Unit 06 GeoMations: How New Orleans Doesn't Work

Here's a great tree. And the great tree is standing up on a bluff looking down on the Mississippi River, which sits down in a valley. And the river has a little natural levee-- this, we haven't gotten to human built ones yet-- and it sits down in a valley.

And then, over on the other side, there's another natural levee, and then you go up another bluff to the top. And the river itself sits down in its river valley like this. And it is flowing towards you, which is what the head of this arrow shows.

And the river is sitting on a few miles thickness of mud that have accumulated over the years as the delta has built out into the Gulf of Mexico. And whenever you get a few miles of mud, everything is sinking under its own weight. And that, in turn, means that the surface is sinking, as well.

Now, nature has a way of handling this surface sinking problem, which is that during a big flood, the water spreads out over the flood plain. And mud falls out of the water, and the mud makes a new layer. And so as the surface sinks, more mud is added. And so there's no net change in the elevation. And that's just fine, except for one little problem.

Over here you have a city. And you've built this big city. And you really don't want that flood coming into your city. So you just call up the Corps of Engineers and you say, make a big wall, and make sure that that flood is not going to get into my city.

Well that's just fine, except that doesn't stop the sinking, because the thing is going down. And so if you come back later, what you'll find is that the surface has moved down to a place like this, and your city has moved down to a place like this. I'm using a darker line so you can see where it's gone to from where it was.

And so you tell them to make the wall bigger. But meanwhile, the city is sinking even deeper. And you've gotten up somewhere way down here, now.

And things are getting really nasty, because at this point, there's a really big storm. And it manages to get just over the top, and it fills your city with water. And then you're underwater and you're very, very unhappy. And this happened to New Orleans. And the sinking is not stoppable, so if it's rebuilt, it is likely that it will happen again.