

## Research Stage 1 Problem Statement

### Interim Title: Boring Drives are Dangerous Drives

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

Boring drives are dangerous drives. This problem needs researched because, even though it may be obvious to drivers as they drive along boring stretches of road, the safety impact of driving uninteresting routes must be quantified in order to be mitigated. Transportation safety is and continues to be an essential research topic in Oregon and researching solutions to the problem “boring drives are dangerous drives” could create useful solutions and resolve uncertainty around how to improve safety on uninteresting routes in Oregon. Researching solutions to this problem is in line with the “Safer Traffic Control Devices” topic of interest specified by the ODOT Traffic Safety and Human Factors (TSHF) Expert Task Group (ETG).

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

To help resolve the transportation problem “boring drives are dangerous drives”, it is essential to know what changes can be made to the roadway to make the drive less boring, without unduly distracting drivers or making the driving task unnecessarily difficult? Investigation into what makes a drive interesting is a key step towards implementing mitigation strategies for safety improvement along boring routes. What features of an interesting drive can be implemented on an uninteresting route to improve safety and minimize vigilance decrement? Classification of roads in Oregon by how interesting they are to drive will allow for direct comparison of roadway features and identification of offending aspects of boring routes. Solutions may be found along interesting roads in Oregon or novel implementations in other locations, like trivia signs posted in fatigue zones in Queensland, Australia, or rumble strips tuned to play a song when drivers travel over them at the posted speed limit.

The outcome of the proposed research is a documented understanding of what roadway features make a drive uninteresting, and what mitigation strategies could be implemented to make a drive more interesting for the sake of improving driver experience and safety. The results of the proposed research could be applied to work within ODOT and other transportation agencies similarly to how the Crash Reduction Factor Manual is used to identify safety countermeasures. The methodology created and implemented during the proposed research could also be applied to other states or areas.

**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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Greg Griffin, PhD, AICP	Principal Research Analyst, ODOT; Research	Greg.Griffin@odot.oregon.gov	503-871-0411

	Coordinator, TSHF ETG		
<b>Kenneth Shonkwiler</b>	Principal Transportation Planner, Interim Planning and Programming Manager, ODOT, Region 4	Kenneth.D.SHONKWILER@odot.oregon.gov	541-815-6877

#### 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:

What components are expected to align with climate goals of the agency?

N/A

## 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:

N/A

## 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:

The proposed research is directly related to transportation safety, under the guiding problem statement “boring drives are dangerous drives”. Investigation into what makes a drive interesting from a human driver’s perspective will allow for identification and justification of targeted safety improvements on roads that are considered boring or uninteresting.

Solving the proposed transportation issue may improve safety culture for the traveling public. Public buy-in may be necessary for successful implementation of safety improvements identified as a result of solving the transportation issue. Efforts to obtain buy-in from the public may result in a positive shift in safety culture for the traveling public.

Solving the proposed transportation issue may improve safety through using best available technologies. Depending on the outcome of the investigative portion of the proposed work, best available technologies may be identified as targeted safety improvements beneficial for routes considered boring or uninteresting.

Solving the proposed transportation issue will improve safety through communication and collaboration. Because the investigative portion of the proposed work involves identifying features of interesting routes, communication between agencies with roadway jurisdiction in different areas in Oregon is essential. Thus, communication and collaboration between agencies is a critical step in improving safety by solving the transportation issue. Communication and collaboration between ODOT and the public will also play a large role in improving safety by solving the transportation issue because the success of safety improvements will largely rely on the compliance of the public.

## 5. Other comments:

Highway 97 is a specific area of interest regarding solving the proposed transportation issue. The work could be scoped to initially focus on Highway 97 in Oregon and include plans for broader implementation of developed methodology or process at the state level.

## 6. Corresponding Submitter’s Contact Information:

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This form is not a grant application or contract document. Please do not include proprietary information on this form. Once this form is received ODOT may revise and publish the problem statement. If selected, ODOT will assign investigator(s) of the department’s choosing to conduct research.