

Open Educational Resources for Public Higher Ed in Colorado

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Colorado Commission on Higher Education, 7 December 2017

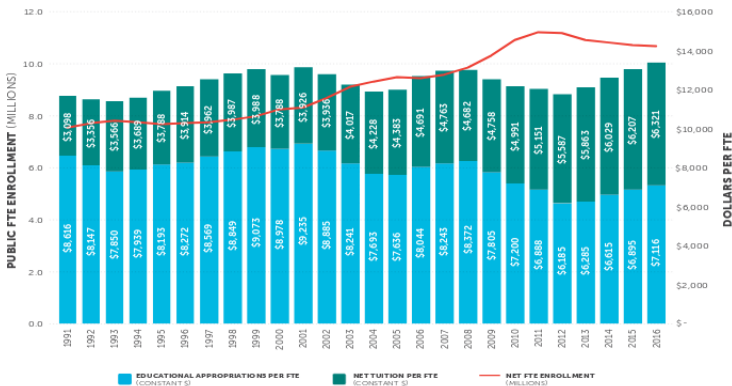


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These slides can be found at <https://poritz.net/j/share/OER4CCHE>

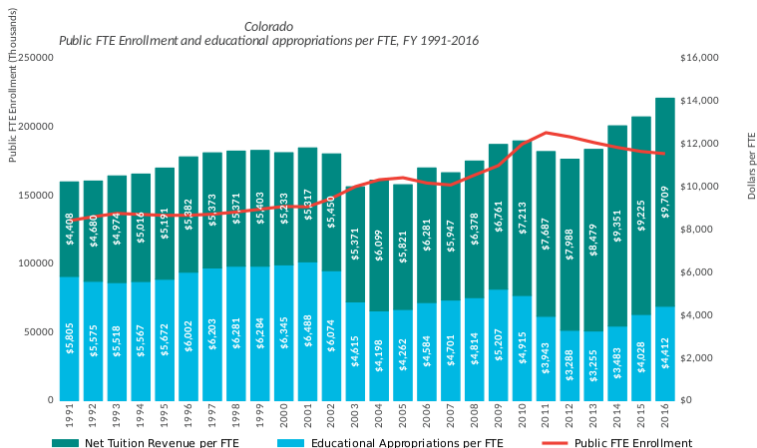
Why OER? Financial Issues 1, Across the US

PUBLIC FTE ENROLLMENT AND EDUCATIONAL APPROPRIATIONS PER FTE,
U.S., FY 1991-2016



SOURCE: State Higher Education Executive Officers

Why OER? Financial Issues 2, In Colorado

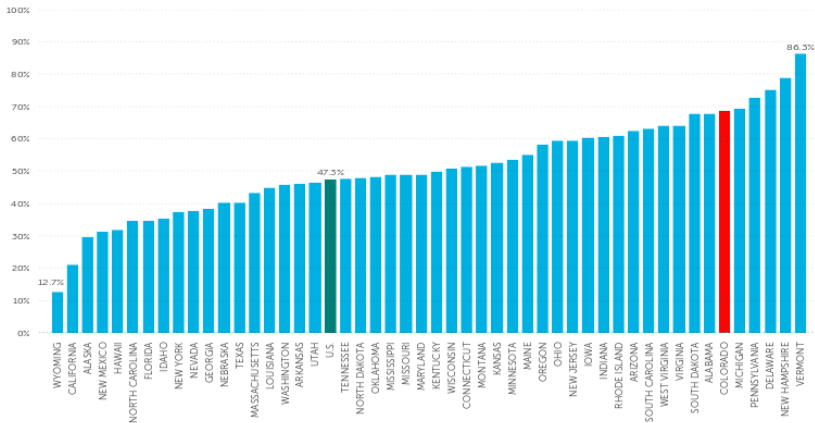


NOTES: Data adjusted for inflation using the Higher Education Cost Adjustment (HECA). Full-time equivalent (FTE) enrollment equates student credit hours to full-time, academic year students, but excludes medical students. Educational appropriations are a measure of state and local support available for public higher education operating expenses including ARRA funds, and exclude appropriations for independent institutions, financial aid for students attending independent institutions, research, hospitals, and medical education. Net tuition revenue is calculated by taking the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees. Net tuition revenue used for capital debt service is included in the net tuition revenue figures above.

SOURCE: State Higher Education Executive Officers

Why OER? Financial Issues 3, National Comparison

NET TUITION AS A PERCENT OF TOTAL EDUCATIONAL REVENUE, FY 2016



SOURCE: State Higher Education Executive Officers

Why OER? Financial Issues 4, Student Debt

Total student debt in the U.S. is around **\$1.45 trillion** – which is approximately \$620 billion more than total credit card debt.

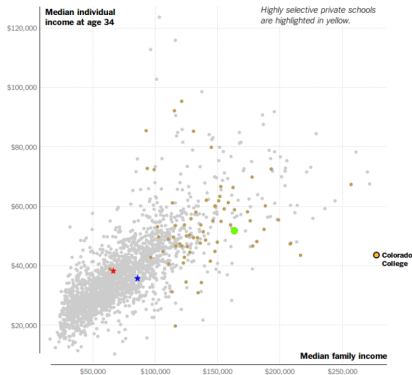
Some examples in Colorado:

Institution	Avg Debt, 2014 Grads
CSU-Pueblo	\$29,914
MSU, Denver	\$28,468
Colorado College	\$19,756
University of Denver	\$29,050
All private[non-profit] and public 4-years in CO	\$25,064

2014 is most recent complete data available

Source: <https://ticas.org/posd/state-state-data-2015#>

Why OER? Financial Issues 5.5, What's Up with Colorado College?



Source: *The New York Times*, built on data from *The Equality of Opportunity Project*

Interactive tool at <https://www.nytimes.com/interactive/projects/college-mobility>

In case you're curious, ★ is CSU-Pueblo, ★ is MSU, Denver, and ● is DU.

Why OER? Financial Issues 5, Categories of Costs to Students

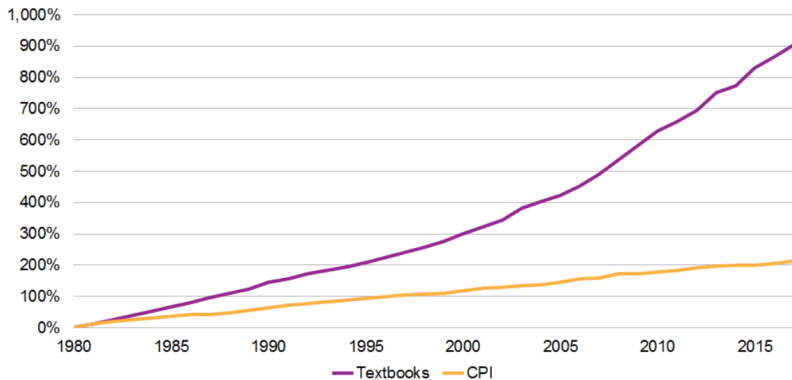
Costs students bear include

- tuition and fees
- room and board
- personal expenses
- transportation
- books, software, *etc.*

The last one is a place we might be able to make a difference – in fact, thinking just about textbooks, it is one which currently hurts students' finances immensely.

Why OER? Financial Issues 6, Textbook Costs 1

Increase in textbook costs since 1980

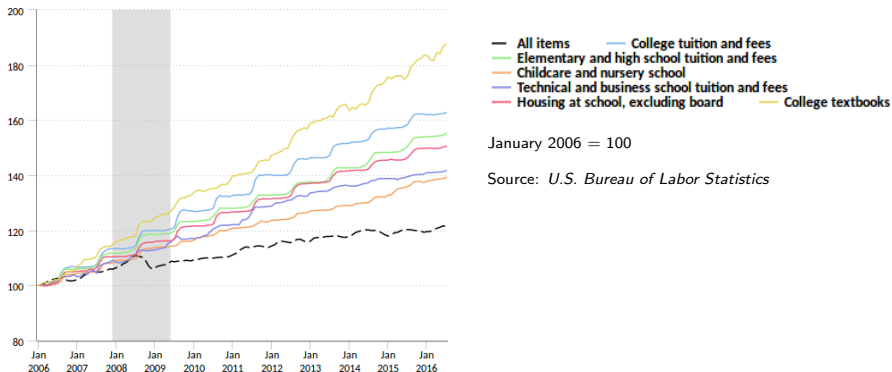


Source: U.S. Bureau of Labor Statistics

Textbook costs are high even compared to other educational expenses.

Why OER? Financial Issues 7, Textbook Costs 2

Consumer price indices for tuition and school-related items, not seasonally adjusted, January 2006-July 2016



<https://www.bls.gov/opub/ted/2016/college-tuition-and-fees-increase-63-percent-since-january-2006.htm>

Why OER? Financial Issues 8, Textbook Costs 3

Textbooks are a perfect example of a **market failure** in that the consumer who pays the price for the product is not the person who chooses which product to purchase!

Textbook choice is in the hands of the individual professor (or, sometimes, a group of professors when a course will be taught in several sections) – this is actually an important part of the faculty's academic freedom in the classroom and we should be very cautious about stepping on those toes.

Commercial publishers have an incentive to attract professors to their textbooks, with free instructor's editions, test banks, homework answer books, etc., but apparently little incentive to make prices increase in a reasonable way.

E.g., while there have probably been a number of improvements in the understanding of calculus and how to teach it since the first textbook [by Maria Gaetana Agnesi] was published in 1748, it is hard to believe the improvements in exposition since 1980 truly warrant a 900% increase in price.

Why OER? Scholarly Production Wants to Be Free 1

Faculty are not used to thinking of their work as being in a marketplace¹.

We are used to signing over our copyrights on research papers to the journal publishers, who in turn make large profits on subscriptions which they in no way pass on to the article authors.

Scholars do tend to keep the copyrights on their monographs and textbooks, although usually tied up in restrictive contracts.

It is as rare as winning the lottery (or getting struck by lightning) that a book will sell enough to make some serious money for the author.

Scholars mostly seek **impact**, which comes when others use a work in new ways – clearly without first asking permission. We **hope** someone else will take our ideas, with attribution!, and do something amazing.

In this sense, scholarly production wants to be **free, as in speech**, which probably also makes it **free, as in beer**².

¹ other than “the marketplace of ideas”

² witticism due to Richard M. Stallman

Why OER? Scholarly Production Wants to Be Free 2

If a professor wants to assign an expensive textbook in a class (and has a good reason to do so) or wants to publish a textbook commercially with the hope of writing the runaway bestseller on economic history, then by academic freedom and scholarly tradition, we should not stand in the way.

But usually, many faculty will be happy to contribute their textbooks, problem banks, software, and other writings to a global intellectual commons, and many more will be happy to assign those **Open Educational Resources [OER]** in their classes.

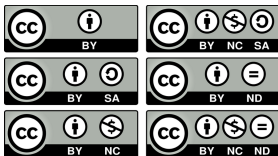
This serves the dual purpose of saving students a ton of money and also allowing every individual instructor to customize or improve the texts they use in their classes – unlike traditional, commercial products which are frozen in stone by copyright law, with all their errors or mismatches to intended local use, until the next edition comes out. In the OER world we often say: **Come for the price, stay for the quality.**

What Are OER? A Definition, and the Creative Commons

Open Educational Resources are:³

“...teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others.”

We see here indications [“public domain,” “intellectual property license”] that legal issues around copyright should, for once, not be completely ignored. There is now a mechanism to do this, using the **Creative Commons Licenses**:⁴



³ in the definition used by the William and Flora Hewlett Foundation, a major funder for OER work

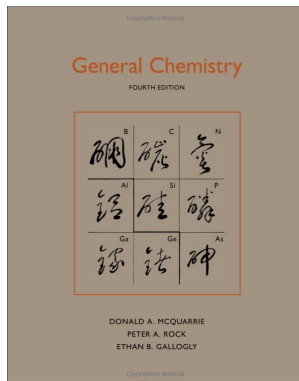
⁴ see <https://creativecommons.org>

Where Are OER? Some Are In Repositories

Scholars around the world are constantly producing a large variety of OER, which can be found (or lost) in places like:

- web pages
 - for some individual's personal work, e.g.,
<http://www.poritz.net/jonathan/share/>
 - for a particular OER e.g., <http://www.introtoie.com/>
- repositories, including those run by
 - ⇒ universities, e.g., <https://www.csupueblo.edu/library/services/faculty-support/scholarship.html>
 - ⇒ disciplinary organizations, e.g., <https://aimath.org/textbooks/>
 - ⇒ OER-promoting NGOs, e.g., <https://openstax.org/>,
<https://rebus.community/>,
<https://open.umn.edu/opentextbooks/>, etc.
 - ⇒ OER-promoting state offices, e.g.,
<https://www.floridashines.org/orange-grove>

Where Are OER? What If They Were in Classrooms? 1



F2016 at CSUP:

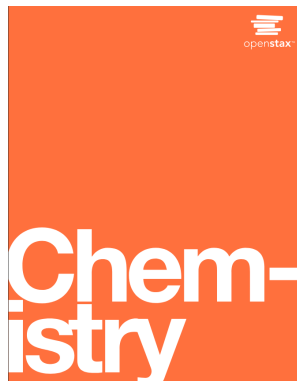
Chem 121

[required text]

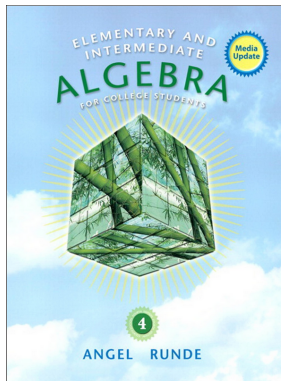
$$\leftarrow \$108 \times 160 \text{ students} \\ = \$17,280$$

[OpenStax alternative]

\$0 →



Where Are OER? What If They Were in Classrooms? 2



F2016 at CSUP:

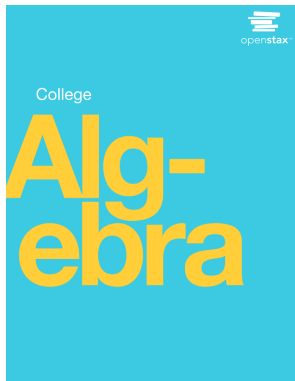
Math 121

[required text]

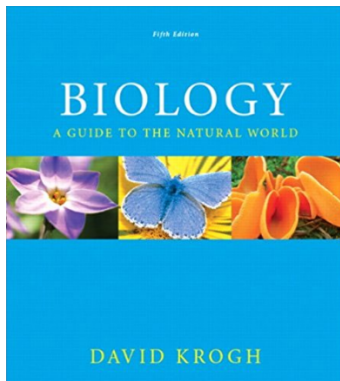
$$\leftarrow \$260 \times 149 \text{ students} \\ = \$38,777$$

[OpenStax alternative]

\$0 $\rightarrow$



Where Are OER? What If They Were in Classrooms? 3



F2016 at CSUP:

Bio 100

[required text]

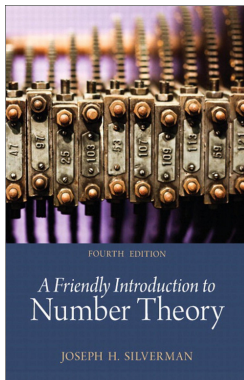
$$\begin{aligned} &\leftarrow \$222 \times 142 \text{ students} \\ &= \$31,594 \end{aligned}$$

[OpenStax alternative]

\$0 →



Where Are OER? What If They Were in Classrooms? 4



S2015 at CSUP:

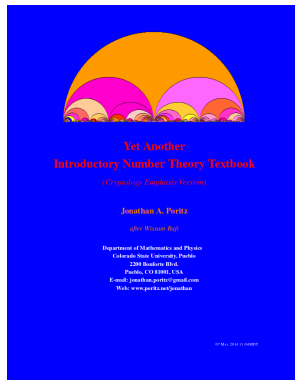
Math 319

[required text]

← $\$109 \times 10 \text{ students}$
 $= \$1,090$

[local alternative]

$\$0 \rightarrow$



How Good Are OER? Perception, Reviews, and the ADA

The short answer is **As good as commercial textbooks, if not better.**

Some details:

- Studies show no decrease in student performance with OER.
- Studies show students enroll in more credits and complete more quickly when they have access to courses that use OER.
- Faculty perceptions of OER are influenced by a culture of “Free? Don’t you get what you pay for?”
- Some repositories have peer reviews of their texts, which are very useful.
- There is a lag in disability accommodation in some OER, which is decreasing.

OER Council Members

Council Members

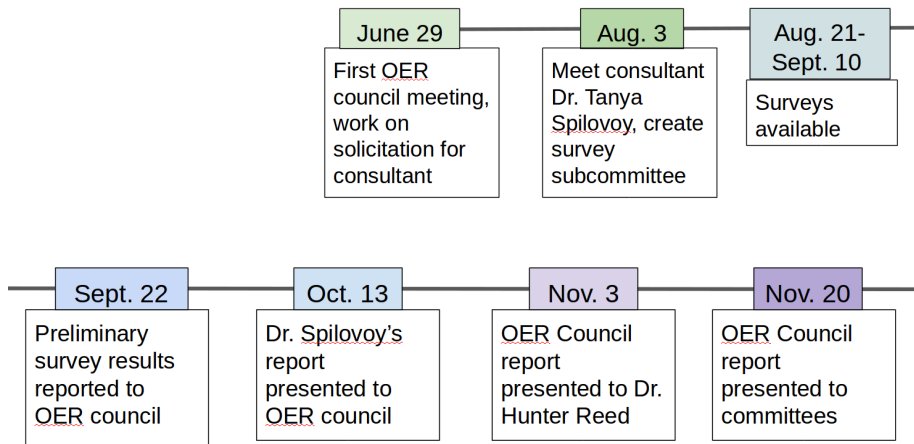


OER Council Activities per **Senate Bill 17-258**

- Work with a contracted entity to review and evaluate the extent to which each public institution of higher education is using OER
- Solicit input concerning the use of OER from a variety of stakeholders
- Recommend initiatives for increasing the use of OER that are likely to result in cost savings and other educational benefits for students enrolled in public institutions of higher education
 - Report due to Joint Budget and Education Committees by November 20th

OER Council Timeline

Timeline

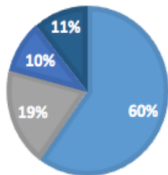


Three Surveys

1. Solicitation of Individual Input OER Survey

- Broadly distributed
- 3009 responses

■ College student ■ Faculty
■ College parent ■ Other



2. Colorado Public Institutions of Higher Education OER Survey

- Sent to Chief Academic Officers of institutions of public higher education
- 27/31 responses

3. Colorado Public Systems of Higher Education OER Survey

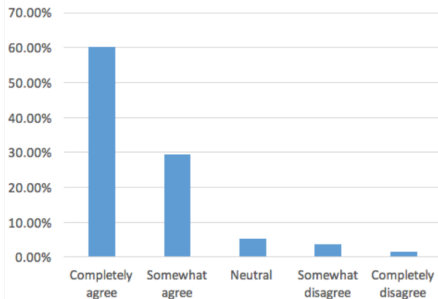
- CU System
- CCCS/CCCOOnline

Survey Results Concern About Affordability 1

Broad concern about affordability of higher education

Individual Input Survey

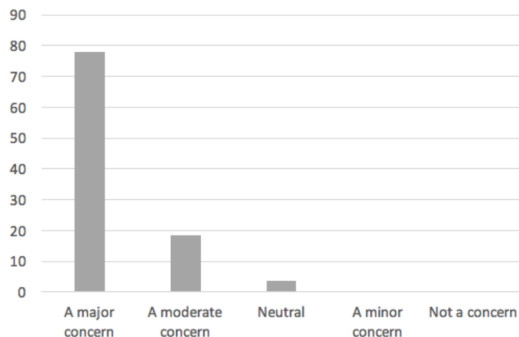
Indicate your level of agreement with the following statement:
“Textbook costs have become a serious affordability barrier to students attending Colorado’s colleges and universities.”



Broad concern about affordability of higher education

Institutional OER Survey

How important is reducing the cost students pay for higher education to your institution's board, president and senior administrators?

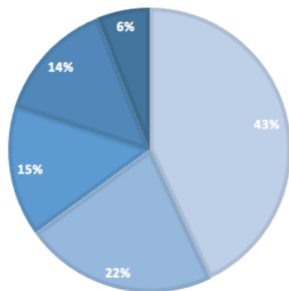


Survey Results Low Awareness of OER 1

Awareness of OER is Low

Individual Input OER Survey

Generally, how aware are you of Open Educational Resources (OER)?



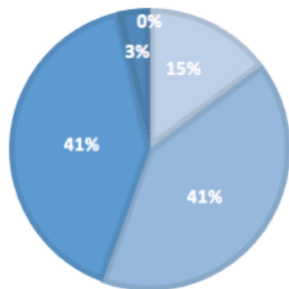
- Not aware of OER
- Heard of OER but don't know much
- Somewhat aware of OER, not sure about use
- Aware of OER and use
- Very aware of OER and use

Survey Results Low Awareness of OER 2

Low Awareness of Open Textbooks on Campuses

Institutional OER Survey

Generally, how aware are the majority of faculty, staff and administrators at your institution of Open Textbooks?



- Not aware of open textbooks (OT)
- Heard of OT but don't know much
- Somewhat aware of OT, not sure about use
- Aware of open textbooks and use
- Very aware of open textbooks and use

Obstacles to OER Adoption

- Awareness about OER
- Need for faculty training
- Resources
 - Time needed to locate and evaluate resources
 - Funding to increase awareness and encourage OER adoption
 - Lack of materials
 - Specific subjects
 - Ancillary materials
- Need for organized structure and campus champions
 - Sharing of OER experience

OER Council Recommendations

Create a Colorado OER Initiative (COER)

1. Scale the use of OER through targeted grant funding, including:
 - **Institutional grants** to campuses for establishing an OER task force, setting their own OER priorities and disbursing grants
 - **Individual or small-group grants** for faculty and staff, especially at institutions without an institutional grant or OER initiative, to support OER creation, adoption and promotion.

OER Council Recommendations

2. Ensure knowledge-sharing, professional development and community-building and sustaining opportunities such as

- Regular **virtual meetings** of selected OER interest groups
- An **annual OER conference** of and for stakeholders from around the state, with keynotes and workshops on specific practical issues.

OER Council Recommendations

3. Establish enabling structure and staffing at the state level with
 - A standing **State OER Council** to set statewide policy, oversee grant programs and act as conference organizing committee, among other duties
 - A **full-time staff member in the Colorado Department of Higher Education** to support the above activities and to maintain information resources such as websites and collateral materials
 - An **annual report** to the Legislature describing COER activities and reporting on various metrics of success.

OER Council Recommended Budget

Activity	FY 19	FY20	FY21	Total
Targeted Grants ⁷	\$450,000	\$900,000	\$900,000	\$2,250,000
CDHE Support ⁸	\$90,000	\$91,350	\$92,720	\$274,070
Communications Development, including website	\$35,000	\$20,000	\$20,000	\$75,000
State OER Council ⁹	\$5,000	\$3,000	\$3,000	\$11,000
Annual OER Professional Development Event	\$40,000	\$40,000	\$40,000	\$120,000
Workshop/ Open Course ¹⁰	\$40,000	\$5,000	\$5,000	\$50,000
Recognition ¹¹	\$0	\$20,000	\$20,000	\$40,000
TOTALS	\$660,000	\$1,079,350	\$1,080,720	\$2,820,070

Estimated savings to students and parents

- Based on outcomes in other states, we estimated a four-times return on investment from grant funds each year
 - \$500,000 in funding could yield \$2,000,000 in savings
- Once a course is switched to using OER resources it is likely to stay that way, allowing savings to continue into the future
- We estimate a \$16.2 million dollar savings after 3 years for the program from \$2.2 million spent on grants (and \$2.82 million spent in total)

Illustration of savings

Year 1

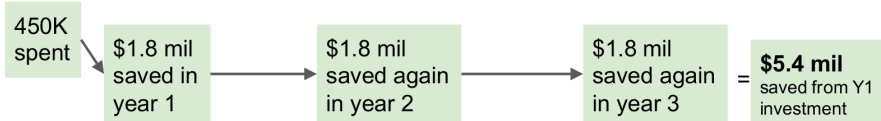
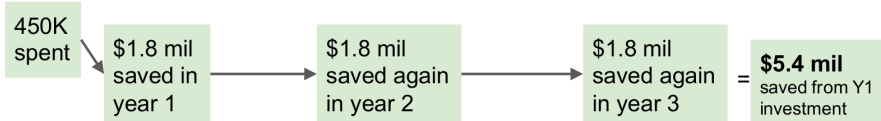


Illustration of savings

Year 1



Year 2

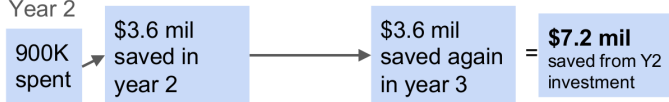
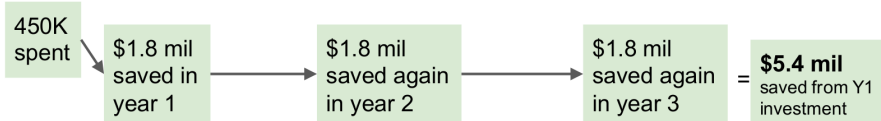
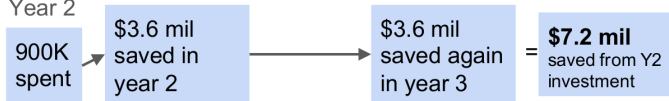


Illustration of savings

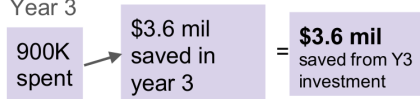
Year 1



Year 2



Year 3



OER Council Savings Timeline, Totals

Illustration of savings

Year 1

450K
spent

\$1.8 mil
saved in
year 1

\$1.8 mil
saved again
in year 2

\$1.8 mil
saved again
in year 3

= **\$5.4 mil**
saved from Y1
investment

$\$5.4 + \$7.2 + \$3.6 = \$16.2$ mil
in savings after 3 years

Year 2

900K
spent

\$3.6 mil
saved in
year 2

\$3.6 mil
saved again
in year 3

= **\$7.2 mil**
saved from Y2
investment

Year 3

900K
spent

\$3.6 mil
saved in
year 3

= **\$3.6 mil**
saved from Y3
investment

OER Council Thanks

Thanks

Legislature and Governor Hickenlooper for passage of SB-258

Chief Legislative Analyst Amanda Bickel

Dr. Tanya Spilovoy  **wcet**



- Dr. Kim Hunter Reed
- Mr. Carl Einhaus
- Mr. Spencer Ellis
- Dr. Tim Flanagan



Questions?

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