



# Southern Oregon Medical Workforce Center Economic Assessment for Public Funding

**ECON**orthwest  
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Prepared for Oregonians for Rural Health  
Final Results Summary  
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# Acknowledgements

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This presentation accompanies a detailed final report.

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# Medical Workforce Center Description

Oregonians for Rural Health is exploring the feasibility of developing a medical workforce center in Roseburg, Oregon to educate and train students to become healthcare providers.

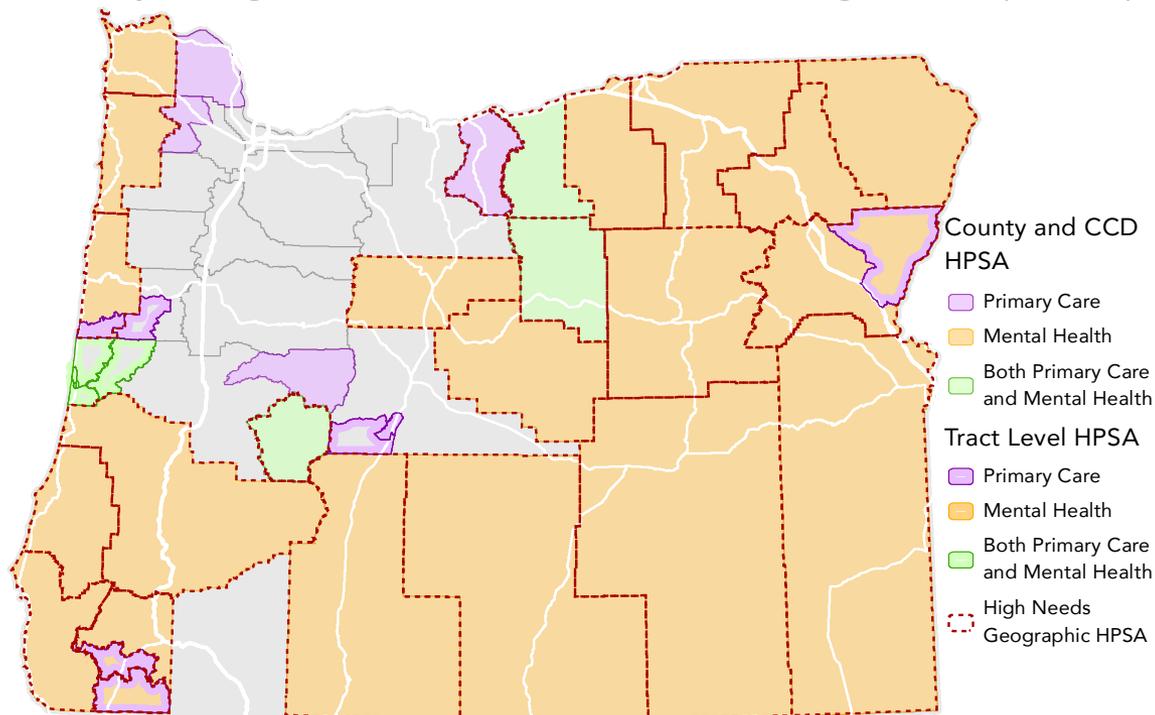
The Center will:

- Provide training for high-demand health care positions
- Offer affordable and accessible post-secondary medical education
- Serve as a pipeline of skilled allied and mental health providers
- Ensure ongoing access to local quality healthcare

Program		Cohort Size	Year Classes Begin				
			2020	2021	2022	2023	2024
Doctor of Psychology	PSY	4					
Bachelor of Science in Nursing	BSN	24					
Registered Nurse to Bachelors	RN to BSN	20					
Master of Social Work	MSW	15					
Bachelor of Social Work	BSW	15					
Doctor of Physical Therapy	PT	10					
Doctor of Medical Science	PA	20					
Doctor of Nursing Practice	DNP	12					

# Rural Oregon has a shortage of health professionals

## Federally Designated Health Professional Shortage Areas (HPSAs)

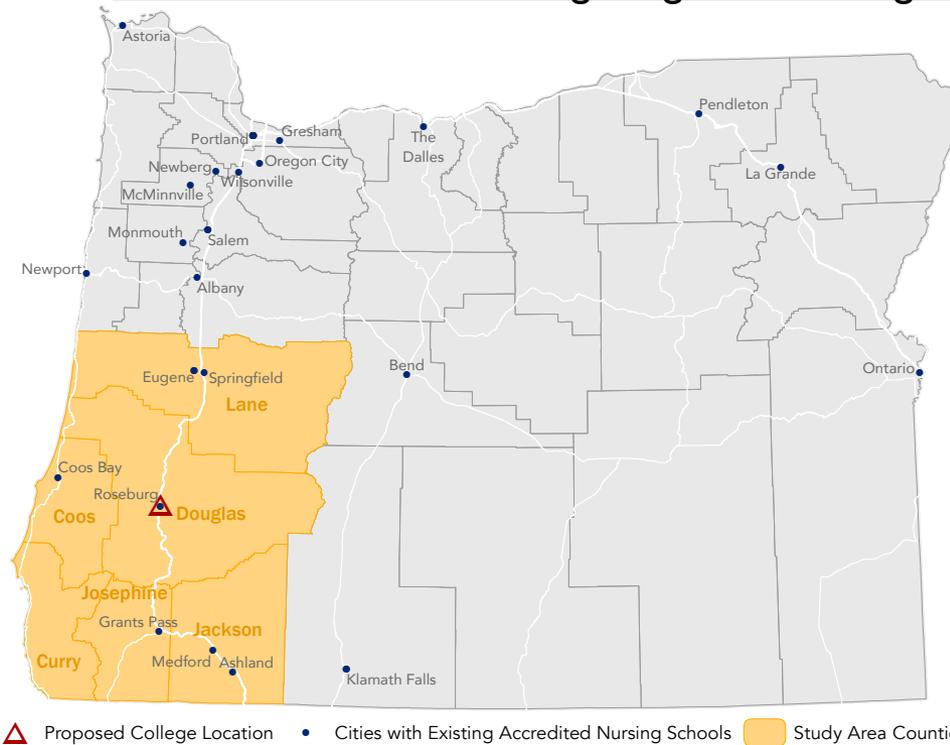


## Oregon Employment Department Projected Needs

Program	2017 Employment	2027 Employment	Total Openings	Openings Due to Growth	Openings Due to Attrition
Physician Assistant	1,299	1,807	1,329	508	821
Registered Nurse	37,353	43,600	26,635	6,247	20,388
Nurse Practitioner	1,762	2,376	1,608	614	994
Physical Therapist	3,052	3,885	2,222	833	1,389
Mental Health Counselor	3,158	3,715	4,068	557	3,511
MHSA Social Worker	2,304	2,684	2,861	380	2,481

# Rural Oregon has a shortage of training programs

## Health Professional Training Programs in Oregon



## Oregon Health Education Program Admissions

Program	Number of Schools	Admitted Students	Number of Applicants	Acceptance Rates
Physician Assistant	2	101	4,000	3%
Registered Nurse	23	1,740	7,876	22%
Nurse Practitioner	2	29	81	36%
Physical Therapist	2	94	1,645	6%
Mental Health Counselor	11	208	767	25%
MHSA Social Worker	4	343	810	35%

# Economic Assessment Objectives

## Public Economic Value Analysis

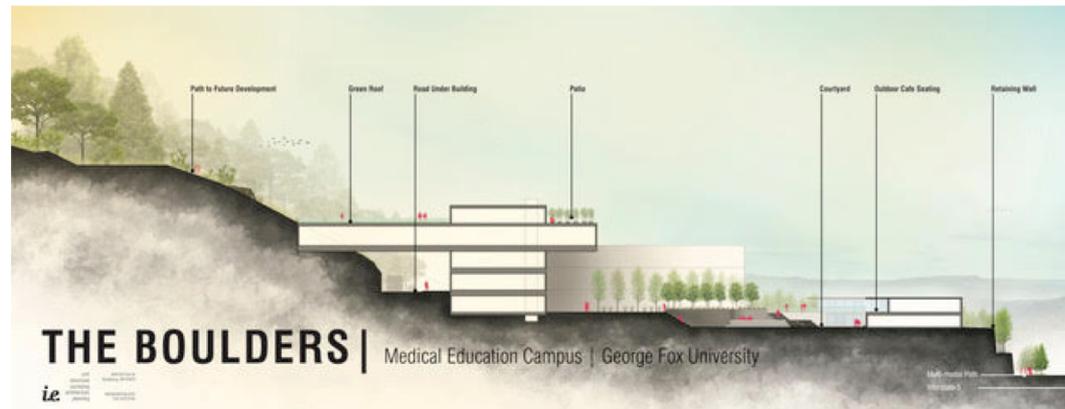
- What are the potential short-term and long-term economic benefits that the center would produce in the region?

## Financial Feasibility Analysis

- What are the expected financial returns of the center?

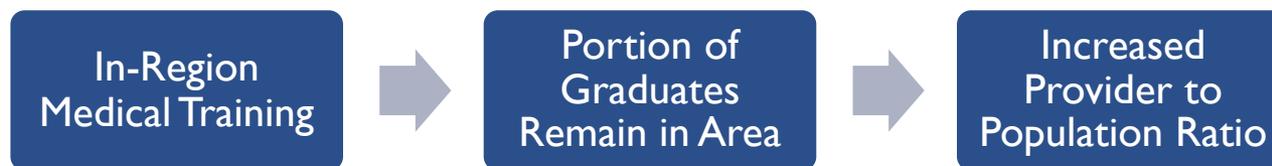
## Economic Impact Analysis

- What are the regional direct, indirect, and induced gross economic contributions of the construction and operation of the center?



## Mechanism of Action:

The Center will provide public benefits by increasing the number of nursing and allied health professionals in southern Oregon.



## Monetized benefits only include public benefits that:

- Accrue broadly to Oregon residents,
- Accrue directly from the graduates,
- Have been empirically measured in peer-reviewed research,
- Are conservatively estimated, and
- Can be used to evaluate the return on investment for public financing.

## Valuation Framework:

- 20 year time horizon.
- 7% discount rate.

# Economic Value Analysis – Results

<b>Summary of Monetized Public Benefits</b>	<b>Present Value</b>
Turnover Cost Savings	\$2,033,000
Reduction in Preventable Hospitalizations (NPs & PAs)	\$21,504,000
Reduction in Hospital Readmissions (SWs)	\$14,422,000
Workforce Development	\$119,000
<b>Total</b>	<b>\$38,078,000</b>

## **Other Non-Monetized Public Benefits**

Increased Clinical Productivity

Fewer Emergency Room Diversions

Reduced Travel/Wait Time for Specialized Services

Improved Veteran Health Care Access

Improved Community Mental Health Outcomes

# Economic Value Analysis - Details

## Turnover Cost Savings

- Replacing departing health professionals is costly and are borne by the healthcare system.
- Turnover costs include recruitment, training, and lower productivity of new hires.
- Oregon-born health professionals in the study area have a 26% lower turnover rate.

Public Benefits	Present Value
<b>Total Cost Savings</b>	<b>\$ 2,033,000</b>
<b>Non-local Costs</b>	<b>\$ 9,220,000</b>
<b>Local Costs</b>	<b>\$ 7,187,000</b>

Inputs	Value	Source
<b>Number of Graduates</b>	120	George Fox University Proposal
<b>Share that remain in area each year</b>	75.2%	Kovner C, S. Corcoran, C. Brewer. (2011).
<b>Local Turnover</b>	10.3%	ECONorthwest Analysis of American Community Survey Data
<b>Out of State Turnover</b>	14.0%	ECONorthwest Analysis of American Community Survey Data
<b>Share of Allied Health Graduates</b>	25%	George Fox University Proposal
<b>Share of Nursing Graduates</b>	75%	George Fox University Proposal
<b>Allied Health Turnover Cost</b>	\$ 13,303	Waldman, J. D., Kelly, F., Aurora, S., & Smith, H. L. (2004).
<b>Nursing Turnover Cost</b>	\$ 37,727	Waldman, J. D., Kelly, F., Aurora, S., & Smith, H. L. (2004).

Note: Although the Waldman et al (2004) study is 15 years old, it remains one of the more comprehensive estimates of turnover costs and is still regularly cited. Dollar values have been updated for inflation to 2019 and have been validated by the Oregon Center for Nursing.

# Economic Value Analysis - Details

## Reduction in Preventable Hospitalizations

**Public Benefits**

**Present Value**

**Total Cost Savings**

**\$ 21,504,000**

- Improved clinic staffing with Nurse Practitioners and Physician Assistants reduces unnecessary emergency room visits.
- Reduced unnecessary emergency room visits saves the healthcare system money and allocates resources more effectively.

Inputs	Value	Source
Number of NP & PA Graduates	32	George Fox University Proposal
Share of Graduates that remain in area each year	75.2%	Kovner C, S. Corcoran, C. Brewer. (2011).
Local Turnover	10.3%	ECONorthwest Analysis of American Community Survey Data
Unnecessary Hospitalizations	13.7% - 27.1%	Weinick, R., R. Burns, and A. Mehrotra. (2010).
Marginal Cost per Hospitalization	\$228 - \$460	Weinick, R., R. Burns, and A. Mehrotra. (2010).
Reduction in Unnecessary Hospitalizations	10%	Kuo, Y. N. Chen, J. Baillargeon, M. Raji, J. Goodwin. (2015).

# Economic Value Analysis - Details

## Reduction in Hospital Readmissions

**Public Benefits**

**Present Value**

**Total Cost Savings**

**\$ 14,422,000**

- Unnecessary hospital readmissions often result from patients not following up with primary care providers, not filling prescriptions, not following recommended care management plans, etc.
- The Affordable Care Act requires the Department of Health and Human Services to reduce payments to hospitals for excess readmissions.
- Social Workers employed by hospitals to provide patient follow-up have a dramatic (65%) reduction in 30-day readmissions.

Inputs	Value	Source
Number of SW Graduates	30	George Fox University Proposal
Share Employed by Medical Facilities	20%	ECONorthwest Analysis of American Community Survey Data
Share of Graduates that remain in area each year	75.2%	Kovner C, S. Corcoran, C. Brewer. (2011).
Local Turnover	10.3%	ECONorthwest Analysis of American Community Survey Data
Unnecessary Readmission Rate	18.4%	Gerhardt G, et al. (2013)
Net Cost of Unnecessary Readmissions	\$1,096	Carey, K. and T. Stefos. (2015).
Reduction in Unnecessary Readmissions	65%	Bronstein, L. et al. (2015)

# Economic Value Analysis - Details

## Workforce Development

- Educational training programs reduce the reliance on public assistance programs.

Public Benefits	Present Value
Total Cost Savings	\$ 119,000

Inputs	Value	Source
Number of Graduates	120	George Fox University Proposal
Share that remain in area each year	75.2%	Kovner C, S. Corcoran, C. Brewer. (2011).
Local Turnover	10.3%	ECONorthwest Analysis of American Community Survey Data
Public Benefits Per Graduate	\$163	McConnell, S. & Glazerman, S. (2001).

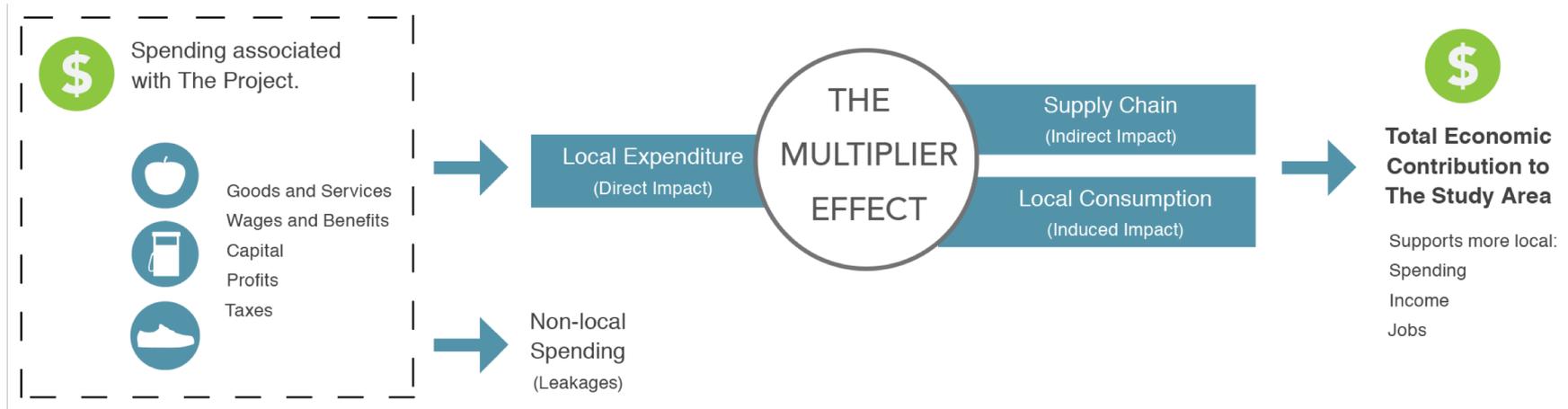
Cashflow Analysis Results: The center is expected to experience positive cash flow by 2024 and pay off all operating debt by 2029.

All Programs	Positive Operating Cash Flow Year	Years with Operating Debt	Maximum Operating Debt	Capital Balance at 2040
<b>\$5M Loan</b>	2024	2022-28	(\$3,516,000)	\$15,578,000
Scenario A: 5% lower enrollment	2026	2022-30	(\$3,926,000)	\$7,555,000
Scenario B: 5% higher staff costs	2025	2022-29	(\$3,933,000)	\$10,198,000
<b>\$10M Loan</b>	2026	2021-34	(\$5,179,000)	\$3,823,000
Scenario A: 5% lower enrollment	2040+	2021-40+	(\$6,170,000)	(\$4,201,000)
Scenario B: 5% higher staff costs	2027	2021-40+	(\$5,897,000)	(\$1,558,000)

Program		Positive Operating Cash Flow Year
Master of Social Work	MSW	2021
Bachelor of Social Work	BSW	2022
Doctor of Physical Therapy	PT	2022
Doctor of Medical Science	PA	2024
Bachelor of Science in Nursing	BSN	2024
Doctor of Nurse Practice	DNP	2025

# Economic Impact Analysis

The construction and operation of the center has downstream supply-chain and consumption effects in other sectors of the regional economy, which results in a “multiplier effect” as changes in spending circulate throughout the regional economy.



- **Direct effects** are the output, jobs, and income associated with the immediate effects of final demand changes.
- **Indirect effects** are production changes in backward-linked industries caused by the changing input needs of directly affected industries.
- **Induced effects** are the changes in regional household spending patterns caused by changes in household income.

# Economic Impact Analysis - Results



Construction



Operations



Student Spending

Total Jobs	Total Income	Total Output
260	\$11.3 M	\$33.8 M
148	\$6.4 M	\$13.8 M
35	\$0.87 M	\$3.7 M

# Economic Impact Analysis - Details



## Construction (2020 only)

### Inputs

Description	Amount (\$)	IMPLAN Category
<b><u>Hard Costs</u></b>		
Site Prep	3,916,000	469 Landscaping and horticultural
Building	17,325,000	55 Construction of new educational structures
<b><u>Soft Costs</u></b>		
Engineering	314,000	449 Architecture, engineering, and related services 455 Environmental and other technical consulting sectors
Survey	78,000	
Construction Management	196,000	454 Management Consulting Services
Legal	40,000	447 Legal services
<b><u>Fees</u></b>		
Revenues to government	1,000	N/A
<b><u>Interior</u></b>		
Furniture, fixtures and equipment	1,925,000	370 Non-upholstered wood furniture
Medical equipment	2,083,000	379 Surgical and Medical Equipment Manufacturing
<b>Total</b>	<b>25,878,000</b>	

### Results

Impact Type	Employment	Labor Income (\$)	Total Value Added (\$)	Output (\$)
<b>Direct Effect</b>	166	7,364,000	9,090,000	21,306,000
<b>Indirect Effect</b>	40	1,839,000	2,887,000	6,055,000
<b>Induced Effect</b>	54	2,087,000	3,626,000	6,398,000
<b>Total Effect</b>	260	11,289,000	15,602,000	33,758,000

# Economic Impact Analysis - Details



## Operations (Annual)

### Inputs

Once the center is fully operational approximately \$4 million will be spent on staff compensation for 77 FTE positions per year. An additional \$1 million will be spent on operations costs for a total of \$5 million per year.

### Results

Impact Type	Employment (FYE)	Labor Income (\$)	Total Value Added (\$)	Output (\$)
Direct Effect	69	4,048,000	4,048,000	5,016,000
Indirect Effect	49	1,147,000	3,026,000	5,148,000
Induced Effect	30	1,175,000	2,038,000	3,598,000
<b>Total Effect</b>	<b>148</b>	<b>6,368,000</b>	<b>9,111,000</b>	<b>13,760,000</b>

### Tax Revenue

The direct state taxes are estimated to generate \$175,000 in tax revenue per year. Secondary state and local taxes are estimated to generate \$16,000 per year in tax revenue. The total average annual fiscal impact from operations is estimated as \$192,000.

# Economic Impact Analysis - Details



## Student Spending (Annual)

### Inputs

Students in Southern Oregon who live off campus spend approximately \$13,000 per year (excluding tuition). This new spending in the region generates increased demand for consumer goods and services.

Spending Category	Percent
Books and supplies	4
Housing	40
Food	20
Health Insurance	8
Transportation	8
Apparel	5
Personal/Other	15
Total	100

### Results

Impact Type	Employment	Labor Income (\$)	Total Value Added (\$)	Output (\$)
Direct Effect	25	493,000	1,474,000	2,447,000
Indirect Effect	6	221,000	409,000	758,000
Induced Effect	4	162,000	281,000	496,000
Total Effect	35	875,000	2,164,000	3,699,000

Student spending will also provide revenue to state and local taxing jurisdictions through this increased economic activity. The average annual fiscal impact from student spending is estimated as \$194,000.

The proposed medical workforce center has the strong potential to:

- Increase the supply of healthcare providers in rural Oregon,
- Provide public economic benefits to the state through reduced unnecessary burden on the health care system,
- Operate in a financial feasible manner, and
- Generate positive economic impacts in the region.

## Summary of Results

Analysis Category	Result
Monetized Economic Benefits	Over \$38.1 million
Financial Feasibility	Positive Cash Flow by 2024 Operating Debt-Free by 2029
Construction Economic Impacts	260 total jobs; \$33.8 million total output
Operation Economic Impacts	148 total jobs; \$13.8 million total output annually
Student Spending Economic Impacts	35 total jobs; \$3.7 million total output annually

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