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TO: Rebecca Tepper, Secretary
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THROUGH: Kurt Gaertner, Asst. Secretary for Environmental Policy

FROM: John DeLeire, Director of the Right of Way Bureau
Massachusetts Department of Transportation
10 Park Plaza, Suite 7160
Boston, MA

DATE: March 12, 2025

RE: M.G.L. c.3, §5A - Alternative Analysis and Replacement Land Waiver Request
Reconstruction of Randolph Avenue (Route 28) at Chickatawbut Road, Milton

An Act Preserving Open Space in the Commonwealth (M.G.L. c.3, §5A) – Alternatives Analysis:

In accordance with the Executive Office of Energy and Environmental Affairs (EEA) and the Guidance on Implementation of An Act Preserving Open Space in the Commonwealth (M.G.L. c.3, §5A) issued in February 2023, the Massachusetts Department of Transportation (MassDOT) issues the following alternatives analysis as required by M.G.L. c.3, §5A for the change of use of land related to the proposed safety improvement reconstruction project at the intersection of Randolph Avenue and Chickatawbut Road in Milton (the "Project"). The purpose of the alternatives analysis is to demonstrate that no feasible or substantially equivalent alternative exists that avoids or further minimizes impacts to the public land adjacent to the project site subject to Article 97 of the Massachusetts Constitution.

(i) Explain the Proposed Article 97 Action and Identify the Public Purpose that it will Serve

MassDOT proposes redesigning the intersection of Randolph Avenue and Chickatawbut Road to improve safety for all roadway users. The purpose of this project is to improve the safety and traffic conditions at the intersection, which consistently ranks in the top 5 high crash locations in Massachusetts. The project

will improve vehicular, pedestrian, and bicyclist safety, and include aesthetic improvements to this important gateway intersection into the Town of Milton and Metropolitan Boston.

- A. **PROJECT LOCATION:** The project area consists of the intersection of Randolph Avenue and Chickatawbut Road. Randolph Avenue (Route 28) is a state-owned road that runs North to South and provides two lanes in each direction with a sidewalk on both sides of the roadway north of the intersection with Chickatawbut Road. Chickatawbut Road is a Commonwealth of Massachusetts, Department of Conservation and Recreation (DCR) owned parkway that runs East to West and provides one lane in each direction. The intersection of Randolph Avenue and Chickatawbut Road is a signalized intersection bounded by the Blue Hills Reservation to the east and southwest. Beyond the project limits, the intersection is bounded to the south by the Milton/Quincy Town line, to the north by Brook Lane and serves as a gateway intersection into the Blue Hills Reservation, the Town of Milton, and Metropolitan Boston.
- B. **SAFETY CONCERNS:** The intersection of Randolph Avenue and Chickatawbut Road is currently a top crash location within Massachusetts. There were 188 crashes between 2016 and 2022 and of those 82 resulted in injury or fatality. The most common crash types at the intersection are angle crashes which make up nearly half of the crashes. Rear ends and sideswipes make up another third of the crashes at the intersection. It is important to note there have been 2 fatalities at this intersection, one in 2014 and one in July 2022; and there have been other fatalities along Randolph Avenue and Chickatawbut Road that were not near the intersection. The intersection has several safety concerns including the left-turn movements at the intersection from Randolph Avenue onto Chickatawbut Road which must yield to oncoming through traffic, fast vehicular travel speeds along the Randolph Avenue corridor, steep grades approaching the intersection, poor bicycle and pedestrian accommodations, solar glare along Randolph Avenue limiting signal visibility, and peak period traffic congestion.
- C. **PROPOSED IMPROVEMENTS:** The reconstructed roundabout intersection will continue to provide two lanes on Randolph Avenue approaching and departing the intersection. Chickatawbut Road will continue to provide one lane in each direction. In addition, the following vehicular safety improvements are included in the roundabout design:
- Splitter Islands on all approaches to separate traffic and initiate geometric roadway changes to force reductions in speed.

- Geometric curvature changes to the roadway will occur on all approaches as the vehicle gets closer to the roundabout, which forces further speed reductions prior to entering the roundabout.
- Truck apron within the roundabout will allow trucks to make all required turning movements, while keeping the overall roundabout footprint as small as possible.
- Geometric driver approach angle deflection at all entry and exit points to further reduce speed through the roundabout.
- Landscape center island of the roundabout to enhance the aesthetics of the intersection.
- Advance signage and pavement markings to direct vehicle drivers as to what lane to position themselves in so that no one will need to make lane changes while circulating the roundabout.

D. ENVIRONMENTAL IMPACTS: Although the proposed design impacts land protected by Article 97, MassDOT has minimized impacts on the surrounding environment as much as possible, including the incorporation of retaining walls. The construction impacts are almost entirely within the existing state layout or are otherwise occurring on DCR owned property, which was previously developed or altered, including sections of Chickatawbut Road which are already paved. Relatively minor wetland impacts will occur within the existing residential lot in the northeast quadrant, which will be fully mitigated by the project. Environmental permitting will include Wetlands Protection Act permitting through the Milton Conservation Commission and MassDEP, coordinating with MassWildlife, MassDEP, and DCR, and completing the MEPA and NEPA reviews and permitting processes. The proposed roundabout will also include stormwater improvements.

E. PEDESTRIAN AND BICYCLE IMPROVEMENTS: The improvements include, but are not limited to:

- Designated bus stops on both Randolph Avenue Northbound and Southbound, just after exiting the roundabout.
- Designated on-road bike lanes on Randolph Avenue and on the west leg of Chickatawbut Road which transition onto the raised shared use path surrounding the roundabout.
- Shared use paths around all sides of the roundabout.
- Improved access and connections for all modes of travel to the Blue Hills Reservation parking area and trails entrance.
- High visibility crosswalks equipped with accessible ramps and rapid rectangular flashing beacons (RRFBs) on all roadway segments entering and exiting the roundabout.

(ii) Identify the Alternatives Considered and Describe Why the Alternatives Not Selected are Not Feasible or Substantially Equivalent to the Proposed Article 97 Action

The Randolph Avenue/Chickatawbut Road intersection has been selected as a location needing improvements to enhance safety and operations. The intersection is a high crash location and the Road Safety Audit (RSA) done at this intersection in November 2016 showed the intersection experiences heavy congestion during both a.m. and p.m. peak hours. The project consultant evaluated four different intersection design alternatives and worked with MassDOT to choose a preferred alternative. The preferred alternative seeks to improve safety at the intersection and address the concerns outlined in the RSA.

- A. Alternatives 1, 2 & 3 – Signalized Intersection
- B. Alternative 4 – Roundabout

In 2018, an alternatives analysis memorandum was developed. Multiple concepts were developed to improve safety and operations at the intersection which included changes to the signalized intersection, as well as concepts which converted the intersection to a roundabout. The signalized intersection options had less of an impact on Article 97 lands than did the roundabout option. However, a safety analysis comparison was performed on all future alternatives and determined that the roundabout concept is shown to have the most significant reduction in fatal and injury crashes at the intersection. The analysis revealed that the roundabout would result in lower speeds, reduced conflict points and improved traffic operation on Randolph Avenue approaching the intersection. After coordination between the Project team, MassDOT, and the Town of Milton, the roundabout option was chosen as the preferred design for the intersection of Randolph Avenue at Chickatawbut Road, despite the increased impact to Article 97 lands as it has the greatest anticipated improvement to safety.

The proposed roundabout design will maintain the two approach lanes along Randolph Avenue and single lane approaches along Chickatawbut Road. The proposed roundabout will have an inscribed diameter of 141' and circulating lanes that are 15 feet wide. Approach lanes to the roundabout are proposed to be 12 feet wide. The proposed roundabout will be designed to a 25-mph design speed and will eliminate the potential for head on and angled collisions. A new, 10-foot-wide shared use path will also be provided on both sides of Randolph Avenue and Chickatawbut Road to provide safer pedestrian and bicycle connections through the intersection, as well as ADA compliant accommodations and pedestrian connectivity

to the parking lot for the Blue Hills Reservation located at the southeastern corner of the intersection.

In addition, the existing drainage system will be improved with new deep sump catch basins, new lateral pipes, and trunk line pipes. Retaining walls are proposed along Randolph Avenue and Chickatawbut Road to reduce impacts to abutting properties, parkland, and environmental resources.

An Act Preserving Open Space in the Commonwealth (M.G.L. c.3, §5A) – Funding in Lieu Request:

MassDOT respectfully requests that the Secretary consider a waiver for the replacement land and the “Funding in Lieu” requirements of M.G.L. c.3, §5A. MassDOT believes that the areas within the parcel being permanently changed are not of significant natural resource or recreational value. Generally, the land in question is at the entrance to the Blue Hills Reservation on both sides of Randolph Avenue and includes some already paved portions of Chickatawbut Road. Further, the Project serves a significant public interest in that it will improve safety at the intersection of Randolph Avenue and Chickatawbut Road for vehicles, bicycles, pedestrians and those individuals requiring ADA compliant accommodations.

Funding in Lieu allows the protected landowner, in this case DCR, the ability to purchase multiple smaller parcels of land or pool funds to target larger, more useful tracts of land to support their efforts to protect, promote and enhance the state’s natural, cultural and recreational resources.¹

(i) Equal Justice (“EJ”) Population Analysis

There are about 259 EJ Populations within a 5-mile radius from the Project site in the municipalities of Dedham, Milton, Quincy, Randolph, Braintree, Norwood, Canton, Holbrook, Stoughton, Avon, and Boston, meeting the established criteria of either a Minority population, a low-income population or an English isolation population, or any combination of these three. It was further determined that this project is within a 1-mile radius of communities that meet the criteria for EJ for low income and minority population. Of the EJ Populations, there is one tract where 5% or more of the population within one mile of the Project site do not speak English very well. This population speaks Chinese and represents 6.2% of the population of the tract. Accordingly, MassDOT made the EJ Screening Form available in both English and Chinese.

¹ Mass.gov/orgs/departments-of-conservation-recreation

A. PROJECT IMPACTS TO ENVIRONMENTAL JUSTICE POPULATION

- Impacts to EJ and Non-EJ Populations - MassDOT has taken steps to minimize and mitigate overall Project impact. To the extent that impacts exist, the Project's location within an EJ community means that EJ communities will be affected. However, impacts on transportation, air quality transportation, and climate, are diffused and would be present regardless of the Project. The beneficial aspects of the Project are expected to outweigh the anticipated impacts.
- Transportation Impacts to EJ Population - The Project is expected to improve conditions around Randolph Avenue at the Chickatawbut Road intersection. Proposed improvements are expected to increase safety and ease of travel for all modes of transportation in the area. Transportation impacts to the surrounding community will be temporary due to construction related activities. Nevertheless, MassDOT will undertake practicable mitigation measures including staged construction to minimize and prevent traffic delays and disruptions.
- Air Quality Impacts to EJ Population - The Project's effect on air quality will be short-term, primarily the result of emissions from construction-related vehicles and equipment. MassDOT will implement mitigation measures to minimize potential air quality impacts.
- Climate Impacts on EJ Population - Future climate conditions are expected to produce conditions which will require adaptation and resiliency from existing facilities. The Project has been carefully designed to weather storms and flooding events. The Project is not expected to produce any direct adverse impacts to the climate that will affect EJ populations.
- Stormwater and Flooding Impacts to EJ Population - The Project will create approximately 0.42 acres of impervious area; however, the Project site has been designed to mitigate any impacts that are created as a result of the new impervious area. The existing stormwater management system will be upgraded with new deep sump catch basins to improve the existing inadequate drainage system and prevent stormwater shedding onto abutting properties. The Project is also not anticipated to increase risk to the surrounding areas and to EJ Populations.

B. PROJECT BENEFITS TO ENVIRONMENTAL JUSTICE POPULATION

This project is anticipated to improve road congestion and in turn air quality, improve vehicle, pedestrian, and bicycle safety therefore increasing public safety, improve bicycle and pedestrian connectivity access for commuters and recreational activities and resources, and reduce roadway crashes.

C. EQUAL JUSTICE POPULATION ANALYSIS CONCLUSION

MassDOT completed an Environmental Justice (EJ) Population assessment and analysis in conjunction with this Project. Based on the information gathered during this assessment, the identified EJ populations do not bear an existing “unfair or inequitable” environmental burden and related public health consequences as compared to the general population. Any minor short-term environmental or public health impact during the Project construction is greatly outweighed by the mitigation and site improvements to be implemented. The environmental and public health impacts are unlikely to result in a disproportionate adverse effect on the EJ populations within one mile of the Project.

(ii) Further rationale for approving request.

MassDOT would like to share with the Secretary some concerns if this request is not approved. Specifically, if required to provide replacement land, MassDOT may lose Federal funding for the following reasons:

A. MASSDOT WILL NOT LIKELY BE ABLE TO ADVERTISE THE PROJECT ON TIME IF REQUIRED TO PROVIDE REPLACEMENT LAND

MassDOT is initiating the process of appraising Article 97 land owned by DCR needed for the Project. Once that appraisal is complete, MassDOT will know the value of a replacement parcel it should acquire. MassDOT will then need to locate and appraise a replacement parcel to ensure that it complies with the following M.G.L. c.3, §5A requirements:

- a. The parcel is not already subject to Article 97.
- b. The parcel is located in an area of equal or greater natural resource value than the Article 97 land.
- c. The parcel is of equal or greater acreage and monetary value than the Article 97 land.

When a replacement parcel has been identified and satisfies the requirements of the M.G.L. c.3, §5A, the MassDOT environmental team will need to perform an environmental assessment to determine if permitting or approvals are necessary before acquiring the replacement parcel. The environmental assessment may also result in a determination that the replacement parcel cannot be acquired due to possible contamination issues, historical significance, current 4F or 6F designation, etc.

MassDOT environmental permitting for the Project was approved based on the Project parameters as submitted to MEPA and NEPA. If MassDOT is

required to acquire a replacement parcel these approved permits may be negatively impacted.

After a replacement parcel of appropriate value has been selected and passed environmental review, the process of acquisition by eminent domain can proceed, which may take an additional 9 to 12 months ensuring the Project will not meet the current advertising date. Additionally, an adversarial taking of land not required by the Project design opens the door for litigation. This litigation will not enjoy the typical benefits of the land being used for a safety improvement project. A layer of complexity will burden the Attorney General's office in their efforts to defend such a claim.

B. FEDERAL HIGHWAY MAY NOT APPROVE OF MASSDOT TAKING PROPERTY OUTSIDE THE PROJECT LIMITS

Federal Highway may not condone the taking of private property which has no relation to the Project. They may not be willing to continue providing funding for the Project.

C. MASSDOT WILL BE REQUIRED TO PERFORM AN ENVIRONMENTAL JUSTICE ANALYSIS ON ANY REPLACEMENT LAND

Federal Highway requires an EJ analysis on all property impacted by a project. By adding replacement land to the Project, MassDOT will now be required to complete an EJ analysis. Failure to complete the analysis will potentially result in a loss of Federal funds. Alternatively, complying with the requirement will be time-consuming, possibly resulting in MassDOT not being able to advertise on time, which would also jeopardize the federal funding.

An Act Preserving Open Space in the Commonwealth (M.G.L. c.3, §5A) – Public Notice Requirement

MassDOT, in conjunction with the Executive Office of Energy and Environmental Affairs, will post this Request publicly on the Tracker for submissions required by An Act Preserving Open Space in the Commonwealth (M.G.L. c.3, §5A).

Thank you for considering this request. We look forward to hearing from you.