

***Using Cost-Benefit Analysis in
Washington State to Identify & Implement
Evidence-Based Public Policies***

**Conference on Return on Investment:
The Dollars and Cents of a Non-Profit Program's Worth
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Washington State Institute For Public Policy

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National Park** →

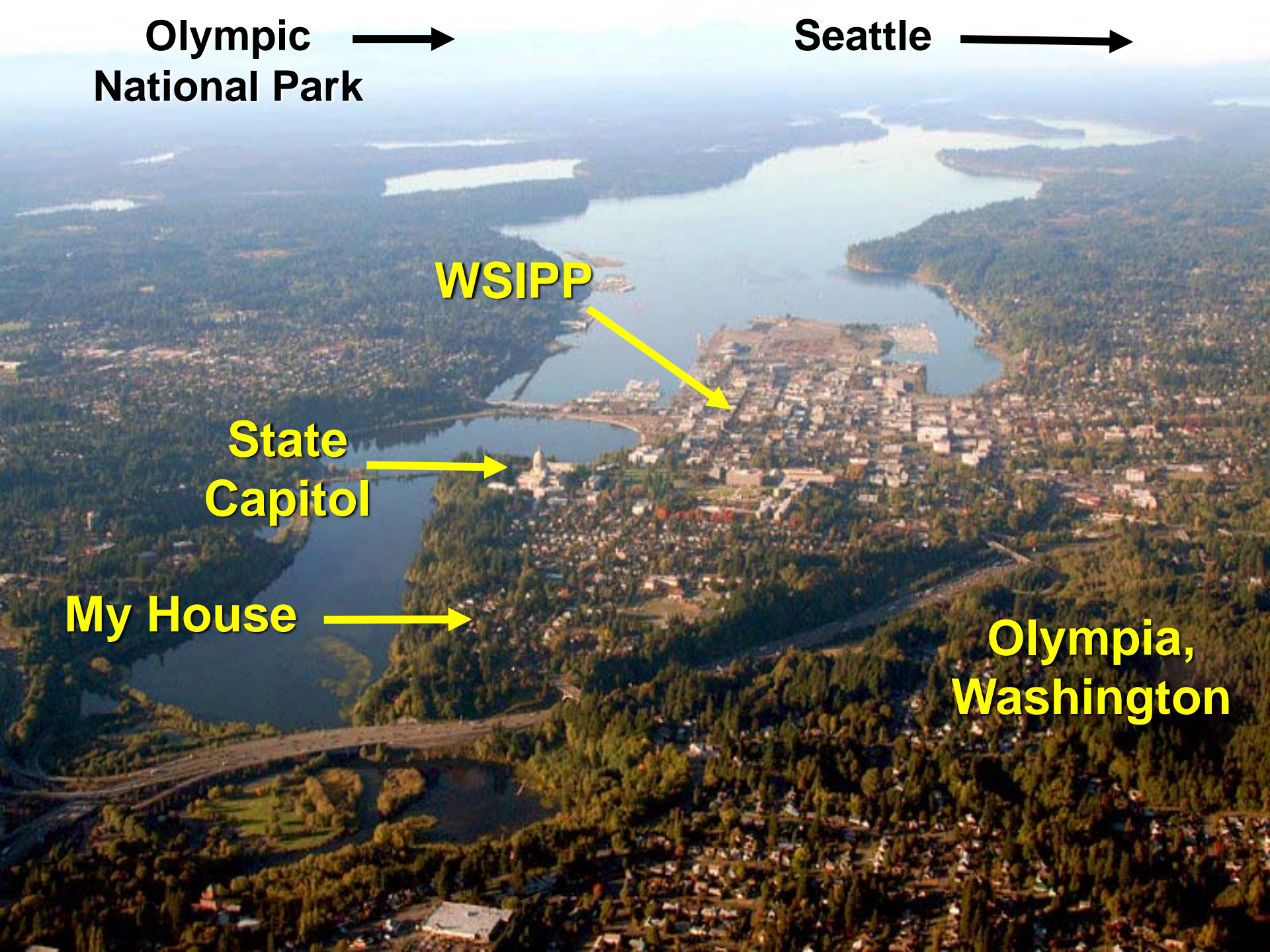
Seattle →

WSIPP

**State
Capitol** →

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**Olympia,
Washington**



Three Topics

- 1. Legislative Demand for Evidence–Based and Cost–Benefit Information.**
- 2. An Example: K–12 Education.**
- 3. Generalize some lessons from Washington State.**

Recent Legislative Directions to WSIPP to Produce Cost-Benefit and Evidence–Based Information:

Prevention Programs in Early Childhood (2003 Session)

“...review research assessing the effectiveness of prevention and early intervention programs...to reduce the at-risk behaviors for children and youth...and identify specific **research-proven** programs that produce a **positive return on the dollar compared to the costs of the program.**”

K-12 Education Outcomes (2006 Session)

Study “the **cost-benefits** of various K–12 educational programs and services. The goal for the effort is to provide policymakers with additional information to aid in decision making. .”

K-12 Education Outcomes (2007 Session)

Develop funding options that “...reflect the most effective instructional strategies and service delivery models and be based on **research-proven** education programs and activities with demonstrated **cost benefits.**”

Child Abuse and Out of Home Placement of Children (2007 Session)

“...study **evidence-based, cost-effective** programs and policies to reduce the likelihood of children entering and remaining in the child welfare system, including both prevention and intervention programs.”

(Continued) Recent Legislative Directions to WSIPP:

Substance Abuse and Mental Health (2005 Session)

“...study the net short-run and long-run fiscal savings to state and local governments of implementing **evidence-based** treatment of chemical dependency disorders, mental disorders, and co-occurring mental and substance abuse disorders...**project total fiscal impacts** under alternative implementation scenarios. In addition to fiscal outcomes, the institute shall **estimate the long-run effects** that an **evidence-based strategy could have on statewide education, crime, child abuse and neglect, substance abuse, and economic outcomes...**”

Developmental Disabilities (2008 Session)

Study “review of research on service and support programs for children and adults with developmental disabilities, excluding special education, and an **economic analysis of net program costs and benefits**. . .”

Crime, Criminal Justice Costs, & Prison Construction (2005 Session)

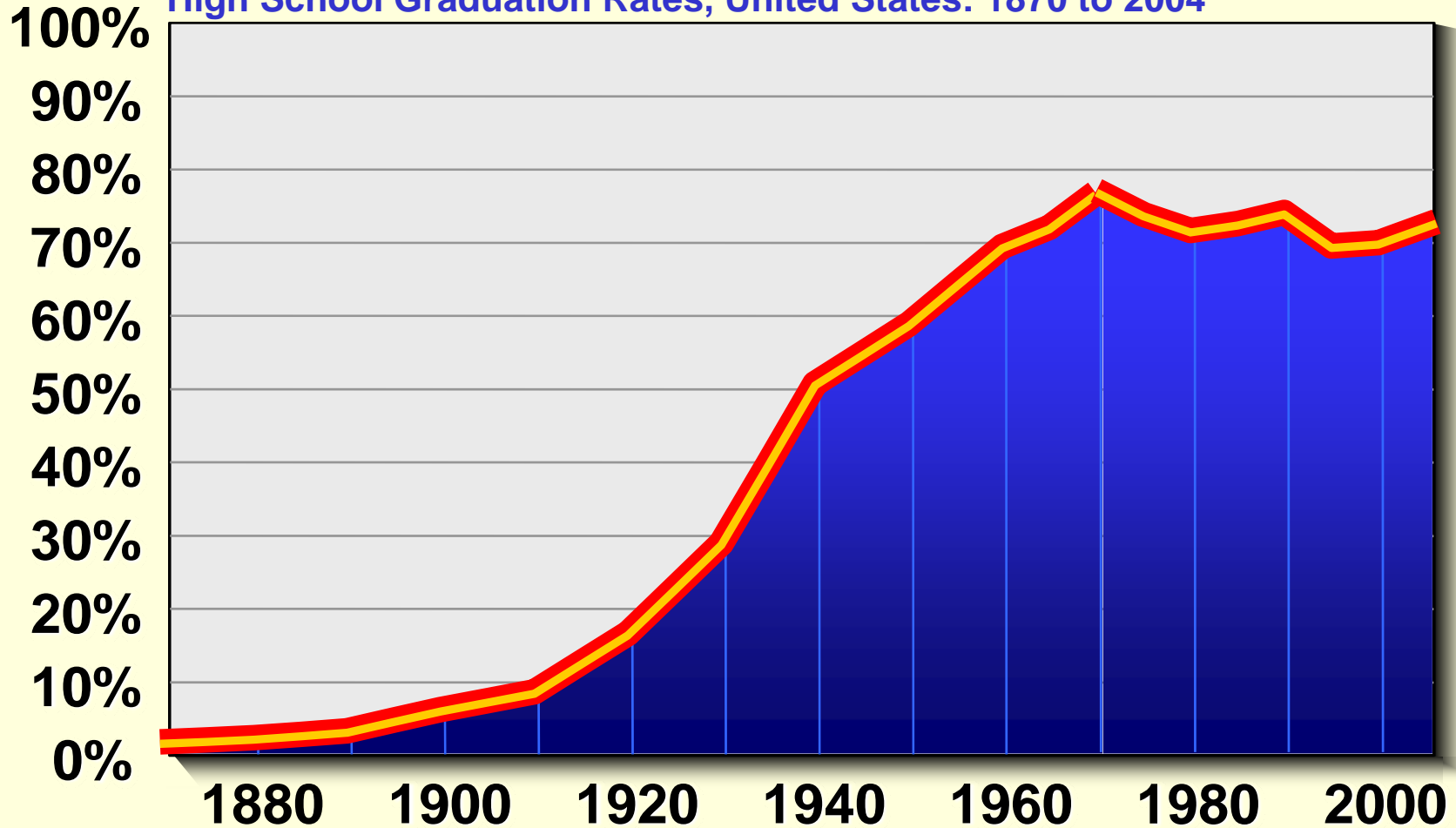
“...study the **net short-run and long-run fiscal savings** to state and local governments of implementing evidence-based treatment human service and corrections programs and policies, including prevention and intervention programs, sentencing alternatives, and the use of risk factors in sentencing. The institute shall use the results from its 2004 report on **cost-beneficial** prevention and early intervention programs and its work on effective adult corrections programs to **project total fiscal impacts** under alternative implementation scenarios. . .”

Evidence–Based Public Policy in Washington State: The Road from Studies to Policy Changes

Outcome of Legislative Interest	What Works?		Cost-Benefit?		Policy Change?	
	Systematic Review of Evidence?	Specific List or General Finding?	<u>Program</u> Level Cost-Benefit?	<u>Portfolio</u> Level Cost-Benefit?	Legislative action?	Executive action?
Crime	Yes	Specific	Yes	Yes	Yes	Yes
Child Abuse & Neglect	Yes	Specific	Yes	Yes	some	some
K–12 & Early Educ.	Yes, and Underway	Specific	Yes, and Underway	Underway	some	some
Substance Abuse	Yes	General	Yes	Yes	some	?
Mental Health	Yes	General	Yes	Yes	some	?
Developmental Disability	Underway	?	?	?	?	?

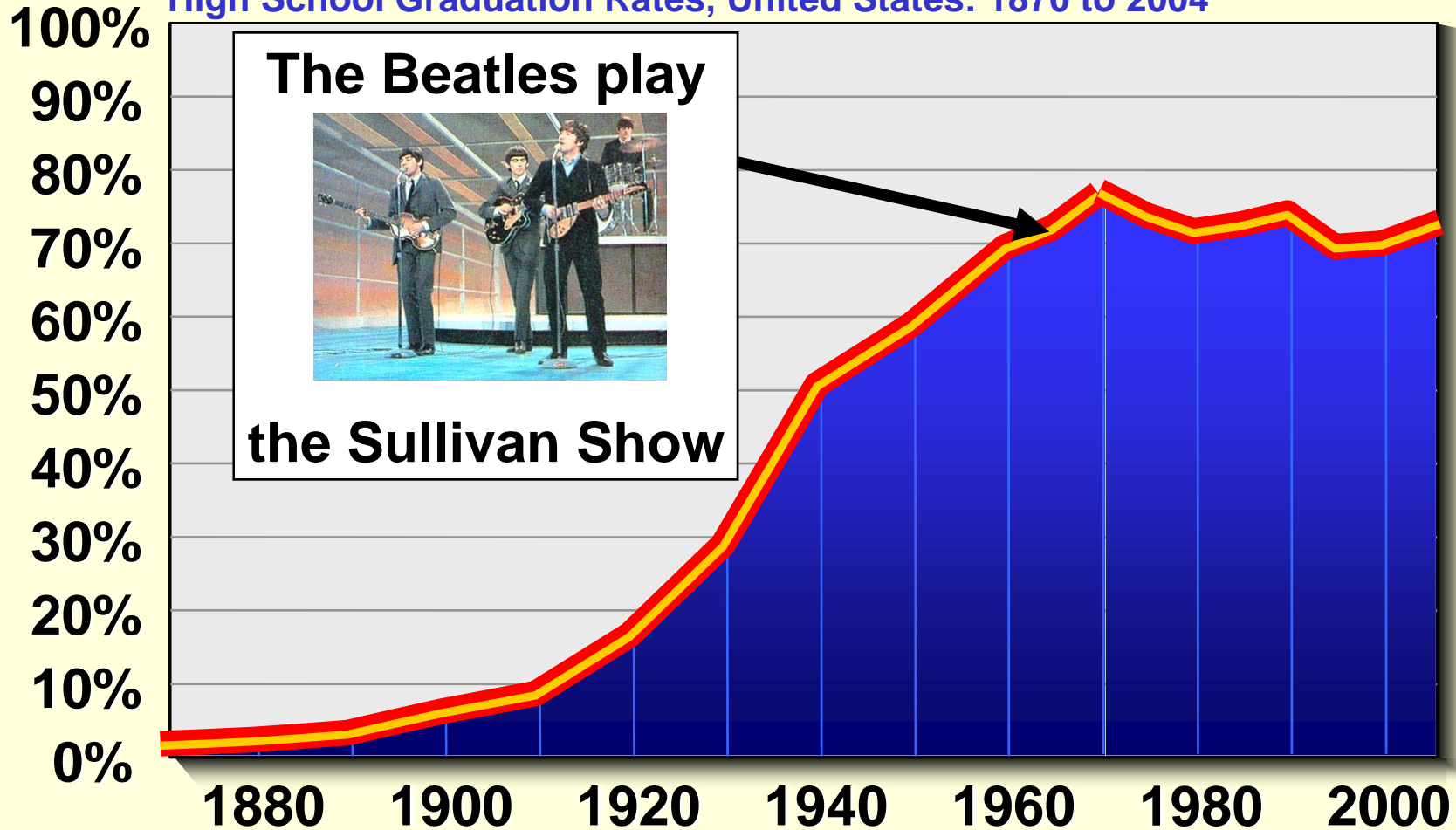
What Public Policy Levers Lead to Improved Education Outcomes?

High School Graduation Rates, United States: 1870 to 2004

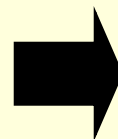


What Public Policy Levers Lead to Improved Education Outcomes?

High School Graduation Rates, United States: 1870 to 2004



What Works to Improve Education Outcomes?



1. WSIPP researcher gathers all the studies she can locate on a topic.

2. She applies “standards of evidence” to identify the high quality studies.

3. She analyzes all of the high quality studies to estimate an average effect.

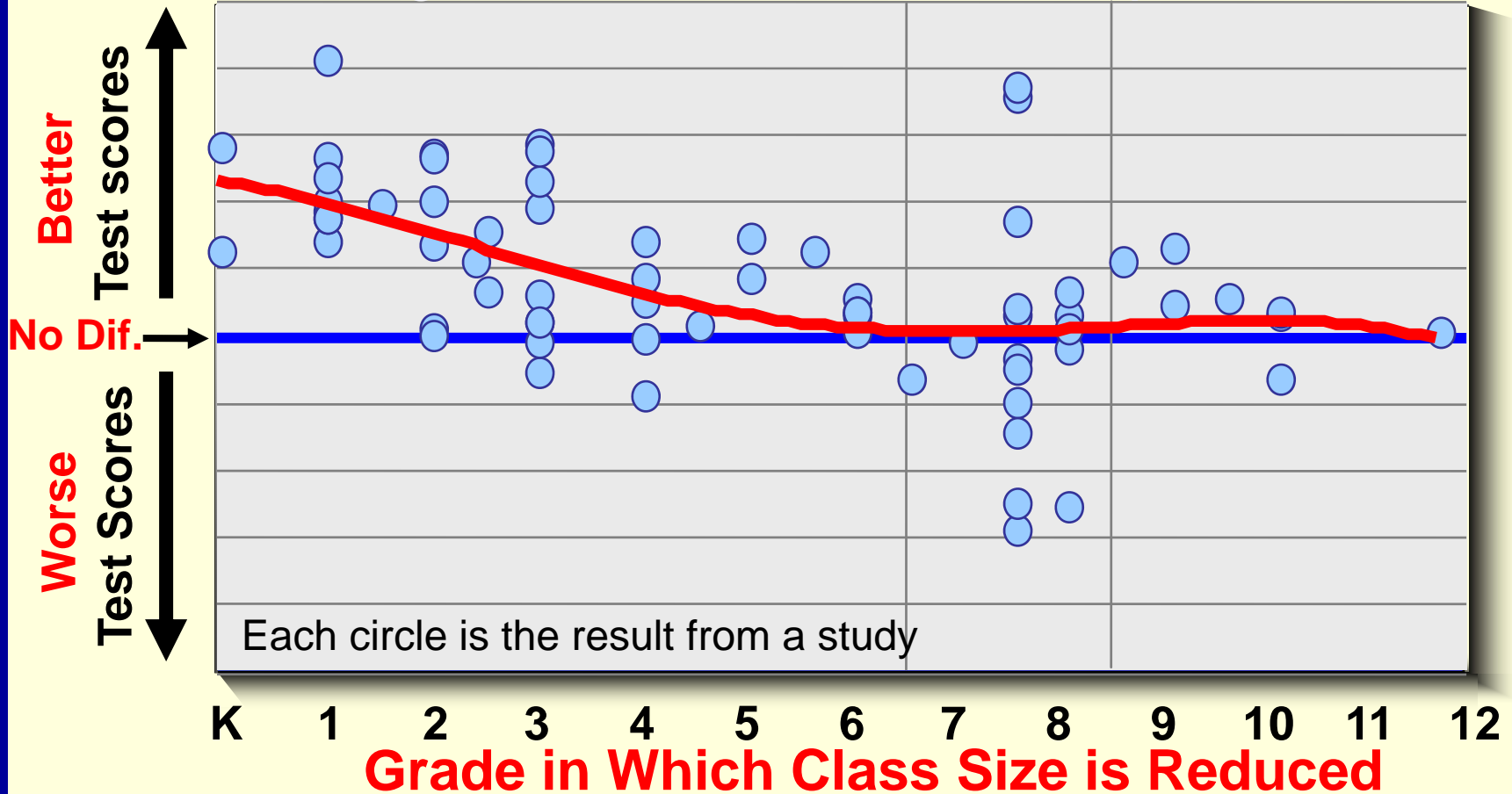
What Are the Economics of Each Option?

- 1. Costs: what does each option cost?**
 - ✓ For example, we estimate the operating and capital costs to lower class sizes or fund full-day vs. half-day kindergarten.
- 2. Benefits: for each option, what is the economic value of any statistically significant change in education outcomes?**
 - ✓ We estimate life-time labor market and other benefits (e.g. reduced costs of health care, crime, foster care) of gains in K-12 test score outcomes or graduation rates. Human capital model.
- 3. Compute return-on-investment information.**

Does Reducing Class Size Improve Test Scores?

The results of 38 statistically-sound studies (with 69 grade-level tests) of the effect of class size reductions on test-score outcomes.

The Change in Test Scores for a One Unit Drop in Class Size*

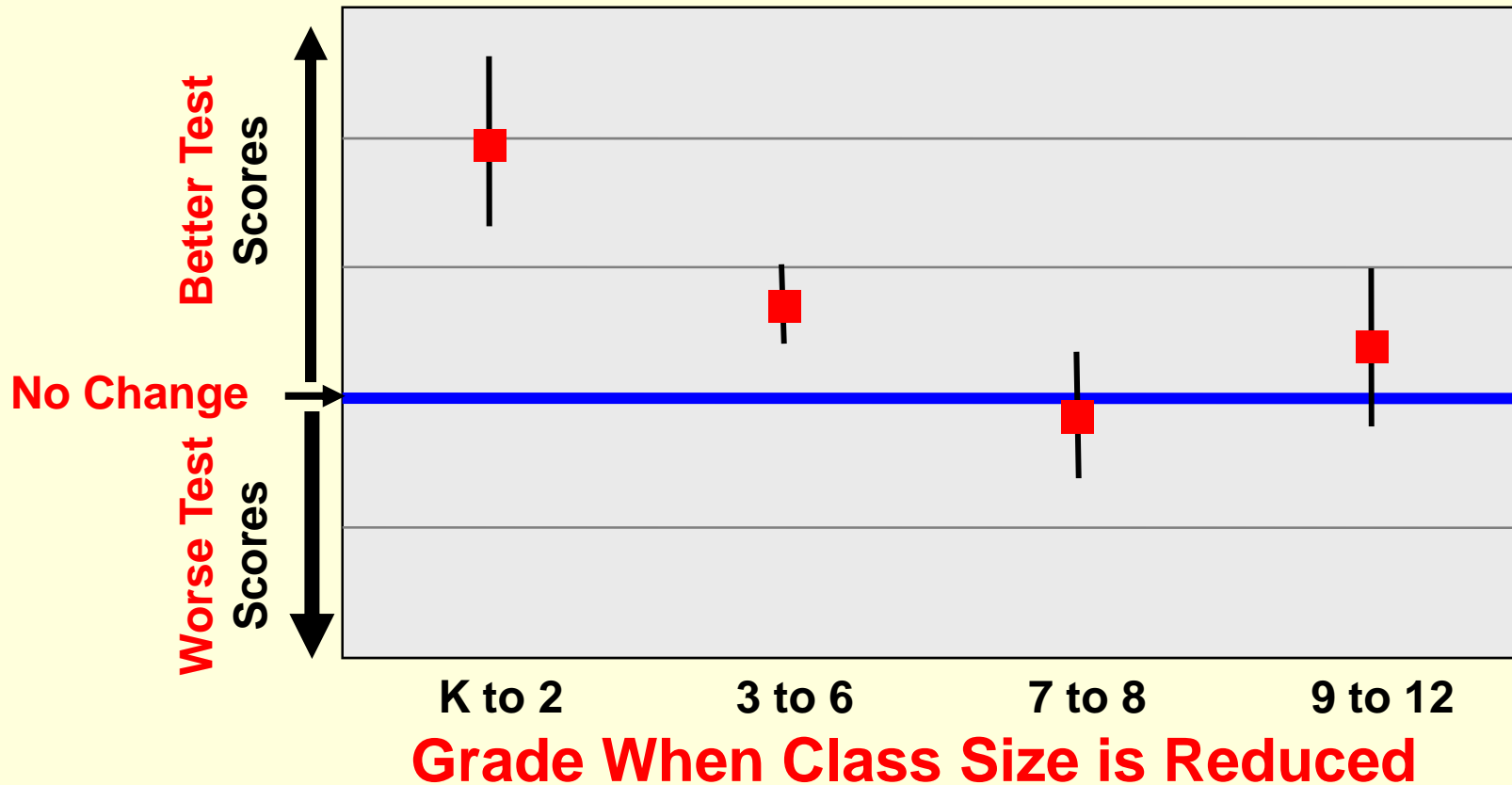


* Effect Size Metric: the change in the standard deviation of test scores, on standardized achievement tests.

Does Reducing Class Size Improve Test Scores?

Multivariate results

The Change in Test Scores Per Class Size Reduction*



* Effect Size Metric: the change in the standard deviation of test scores on standardized tests. Boxes are the average effects; vertical lines are 95% confidence intervals.

Cost-Benefit: Class Size Effects

1. Do Class Size Reductions Boost Test Scores?

- ✓ **The results are mixed, they vary by grade level:**
 - **Yes, in K through grade 2.**
 - **Yes, (but less so) in grades 3 through 6.**
 - **Apparently not in middle and high school.
(more research needed).**

2. What are the economics?

- ✓ **A one-unit drop in class size costs about \$220 per student per year (operating and amortized capital costs).**
- ✓ **For K-2, the return on investment (ROI) is 8.3% (range 5.7 to 11%). This is equal to \$2.79 in benefits per dollar of cost.**
- ✓ **For grades 3 through 6, the ROI is 6%.**
- ✓ **For middle and high school, return is negative.**

3. Tentative Finding: Low-Income Students Benefit More from Reductions in Class Size.

Other K–12 Topics Being Analyzed as Part of Washington's K–12 Study

- ✓ **Factors in Current Salary Schedule**
 - Years of experience
 - Graduate degrees
 - Professional development
- ✓ **National Board Certification**
- ✓ **Wage Levels on Recruitment and Retention**
- ✓ **Pay for Performance, Knowledge, Skills**
- ✓ **Extended Learning (school year length & intensity)**
- ✓ **Mentoring and Tutoring**
- ✓ **Teacher Aides**
- ✓ **English Language Learner Programs**
- ✓ **Others**

Our "Consumer Reports" Lists

1. What Works?
2. What Doesn't?
3. What Are the Benefits & Costs?

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Exhibit 4
Reducing Crime With Evidence-Based Options: What Works, and Benefits & Costs

Washington State Institute for Public Policy Estimates as of October, 2006	Effect on Crime Outcomes Percent change in crime outcomes, & the number of evidence-based studies on which the estimate is based (in parentheses) (1)	Benefits and Costs (Per Participant, Net Present Value, 2006 Dollars)			
		Benefits to Crime Victims (of the reduction in crime) (2)	Benefits to Taxpayers (of the reduction in crime) (3)	Costs (marginal program cost, compared to the cost of alternative) (4)	Benefits (total) Minus Costs (per participant) (5)
Programs for People in the Adult Offender System					
Vocational education in prison	-9.0% (4)	\$8,114	\$6,806	\$1,182	\$13,738
Intensive supervision: treatment-oriented programs	-16.7% (11)	\$3,318	\$3,369	\$7,124	\$11,563
General education in prison (basic education or post-secondary)	-7.0% (17)	\$6,325	\$5,306	\$962	\$10,669
Cognitive-behavioral therapy in prison or community	-6.3% (25)	\$5,658	\$4,746	\$105	\$10,299
Drug treatment in community	-9.3% (6)	\$5,133	\$5,495	\$574	\$10,054
Correctional industries in prison	-5.9% (7)	\$3,560	\$4,496	\$417	\$9,417
Drug treatment in prison (therapeutic communities or outpatient)	-5.7% (20)	\$5,133	\$4,306	\$1,604	\$7,835
Adult drug courts	-8.0% (57)	\$4,395	\$4,705	\$4,333	\$4,767
Employment and job training in the community	-4.3% (16)	\$2,373	\$2,386	\$400	\$4,359
Electronic monitoring to offset jail time	0% (9)	\$0	\$0	\$870	\$870
Sex offender treatment in prison with aftercare	-7.0% (6)	\$6,442	\$2,885	\$12,585	-\$3,258
Intensive supervision: surveillance-oriented programs	0% (23)	\$0	\$0	\$3,747	-\$3,747
Washington's Dangerously Mentally Ill Offender program	-20.0% (1)	\$18,020	\$15,116	n/e	n/e
Drug treatment in jail	-4.5% (1)	\$2,481	\$0	\$2,656	n/e
Adult boot camps	0% (22)	\$0	\$0	\$0	n/e
Domestic violence education/cognitive-behavioral treatment	0% (9)	\$0	\$0	n/e	n/e
Jail diversion for mentally ill offenders	0% (11)	\$0	\$0	n/e	n/e
Life Skills education programs for adults	0% (4)	\$0	\$0	n/e	n/e
Programs for Youth in the Juvenile Offender System					
Multidimensional Treatment Foster Care (v. regular group care)	-22.0% (3)	\$51,828	\$32,915	\$6,945	\$77,798
Adolescent Diversion Project (for lower risk offenders)	-19.9% (6)	\$24,328	\$18,208	\$1,913	\$40,623
Family Integrated Transitions	-13.0% (1)	\$30,708	\$19,502	\$9,665	\$40,545
Functional Family Therapy on probation	-15.9% (7)	\$19,529	\$14,817	\$2,325	\$31,821
Multisystemic Therapy	-10.5% (10)	\$12,855	\$9,622	\$4,264	\$18,213
Aggression Replacement Training	-7.3% (4)	\$8,897	\$6,659	\$897	\$14,660
Teen courts	-11.1% (5)	\$5,907	\$4,238	\$936	\$9,208
Juvenile boot camp to offset institution time	0% (8)	\$0	\$0	-\$8,077	\$8,077
Sex offender cognitive-behavioral treatment	-10.2% (5)	\$32,515	\$8,377	\$33,064	\$7,829
Restorative justice for low-risk offenders	-8.7% (21)	\$4,628	\$3,320	\$880	\$7,067
Interagency coordination programs	-2.5% (15)	\$3,084	\$2,308	\$205	\$5,186
Juvenile drug courts	-3.2% (2)	\$4,232	\$3,167	\$2,777	\$4,622
Regular surveillance-oriented parole (v. no parole supervision)	0% (2)	\$0	\$0	\$1,201	-\$1,201
Juvenile intensive probation supervision programs	0% (3)	\$0	\$0	\$1,598	-\$1,598
Juvenile wilderness challenge	0% (9)	\$0	\$0	\$3,085	-\$3,085
Juvenile intensive parole supervision	0% (8)	\$0	\$0	\$5,460	-\$5,460
Scared Straight	+6.8% (10)	-\$8,355	-\$6,253	\$58	-\$14,667
Counseling/psychotherapy for juvenile offenders	-18.9% (6)	\$23,126	\$17,309	n/e	n/e
Juvenile education programs	-17.5% (3)	\$41,181	\$26,153	n/e	n/e
Other family-based therapy programs	-12.2% (12)	\$15,006	\$11,231	n/e	n/e
Team Child	-10.9% (2)	\$5,759	\$4,131	n/e	n/e
Juvenile behavior modification	-8.2% (4)	\$19,271	\$12,238	n/e	n/e
Life skills education programs for juvenile offenders	-2.7% (3)	\$6,441	\$4,091	n/e	n/e
Diversion progrs. with services (v. regular juvenile court)	-2.7% (20)	\$1,441	\$1,034	n/e	n/e
Juvenile cognitive-behavioral treatment	-2.5% (8)	\$3,123	\$2,337	n/e	n/e
Court supervision vs. simple release without services	0% (8)	\$0	\$0	n/e	n/e
Diversion programs with services (v. simple release)	0% (7)	\$0	\$0	n/e	n/e
Juvenile intensive probation (as alternative to incarceration)	0% (5)	\$0	\$0	n/e	n/e
Guided Group Interaction	0% (4)	\$0	\$0	n/e	n/e
Prevention Programs (crime reduction effects only)					
Nurse Family Partnership-Mothers	-56.2% (1)	\$11,531	\$8,161	\$5,409	\$14,283
Nurse Family Partnership-Children	-16.4% (1)	\$8,632	\$4,922	\$733	\$12,822
Pre-K education for low income 3 & 4 year olds	-14.2% (1)	\$8,145	\$4,644	\$593	\$12,186
Seattle Social Development Project	-18.6% (1)	\$1,605	\$4,341	n/e	n/e
High school graduation	-10.4% (1)	\$1,738	\$2,851	n/e	n/e
Guiding Good Choices	-9.1% (1)	\$570	\$2,092	n/e	n/e
Parent-Child Interaction Therapy	-3.7% (1)	\$268	\$784	n/e	n/e
Program types in need of additional research & development before we can conclude they do or do not reduce crime outcomes:					
Programs needing more research for people in the adult offender system					
Case management in the community for drug offenders	0% (13)				Comments: Findings are mixed for this broad grouping of programs.
COSA (Faith-based supervision of sex offenders)	-22.3% (1)				Too few evaluations to date.
Day fines (compared to standard probation)	0% (1)				Too few evaluations to date.
Domestic violence courts	0% (2)				Too few evaluations to date.
Faith-based programs	0% (5)				Too few evaluations to date.
Intensive supervision of sex offenders in the community	0% (4)				Findings are mixed for this broad grouping of programs.
Medical treatment of sex offenders	-21.4% (1)				Too few evaluations to date.
Mixed treatment of sex offenders in the community	0% (2)				Too few evaluations to date.
Regular parole supervision vs. no parole supervision	0% (1)				Too few evaluations to date.
Restorative justice programs for lower risk adult offenders	0% (6)				Findings are mixed for this broad grouping of programs.
Therapeutic community programs for mentally ill offenders	-20.8% (2)				Too few evaluations to date.
Work release programs (from prison)	-4.3% (4)				Too few recent evaluations.
Programs needing more research for youth in the juvenile offender system					
Dialectical Behavior Therapy	0% (1)				Too few evaluations to date.
Increased drug testing (on parole) vs. minimal drug testing	0% (1)				Too few evaluations to date.
Juvenile curfews	0% (1)				Too few evaluations to date.
Juvenile day reporting	0% (2)				Too few evaluations to date.
Juvenile jobs programs	0% (3)				Too few recent evaluations.
Juvenile therapeutic communities	0% (1)				Too few evaluations to date.
Mentoring in juvenile justice	0% (1)				Too few evaluations to date.

People Make Decisions, Studies Don't

1. Money Matters

- ✓ Balanced budget requirement forces choices. → C/B
- ✓ Two aisles, one theme: "Wise use of taxpayer's dollar."

2. The Cost Benefit Messenger Matters

- ✓ Local, long-term, honest broker. → "Consumer Reports"
- ✓ Importance of consistent, comparative costs & benefits.
- ✓ Techniques: meta-analysis (can't play favorites); expected value & risk analysis of giving the wrong advice.

3. "Big Picture" Tangible Outcomes Matter

- ✓ "I want to fight crime and lower taxpayer costs" more than "What is the ROI on drug courts?"
- ✓ "I want to improve high school graduation rates and not spend too much more money" more than "What is the ROI on early childhood education or class size reductions?"



Thank You!

Mount Rainier