

**SENATE . . . . . No. 451**

The Commonwealth of Massachusetts

PRESENTED BY:

*Marc R. Pacheco*

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act providing for the establishment of a comprehensive adaptation management plan in response to climate change.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
<i>Marc R. Pacheco</i>	<i>First Plymouth and Bristol</i>
<i>Frank I. Smizik</i>	<i>15th Norfolk</i>
<i>Stephen Kulik</i>	<i>1st Franklin</i>
<i>Chris Walsh</i>	<i>6th Middlesex</i>
<i>Robert M. Koczera</i>	<i>11th Bristol</i>
<i>Benjamin B. Downing</i>	<i>Berkshire, Hampshire, Franklin and Hampden</i>
<i>Anne M. Gobi</i>	<i>Worcester, Hampden, Hampshire and Middlesex</i>
<i>Brian A. Joyce</i>	<i>Norfolk, Bristol and Plymouth</i>
<i>Jason M. Lewis</i>	<i>Fifth Middlesex</i>
<i>Denise Provost</i>	<i>27th Middlesex</i>
<i>Daniel A. Wolf</i>	<i>Cape and Islands</i>
<i>Marjorie C. Decker</i>	<i>25th Middlesex</i>
<i>James B. Eldridge</i>	<i>Middlesex and Worcester</i>
<i>Edward F. Coppinger</i>	<i>10th Suffolk</i>
<i>Michael O. Moore</i>	<i>Second Worcester</i>

<i>Steven Ultrino</i>	<i>33rd Middlesex</i>
<i>Barbara L'Italien</i>	<i>Second Essex and Middlesex</i>
<i>Patricia D. Jehlen</i>	<i>Second Middlesex</i>
<i>Benjamin Swan</i>	<i>11th Hampden</i>
<i>Sal N. DiDomenico</i>	<i>Middlesex and Suffolk</i>
<i>Daniel J. Ryan</i>	<i>2nd Suffolk</i>

**SENATE . . . . . No. 451**

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By Mr. Pacheco, a petition (accompanied by bill, Senate, No. 451) of Marc R. Pacheco, Frank I. Smizik, Stephen Kulik, Chris Walsh and other members of the General Court for legislation to establish a comprehensive adaptation management plan in response to climate change. Environment, Natural Resources and Agriculture.

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[SIMILAR MATTER FILED IN PREVIOUS SESSION  
SEE SENATE, NO. 2028 OF 2013-2014.]

The Commonwealth of Massachusetts

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**In the One Hundred and Eighty-Ninth General Court  
(2015-2016)**  
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An Act providing for the establishment of a comprehensive adaptation management plan in response to climate change.

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

1 SECTION 1. The General Laws are hereby amended by inserting after chapter 21O the  
2 following chapter: Chapter 21P.

3 COMPREHENSIVE ADAPTATION MANAGEMENT PLANNING IN RESPONSE  
4 TO CLIMATE CHANGE.

5 Section 1. As used in this chapter the following words shall have the following meanings  
6 unless the context clearly requires otherwise:

7 “Adaptation”, a response and process of adjustment to actual or expected climate change  
8 and its effects that seeks to increase the resiliency and reduce the vulnerability of Massachusetts’

9 built and natural environments and seeks to moderate or avoid harm or exploit beneficial  
10 opportunities to reduce the safety and health risks that vulnerable human populations, and  
11 resources will encounter due to such change.

12 “Executive office”, the executive office of energy and environmental affairs.

13 “Hazard mitigation”, an effort using nonstructural measures to reduce loss of life and  
14 property by lessening the impacts of major storms.

15 “Plan”, the comprehensive adaptation management plan.

16 “Resilience”, the capacity of social, economic, and environmental systems to cope with a  
17 hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their  
18 essential function, identity, and structure, while also maintaining the capacity for adaptation,  
19 learning, and transformation.

20 “Risk assessment”, evaluating and prioritizing known risks and their effects.

21 “Risk management”, making a decision and setting policy based on the knowledge  
22 acquired through risk assessment.

23 “Sustainability”, the establishment and maintenance of conditions under which humans  
24 and nature can exist in productive harmony and fulfill the social, economic and other  
25 requirements of present and future generations in a just and equitable manner, including  
26 providing for the long-term viability of the people and economy of the commonwealth and its  
27 natural ecosystems, which requires consideration of the risks posed by climate change, the  
28 practicality of maintaining a long-term presence in the most vulnerable areas and the need to  
29 protect and restore natural ecosystems and their services.

30 “Vulnerability”, the propensity of predisposition to be adversely affected. Vulnerability  
31 encompasses a variety of concepts and elements including sensitivity or susceptibility to harm  
32 and lack of capacity to cope and adapt.

33 Section 2. (a) Notwithstanding any general or special law to the contrary, the secretary of  
34 energy and environmental affairs and the secretary of public safety and security, with appropriate  
35 secretariats as determined by the Governor, shall develop, draft and adopt a comprehensive  
36 adaptation management action plan.

37 The plan shall be developed under the guidance of an interagency advisory committee  
38 and supported by Advisory Commission in section F and technical subcommittees and staff as  
39 necessary.

40 Upon the adoption of the comprehensive adaptation management plan, all commonwealth  
41 certificates, licenses, permits, authorizations, grants, financial obligations, projects, plans,  
42 actions, and approvals for any proposed projects, uses, or activities in and by the commonwealth  
43 shall be consistent, to the maximum extent practicable, with the adopted plan.

44 The plan shall be completed no later than two years after the effective date of this act and  
45 shall be updated at least five years. The plan, and all updates, shall be filed with clerks of the  
46 house of representatives and senate.

47 (b) The plan shall include, but not be limited to: (i) a statement setting forth the  
48 commonwealth’s goals, priorities and principles for ensuring effective prioritization for the  
49 resiliency, preservation, protection, restoration and enhancement of the commonwealth’s built  
50 and natural infrastructure; (ii) a commitment to the adherence of sound management practices  
51 which shall take into account the existing natural, built and economic characteristics of the

52 commonwealth's most vulnerable areas and human populations; (iii) data on existing, forecasted  
53 and projected impacts including, but not limited to, drought and temperature changes, inland  
54 flooding and sea level rise according to the best and latest data, forecasting and models; (iv) a  
55 statement on the preparedness and vulnerabilities in the commonwealth's emergency response  
56 and infrastructure resiliency including, but not limited to, energy, transportation,  
57 communications, health and other systems; and (vii) an assessment of the economic vulnerability  
58 in high risk communities to local businesses

59 (c) The plan shall include the following sequential steps: (i) a preliminary report (ii) an  
60 inventory and vulnerability assessment of human populations, and the natural and built assets of  
61 the commonwealth, subject to the threat of climate change, (iii) a final report.

62 (d) There shall be a Comprehensive Adaptation Management Plan Advisory  
63 Commission to assist the secretary of energy and environmental affairs and the secretary of  
64 public safety and security in developing the comprehensive adaptation management plan. The  
65 commission shall consist of: stakeholders and comprised of representatives with expertise in the  
66 following areas: transportation and built infrastructure; commercial, industrial and manufacturing  
67 activities; commercial property management and real estate; low income consumers; energy  
68 generation and distribution; land conservation; water supply and quality; recreation; ecosystems  
69 dynamics; coastal zone and oceans; rivers and wetlands; and local government.

70 (e) The secretary of energy and environmental affairs and the secretary of public safety  
71 and security shall convene an interim task force that shall prepare an interim plan concurrently  
72 with the management plan. Nothing in the management plan shall prevent the preparation of the  
73 interim plan. The task force shall be comprised of representatives with expertise in the following

74 areas: transportation and built infrastructure; commercial, industrial and manufacturing activities;  
75 commercial property management and real estate; low income consumers; energy generation and  
76 distribution; land conservation; water supply and quality; recreation; ecosystems dynamics;  
77 coastal zone and oceans; rivers and wetlands; and local government.

78 The interim plan shall include but is not limited to:

79 (1) supporting existing efforts of state agencies, such as the SmartCoasts program at the  
80 Office of Coastal Zone management, BioMap2 at the Department of Fish and Game, and  
81 vulnerability studies being conducted by the Department of Public Health and the Department of  
82 Transportation.

83 (2) Recommending new actions that could be implemented immediately using existing  
84 state agency legal authorities, state resources and funding based upon the following:

85 (a) a compilation and prioritization of strategies and actions, derived from the  
86 recommendations included in the climate change adaptation report prepared under section 9 of  
87 chapter 298 of the acts of 2008;

88 (b) a compilation and prioritization of recommendations from climate change action  
89 plans prepared by regional planning agencies and municipalities,

90 (c) Unilateral actions by the executive branch, including but not limited to: executive  
91 orders and policy directives issued by the governor; and policies, regulations and guidance by the  
92 Secretary.

93 (3) Recommending new actions that require new state authorities, resources and  
94 funding, including but not limited to:

95 (a) identifying new potential sources of revenue.

96 Subsections (1) through (3) shall include but not be limited to: the establishment of goals  
97 and outcomes; the identification of existing legal authorities under which actions can take place;  
98 designation of lead state agencies and partners; timeframe and potential costs of  
99 recommendations; a general estimate of the costs of inaction related to liabilities; and the  
100 identification of resources such as public funds and private funds including the identification of  
101 opportunities to leverage funds through partnerships between federal-state agencies and public  
102 and private entities.

103 (2) a technical advisory committee on the risks associated with climate change  
104 including, but not limited to, the risks associated with temperature changes, drought and  
105 increased precipitation and coastal and inland flooding.

106 The advisory committee shall be chaired by the secretaries, or their designees, and shall  
107 be comprised of representatives with expertise in the following areas: (1) coastal zone and river  
108 flooding and erosion; (2) hydrological and hydraulic modeling; (3) natural hazard preparedness  
109 and mitigation; (4) sea level and storm surge projections; (5) risk measurement and reduction; (6)  
110 emergency management planning; and (7) scenario planning. The advisory committee shall,  
111 within 6 months from the effective date of this act complete an preliminary report which shall  
112 include:

113 (A) a set of combined sea-level rise and coastal and river storm-surge scenarios;

114 (B) estimates of risk levels of each scenario occurring by 2030, 2050 and 2100;



115 (C) estimates of flood water levels in coastal and flood plain and river front areas under  
116 each scenario which shall reflect appropriate local information such as local uplift and  
117 subsidence, and coastal erosion rates;

118 (D) estimates based on hydrological and hydraulic modeling of coastal and flood plain  
119 and river front flood water levels in each scenario in historically coastal areas now currently  
120 protected by dams, including river basins;

121 (E) develop scenario planning and the capability to explore policy options for guiding  
122 where to build, what to build and how to strengthen communities in areas of greatest  
123 risk; and

124 (F) identify critical buffer areas of coast and forests and flood plains that serve to  
125 significantly reduce vulnerability to climate related impacts, to guide priorities for state, regional,  
126 and local land protection initiatives.

127 The preliminary report shall serve as the basis for vulnerability assessments which state  
128 agencies and public utilities shall develop for their portfolio of assets. For the purposes of this  
129 paragraph, “state agencies” shall include all executive agencies including, without limitation, the  
130 Massachusetts Department of Transportation, the department of environmental protection, the  
131 department of capital asset management and maintenance, the department of conservation and  
132 recreation, the department of public utilities, the department of public health, the Massachusetts  
133 Emergency Management Agency and independent and quasi-public agencies including, but not  
134 limited to, the Massachusetts Bay Transportation Authority, the Massachusetts Water Resources  
135 Authority and the Massachusetts Port Authority, and public utilities shall include energy  
136 generation and transmission, solid waste, drinking water, wastewater and stormwater and

137 telecommunication utilities serving areas identified in the initial report as subject to material risk  
138 of flooding.

139           The vulnerability assessments shall classify the economic losses over time associated  
140 with each major asset for each flooding scenario as unacceptable, non-critical or immaterial. For  
141 assets exposed to material risk of unacceptable losses, the vulnerability assessment shall include  
142 order-of-magnitude cost-estimates for: (i) measures to protect the assets from flooding; (ii)  
143 measures to make the assets flood resilient; and (iii) removal and relocation of the assets from  
144 flood-exposed coastal and river areas. Estimates shall also be prepared for the economic, social  
145 and environmental damages if no adaptation actions are taken. Qualitative benefit-cost  
146 discussions of projected social impacts of flood prevention versus flood resilience shall also be  
147 included. This shall include consideration of avoided costs associated with guiding new  
148 development away from vulnerable locations and maintaining the water-absorbing capacity of  
149 the natural forested landscape.

150           The vulnerability assessments shall be submitted to the advisory committee within 12  
151 months of the completion of the preliminary report. The advisory committee shall create a final  
152 report based on the findings of the preliminary report and vulnerability assessments within 3  
153 months of the completion of the vulnerability assessments. The final report shall include but not  
154 be limited to: (a) the establishment of goals and outcomes; (b) the identification of existing legal  
155 authorities under which actions can take place and recommend new authorities where they do not  
156 already exist; (c) designation of lead state agencies and partners; and, (d) prioritization,  
157 timeframe and potential costs of recommendations.

158           The secretaries shall, at least 6 months before establishing a comprehensive adaptation  
159 management plan pursuant to this section, provide for public access to the draft plan in electronic  
160 and printed copy form and shall provide for a public comment period, which shall include at  
161 least 5 public hearings across the commonwealth. The secretaries shall publish notice of the  
162 hearings in the Environmental Monitor within 30 days of the date of the hearings. A notice of the  
163 public hearings shall also be placed, at least once each week for the 5 consecutive weeks  
164 preceding the hearings, in newspapers with sufficient circulation to notify the residents of the  
165 where the hearings shall be held. The hearings shall be held not sooner than 30 days and not later  
166 than 35 days after the notice is published in the Environmental Monitor. The public comment  
167 period shall remain open for at least 60 days from the date of the final public hearing. After the  
168 close of the public comment period, the secretaries shall issue a final comprehensive adaptation  
169 management plan and shall file the plan, together with legislation necessary to implement the  
170 plan, if any, by filing the same with the clerks of the house of representatives and senate.

171           a public hearing before issuing the plan. The plan must be issued within 24 months of the  
172 effective date of this act and shall file the same with the clerks of the senate and house of  
173 representatives.

174           Section 3. The comprehensive adaptation management plan shall be consistent with this  
175 section and all other general and special laws. The comprehensive adaptation management plan  
176 shall not be construed to supersede existing general or special laws, or to confer rights and  
177 remedies in addition to those conferred by existing general or special laws.

178           Section 4. The plan shall encourage and provide guidance to regional planning agencies  
179 to proactively address the unavoidable consequences of climate change and provide a process for  
180 local and regional climate vulnerability assessment and adaptation strategy development.

181           Section 5. There shall be established and set up on the books of the commonwealth a  
182 regional comprehensive adaptation management plan grant program. The program shall provide  
183 financial assistance to regional planning agencies for the development and implementation of  
184 plans at the regional levels of government. The regional plans shall include, but not be limited to:  
185 (i) plans for a step-by-step process for regional climate vulnerability assessment and adaptation  
186 strategy development; (ii) a definition of regional impacts by supporting communities  
187 conducting climate vulnerability assessments; and (iii) an understanding of regional  
188 characteristics, including regional environmental and socioeconomic characteristics.

189           Section 6. Regional grants shall be administered by the executive office. Regional grants  
190 shall be designed to reduce community risks and hazards as a result of climate change. Regional  
191 grants shall advance regional and local efforts to adapt land use, zoning, infrastructure, policies  
192 and programs to reduce the vulnerability of the built and natural environment to changing  
193 environmental conditions as a result of climate change. State agencies shall prioritize the  
194 protection of identified inland as well as coastal vulnerable locations not yet built upon.

195           Section 7. The executive office may acquire by purchase from willing sellers, land  
196 abutting or adjacent to areas subject to the ebb and flow of the tide or on barrier beaches or in  
197 velocity zones of flood plain areas, on which structures have been substantially and repeatedly  
198 damaged by severe weather, for conservation and recreation purposes.

199 Section 8. Prior to the acquisition of any land under this act, the executive office shall  
200 develop a conservation and recreation management plan for any such land after consultation with  
201 the city or town in which the land is located. The management plan shall set forth the priority,  
202 description and location of lands to be acquired, and any land management agreement reached  
203 between said agency and municipality for local responsibility to carry out the development and  
204 management of said property. All land acquired pursuant to this chapter shall be deemed to have  
205 been acquired for protection of the people in their right to conservation, development, and  
206 utilization of natural resources.

207 Section 9. No land shall be acquired under this act until after a public hearing has been  
208 held by

209 the executive office in the municipality in which the land is situated to consider the  
210 management plan. The mayor and city council in a city or the board of selectmen, planning board  
211 and conservation commission, if any, of a town shall be notified of such hearing.

212 Section 10. If the executive office deems it necessary to make appraisals, surveys,  
213 soundings, borings, test pits or other related examinations to obtain information to carry out this  
214 act, the executive office or its authorized agents or employees may, after due notice by registered  
215 mail, enter upon lands, water and premises, not including buildings, to make such appraisals,  
216 surveys, soundings, borings, test pits and other related examinations as it may deem necessary or  
217 convenient for the purposes of this act and such entry shall not be a trespass. The executive  
218 office shall provide reimbursement for any injury or actual damages resulting to the lands,  
219 waters and premises caused by any act of its authorized agents or employees and shall, so far as

220 possible, restore the lands to the same condition as prior to making such appraisals, surveys,  
221 soundings, borings, test pits or other related examinations.

222           Section 11. The executive office may expend such sums as may be available from any  
223 source to carry out section 1, including expenses in connection therewith and the cost of planning  
224 therefore and for the development, redevelopment or improvement thereof.

225           Section 12. This act shall be in addition to any other bond authorization, appropriation or  
226 authority to acquire land available to any agency of the commonwealth.

227           Section 13. The executive office, acting for and on behalf of the commonwealth, may  
228 lease to cities and towns, on a form approved by the attorney general, for not more than 25 years,  
229 certain property conveyed to the commonwealth under section 1 or by the federal emergency  
230 management agency under 42 USC 4001, section 1362 of Pub. L. 90-448, as amended, for use as  
231 conservation and recreation areas. Leases shall be in such form and contain such provisions as  
232 the secretary of environmental affairs shall determine, including such terms and conditions  
233 which are necessary to comply with laws relative to the protection of barrier beaches. Lands shall  
234 be leased upon the express conditions that the land shall be used for conservation and recreation  
235 purposes only, that no permanent structures shall be erected and a reversionary clause that  
236 requires the lease to be terminated if the leased land is used in violation of this act.

237           Section 14. In consideration for the granting of a lease authorized in section 13, a city or  
238 town shall agree to maintain the acquired land as a clean, safe and orderly conservation or  
239 recreation area.

240           Section 15. Pursuant to its authority under section 40 of chapter 131 of the General  
241 Laws, the commissioner of environmental protection shall, within 180 days of the effective date

242 of this act, promulgate rules regulating the dredging, filing or altering of land subject to coastal  
243 storm flowage.