MVP:

Applying Data Science Methods to Better Preparing Portlanders for a Large Cascadia Earthquake

Problem Scope: Homes built before 1974 will suffer the worst damage in a serious earthquake; 54.8% of all Portland homes were built before 1974. The Oregon government estimates that Portland could experience anywhere between 10,000 to 30,000 injuries and upwards of thousands of deaths during the earthquake.

Problem: Not everyone should simply "duck and cover" in the event of an earthquake. In homes where there is high potential for collapse residents should leave the building immediately when shaking begins.

Data Science Solution(s):

1) Create a classification machine learning model that determines whether a Portland home will collapse during an earthquake.
2) Create a website for Portland residents which:
    a) Classifies the potential for their home/place of residence to collapse.
    b) Based on the number of residents in their homes Informs them about how much food and water to have stocked up
    c) Details the closest FEMA Tier 1 Critical Facility where they can receive medical attention and aid.
    d) Details the closest "Basic Earthquake Emergency Communication Node" (BEECN)
        i) A Basic Earthquake Emergency Communication Node or BEECN is a place to go in Portland after a major earthquake to ask for emergency assistance if phone service is down, or to report severe damage or injury.

Impact Hypothesis: By creating a website where Portlanders can learn how to respond to an earthquake based on their unique place of residence we hope to reduce the number of people injured or killed during a Cascadia Subduction Zone Earthquake.

Image caption: Below shows the 7,846 homes built before 1974 within just 3 of the 31 Portland zip codes. The map highlights a small sample of the many homes at risk for collapse during an earthquake.