

Fragile System Part Deux

Lecture 1 - Connections



<https://www.youtube.com/watch?v=vRF6EO0q6uQ>

Final Exam

- Wednesday 11th December 3:30pm, SRC Gym
- ~100 multiple choice questions, covering all topics, slight emphasis on Impacts and Extinctions
- 1.5 hours Individual, 1 hour Group

Bring your Student ID – it will be checked

Group exams will have a Group Number

Impacts Review Session

Monday December 9th

3-4 pm LIFE 2201

It's two days before the exam – so study first,
and come prepared with your questions!

Session will be recorded – but please come
along and ask your questions!

Learning Goals

- Describe the links between the different disasters we have talked about in class
- Synthesize your knowledge of individual disasters into a coherent understanding
- Describe the hazards related to meteorite impacts

Our Disasters

Storms

Waves

Earthquakes

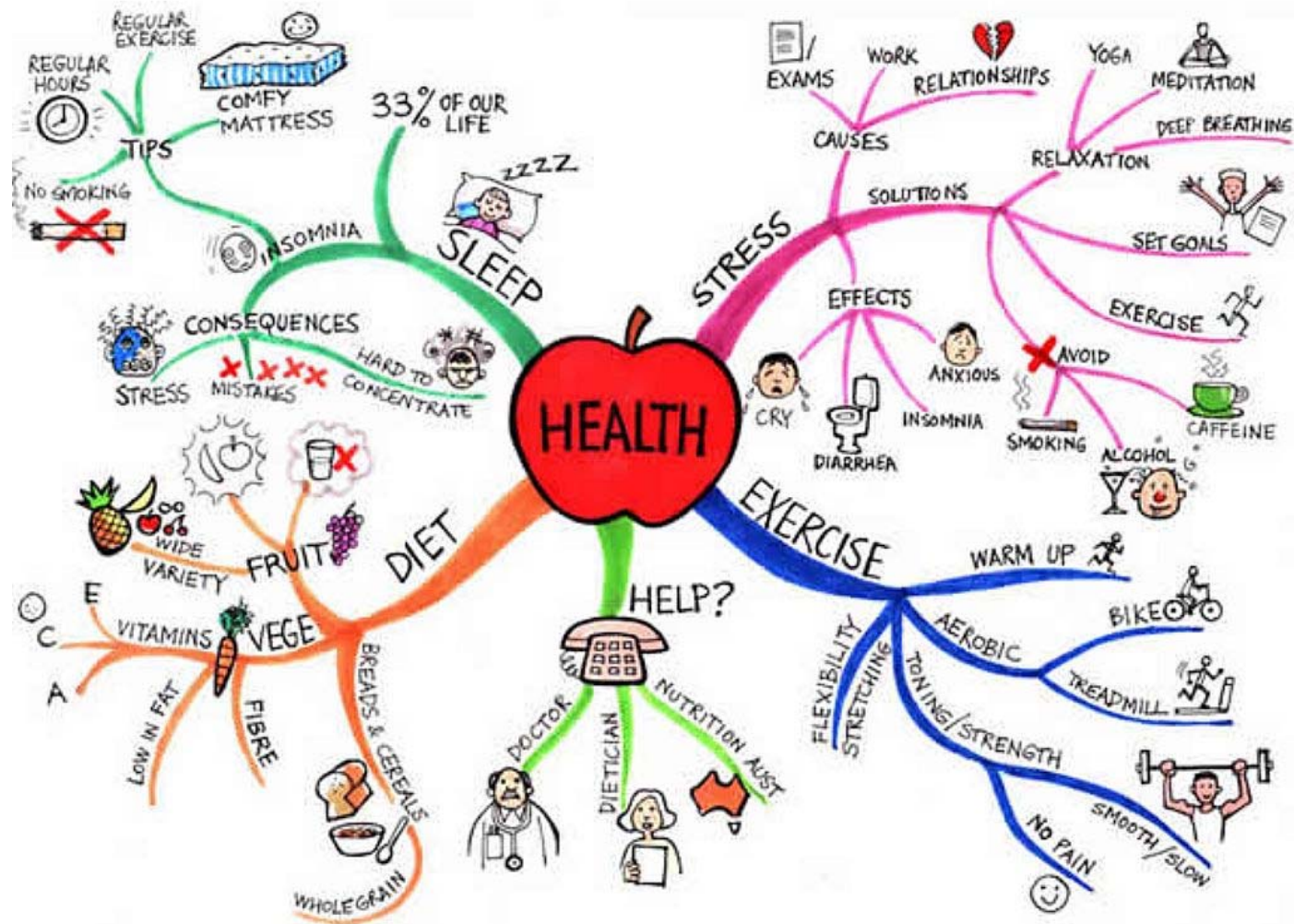
Landslides

Volcanoes

Impacts

In pairs – take out a piece of paper each and draw a mind-map showing the links between these different disasters
Which are related? And how?

<http://www.tonybuzan.com/gallery/mind-maps/>



A Health Mind Map

You might also be able to link some of these items across the branches

Our Disasters

Storms

Waves

Earthquakes

Landslides

Volcanoes

Impacts

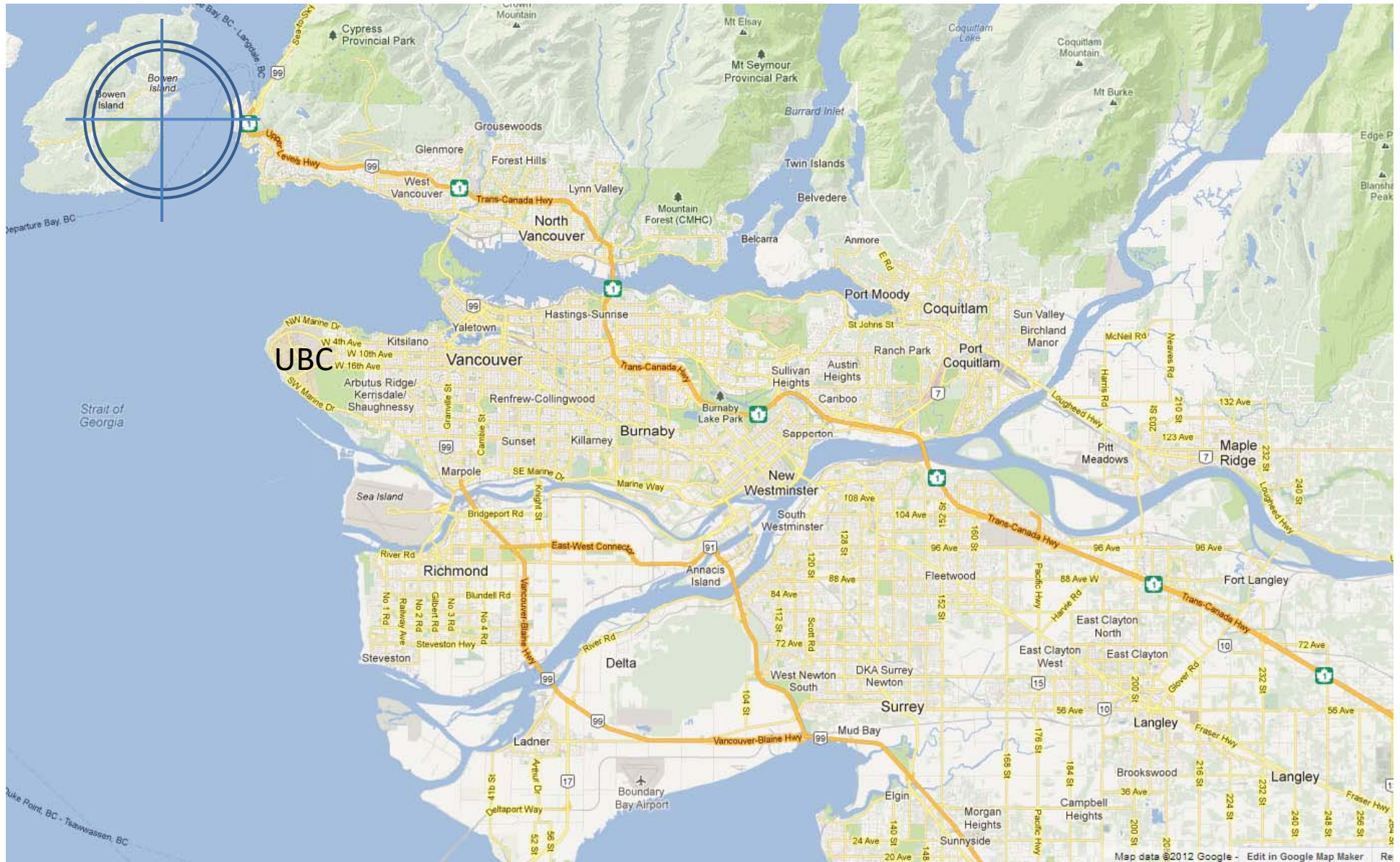


Impact Generator

<https://neal.fun/asteroid-launcher/>

Or search for “Asteroid Launcher”

Using the asteroid launcher, work in groups of 4 to complete the worksheet, and learn more about how size matters (for impacts at least!)



Scenario – a meteor hits the edge of Bowen Island, what are the consequences?

Clicker Question?

Using Google Maps – approximately how far in a straight line is Snug Cove on Bowen Island to us in the lecture theatre?

- A) 6 km
- B) 8 km
- C) 10 km
- D) 12 km
- E) 14 km

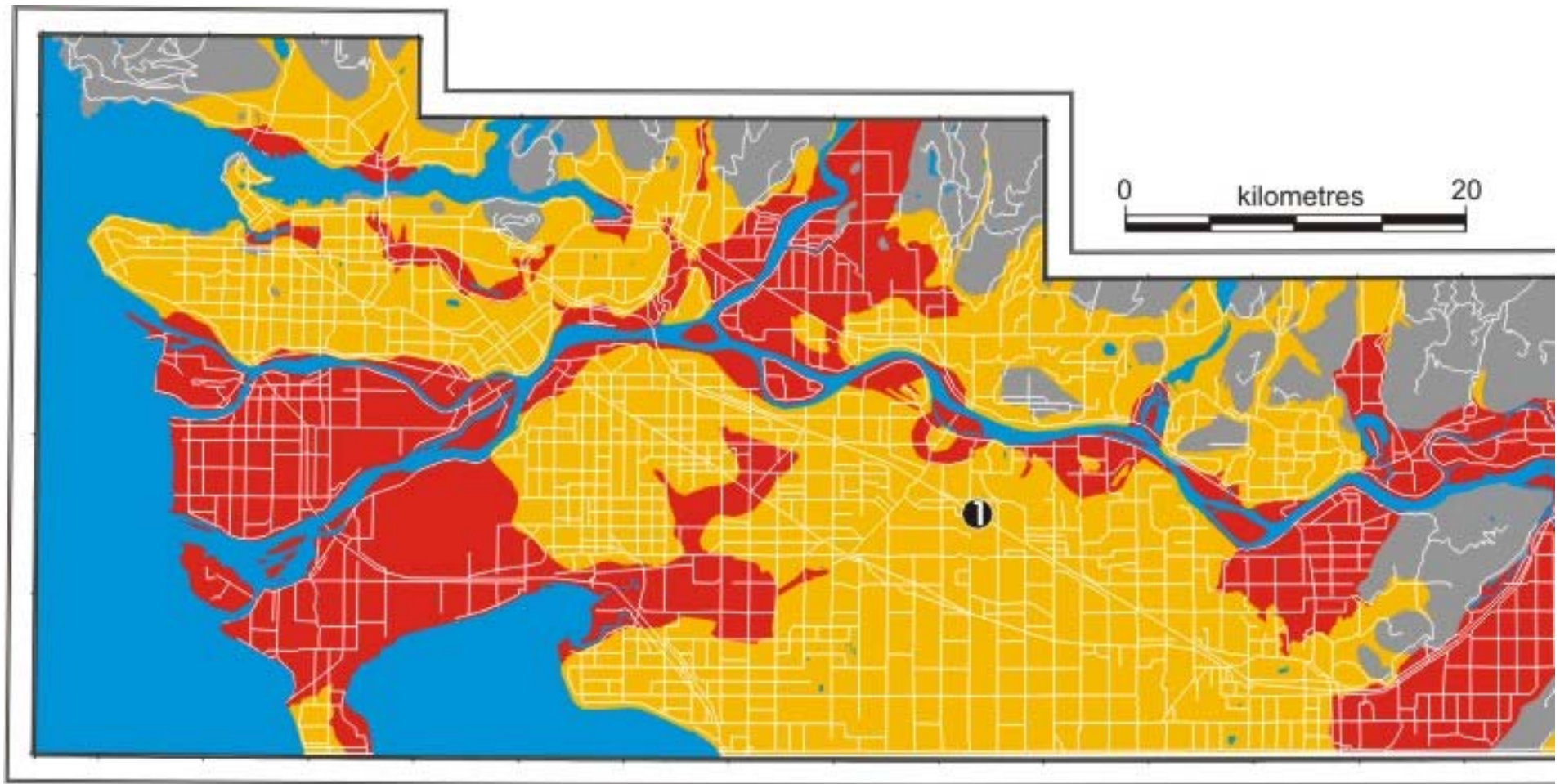
Clicker Question?

For the meteorite in 1b)

Projectile Diameter: **60 m**; Asteroid type: **iron**; Speed: **20 Km/s**; Impact angle **45°**

Are we safe at UBC?

- A) Yes – but it would be a spectacular sight
- B) No – we are vaporized
- C) No – we are hit by the tsunami
- D) No – we are taken out by the shockwave
- E) No – we are destroyed in an earthquake



Earthquake Liquefaction Risk Map
Vancouver

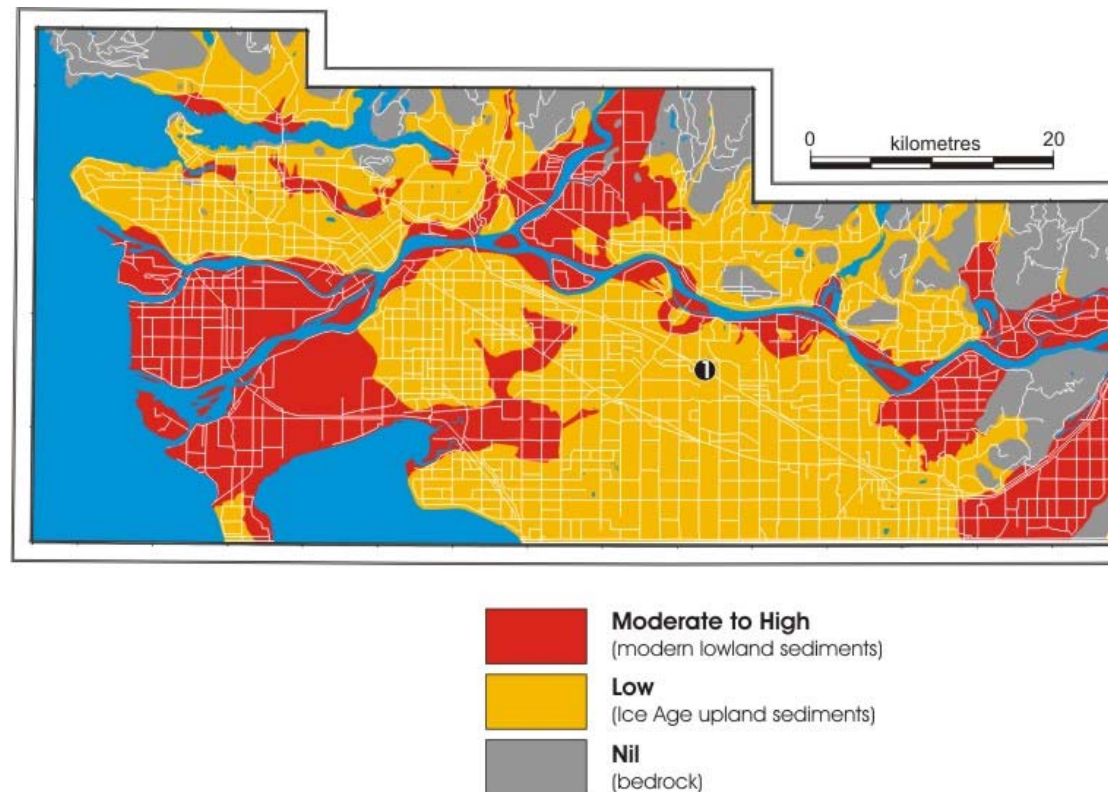
First – where is Bowen Island?



Clicker Question?

What is the liquefaction hazard at UBC?

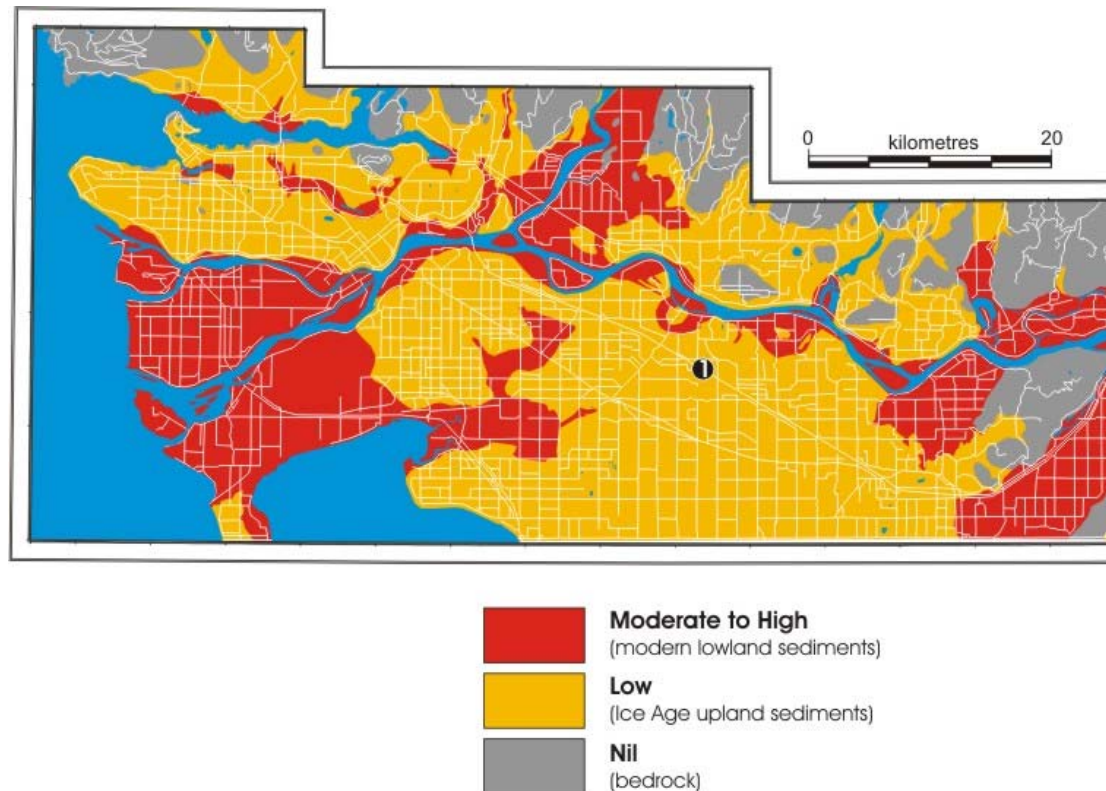
- A) Moderate to high
- B) Low
- C) Nil



Clicker Question?

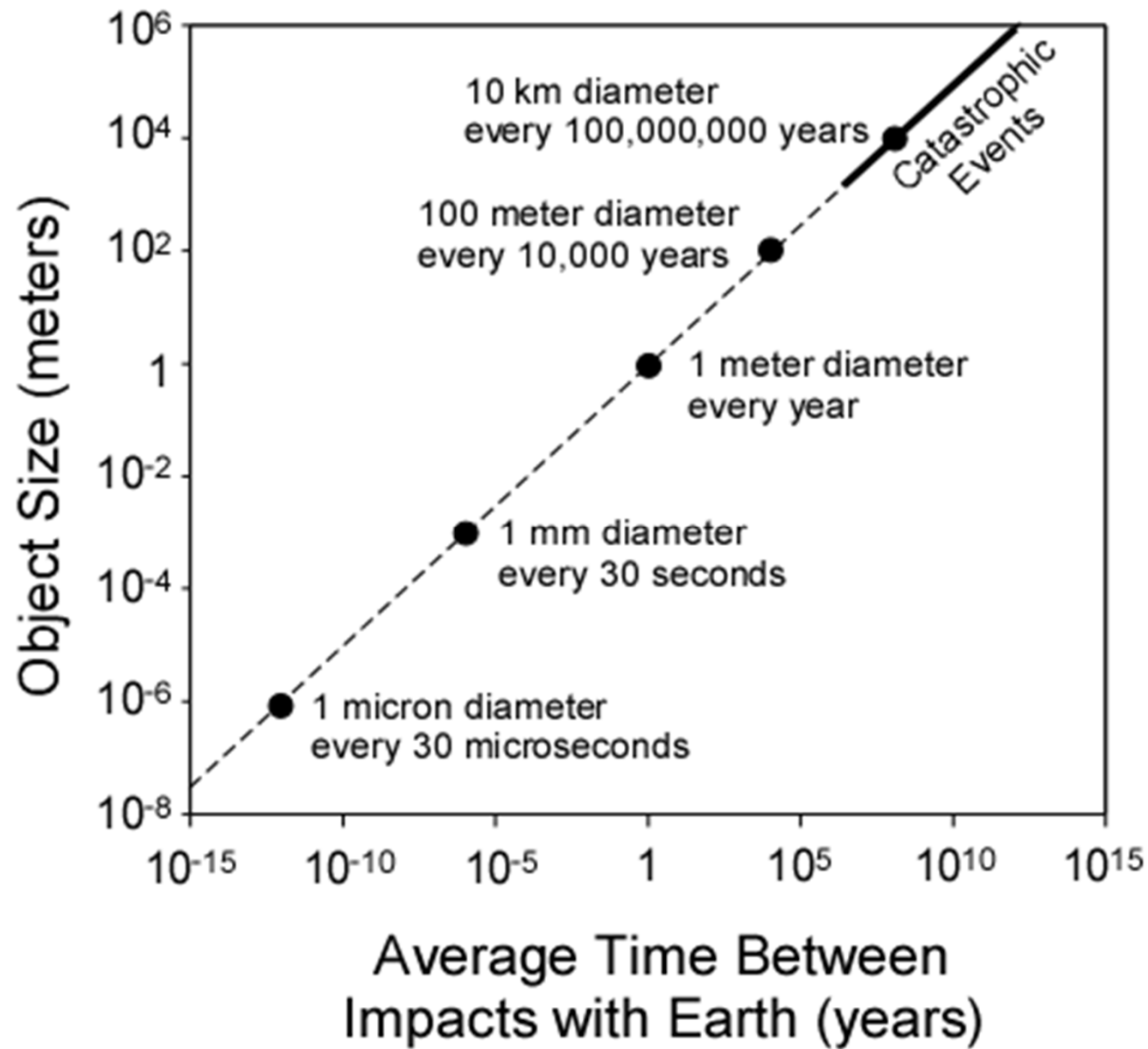
What is the liquefaction hazard where you live?

- A) Moderate to high
- B) Low
- C) Nil





What size impactor is needed to cause a mass extinction??



How big? How often? How likely are the events you are modelling?



Do you know how the Moon formed?

A) Yup

B) Nope

E) I choose to answer E for reasons I keep to myself

<https://www.youtube.com/watch?v=kRIhICWplqk>

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Next Class

- Climate change and disasters
- Course evaluations (first ~10-15 minutes)

