

Testimony in support of the “Don’t Look Up” Act

RE: **An Act Establishing the Climate Resilient Capital Task Force**
193 HD2689 H.736

Prepared for

The Joint Committee on Emergency Preparedness
and Management
General Court
Care of matthew.murphy@mahouse.gov
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Prepared by

Douglas Quattrochi
Executive Director
MassLandlords, Inc.
and team
hello@masslandlords.net
774-314-1896

Funded by

The (as of June 1) 2,434 members of MassLandlords, Inc.
a 501(c)6 nonprofit trade association whose mission is
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One Broadway, Floor 14
Cambridge, MA 02142-1187

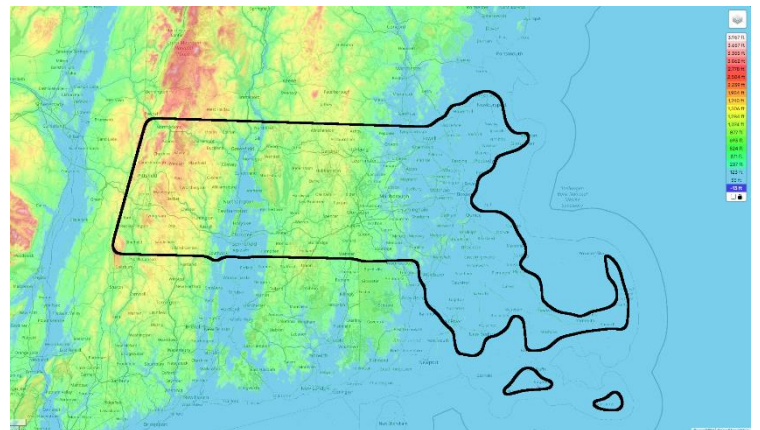


Figure 1. Although perhaps unthinkable to many, if all the ice melts, the world will be very different. It's not too late to stop some of this. But a large amount of sea level rise is already “committed” in the sense that it is irreversible. How much of Massachusetts’ real estate gets lost during storm surge depends very much on the actions we take today. Licensed TessaDEM and OpenStreetMap under ODbL.

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Executive Summary

“An Act Establishing the Climate Resilient Capital Task Force” would create a three year, professionally staffed commission of 17 appointees to consider “managed retreat” vs. coastal defense on a statewide scale. This would be the first legislation of its kind in the United States, which is appropriate for us to do first, because no one in the U.S. has permitted so much development, at such a high cost, with so little

forethought to flood risk, as we have with Boston’s seaport district and other neighborhoods. The bill prioritizes public good over private investment. The locations of the General Court, the executive offices, the judiciary, the agencies *and* most importantly at least one at-risk community would be used as case studies for either coastal defense or relocation. For each case study, the cost and uncertainty of each option will be assessed in broad terms for the legislature subsequently to act on. This bill cannot wait, as First Street Foundation now identifies thousands of Massachusetts properties as having a greater than 90% risk of at least 12 inches of water in them in the next five years (primarily rain flood and storm surge in basement units). The commission would draw on extensive work already done in this field to operationalize much of what has already been learned. Furthermore, this bill provides a once-in-a-lifetime opportunity to address short term emergency needs while simultaneously charting the long-term future of the commonwealth. Recommending this bill as “ought to pass” will put Massachusetts on the record for far-sighted and equitable leadership in the face of otherwise daunting climate change. Rain flood, storm surge and sea level rise are here and building. We can and must outbuild it.



In coastal cities, the combination of more frequent extreme sea level events (due to sea level rise and storm surge) and extreme rainfall/riverflow events will make flooding more probable (high confidence).

IPCC 2021-08-27 Physical Science Basis Summary for Policymakers -
IPCC_AR6_WGI_SPM, Statement C.2.6



Catalog of Flood-related Challenges

To greatly oversimplify, flood risk for Massachusetts can be thought of as a short-term rainfall problem, a medium-term storm surge problem, and a long-term sea level rise problem. The presence of a river can amplify local flooding through a “compound event” (e.g., storm surge combined with rain upstream).

Short-term, Basements, Parks and Roads are Flooding from Rainfall

As the atmosphere warms, it becomes capable of holding more moisture before precipitating out as rain or snow. This means precipitation events like Nor’easters and summer thunderstorms will drop more rain on us faster and for a longer time than we’re used to historically.

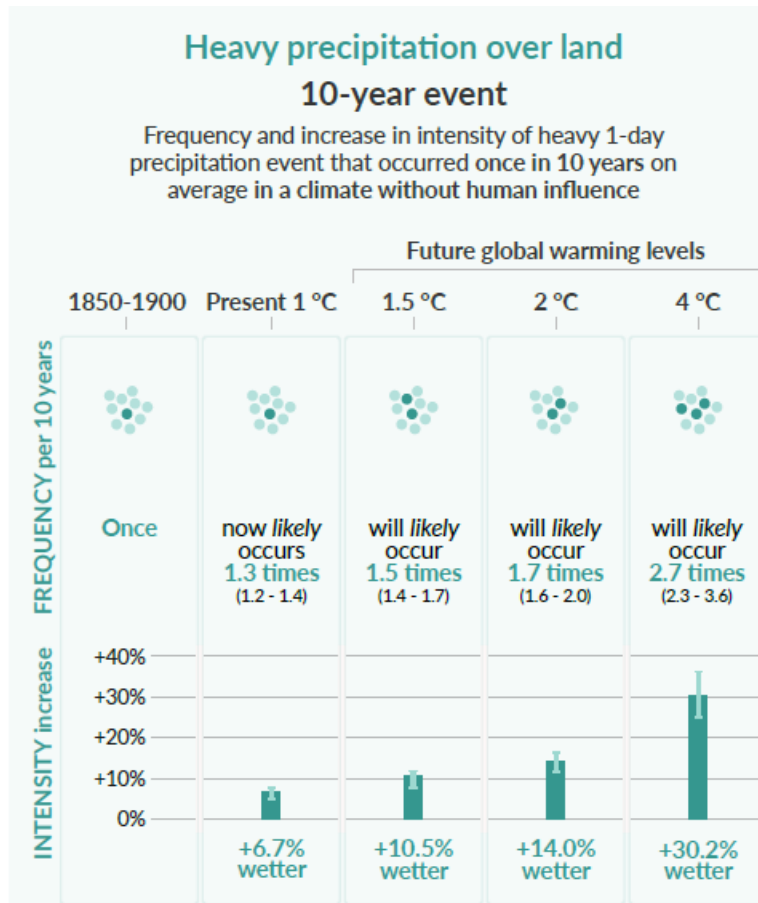


Figure 2. The 2021 Intergovernmental Panel on Climate Change (IPCC) Summary for Policymakers shows rainfall increasing globally.

Massachusetts property owners have already experienced rainfall related flooding. Residential gutters are typically undersized for today’s rainfall. In an unfinished basement, the most serious concerns are mold in the air and rust on appliances. Rarely, gas appliance pilot lights can be knocked out by rainfall flooding.

Commonly, especially in hilly communities like Worcester, rainfall events back up public sewers and cause extensive damage to properties, especially where finished basements provide a low outlet like a basement toilet. Roads, especially underpasses, are flooding across the state with increased frequency.

Massachusetts has no requirement on sellers or lessors of real estate to disclose flood risk to potential buyers or lessees. Few are aware of rain flood as a concern. Imposing such a requirement does not solve the problem, as inevitably someone will be left “holding the bag” with a lease or deed that has become unusable. This problem requires coordinated action.

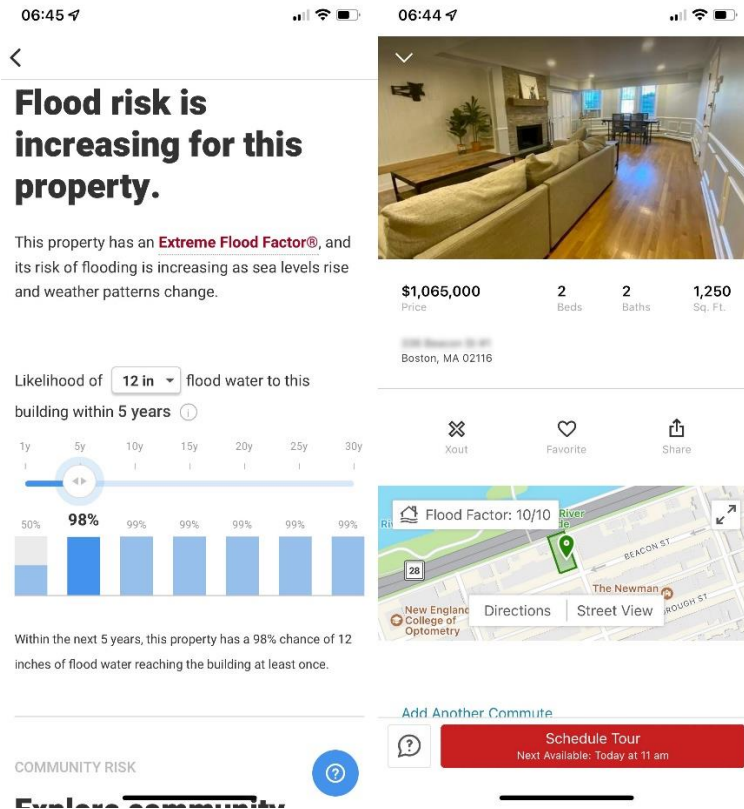


Figure 3. This April 2022 condo listing for Back Bay, Boston shows a 98% risk of 12 inches of water in the next five years. This model will be using primarily rain flood risk for this low-lying lot. Editorial use of RedFin and First Street Foundation FloodFactor.

Medium-term, Storm Surge that has Taken Lives in New Jersey and New York is Headed Our Way

Hurricanes were predominantly a southern summer phenomenon, but they do hit Massachusetts and will hit with increased frequency and severity. We have seen the effect of climate-changed Hurricanes in the case of Hurricane Katrina, which decreased the population of New Orleans by half short-term and 20% after 20 years¹.

When Hurricane Sandy hit New York, the storm surge at Battery Park was 12 feet. This storm caused \$30 to \$50 billion in damage². Its remnants flooded Marble Head, Massachusetts, even though it was not a direct hit.

A direct hit hurricane now will be much worse than prior experience alone would suggest.

¹ https://en.wikipedia.org/wiki/New_Orleans

² https://en.wikipedia.org/wiki/Hurricane_Sandy



Figure 4. Flooding in Marblehead Massachusetts caused by Hurricane Sandy - cc by 2 the birkes wikimedia.jpg



Figure 5. The official National Oceanic and Atmospheric Administration "Sea Level Rise Viewer" for Boston and Cambridge falls four feet short of actual storm surge from Hurricane Sandy, which was 14 feet when it hit New York in 2012. Even at ten feet of storm surge, Boston's infrastructure and access to the capital would be swamped. Public Domain
<https://coast.noaa.gov/slr/#/layer/slr/10/-7910282.712677894/5215253.588984675/15/satellite/none/0.8/2050/interHigh/midAccretion>

Long-term, Sea Level Rise Will Take Whatever is Left

Based on emissions already produced, we are committed globally to between 0.7 meters (2 feet) and 1.2 meters (3.9 feet) of sea level rise³, with an additional rise of between 0.2 meters and 1.0 meter for each five-year delay from 2015 until we reach net-zero emissions globally. Under the Massachusetts-specific Global Warming Solutions Act, we plan to reach net-zero emissions by 2050. This commits us to an additional 7 five-year increments, for a total sea level rise of between 2.1 meters (6.9 feet) and 8.2

³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5820313/>

meters (26.9 feet) (95% confidence), if all other jurisdictions also do their part. There are many reasons to doubt that we will globally achieve even this far-off goal.

The committed sea level rise is a different way to measure our problem compared to the forecast sea level rise of the IPCC. This graph is misleading only in the sense that it stops at 2100, past which sea levels continue to rise. Long-term, Massachusetts has no margin of safety on flooding.

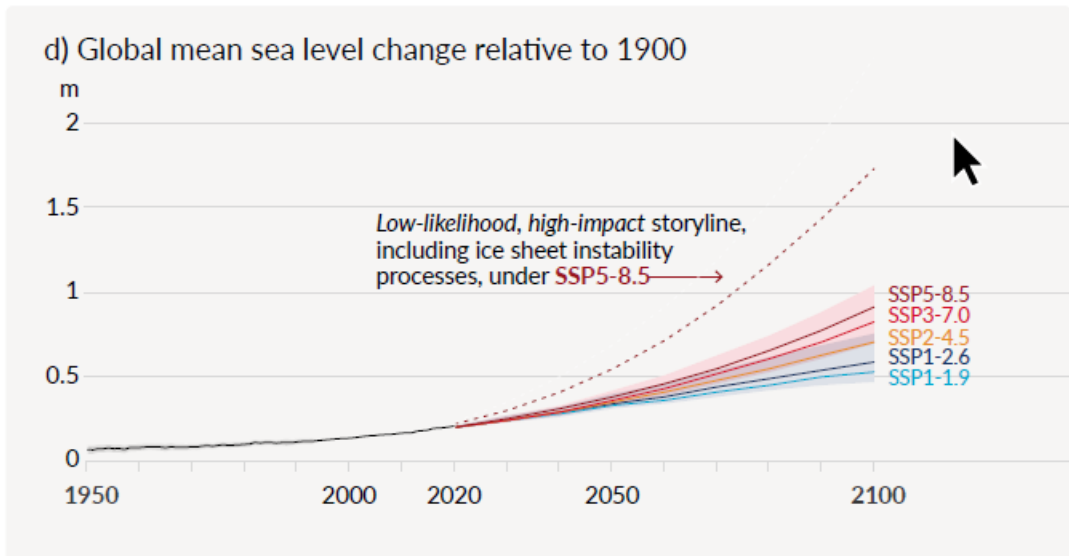


Figure 6. Global sea level rise forecasts have potentially large downside. We tend to think linearly but the graphs show this is a nonlinear process. IPCC 2021-08-27 Physical Science Basis Summary for Policymakers

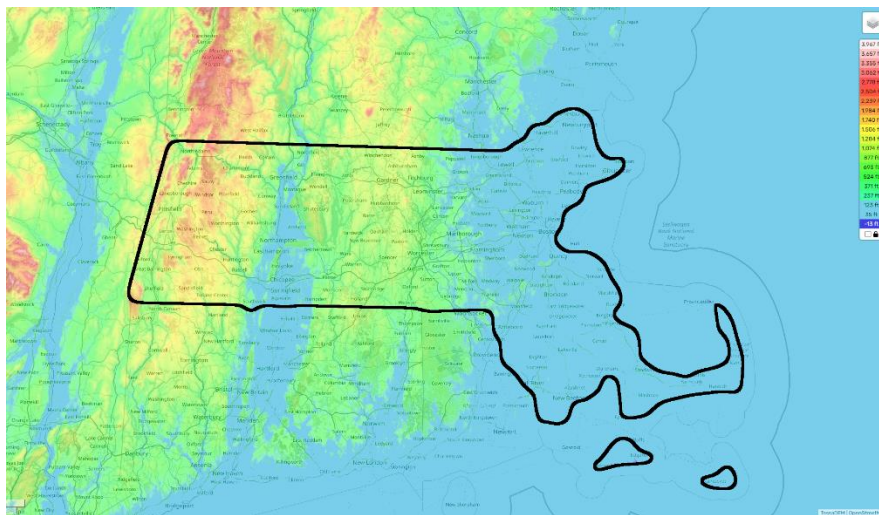


Figure 7. Although perhaps unthinkable to many, if and when all the ice melts, the world will be very different. The maximum possible sea level rise is between 200 and 300 feet, which will make MetroWest beachfront. And note that Springfield and Holyoke will also be gone, subsumed by what ought to be called the Bay of Hartford. Licensed TessaDEM and OpenStreetMap under ODbL.

Particular Problems with the Current Flood Response

There is a great deal of work being done by many people to eliminate emissions, and this must be done. There is more work being done to mitigate flooding, and this too must be done. But the largest possible decision of “build or retreat” is not being made, and no public discussion is being had at this critical moment.

Decisions on Managed Retreat are Being Made Locally without State Support

We all should have a say in how the commonwealth’s limited funds are put to use, but increasingly we see local municipalities making decisions in a statewide policy vacuum and taking advantage of funding sources in an ad hoc manner.

Boston has separately arranged with the Army Corps of Engineers to evaluate storm surge mitigation⁴.

Barnstable held a webinar in 2021 with Representative Xiarhos and Senator Moran on federal buyout programs⁵.

Marshfield and Duxbury were briefed on the shortcomings of sea walls, and encouraged to adopt “dune nourishment” approaches to extending the life of their shorelines⁶.

Martha’s Vineyard has been managing its retreat by itself, moving the Cape Poge Light four times over the last century⁷.

There is an urgent need for a coordinated statewide discussion on what we’re doing and where we’ll spend funds.

Well-off Areas are Implementing Their Own Flood Mitigation Systems

Fort Point Boston, an area redeveloped in the last 10 years into a very prestigious neighborhood, is asking for a billion dollars of public money to protect billions more in private and institutional real estate.⁸

⁴ “Climate Ready Boston Partnering with Army Corps” January 17, 2023. <https://www.boston.gov/news/climate-ready-boston-partnering-army-corps>

⁵ Woods Hole Oceanographic Institution. April 21, 2021. <https://seagrant.whoi.edu/regional-topics/storms-erosion-flooding/managed-retreat/>

⁶ “Building Shoreline Resiliency in Marshfield & Duxbury through Beach and Dune Nourishment.” September 2020. https://www.town.duxbury.ma.us/sites/g/files/vyhli3056/f/uploads/marshfield_duxbury_czmresiliencygrant_public_meeting_8-27-2020_final.pdf

⁷ Murray, Richard and Daniel Schrag. “Managing the climate crisis may require a managed retreat.” May 31, 2021. <https://www.bostonglobe.com/2021/05/31/opinion/managing-climate-crisis-may-require-managed-retreat/?event=event12>

⁸ Chesto, Jon. “Fort Point Channel floodgate idea advances, but how to pay for it?” February 26, 2023. <https://www.bostonglobe.com/2023/02/26/business/fort-point-channel-floodgate-idea-advances-how-pay-it/>

The Massachusetts Institute of Technology has designed a flood tank under Vassar Street for its own campus, but surrounding areas have little or no support or participation⁹.

Savvy Investors are Devaluing Coastal Properties; Residential Buyers and Renters are Not

Flood risk is impacting real estate values. Some papers say the impact of flood risk on real estate prices is mixed. This is not actually true. When you separate out uninformed residential owners and renters from savvy commercial investors, flood risk is revealed to be a primary factor in setting prices for coastal real estate.

A 2021 paper by Addoum, Eichholtz, Steiner and Yönder¹⁰ examined the prices agreed to by sophisticated amateur investors, professional investors and institutional investors when purchasing commercial real estate. They examined price appreciation in three coastal markets before and after Hurricane Sandy. The markets are New York (directly hit by Hurricane Sandy), Boston (indirectly hit by Hurricane Sandy) and Chicago (not hit by Hurricane Sandy and no foreseeable hurricane risk).

This study showed that a one-mile decrease in distance to the shore was associated with a 21% slower price appreciation for a New York commercial property after Sandy compared with before. In other words, savvy investors learned through Sandy that being closer to an inadequately managed coastline is a bad thing. The effect of Sandy on Boston was strong and significant, although smaller. **Being one mile closer to the water in Boston decreased commercial real estate purchase prices by 9.5%.** In Chicago, appreciation continued as normal post-Sandy, showing that the effects in the Boston and New York markets are due to coastal flooding alone, not due to any other nationwide change in markets.

These changes were not only large, they were long-lasting. Commercial properties were still appreciating at slower rates five years after Hurricane Sandy, when the study was concluded.

Flood Risk is Treated Like a Coastal Problem, but It is Statewide

As mentioned above, the primary short-term cause of flood risk is rainfall. Even no-name storms now cause flooding in Worcester. Named storms like Fred in 2021 flooded Route 20, at an elevation 300 feet above sea level, causing four vehicles to need rescuing¹¹. This will happen more and more frequently.

⁹ "MIT Climate Resilience Planning: Flood Vulnerability Study." March 2018.

https://sustainability.mit.edu/sites/default/files/resources/2018-11/mit_climate_resiliency_rpt326.mar2018.pdf

¹⁰ Addoum et. Al. "Climate Change and Commercial Real Estate: Evidence from Hurricane Sandy." *SSRN* March 2021. Available online June 17, 2023 at <https://ssrn.com/abstract=3206257>

¹¹ "4 Rescued From Submerged Cars in Worcester; Flash Flooding Swamps New England" August 19, 2021. <https://www.nbcboston.com/news/local/4-people-rescued-from-cars-submerged-under-water-on-rt-20-in-worcester/2470848/>



Figure 8. Pluvial flood or "rain flood" is an increasingly common result of climate change, especially far inland. Beaver Brook Park in Worcester, 40 miles from the ocean and 481 feet above sea level, now floods each rainstorm, even if the brook itself does not overflow because the rain falls faster and heavier than we can drain it away. CC BY-SA MassLandlords, Inc.

Housing and Transportation Infrastructure are Badly Outdated, Continued Investment is At Risk of Loss from Flooding

Massachusetts has been in a housing crisis for a century, since single family zoning was invented. Chapter 40B, passed in the 1970s, and the Housing Choice Act, passed in 2021, do not in any way create enough housing to accommodate what is certain to be a very large number of climate refugees in the future, let alone current residents.

Furthermore, we've been in a transportation crisis for almost as long, since the public defunded rail and street cars in favor of emissions-intensive car traffic along highways.

Continuing to invest in the same concentrated "hub" pattern will lead to continued unaffordability and continued pressure on infrastructure and commutes. Furthermore, the center of "the hub" is where flood risk is most extreme long-term.



Figure 9. In August 2005, Hurricane Katrina breached 53 federally funded levees designed to protect Katrina. Is any levee built in Boston capable of defending against all future hurricanes? Couldn't it be better just to move before this happens? Public Domain as work of the United States Federal Government.

Building lots more housing and transportation infrastructure without adequately and certainly defending it against coastal flooding would be foolish.

The Climate Resilient Capital Task Force Addresses All Concerns by Design

The Task Force Provides a Shared Decision Making Framework

Rather than leaving each town and city to fend for itself, the Task Force would create a shared decision making framework in three steps.

First, we would estimate the cost of catastrophic flooding under the “low likelihood, high impact” scenarios outlined by the Intergovernmental Panel on Climate Change for our area in the year 2100. This would include base sea level rise of 1.75 meters plus associated increased rainfall and storm surge all at once (e.g., a hurricane). This cost would be weighted by the probability of this happening. We wouldn’t look at the entire state. We would look at the offices of the legislature, the courts, the executive, the agencies and at least one low-lying, at-risk community. This gives us a manageable “cost of doing nothing.”

Second, we would estimate the cost of certainly protecting these same areas from this same storm. Obviously, nothing is certain, but we need to have high confidence in whatever we would build by way of flooding defense. We need to learn from Katrina.

Third, we would estimate the cost of preemptively moving all these at-risk offices and this at-risk community out of harm’s way. This would not be a temporary move; this would be a permanent retreat to one or more capital districts. The public cost would be the construction of buildings, utilities and transportation infrastructure (e.g., roads, rail, bike lanes). There would be zoning set out to facilitate private co-investment (e.g., commercial and residential multifamily real estate).

This will create a public record for whether it’s better, in general, to move, stay or do nothing. An increasing number of people think long-term movement is a reasonable thing to consider.

The Task Force Creates a Diverse Coalition of All Possible Stakeholders

The Task Force would be intended to be a full-time, compensated job for three years. This allows individuals to participate who otherwise might not be available.

The Task Force appointees will come from a wide range of backgrounds and perspectives.



Flood Risk Will Be Treated like the Shared Statewide Problem It Is

Rather than have each town or city fend for itself, we will have statewide visibility on flood risk. We will also have a statewide example of the hard, and at times emotional, conversation around managed retreat. The Task Force makes no presupposition about which option will be best, whether defense or retreat. But the decision needs to be made together with all perspectives at the table.

The Task Force’s Recommendations Can Also Guide Housing and Transportation Investment

When the Task Force issues its reports on defense and retreat, it will become clear where future investment should take place. If we want to continue to invest in Boston as capital, and the defense plan is clearly the best plan, then yes, we will redouble our investment in Boston and surroundings *in a flood-safe way*. On the other hand, if the managed retreat plan is the best plan, then yes, we will redouble our investment in areas traditionally underserved, distributing housing and transportation equitably and with greater extent than ever before.

Task Force Frequently Asked Questions (FAQ)

Does this Bill Make Worcester the Capital?

No, the Task Force will be charged with estimating the costs of doing nothing, defending our commonwealth from flood risk, and managing a retreat to areas with historically lower flood risk. Any implementation of the plan would require legislative support across many sessions and is beyond the scope of this bill.

Why Aren't Current Flood Responses Good Enough?

Because everyone is doing a different thing, and ultimately, we will find there is not enough public funding for an uncoordinated response to flood risk. See the section titled, "Decisions on Managed Retreat are Being Made Locally without State Support."

Isn't Building a New City Unprecedented?

No, cities have been purposefully built frequently throughout history.

Kyoto, then the capital of Japan, was laid out in 794 and remains on that same plan today.

Canberra, the capital of Australia, was planned as the capital of the new country in the late 19th century¹².

Brasília, the capital of Brazil, was planned in 1956.

Jakarta, the capital of Indonesia, is being abandoned in favor a new mountain town call Nusantara¹³.

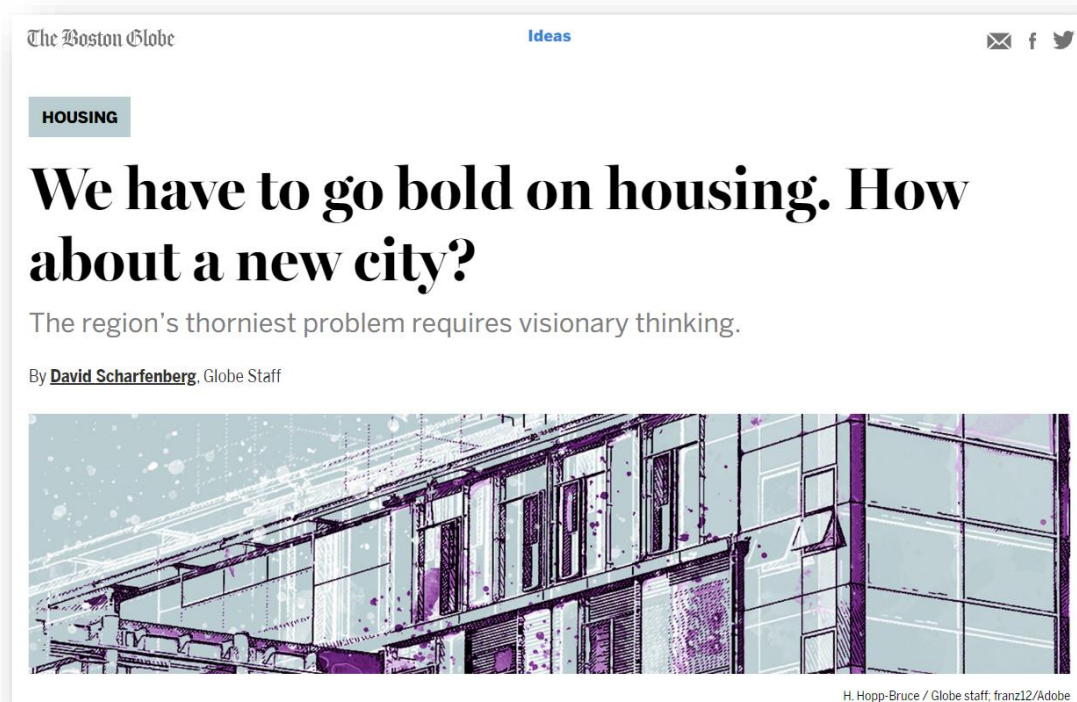


Figure 10. This June 20, 2022 article in the Boston Globe contemplates a planned city for the creation of abundant, affordable housing. Why not build it above the worst-case sea-level rise? <https://apps.bostonglobe.com/ideas/graphics/2022/06/the-next-big-dig/we-have-go-bold-on-housing-how-about-new-city>

¹² <https://en.wikipedia.org/wiki/Canberra>

¹³ <https://www.bbc.com/news/world-asia-60037163>

A Long-term Perspective Requires Decisions Now

Massachusetts has one of the oldest still functioning written constitutions in the world. It was first conceived in the 1770s by John Adams¹⁴. Having survived for 200 years demands we look out to the next 200 years. The journey of the next 200 years starts with this bill. The outlook is daunting for many reasons, not least of which is climate change. But this bill gives a manageable next step.

Long-term, Boston and many coastal areas of Massachusetts will not exist the way we presently think of them. Boston's average elevation city-wide is nine feet above sea level, placing it at risk of flooding even under quiescent (still) bathtub models of sea level rise. There is no margin of safety long-term.

If all the ice were to melt globally, Massachusetts would be completely reshaped. Certainly, many people work hard every day to prevent this outcome. The cover image is meant to be provocative, not predictive.

Short-term, rain flood presents an immediate risk to Massachusetts' basement homes. First Street Foundation has identified thousands of properties certain to be flooded in the next five years.

Medium-term, storm surge presents a serious risk to Massachusetts' coastal towns and cities. When Hurricane Sandy hit New York in 2012, the storm surge at Battery Park was 12 feet. We have had storms like this hit Massachusetts. When the sea level is driven up by storm surge, and the heavy rainfall cannot get out to sea, coastal regions already flood.

When John Adams drafted the Massachusetts constitution, he insisted that our organizing term be "commonwealth." This phrasing encourages us to think not individualistically but socially. A variety of problems, from public education through infrastructure to housing and more require coordination. Nothing could require more coordination for our commonwealth than a discussion about whether to defend or retreat.

Why "Don't Look Up?"

The film "Don't Look Up" was filmed in Boston. It represents a world threatened by an asteroid impact. The arrival of the asteroid is obvious to all, as it can be seen in the sky and grows larger and brighter each passing day. But some seeking to remain in power convince people not to believe their eyes, that everything will be fine. This distracts the people of the world from the problem until it is too late. Even the rich, who imagine they have an expensive private solution, are shown to have been deluding themselves and succumb to nature.

The asteroid is an allegory for climate change. We've already seen roads flooded statewide. We've seen the Boston seaport district flooded at ordinary "king tides." And still we have no statewide discussion on managed retreat! We have written this testimony to put ourselves on the record as telling you that we are looking up. We expect the General Court to look up, as well.

¹⁴ https://en.wikipedia.org/wiki/Constitution_of_Massachusetts

Appendix A

The subsequent pages show a break-down of the law and our commentary section by section.

Due to print pagination, this material is better viewed online on desktop or mobile devices at:



<https://masslandlords.net/policy/bills/climate-resilient-capital-task-force/>

An Act Establishing the Climate Resilient Capital Task Force (also known as the “Don’t Look Up” Act).

Bill title and nickname. “Don’t Look Up” is the title of a 2021 movie, filmed in Boston, about the world ignoring an impending extinction-level disaster.

WHEREAS the deferred operation of this act would tend to defeat its purpose, which is to prepare for imminent and long-term extreme weather events combined with a projected increase in the sea level associated with global heating, therefore it is hereby declared to be an emergency law, necessary for the preservation of the public convenience,

Because delaying action proposed in this bill could result in disaster, this shall be an emergency law creating a task force to formulate a plan for the continuance of government in the event of climate catastrophe, either by building adequate protection for existing government infrastructure or relocating it to more flood-resistant territory. The task force is described below.

Be It Enacted by the Senate and House of Representatives in the General Court assembled, and by the authority of the same as follows:
(1) There is hereby established a

Climate Resilient Capital Task Force for the purpose of identifying, considering, and recommending options for the uninterrupted continuity of Commonwealth civil government under worst-case climate scenarios either by the defense of the existing state capital and neighborhoods or the relocation and distribution of state offices and neighborhoods to more naturally advantageous sites.

(2) (a) All members of the Task Force shall be appointed on or before August 15, 2023, and the Task Force shall hold its first meeting on or before September 15, 2023.

The Task Force shall be composed of 17 members as follows:

1. One member appointed by the Governor.

2. One member appointed by the Lieutenant Governor.

3. One member appointed by the Secretary of the Commonwealth.

4. One member appointed by the President of the Senate.

5. One member appointed by the Minority Leader of the Senate.

6. One member appointed by the Speaker of the House of Representatives.

7. One member appointed by the Minority Leader of the House of Representatives.

8. Two members appointed by the Massachusetts Emergency Management Agency.

9. One member appointed by the Massachusetts AFL-CIO.

10. One member appointed by Associated Industries of Massachusetts.

11. One member appointed by the Massachusetts Municipal Association.

12. One member appointed by the Metropolitan Area Planning Council.

13. One member appointed by the University of Massachusetts.

14. One member appointed by the Massachusetts Institute of Technology.

15. One member appointed by the Teamsters Local Unions 3, 25, 42, 59, 122, 127, 170, 404 and 653 in agreement.

16. One member appointed by the Massachusetts Office of Coastal Zone Management.

(b) Members of the Task Force may participate in meetings by telephone or by other electronic means of communication.

Task force members may attend meetings remotely.

(c) Members of the Task Force shall serve with compensation while performing their duties as described below and furthermore are entitled to reimbursement for per diem and travel expenses in accordance applicable General Laws and regulations.

Task force members will be paid for their service, as described below.

The Task Force may receive and expend such funds to carry out its mission as may be authorized and appropriated or donated from time to time.

The task force's work and compensation will be supported by appropriated or donated funds.

(d) Members of the Task Force shall, as first order of business, familiarize themselves with the skills and ambitions of their colleagues and, by ranked choice ballots, choose a presiding member to set meeting agendas, a secretary to take minutes and comply with public records requests, and a treasurer to manage funds sent per paragraph (c) of this section, if any.

Task force members will elect a chair, secretary and treasurer from among membership.

The Secretary of the Commonwealth shall conduct the vote.

(e) A majority of the Task Force may at any time call another vote to choose a new presiding member, secretary or treasurer as in paragraph (d) of this section.

An election can be called by a majority any time to elect a new chair, secretary or treasurer.

(f) Upon the death or resignation of any member, the office of their original appointer, or the organization(s) named in Section 2 as appointer, shall re-appoint the successor member.

If a task force member passes away, a new member will be appointed.

(g) The Task Force may by three-quarters of the members in approval adopt such other internal rule or by-law as they deem fit provided such rule or by-law is in accordance with this Act.

Further task force rules may be adopted by a three-quarters majority of the membership.

(3) (a) In conducting the study, the Task Force shall consider, without limitation:
1.

The task force will pursue the following issues and tasks:

The maintenance and defense of the current capital in Boston, as follows:
a.

For the purpose of creating a microcosm on which decisions about the larger city may be made, the Task Force shall estimate the probability-weighted cost of catastrophic storm damage to the Capitol Building, the offices of the agencies, and the offices of the Supreme Judicial Court as currently situated, as well as at least one high-risk coastal or riparian residential neighborhood within 15 miles of the Capitol as the crow flies (e.g., Nahant, Hull, Back Bay, etc.).

Calculate and project the costs of climate-related catastrophe to existing government infrastructure, and to a nearby neighborhood, for use in decision-making.

This cost shall be calculated assuming the low-likelihood, high impact scenario of 1.75 meters of sea level rise by 2100

Costs will be based on the scenario of 1.75 meters of sea level rise or more, as

as published by the Intergovernmental Panel on Climate Change (IPCC) 2021 Physical Science Basis Summary for Policymakers, or the most recent IPCC report published as of the appointment of this Task Force, as well as the low-likelihood, high impact estimates for storm intensity and other factors over and above that sea level rise.

published by the IPCC, and storm surge on top of this.

This cost shall include the economic losses and cost to residents of interruption to the Commonwealth's self-governance institutions.

Cost estimates will be inclusive of economic losses and indirect losses due to government non-function.

b.

The Task Force shall define the high-confidence climate resilience defense against this low-likelihood, high impact scenario in the form of upgrades to the region and surroundings of the Capitol, to the offices of the agencies, and to the offices of the Supreme Judicial Court, and the chosen neighborhood(s), each as presently situated.

The task force will formulate a defense plan against climate catastrophe for existing government infrastructure.

This resilience plan shall describe the required road, rail, airport, seaport, and communications infrastructure essential to preserve the functions of

The plan will include all aspects necessary to keep government operating and protect residents.

these offices and the security of these residences.

This resilience plan shall include ecotone water levees, seawalls, or other measures of defense against sea level rise in Boston and co-flooding low-lying communities.

The plan will include levees, seawalls and other measures as necessary.

The resilience plan shall be designed such that, if put into practice, it will in every way possible result in net zero additional emissions.

c.

The Task Force shall estimate the material and labor cost of the resilience plan;

The task force will project plan material and labor costs;

the additional cost of Massachusetts workforce training and apprenticeship needed to effect the resilience plan with local hands;

costs for local training and apprenticeship;

the cost of the purchase without taking of any land or property required;

costs for public land purchases without taking private land;

the cost of removing and recultivating any ecology or natural habitat so displaced;

costs for replacing impacted ecology;

and the time needed for the resilience plan to be effected.

and a timeline for implementation.

d.

In every estimate of the above, uncertainty shall be a given, such that estimates should be rendered no more precisely than is warranted, at a minimum with ranges around the correct order of magnitude of the cost in dollars or the time in months.

All estimates should include projected ranges to account for unpredictable factors.

2.

The relocation and distribution of capital offices throughout the Commonwealth, as follows:
a.

For the purpose of creating a microcosm on which decisions about the larger city may be made, the Task Force shall define the relocation plan, either for a new capital and new neighborhoods near the

The task force will also formulate a plan for relocating government infrastructure.

geographic center of the Commonwealth or for separate capital districts and neighborhoods distributed throughout the Commonwealth.

In the interests of long-term stability, the relocation plan shall not place any new office, neighborhood or district below the estimated inundation elevation, calculated under the assumption of the melting of all ice across the globe, as most recently published by the United States Geological Survey.

Relocation must be to areas above estimated flood levels assuming all ice on the planet melts, as projected by the U.S.G.S.

The relocation plan shall relocate the executive branch offices;

the offices of the agencies, the halls, chambers and offices of the General Court;

the Supreme Judicial Court, and the chosen neighborhood(s).

The relocation plan shall account for the likelihood of rain and river flood, fire, and damaging winds in any prospective site.

The plan will also consider rain and river flooding, fire and high winds.

The relocation plan shall be designed such that, if put into practice, it will in every way possible result in net zero additional emissions.

The relocation plan's implementation will not increase emissions in any way.

b.

The Task Force shall estimate the material and labor cost of the relocation plan;

the additional cost of Massachusetts workforce training and apprenticeship needed to effect the relocation with local hands;

the cost of the purchase without taking of any land or property required;

the cost of removing and recultivating any ecology or natural habitat so displaced;

and the time needed for the relocation plan to be effected.

c.

The Task Force shall estimate the economic impact of relocation on Boston and surrounding communities;

How much would government relocation cost Greater Boston?

the economic impact on the new location or locations and surrounding communities;

How much would it cost new hosting communities?

the impact on housing costs in Boston and on the new location or locations;

What would be the impact on housing?

the required density changes;

On density?

the impact on democratic participation of residents of the furthest Berkshire, Dukes, Barnstable, and Nantucket counties;

On democratic participation of distant communities?

the climate justice implications of such a relocation;

On climate justice?

and any other considerations the Task Force may deem necessary and proper to estimate.

And other impacts and estimates.

d.

In every estimate of the above, uncertainty shall be a given, such that estimates should be rendered no more precisely than is warranted, at a minimum with ranges around the correct order of magnitude of the cost in dollars or the time in months.

(b) The Task Force may request data, information, and assistance from any state agency, local government, or any political subdivision thereof, which to the extent permitted by law shall provide the Task Force with all relevant information and assistance on any matter within their knowledge or control as promptly as is reasonably practicable.

The Task Force may: (i) use such voluntary and uncompensated services of private individuals, agencies and organizations as may from time to time be offered and needed;

and (ii) hold regular, public meetings and fact-finding hearings and other public forums as it may consider necessary.

The task force will have cooperation and assistance from other government agencies as needed.

The task force may also use assistance from non-governmental sources;

and hold public meetings as necessary.

The Task Force shall be subject to the provisions of Chapter 30A, Section 11B.

Chapter 30A s. 11B sets rules regulating studies conducted by state governmental agencies.

The Task Force shall be subject to the requirements of Chapter 66.

Chapter 66 regulates use and treatment of public records.

The secretary of the Task Force shall be responsible for compliance under Chapter 66 Section 10.

Section 10 defines rules for public records access.

(4) No later than 18 months after the first meeting of the Task Force, the Task Force shall submit a report of the resilience plan, including findings and recommendations, to each appointer under Section 2, including but not limited to the Governor, the President of the Senate, and the Speaker of the House of Representatives, and also to the Chief Justice of the Supreme Judicial Court, and shall publish electronically the same for public review.

The task force will submit and publish a report including its resilience plan within 18 months of its first meeting, to government officials.

No later than 18 months after the report of the resilience plan, the Task Force shall submit a report of the relocation plan, including findings and recommendations, to the same, and shall likewise publish it.

Within 18 months of that report, the task force will submit and publish its relocation plan.

The Task Force shall be dissolved upon submission and publication of the relocation plan, except if at the request of the Governor the Task Force shall continue for the purpose of advising on the implementation of its recommendations.

The task force will then be dissolved unless requested to continue by the governor.

(5) If any appointer under section 2 should fail to appoint their member or members of the Task Force, or if any member should fail to participate meaningfully in the work of the Task Force, or if the Task Force should fail to produce either or both plans, or if any state agency, local government or political subdivision thereof should fail to provide the assistance or information required under this Act, then the supreme judicial or superior court may, upon petition of not less than ten taxable inhabitants of the commonwealth, compel the participation of said delinquent or delinquents, levy fines against compensation already paid up to and including the amount of compensation awarded here, or both.

Cooperation with the task force from all participants will be mandated, subject to fines for non-cooperation.

(6)

(a) That the members of the Task Force should devote their full professional capacity to the effort, and that the appointers under Section 2 should be free to choose appointees from among the

Each member of the task force will receive annual compensation of \$100,000.

full diversity of the commonwealth's residents, there shall be per appointee a salary of \$100,000 per annum paid in accordance with applicable General Laws and regulations via the Executive Office of Energy and Environmental Affairs.

(b) To provide for the establishment and operation of the Task Force, there is hereby appropriated from the General Fund for the several purposes of and subject to the conditions specified in this act, and subject to the laws regulating the disbursement of public funds for the fiscal year ending June 30, 2023: Salaries for the Task Force for 36 months \$5,100,000.

A total of \$5.1 million will be appropriated from the state's General Fund for task force members' salaries.