CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT IN WA: WHAT WE KNOW AND WHAT WE CAN DO
Sarah Chen*, Program on the Environment, University of Washington
Site supervisor: Lindsey Engh, Engh Group
Faculty advisor: Kristi Straus, College of Environmental Studies, University of Washington

### Introduction
- The Washington State (WA) construction sector has been expanded steadily for decades, even during the pandemic, with developers seeking opportunities to advance their capital through the building. It accounts for almost 15% of GDP in the state, while it has a significant effect on sustainability. Waste disposal, especially landfilling, is one of the main areas leading to waste in the industry and a major factor contributing to arising environmental issues, given the difficulties in handling some construction materials.
- Identifying effective waste management approaches in construction projects may help reduce the waste and increase diversion of materials through the whole construction scheme, from design of the building to demolition. Therefore, to improve the waste management and to reduce landfill waste as a final aim, it is necessary to examine the whole waste management system from approving a construction project to deconstruct one. With the information learned during the internship, I did a literature review using scholar resources on WA’s existing construction and demolition waste management (CDWM) law.

### Research Question
What are opportunities and challenges for assessing Washington State’s management on reducing construction and demolition waste?

### Internship
I worked in the Engh Group on two projects:
- A zero-construction-waste project, including developing a standardized system for stores under global portfolio, tracking ongoing on-site CDW,
- A material diversion program, including creating sustainable material management with standard framework, and researching opportunities for increasing material recovery for clean wood as a construction material in its supply chain.

In the process of working on CDW projects and certain construction material, I become more familiar with the field in details and depths, and have the chance reach out to professionals in the industry.

### Methods
- My site supervisor gave me a throughout orientation to the industry and prepared me with background knowledge to both consulting and waste management.
- Through the internship, I was able to attend online conferences and online discussion to learn about the insiders’ insights on construction waste management and material diversion.
- Besides, I utilized scholar resources and official governmental websites to complete a literature review on WA’s existing construction and demolition waste management (CDWM) law, since examining existing legislation contributes to a great draft of WA’s waste management process.

### Findings
#### Opportunities
- A shift towards a circular economy is necessary towards the proposed green building and sustainable infrastructure development.

#### Challenges
- Shortage of innovation and improvement activities
- Lack of comprehensive expertise and special education
- Lack of knowledge in customers and builders about sustainable construction and waste management

### Implications
- Continually practice commitment to proper solid waste management through reduction, recycling, and reusing of Construction and Demolition waste products;
- Encourage local construction waste reduction projects;
- Aid in the improvement of WA CDWM and provide a solid guideline for local construction firms;
- Promote circular economy;
- Improve practices on C&D management regulations to achieve high diversion rate.

### Significances
- These results hopefully can provide insights on how to improve the current waste management system to provide a more throughout management on construction waste.
- Also, this can provide views on how to reduce landfill waste in general from the construction industry on the level of management.

### Acknowledgements
I wish to thank everyone who supported this work, especially Lindsey Engh, Kristi Straus for all the guidance and mentorship.