

PROJECT OUTLINE

Team Name, Number, Color: DotDotDot, 4212, Red

Member Names: Serena, Hayley, Jason, Rachel, Kameron (Team Mentor.)



, Our Team Mascot, Alex the Red Owl:

Our Team Motto: Owls are a sign of confidence, and we are confident!

Background Research (2-5 sentences)

Why is this problem important? Give facts and statistics

1. It takes 4-6 days or even longer for items delivered to you in some areas especially during Covid.
2. It takes 4 to 5 business days for mailing companies within rural areas.
3. In rural areas, packages aren't delivered to houses as often as suburban areas.

Problem Statement

It takes a long time for mail to be delivered to communities.

- Who: Everyone who gets mail
- What: it takes too long for the package to be delivered
- How: Self-driving truck that produces and deploys a robot to go and deliver the package and then come back to the truck

Problem Explanation (2-5 sentences)

Why is this a problem? Who does it affect? What are the consequences of not addressing this?

- When: every day that you get mail
- Who: Everyone who gets mail
- When: every day that you get mail

It is a problem because people need their packages to arrive punctually. The consequences of not addressing the problem can lead to people realizing the unreliability of mail delivery. Transportation companies can lose business.

Previous Solutions

- 1. Previous Solution 1: Robots, specifically drones, that can deliver goods anywhere and on time. (drones)**
 - 1.1. Pros: It would be harder for the drones to get lost.**
 - 1.1.1. The drones will not get cold in the winter and they won't get hot in the summer.**
 - 1.2. Cons: Drones could run out of energy or break down.**
 - 1.2.1. The package could be too heavy for the drone to carry.**
 - 1.2.2. The drone could rust when it gets older**
 - 1.2.3. Drones are expensive.**
- 2. Previous Solution 2: Self driving cars to deliver groceries or goods.**
 - 2.1. Pros: They can help bring goods more accurately and safer**
 - 2.1.1. The vehicles will not have any problems with the environment and drives safely**
 - 2.2. Cons: Because it is a self - driving car, the car isn't the smartest so there may be a problem with communication for example.**
 - 2.2.1. There could be confusion with the deliveries.**
- 3. Previous Solution 3: Rural mailboxes - mail boxes next to the road so delivery trucks do not need to maneuver through unfamiliar roads**
 - 3.1. Pros: delivery vehicles do not need to drive on rural roads**

3.1.1. Mail delivery trucks are less likely to encounter obstacles they aren't familiar with.

3.2. Cons: chances of stolen goods

3.2.1. Anyone on the side of the road could take a hold of packages.

4. Previous Solution 4: Better shipping containers.

4.1. Pros: the goods won't be damaged as easily

4.1.1.

4.2. Cons: could be costly

4.2.1.

5.

5.1. Costly and could be potential faults

Robots (not drones) can help deliver mail safely and accurately.

Solution Statement (1 sentence)

6. Robots delivering mail

6.1. Pros: increased accuracy and efficiency

6.1.1. Increased business and better environment

6.2. Cons: People can be scared of the robots

Solution Explanation (2-5 sentences)

The robot is going to travel to each house in many areas to drop off packages. The robot can also scan the barcodes on each package to know which house to drop them off at. The robot will move with treads to be able to travel through all terrains, including rocky areas. The robot will have motion sensors, color sensors, proximity sensors, and a camera to travel the same path everyday without running into any objects or people in its way and to be able to map out and recognize areas before travelling there.

Full Citation

- [Sending to a Rural Delivery Zone | Help](#)
- [How Big Should Your Mailbox Be? USPS Mailbox Regulations and More](#)
- [5 Solutions to Common Causes of Delayed Shipments](#)