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DATE: October 12, 2016
TO: Shay Mikalson, Superintendent, Bend-LaPine Public Schools
FROM: Andrew Dyke and Ryan Knapp
SUBJECT: BEND-LAPINE MEASURE 98 SIMULATION

Introduction

This memorandum displays outputs from our simulation of how Measure 98 funds could affect on-time graduation rates in Bend-LaPine Public Schools (BLPS). The district-level simulation model is based on information from a variety of sources, including recent enrollment and graduation rate data, an ECONorthwest estimate of the funds Measure 98 would make available to BLPS, research literature that identifies the impact on high school graduation rates of programs similar to those identified in Measure 98, and descriptive information from district staff about current and planned program offerings.

Simulation inputs and outputs

- Figure 1 displays the top-level simulation inputs that can be adjusted to compare different scenarios:
    - Annual Measure 98 funding allocation and distribution across spending areas
    - For each of three program areas (dropout prevention, college credit, and CTE), the assumed share of affected students that would not otherwise have received the relevant program services
- Figure 2 and Figure 3 display the simulated allocation of funds for 2017-18 to 2020-21.
- Figure 4 and Figure 5 are output charts that change based on the selected program inputs (see Figure 1).

Notes about the simulation

- The data available to inform the simulation are quite limited. Outputs are best suited as a guide for the magnitude of potential impacts on high school graduation.
- Total annual funding allocation: ECONorthwest estimates based on statewide funding estimate from Oregon's Financial Estimate Committee and district-level ADMw data from Oregon Department of Education.
- Allocation of Measure 98 funds across spending areas is our translation of information from district staff. The scenario displayed below assumes that district administrative spending is the maximum allowed under Measure 98.
- Startup and implementation costs could be significant. We have no concrete information on which to identify dollar amounts, although BLPS staff indicated that capital costs

related to upgrading the district's CTE programs would likely be the most important component of these costs.

  - As a starting point for discussion, the simulation assumes that 35 percent of 2017-18 Measure 98 funds are allocated to startup and implementation.
  - We assume that 90 percent of the assumed startup/implementation costs are for CTE-related capital investments. We assume that the remainder is allocated in proportion to total Measure 98 fund allocation across program types.
  - We assume that these costs decline by one third each year. The model reallocates the difference to Measure 98 services for students.

- The assumed shares of funds serving "new" students reflect assumptions about how many students served using Measure 98 funds would not otherwise have participated in each program to an extent that would significantly affect graduation outcomes. The simulation assumes status quo graduation rates for the corresponding "not new" share. This doesn't mean the funds aren't used effectively. Alternatively, Measure 98 funds could, in rare cases, backfill funding for a relevant program that anticipates losing grant funding, also suggesting a smaller assumed share of "new" students.
- The allocation of funds across program types, assumed per-student marginal costs, and the share of affected students identified as "new" determine the number of students to which we apply program graduation rate impacts.
- As a simplifying assumption, we assume that CTE would affect the probability of graduating for at most half of a 9th grade cohort. We make a similar assumption for accelerated college credit. We assume that dropout prevention will increase the probability of graduation for about one quarter of each 9th grade cohort. This is a little higher than the share of 9th grade students identified as at-risk, but similar to the share of recent BLPS cohorts that did not graduate high school in four years.
- Due to the constraints imposed by these assumptions, not all increases in funding increase the graduation rate in the simulation output. This situation could arise if, for example, the district already has a robust CTE program for which additional resources would improve the program without necessarily increasing graduation rates dramatically (e.g., upgrading facilities and offerings to better align with local labor force needs). Research has demonstrated that high-quality CTE can also improve participants' employment prospects, and there are other short- and long-term benefits that additional CTE funding could provide.

Figure 1. Measure 98 simulation inputs

School district:	Bend-LaPine	
Estimated annual funding:	$4,238,118	
Allocation of funding in first year:	Share of total	
Dropout prevention	20%	$847,624
College credit	10%	$423,812
Career technical education	30%	$1,271,435
District administration	5%	$211,906
Startup/implementation costs*	35%	$1,483,341
Total:	100%	

Share of Measure 98 funds serving "new" students	
Dropout prevention	75%
College credit	25%
Career technical education	50%

*Startup/implementation costs assumed to decline by 33% per year.

Figure 2. Assumed funding allocation, 2017-18 to 2020-21

Year	Dropout prevention total	College credit	CTE	Administrative	Startup/ implementation	Total
2017-18	$ 847,624	$ 423,812	$ 1,271,435	$ 211,906	$ 1,483,341	$ 4,238,118
2018-19	$ 1,010,791	$ 505,396	$ 1,516,187	$ 211,906	$ 993,839	$ 4,238,118
2019-20	$ 1,134,240	$ 567,120	$ 1,701,361	$ 169,525	$ 665,872	$ 4,238,118
2020-21	$ 1,207,486	$ 603,743	$ 1,811,230	$ 169,525	$ 446,134	$ 4,238,118

Figure 3. Assumed startup and implementation costs by program, 2017-18 to 2020-21

Year	Dropout prevention total	College credit	CTE	Total startup/ implementation
2017-18	$ 98,889	$ 49,445	$ 1,335,007	$ 1,483,341
2018-19	$ 66,256	$ 33,128	$ 894,455	$ 993,839
2019-20	$ 44,391	$ 22,196	$ 599,285	$ 665,872
2020-21	$ 29,742	$ 14,871	$ 401,521	$ 446,134

Figure 4. Projected on-time graduation rate for school district, students eligible for free and reduced-price lunch

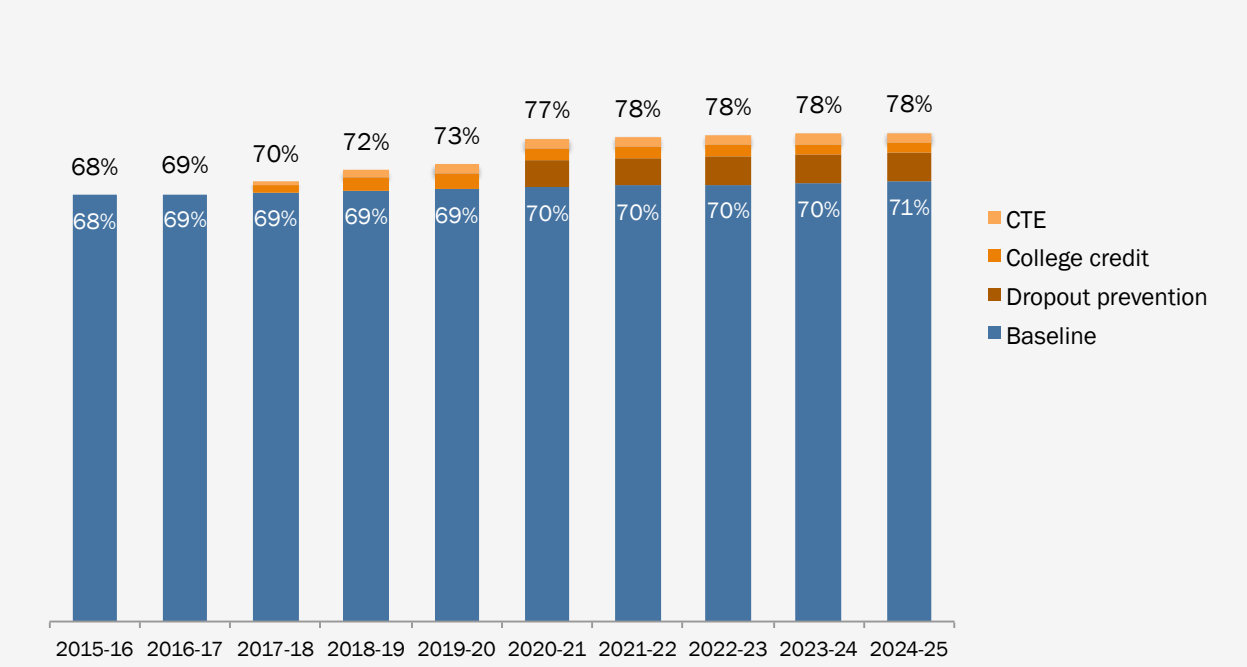

Figure 5. Projected on-time graduation rate for school district, all students