# Design Proposal Template:

**School: Ochoa Middle School** **State: WA Division: Middle School**

**Team Members' Names: Sheyla Salas, Karen Salazar, Marely Sanchez, Analy Laez**

**Project Title:** Readers should have a general sense of what the project is about and want to read more. (20 word maximum)

***Dialert: The silent bus alarm that speaks volumes.***

**Inequity Being Addressed:** Describe the inequity that you will attempt to address with your proposed solution, and why you chose this inequity. Students are able to consider a global perspective related to their inequity. (75 word maximum)

School buses often lack built-in emergency alert systems, leaving drivers vulnerable. In Pasco, a driver was fatally attacked, highlighting an urgent safety gap. Between 2008 and 2022, bus-related assaults rose 300% nationwide. Dialert addresses this inequity by providing a silent, rapid-response signal to alert bystanders and authorities without alerting the assailant. This improves both physical and mental safety and supports UN SDG 16.1, which aims to reduce violence related casualties.

**Community Research and User Identification:** Explain the process used to identify the inequity and select your user. Include any research done to identify issues in your community and understand which groups face challenges because of these issues. (150 word maximum)

We identified the safety gap for bus drivers through research and community conversations focused on UN SDG 16.1. In 2021, a Pasco School District driver was killed during a bus route with students onboard. In 2025, a Kennewick driver faced a similar emergency, forced to seek help while under threat. Globally, over 4.4 million people die annually due to violence (WHO, 2025). We interviewed our school principal, a Pasco bus driver, and three transportation safety experts. These discussions revealed that school buses lack emergency alert systems and that drivers experience daily stress about potential assaults. Public transit systems use alerts, but they are expensive and difficult to retrofit on school buses. Our interviewees unanimously agreed on the urgent need for an accessible, discreet alert system. Based on our research, we chose bus drivers as our users and began designing Dialert as an accessible, high-impact solution to address this critical need.

**User Profile:** Provide a detailed description of your selected user. Include information about challenges they face, how those challenges impact their lives, and specific project needs based on user feedback. (150 word maximum)

Our users are school and public bus drivers, who face daily risks from aggressive passengers, unknown individuals, and/or guardians. After numerous interviews, we learned that school buses don't have alert systems to signal others of emergencies. These situations endanger both their physical and mental health. School buses lack emergency alert systems. Drivers must rely on hard-to-reach radios to request help—especially dangerous in active threats. From our interviews, one Pasco driver suggested positioning the button away from typical controls to prevent confusion. Our school principal recommended placing emergency lights silently on the rear of the bus to avoid tipping off intruders. Drivers emphasized the need for a fast, quiet signal to ensure their safety and protect the students on board. This feedback guided our design of Dialert—a discreet panic system offering a sense of control, improved response time, and the ability to signal for help in a non-escalating way.

**Project Goals:** List your project goals and explain how these goals will address inequity. Project goals should define the desired outcomes, not specific features of the proposed solution. (150 word maximum)

**Dialert's Project Goals:**

Dialert aims to improve bus driver safety through three key goals:

1. **Reduce Anxiety and Improve Mental Safety:** By providing a discreet way to signal danger, Dialert empowers drivers, helping them feel more secure and supported in high-stress situations addressing our bus drivers' mental safety inequity.
2. **Increase Physical Safety:** Dialert helps prevent harm by giving drivers a quick way to alert bystanders and responders, reducing the risk of violence-related injuries or deaths addressing our bus drivers' physical safety inequity.
3. **Shorten Emergency Response Time:** Inspired by a local incident and resulting WA State law changes where bus drivers can defend themselves during attacks, Dialert ensures faster alerts to authorities, minimizing response delays and improving outcomes during emergencies.

Together, these goals address both physical and mental safety inequities that school bus drivers face daily, promoting a safer, more responsive transportation environment.

**Proposed Solution:** Describe your proposed solution, including any innovative and unique features, and explain how this solution will address your users' needs and the inequity they face. (150 word maximum)

Our solution is a silent emergency alert system on buses. A distinct panic button is positioned on the left side of the driver's seat, away from other controls to avoid accidental use. When pressed, it activates red, blue, and white LED lights on the back of the bus—visible to nearby drivers and pedestrians, but silent, so intruders aren't alerted. This discreet signal prompts witnesses to call 911 without escalating the threat. Our interviews confirmed this approach is more practical for bus drivers in comparison to traditional radios. Dialert gives drivers a safe, reliable way to ask for help, especially in situations where reaching for a radio is impossible. It boosts drivers' sense of safety and physical safety, addresses a critical equity gap in school transportation, and supports global violence-reduction efforts. The solution is innovative and scalable, designed to meet immediate safety needs while advocating for systemic change across communities.

**Initial Design:** A single graphic of your first design idea with key features adequately labeled. It should be easy to understand, and the reader should have a general understanding of how the prototype functions by looking at the graphic. Max size 8.5" x 11"