

HOUSE No. 4166

The Commonwealth of Massachusetts

PRESENTED BY:

Michelle L. Ciccolo

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 to evaluate transportation resiliency and progress towards meeting carbon emissions reductions benchmarks.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
<i>Michelle L. Ciccolo</i>	<i>15th Middlesex</i>	<i>1/15/2025</i>

HOUSE No. 4166

By Representative Ciccolo of Lexington, a petition (accompanied by bill, House, No. 4166) of Michelle L. Ciccolo relative to climate adaptation and transportation infrastructure. Transportation.

The Commonwealth of Massachusetts

**In the One Hundred and Ninety-Fourth General Court
(2025-2026)**

An Act to evaluate transportation resiliency and progress towards meeting carbon emissions reductions benchmarks.

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. Chapter 6C of the General Laws is hereby amended by adding the
2 following section:-

3 Section 80. (a) For the purposes of this section the following words shall, unless the
4 context requires otherwise, have the following meanings:

5 “Adaptation”, adjustments in natural or human systems in response to actual or expected
6 climatic stimuli and associated impacts, including but not limited to changes in processes,
7 practices and protocols to increase resiliency of built and natural structures, moderate potential
8 damages or benefit from opportunities associated with climate change.

9 “Adaptation cost assessment”, a determination of the life cycle financial cost of
10 infrastructure procured and infrastructure improvements made to implement the adaptation
11 strategies identified in a vulnerability assessment. The adaptation cost assessment shall include:

12 (i) estimated financial costs associated with procurement, construction, maintenance, retrofits
13 and other related improvements made to said infrastructure; and (ii) the estimated financial cost
14 savings resulting from the abated climate risk associated with said infrastructure procurement
15 and improvement. The adaptation cost assessment shall evaluate said infrastructure from its
16 construction or acquisition to its decommissioning. The adaptation cost assessment may include
17 an estimation of the financial value of the co-benefits resulting from said infrastructure
18 procurements and improvements.

19 “Infrastructure”, including rolling stock, vehicles, equipment, facilities, culverts, roads,
20 bridges, power supplies and other capital asset types, as determined by the secretary.

21 “Vulnerability assessment”, an evaluation of degree of susceptibility to, or ability to cope
22 with, adverse effects of climate change, such as climate variability and extremes, including an
23 evaluation of adaptive capacity and subsequent adaptation strategies and options for the asset,
24 system, institution or other subject being assessed.

25 (b) In addition to any vulnerability assessment required pursuant to subsection (b) of
26 section 10 of chapter 21N, the department and each division and authority under the control of
27 the department shall complete a vulnerability assessment and an adaptation cost assessment
28 pertaining to all assets comprising the metropolitan highway system. The vulnerability
29 assessment shall: (i) identify adaptation solutions to be prioritized based on severity of asset
30 vulnerability, level of anticipated climate risk, safety risk to users, riders and workers if
31 vulnerability is not addressed; and (ii) identify whether the asset is located in or serves an
32 environmental justice community. Adaptation solutions shall: (1) identify any opportunities to
33 work in partnership with abutting landowners and municipalities in the implementation of

34 adaptation solutions; and (2) include the identification of solutions that are reflected in municipal
35 hazard mitigation plans and additional planning efforts related to the municipal vulnerability
36 preparedness grant program. Every 4 years, the department shall review and update the
37 vulnerability assessment and adaptation cost assessment required pursuant to this subsection.

38 (c) The department and each division and authority under the control of the department
39 shall complete a vulnerability assessment and an adaptation cost assessment pertaining to all
40 equipment and mass transportation facilities, as defined in section 1 of chapter 161A. Each
41 vulnerability assessment shall: (i) identify adaptation strategies to be prioritized based on
42 severity of asset vulnerability, level of anticipated climate risk and safety risk to users, riders and
43 workers if vulnerability is not addressed; (ii) identify whether the asset is located in or serves an
44 environmental justice community; (iii) identify the authority's plan to provide replacement or
45 alternative service to sustain the current level of service to riders in the event assets are
46 unsuitable to operate due to damage associated with climate risks, including, but not limited to,
47 flooding, extreme heat, excessive snow and ice and other extreme weather events; and (iv)
48 include the cost of any temporary or extended use facilities required to provide ongoing access or
49 detours for roads and bridges during their replacement or repair. Adaptation solutions shall: (1)
50 identify any opportunities to work in partnership with abutting landowners and municipalities;
51 and (2) include identification of solutions that are reflected in municipal hazard mitigation plans
52 and additional planning efforts related to the municipal vulnerability preparedness grant
53 program. 4 years, the department and each division and authority under the control of the
54 department shall review and update the vulnerability assessments and cost adaptation
55 assessments required pursuant to this subsection.

56 (d) The vulnerability assessments and adaptation cost assessments required pursuant to
57 subsections (b) and (c) shall be completed within 18 months of the enactment of this section.
58 Every 4 years following the enactment of this section, the secretary of the department shall
59 provide a report detailing progress toward the vulnerability and adaptation cost assessments
60 required pursuant to said subsections (b) and (c) to the clerks of the house of representatives and
61 the senate, the chairs of the house and senate committees on ways and means and the chairs of
62 the joint committee on transportation.

63 SECTION 2. The second paragraph of subsection (g) of section 5 of chapter 161A of the
64 General Laws, as appearing in the 2022 Official Edition, is hereby amended by inserting after the
65 word “act” the following words:- , capital investments identified as priority adaptation strategies
66 in the department’s vulnerability assessment.

67 SECTION 3. Chapter 161B of the General Laws is hereby amended by adding the
68 following section:-

69 Section 28. (a) For the purposes of this section the following words shall, unless the
70 context requires otherwise, have the following meanings:

71 “Adaptation”, adjustments in natural or human systems in response to actual or expected
72 climatic stimuli and associated impacts, including but not limited to changes in processes,
73 practices and protocols to increase resiliency of built and natural structures, moderate potential
74 damages or benefit from opportunities associated with climate change.

75 “Adaptation cost assessment”, a determination of the life cycle financial cost of
76 infrastructure procured and infrastructure improvements made to implement the adaptation
77 strategies identified in a vulnerability assessment. The adaptation cost assessment shall include:

78 (i) estimated financial costs associated with procurement, construction, maintenance, retrofits
79 and other related improvements made to said infrastructure; and (ii) the estimated financial cost
80 savings resulting from the abated climate risk associated with said infrastructure procurement
81 and improvement. The adaptation cost assessment shall evaluate said infrastructure from its
82 construction or acquisition to its decommissioning. The adaptation cost assessment may include
83 an estimation of the financial value of the co-benefits resulting from said infrastructure
84 procurements and improvements.

85 “Infrastructure”, including rolling stock, facilities, vehicles, equipment, culverts, roads,
86 bridges, power supplies and other capital asset types, as determined by the council.

87 “Vulnerability assessment”, an evaluation of degree of susceptibility to, or ability to cope
88 with, adverse effects of climate change, such as climate variability and extremes, including an
89 evaluation of adaptive capacity and subsequent adaptation strategies and options for the asset,
90 system, institution or other subject being assessed.

91 (b) All regional transit authorities, as established in section 2, shall complete a
92 vulnerability assessment and an adaptation cost assessment. The vulnerability assessment and
93 adaptation cost assessment shall pertain to all equipment and mass transportation facilities as
94 defined in section 1 of chapter 161A. The vulnerability assessment shall: (i) identify adaptation
95 strategies to be prioritized based on severity of asset vulnerability, level of anticipated climate
96 risk and safety risk to riders and workers if vulnerability is not addressed; (ii) identify whether
97 the asset is located in or serves an environmental justice community; and (iii) identify the
98 authority’s plan to provide replacement or alternative service to sustain the current level of
99 service to riders in the event assets are unsuitable to operate due to damage associated with

100 climate risks, including but not limited to flooding, extreme heat, excessive snow and ice and
101 other extreme weather events. Adaptation solutions shall: (1) identify any opportunities to work
102 in partnership with abutting landowners and municipalities; and (2) include identification of
103 solutions that are reflected in municipal hazard mitigation plans and additional planning efforts
104 related to the municipal vulnerability preparedness grant program. Every 2 years, each regional
105 transit authority shall review and update the vulnerability assessments and cost adaptation
106 assessments required pursuant to this subsection.

107 (c) The vulnerability assessment and adaptation cost assessment required pursuant to
108 subsection (b) shall be completed within 18 months of the enactment of this section. Every 4
109 years following the enactment of this section, the secretary of the regional transit authority
110 council shall provide a report detailing progress toward the vulnerability and adaptation cost
111 assessments required pursuant to said subsection (b) to the clerks of the house of representatives
112 and the senate, the chairs of the house and senate committees on ways and means and the chairs
113 of the joint committee on transportation.

114 SECTION 4. Chapter 465 of the acts of 1956 is hereby amended by adding the following
115 section:-

116 Section 37. (a) For the purposes of this section the following words shall, unless the
117 context requires otherwise, have the following meanings:

118 “Adaptation”, adjustments in natural or human systems in response to actual or expected
119 climatic stimuli and associated impacts, including but not limited to changes in processes,
120 practices and protocols to increase resiliency of built and natural structures, moderate potential
121 damages or benefit from opportunities associated with climate change.

122 “Adaptation cost assessment”, a determination of the life cycle financial cost of
123 infrastructure procured and infrastructure improvements made to implement the adaptation
124 strategies identified in a vulnerability assessment. The adaptation cost assessment shall include:
125 (i) estimated financial costs associated with procurement, construction, maintenance, retrofits
126 and other related improvements made to said infrastructure; and (ii) the estimated financial cost
127 savings resulting from the abated climate risk associated with said infrastructure procurement
128 and improvement. The adaptation cost assessment shall evaluate said infrastructure from its
129 construction or acquisition to its decommissioning. The adaptation cost assessment may include
130 an estimation of the financial value of the co-benefits resulting from said infrastructure
131 procurements and improvements.

132 “Infrastructure”, including rolling stock, facilities, vehicles, equipment, culverts, roads,
133 bridges, power supplies and other capital asset types, as determined by the Authority.

134 “Vulnerability assessment”, an evaluation of degree of susceptibility to, or ability to cope
135 with, adverse effects of climate change, such as climate variability and extremes, including an
136 evaluation of adaptive capacity and subsequent adaptation strategies and options for the asset,
137 system, institution or other subject being assessed.

138 (b) The Authority shall complete a vulnerability assessment and an adaptation cost
139 assessment pertaining to all equipment and mass transportation facilities, as defined in section 1
140 of chapter 161A of the General Laws. Each vulnerability assessment shall: (i) identify adaptation
141 strategies to be prioritized based on severity of asset vulnerability, level of anticipated climate
142 risk and safety risk to users, riders and workers if vulnerability is not addressed; (ii) identify
143 whether the asset is located in or serves an environmental justice community; (iii) identify the

144 authority's plan to provide replacement or alternative service to sustain the current level of
145 service to riders in the event assets are unsuitable to operate due to damage associated with
146 climate risks, including, but not limited to, flooding, extreme heat, excessive snow and ice and
147 other extreme weather events; and (iv) include the cost of any temporary or extended use
148 facilities required to provide ongoing access or detours for roads and bridges during their
149 replacement or repair. Adaptation solutions shall: (1) identify any opportunities to work in
150 partnership with abutting landowners and municipalities; and (2) include identification of
151 solutions that are reflected in municipal hazard mitigation plans and additional planning efforts
152 related to the municipal vulnerability preparedness grant program. Every 4 years, the Authority
153 shall review and update the vulnerability assessments and cost adaptation assessments required
154 pursuant to this subsection.

155 (c) The vulnerability assessment and adaptation cost assessment required pursuant to
156 subsection (b) shall be completed within 18 months of the enactment of this subsection. Every 4
157 years following the enactment of this section, the Authority shall provide a report detailing
158 progress toward the vulnerability and adaptation cost assessments required pursuant to said
159 subsection (b) to the clerks of the house of representatives and the senate, the chairs of the house
160 and senate committees on ways and means and the chairs of the joint committee on
161 transportation.

162 SECTION 5. (a) There is hereby established a special commission on transportation
163 finance for "net-zero by 2050" to investigate, study and make recommendations on the
164 development and deployment of comprehensive and regionally equitable public transportation
165 pricing, roadway pricing and congestion pricing to further the climate goals of the
166 commonwealth. The commission shall be composed of the following members: 5 members who

167 shall not be employees of the executive branch and who shall reside in different geographic
168 regions of the commonwealth, 1 of whom shall be a representative of the construction industries
169 of the commonwealth, to be appointed by the governor to serve terms of 2 years; 3 members,
170 who shall not be members of the general court and who shall reside in different geographic
171 regions of the commonwealth, to be appointed by the president of the senate to serve terms of 2
172 years; 3 members, who shall not be members of the general court and who shall reside in
173 different geographic regions of the commonwealth, to be appointed by the speaker of the house
174 of representatives to serve terms of 2 years; a representative of the Massachusetts Taxpayers
175 Foundation, Inc.; a representative of the Massachusetts Business Roundtable, Inc.; a
176 representative of the Massachusetts Municipal Association, Inc.; a representative of the regional
177 transit authorities as chosen by the secretary of transportation; a representative of the regional
178 planning agencies as chosen by the Massachusetts Association of Regional Planning Agencies;
179 and a representative of the Massachusetts Bay Transportation Authority advisory board,
180 established in section 7A of chapter 161A of the General Laws. Each of the members of the
181 commission shall be an expert with experience in the fields of law or public policy,
182 transportation planning or the design and construction of transportation projects. One of the
183 members appointed by the governor, 1 of the members appointed by the president of the senate
184 and 1 of the members appointed by the speaker of the house of representatives shall be
185 representatives of the Massachusetts business community. One of the members appointed by the
186 governor, 1 of the members appointed by the president of the senate and 1 of the members
187 appointed by the speaker of the house of representatives shall be representatives of
188 environmental organizations, planning organizations, transportation consumer organizations or
189 other public interest organizations. One of the members appointed by the governor shall be an

190 expert in the field of management consulting or organizational change. One of the members
191 appointed by the governor shall be an expert in the field of public finance. One of the members
192 shall be appointed by the governor to serve as chairperson of the commission. The members of
193 the commission shall be appointed no later than 2 months following the passage of this act.

194 (b) The commission shall:

195 (i) endeavor to understand the current transportation financial landscape, by identifying
196 and providing for current transportation funding forecasts, including but not limited to: (i)
197 providing estimates of annual operation and maintenance costs for roadways; (ii) providing
198 estimates of annual revenue with consideration of declining motor vehicle fuel excise revenue
199 due to vehicle electrification; (iii) providing traffic forecasts, including forecasts of traffic
200 diversion impacts; (iv) providing year to year estimates of annual operation and maintenance
201 costs of the Massachusetts Bay Transit Authority and regional transit authorities; and (v)
202 providing estimates of annual revenue, and the methodology employed for such estimates,
203 including an analysis of revenue from the “fair share” amendment for the repair and maintenance
204 of roads, bridges and public transportation;

205 (ii) provide specific operating and capital funding options for the transportation sector to
206 align with the commonwealth’s year 2050 requirements for net-zero greenhouse gas emissions
207 and provide for transportation climate resiliency, including identifying and providing for sources
208 of funding for such costs for meeting the 2025, 2030, 2035, 2040, 2045 and 2050 statewide
209 greenhouse gas emissions limits. The commission shall: (i) identify and analyze physical,
210 technological, legal and other issues or requirements related to roadway pricing in the
211 commonwealth; (ii) propose detailed specifications and regionally equitable locations for toll

212 gantries and other equipment necessary to assess and collect tolls; (iii) review roadway pricing
213 scenarios under the Federal Highway Administration’s Value Pricing Pilot Program; (iv) propose
214 equitable increase in transportation network company fees, including increased ride share fees
215 and excise taxes on out-of-state operators; (v) propose any other revenue sources and strategies
216 that may be needed to meet the commonwealth’s 2050 emissions mandates; (vi) provide a
217 regional and social equity analysis with specific recommendations related to mitigating adverse
218 impacts for low income residents; (vii) identify all local, state and federal approvals necessary to
219 deploy new tolls and other roadway pricing mechanisms on relevant roadways; and (viii) take
220 into consideration roadway and congestion pricing programs in other jurisdictions throughout the
221 United States and the world;

222 (iii) identify costs to ensure a reliable, safe and resilient public transportation system that
223 aligns with the commonwealth’s year 2050 requirements for net-zero greenhouse gas emissions,
224 including identifying and providing for sources of funding for such costs for meeting the 2025,
225 2030, 2035, 2040, 2045 and 2050 statewide greenhouse gas emissions limits. The commission
226 shall: (i) study commute and demand patterns for public transit entities; (ii) study economic
227 development and housing patterns and projections and the impact each has on public transit
228 demand; (iii) review the commonwealth’s laws regarding emissions reductions within the
229 transportation sector; (iv) determine fare structures for all modes of transit of the Massachusetts
230 Bay Transportation Authority and regional transit authorities that account for commute patterns
231 and demand, economic development and housing patterns and emissions reduction requirements;
232 (v) examine the feasibility of means-tested fares; (vi) provide estimates of costs to implement the
233 adaptation needs identified in the vulnerability assessment; (vii) provide estimates of costs of
234 annual revenue; (viii) provide ridership forecasts; (ix) provide a regional and social equity

235 analysis with specific recommendations related to mitigating adverse impacts; (x) identify all
236 local, state and federal approvals necessary to deploy new fare structures at regional transit
237 authorities and the Massachusetts Bay Transportation Authority; and (xi) provide potential
238 impacts on vehicular emissions reduction;

239 (iv) analyze the efficacy and financial sufficiency of the commonwealth's current chapter
240 90 program in meeting the goal of net zero by 2050 and climate resiliency; provided, that the
241 commission shall include in its review the sufficiency of the chapter 90 program's current
242 funding formula based on local road mileage, population and employment and alternatives
243 thereto, including the additional or alternative factor of a municipalities' equalized value in the
244 formula;

245 (v) consult and collaborate with all of the commonwealth's regional transportation
246 agencies, regional planning agencies, regional economic development organizations, the
247 Massachusetts Municipal Association, Inc., the commonwealth's gateway cities and the city of
248 Boston to address geographical transportation financing challenges and solutions that vary within
249 and among the commonwealth's regions; and

250 (vi) consult and collaborate with community-based organizations and communities of
251 color and diversity regarding social equity issues impacting transportation sector financing
252 including, but not limited to, social equity issues for communities underserved by the current
253 transportation financing system and most directly impacted by congestion and greenhouse gas
254 emissions. The commission shall, on an ongoing basis, evaluate its efforts to provide for such
255 consultation and collaboration.

256 (c) The commission may also: (i) propose any other revenue sources and strategies that
257 may be necessary to meet the commonwealth's 2050 emissions mandates; (ii) provide year-to-
258 year direct measurements and estimates of annual operation and maintenance costs; and (iii)
259 propose methods of distributing methods of raised revenue that are in line with the program's
260 goals.

261 (d) The commission may investigate, study and make recommendations on additional
262 mobility methods as necessary.

263 (e) Not later than 12 months following the passage of this act, the commission shall
264 develop an interim initial report with recommendations on Massachusetts Bay Transit Authority
265 and the regional transit authorities financing.

266 (f) Not later than 18 months following the passage of this act, the commission shall
267 develop a final report detailing its findings, including a draft of any legislation required to
268 implement its recommendations, to the governor, the secretary of transportation, the clerks of the
269 house of representatives and the senate, the house and senate committees on ways and means and
270 the joint committee on transportation.

271 (g) Not later than three months from the passage of this act, the treasurer shall transfer
272 from the Massachusetts Transportation Trust Fund \$200,000 for the administration of the
273 commission; provided, that the commission shall have an budget of \$100,000 for the duration of
274 the project and shall have access to the resources and staff of the employees of the Massachusetts
275 Department of Transportation and the Massachusetts Bay Transit Authority and may employ
276 such additional staff or consultants as it may deem necessary.

277 SECTION 6. Section 5 shall take effect 6 months following the passage of this act.