

TABLE 3
BRBW SIGNIFICANT WETLAND IMPACT AREAS AND PROPOSED DESIGN OPTIONS

Town	Station	Description	Original Impact (acres) (no alternative treatments)	Design Options Evaluated (Proposed design option for MassHighway consideration identified in shaded text)	Projected ^{1,2} Impact with Proposed Design Option
Uxbridge	6172+00 to 6183+00 1100 linear feet	Wassener Property – Alignment runs parallel with P&W tracks. Steep drop off in grade requires significant fill in wetland to support bikeway. Also results in potentially significant fill in BLSF.	0.5 BVW	<p>A retaining wall between the specified stations may reduce BVW impacts significantly but would not reduce BLSF.</p> <p>A cantilever or deck on piers, parallel to the berm which supports the P&W RR tracks may reduce impacts to both resource areas.</p> <p>Elevated option , or use fill for several hundred feet and elevate the rest.</p> <p style="background-color: #92d050;">The fill profile will be lowered (below 10yr flood); A retaining wall will be used; and The width of the shoulders will be reduced: 10ft path with 2ft shoulders</p>	<p>Need new cross sections to calculate impacts.</p> <p>Impacts likely reduced at least by half.</p>
Uxbridge	6108+00 to 6109+50 And 6115+50 to 6117+50	<p style="text-align: center;">South of Route 16.</p> <p>Despite several proposed bridges here, significant impact is anticipated over a 150ft and 200ft section.</p> <p>6108+00: Fill between several span bridges. Wide limit of impact to meet appropriate bridge height.</p> <p>6115+00: 70 ft wide limit of work required to ramp up to bridge over Mumford River.</p> <p>Several additional station areas where limits of work encroach on Blackstone</p>	0.4 BVW total 2000sq ft LUWW	<p>Use elevated pier structure to extend bridge over Mumford and connect spans over the backwater area.</p> <p>If fill remains, an open bottom arch or appropriate culvert is needed for stream UHB.</p> <p style="background-color: #92d050;">An elevated bikeway section is proposed in both sections. However, overhead transmission lines may impede construction crane use in the section leading to the Mumford River span.</p> <p>Mechanically Stabilized Earth (MSE) or retaining walls will be used just south of Rt. 16 in order to avoid encroachment of limits of work.</p>	<p>Should be approximately</p> <p>90 sq ft</p> <p>and</p> <p>0 sq ft LUWW</p>

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		River bank and increase impacts.			
Uxbridge	6045+00 to 6080+00 (Excludes bridges at 6076+50 to 6077+50 And 6079+00 to 6080+00 And small upland area)	Riverbend Farm Extensive wetland system 3200 linear feet of impact	1.4 BVW	<p>Reduce elevation of berm – stay at grade where feasible until ramp up to bridge is necessary. Require MassHighway concurrence on proposed alignment at ground level – instead of at 10 yr flood elevation.</p> <p>Combination of alternating elevated pier and fill berm. Fill 500ft, elevate 1000ft, fill 500ft etc.</p> <p>Elevate the entire section.</p> <p>(Any fill areas will require extensive cross culverts for hydrology.)</p> <p style="background-color: #92d050;">Bikeway proposed to be built at ground level, limiting fill. The bikeway will be elevated/spanned between sta 6073+00 to 6082+00 (encompassing the bridge crossings over the oxbow).</p> <p style="background-color: #92d050;">The width of shoulders will be reduced: 10 ft path with 2ft shoulders</p>	<p>Without reducing shoulders: 1.03 acres</p> <p>With reducing shoulders: 0.9 acres</p>

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Northbridge	5232+00 to 5249+00 Included within 5202+00 to 5266+00 NHESP	Plummers Landing (DCR property) Long, narrow forested berm with wetland impact to either side Also includes area sensitive to NHESP	1.4 BVW over entire section 5189+00 to 5250+00	<p>Use elevated bikeway structure on piers from 5232+00 to 5249+00 (1700ft) Suggest placing it adjacent to the forested berm, for structural, aesthetic and habitat considerations. However, this will require all structure footings to be placed in open water and wetlands.</p> <p>Use elevated pier on forested berm if possible. However, this will result in the loss of large mature trees and habitat.</p> <p>Some combination of using portions of the berm for footings but retaining other areas.</p> <p>Elevated bikeway structure proposed from 5232+00 to 5249+00 placed adjacent to the forested berm which will require all footings to be in open water and wetlands.</p> <p>Proposed use of Turtle crossings in remaining NHESP sensitive area.</p>	<p>Will require new cross sections to calculate actual impacts.</p> <p>Impacts likely reduced by approximately 0.6 acres.</p>
Northbridge	5157+00 to 5168+00 Excludes bridge at 5165+00 to 5166+00	Double crossing over Blackstone River will likely require extensive filling in BVW and floodway in order to stay at correct elevation to connect to bridges and follow sewer easement.	More than 0.5 acres BVW: cross sections not complete	<p>Elevate between the two bridges (800ft) and the final (200ft) to the sewer easement.</p> <p>Use retaining walls to reduce the width of the berm</p> <p>Propose to use elevated bikeway structure between the two bridges and up to the sewer easement.</p>	Should be approximately 210 sq ft.

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Northbridge	5057+00 to 5065+50	Pond and BVW NE Extensive fill to open water of a pond to support the trail at a steep drop-off	5500 sf BVW 6000 sf LUWW	Retaining wall to reduce impacts to both resource areas. A cantilever or elevated bikeway on piers between the stations provided (particularly starting at 5059+50), to support the trail and reduce impacts. Proposed elevated bikeway structure throughout this area.	Should be approximately 60 sq ft. BVW 130 sq ft LUWW
Sutton	3000+00 to 3013+00 Excludes bridge from 3006+00 to 3007+50	Chase Rd Farm, extensive fill- 40ft-wide limit of work to ramp up to bridge.	1.1 BVW	Use retaining wall to reduce the width of the berm Combination of alternating elevated bikeway structure and bikeway on fill berm. Elevate the entire section or build continuous culverts. (Any fill areas will require extensive cross culverts for hydrology) Proposed elevated bikeway structure in this section.	Should be approximately 270 sq ft.
Millbury	2001+00 to 2027+50 Excludes 2016+00 to 2020+50 upland crossing plus 350ft upland islands	Aquarion Water Co. parcel, extensive wetland system and extensive fill. Approx 1900 linear ft of impact	1.4 BVW	Reduce elevation of berm – stay at grade where feasible until ramp up to bridge is necessary. Will require MassHighway concurrence and Aquarion Water approval on constructing the bikeway at ground level – instead of at 10 yr flood elevation. Combination of alternating elevated pier and fill berm. Fill is more reasonable near backyards (2013+00 to 2016+00), Elevate near 2004+00 (seasonally ponded wood duck habitat)	Without reducing shoulders: 0.46 acres With reducing shoulders: 0.42 acres

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				<p>Elevate the entire section or build continuous culverts. (Any fill areas will require extensive cross culverts for hydrology.)</p> <p>Proposed bikeway will be built at ground level, limiting the fill necessary from 2001+00 to 2014+00.</p> <p>The bikeway will be elevated/spanned between sta 2020+50 to 2020+50 to the bridge crossing.</p> <p>The width of shoulders will be reduced: 10 ft path with 2ft shoulders</p>	
Total			6.95 acres		2.4 acres

¹Assuming support piers are needed every 50 feet and require approximately 10 square feet of permanent fill – represents preliminary gross estimates.

² Does not include impacts to wetlands from shading or limited clearing.