

HOUSE No. 3013

The Commonwealth of Massachusetts

PRESENTED BY:

Tricia Farley-Bouvier and Jason M. Lewis

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 promote the safe integration of autonomous vehicles into the transportation system of the Commonwealth.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
<i>Tricia Farley-Bouvier</i>	<i>3rd Berkshire</i>
<i>Jason M. Lewis</i>	<i>Fifth Middlesex</i>
<i>Kenneth I. Gordon</i>	<i>21st Middlesex</i>
<i>Jonathan Hecht</i>	<i>29th Middlesex</i>

HOUSE No. 3013

By Representative Farley-Bouvier of Pittsfield and Senator Lewis, a joint petition (accompanied by bill, House, No. 3013) of Tricia Farley-Bouvier and others for legislation to promote the safe integration of autonomous vehicles into the transportation system of the Commonwealth.
Transportation.

The Commonwealth of Massachusetts

**In the One Hundred and Ninety-First General Court
(2019-2020)**

An Act to promote the safe integration of autonomous vehicles into the transportation system of the Commonwealth.

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 90,
2 Section 62 the following sections:

3 Section 63. Definitions applicable to Secs. 63 to 63F

4 (A) The following words, as used in Sections 63 to 63F, inclusive, shall have the
5 following meanings:

6 (1) “Automated driving system” means a combination of hardware and software that has
7 the capability to perform driving tasks by controlling and combining braking, throttle, and
8 steering functionality without the active physical control or monitoring by a human driver.

9 (2) “Autonomous vehicle” means any motor vehicle equipped with an automated driving
10 system that has been integrated into that vehicle, where the automated driving system performs

11 all driving tasks and monitors the driving environment without the expectation that a human
12 driver will be available to respond appropriately to a request to intervene. An autonomous
13 vehicle does not include a vehicle that merely is equipped with one or more collision avoidance
14 systems, including, but not limited to, electronic blind spot assistance, automated emergency
15 braking systems, park assist, adaptive cruise control, lane keep assist, lane departure warning,
16 traffic jam and queuing assist, or other similar systems that enhance safety or provide driver
17 assistance, but are not capable, collectively or singularly, of driving the vehicle without the
18 active control or monitoring of a human driver. The term “autonomous vehicle” consists of all
19 vehicles with driving automation at Level 4 and Level 5 as defined by SAE International as of
20 the effective date of this legislation.

21 (3) “Level three vehicle” means any motor vehicle equipped with an automated driving
22 system that has been integrated into that vehicle, where the automated driving system performs
23 all driving tasks and monitors the driving environment with the expectation that a human driver
24 will be available to respond appropriately to a request to intervene. A level three vehicle does
25 not include a vehicle that merely is equipped with one or more collision avoidance systems,
26 including, but not limited to, electronic blind spot assistance, automated emergency braking
27 systems, park assist, adaptive cruise control, lane keep assist, lane departure warning, traffic jam
28 and queuing assist, or other similar systems that enhance safety or provide driver assistance, but
29 are not capable, collectively or singularly, of driving the vehicle without the active control or
30 monitoring of a human driver. The term “level three vehicle” consists of all vehicles with
31 driving automation at Level 3 as defined by SAE International as of the effective date of this
32 legislation.

33 (4) “Zero emissions vehicle” means a motor vehicle that produces zero exhaust emissions
34 of any criteria pollutant or precursor pollutant, or greenhouse gas, excluding emissions from air
35 conditioning systems, under any and all possible operating modes or conditions.

36 (5) The term “public transit” shall include any train, passenger bus, passenger ferry boat,
37 water shuttle or other equipment used in public transportation owned by or operated under the
38 authority of a regional transit authority as set forth in section 3 of chapter 161B, the
39 Massachusetts Bay Transportation Authority, the Massachusetts Port Authority, or the
40 Massachusetts Department of Transportation.

41 (6) “Department” means the Massachusetts Department of Transportation.

42 (7) “Registrar” means the Registrar of Motor Vehicles.

43 (8) An “operator” is the person or entity providing use of a level three or autonomous
44 vehicle commercially, publicly, or privately. Operators include, but are not limited to, the
45 following: commercial passenger transportation service companies, commercial freight service
46 companies, transit authorities, academic or research institutions developing automated driving
47 systems, and individual owners or lessors of privately owned autonomous vehicles.

48 (9) A “passenger” of a level three or autonomous vehicle is any person physically present
49 in an autonomous vehicle while the autonomous vehicle’s automated driving system is engaged.

50 (10) A “manufacturer” of an autonomous vehicle is:

51 (a) The person or entity that originally manufactures a vehicle and equips an automated
52 driving system on the originally completed vehicle; or

53 (b) In the case of a vehicle not originally equipped with an automated driving system by
54 the vehicle manufacturer, the person or entity that modifies the vehicle by installing an
55 automated driving system to convert it to an autonomous vehicle after the vehicle was originally
56 manufactured.

57 (11) “Testing” means analysis and evaluation of level three or autonomous vehicles by a
58 manufacturer, an operator, or an expert third party engaged by a manufacturer or operator.

59 (12) “Deployment” means use of autonomous vehicles by members of the public who
60 may but need not be employees or agents of manufacturers or operators of autonomous vehicles.

61 Section 63A. Autonomous vehicle policy and regulatory authority

62 (A) It shall be the policy of the commonwealth of Massachusetts to promote the
63 integration of autonomous vehicles into the commonwealth for the purpose of improving the
64 transportation system and encouraging economic development, complying with greenhouse gas
65 emissions targets set out in chapter 21N, and to allow autonomous vehicles on the public ways of
66 the commonwealth subject to such restrictions as are necessary to ensure protection of the
67 commonwealth’s people and environment, adequate funding of the commonwealth’s
68 transportation infrastructure, and compliance with state and federal laws.

69 (B) The Department is hereby authorized in accordance with the provisions of chapter
70 30A to promulgate such rules as are necessary to carry out its duties under Sections 63 through
71 63F of this chapter and in accordance with the purpose set forth in subsection (a) of this section.
72 In promulgating any such regulations, the Department shall seek to protect the commonwealth’s
73 most impacted and disadvantaged communities and ensure equal protection and the equitable
74 distribution of the benefits and costs associated with the introduction of autonomous vehicles.

75 Section 63B. Level three and autonomous vehicles allowed

76 (A) A level three vehicle may be tested on public ways within the commonwealth only if
77 the level three vehicle:

78 (1) Has a failure alert system to notify the passenger when a system failure is detected;

79 (2) Meets the federal motor vehicle safety standards for its model year and all other
80 applicable safety standards and performance requirements established by state and federal law;

81 (3) Relies on the most recent version of all software used as part of its automated driving
82 system and such software has been updated to the latest available version within 30 days of the
83 release of any such updated version;

84 (4) is clearly marked as an autonomous vehicle in a manner approved by the Registrar;
85 and

86 (5) Has a system that captures and stores such data as the Department deems necessary
87 through rules promulgated in accordance with the provisions of chapter 30A, after consultation
88 with the Registrar. Any such system must be open-source and based on common standards, with
89 an operating system that has been made public so that components performing the same function
90 can be readily substituted or provided by multiple providers. The data captured and stored by
91 such system shall include, but not be limited to, real-time distance traveled and real-time number
92 of passengers. Data relating to real-time distance traveled and real-time number of passengers
93 shall be stored, with the capability of being cross-referenced, for a reasonable time period as
94 established by the Department, provided that such period shall not exceed eighteen months. Data
95 relating to safety shall be stored for a reasonable time period after the vehicle has been removed

96 from services, established by the Department, provided that such period shall not exceed
97 eighteen months.

98 In issuing any regulations setting requirements for data collection from autonomous
99 vehicles, the Department shall take all necessary steps:

100 (a) To protect the privacy of individuals including, but not limited to, the operators and
101 passengers of autonomous vehicles; and

102 (b) To ensure the security of the data-collection system, the resistance of the system to
103 tampering, and the accuracy of the data captured and stored by the system.

104 Such steps shall include limiting the availability of any sensitive data to the public.

105 (B) An autonomous vehicle may be tested or deployed on public ways within the
106 commonwealth only if the autonomous vehicle:

107 (1) Has a mechanism that is readily accessible to passengers, that does not rely on
108 wireless connectivity, and that, if engaged, forces the vehicle to expediently come to the closest
109 safe stop and allow passengers to exit.

110 (2) Has a failure alert system to notify the passenger when a system failure is detected;

111 (3) Meets the federal motor vehicle safety standards for its model year and all other
112 applicable safety standards and performance requirements established by state and federal law;

113 (4) Relies on the most recent version of all software used as part of its automated driving
114 system and such software has been updated to the latest available version within 30 days of the
115 release of any such updated version;

116 (5) is clearly marked as an autonomous vehicle in a manner approved by the Registrar;
117 and

118 (6) Has a system that captures and stores such data as the Department deems necessary
119 through rules promulgated in accordance with the provisions of chapter 30A, after consultation
120 with the Registrar. Any such system must be open-source and based on common standards, with
121 an operating system that has been made public so that components performing the same function
122 can be readily substituted or provided by multiple providers. The data captured and stored by
123 such system shall include, but not be limited to, real-time distance traveled and real-time number
124 of passengers. Data relating to real-time distance traveled and real-time number of passengers
125 shall be stored, with the capability of being cross-referenced, for a reasonable time period as
126 established by the Department, provided that such period shall not exceed eighteen months. Data
127 relating to safety shall be stored permanently.

128 In issuing any regulations setting requirements for data collection from autonomous
129 vehicles, the Department shall take all necessary steps:

130 (a) To protect the privacy of individuals including, but not limited to, the operators and
131 passengers of autonomous vehicles; and

132 (b) To ensure the security of the data-collection system, the resistance of the system to
133 tampering, and the accuracy of the data captured and stored by the system.

134 Such steps shall include limiting the availability of any sensitive data to the public.

135 Section 63C. Level three and autonomous vehicle testing and deployment

136 (A) A manufacturer or operator may test level three or autonomous vehicles on the public
137 ways of the commonwealth or may test, deploy, or sell or lease for deployment autonomous
138 vehicles for use on the public ways of the commonwealth only if the manufacturer or operator
139 has been certified by the Registrar.

140 (B) A manufacturer or operator may apply to the Registrar for certification under this
141 section. The application shall be in the form prescribed by the Registrar in consultation with the
142 Department. The application shall establish that:

143 (1) The level three vehicle or autonomous vehicle and the automated driving system meet
144 all applicable requirements of section 63B of this chapter; and

145 (2) The level three vehicle or autonomous vehicle shall be operated only in accordance
146 with Section 63D of this chapter.

147 (C) The Registrar, in consultation with the Department, shall promulgate rules in
148 accordance with the provisions of chapter 30A, for the testing of level three vehicles and the
149 testing, deployment, and sale or leasing for deployment of autonomous vehicles. The rules shall
150 establish standards for equipment used in and for the performance of level three and autonomous
151 vehicles that the Department determines are necessary to ensure the safe operation of such
152 vehicles on the public ways of the commonwealth and set inspection requirements specific to
153 such vehicles. The rules shall include a waiver for autonomous vehicles of such inspection
154 requirements as the Registrar deems appropriate in accordance with section 7A of chapter 90.
155 The rules shall also provide for sharing of the data captured and stored in accordance with
156 Section 63B(a)(6), including providing the public with open access to such data, subject to such

157 safeguards as the Registrar deems necessary for the protection of privacy. The rules may include,
158 but need not be limited to, the following:

159 (1) The establishment of a pilot program for testing level three or autonomous vehicles,
160 or the phased integration and deployment of autonomous vehicles;

161 (2) Limits on the number of level three or autonomous vehicles that may be tested or, in
162 the case of autonomous vehicles, deployed at any given time on the public ways of the
163 commonwealth;

164 (3) Special license requirements relating to the testing or deployment of autonomous
165 vehicles appropriate to the class of vehicle based on weight rating or number of passengers; and

166 (4) Criteria for revocation, suspension, or denial of an application or certification under
167 this section.

168 (D) A manufacturer or operator shall submit proof of liability insurance with an
169 application made under this section. Such insurance shall provide coverage in an amount to be
170 established by the Registrar.

171 (E) The Registrar may certify a manufacturer or operator under this section only if the
172 Registrar determines that the level three or autonomous vehicles covered by the certification are
173 safe to operate on the public ways of the commonwealth. Such determination shall include at a
174 minimum a finding that the level three or autonomous vehicles covered by the certification are in
175 compliance with all federal standards and regulations including, but not limited to, the
176 Performance Guidance set forth by the National Highway Traffic Safety Administration and
177 applicable Federal Motor Vehicle Safety Standards.

178 (F) The Registrar by rule shall establish fees for applications made under this section.
179 The fees shall be in amounts adequate to pay all administrative costs incurred by the department
180 in administering this part. Zero-emission vehicles shall be exempt from application fees
181 established under this section.

182 Section 63D. Operation of level three and autonomous vehicles

183 (A) A level three vehicle from a certified manufacturer may be tested on the public ways
184 of the commonwealth, but only if a passenger with the proper license for the type of motor
185 vehicle being tested is present and is adequately trained to pilot and monitor the vehicle as a
186 fallback-ready human driver.

187 (B) Notwithstanding sections 17 and 18 of chapter 90 of the General Laws, or any
188 general or special law, or regulation to the contrary, the speed limit for autonomous vehicles
189 shall be 25 miles per hour on public ways in a thickly settled or business district, as defined in
190 section 1 of said chapter 90, 15 miles per hour within a duly established school zone when
191 children are present, and the same as the prevailing speed limit on all other public ways.

192 (C) Notwithstanding the other provisions of this chapter, any municipality with a
193 population density greater than or equal to 4,500 people per square mile shall have the power to
194 limit autonomous vehicles to only motor vehicles providing public transportation as set forth in
195 section one of chapter 159A, transportation network vehicles as set forth in section one of
196 chapter 159A1/2 provided that for purposes of this subsection, “driver” shall include the operator
197 of an autonomous vehicle, or vehicles carrying an average of 1.8 or more passengers per vehicle
198 mile traveled as calculated on a monthly basis per vehicle or fleet of commonly-owned vehicles.

199 Any such limitation need not apply to an entire municipality but may be applied to any
200 geographic area or areas within a municipality, as the municipality deems suitable.

201 (D) Notwithstanding the other provisions of this chapter, any municipality may by
202 ordinance or bylaw adopted by two-thirds vote of the city council in a city or by a two-thirds
203 vote of a town meeting in a town, establish a mileage limit on the distance that an autonomous
204 vehicle may travel within that municipality without a passenger present in the vehicle. This shall
205 not apply to freight or emergency vehicles .

206 (E) Notwithstanding the other provisions of this chapter, any municipality may by
207 ordinance or bylaw adopted by two-thirds vote of the city council in a city or by a two-thirds
208 vote of a town meeting in a town, establish autonomous vehicle parking charges subject to the
209 following provisions:

210 (1) Autonomous vehicles may travel on any public way without a passenger present
211 in the vehicle for up to two minutes.

212 (2) After two minutes, municipalities may charge any autonomous vehicle a fee in
213 lieu of parking charges.

214 (3) After 30 minutes, the municipality may require any autonomous vehicle to park.

215 (4) This section shall not apply to emergency vehicles.

216 (E) Whoever violates subsection sections 63A through 63D of this chapter shall be
217 subject to a fine of not more than \$500 for a first violation, \$1,000 for a second violation, and
218 \$2,500 for every violation thereafter. Any person who receives a citation for violating any
219 provision of these sections may contest such citation pursuant to section three of chapter 90C.

220 Section 63E. Road usage charge on autonomous vehicles

221 (A) A road usage charge is imposed on autonomous vehicles that operate on the public
222 ways within this state pursuant to this Chapter.

223 (B) The Department shall, in accordance with the provisions of chapter 30A, promulgate
224 rules regarding the computation, assessment, and collection of the road usage charge on
225 autonomous vehicles.

226 (C) In promulgating rules regarding the computation of the road usage charge on
227 autonomous vehicles, the Department shall, not later than 270 days following the effective date
228 of this section:

229 (1) Establish a base per-mile rate on autonomous vehicles of no less than 2.5 cents per
230 mile, provided that the minimum rate imposed under this paragraph shall be adjusted at the
231 beginning of each calendar year, by the percentage, if any, by which the consumer price index, as
232 defined in section 1 of the Internal Revenue Code, pursuant to 26 U.S.C. section 1, for the
233 preceding year exceeds the consumer price index for the calendar year that ends before such
234 preceding year;

235 (2) Allow for a reduction in the base per-mile rate on autonomous vehicles that are zero-
236 emission vehicles;

237 (3) Allow for a reduction in the base per-mile rate on autonomous vehicles owned and
238 operated by the commonwealth or by any city or town within the commonwealth;

239 (4) Allow for reductions in the base per-mile rate on autonomous vehicles for each
240 passenger in an autonomous vehicle per mile;

241 (4) Allow for reductions in the base per-mile rate on autonomous vehicles for each mile
242 traveled during off-peak travel hours as defined by the Department;

243 (5) Allow for reductions in the base per-mile rate on autonomous vehicles for each mile
244 traveled in specified geographic areas where no or few public transit options are available;

245 (6) Allow for reductions in the base per-mile rate on autonomous vehicles for operators
246 whose personal income, as documented by tax returns or other credible evidence, falls below a
247 threshold established by regulation;

248 (7) Impose an increased per-mile rate on autonomous vehicles for each mile traveled
249 without a passenger;

250 (8) Impose an increased per-mile rate or a tiered system of increased per-mile rates on
251 autonomous vehicles with a weight greater than or equal to 4,000 pounds (taking into account
252 any motor vehicle fuels excise tax paid for vehicles over 8,500 pounds);

253 (9) Impose an increased per-mile rate on autonomous vehicles for each mile traveled
254 between 8 am and 8 pm within a severe congestion zone as designated by the Department
255 through rules promulgated under this chapter; and

256 (10) Create such exemptions as are necessary to ensure that the road usage charge is
257 reasonably related to the services provided by the Department, including, but not limited to,
258 exempting travel on private property and out-of-state travel.

259 Section 63F. Allocation of road usage charge revenue

260 (A) All road usage charge revenue collected from autonomous vehicles pursuant to
261 Section 63E shall be credited to the commonwealth Transportation Fund.

SECTION 2. This act shall take effect upon its passage.