Oregon Department of Transportation

Research Stage 1 Problem Statement

Number 26-22 – "Evaluating the Infrastructure and Economic Impacts of Increased Weight Limits for Oversized Loads on Oregon's Transportation System"

1. Concisely describe the **transportation issue** (including problems, improvements, or untested solutions) that Oregon needs to research.

Oregon's current weight restrictions for non-divisible loads are set lower than neighboring states like Idaho and Nevada, which allow weights up to 129,900 lbs. In response to industry requests for higher weight limits to align with these states, the Oregon Department of Transportation (ODOT) needs a comprehensive analysis of the potential impacts of raising allowable weights. This research will examine the effects on infrastructure, highway safety, and maintenance costs associated with increased load weights, as well as the implications for greenhouse gas (GHG) emissions. By allowing more weight per vehicle, industry anticipates a reduction in the number of trips needed, which could decrease emissions. This analysis will provide ODOT with data-driven insights to guide policy decisions.

2. What **final product or information** needs to be produced to enable this research to be implemented?

The final product of this research aims to offer ODOT a comprehensive report with recommendations that support an informed evaluation of increasing weight limits for non-divisible loads. The report will likely include an infrastructure impact assessment detailing the potential effects of heavier loads on bridges, pavements, and highway safety, with particular attention to high-frequency freight routes in Oregon. By drawing insights from neighboring states with higher allowable weights, the analysis could help ODOT identify areas where infrastructure upgrades may be needed and estimate associated costs to maintain system integrity.

Additionally, the report intends to provide an economic impact assessment to help quantify the contributions of oversized freight to Oregon's economy, balancing potential economic gains from greater freight capacity with the costs of infrastructure maintenance and safety considerations. Key likely recommendations may address:

- **Permitting Structure**: Potential adjustments to permit fees to better align with maintenance needs, informed by practices in states like Idaho and Nevada.
- **Funding Models**: Options for funding, such as public-private partnerships, to help support infrastructure improvements.
- **Heavy-load & OSL Corridors**: Identification of designated routes that could help minimize infrastructure impacts, improve safety, and facilitate efficient movement of **oversized loads, (including over-dimensional loads)**.
- **Parking and Staging Facilities**: An evaluation of parking and staging needs for oversized/ **over-dimensional** loads to enhance route efficiency and safety.
- **Strategic Implementation Plan**: A phased approach to implementing findings, enabling ODOT to prioritize investments and engage stakeholders effectively.

This report is intended to provide ODOT with a balanced approach to potentially supporting increased load limits, identifying key OS/D load **routes**, allowing for policy considerations that are economically viable, infrastructure-conscious, and supportive of public safety Furthermore, by evaluating the economic benefits of increased freight capacity, the report aims to identify potential pathways for local economic growth, fostering prosperity in communities situated along key freight corridors.

3. (Optional) Are there any individuals in Oregon who will be instrumental to the success of implementing any solution that is identified by this research? If so, please list them below.

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4. Decision making lenses

Please complete the following three sections. Your answers to these questions will be applied on a programmatic basis to support agency decisions. Answering yes to the questions below is not required. Resolving a narrowly focused technical research problem may meet agency needs without answering yes to any of the following questions. The ODOT Research Section will seek a balanced portfolio some projects will answer yes to one of the three categories below (e.g. climate, equity, and/ or safety) and other projects in a different category.

We are looking for an overall program balance and no one project is expected to balance all categories. Generally, a research problem statement is expected to be able to answer yes with clear and verifiable information in only one of the three categories below, some projects may be able to answer yes in two or even three categories. Some projects (i.e. needs focused on specific elements of infrastructure design), may have no yes answers but may still be high value research need.

Climate

Oregon recognizes the climate crisis and makes systemic changes to reduce emissions caused by travel. Every mile driven in Oregon is powered by a clean source of fuel. We seek research that supports construction and maintenance operations are carbon neutral and investments in mobility that support travel by low and no emission modes. While every research project may not result in a reduction in emissions, transportation investments overall support emission reductions to achieve state goals. Oregon envisions a transportation system that is resilient in the face of seismic and climate events and impacts to the degradation of the natural environment are reduced. Our vision includes a transportation infrastructure is built in a way that avoids impacts on key habitat and results in better environmental conditions for wildlife and native vegetation. For definitions and details please review the equity vision, goals, and objectives of the ODOT Strategic Action Plan and Oregon Transportation Plan.

4f. Will addressing the **transportation issue** identified as a need in Question 1 develop, or validate methods for the estimation, measurement, or monitoring of transportation generated greenhouse gasses (GHG)?

☐Yes ☒No ☐Unsure

4g. If climate or GHG is not the focus of this **transportation issue** identified in this problem statement, will the research apply a GHG analysis to transportation infrastructure, planning, operations, maintenance, or materials?

☒Yes ☐No ☐Unsure

4h. Will the addressing the **transportation issue** include development or testing of construction practices, methods, or materials to establish potential reductions in greenhouse gas emissions?

☐Yes ☒No ☐Unsure

4i. Will the solving the **transportation issue** in question 1 study or support the reduction of vehicle miles traveled and single occupancy vehicle travel or support transition to electric vehicles (or other types of zero emission vehicles) or low-carbon alternative fuels?

☒Yes ☐No ☐Unsure

4j. Will the solving the **transportation issue** in question 1 lead to work that will support, measure, monitor, transportation system resilience in response to expected climate events, effects, or natural disasters in general?

☐Yes ☒No ☐Unsure

4k. Will the solving the **transportation issue** in question 1 lead to work that may result in better environmental conditions for wildlife and native vegetation ?

☐Yes ☒No ☐Unsure

4l. If you answered yes to any of the climate questions above or can provide alternative details related to climate, please provide additional information:

While Climate is not the primary focus of this research, greenhouse gas (GHG) emissions are relevant to the scope, especially as industry stakeholders advocate for increased weight limits as a means to reduce the number of trips required, potentially lowering overall emissions. Consequently, this project will consider materials and methods with low-carbon impacts that may indirectly contribute to climate objectives. Additionally, data related to GHG emissions reductions tied to fewer vehicle trips could be assessed to provide a fuller picture of the potential environmental benefits or trade-offs.

Equity

Equity can have many dimensions and impacts relating to communities, and transportation. It is important that problem statement proposals clearly explain in what capacities are equity dimensions or impacts being examined within problem statements. It is a goal of the OTP to “Improve access to safe and affordable transportation for all, recognizing the unmet mobility needs of people who have been systemically excluded and underserved. Create an equitable and transparent engagement and communications decision-making structure that builds public trust”. Proposed research may have the intent of studying elements of this goal or apply analysis to specific transportation topics to ensure the resulting research recommendations is consistent with our equity goals. For definitions and details please review the equity vision, goals, and objectives of the ODOT Strategic Action Plan and Oregon Transportation Plan.

4a Is the **transportation issue** identified as a need in Question 1 specifically focused on transportation equity?

☐Yes ☒No ☐Unsure

4b If the **transportation issue** is not focused on transportation equity, will the primary topic be assessed for equity benefits or impacts within the research project?

☒Yes ☐No ☐Unsure

4c Is the implementation of potential findings from this research likely to directly involve participation from an identified group that would benefit from an equitable process or outcome?

☒Yes ☐No ☐Unsure

4d Is the intended final product or information expected to support ODOT's equity efforts (Including but not limited to supporting one of the equity related objectives of the ODOT's Strategic Action Plan or Oregon Transportation Plan) ?

☒Yes ☐No ☐Unsure

4e If you answered yes to any of the equity questions above or can provide alternative details related to equity, please provide additional information:

Yes. Equity benefits will be evaluated, with a focus on communities impacted by freight routes and policies to ensure fair distribution of infrastructure costs. If policies allow for heavier and longer freight vehicles, maintenance expenses, potential reconfiguration of public rest areas, and other infrastructure-related costs are likely to increase. By quantifying these system costs, this research aims to provide funding recommendations that avoid disproportionately impacting the people of Oregon. The study will also examine efforts in neighboring states to address similar issues and adapt those processes to Oregon's specific context. Additionally, this research will explore the potential for economic growth in affected communities, identifying ways that infrastructure investments and policy adjustments can create viable paths to local prosperity along key freight corridors.

Safety

Research outcomes may include interventions and countermeasures to prevent or reduce the frequency of crashes or other causes of transportation-related injury or death; or may include measures to reduce severity of injury (including prevention of death) after a crash or other injurious event. For definitions and details please review the equity vision, goals, and objectives of the ODOT Strategic Action Plan, Oregon Transportation Safety Action Plan and Oregon Transportation Plan.

4m. Will solving the **transportation issue** in question 1 support improving **safety culture** for either transportation workers or the traveling public?

☒Yes ☐No ☐Unsure

4n. Will the solving the **transportation issue** support improving safety through **healthy and livable communities**?

☒Yes ☐No ☐Unsure

4o. Will solving the **transportation issue** support improving safety through using **best available technologies**?

☐Yes ☐No ☒Unsure

4p. Will solving the **transportation issue** support improving safety through **communication and collaboration**?

☒Yes ☐No ☐Unsure

4q. Will the solving the **transportation issue** support improving safety through **investing strategically**?

☒Yes ☐No ☐Unsure

4r. If you answered yes to any of the safety questions above or can provide alternative details related to safety, please provide additional information:

Yes. This research supports improved safety by identifying infrastructure vulnerabilities and implementing best practices for load-bearing routes. Additionally, it will address safety concerns related to parking for oversized loads, which require specific accommodations. For example, large loads like windmill blades parked along the roadside can pose significant hazards, as the wing tips often align with the height of cab windows on oncoming trucks. This research will explore safe parking solutions to minimize such risks and improve overall safety for both oversized load vehicles and general traffic, including an analysis of best routes for OS/D loads.

5. Other comments:

This research proposal seeks to align with ODOT's strategic goals by exploring sustainable infrastructure management options that support economic growth in the freight sector. Raising the allowable weight limits for non-divisible loads to 129,900 lbs. may bring economic benefits by facilitating more efficient goods movement. However, balancing these benefits with infrastructure longevity, safety, and environmental considerations will be crucial. This research will include multi-state comparisons, drawing insights from practices in Idaho, Nevada, and other states to develop an approach that is responsive to Oregon's specific infrastructure and policy landscape.

The study will also explore potential funding mechanisms and opportunities for public-private partnerships to address infrastructure costs associated with increased weight limits. For example, some states, such as Texas, have adopted cost-sharing models where private industry stakeholders contribute to road maintenance on routes heavily used by oversized loads. Considering similar partnership models could provide a viable funding option for ODOT, potentially enabling infrastructure investments without placing the full financial burden on state resources.

In addition, the study will examine current parking and staging infrastructure for oversized loads, which has been identified through industry feedback and previous research as an area with limited policy support. By identifying critical parking and staging needs, especially along Oregon's high-frequency freight routes, this research aims to inform strategies for improving freight efficiency and safety related to oversized vehicle movements. Safety considerations will also include assessing the risks posed by roadside parking for large loads, such as windmill blades, which can create hazards for oncoming vehicles.

Finally, this proposal supports ODOT's ongoing commitment to safety, equity, and environmental sustainability. The research will address specific safety considerations associated with heavier weight limits, including the impacts on traffic flow and infrastructure vulnerability, and provide recommendations that enhance public and freight operator safety. Equity considerations will focus on communities near major freight corridors, ensuring infrastructure costs are distributed fairly and that these communities are not disproportionately affected by increased freight activity. Additionally, the study will examine potential reductions in greenhouse gas (GHG) emissions, as increased load limits could reduce the number of trips required, aligning with Oregon's climate goals.

In summary, this study is designed to provide ODOT with a comprehensive understanding of the potential impacts of increased weight limits, balancing economic, safety, equity, and environmental sustainability perspectives. The findings will offer a foundation for ODOT's future policy discussions and support informed decision-making on oversized load regulations, meeting the needs of both the freight industry and the public.

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