimated as a function of the student's 7th grade standardized math score (along with other demographic variables). The coefficient on the prior test score was .832. Since 10th grade scores are perfectly correlated with themselves, the annual rate of decay in correlation coefficients over three years (the time interval between 7th and 10th grades) is -5.96 percent (from a correlation coefficient of 1.000 to .832 over three years). This method can thus provide a means to approximate the annual rate of decay that could be expected from a resource (e.g. paying teachers more) that boosts 7th grade performance and the subsequent effect that the 7th grade resource may have on 10th grade test scores. To continue the example, if a 7th grade resource is estimated to have an effect size of .020 on 7th grade test scores, then applying the -5.96 average annual rate of decay estimate for three years would indicate that the 7th grade resource would have an effect size of .017 on 10th grade test scores.

Since we have WASL data for 10th, 7th, and 4th grade tests, we were able estimate these implied decay rates for 7th and 4th grade resources. We then used the regression coefficients for these three years to interpolate and extend the estimated coefficients for other years (preK to 9th grade, in the student's academic career) and calculated the implied decay rates.

Change in 10th Grade WASL Scale Scores and Met-Standard Rates. The change in 10th grade scale score points for outcome o and for free and reduced price meal status f, is given by (A.3g).

(A.3g) $10\Delta S_{ofg} = PES_{of(g=10)} \times SDS_{of(g=10)}$

The effect of a portfolio of resources expended in grade g on 10th grade WASL scores for o and f, $PES_{of(g=10)}$ is multiplied by the standard deviation of scale scores for the same group in grade ten, $SDS_{of(g=10)}$.

The model then sums up the changes to 10th grade scale score points for resources spent in each grade. The model forecasts the statewide cumulative effect of changes to 10th grade scores beginning in the 2009-10 school year to the 2020-21 school year. In the 2009-10 school year, only those modified resources applied to 10th graders during that year could be expected to affect end of 10th grade WASL scores in the spring of 2010. By the 2020-21 school year, however, resource changes made to pre-kindergartners in 2009-10 could be expected to affect 10th grade WASL met-standard rates in the spring of 2021. This cumulative process is captured with (A.3h).

(A.3h) $\Delta S_{ofy} = \sum_{g=1}^{y} 10\Delta S_{of(13-g)}$

In (A.3h), the subscript y is the forecast year where the school year 2009-10 =1 and 2020-21 = 12. The parameter 13 (minus one) indicates that in steady state there are 12 "resource years" that can affect 10th grade WASL scores—resources spent in pre-kindergarten, kindergarten, and grades one through ten.

The cumulative effect of the resources by forecast year y (2009-10 to 2020-21) on the total 10th grade scale score, *ceteris paribus*, is given by (A.3i).

(A.3i) $TS_{ofy} = \Delta S_{ofy} + MeanS_{of(g=2008)}$

For any year y in the forecast, the change in scale scores brought about by the cumulative effect of resources as of that year is added to the mean scale score as of 2008 (the last year in which scale scores are available) and, *ceteris paribus*, they are the best estimates of the base scale scores in any year in the forecast period.

The WASL met-standard rate in any year in the forecast period is then modeled using Microsoft Excel's cumulative normal distribution function, NORMDIST.

(A.3j) $MS\%_{ofy}$ = NORMDIST(CUT_o,TS_{ofy},$SDS_{of(g=2008)}$,cumulative)

The only new variable in (A.3j) is the CUT score for each test outcome; the cut score is defined by the State and is displayed in Exhibit A-2.

Finally, for each year in the forecast horizon—school years 2009/2010 to 2020/2021—the statewide met-standard rate for the 10th grade WASL is taken to be the weighted average of the FRPM and non-FRPM populations.

(A.3k) $$MS\%_{oy} = MS\%_{o(f=1)y} \times W_{o(f=1)(g=2008)} + MS\%_{o(f=0)y} \times W_{o(f=0)(g=2008)}$$

A4. Modeling Uncertainty

The model described thus far in this Appendix produces a mean projection of student outcomes for a given set of inputs. As we described, however, there is a significant amount of uncertainty around many of the inputs. In particular, for several of the key inputs to the model—for example, the effect sizes for each resource, ES_{rofg}—it would be desirable to model how the expected errors in these estimates might affect the expected projection of the student outcomes. To undertake this risk and uncertainty analysis, we first determine the range of uncertainty with the standard errors for each of the key parameters. For a few other parameters, we must hypothesize low and high ranges to place bounds on our estimates of uncertainty.

After we specify ranges of uncertainty on each of the inputs, we then use a simulation approach to determine the degree to which the mean projection is sensitive to these known or hypothesized levels of uncertainty. To conduct the simulation, we use Palisade Corporation's @RISK® simulation software. The simulation uses a Monte Carlo approach to randomly draw from the specified error ranges in the input variables, after a particular type of probability distribution and its parameters have been specified. We run the basic model with the Monte Carlo simulation for 10,000 cases. This produces a range of future projections and we use this range to project the relative uncertainty in the mean forecast.

A5. Procedures to Calculate Effect Sizes for Individual Educational Resources

As mentioned earlier in this Appendix, each resource considered by the Task Force could have an effect on student outcomes. In (A.3a), ES_{rofg} represents a mean effect size for resource r that affects outcome o for students with or without a FRPM status f who are in grade g.

Effect sizes summarize the degree to which a program or policy affects an outcome. In experimental settings this involves comparing the outcomes of treated participants relative to untreated participants. There are several methods used by analysts to calculate effect sizes, as described in Lipsey and Wilson (2001).[17] In educational research the most common effect size statistic is the *standardized mean difference effect size*, and that is the measure we employ in this analysis.

A mean difference effect size usually involves continuous outcome data, such as student test scores, where the differences are in the means of the outcome.[18]

$$\text{(A.5a)} \quad ES_r = \frac{M_t - M_c}{\sqrt{\frac{(N_t - 1)SD_t^2 + (N_c - 1)SD_c^2}{N_t + N_c - 2}}}$$

In this formula, ES_r is the estimated effect size, for a particular program or resource *r*, for the difference between means obtained from the information in a research study; M_t is the mean value of an outcome for the treatment or experimental group; M_c is the mean value of an outcome for the control group; SD_t is the standard deviation of the mean for the treatment group; and SD_c is the standard deviation of the mean for the control group; N_t is the number of subjects in the treatment group; and N_c is the number of subjects in the control group.

Particularly in education research, the numerator in (A5a), M_t - M_c, is obtained from a coefficient in a regression equation, not from experimental studies of treatment and control groups. Similarly, in most education research studies, the denominator in (A.5a), the standard deviation of an outcome, is obtained for the entire population studied in the regression analysis.

The variance of the mean difference effect size statistic in (A.5a) is given by:[19]

$$\text{(A.5b)} \quad Var = \frac{N_t + N_c}{N_t N_c} + \frac{(ES_r)^2}{2(N_t + N_c)},$$

Since most of the effect sizes calculated for this study of educational research are taken from regression studies, the total N from the study is used for the sum of N_t and N_c, and the product term N_tN_c is set to equal $(N/2)^2$.

Some studies record outcomes not as continuous measures such as test scores, but as dichotomies; for example, high school graduation. For these yes/no outcomes, Sanchez-Meca, et al.[20] have shown that the Cox transformation produces the most unbiased approximation of the standardized mean effect size. We calculate the effect size for dichotomous outcomes using the formula:

$$\text{(A.5c)} \quad ES_r \cong ES_{Cox} = LN(OR)/1.65$$

where OR is the odds ratio of success for the treatment group compared to the control group.

The ES_{Cox} has a variance of

$$\text{(A.5d)} \quad Var_{Cox} = 0.367x\left[\frac{1}{O_{1E}} + \frac{1}{O_{2E}} + \frac{1}{O_{1C}} + \frac{1}{O_{2C}}\right]$$

where O_{1E}, O_{2E}, O_{1C}, *and* O_{2C} are the number of successes and failures in the treatment and control groups (E and C).

Adjusting Effect Sizes and Variances for Multi-Level Data Structures. Most studies in the education field use data that are hierarchical in nature. That is, students are clustered in classrooms, classrooms are clustered within schools, schools are clustered within districts, and districts are clustered within states. Analyses that do not account for clustering will underestimate the variance in outcomes at the student level (the denominator in (A.5a)) and thus may over-estimate effect sizes. In studies that do not account for clustering, effect sizes and their variance require additional adjustments.[21]

There are two types of studies, each requiring a different set of adjustments.[22]

First, for student-level studies that ignore the variance due to clustering, we make adjustments to the mean effect size and its variance,

$$\text{(A.5e)} \quad ES_T = ES_m * \sqrt{1 - \frac{2(n-1)\rho}{N-2}}$$

(A.5f)

$$V\{ES_T\} = \left(\frac{N_t - N_c}{N_t N_c}\right)(1 + (n-1)\rho) + \ldots$$

$$\ldots ES_m{}^2\left(\frac{(N-2)(1-\rho)^2 + n(N-2n)\rho^2 + 2(N-2n)\rho(1-\rho)}{2(N-2)[(N-2) - 2(n-1)\rho]}\right)$$

where ρ is the intraclass correlation, the ratio of the variance between clusters to the total variance; N is the total number of individuals in the treatment group, N_t, and the comparison group, N_c; and n is the average number of persons in a cluster, K.

In the educational field, clusters can be classes, schools, or districts. For this study, we used 2006 Washington Assessment of Student Learning (WASL) data to calculate values of ρ for the school-level (ρ = 0.114) and the district level (ρ = 0.052). Class-level data are not available for the WASL, so we use a value of ρ = 0.200 for class-level studies.

---

[17] M. Lipsey, & D. Wilson. (2001). *Practical meta-analysis*. Thousand Oaks: Sage Publications.

[18] Ibid, Table B10, equation 1, p. 198.

[19] Ibid, Table 3.2, p. 72.

[20] J. Sanchez-Meca, F. Marin-Martinez, & S. Chacon-Moscoso. (2003). Effect-size indices for dichotomized outcomes in meta-analysis. *Psychological Methods, 8*(4): 448-467.

[21] Studies that employ hierarchical linear modeling, or fixed effects with robust standard errors, or random effects models account for variance and need no further adjustment.

[22] These formulas are taken from: L. Hedges. (2007). Effect sizes in cluster-randomized designs. *Journal of Educational and Behavioral Statistics, 32*(4): 341-370. http://jeb.sagepub.com/cgi/content/abstract/1076998606298043v1

Second, for studies that report means and standard deviations at a cluster level, we make adjustments to the mean effect size and its variance:

(A.5g) $ES_T = ES_m * \sqrt{\frac{1+(n-1)\rho}{n\rho}} * \sqrt{\rho}$

(A.5h)

$$V\{ES_T\} = \left\{\left(\frac{K_t - K_c}{K_t K_c}\right) * \left(\frac{1+(n-1)\rho}{n\rho}\right) + \frac{[1+(n-1)\rho] * ES_m^2}{2n\rho(K_t + K_c - 2)}\right\} * \rho$$

We did not adjust effect sizes in studies reporting dichotomous outcomes. This is because the Cox transformation assumes the entire normal distribution at the student level.[23]

Computing Weighted Average Effect Sizes, Confidence Intervals, and Homogeneity Tests. Once effect sizes are calculated for each program effect, and any necessary adjustments for clustering are made, the individual measures are summed to produce a weighted average effect size for a program area. We calculate the inverse variance weight for each program effect and these weights are used to compute the average. These calculations involve three steps. First, the standard error, SE_T of each mean effect size is computed with:[24]

(A.5i) $SE_T = \sqrt{\frac{N_t + N_c}{N_t N_c} + \frac{(ES_T)^2}{2(N_t + N_c)}}$

Next, the inverse variance weight w is computed for each mean effect size with:[25]

(A.5j) $w = \frac{1}{SE_T^2}$

The weighted mean effect size for a group with i studies is computed with:[26]

(A.5k) $\overline{ES} = \frac{\sum(w_i ES_{T_i})}{\sum w_i}$

Confidence intervals around this mean are then computed by first calculating the standard error of the mean with:[27]

(A.5l) $SE_{\overline{ES}} = \sqrt{\frac{1}{\sum w_i}}$

Next, the lower, ES_L, and upper limits, ES_U, of the confidence interval are computed with:[28]

(A.5m) $\overline{ES_L} = \overline{ES} - z_{(1-\alpha)}(SE_{\overline{ES}})$

(A.5n) $\overline{ES_U} = \overline{ES} + z_{(1-\alpha)}(SE_{\overline{ES}})$

In equations (A.5m) and (A.5n), $z_{(1-\alpha)}$ is the critical value for the z-distribution (1.96 for α = .05).

The test for homogeneity, which provides a measure of the dispersion of the effect sizes around their mean, is given by:[29]

(A.5o) $Q_i = (\sum w_i ES_i^2) - \frac{(\sum w_i ES_i)^2}{\sum w_i}$

The Q-test is distributed as a chi-square with k-1 degrees of freedom (where k is the number of effect sizes).

Computing Random Effects Weighted Average Effect Sizes and Confidence Intervals. When the p-value on the Q-test indicates significance at values of p less than or equal to .05, a random effects model is performed to calculate the weighted average effect size. This is accomplished by first calculating the random effects variance component, v.[30]

(A.5p) $v = \frac{Q_i - (k-1)}{\sum w_i - (\sum wsq_i / \sum w_i)}$

This random variance factor is then added to the variance of each effect size and finally all inverse variance weights are recomputed, as are the other meta-analytic test statistics.

A6. WASL Inputs for the Model

Some of the equations listed in this Appendix require inputs about the test score results for the WASL. The Institute obtained student level WASL data from OSPI and calculated a number of summary statistics. OSPI also reports several key summary statistics on WASL results on its website. The WASL information used in the projection model from both of these sources are shown in Exhibits A-1 and A-2.

[23] Mark Lipsey, personal communication, November 11, 2007.
[24] Lipsey & Wilson (2001), equation 3.23, p. 49.
[25] Ibid., equation 3.24, p. 49.
[26] Ibid., p. 114
[27] Ibid.
[28] Ibid.
[29] Ibid., p. 116
[30] Ibid., p. 134

Exhibit A-1

Actual 10th Grade WASL Met-Standard Rates From the OSPI Website*

School Years	All Test Takers			Non Free & Reduced Price Meal Students			Free and Reduced Price Meal Students		
	Math	Reading	Writing	Math	Reading	Writing	Math	Reading	Writing
1995-96	-	-	-	-	-	-	-	-	-
1996-97	-	-	-	-	-	-	-	-	-
1997-98	-	-	-	-	-	-	-	-	-
1998-99	33.0%	51.4%	41.1%	-	-	-	-	-	-
1999-00	35.0%	59.8%	31.7%	-	-	-	-	-	-
2000-01	38.9%	62.4%	46.9%	-	-	-	-	-	-
2001-02	37.3%	59.2%	54.3%	-	-	-	-	-	-
2002-03	39.4%	60.0%	60.5%	-	-	-	-	-	-
2003-04	43.9%	64.5%	65.2%	-	-	-	-	-	-
2004-05	47.5%	72.9%	65.2%	55.5%	79.7%	72.7%	28.1%	56.4%	46.8%
2005-06	51.0%	82.0%	79.8%	59.2%	87.5%	85.4%	30.4%	68.1%	65.4%
2006-07	50.4%	80.8%	83.9%	58.8%	86.2%	88.7%	30.5%	68.2%	72.3%
2007-08	49.3%	81.3%	86.2%	58.2%	86.3%	90.1%	29.5%	70.2%	77.3%
2008-09	-	-	-	-	-	-	-	-	-
2009-10	-	-	-	-	-	-	-	-	-
2010-11	-	-	-	-	-	-	-	-	-
2011-12	-	-	-	-	-	-	-	-	-
2012-13	-	-	-	-	-	-	-	-	-
2013-14	-	-	-	-	-	-	-	-	-

Source: Downloaded from the website of the Office of Superintendent of Public Instruction, 9-7-08.
* The denominator for these OSPI-defined met-standard rates includes both 10th grade students who took the WASL as well as those who did not take the test because of an unexcused absence.

Exhibit A-2

Math: Grade 10 Scale Scores for School Year 2006-07

	Percent of students*	Mean*	Adjust-ment to Mean**	SD*	Cut Point	Calculated Met-Standard Rate**	Distribution Type**
All Test Takers	100.0%	397.8	2.6	39.4	400	50.4%	Normal
Non Free & Reduced Price Meal	70.5%	405.5	2.8	37.3	400	58.8%	Normal
Free and Reduced Price Meal	29.5%	379.4	1.2	38.0	400	30.5%	Normal

Reading: Grade 10 Scale Scores for School Year 2006-07

	Percent of students	Mean	Adjust-ment to Mean*	SD	Cut Point	Calculated Met-Standard Rate	Distribution Type
All Test Takers	100.0%	424.7	1.3	29.9	400	80.8%	Normal
Non Free & Reduced Price Meal	70.5%	429.8	1.0	28.3	400	86.2%	Normal
Free and Reduced Price Meal	29.5%	412.4	1.8	29.9	400	68.2%	Normal

* These descriptive statistics are from the actual distribution of scores for those students who took the 10th grade WASL in 2006-07. The Institute obtained student-level WASL information from OSPI describing student performance on the mathematics and reading WASL tests for 10th, 7th and 4th graders from 2000 through 2007. Students, schools, and districts all have unique identifiers which are used to trace students as they move through the public school system. In addition to information on student performance, the WASL data contain demographic indicators for students (such as race and gender) and a proxy for socioeconomic status as indicated by eligibility for the federal free and reduced price meal program.
** These statistics are estimates made by the Institute with the actual data for those students who took the 10th grade WASL in 2006-07. We determined that the distribution of WASL scale scores for both the math and reading tests were well approximated with a normal probability distribution. Using a normal distribution with the actual mean and standard deviation for each test, the estimated met-standard rates did not precisely match the rates reported by OSPI and listed here in Exhibit A-1. Therefore, the column labeled “Adjustment to Mean” in this table is the value added to the actual mean score so that the “calculated met-standard rate” is equal to the OSPI reported rate.

E2SSB 5627
AN ACT Relating to basic education funding.

Section 1. The state's definition of basic education and the corresponding funding formulas must be regularly updated in order to keep pace with evolving educational practices and increasing state and federal requirements and to ensure that all schools have the resources they need to help give all students the opportunity to be fully prepared to compete in a global economy.

The work of Washington learns steering committee and the K–12 advisory committee provides a valuable starting point from which to evaluate the current educational system and develop a unique, transparent, and stable educational funding system for Washington that supports the goals and the vision of a world-class learner-focused K–12 educational system that were established in the final Washington learns report.

This act is intended to make provision for some significant steps towards a new basic education funding system and establishes a joint task force to address the details and next steps beyond the 2007-2009 biennium that will be necessary to implement a new comprehensive K–12 finance formula or formulas that will provide Washington schools with stable and adequate funding as the expectations for the K–12 system continue to evolve.

Section 2. (1) The joint task force on basic education finance established under this section, with research support from the Washington state institute for public policy, shall review the definition of basic education and all current basic education funding formulas, develop options for a new funding structure and all necessary formulas, and propose a new definition of basic education that is realigned with the new expectations of the state's education system as established in the November 2006 final report of the Washington learns steering committee and the basic education provisions established in chapter 28A.150 RCW.

(2) The joint task force on basic education finance shall consist of fourteen members: (a) A chair of the task force with experience with Washington finance issues including knowledge of the K–12 funding formulas, appointed by the governor;(b) Eight legislators, with two members from each of the two largest caucuses of the senate appointed by the president of the senate and two members from each of the two largest caucuses of the house of representatives appointed by the speaker of the house of representatives; (c) A representative of the governor's office or the office of financial management, designated by the governor;(d) The superintendent of public instruction or the superintendent's designee; and (e) Three individuals with significant experience with Washington K–12 finance issues, including the use and application of the current basic education funding formulas, appointed by the governor. Each of the two largest caucuses of the house of representatives and the senate may submit names to the governor for consideration.

(3) In conducting research directed by the task force and developing options for consideration by the task force, the Washington state institute for public policy shall consult with stakeholders and experts in the field. The institute may also request assistance from the legislative evaluation and accountability program committee, the office of the superintendent of public instruction, the office of financial management, the house office of program research, and senate committee services.

(4) In developing recommendations, the joint task force shall review and build upon the following:(a) Reports related to K–12 finance produced at the request of or as a result of the Washington learns study, including reports completed for or by the K–12 advisory committee;(b) High-quality studies that are available; and (c) Research and evaluation of the cost-benefits of various K–12 programs and services developed by the institute as directed by the legislature in section 607(15), chapter 372, Laws of 2006.

(5) The Washington state institute for public policy shall provide the following reports to the joint task force:

(a) An initial report by September 15, 2007, proposing an initial plan of action, reporting dates, timelines for fulfilling the requirements of section 3 of this act, and an initial timeline for a phased-in implementation of a new funding system that does not exceed six years;

(b) A second report by December 1, 2007, including implementing legislation as necessary, for at least two but no more than four options for allocating school employee compensation. One of the options must be a redirection and prioritization within existing resources based on research-proven education programs. The report must also include a projection of the expected effect of the investment made under the new funding structure. The second report shall also include a finalized timeline and plan for addressing the remaining components of a new funding system; and

(c) A final report with at least two but no more than four options for revising the remaining K–12 funding structure, including implementing legislation as necessary, and a timeline for phasing in full adoption of the new funding structure. The final report shall be submitted to the joint task force by September 15, 2008. One of the options must be a redirection and prioritization within existing resources based on research-proven education programs. The final report must also include a projection of the expected effect of the investment made under the new funding structure.

Section 3. (1) The funding structure alternatives developed by the joint task force under section 2 of this act shall take into consideration the legislative priorities in this section, to the maximum extent possible and as appropriate to each formula.

(2) The funding structure should reflect the most effective instructional strategies and service delivery models and be based on research-proven education programs and activities with demonstrated cost benefits. In reviewing the possible strategies and models to include in the funding structure the task force shall, at a minimum, consider the following issues:

(a) Professional development for all staff;

(b) Whether the compensation system for instructional staff shall include pay for performance, knowledge, and skills elements; regional cost-of-living elements; elements to recognize assignments that are difficult; recognition for the professional teaching level certificate in the salary allocation model; and a plan to implement the pay structure;

(c) Voluntary all-day kindergarten;

(d) Optimum class size, including different class sizes based on grade level and ways to reduce class size;

(e) Focused instructional support for students and schools;

(f) Extended school day and school year options; and

(g) Health and safety requirements.

(3) The recommendations should provide maximum transparency of the state's educational funding system in order to better help parents, citizens, and school personnel in Washington understand how their school system is funded.

(4) The funding structure should be linked to accountability for student outcomes and performance.

Section 4. This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and takes effect immediately.

Document No. 08-09-2201

Washington State
Institute for
Public Policy

The Washington State Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors—representing the legislature, the governor, and public universities—governs the Institute and guides the development of all activities. The Institute's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.