

**SENATE . . . . . No. 2358**

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The Commonwealth of Massachusetts

PRESENTED BY:

***Michael O. Moore***

*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 relative to life cycle costs for long term pavement solutions.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	
<i>Michael O. Moore</i>	<i>Second Worcester</i>	
<i>Diana DiZoglio</i>	<i>First Essex</i>	<i>2/12/2021</i>
<i>Michael F. Rush</i>	<i>Norfolk and Suffolk</i>	<i>2/12/2021</i>
<i>Michael D. Brady</i>	<i>Second Plymouth and Bristol</i>	<i>2/16/2021</i>
<i>Angelo J. Puppolo, Jr.</i>	<i>12th Hampden</i>	<i>2/17/2021</i>
<i>Jessica Ann Giannino</i>	<i>16th Suffolk</i>	<i>2/17/2021</i>
<i>Brian M. Ashe</i>	<i>2nd Hampden</i>	<i>2/17/2021</i>
<i>Bruce J. Ayers</i>	<i>1st Norfolk</i>	<i>2/18/2021</i>
<i>Jonathan D. Zlotnik</i>	<i>2nd Worcester</i>	<i>2/18/2021</i>
<i>Alan Silvia</i>	<i>7th Bristol</i>	<i>2/19/2021</i>
<i>Joseph W. McGonagle, Jr.</i>	<i>28th Middlesex</i>	<i>2/23/2021</i>
<i>John J. Cronin</i>	<i>Worcester and Middlesex</i>	<i>2/23/2021</i>
<i>David K. Muradian, Jr.</i>	<i>9th Worcester</i>	<i>2/24/2021</i>
<i>Paul K. Frost</i>	<i>7th Worcester</i>	<i>2/24/2021</i>
<i>John C. Velis</i>	<i>Second Hampden and Hampshire</i>	<i>2/24/2021</i>
<i>Edward F. Coppinger</i>	<i>10th Suffolk</i>	<i>2/24/2021</i>
<i>Kimberly N. Ferguson</i>	<i>1st Worcester</i>	<i>2/25/2021</i>
<i>Michael P. Kushmerek</i>	<i>3rd Worcester</i>	<i>3/1/2021</i>

<i>Brendan P. Crighton</i>	<i>Third Essex</i>	<i>3/1/2021</i>
<i>James Arciero</i>	<i>2nd Middlesex</i>	<i>3/1/2021</i>
<i>Anne M. Gobi</i>	<i>Worcester, Hampden, Hampshire and Middlesex</i>	<i>3/1/2021</i>
<i>Patrick M. O'Connor</i>	<i>Plymouth and Norfolk</i>	<i>3/8/2021</i>
<i>Hannah Kane</i>	<i>11th Worcester</i>	<i>3/16/2021</i>
<i>Brian W. Murray</i>	<i>10th Worcester</i>	<i>4/15/2021</i>

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By Mr. Moore, a petition (accompanied by bill, Senate, No. 2358) of Michael O. Moore, Diana DiZoglio, Michael F. Rush, Michael D. Brady and other members of the General Court for legislation relative to life cycle costs for long term pavement solutions. Transportation.

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[SIMILAR MATTER FILED IN PREVIOUS SESSION  
SEE SENATE, NO. 2122 OF 2019-2020.]

The Commonwealth of Massachusetts

\_\_\_\_\_  
**In the One Hundred and Ninety-Second General Court  
(2021-2022)**  
\_\_\_\_\_

An Act relative to life cycle costs for long term pavement solutions.

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

1 Chapter 6C of the General Laws is hereby amended by inserting after section 76 the  
2 following 2 sections:-

3 Section 77. (a) the following definitions shall apply for the purposes of this section:

4 “life-cycle cost,” the total cost of the initial project plus all anticipated costs for  
5 subsequent maintenance, repair, or resurfacing over the life of the pavement,

6 “plain joined cementitious concrete,” cement concrete pavement with no reinforcement  
7 and proper joint placement

8 (b) the department shall develop and implement a life-cycle cost analysis for each project  
9 for which the estimated total pavement costs exceed \$1,000,000.00, funded in whole, or in part,

10 with state funds. The department shall design each project in both “Hot Mix Asphalt” (HMA)  
11 and “Plain Jointed Cementitious Concrete” (PJCC), and award paving projects utilizing the  
12 material having the lowest Life Cycle Cost

13 (c) Except as otherwise provided in this section, life-cycle cost shall compare equivalent  
14 designs, and shall be based upon Massachusetts actual historic project maintenance, repair, and  
15 resurfacing schedules and costs as recorded by the Department pavement management system,  
16 and shall include estimates of user costs throughout the entire pavement life.

17 For pavement projects for which there are no relevant Massachusetts actual  
18 historic project maintenance, repair, and resurfacing schedules and costs as recorded by the  
19 pavement management system, the Department may use either of the following as a substitute  
20 for the requirements listed in subsection (a):

21 1. actual historical and comparable data for reasonably equivalent designs from states  
22 geographic locations with similar climates, soil structures, or vehicle traffic

23 2. the department may determine appropriate estimated maintenance, repair, and  
24 resurfacing schedules for a project by using preliminary results from a demonstration project  
25 described in section that is underway at the time of the project. The schedules described in this  
26 subdivision shall be determined using the appropriate engineering analysis techniques and shall  
27 be approved by the chief engineer of the department. The temporary schedules described in this  
28 subsection shall be superseded by actual performance data as it is developed.

29 Section 78. (a) notwithstanding section 77, the department shall design and construct a  
30 minimum of 4 PJCC Demonstration Projects per year for a minimum of 10 years, for the purpose  
31 of generating historical information that can be utilized in the life cycle cost analysis, with at

32 least one of these projects annually using thin concrete overlay, which may require synthetic  
33 fiber reinforcement to extend the life and performance of the pavement

34 (b) demonstration projects shall be selected by the department in consultation with  
35 representatives of the Massachusetts Concrete and Aggregate Producers Association, and shall  
36 meet at least one of the following criteria

37 1. Pavement designs intended to increase pavement life-expectancy in a manner that  
38 results in lower life cycle costs

39 2. Pavement designs intended to improve performance, including but not limited to,  
40 friction, surface stress, reduction of noise, and improvement of ride quality

41 3. Pavement designs intended to compare the performance of various types of pavement

42 (c) each demonstration project shall include measurable goals and objectives for  
43 determining the success of that project, and the department shall measure the interim success of  
44 each project and prepare an annual report that compares the cost effectiveness and performance  
45 of the materials and designs to the departments standard selection process. The report shall be  
46 provided to the department, the Speaker of the House of Representatives, and the President of the  
47 Senate.