The next situation we find ourselves in is the case of existing waterfront developments with some undeveloped marginal lots, or newly subdivided lots.
One case illustrating this situation involves building on a beach on the Chesapeake Bay.

The Bay is to the right of the photo -- essentially an unlimited fetch. There’s a low saltmarsh at the upper right point, and Phragmites to the west behind the low marsh. There are some pines, then marsh further back toward the northwest. The entire area is at a very low elevation.
After Hurricane Isabel in 2003, 2 new houses were built. Notice fewer trees and more beach (less vegetation). We’ll see a ground shot of the house to the north.
A pre-Isabel ground shot, looking north toward the point. Notice the well-vegetated shoreline.
Pre-Isabel
Taken the spring after Isabel.
Very low elevation all around (not just on beach side).
Brand new, expensive, house built on the beach on a newly subdivided lot.
Septic field installed near the house.
Whenever you have development on the shoreline, there are tradeoffs between public and private benefits and detriments.
Ecosystem Services provided

• Dynamic reservoir of sand for erosion/storm protection – of this property and “mainland” properties behind this barrier
• Unique dune/beach habitat

Some of the public benefits are reflected in the ecosystem services provided.
The beach protects not only the land immediately adjacent, but it also provides protection for the “mainland” behind this barrier.
What are some of the risks of developing here?

- Loss of ecosystem services
- With storm events and sea level rise → house at risk
- Septic system failure → water quality/health problems
- Public infrastructure loss (power, water, etc.)
- Need for emergency services

→ For a private individual to gain, the public takes a hit. (Public cost > Private benefit)

Loss of ecosystem services by building the house & subsequent shoreline defense structures, and other landscape management efforts (ex.-trying to grow lawn, fertilizing).

Loss of the house is a cost to the property owner, but also to the public (ex.-debris removal).

Infrastructure loss can also include roads.

Emergency response is another public cost.
This is, of course, not an isolated incident. There’s a lot of risky development happening.
Same house, different angle. Apparently, the property owners stated that they knew they’d be flooded & were willing to take risk. BUT – risk & costs are also to the public.
• Development on fill at mouth of major tributary
• Flooded before being occupied
Development of a former oyster house property to condos.
Some fill was added to increase elevation, but it’s still very low-lying and risky.
Preventing risky development

So where does the responsibility for preventing risky development lie?
Let’s look at the agencies that are involved in decision-making in these risky coastal areas. Of these agencies, which do you think has the greatest capacity to prevent these types of risky d...
Which of these agencies has the greatest capacity to prevent this type of risky situation?

- Local Planning/Zoning Dept.
Local planning/zoning/building departments are best situated in the timeline of the development process to avoid risky development.
What’s a poor Wetlands Board to do?

Wetlands Boards are given the task of weighing public and private benefits & detriments of shoreline projects, but they are unable to affect the process at the right juncture in some situations. There’s really no good way to protect this house. It would be better if we could have avoided this situation to start with by better planning & decision-making earlier in the process.
NOT Developing in Risky Areas

Let’s just enjoy them, instead.