

The sea is rising and coastal land is sinking, and local leaders should make flooding a priority issue

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The mid-November nor'easter storm that pummeled Hampton Roads flooded substantial portions of our region. President Barack Obama declared portions of Hampton Roads a disaster area after a record high storm tide was recorded at Money Point on the Elizabeth River. Newport News sustained an estimated \$700,000 in storm damage and there will be substantial additional costs if regional communities seek to replenish their washed-away beaches.

OK, this was bad, but will it happen again? Alas, the most likely answer is, "Yes, not only will this happen again, but also in the future these episodes will occur more often and be far more destructive."

Let's probe the reasons why. First, ocean levels have been rising in Hampton Roads for at least 100 years. By 2100, the Chesapeake Bay Program's Scientific and Technical Advisory Committee predicts, ocean levels in our region will rise between 2.3 and 5.2 feet. Second, the ground beneath our feet literally is slowly sinking in much of our region — between 5 and 7.5 inches per century because of the crumbling of the Earth's crust around the Chesapeake Bay.

If we take the mid-range estimate for ocean rise (3.7 feet by 2100) and the mid-range estimate for sinking land (6.25 inches by 2100), then together we are talking about a 4-foot, 3-inch rise (51 inches) in the waters surrounding us by 2100. This translates approximately to 0.57 inches per year, every year, between now and 2100.

This means that in the future, even minor storms will cover us with water and that this will happen several times per year. If a major storm strikes us during a time of high tide, then nothing less than a huge disaster will be the result. Let's be concrete. The 2009 State of the Region report predicts that nearly all land east of Route 17, both on the Peninsula and Southside, will flood during significant storms. This will cause tremendous property damage, throttle economic activity, force evacuations and almost surely result in a loss of lives.

Flooding, then, may be the issue of the 21st century for Hampton Roads. Yes, our transportation challenges are immense, but even the best roads are of no use if they are under water. Adding more tunnel tubes will be futile if those new tubes periodically fill up with water like swimming pools.

No doubt we could sponsor a healthy debate focusing on why our oceans are rising and whether this is the result of human activity. I'll sidestep that possibility and make a simple observation. Ocean levels are rising in Hampton Roads, and our land is sinking. These are facts that cannot be avoided. Unless we construct dikes, levees, locks, breakwaters and other devices to control the

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waters that both surround and penetrate our region, we will face unmitigated water damage in the future from even small storms. And, eventually, about 2060, it will not even take a storm to begin to cover up substantial portions of our coastal lands. By 2100, a high tide will be sufficient to push water up to Route 17 in most areas of our region.

The Netherlands has demonstrated that it is possible to frustrate rising ocean levels and also to mitigate water damage from storms. However, the cost is quite high and includes the loss of beaches and ocean access as well as the disappearance of environmentally distinctive tidal and marsh lands.

Remember our debates over issues such as the boat tax and the car tax? The financial stakes attached to these laws will seem like small potatoes in the future as we come to grips with the costs of dealing with rising ocean levels. It is time for our elected officials to take notice.

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