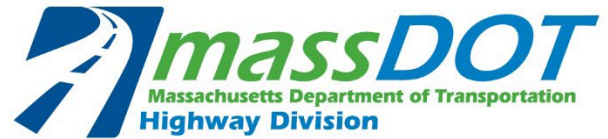




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## **A review of the Bipartisan Infrastructure Law (Infrastructure Investment and Jobs Act of 2021, Public Law 117-58); relative to the feasibility of establishing wildlife crossings in Massachusetts**

### **Introduction**

In accordance with the MassTRAC bill (Citation: House No 5151: Page 80; Section 40; Lines 1750-1756), the Environmental Section of the Massachusetts Department of Transportation (MassDOT) Highway Division has developed this report on the feasibility of wildlife crossing projects, including the consideration of project eligibility under grants and programs established by the Infrastructure Investment and Jobs Act of 2021, Public Law 117-58 (also known as the "[Bipartisan Infrastructure Law](#)" herein referred to as the BIL). This report consists of the following:

- A summary of MassDOT's review of the BIL programing relative to wildlife connectivity;
- An overview of MassDOT's current state of practice for wildlife connectivity and conservation; and,
- A brief description of projects and initiatives being undertaken as a result of the BIL.

### **Summary of BIL Programing**

The BIL presents a significant new opportunity for state DOTs to implement strategies to reduce wildlife-vehicle collisions and to enhance wildlife [connectivity](#).

First and foremost, the [Surface Transportation Block Grant Program](#) (STBG); has expanded its program eligibility to wildlife-related projects and activities. The purpose of the STBG is to promote flexibility in state and local transportation decisions and provides versatile funding to best address state and local transportation needs. The BIL has added the following eligibility criteria for the STBG:

- Wildlife crossing structures, and projects and strategies designed to reduce the number of wildlife-vehicle collisions [23 U.S.C. 133(b)(1)(G); 23 U.S.C. 133(b)(14)].
- The addition or retrofitting of structures or other measures to eliminate or reduce crashes involving vehicles and wildlife [23 U.S.C. 133(b)(3)].

These additional provisions provide the resources necessary for state DOTs to implement wildlife-vehicle collision mitigation and wildlife connectivity enhancements through the course of their capital advertisement programs. In particular, these provisions have allowed MassDOT to propose a bridge replacement project in the Town of Littleton, that before the BIL was not

eligible for federal funding (please see “Wildlife Projects and Initiatives Proposed under the BIL” section below for additional information).

The BIL also includes a variety of new and expanded [Competitive Grant Programs](#) and discretionary grants related to wildlife connectivity, conservation, and/or wildlife-vehicle collision reduction, including:

- The Wildlife Crossing Pilot Program (23 USC § 171);
- The National Culvert Removal, Replacement & Restoration Program (49 USC § 6703);
- The Pollinator-Friendly Program (23 USC § 223); and
- INFRA (Nationally Significant Multimodal Freight & Highway Projects) (23 USC § 133).

Lastly, there are other new programs, such as PROTECT (23 USC § 176; which is a hybrid federal aid / discretionary grant program) and the Bridge Investment Program (23 USC § 124), through which, projects that improve hydraulics and flood resilience could also result in co-benefits to fish and wildlife passage.

## **MassDOT Highway Division State of Practice**

### **Partnership**

Since 2009, MassDOT has been in partnership with the Massachusetts Department of Fish and Game’s Division of Fisheries and Wildlife (MassWildlife) to streamline project review, develop best practices and innovations, and incorporate natural resource priorities into transportation planning. This partnership was established in 2008 initially to establish liaisons at each agency for detailed early project coordination relative to rare species permitting, to reduce potential impacts through the evaluation of preliminary project design and by investigating creative cost-effective mitigation opportunities. These liaisons and efforts have established effective communication and trust between the two agencies, and have served as a national model for the creation of federal guidance on [Establishing a Transportation Liaison Program](#). Since then, the two agencies have been able to incorporate conservation planning and innovative science-based solutions into the Commonwealth’s transportation network. MassDOT and MassWildlife also organize a monthly interagency working group with the other New England DOTs. These meetings allow the agencies to discuss the state of practice, strategize and plan ahead for regulatory changes, and to identify new opportunities to collaborate (e.g. staff development and strategic planning). Increased funding and programs associated with the BIL present a historic opportunity to advance our shared vision of regional connectivity and integrated transportation-wildlife planning.

MassDOT has also been an active local and regional participant in the fields of road ecology, landscape connectivity, and resiliency for many years. Further, many of the staff within MassDOT Environmental have strong backgrounds in these fields and are at the forefront of the

state of practice. For example, MassDOT actively participates in and has hosted multiple regional conferences, specially, the Northeastern Transportation and Wildlife Conference, and has presented at the International Conference on Ecology and Transportation (ICOET). In addition, MassDOT staff serve on regional and national working groups that focus on road ecology, landscape connectivity, and resiliency. An example of MassDOT's external partnerships is involvement with the Staying Connective Initiative (SCI). SCI is a public-private, partnership led by the Nature Conservancy with over 65 agency, non-profit, and academic partners working together on landscape-scale connectivity conservation in the northeastern US and southeastern Canada. SCI provides vital assistance to agency partners by integrating transportation and habitat protection strategies, mapping priority sites, and linking and coordinating efforts to develop a regional connectivity and climate-resilient conservation plan that leverages co-benefits.

### Data Sharing and Project Initiation

For over a decade, MassDOT has conducted early coordination with MassWildlife through the sharing of geographic information system (GIS) data for upcoming Highway Division projects. Through this early coordination, projects were screened for rare species permitting requirements, and fish and wildlife connectivity opportunities. In recent years, since the implementation of the MassDOT Project Intake Tool ([MaPIT](#)) in 2017, projects receive an automated, early environmental screening at the very beginning of the MassDOT project initiation process. As a result, environmental permitting criteria, conservation priorities, and concerns are identified before a project scope is established. How the transportation planner proposes to address these environmental criteria either positively or negatively impacts the overall project score, and ultimately, whether the project is selected by the Project Review Committee (PRC) for advancement to the design process. MassDOT has integrated into MaPIT a variety of conservation datasets from MassWildlife and the Massachusetts Division of Marine Fisheries (DMF), and over time these data layers are updated or superseded with new data, such as MassWildlife's newly updated [BioMap](#) and the DMF's [new Priority Projects data layer](#). As a result of this process, more project proponents are proposing fish and wildlife passage enhancements within project scopes than prior to MaPIT.

### Project Development

After a project is approved by the PRC for design, the next step is called Scoping. During project Scoping, an interdisciplinary team of Highway Division staff, including Environmental, work with the Project Manager and design consultant to establish the consultant scope of work. This includes identification of permits that will be required, as well as identifying important design criteria to consider in order to meet the project need, scope, and regulatory requirements, such as the Massachusetts Stream Crossing Standards. In addition, early coordination with environmental agencies occurs in order to identify rare species implications and to collaborate on conservation opportunities related to the project need and scope. This Scoping process

facilitates context sensitive design, and ultimately results in predictability and efficiencies to the environmental permitting processes during project development.

MassDOT's strategy for incorporating fish and wildlife passage into transportation projects has focused on considering improvements at bridge and culvert replacements. Small changes to a bridge or culvert design can create big gains for fish and wildlife passage. Through such a strategy, MassDOT is able to make improvements on a broad, statewide scale throughout the course of the State Transportation Improvement Program. MassDOT's actions directly supports the larger landscape level conservation efforts that are being undertaken by MassWildlife here in Massachusetts as well as regionally through the Northeast Association of Fish and Wildlife Agencies (ranging from Virginia to Maine). It must be noted that the Massachusetts Stream Crossing Standards, which are codified into state wetlands regulations, provide a regulatory framework for the integration of fish and wildlife passage into bridge and culvert replacements. Although these standards apply to all bridge and culvert replacements that require wetlands permits, MassDOT strives to make improvements where they will yield the greatest conservation benefit, using the aforementioned data from partner wildlife agencies to guide decision making. Typical fish and wildlife passage design measures at bridges and culverts include: the sizing of structures and restoration of streambed to ensure fish can swim up and downstream; increasing vertical and horizontal clearances to improve ambient lighting conditions and to provide enough clearance for target species to pass through the structure; the creation of wildlife benches for dry wildlife passage along stream banks; and, when appropriate, the installation of toe-of-slope fencing to guide animals, such as turtles, to crossing structures and to prevent their access to roadway surfaces. In addition to improved fish and wildlife connectivity, bridge and culvert replacement projects can restore riverine processes, increase the resiliency of the transportation network to flood damage, and can restore and connect wetland habitats.

### Staff Development

MassDOT Environmental has a robust staff development program, which includes training environmental reviewers on a wide range of environmental topics, including wildlife connectivity and conservation. MassWildlife and other partners agencies periodically participate, both in training MassDOT staff and in learning about MassDOT processes. A noteworthy example of our interagency staff development efforts is the Massachusetts Rivers & Roads Training Program. The program was initiated by MassDOT and its partners in 2018 to advance an understanding of fluvial geomorphology across the transportation sector, create a more resilient transportation network, and protect rivers. Through online, classroom, and field trainings, hundreds of attendees have learned about river shape and process, resilient infrastructure design, and fish and wildlife passage at bridges and culverts. MassDOT is now reaping the benefits as we observe more and more project plans with these design concepts integrated. Of note, in 2020, the Rivers & Roads Training Program received the Environmental Protection Agency-Environmental Merit Award, and in 2022, MassDOT was recognized by the

Massachusetts Department of Energy Resources with the Leading by Example Award for these efforts as well as other policies/programs that have led to significant and measurable environmental and energy benefits.

MassDOT is proposing to send staff to attend and present at the 2023 ICOET in Burlington, Vermont. This conference will allow us to collaborate, stay up to date on the state of practice, and bring resources back to MassDOT that will improve project delivery and environmental compliance. Several key topics that will be featured at ICOET include: enhancing infrastructure systems for net economic and/or ecological gain; wildlife movement; public safety; landscape connectivity across eco-tones; and, mainstreaming ecology in transportation planning and program delivery. Finally, it will allow us to showcase the efforts that we are accomplishing throughout the Commonwealth.

### **Wildlife Projects and Initiatives Proposed under the BIL**

The MassDOT Highway Division is currently working with MassWildlife to identify and prioritize opportunities to improve wildlife passage along the state highway network, and to determine which federal funding programs to pursue through the BIL. Information on wildlife-related BIL programs has been provided to MassDOT's program developers, and they are considering this information as a funding mechanism through the course of program development. Identifying and leveraging these funds will build capacity and further enhance our abilities to improve terrestrial/aquatic connectivity, resiliency, reduce wildlife-vehicle collisions, and protect the Commonwealth's natural resources. Through this review, three priority projects (see below) were recently identified and are being considered as potential candidates for BIL funding.

#### **Projects**

#### **BECKET- BRIDGE REPLACEMENT, B-03-057 AND B-03-058, APPALACHIAN TRAIL OVER I-90**





Project Description: Replacement of the Appalachian Trail (AT) bridges (B-03-057 and B-03-058) over I-90 in the Town of Becket, including the enhancement of the crossing to provide both pedestrian and wildlife passage. The AT is a National Scenic Trail that crosses over I-90 in the Town of Becket. The crossing requires pedestrians/hikers to cross over two off-set bridges and walk down the median of I-90 in order to access the AT (see inset above). In addition, I-90 bisects and fragments wildlife habitat across the Commonwealth, and there are limited locations where wildlife can safely cross I-90. Wildlife that attempt to cross I-90 can cause wildlife-vehicle collisions. The Berkshires play a critical role in regional landscape connectivity. The forests of the Berkshire and Taconic Highlands of Western Massachusetts link the Green Mountains of Vermont to the Hudson Highlands of New York. This geography, known as the Berkshire Wildlife Linkage, has an estimated 75 percent forest cover and includes the most intact forest ecosystem in southern New England. Improvements to the AT crossings over I-90 have the potential to serve as the gateway to Berkshires, enhancing the recreational experience of the AT, while also improving landscape connectivity for terrestrial wildlife.

LITTLETON- BRIDGE REPLACEMENT, L-13-008, ROUTE 119 OVER BEAVER BROOK AND CAUSEWAY IMPROVEMENT FOR WILDLIFE



Project Description: Replacement of a bridge (L-13-008) over Beaver Brook, and modernization of the Route 119 causeway and approach roadway. The bridge was built in 1921, is exhibiting signs of deterioration, and the roadway cross section is functionally obsolete (see inset above). Although the bridge is not structurally deficient, it is now eligible for federal funding through the wildlife-related activities of the STBG Program. The bridge requires regular MassDOT Dive Team inspections due to the lack of clearance between the beams and normal water level. This, in conjunction with the low-lying causeway, is believed to be a contributing factor to turtle mortality for both common and rare species. Goals of this project are full replacement of the bridge, modernization of the causeway and roadway approaches, reduction of wildlife vehicle

collisions and turtle mortality, enhanced landscape connectivity and flood resiliency, and improved public safety.

#### STOCKBRIDGE- CULVERT REPLACEMENT ON ROUTE 7 OVER KAMPOOSA BROOK



Project Description: Replacement of an undersized culvert on Route 7 in Stockbridge at the outlet to Kampoosa Bog (see inset above), a top conservation priority of the Massachusetts Division of Fisheries and Wildlife. The Kampoosa Bog is an approximately 250-acre wetland complex, which provides habitat for 16 state-listed species, including 9 species that are Endangered. Although the culvert is in operational condition, it prevents optimal hydraulic flow within the Bog, which is causing impacts to the rare species community.

In addition to these projects, MassDOT Environmental is screening projects currently in the preliminary design stage against a suite of conservation data layers, to identify potential opportunities to integrate wildlife connectivity measures into projects that are still at a conceptual level of design.

#### *Planning Initiatives*

Two planning efforts that the MassDOT Highway Division is considering are a Statewide Wildlife and Transportation Action Plan and a Pollinator Conservation Plan. Both planning efforts are identified and supported through the BIL.

The Statewide Wildlife and Transportation Action Plan would include, but not be limited to the following focal areas:

- Actions to reduce wildlife-vehicle collisions and improve public safety;
- Enhancing, protecting, and restoring habitats impacted by roads; and
- Incorporating conservation priorities into transportation planning; and identifying wildlife-transportation research needs.

The Pollinator Conservation Plan would aim to identify priorities and opportunities for the Commonwealth's native pollinators. The plan would include, but not be limited to the following focal areas:

- Roadside pollinator best practices;
- Development of pre-approved native seed mixes and plantings for a range of site conditions;
- Statewide conservation actions that can enhance and expand native pollinator habitat; and
- Identifying other research needs/opportunities.

Besides infrastructure and land connectivity improvements, many other conservation efforts are also taking place, such as the conservation of peregrine falcons nesting on bridges (there are multiple bridges across the state, including the Gillis Bridge in Newburyport and Braga Bridge in Fall River), and the donation of spent construction materials to [create off-shore reef habitat](#).

## **Summary**

In summary, the BIL presents a significant opportunity in time to advance wildlife-vehicle collision reduction and wildlife connectivity strategies across the Commonwealth's transportation network. MassDOT is looking towards utilizing the BIL to enhance the existing robust wildlife program, and to advance a variety of new projects and initiatives.