

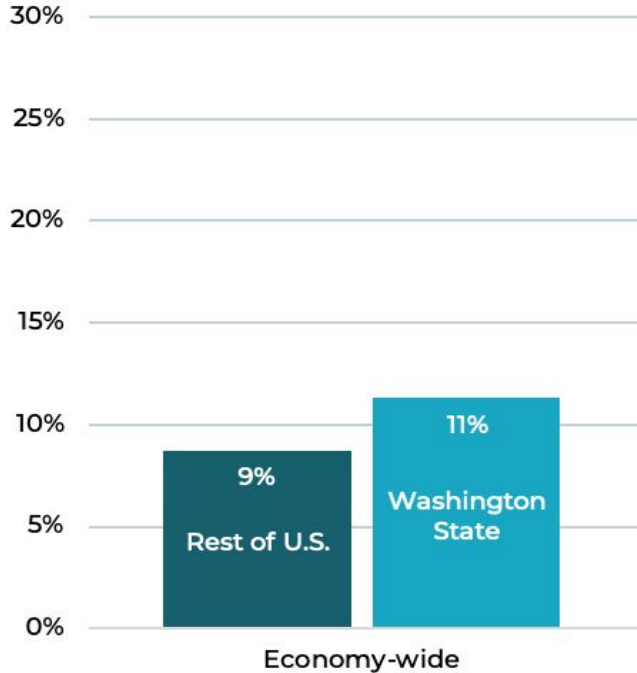


Low Carbon  Prosperity Institute CLIMATE XCHANGE

**BUILDING  
BACK  
BETTER** | INVESTING IN A  
RESILIENT RECOVERY  
FOR WASHINGTON STATE

# Situation

## Workforce Lost



- Continuing pandemic
- Record unemployment & business damage
- Rising needs: public health systems, social justice
- Climate change
  
- Fragile financial system
- Reduced state revenues, federal
- Stressed population
- Tendency to revert to prior *status quo*

**GOAL:** *Inform recovery plans*

- *Employment & economy*
- *Public health*
- *Social well-being*
- *Environmental, especially climate*

## **GOAL:** *Inform recovery plans*

- *Employment & economy*
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- *Environmental, especially climate*

## **RESULT:** *The Resilient Recovery Portfolio*



CLEAN  
TRANSPORTATION



WATER, POWER, &  
ENERGY EFFICIENCY



FOREST CONSERVATION &  
ECOSYSTEM RESTORATION



LOW CARBON  
AGRICULTURE



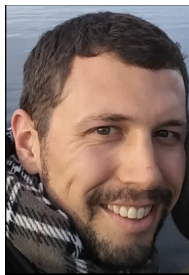
SUSTAINABLE  
INDUSTRY

# BUILDING BACK BETTER

## INVESTING IN A RESILIENT RECOVERY FOR WASHINGTON STATE



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Senior Research Associate  
Climate XChange



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R&D Scientist  
LCPI



**Ruby Wincele**  
Policy Fellow  
Climate XChange



# Meeting the challenge

- The ongoing stimulus battle
  - “Rescue” vs “Recovery”
- What’s the focus?
  - Rapid job growth
  - Improved health
  - Avoid carbon lock-in
- Literature and lobbying arm’s race
- We need data



# Study Approach and Overview

1. Assemble suite of green stimulus investments
2. Model job and economic impacts in IMPLAN
3. Build project-specific GHG and health impact models
4. Combine into package that maximizes ALL benefits

**\*BONUS\*** Estimate the health and climate cost-benefit of achieving deep decarbonization in Washington State



# What's in the *Resilient Recovery Portfolio*?

## CLEAN TRANSPORTATION INVESTMENTS

- High-Speed Rail\*
- Light Rail - Sound Transit Expansion\*
- Low Carbon Buses and Trucks
- Clean Vehicle Programs
- Transit-Oriented Community Development



## WATER, POWER, AND ENERGY EFFICIENCY INVESTMENTS

- Home Energy Efficiency and Renewables
- 100% Clean Power Readiness
- Water-Energy Programs



## FOREST CONSERVATION AND ECOSYSTEM RESTORATION

- Wildfire Prevention and Preparedness\*
- Urban and Community Forestry
- Yakima Basin Ecosystem Restoration\*



## LOW CARBON AGRICULTURE

- Dairy Digesters
- Agriculture Water Efficiency








## SUSTAINABLE INDUSTRY

- Electric Ferries\*
- Low Carbon Freight Operations

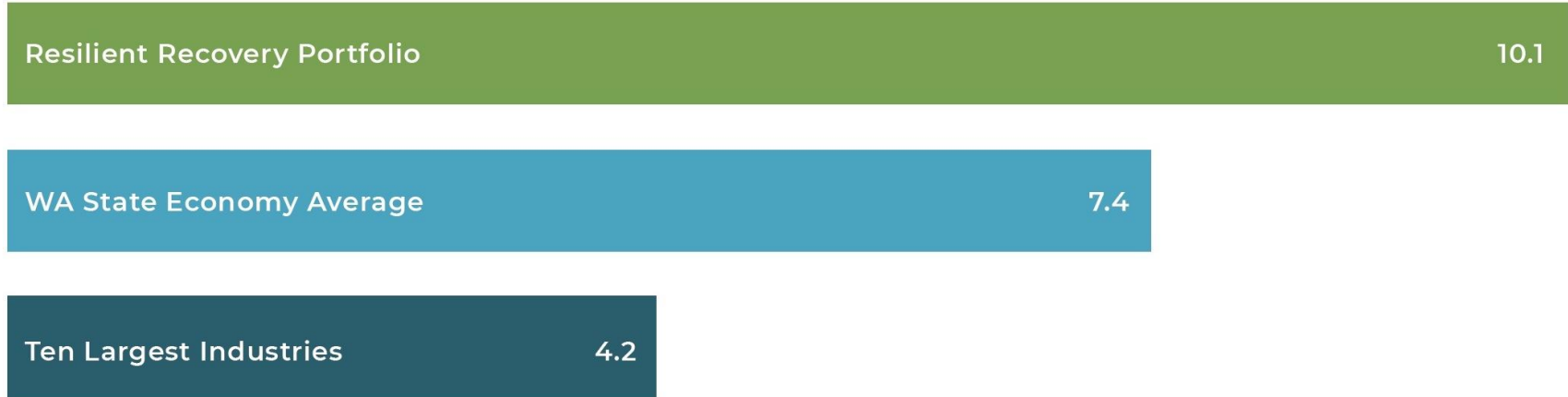




# Summary Results

| INVESTMENT AREA   | INVESTMENT SCALE | DEPLOYMENT SPEED | FTE JOBS/\$M | HEALTH BENEFITS | CLIMATE BENEFITS |
|---|------------------|------------------|--------------|-----------------|------------------|
|  CLEAN TRANSPORTATION                        | \$\$\$           | MIXED            | 10.7         | +++             | +++              |
|  WATER, POWER, & ENERGY EFFICIENCY           | \$\$\$           | MEDIUM TO FAST   | 8.7          | +++             | +++              |
|  FOREST CONSERVATION & ECOSYSTEM RESTORATION | \$\$\$           | FAST             | 12.7         | +++             | +++              |
|  LOW CARBON AGRICULTURE                      | \$\$\$           | MEDIUM           | 6.8          | NOT QUANTIFIED  | +++              |
|  SUSTAINABLE INDUSTRY                        | \$\$\$           | MEDIUM           | 7.1          | +++             | +++              |

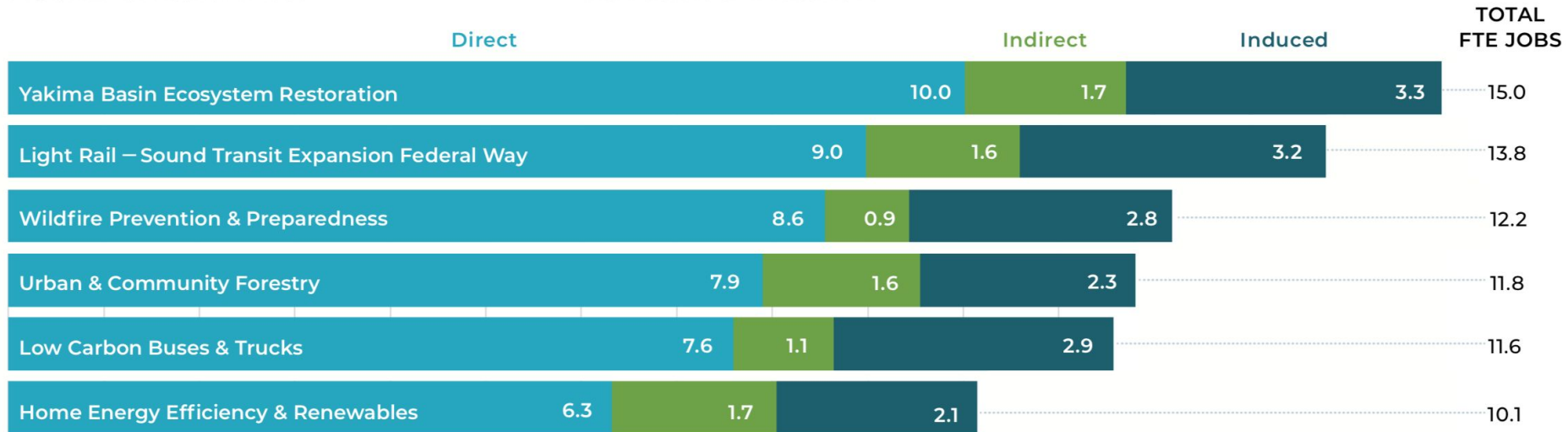
# Resilient Recovery Portfolio Results: **Jobs**



FTE JOB-YEARS IN WASHINGTON PER \$1 MILLION INVESTED

# Resilient Recovery Portfolio Results: **Jobs**

## Strongest-performing programs



# *Resilient Recovery Portfolio Results: **Jobs***

## Strongest-performing Industries

Construction ~20%

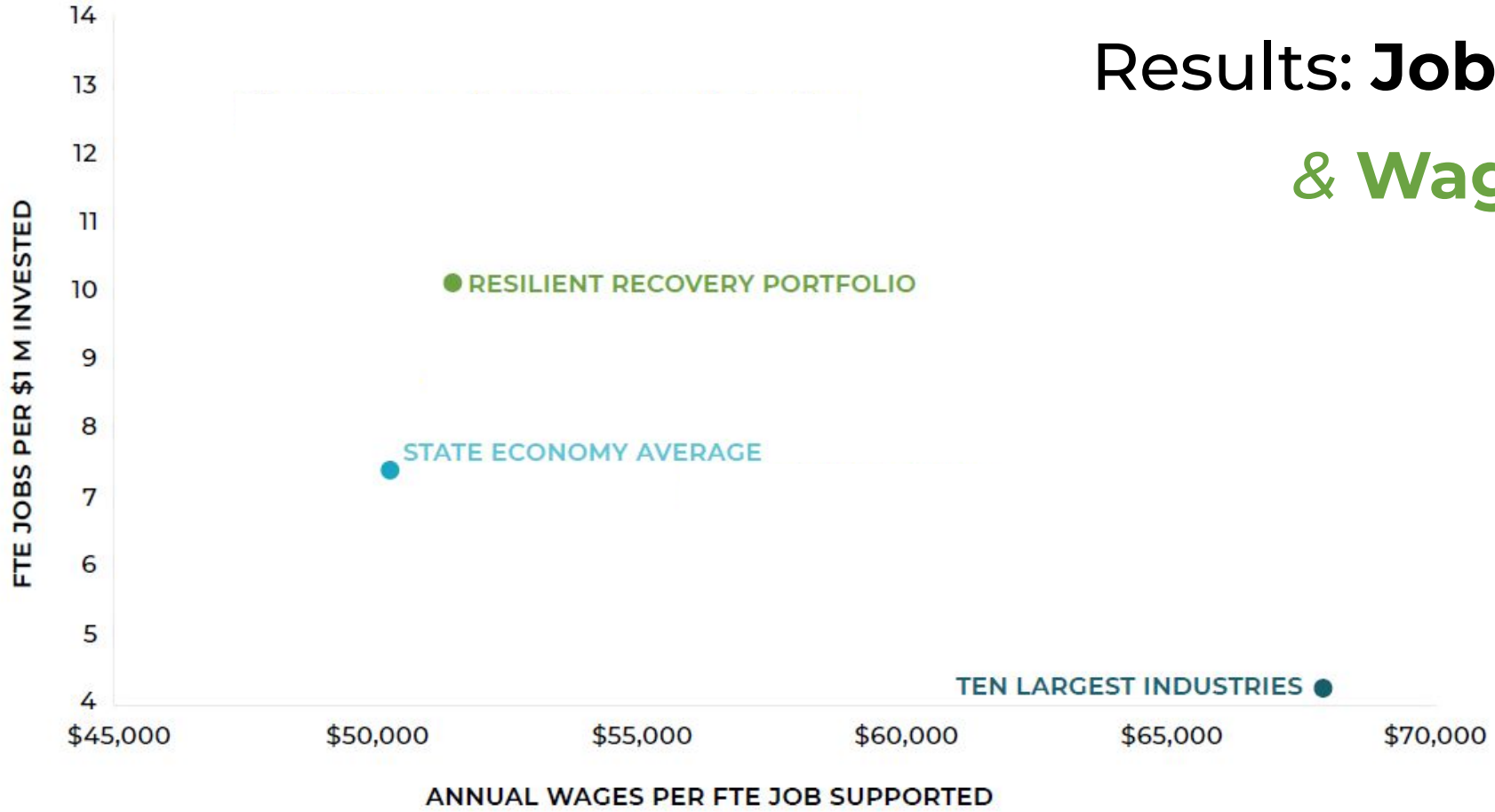
Passenger Transit / Govt. ~13%

Agriculture, Forestry, Landscaping ~12%

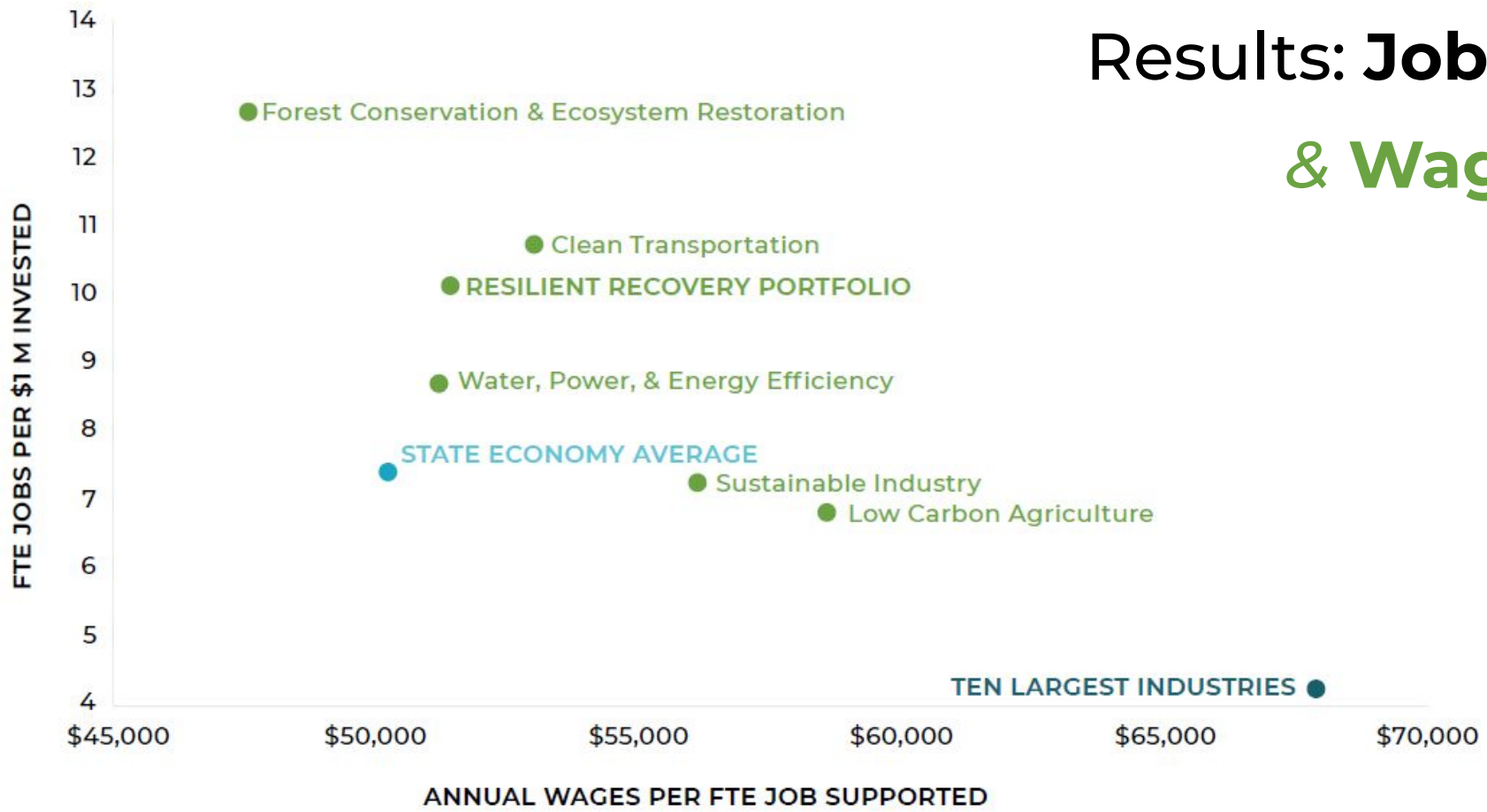
Individual and Family Services ~4%

Ship Building ~2%

# Results: Jobs & Wages



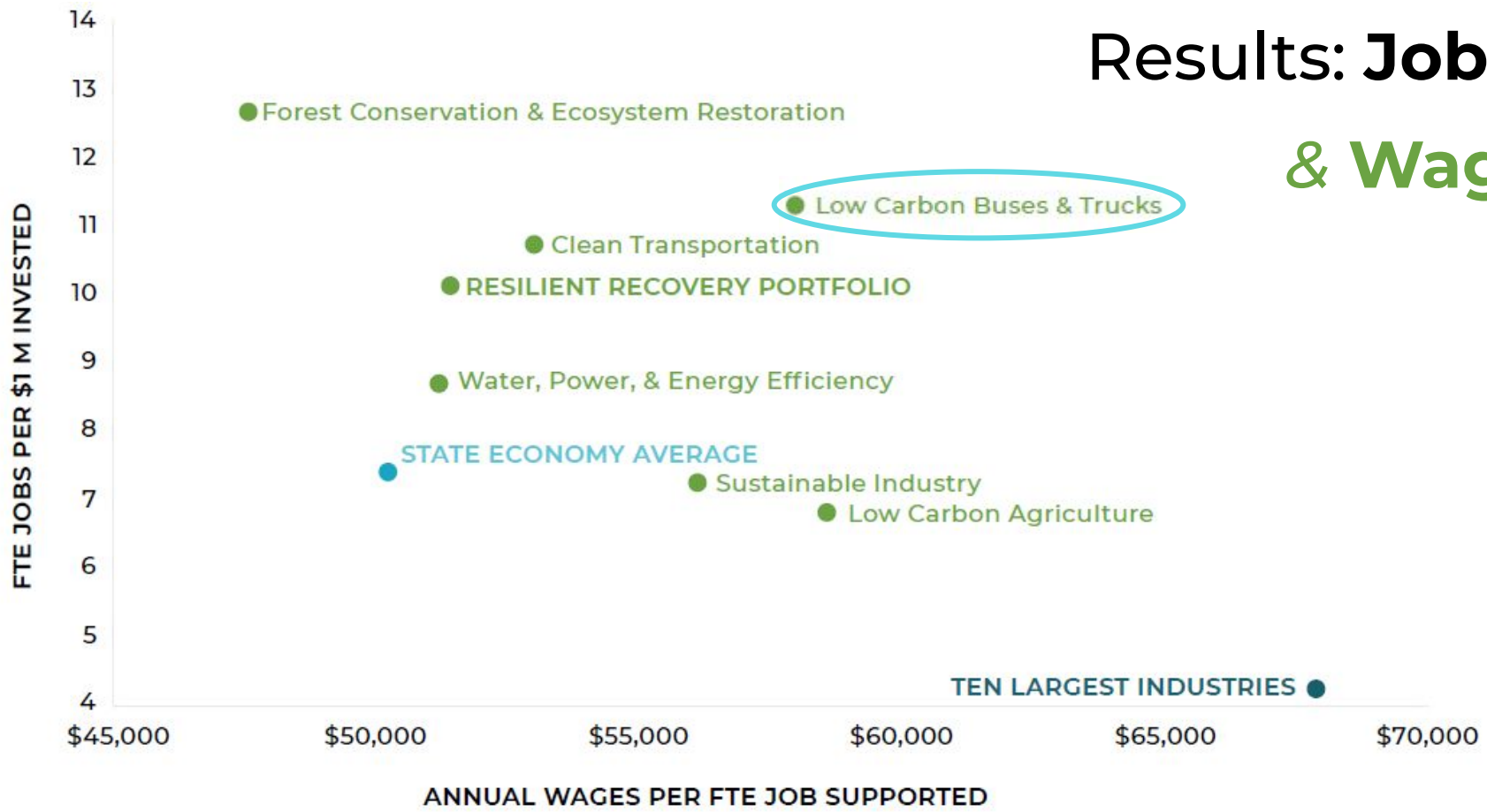
# Results: Jobs & Wages





# Results: Jobs

# & Wages



# Results: Jobs

# & Wages

ration

● Low Carbon Buses & Trucks

tion



Photo Credit: Steve Morgan

| IMPLAN SECTOR  | SHARE OF FUNDS |
|--|----------------|
| Heavy-duty truck manufacturing                       | 44.4%          |
| Local government passenger transit                   | 39.6%          |
| Transit & ground passenger transportation            | 1.5%           |
| Construction of new nonresidential structures        | 6.9%           |
| Semiconductor & related device manufacturing         | 2.9%           |
| Motor vehicle parts manufacturing                    | 1.0%           |
| Construction of new power & communication structures | 0.8%           |



Photo Credit: Steve Morgan

# Results: Jobs

## & Wages

● Low Carbon Buses & Trucks

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**FTEs = 11.6**

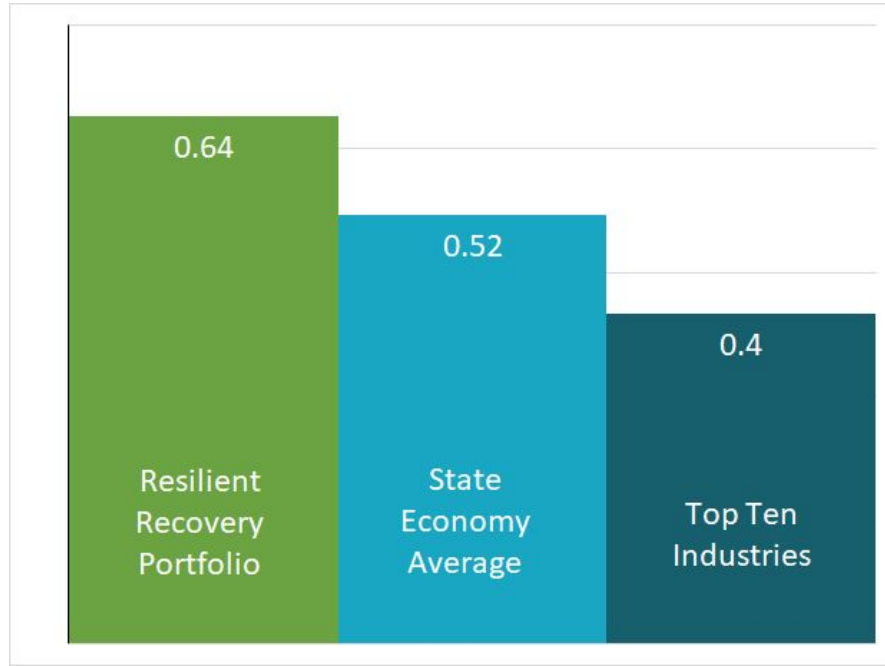
**Wages = \$58k**

**Labor-intensive compensation**

**Low-leakage: Keeps \$ in-state**

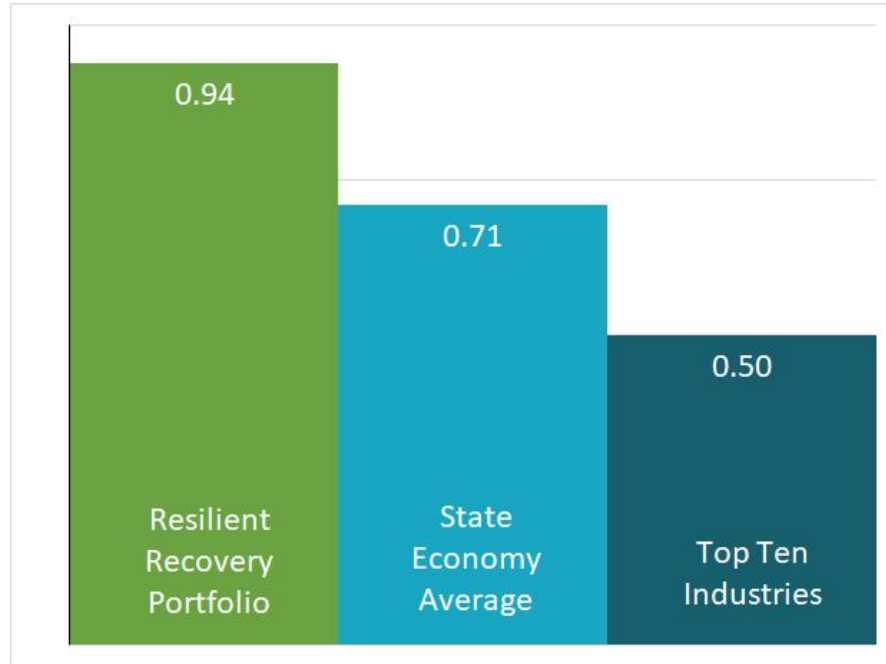
# Results: **Broader Economy**

## Employee Compensation (per \$)



# Results: **Broader Economy**

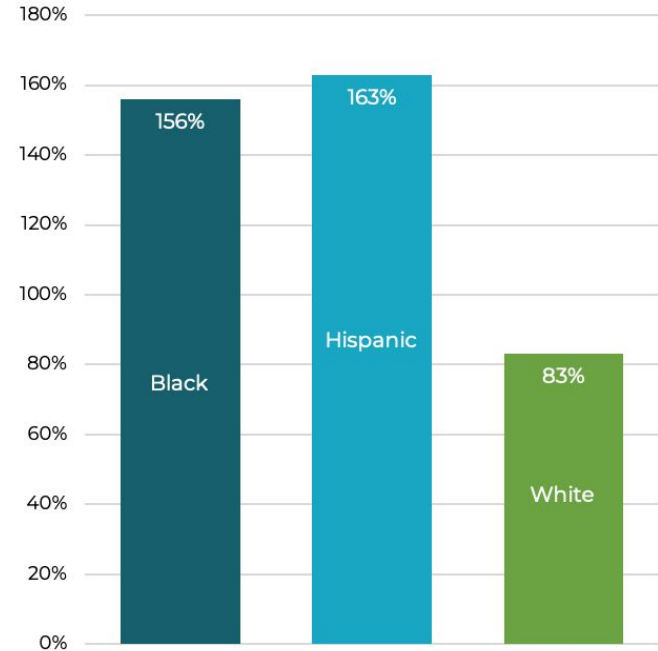
Total Value Added (per \$)



# Air Pollution and Equity

- More than 1,100 Washingtonians die from exposure to pollution annually
- Children and infants particularly vulnerable to pollution
  - Black children with asthma have a 250 percent higher hospitalization rate and 500 percent higher death rate than white children

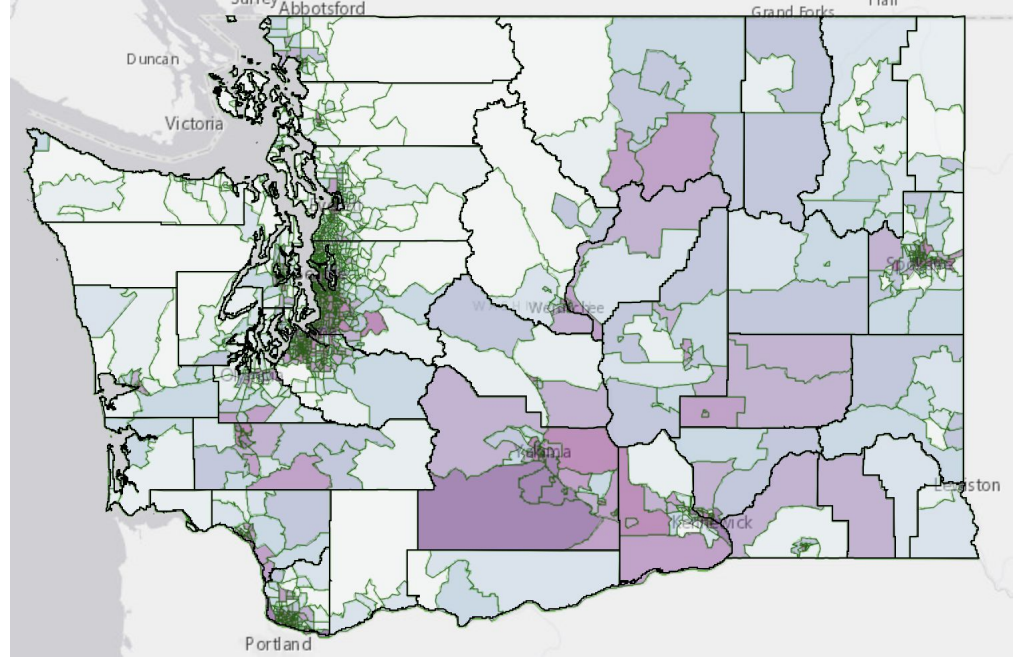
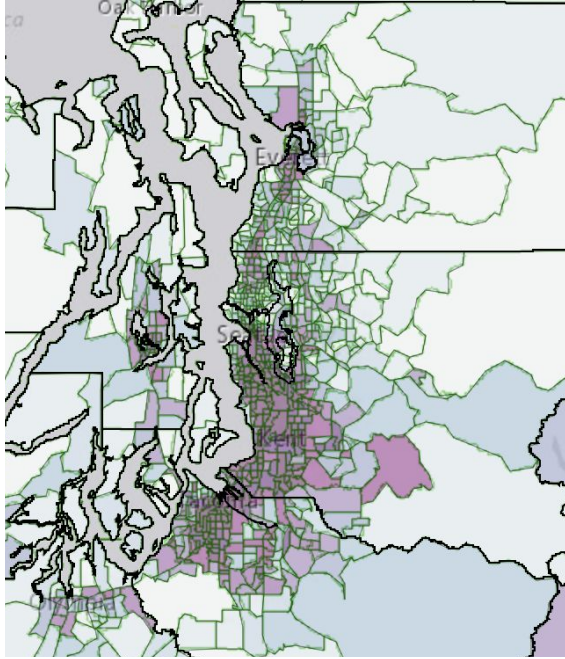
Racial Pollution Burden relative to Consumption



Source: *Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure* <https://www.pnas.org/content/116/13/6001>



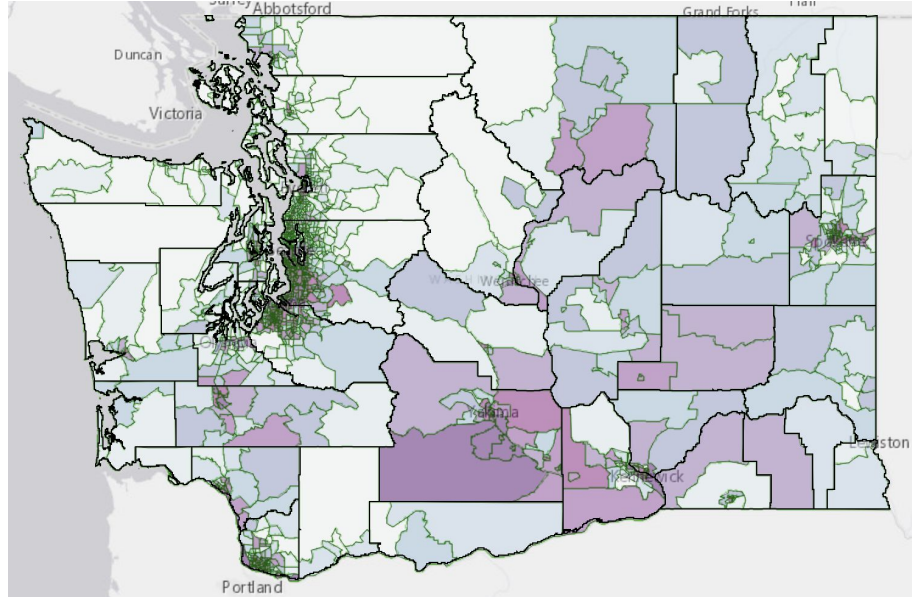
# Washington Environmental Health Disparities



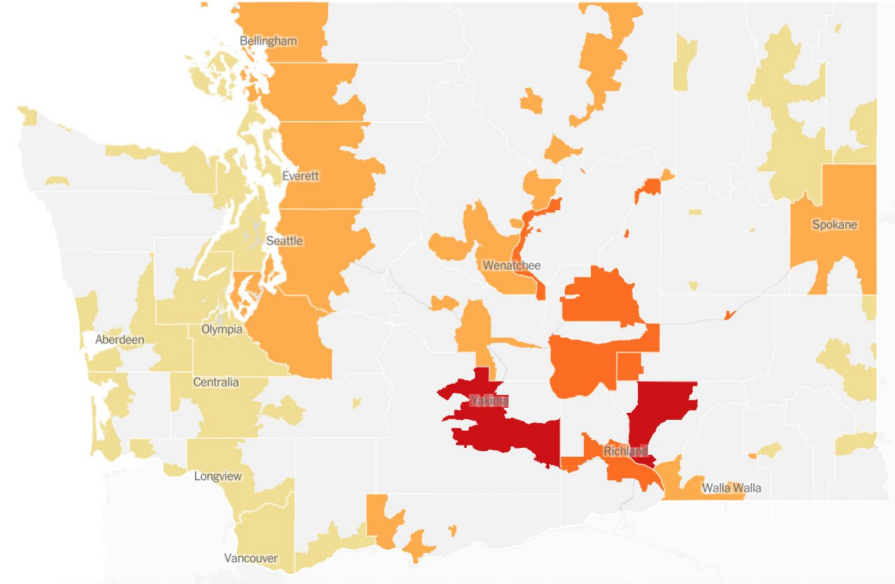
Source: Washington State Department of Health

# Air Pollution and COVID-19

Washington Environmental Health Disparities Map



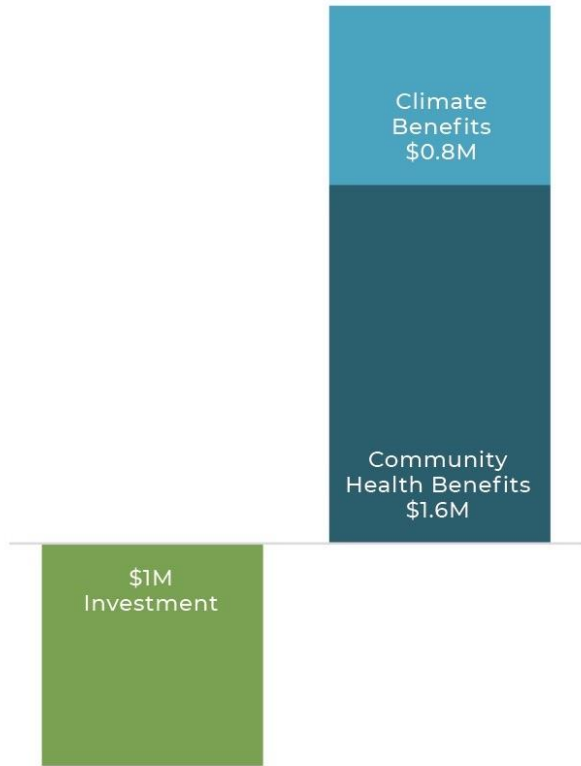
COVID-19 cases per capita by county



Source: Washington State Department of Health

Source: The New York Times

# Resilient Recovery Portfolio Results: **Health & Climate**



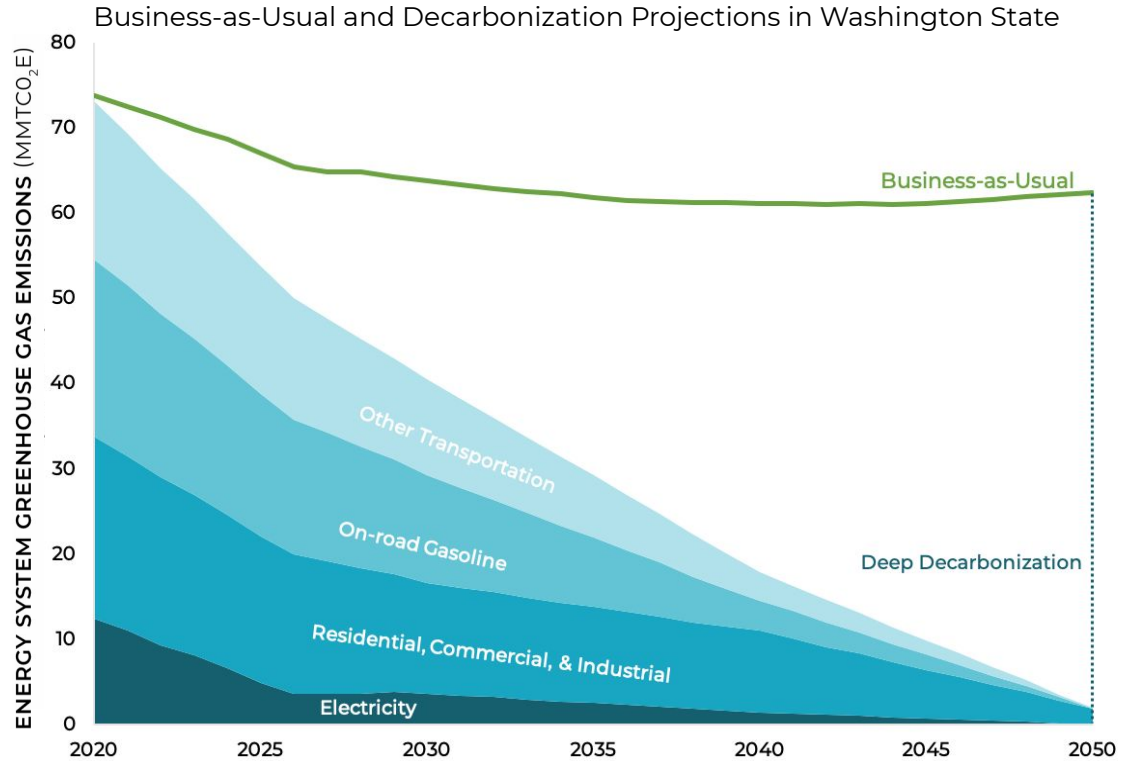
\$2.4 million in climate and health benefits for every \$1 million invested in the *Resilient Recovery Portfolio*

# Resilient Recovery Program Highlights: **Health & Climate**

| INVESTMENT PROGRAMS                | CLIMATE BENEFITS* | COMMUNITY HEALTH BENEFITS | TOTAL CO-BENEFITS |
|------------------------------------|-------------------|---------------------------|-------------------|
| WILDFIRE PREVENTION & PREPAREDNESS | \$3,600,000       | \$9,000,000               | \$12,600,000      |
| LOW CARBON BUSES & TRUCKS          | \$79,000          | \$120,000                 | \$200,000         |

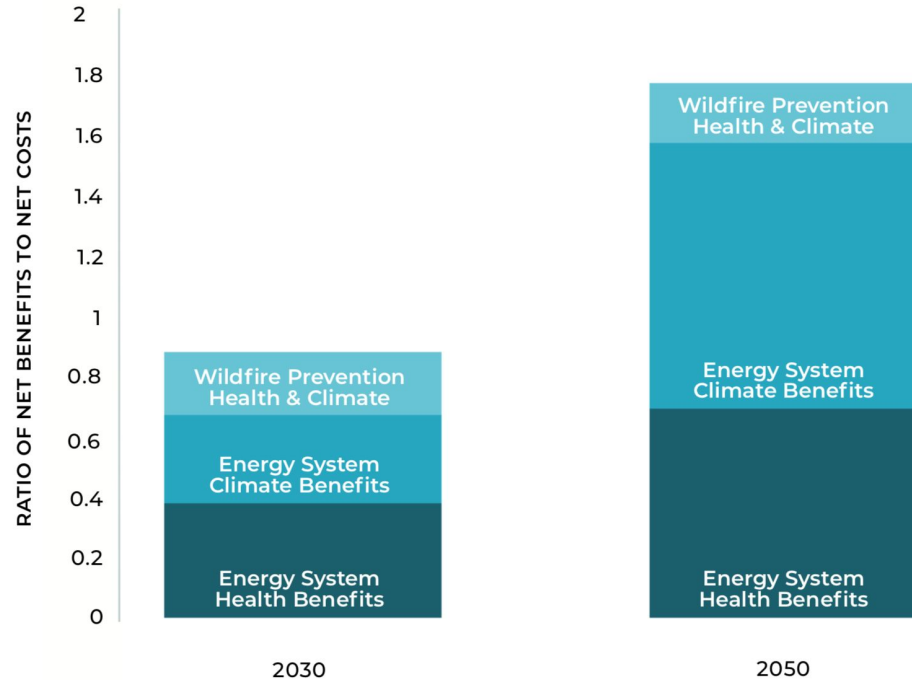
\*Climate Benefits are calculated using a social cost of carbon estimate of \$52/metric ton CO<sub>2</sub>e

# Deep Decarbonization Pathway



# Deep Decarbonization Benefits: Health & Climate





Benefit-cost ratio for Deep Decarbonization in Washington State (NPV)








# BUILDING BACK BETTER

## INVESTING IN A RESILIENT RECOVERY FOR WASHINGTON STATE

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|  SUSTAINABLE INDUSTRY                      | \$\$\$           | MEDIUM           |

### Ongoing Priorities

Benefits accrue where needed

Occupation, Job Quality lens

Additional programs

Coalition of States

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FOR WASHINGTON STATE

Have a project for the **Resilient Recovery** system to consider?

Want to make this happen in your state?

Have thoughts on how to advance this work?

Reach out to us:

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[kevin@lowcarbonprosperity.org](mailto:kevin@lowcarbonprosperity.org)

[rwincele@climate-xchange.org](mailto:rwincele@climate-xchange.org)



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