

WHAT IS LIQUEFACTION?

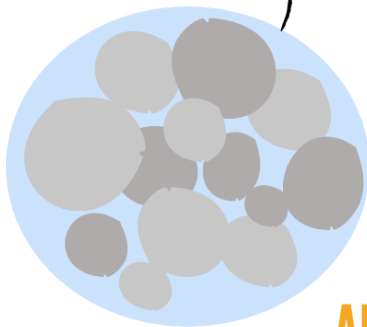
A phenomenon in which vibrations can cause loosely packed water-saturated particles to act like fluids.

BEFORE AN EARTHQUAKE



NORMAL PRESSURE

Particles can hold the weight from above due to the friction created by the tight contact between them

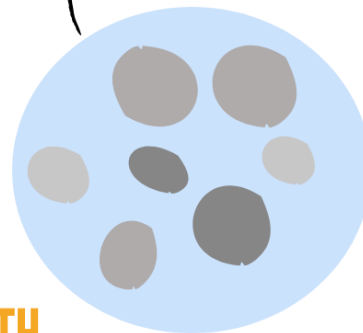


DURING AN EARTHQUAKE



INTENSE PRESSURE

Water from underneath will break away the contact between the particles and fill up empty spaces



AFTERMATH



When the sediment is then unable to support the weight from above, the "... result is subsidence, fracturing, and horizontal sliding of the surface." (Hess,p. 437)

WHAT ARE THE EFFECTS?



1. Sinking of Foundation

The foundation loses the density of sediment and will gradually begin to cave in.



2. Lateral Spreading

The soil moves in a downward direction towards banks, rivers, and oceans. It can produce cracks or extend the length of them.



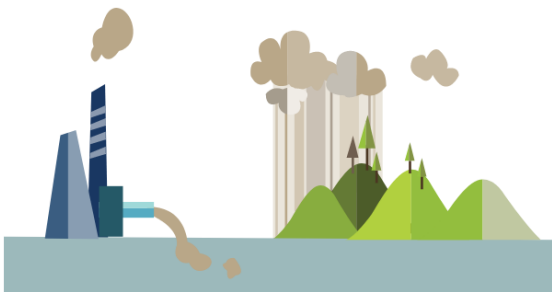
3. Structural Damages

Infastures like buildings and bridges, which are constructed on top of these weak foundations, will subside.



4. Contamination of Water

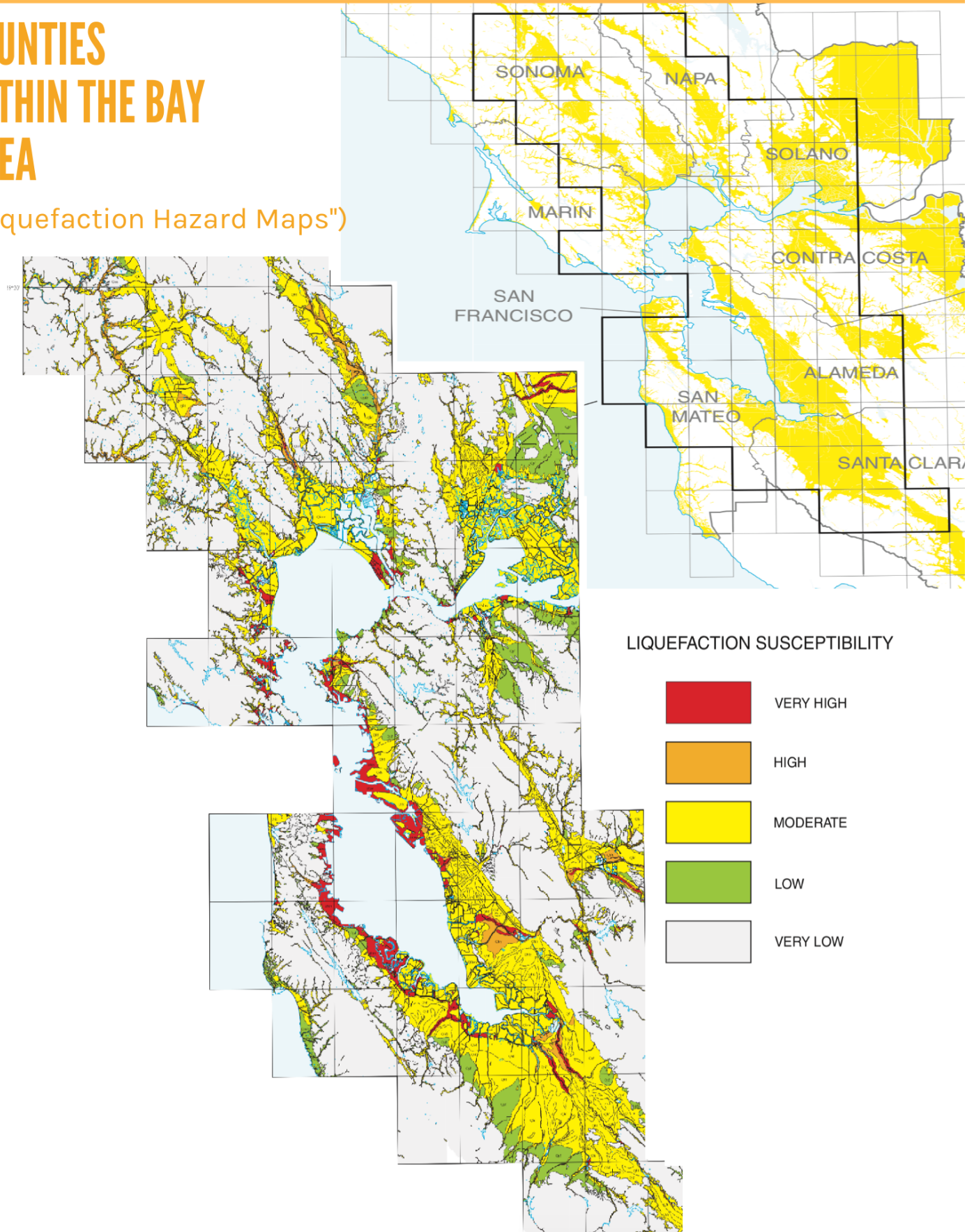
Water can be contaminated due to the breakage of underground utilities such as pipes. Thus, it exposing water to sewerage waste



WHO ARE EFFECTED?

COUNTIES WITHIN THE BAY AREA

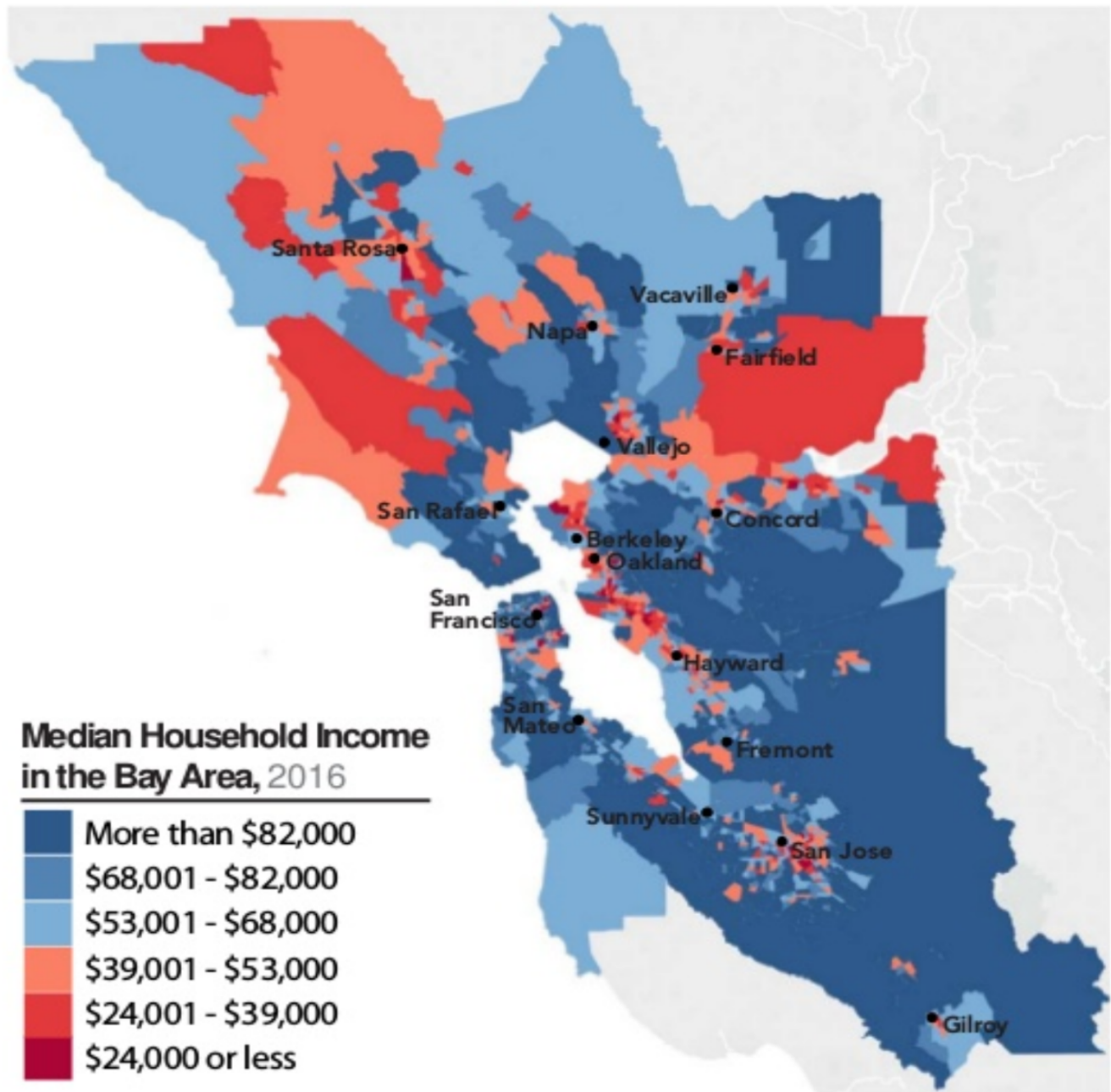
("Liquefaction Hazard Maps")



EVENT REPORT

ECONOMIC BREAKDOWN (Bay Area Council Economic Institute.)

The disproportional areas of income have left people with low income more vulnerable to harm compare to others.

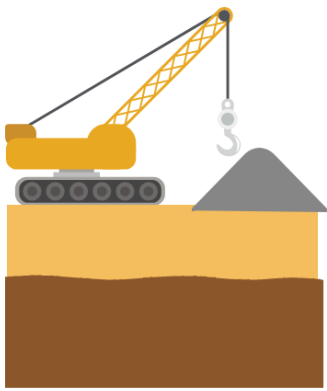


WHAT ARE THE SOLUTIONS?



1. Avoid Building on Weak Soil

Check if the soil is suitable for to build on top beforehand.



2. Improve the Soil

Strengthen the density of the soil through techniques such as mixing dry soils, vibroflotation, and grouting.



3. Build Stronger Structures

Design foundations that can prevent the effects of liquefaction.



These options can decrease the possibility of putting people's lives at risk

CONCLUSION

1. INTRO

- No matter where we live in the Bay Area, we still will be affected by liquefaction.
- The reason we live in these dangerous areas is due in part to the old design and layout.



2. AWARENESS

- Housing is made with inexpensive material and less precaution.
- Even with the low budget for building, these housings are likely to be expensive.
- People who are in the upper or middle class and can afford these houses still can live in vulnerable areas of liquefaction.



**Lives shouldn't be risked for the sake
of money**



**It's now or never to take action and demand
change, the choices we make now will
drastically impact our future.**