

**HOUSE . . . . . No. 1829**

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**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:	DATE ADDED:
<i>Tricia Farley-Bouvier</i>	<i>3rd Berkshire</i>	<i>1/19/2017</i>
<i>Jason M. Lewis</i>	<i>Fifth Middlesex</i>	<i>1/19/2017</i>
<i>David M. Rogers</i>	<i>24th Middlesex</i>	<i>11/8/2017</i>
<i>Carmine L. Gentile</i>	<i>13th Middlesex</i>	<i>11/8/2017</i>
<i>José F. Tosado</i>	<i>9th Hampden</i>	<i>1/24/2017</i>
<i>Denise Provost</i>	<i>27th Middlesex</i>	<i>11/8/2017</i>
<i>Chris Walsh</i>	<i>6th Middlesex</i>	<i>11/8/2017</i>
<i>Frank I. Smizik</i>	<i>15th Norfolk</i>	<i>11/8/2017</i>
<i>RoseLee Vincent</i>	<i>16th Suffolk</i>	<i>11/8/2017</i>
<i>Kenneth I. Gordon</i>	<i>21st Middlesex</i>	<i>11/8/2017</i>
<i>Solomon Goldstein-Rose</i>	<i>3rd Hampshire</i>	<i>11/8/2017</i>
<i>Paul R. Heroux</i>	<i>2nd Bristol</i>	<i>11/8/2017</i>
<i>Daniel J. Ryan</i>	<i>2nd Suffolk</i>	<i>11/8/2017</i>
<i>Eileen M. Donoghue</i>	<i>First Middlesex</i>	<i>11/8/2017</i>
<i>Joan B. Lovely</i>	<i>Second Essex</i>	<i>11/8/2017</i>
<i>Natalie Higgins</i>	<i>4th Worcester</i>	<i>11/8/2017</i>
<i>Jonathan Hecht</i>	<i>29th Middlesex</i>	<i>11/8/2017</i>



**HOUSE . . . . . No. 1829**

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By Representative Farley-Bouvier of Pittsfield and Senator Lewis, a joint petition (accompanied by bill, House, No. 1829) of Tricia Farley-Bouvier, Jason M. Lewis and others relative to autonomous vehicle access to the public ways. Transportation.

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**The Commonwealth of Massachusetts**

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**In the One Hundred and Ninetieth General Court  
(2017-2018)**  
\_\_\_\_\_

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 as defined in section one of this  
10 chapter equipped with an automated driving system that has been integrated into that vehicle,  
11 where the automated driving system performs all driving tasks and monitors the driving

12 environment without the expectation that a human driver will be available to respond  
13 appropriately to a request to intervene. An autonomous vehicle does not include a vehicle that  
14 merely is equipped with one or more collision avoidance systems, including, but not limited to,  
15 electronic blind spot assistance, automated emergency braking systems, park assist, adaptive  
16 cruise control, lane keep assist, lane departure warning, traffic jam and queuing assist, or other  
17 similar systems that enhance safety or provide driver assistance, but are not capable, collectively  
18 or singularly, of driving the vehicle without the active control or monitoring of a human driver.

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

29 (3) The term “zero emission vehicle” (or “ZEV”) means any passenger car or light duty  
30 truck that produces zero emissions of any criteria pollutants under any and all possible  
31 operational modes and conditions. Incorporation of a fuel fired heater shall not preclude a  
32 vehicle from being certified as a ZEV provided the fuel fired heater cannot be operated at  
33 ambient temperatures above 40°F and the heater is demonstrated to have zero evaporative  
34 emissions under any and all possible operational modes and conditions. In addition, zero

35 emission vehicle or "ZEV," means any ZEV placed in service in compliance with the California  
36 Project pursuant to the requirements of the Master Memorandum of Agreement adopted by the  
37 California Air Resources Board March 29, 1996.

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

43 (5) "Department" means the Massachusetts Department of Transportation.

44 (6) "Registrar" means the Registrar of Motor Vehicles.

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

50 (8) A "passenger" of a level three or autonomous vehicle is any person physically present  
51 in an autonomous vehicle while the autonomous vehicle's automated driving system is engaged.

52 (9) A "manufacturer" of an autonomous vehicle is:

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

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

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

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

63 Section 63A. Autonomous vehicle policy and regulatory authority

64 (a) It shall be the policy of the commonwealth of Massachusetts to promote the  
65 integration of autonomous vehicles into the commonwealth for the purpose of improving the  
66 transportation system and encouraging economic development, and to allow autonomous  
67 vehicles on the public ways of the commonwealth subject to such restrictions as are necessary to  
68 ensure protection of the commonwealth’s people and environment, adequate funding of the  
69 commonwealth’s transportation infrastructure, and compliance with state and federal laws.

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

77 Section 63B. Level three and autonomous vehicles allowed

78 (a) A level three vehicle may be tested on public ways within the commonwealth only if  
79 the level three vehicle:

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

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

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

86 (4) is a zero-emissions vehicle, unless the vehicle has a maximum design loaded weight  
87 of more than or equal to eight thousand five hundred pounds;

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

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

98 a reasonable time period as established by the Department, provided that such period shall not  
99 exceed eighteen months. Data relating to safety shall be stored for a reasonable time period after  
100 the vehicle has been removed from services, established by the Department, provided that such  
101 period shall not exceed eighteen months.

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

104 (A) To protect the privacy of individuals including, but not limited to, the operators and  
105 passengers of autonomous vehicles; and

106 (B) To ensure the security of the data-collection system, the resistance of the system to  
107 tampering, and the accuracy of the data captured and stored by the system.

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

109 (b) An autonomous vehicle may be tested or deployed on public ways within the  
110 commonwealth only if the autonomous vehicle:

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

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

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



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

120 (5) is a zero-emissions vehicle, unless the vehicle has a maximum design loaded weight  
121 of more than or equal to eight thousand five hundred pounds; and

122 (6) is clearly marked as an autonomous vehicle in a manner approved by the Registrar;  
123 and

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

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

136 (A) To protect the privacy of individuals including, but not limited to, the operators and  
137 passengers of autonomous vehicles; and

138 (B) To ensure the security of the data-collection system, the resistance of the system to  
139 tampering, and the accuracy of the data captured and stored by the system.

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

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

142 (a) A manufacturer or operator may test level three or autonomous vehicles on the public  
143 ways of the commonwealth or may test, deploy, or sell or lease for deployment autonomous  
144 vehicles for use on the public ways of the commonwealth only if the manufacturer or operator  
145 has been certified by the Registrar.

146 (b) A manufacturer or operator may apply to the Registrar for certification under this  
147 section. The application shall be in the form prescribed by the Registrar in consultation with the  
148 Department. The application shall establish that:

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

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

153 (c) The Registrar, in consultation with the Department, shall promulgate rules in  
154 accordance with the provisions of chapter thirty A, for the testing of level three vehicles and the  
155 testing, deployment, and sale or leasing for deployment of autonomous vehicles. The rules shall  
156 establish standards for equipment used in and for the performance of level three and autonomous  
157 vehicles that the Department determines are necessary to ensure the safe operation of such  
158 vehicles on the public ways of the commonwealth and set inspection requirements specific to

159 such vehicles. The rules shall include a waiver for autonomous vehicles of such inspection  
160 requirements as the Registrar deems appropriate in accordance with section seven A of chapter  
161 ninety. The rules shall also provide for sharing of the data captured and stored in accordance  
162 with Section 63B(a)(5), including providing the public with open access to such data, subject to  
163 such safeguards as the Registrar deems necessary for the protection of privacy. The rules may  
164 include, but need not be limited to, the following:

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

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

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

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

174 (d) A manufacturer or operator shall submit proof of liability insurance with an  
175 application made under this section. Such insurance shall provide coverage in an amount to be  
176 established by the Registrar.

177 (e) The Registrar may certify a manufacturer or operator under this section only if the  
178 Registrar determines that the level three or autonomous vehicles covered by the certification are  
179 safe to operate on the public ways of the commonwealth. Such determination shall include at a

180 minimum a finding that the level three or autonomous vehicles covered by the certification are in  
181 compliance with all federal standards and regulations including, but not limited to, the  
182 Performance Guidance set forth by the National Highway Traffic Safety Administration and  
183 applicable Federal Motor Vehicle Safety Standards.

184 (f) The Registrar by rule shall establish fees for applications made under this section. The  
185 fees shall be in amounts adequate to pay all administrative costs incurred by the department in  
186 administering this part.

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

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

192 (b) If the Registrar should provide by rule that autonomous vehicles may be tested or  
193 deployed on the public ways of the commonwealth without a passenger present, no autonomous  
194 vehicle, other than freight or emergency vehicles, may travel more than one mile continuously  
195 without a passenger present in the vehicle.

196 (c) Notwithstanding sections seventeen and eighteen of chapter ninety of the General  
197 Laws, or any general or special law, or regulation to the contrary, the speed limit for autonomous  
198 vehicles shall be twenty-five miles per hour on public ways in a thickly settled or business  
199 district, as defined in section one of said chapter ninety, fifteen miles per hour within a duly  
200 established school zone when children are present, and the same as the prevailing speed limit on  
201 all other public ways.

202 (d) Notwithstanding the other provisions of this chapter, any municipality with a  
203 population density greater than or equal to four thousand five hundred people per square mile  
204 shall have the power to limit autonomous vehicles to only motor vehicles providing public  
205 transportation as set forth in section one of chapter one hundred fifty nine A, transportation  
206 network vehicles as set forth in section one of chapter one hundred fifty nine A<sup>1/2</sup> provided that  
207 for purposes of this subsection, “driver” shall include the operator of an autonomous vehicle, or  
208 vehicles carrying an average of 1.8 or more passengers per vehicle mile traveled as calculated on  
209 a monthly basis per vehicle or fleet of commonly-owned vehicles. Any such limitation need not  
210 apply to an entire municipality but may be applied to any geographic area or areas within a  
211 municipality, as the municipality deems suitable.

212 (e) Whoever violates subsection sections 63A through 63D of this chapter shall be  
213 subject to a fine of not more than five hundred dollars for a first violation, one thousand dollars  
214 for a second violation, and \$2,500 for every violation thereafter. Any person who receives a  
215 citation for violating any provision of these sections may contest such citation pursuant to section  
216 three of chapter ninety C.

217 Section 63E. Road usage charge on autonomous vehicles

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

220 (b) The Department shall, in accordance with the provisions of chapter thirty A,  
221 promulgate rules regarding the computation, assessment, and collection of the road usage charge  
222 on autonomous vehicles.

223 (c) In promulgating rules regarding the computation of the road usage charge on  
224 autonomous vehicles, the Department shall:

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

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

233 (3) Allow for reductions in the base per-mile rate on autonomous vehicles for each  
234 passenger in an autonomous vehicle per mile;

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

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

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

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

244 (8) Impose an increased per-mile rate or a tiered system of increased per-mile rates on  
245 autonomous vehicles with a weight greater than or equal to four thousand pounds (taking into  
246 account any motor vehicle fuels excise tax paid for vehicles over eight thousand five hundred  
247 pounds);

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

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

254 Section 63F. Allocation of road usage charge revenue

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

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