

SENATE No.

The Commonwealth of Massachusetts

PRESENTED BY:

Bruce E. Tarr, (BY REQUEST)

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 tree canopy.

PETITION OF:

NAME:

Annette Dion

DISTRICT/ADDRESS:

14 Granite Street, Rockport, MA 01966

SENATE No.

By Mr. Tarr (by request), a petition (accompanied by bill) (subject to Joint Rule 12) of Annette Dion for legislation relative to tree canopy. Environment, Natural Resources and Agriculture.

The Commonwealth of Massachusetts

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

An Act relative to tree canopy.

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

1 Purpose: To improve Department of Conservation & Recreation (DCR) Parking Lot
2 Designs by Addressing Tree Canopy, Habitat and Runoff Requirements

3 Background: Non-residential parking spaces in Massachusetts are estimated to cover over
4 100 square miles. Note that this paving did not exist in the pre-automobile age; all that land had
5 been vegetated. Unshaded asphalt can reach very high temperatures warming the air and
6 radiating even at night. Higher temperatures release more organic aerosols than otherwise and
7 decrease the life expectancy of the asphalt. Shaded parking benefits include reduced temperature,
8 improved lifespan, improved aesthetics and improved habitat.

9 The DCR manages state parks and oversees more than 450,000 acres throughout
10 Massachusetts. This equates to 700 square miles or almost 10% of the land area of
11 Massachusetts. Its mission is to protect, promote, and enhance the state’s natural, cultural, and
12 recreational resources.

13 To begin to address this overall problem, the following shall be required of all DCR
14 parking lots:

15 1. FOR IMPERVIOUS PARKING:

16 New Paved Impervious Parking: All new or redesigned paved impervious DCR parking
17 lots that are in or abut presently or historically forested areas (forested meaning areas with trees)
18 shall be designed to incorporate appropriate indigenous trees that within 20 years of planting
19 have canopy coverage of 50% of the parking lot.

20 The shading requirement applies to all surface parking areas, including all surfacing on
21 which a vehicle can drive and all parking stalls; all drives and drive-through lanes within the
22 property regardless of length; and all maneuvering areas regardless of depth.

23 Existing Nonconforming Parking Areas: When a DCR parking area that does not comply
24 with the shading requirement is expanded by an amount, in area or number of spaces, equal to or
25 greater than 50% within any continuous three-year period, or the parking area is reconfigured
26 with a new layout, the entire parking facility, including the existing area and the expansion, shall
27 comply with the shading requirement. When a parking facility that does not comply with the
28 shading requirement is expanded by an amount, in area or number of spaces, less than 50%, only
29 the expansion must comply with the shading requirement.

30 2. FOR PERVIOUS PARKING:

31 Decreasing the area of impermeable pavement has multiple benefits and is encouraged.
32 DCR parking lots need not be entirely paved in asphalt, depending on their usage. A simple
33 analysis during design should be done to determine if the “back-forty” of larger parking areas

34 may be paved with a permeable material. This allows for the incorporation of permeable surfaces
35 in low use areas where impermeable high use surfaces are not needed, and provides an
36 appropriate area for placement of plowed snow. Thus:

37 New Pervious Parking: All new or redesigned pervious DCR parking lots that are in or
38 abut presently of historically forested areas (forested meaning areas with trees) shall be designed
39 to incorporate appropriate indigenous trees that within 20 years of planting have canopy
40 coverage of 25% of the parking lot.

41 The shading requirement applies to all surface parking areas, including all surfacing on
42 which a vehicle can drive and all parking stalls; all drives and drive-through lanes within the
43 property regardless of length; and all maneuvering areas regardless of depth.

44 Existing Nonconforming Parking Areas: When a DCR parking area that does not comply
45 with the shading requirement is expanded by an amount, in area or number of spaces, equal to or
46 greater than 50% within any continuous three-year period, or the parking area is reconfigured
47 with a new layout, the entire parking facility, including the existing area and the expansion, shall
48 comply with the shading requirement. When a parking facility that does not comply with the
49 shading requirement is expanded by an amount, in area or number of spaces, less than 50%, only
50 the expansion must comply with the shading requirement.

51 3. DESIGN AND DOCUMENTATION:

52 Parking Lot Shading Plan: A Parking Lot Shading Plan shall be submitted with the
53 required landscape plans for all parking lots, using the landscape planting plans as a base. The
54 Parking Shading Plan includes two parts: (1) Parking Lot Shading Site Plan and (2) Shading
55 Calculation table. The plan shall show all surface areas included in the calculation. For purposes

56 of calculation, the vertically projected canopy diameters will be used for calculations.
57 Overlapping canopies cannot be counted twice. Existing trees preserved maybe included in the
58 shade credit calculation. Trees shall be drawn to scale representing the canopy size in 20 years.
59 The shading plans shall include a table identifying the quantity and type of trees used and the
60 shading credited to each.

61 In that trees when planted need root space to grow, all DCR projects that require planting
62 of trees shall have sub-surface explorations done to the degree necessary to verify that the design
63 incorporates adequate roots space for planted trees. This may be a very simple exercise or more
64 detailed in the case of obvious or possible bedrock. The outcome of sub-surface investigations in
65 areas of bedrock may require adjustments to the parking lot layout to accommodate required
66 plantings.

67 Parking Area Aesthetics: The resulting aesthetics of a parking area design are an
68 important part of this achieving the DCR mission. Parking lot design should not be, in the best
69 case, an exercise of squeezing the most spaces into the smallest footprint, or, in the worst case,
70 an afterthought. This may require a more aesthetically pleasing irregular footprint with canopy
71 and permeability as addressed above, even at the loss of a few potential spaces.

72 Tree Removal During Nesting Season: All tree removal should be planned to avoid tree
73 removal during nesting season.