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My bridge was designed to cross six lanes of traffic on the I-90 corridor at the Price/Nobel Creek interchange.

For this submission, my main goal was to prevent road kill and connect habitats. However, I also focused on creating a bridge that is safe for drivers. I designed the bridge to be visually appealing, to fit in with the landscape, and act as a showcase. I made the bridge more sustainable by adding environmentally friendly materials and renewable sources of energy.

By making the bridge easy to get to and attractive to animals, I hope to decrease the number of animals that are hit by cars on I-90. Washington State has proposed fences that will guide animals to the bridge. This method has proved successful in Canada. To add onto this idea, I designed a bridge that has two paths on each side. Because of this, the bridge will meet the ground at four different locations instead of two. This will hopefully increase the number of animals crossing the bridge. I also designed a rich habitat on the crossing. Grand firs and Douglas firs could be planted. Only native plants such as these should be planted. If invasive plants were grown, native plants might be threatened. If plants and trees are grown, and a water body is installed, there will be more food, water, and shelter for the animals. These attractive features will bring more wildlife to the bridge. Herbivorous animals such as elk and deer would eat the vegetation. Animals such as bears and mountain cougars would eat smaller mammals such as hares and wood rats that would also inhabit the bridge. On the topic of amenities for animals, I am proposing bat and bird houses. These habitats will help to make up for the trees that were cut down to build I-90. Bringing birds to the crossing would further improve the surrounding habitat. For example, birds would pollinate plants and bring new seeds to the area.

The bridge will also benefit wildlife by creating a connection between fragmented habitats. I-90 separates animals from other animals, food, water, and shelter. Habitat destruction is the largest cause of extinction. As I mentioned before, I have designed the bridge to attract the most animals possible. This will increase wildlife connectivity. The bridge will help wildlife by connecting them to these resources. This could lead to an increase in biodiversity because there will be more migration.

I worked on making the drivers' experiences the safest possible. The bridge's sides tip up. This stops soil and rocks from falling off the crossing onto traffic. This also allows more sunlight to reach the tunnel. A dark tunnel can be very dangerous for drivers. The tunnel should be tiled on the inside. Tiles are reflective which would further decrease the need for artificial lighting. Tiles are easy to clean. This is important because cars emit exhaust and dirt is stirred up. This is sustainable because less waste is produced. If the tunnel was lined with a metal sheet, the whole metal sheet would have to be removed if it became damaged. Instead of removing the entire surface, one tile can be removed if it is damaged. I added solar panels to the top of the crossing. This is optional but it could produce energy for lights if they were needed for the tunnel.

I aimed for my design to not only be safe for drivers, but also an attraction. I designed the bridge to be viewable to drivers and to set an example, but I did not design it to be accessible to

drivers. This is why I designed the triangle supports on the sides of the bridge. I designed them to be too steep to climb up. I did however design an area that drivers could pull over to. They could either view the crossing from their cars or get out and climb up a path to have a better view. At the top of the hill, there would be an information sign that would introduce the bridge as the first wildlife crossing in Washington. This would serve to showcase the bridge.

The bridge design came from a need for the crossing to fit in with the environment. The bridge needs to be pretty and blend in with the landscape because it is in Mountains-to-Sound Greenway National Scenic Byway, a Washington State Scenic Byway. I attempted to retain all of the qualities of the surrounding beauty by not creating an obstructive bridge. My bridge is inspired by both the image of a bird in flight and the profile of the surrounding Cascade mountain range. The design also fits nicely with Snoqualmie pass; its natural curves compliment the soft lines of nature.

As I explained before, the bridge has two paths on each side. On each side, one section will be lower than the other. This is my solution to the heavy rainfall and snowfall in the area. Rainwater and snow melt will flow down the lower path on each side. The water will then be able to soak into the soil of the surrounding areas. I felt it was important to deal with this problem because storm water collects pollutants as it runs off roads and sidewalks. These pollutants flow into water bodies and kill marine organisms. This is huge problem with salmon in our state.

I added cameras to the top of the crossing. Cameras would assist in the research being done to track animals. By filming the surroundings, scientists could learn what animals are visiting the crossing which could lead to future improvements of the crossing.

