

**Attachment 3:**

**No Discharges from MassDOT Outfalls Assessments**

## List of Impaired Water Bodies

---

MA34098	Lake Warner*
MA52013	Falls Pond, North Basin
MA52032	Plain Street Pond
MA70-10	Winthrop Bay
MA72078	Mirror Lake*
MA73009	Cobbs Pond
MA94037	Forge Pond*
MA94113	Old Oaken Bucket Pond
MA95-17	Pocasset Harbor
MA95-23	Great Sippewisset Creek
MA96185	Lovells Pond*
MA96186	Lovers Lake*
MA96198	Middle Pond*
MA96218	Mystic Lake*
MA96309	Stillwater Pond*
MA96-35	Chase Garden Creek
MA96-64	Seapuit River*

---

\*Not on original L-1 List.

## Impaired Waters Assessment for Lake Warner (MA34098)

### Summary

<b>Impaired Water<sup>1</sup></b>	Impairments:	Stormwater	<i>Excess Algal Growth, Dissolved Oxygen, Total Phosphorus, Turbidity</i>
		Non-Stormwater <sup>2</sup>	<i>Non-Native Aquatic Plants</i>
	Category:	<i>4A (TMDL is complete)</i>	
	Final TMDLs:	<i>Total Maximum Daily Loads of Phosphorus for Selected Connecticut Basin Lakes<sup>3</sup></i>	
	WQ Assessment:	<i>Connecticut River Watershed 2003 Water Quality Assessment Report<sup>4</sup></i>	
<b>Location</b>	Towns:	<i>Hadley, Amherst</i>	
	MassDOT Roads:	<i>Route 9, Route 116</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/>	7U (Non-TMDL Method) <input type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Located in Hadley, Massachusetts, Lake Warner (MA34098) is a 65-acre water body that receives flow from the Mill River (MA34-25) and discharges to an unnamed non-impaired stream that flows to the Connecticut River (MA34-04). The total watershed to Lake Warner is shown in Figure 1.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup>MassDEP, No date. Total Maximum Daily Loads of Phosphorus for Selected Connecticut Basin Lakes. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/conntmdl.pdf>

<sup>4</sup>MassDEP, October 2008. Connecticut River Watershed 2003 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/34wqar07.pdf>

and 303(d) of the Clean Water Act.<sup>5</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>6</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Lake Warner is not proposed to change.

MassDEP's Water Quality Assessment Report<sup>7</sup> for this receiving water identified the Aquatic Life Use with an "Impaired" status due to the introduction of non-native macrophytes. However, the Secondary Contact Use and Aesthetics Use were supported based on the good water clarity and the lack of objectionable deposits or conditions, respectively. All other uses were not assessed.

After review, it was determined that the MassDOT property does not discharge to Lake Warner. Route 116 is the closest MassDOT-owned roadway to Lake Warner and it is situated more than a mile away from the water body. In addition, the portion of the roadway that is within an urban area is approximately 1.6 miles from Lake Warner. It is likely that runoff from these roadways discharge to upland areas or other water bodies and therefore does not directly discharge to Lake Warner.

As defined in MassDOT's assessment methodology,<sup>8</sup> since this portion of MassDOT's urban area property does not directly contribute stormwater runoff to Lake Warner, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

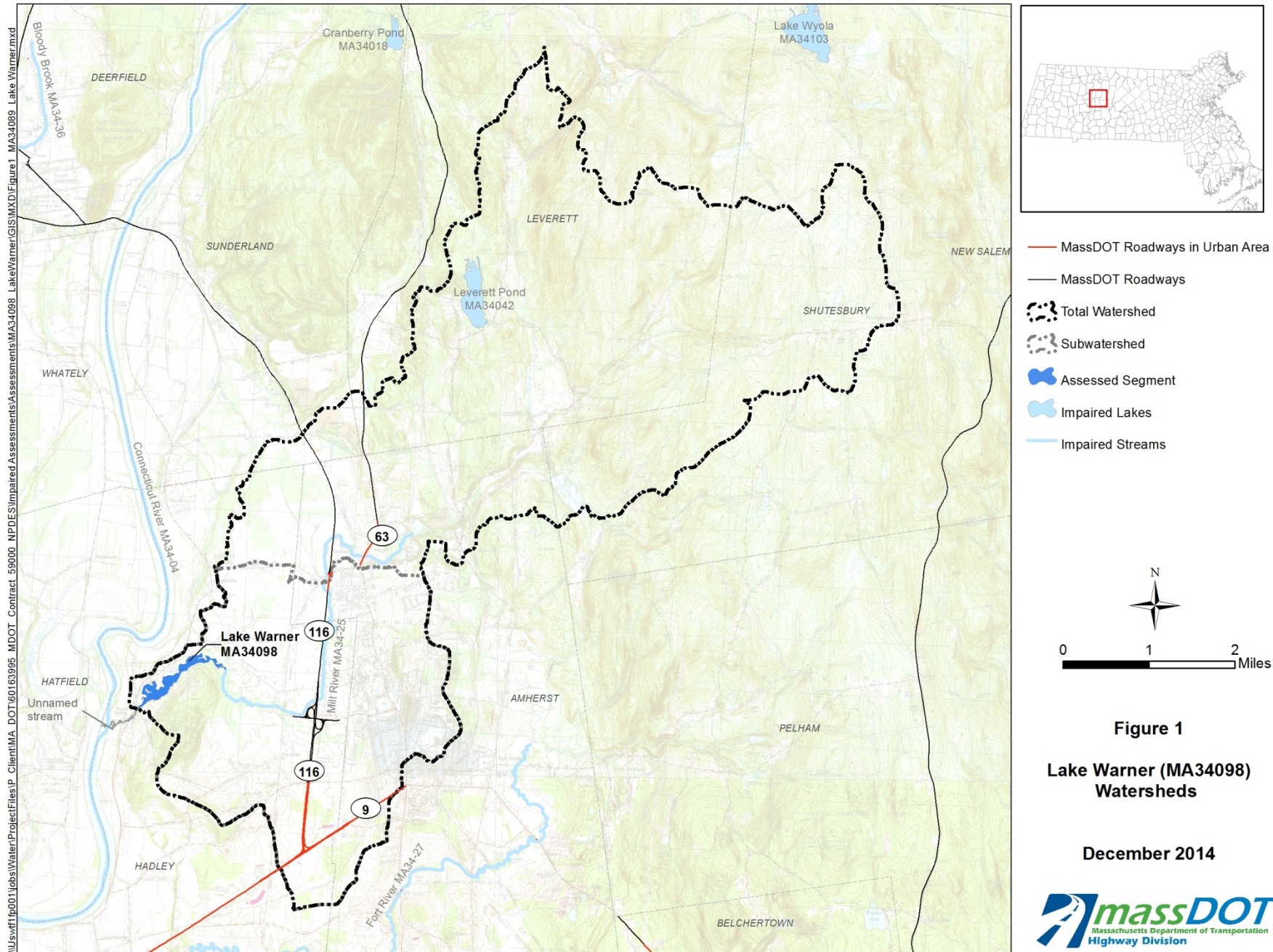
<sup>5</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>6</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>7</sup> MassDEP, October 2008. Connecticut River Watershed 2003 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/34wqar07.pdf>

<sup>8</sup> MassDOT. December 2014. Description of MassDOT's Application of BMP 7R for Pathogen Related Impairments.





## Impaired Waters Assessment for Falls Pond, North Basin (MA52013)

### Summary

<b>Impaired Water</b> <sup>1</sup>	Stormwater Impairments:	<i>Excess Algal Growth, Nutrient/Eutrophication Biological Indicators, Dissolved Oxygen, Phosphorus (Total)</i>
	Category:	<i>5 (Waters requiring a TMDL)</i>
	Final TMDLs:	<i>None</i>
	WQ Assessment:	<i>Ten Mile River Watershed 2002 Water Quality Assessment Report</i> <sup>2</sup>
<b>Location</b>	Towns:	<i>North Attleboro</i>
	MassDOT Roads:	<i>Route 1</i>
<b>Assessment Method(s)</b>		
	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/> No Discharge <input checked="" type="checkbox"/>

### Site Description

Falls Pond, North Basin (MA52013) is located in North Attleboro, Massachusetts adjacent to Route 1. The North Basin is 54.1 acres in size and receives water from Ten Mile River (MA52-02), located to the northwest, and from Falls Pond, South Basin (MA52014), located to the south. The pond discharges to east into Ten Mile River (MA52-02), which continues flowing to the southeast.

The total watershed and subwatershed for Falls Pond, North Basin are the same. The watershed to Falls Pond, North Basin is shown on Figures 1A and 1B. The watershed covers 8.3 square miles and consists mainly of residential neighborhoods, wetland systems, and forested areas. Commercial properties and a 2.5-mile segment of Route 1 also lie within the watershed.

According to the *Ten Mile River Watershed 2002 Water Quality Assessment Report*,<sup>2</sup> Aquatic Life within Falls Pond, North Basin (MA52013) is "impaired" due to low dissolved oxygen throughout approximately half of the lake. Suspected sources consist of municipal point sources and internal nutrient recycling. Fish Consumption and Primary Contact have been labeled as "not assessed",

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDEP, 2006. Ten Mile River Watershed 2002 Water Quality Assessment Report. Available at <http://www.mass.gov/eea/docs/dep/water/resources/3baapp/52wqar.pdf>

and Secondary Contact and Aesthetics are in “alert” status due a phytoplankton bloom identified during a 2002 survey.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>1</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>3</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Falls Pond, North Basin is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Falls Pond, North Basin. Although 2.5 miles of Route 1 lie within the subwatershed, a site visit conducted in September 2014 determined that stormwater from Route 1 discharges into Ten Mile River (MA52-02) before entering Falls Pond, North Basin. Although the river runs through Falls Pond, North Basin, the discharge from Route 1 is accounted for in the assessment of Ten Mile River (MA52-02) which is also on the MassDEP 2012 Integrated List of Waters as a Category 5 water body. See the Impaired Waters Assessment for Ten Mile River (MA52-02) for more information on this water body.

As defined in MassDOT’s assessment methodology,<sup>4</sup> since this portion of MassDOT’s urban property does not directly contribute stormwater runoff to Falls Pond, North Basin, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

<sup>3</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>4</sup> MassDOT, April 2010. BMP 7U: Water Quality Impaired Waters Assessment and Mitigation Plan. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)



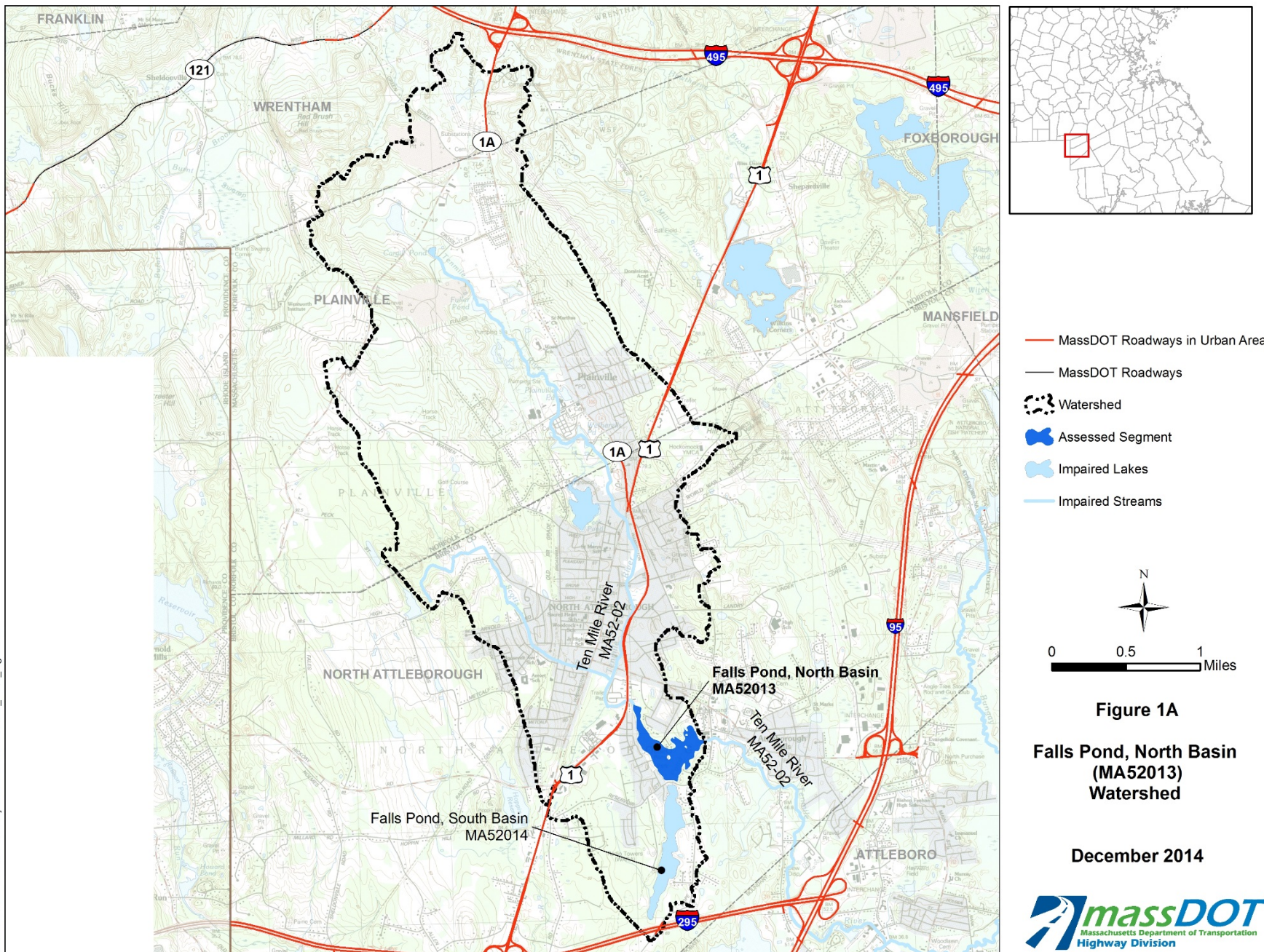


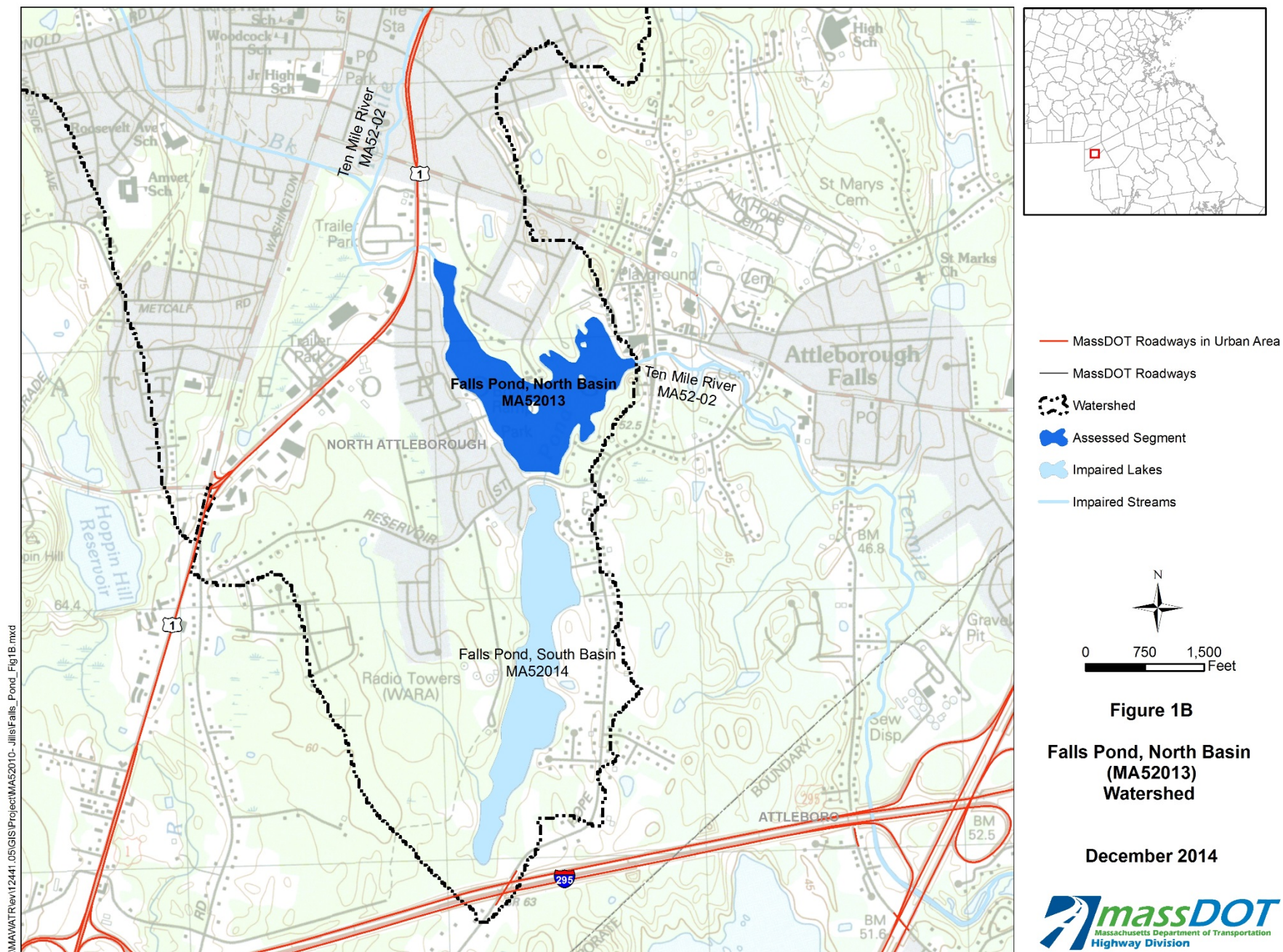
Figure 1A

Falls Pond, North Basin  
(MA52013)  
Watershed

December 2014







## Impaired Waters Assessment for Plain Street Pond (MA52032)

### Summary

Impaired Water <sup>1</sup>	Impairments:	Stormwater:	Excess Algal Growth	
		Non-Stormwater: <sup>2</sup>	Non-Native Aquatic Plants	
	Category:	5 (Waters Requiring a TMDL)		
	Final TMDLs:	None		
	WQ Assessment:	Ten Mile River Watershed 2002 Water Quality Assessment Report <sup>3</sup>		
Location	Towns:	Mansfield		
	MassDOT Roads:	I-95		
Assessment Method(s)	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>	

### Site Description

Plain Street Pond (MA52032) covers 12.2 acres and is located in western Mansfield, just to the east of North Attleborough. The total watershed and subwatershed are the same for this pond and cover 0.7 square miles. The watershed is located primarily in Mansfield with sections extending into Plainville, North Attleborough, and Foxborough. The land use in this watershed is comprised mostly of forest and wetlands, with approximately 50 acres of low-density residential area and 30 acres occupied by I-95, which bisects the watershed (see Figure 1).

Plain Street Pond is included in the *Ten Mile River Watershed 2002 Water Quality Assessment Report*.<sup>3</sup> Assessed only for Aquatic Life use, Plain Street Pond is listed as “impaired” due to the non-native aquatic plant species *Cabomba caroliniana*, which was observed in 1997. The report

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup> MassDEP, 2002. Ten Mile River Watershed 2002 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/3baapp/52wqar.pdf>

findings suggest continued monitoring (both biological and water quality) to better document conditions and more accurately assess designated uses.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>1</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>4</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Plain Street Pond is not proposed to change.

After review, it was determined that MassDOT property does not directly discharge to Plain Street Pond. The stormwater discharge from I-95 and the Mansfield Rest Area outlets into a natural, unimpaired stream and flows over 1,500 feet before reaching Plain Street Pond. This stream that receives the direct discharge originates from Witch Pond Swamp north of I-95. It is culverted under the southbound lanes of I-95 and forms an open channel in the median before being culverted again under the northbound lanes of I-95. The stormwater from the Mansfield Rest Area outfalls directly to the unimpaired stream via a culvert at the eastern edge of the rest area. A site visit on September 25, 2014 confirmed that this site is not directly discharging to the impaired segment.

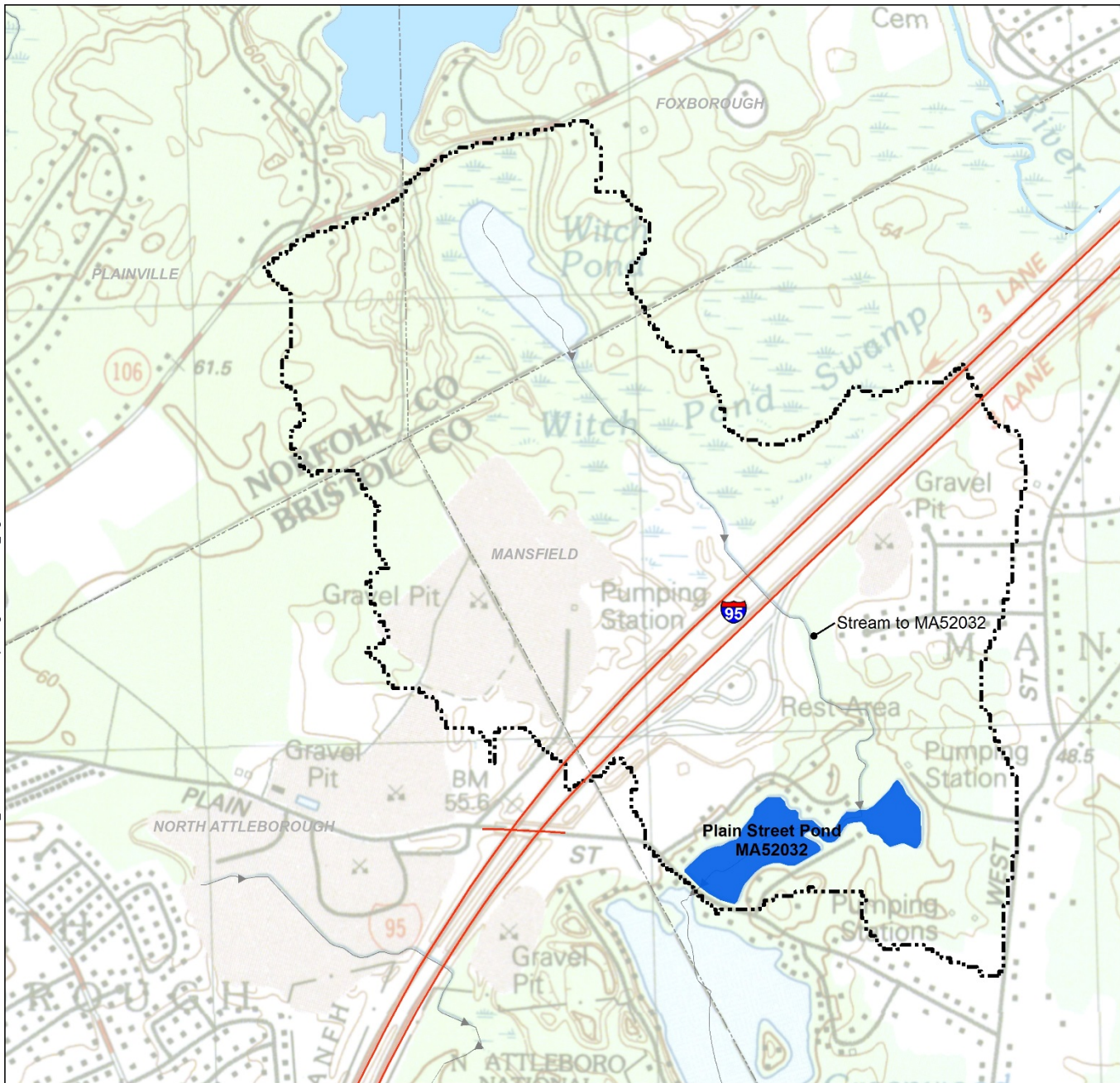
As defined in MassDOT's assessment methodology,<sup>5</sup> since this portion of MassDOT's urban property does not directly contribute stormwater runoff to Plain Street Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

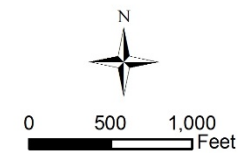
<sup>4</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>5</sup> MassDOT, April 2010. BMP 7U: Water Quality Impaired Waters Assessment and Mitigation Plan. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)





- MassDOT Roadways in Urban Area
- ⬮ Watershed
- ⬮ Assessed Segment
- ⬮ Impaired Lakes
- ⬮ Impaired Streams
- Non-Impaired Stream



**Figure 1**

**Plain Street Pond (MA52032)  
Watershed**

**December 2014**





## Impaired Waters Assessment for Winthrop Bay (MA70-10)

### Summary

<b>Impaired Water<sup>1</sup></b>	Impairments:	Stormwater:	<i>Enterococcus, Fecal Coliform, Other</i>
		Non-Stormwater <sup>2</sup> :	<i>PCB in Fish Tissue</i>
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>None</i>	
	WQ Assessment:	<i>Boston Harbor 2004-2008 Water Quality Assessment Report<sup>3</sup></i>	
<b>Location</b>	Towns:	<i>Boston, Winthrop</i>	
	MassDOT Roads:	<i>Bennington Street, North Shore Road, Route 1A, State Road</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Winthrop Bay (MA70-10) is located east of Boston Logan International Airport with tidal connections to Boston Harbor (MA70-01) to the south and Belle Isle Inlet (MA71-14) to the north. The watershed to Winthrop Bay is shown on Figure 1. MassDEP's Water Quality Assessment Report<sup>3</sup> for this receiving water identified the other impairment as being related to contaminants in fish and shellfish. According to the EPA Assessment TMDL Tracking and Implementation System (ATTAINS) description,<sup>4</sup> other cause is a miscellaneous reporting category used for dissolved gases, floating debris and foam, leachate, stormwater pollutants, and many other uncommon causes lumped together. Additionally, the Water Quality Assessment Report<sup>3</sup> classified Fish Consumption, Shellfish Harvesting, and Primary Contact designated uses as "impaired". Winthrop

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3//Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3//Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup> MassDEP, 2010. Boston Harbor 2004-2008 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/3baapp/70wqar08.pdf>

<sup>4</sup> EPA, 2012. ATTAINS parent cause category summaries, adapted from doc. no. EPA841-R-12-104, October 2012. Available at: <http://www.epa.gov/waters/ir/34PARENTATTAINSDESCRPTIONS.pdf>

Bay is covered by the *Draft Pathogen TMDL for the Boston Harbor Watershed*,<sup>5</sup> which states likely bacteria sources include failing septic systems, combined sewer overflows, sanitary sewer overflows, sewer pipes connected to storm drains, certain recreational activities, wildlife including birds along with domestic pets and animals and direct overland stormwater runoff.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>6</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>7</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Winthrop Bay is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Winthrop Bay. Within the subwatershed, stormwater from Route 1A, North Shore Road, and Bennington Street are conveyed by a closed system into Sales Creek, which enters Belle Isle Inlet east of Suffolk Downs. In addition, stormwater from Route 1A southwest of Sales Creek is conveyed by a closed system into an unnamed open channel that also flows to Belle Isle Inlet. Stormwater from Route 1A and Interstate 90 outside of the subwatershed discharge into Chelsea River (MA71-06)<sup>8</sup> and Boston Inner Harbor (MA70-02).

Outfall locations and flow paths were determined based on record plans and a site visit on October 27, 2014. GIS data from the USGS National Hydrography Dataset (NHD) was used to determine flow paths within the subwatershed, which were confirmed during the site visit.

As defined in MassDOT's assessment methodology,<sup>9</sup> since this portion of MassDOT's urban property does not directly contribute stormwater runoff to Winthrop Bay, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

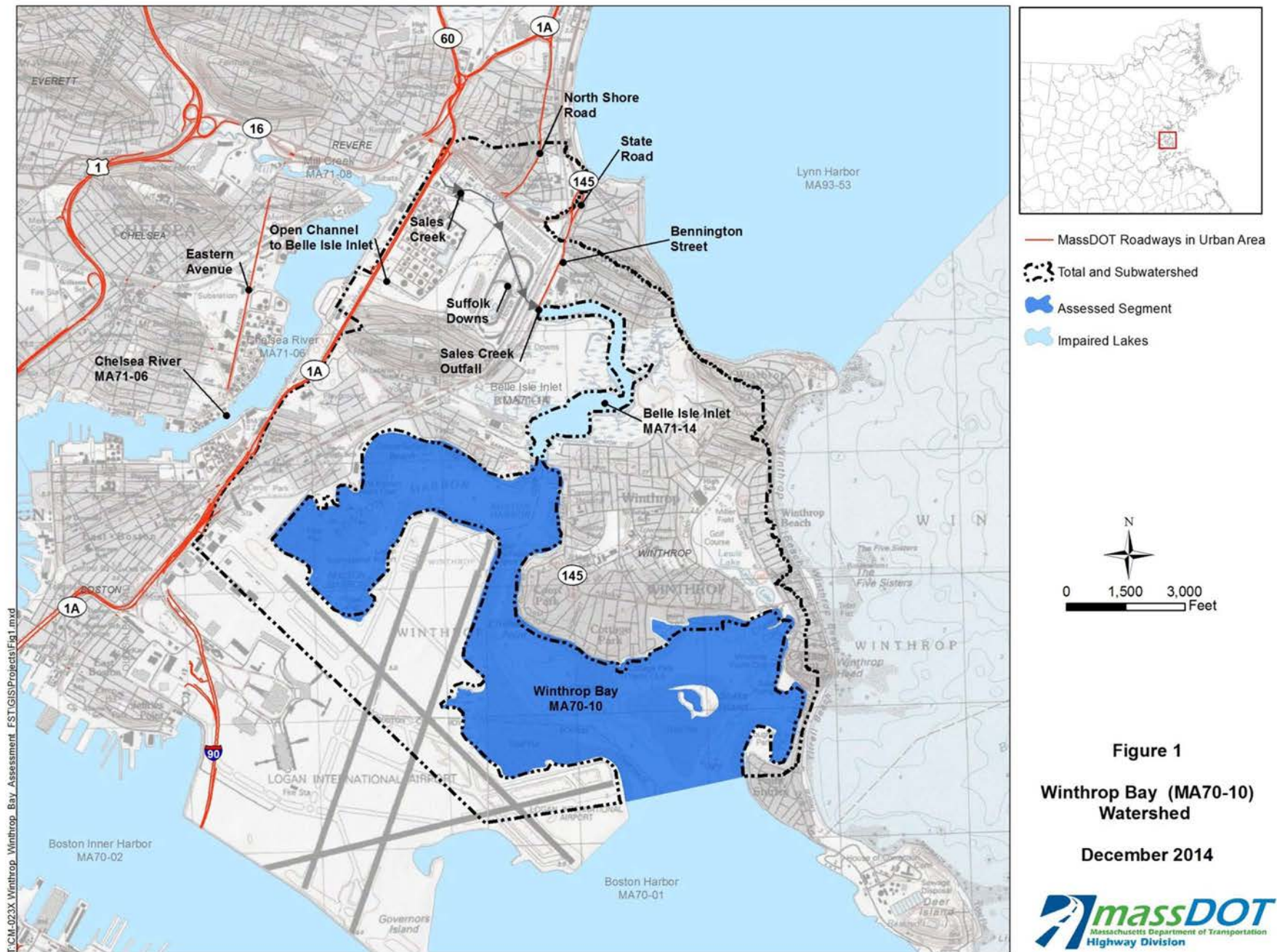
<sup>5</sup> MassDEP. *Draft Pathogen TMDL for the Boston Harbor Watershed* (excluding the Neponset River sub-basin). Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/bharbort1.pdf>

<sup>6</sup> MassDEP, 2013. *Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>7</sup> MassDOT, June 2014. *Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>8</sup> MassDOT, 6 December, 2013. *Semi Annual Submittal under MassDOT's Impaired Waters Program*. Available at: <http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year4/Assessment1.pdf>

<sup>9</sup> MassDOT, 6 April, 2011. *Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method)*. [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)



## Impaired Waters Assessment for Mirror Lake (MA72078)

### Summary

<b>Impaired Water</b> <sup>1</sup>	Impairments:	Stormwater: <i>Nutrient/Eutrophication Biological Indicators, Phosphorus (Total), Secchi Disk Transparency</i> Non-Stormwater: <sup>2</sup> <i>Non-Native Aquatic Plants</i>
	Category:	<i>4A (TMDL is complete)</i>
	Final TMDLs:	<i>Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River, Massachusetts</i> <sup>3</sup>
	WQ Assessment:	<i>Charles River Watershed 2002-2006 Water Quality Assessment Report</i> <sup>4</sup>
<b>Location</b>	Towns:	<i>Wrentham, Norfolk</i>
	MassDOT Roads:	<i>Route 1A</i>
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/>	7U (Non-TMDL Method) <input type="checkbox"/> No Discharge <input checked="" type="checkbox"/>

### Site Description

Mirror Lake (MA72078) is a 61-acre lake located in Wrentham and Norfolk, Massachusetts. Water exits Mirror Lake on its northern side through a culvert, which runs under Mirror Lake Avenue. The discharge then flows through a wetland system and into Stony Brook.

The total watershed and subwatershed for Mirror Lake are the same. The watershed is located in the towns of Wrentham and Norfolk, Massachusetts and is shown in Figure 1. The watershed covers 149 acres and consists mainly of the lake itself along with wetlands and residential areas.

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup> MassDEP, 2011. Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River, Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/n-thru-y/ucharles.pdf>

<sup>4</sup> MassDEP, 2008. Charles River Watershed 2002-2006 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/72wqar07.pdf>

According to the *Charles River Watershed 2002-2006 Water Quality Assessment Report*,<sup>4</sup> Aquatic Life within Mirror Lake is “impaired” due to several causes: non-native aquatic life macrophyte, biological indicators of nutrient enrichment, and elevated total phosphorus. The suspected sources causing the impaired classification are the introduction of a non-native organism and residential development along the lake’s shoreline. Fish Consumption has been classified as “not assessed,” but Primary Contact, Secondary Contact, and Aesthetics are “impaired” due to poor secchi disk transparency. The suspected source of the impairment is the residential development along the shoreline of Mirror Lake.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>1</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Mirror Lake is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Mirror Lake. MassDOT does not own any urban property within Mirror Lake’s watershed.

As defined in MassDOT’s assessment methodology,<sup>6</sup> since this portion of MassDOT’s urban property does not directly contribute stormwater runoff to Mirror Lake, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

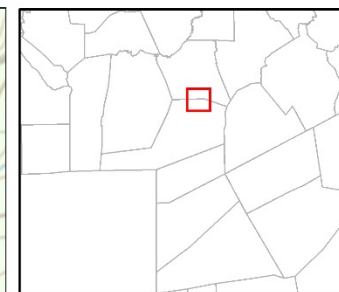
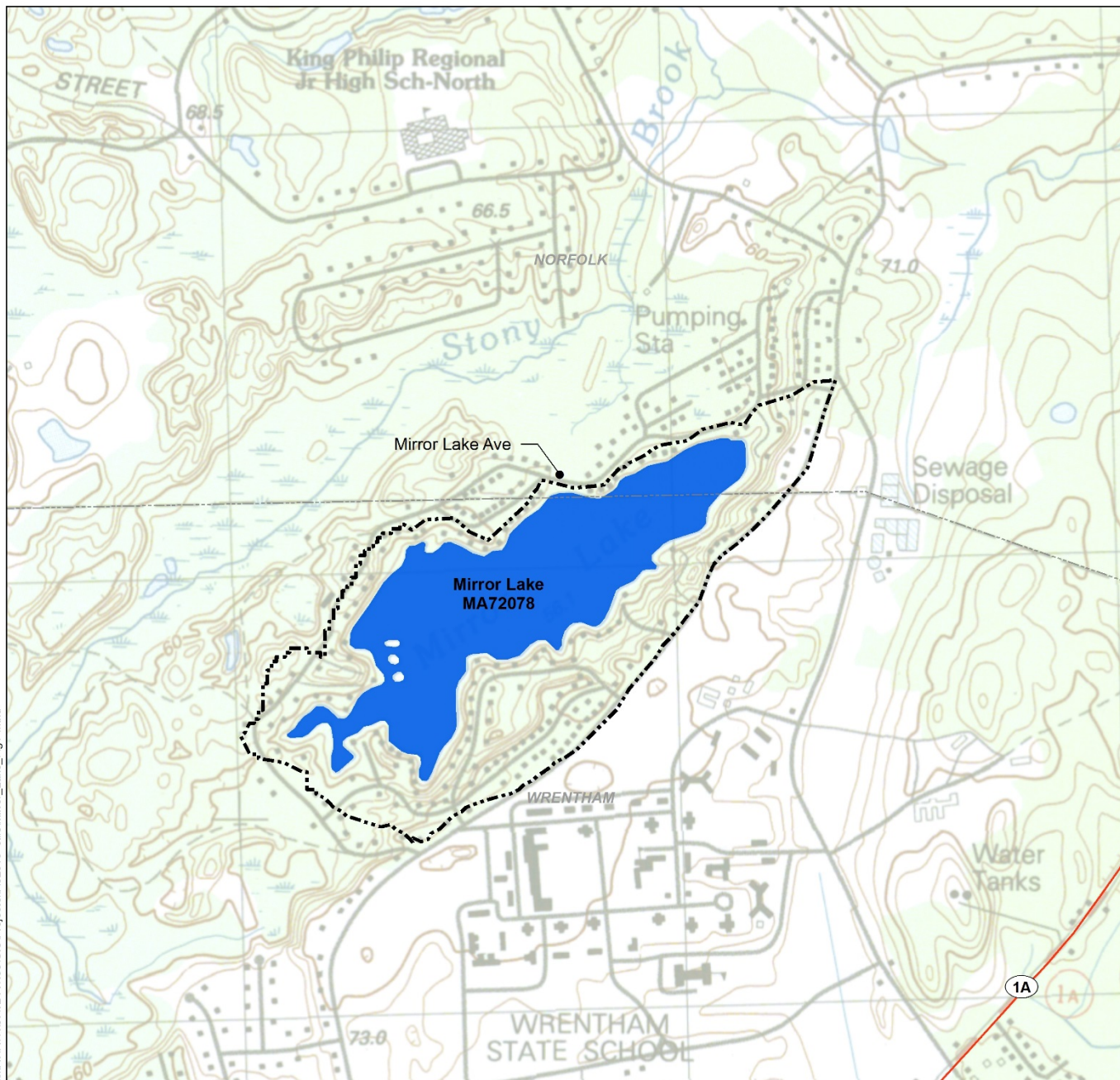
---

<sup>5</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

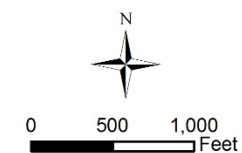
<sup>6</sup> MassDOT, July 2010. BMP 7R: TMDL Watershed Review. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/hpdes/BMP\\_7R\\_TMDL\\_WatershedReview.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/hpdes/BMP_7R_TMDL_WatershedReview.pdf)



\\MAWA\Rev1\2441.05\GIS\Project\MA52010-Jilis\Mirror\_Lake\_Fig1-.mxd



- MassDOT Roadways in Urban Area
- Watershed
- Assessed Segment



**Figure 1**  
**Mirror Lake (MA72078)**  
**Watershed**

**December 2014**



## Impaired Waters Assessment for Cobbs Pond (MA73009)

### Summary

Impaired Water <sup>1</sup>	Impairments:	Stormwater:	Nutrient/Eutrophication Biological Indicators, Dissolved Oxygen, Secchi Disk Transparency	
		Non-Stormwater <sup>2</sup> :	Non-Native Aquatic Plants	
	Category:	5 (Waters requiring a TMDL)		
	Final TMDLs:	None		
	WQ Assessment:	Neponset River Watershed 2004 Water Quality Assessment Report <sup>3</sup>		
Location	Towns:	Walpole		
	MassDOT Roads:	Route 1A		
Assessment Method(s)	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>	

### Site Description

Cobbs Pond (MA73009) is a 14-acre water body located in the Neponset River Watershed in Walpole, Massachusetts. The Pond is located northwest of Route 1A (Main Street) between North Street and Gould Street. Cobbs Pond's total and subwatershed are the same and shown in Figure 1. Cobbs Pond receives water at the north end of the Pond from an unnamed stream and discharges to an unnamed stream at the southeast end of the Pond, where water then flows under Route 1A. MassDEP's Water Quality Assessment Report<sup>3</sup> for this receiving water identified Aquatic Life Use with the status "Impaired" due to a non-native species (*Cabomba caroliniana*) having been observed in Cobbs Pond. All other uses were not assessed.

---

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup>MassDEP, 2008. *Neponset River Watershed 2004 Water Quality Assessment Report*. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/73wqar10.pdf>

The MassDOT-owned portion of Route 1A (Main Street) in Walpole is a two lane roadway that generally runs in a north-south direction. Approximately 0.8-miles of Route 1A passes through the Cobbs Pond subwatershed. Cobbs Pond outlets to an unnamed stream, not included on the 303d list and with no known impairments, at a headwall on the west side of Route 1A.

After review of record plans and performing a site visit on August 14, 2014, it was determined that Route 1A does not directly discharge to Cobbs Pond but rather discharges to the unnamed stream downstream of the outlet of Cobbs Pond, as shown in Figure 1B. Runoff from the roadway is collected in a series of catch basins and discharges to the unnamed stream beyond the Cobbs Pond outlet.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>4</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Cobbs Pond is not proposed to change from a Category 5 (Waters requiring a TMDL) on the Massachusetts Year 2014 Integrated List.

As defined in MassDOT's assessment methodology,<sup>6</sup> since this portion of MassDOT's urban property does not directly contribute stormwater runoff to Cobbs Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

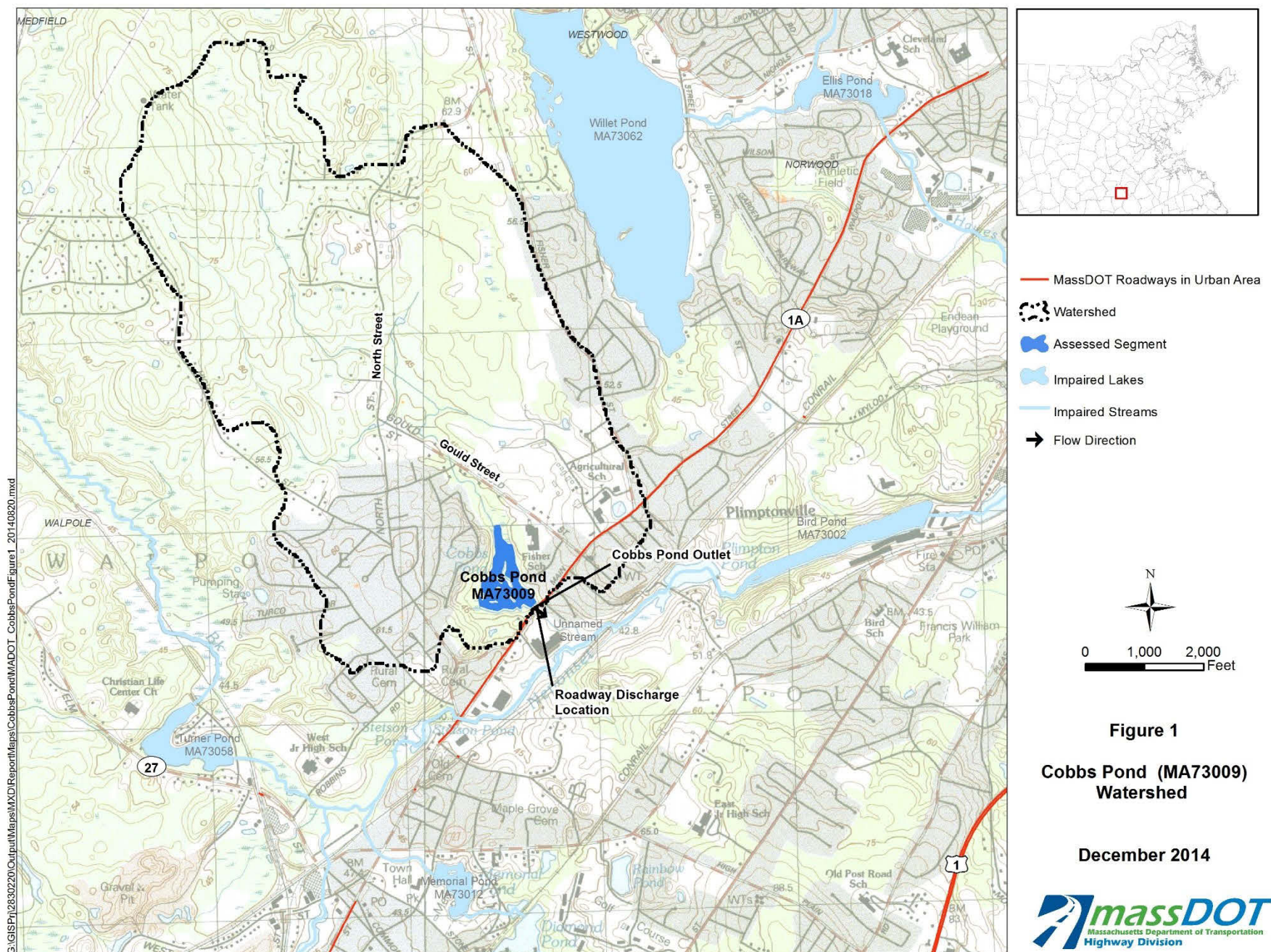
---

<sup>4</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

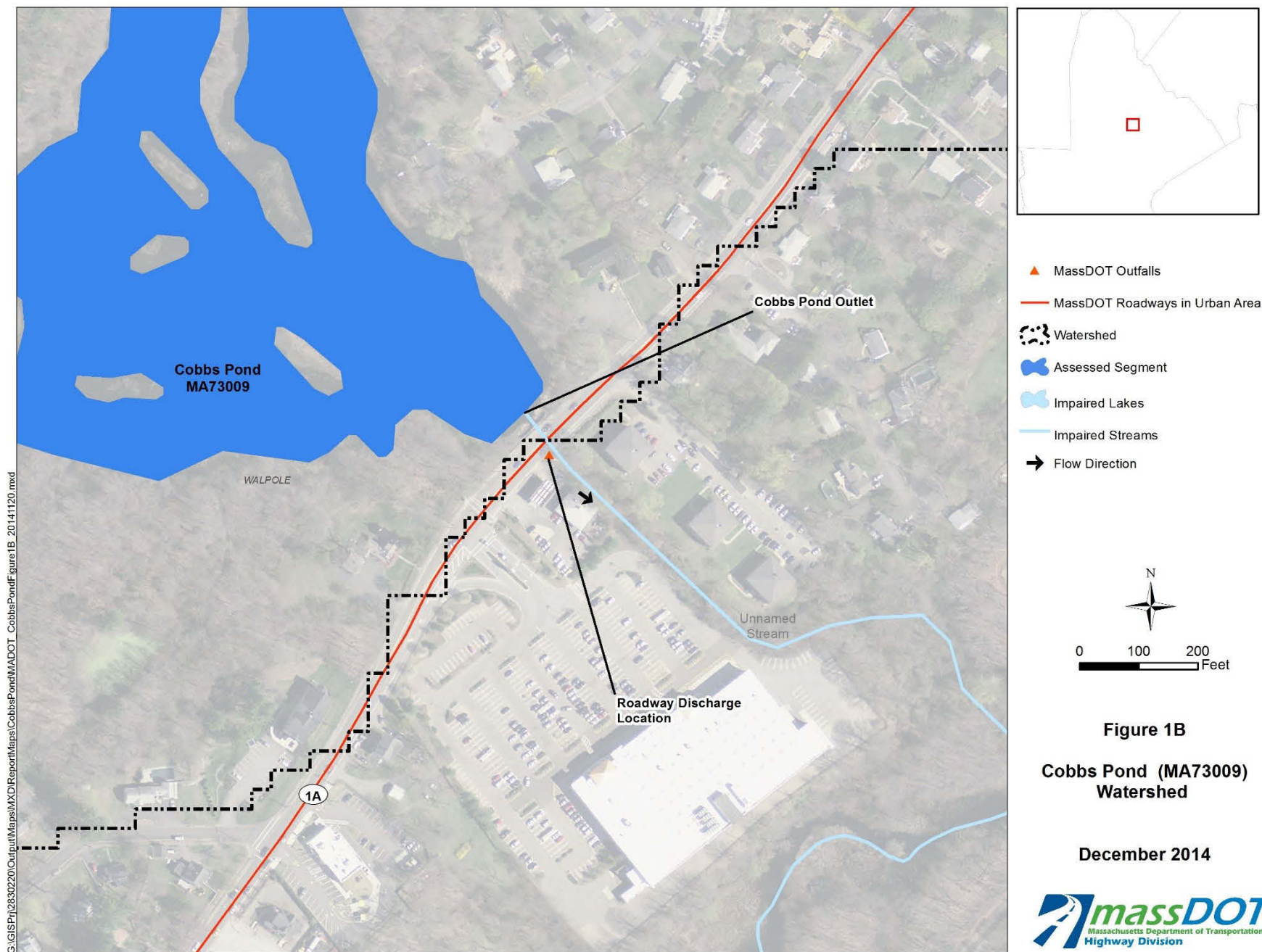
<sup>5</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)









## Impaired Waters Assessment for Forge Pond (MA94037)

### Summary

Impaired Water <sup>1</sup>	Impairments:	Stormwater:	Chlorophyll-a, Dissolved Oxygen Saturation, Excess Algal Growth, Fecal Coliform, Phosphorus (Total), Secchi Disk Transparency	
		Non-Stormwater: <sup>2</sup>	Debris/Floatables/Trash, Non-Native Aquatic Plants	
	Category:	5 (Waters requiring a TMDL)		
	Final TMDLs:	None		
	WQ Assessment:	South Shore Coastal Watersheds 2001 Water Quality Assessment Report <sup>3</sup>		
Location	Towns:	Hanover		
	MassDOT Roads:	Route 139, Route 3, Route 18, Route 53		
Assessment Method(s)	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>	

### Site Description

Forge Pond (MA94037) is a water body approximately 16 acres in size located in Hanover, Massachusetts. The watershed to Forge Pond is shown on Figure 1. Flow enters Forge Pond from French Stream (MA94-03) and Drinkwater River (MA94-21). Drinkwater River continues as the outflow from Forge Pond on the south side of the Pond. MassDEP's Water Quality Assessment Report<sup>3</sup> for Forge Pond identified the Aquatic Life, Primary Contact, Secondary Contact and Aesthetics Use as 'impaired'. Elevated Chlorophyll-a and Phosphorus concentrations were documented and supersaturation of oxygen was indicative of high productivity noting the presence

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup> MassDEP, 2006. South Shore Coastal Watersheds 2001 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/94wqar3.pdf>

of non-native aquatic species *Potamogeton crispis* and *Cabomba caroliniana*. These conditions resulted in the impairment associated with the Aquatic Life Use. Surveys also observed low Secchi disk transparency, filamentous algal blooms and trash/debris resulting in the Primary, Secondary contact and Aesthetics Uses being designated as 'impaired'. Fish toxicity monitoring was conducted in 1995 and resulted in no site-specific fish advisory, so the Fish Consumption Use is not assessed. The water quality assessment report indicates that fecal coliform bacteria data was not available for Forge Pond at the time the report was written; however, elevated counts were documented in both the French Stream and the Drinkwater River. Forge Pond is impaired for fecal coliform, but the water body is not covered by a draft or final pathogen TMDL.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act<sup>4</sup>. MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Forge Pond is not proposed to change.

After review of aerials and field observations, it was determined that the MassDOT property does not directly discharge to Forge Pond. There are no MassDOT-owned urban roadways within the subwatershed. The closest MassDOT-owned property is Route 139 which crosses over and contributes to Drinkwater River (MA94-21), assessed separately, approximately 3,000 feet north of the confluence of Drinkwater River with Forge Pond.

As defined in MassDOT's assessment methodology,<sup>6</sup> since this portion of MassDOT's urban property does not directly contribute stormwater runoff to Forge Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

<sup>4</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>5</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)



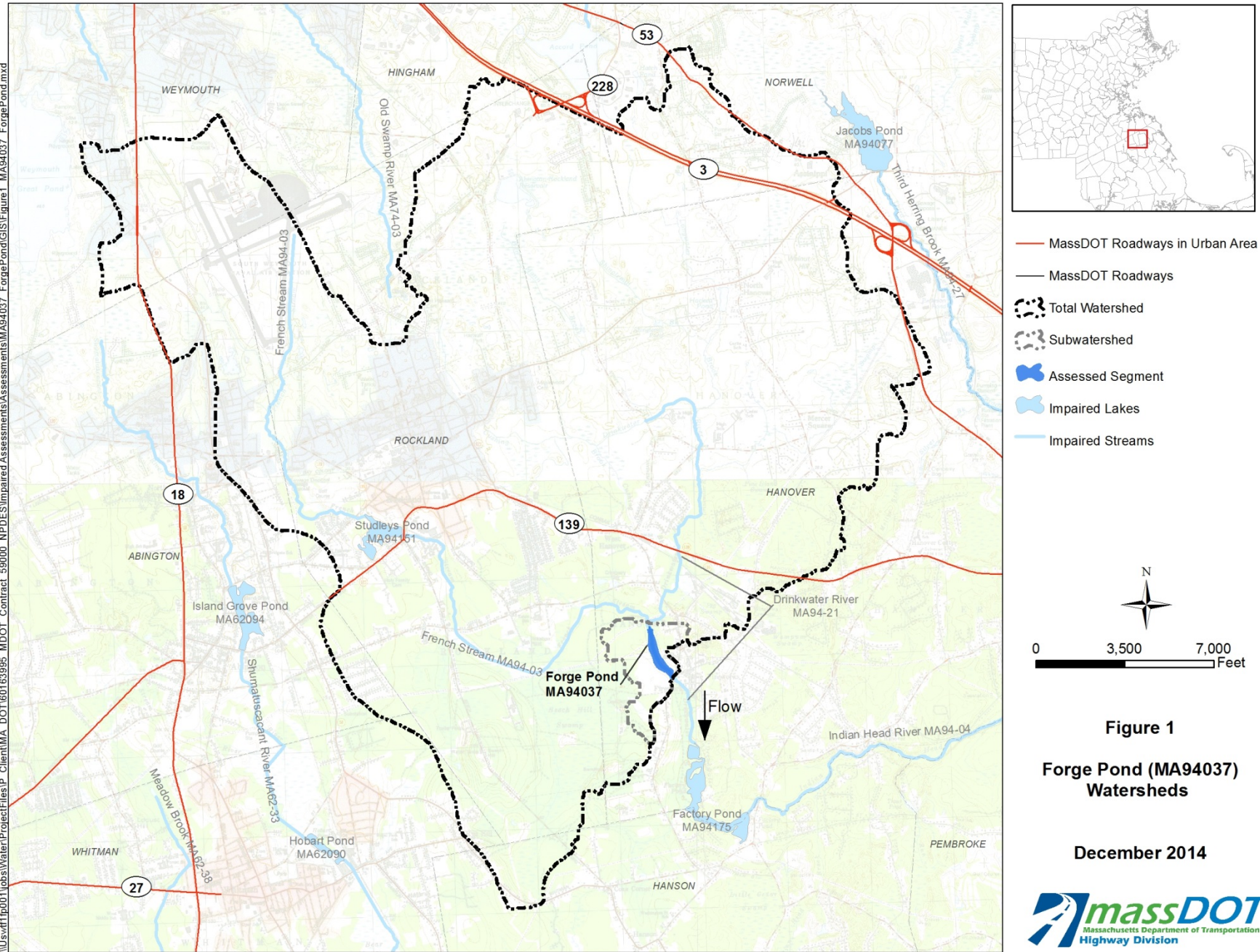


Figure 1

Forge Pond (MA94037)  
Watersheds

December 2014



## Impaired Waters Assessment for Old Oaken Bucket Pond (MA94113)

### Summary

<b>Impaired Water</b> <sup>1</sup>	Impairments:	Stormwater:	<i>Phosphorus (Total)</i>
		Non-Stormwater: <sup>2</sup>	<i>Non-Native Aquatic Plants</i>
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>None</i>	
	WQ Assessment:	<i>None</i>	
<b>Location</b>	Towns:	<i>Scituate</i>	
	MassDOT Roads:	<i>Route 3A</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Old Oaken Bucket Pond (MA94113) is located in coastal Southeastern Massachusetts in the town of Scituate and serves as the Town's drinking water supply. The Pond is a shallow (4 to 6 ft maximum depth) 8.35-acre impoundment of First Herring Brook. The total and subwatershed to Old Oaken Bucket Pond are the same area and are shown on Figure 1. The watershed is approximately 2,920 acres with predominately residential and open area uses including many wetlands. Land within the watershed is within a coastal plain and is flat in nature; because of this and the complex system of surface and groundwater in the area, the exact boundaries of the watershed are uncertain. The watershed may be up to 5.9 square miles (approx. 3,780 acres) depending on the delineation.<sup>3</sup> The Herring River begins downstream of the dam for Old Oaken Bucket Pond and then flows to the North River.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup>First Herring Brook Watershed Initiative. 2003. First Herring Brook Watershed Report, Findings based on investigation of Scituate's surface water supply watershed.

and 303(d) of the Clean Water Act.<sup>4</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Old Oaken Bucket Pond (MA94113) is not proposed to change.

Old Oaken Bucket Pond is impaired for non-native aquatic plants and phosphorus.<sup>4</sup> There are no identified dischargers or contributors to these impairments. However the presence of historical cranberry bogs in the watershed was mentioned in the *"First Herring Brook Environmental Flows Project Report"* authored by the Scituate Water Resources Committee and the North and South Rivers Watershed Association. Cranberry bogs are known to use phosphorus as part of their fertilization plan.<sup>6</sup>

After review, it was determined that the MassDOT property does not discharge to Old Oaken Bucket Pond. The review consisted of geographic and literature sources and a site visit conducted on August 18, 2014. Route 3A is the nearest MassDOT-owned property. Figure 2 shows a small, non-impaired stream that is a tributary to the Pond, Clapp Brook, crossing in a culvert under Route 3A. The site visit to this area found that this brook drains approximately 1,500 linear feet of the roadway via storm drain connections at the culvert. Clapp Brook, a non-impaired brook, flows from an outfall on the east side of Route 3A for approximately 850 feet before entering Old Oaken Bucket Pond. Approximately 700 feet of Clapp Brook's path from the outfall is through wetlands. This distance of flow over land and through wetlands eliminates this discharge point as a contribution to the impairment of the Pond.

In the area near the Route 3A traffic circle in Scituate, historic plans for the roadway showed catch basins discharging stormwater into an outfall downstream of the dam to the pond. Runoff is discharged through this storm drain outfall immediately downstream of the dam and spillway located at the intersection of the Route 3A rotary and Country Way, and therefore does not contribute to the impairment of Old Oaken Bucket Pond.

As defined in MassDOT's assessment methodology,<sup>6</sup> since this portion of MassDOT's urban area property does not directly contribute stormwater runoff to Old Oaken Bucket Pond (MA94113), further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

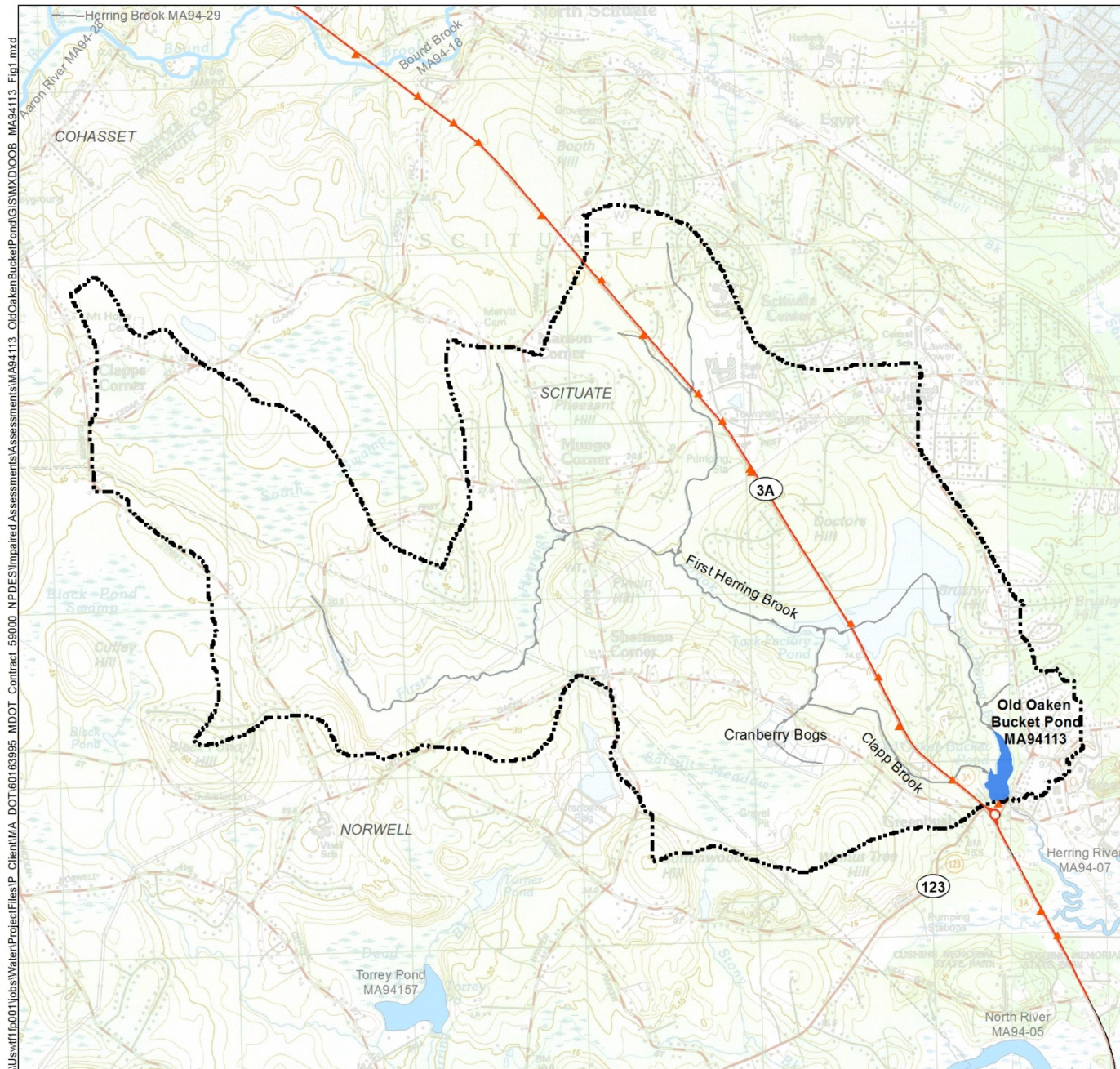
---

<sup>4</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>5</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14wlistp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.mhd.state.ma.us/downloads/projDev/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.mhd.state.ma.us/downloads/projDev/BMP_7U_ImpairedWaterbodiesAssessment.pdf)





- ▲ MassDOT Outfalls
- MassDOT Roadways in Urban Area
- MassDOT Roadways
- Total and Subwatershed
- Assessed Segment
- Impaired Lakes
- Impaired Streams
- Non-Impaired Streams



0 1,500 3,000 Feet

**Figure 1**

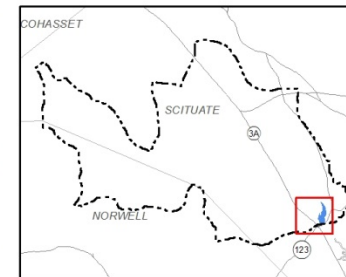
# **Old Oaken Bucket Pond (MA94113) Watershed**

**December 2014**

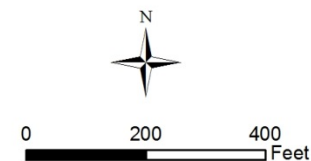




\\Usr\frp001\jobs\Water\ProjectFiles\IP\_Client\MA\_DOT\60163995 MDOT Contract 59000 NPDES\Impaired Assessments\Assessments\MA94113 OldOakenBucketPond\GIS\MXD\OOB\_MA94113\_Fig2.mxd



- ▲ MassDOT Outfalls
- MassDOT Roadways in Urban Area
- MassDOT Roadways
- ⬜ Total and Subwatershed
- Assessed Segment
- Impaired Lakes
- Impaired Streams
- Non-Impaired Streams
- DEP Wetlands



**Figure 2**  
**Old Oaken Bucket Pond**  
**(MA94113) Watershed**

December 2014



## Impaired Waters Assessment for Pocasset Harbor (MA95-17)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Estuarine Bioassessments, Fecal Coliform</i>	
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>Final Pathogen TMDL for the Buzzards Bay Watershed<sup>2</sup></i>	
	WQ Assessment:	<i>Buzzards Bay Watershed 2000 Water Quality Assessment Report<sup>3</sup></i>	
<b>Location</b>	Towns:	<i>Bourne</i>	
	MassDOT Roads:	<i>None</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Pocasset Harbor (MA95-17) covers approximately 0.33 square miles and is located along the eastern coast of Buzzards Bay in Bourne. Figure 1 illustrates the groundwatershed for Pocasset Harbor (MA95-17). The groundwatershed for this impaired segment was provided by USGS based on groundwater modeling developed under the Massachusetts Estuary Program (MEP) and contributing groundwater areas as delineated and published in the USGS 451 groundwater contributing areas data.<sup>4,5</sup> The Cape Cod and Buzzards Bay watersheds are based on groundwater delineations and not ground surface topography.<sup>5</sup>

The southern end of Pocasset Harbor (MA95-17) is connected to Buzzards Bay; the boundary between the two water bodies extends from Wings Neck to the western tip of Bassett's Island. The

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, 2009. Final Pathogen TMDL for the Buzzards Bay Watershed. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/buzzbay1.pdf>

<sup>3</sup>MassDEP, 2003. Buzzards Bay Watershed 2000 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/95wqar3.pdf>

<sup>4</sup>Walter, D.A., Masterson, J.P., and Hess, K.M., 2004. Ground-Water Recharge Areas and Traveltimes to Pumped Wells, Ponds, Streams, and Coastal Water Bodies, Cape Cod, Massachusetts, Scientific Investigations Map I-2857, 1 sheet. Available at: <http://pubs.water.usgs.gov/sim20042857>.

<sup>5</sup>U.S. Geological Survey (USGS). (2009). Groundwater contributing areas for Cape Cod and Plymouth-Carver Regions of Massachusetts. Data Series 451 (1 of 3).

assessed segment is bounded from the adjacent Red Brook Harbor at a line that extends from near the northern tip of Bassett's Island to Patuisset. Land use in the Pocasset Harbor watershed is primarily comprised of residential and open land. There are no regulated NPDES discharges in the Pocasset Harbor (MA95-17) watershed.<sup>6</sup>

According to MassDEP's *Buzzards Bay Watershed 2000 Water Quality Assessment Report*,<sup>7</sup> Pocasset Harbor is "impaired" for the Shellfish Harvesting and Aquatic Life Uses and "supports" the Primary and Secondary Contact Recreational Uses in 0.20 square miles of its area, but was not assessed for Recreational Uses in 0.13 square miles of its area. The cause is listed as elevated fecal coliform bacteria, and estuarine bioassessments with suspected causes as anthropogenic substrate alterations (re-suspension of sediments) and total nitrogen. The suspected source is cited as Recreational activities (boat traffic), and unspecified urban stormwater.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>8</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>9</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Pocasset Harbor is not proposed to change.

After review, it was determined that the MassDOT property does not discharge Pocasset Harbor, as there are no MassDOT urban roadways within the Pocasset Harbor groundwatershed.

As defined in MassDOT's assessment methodologies,<sup>10,11</sup> since this portion of MassDOT's urban area property does not directly contribute stormwater runoff to Pocasset Harbor, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

<sup>6</sup> MassDEP, 2009. Final Pathogen TMDL for the Buzzards Bay Watershed. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/buzzbay1.pdf>

<sup>7</sup> MassDEP, 2003. Buzzards Bay Watershed 2000 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/95wqar3.pdf>

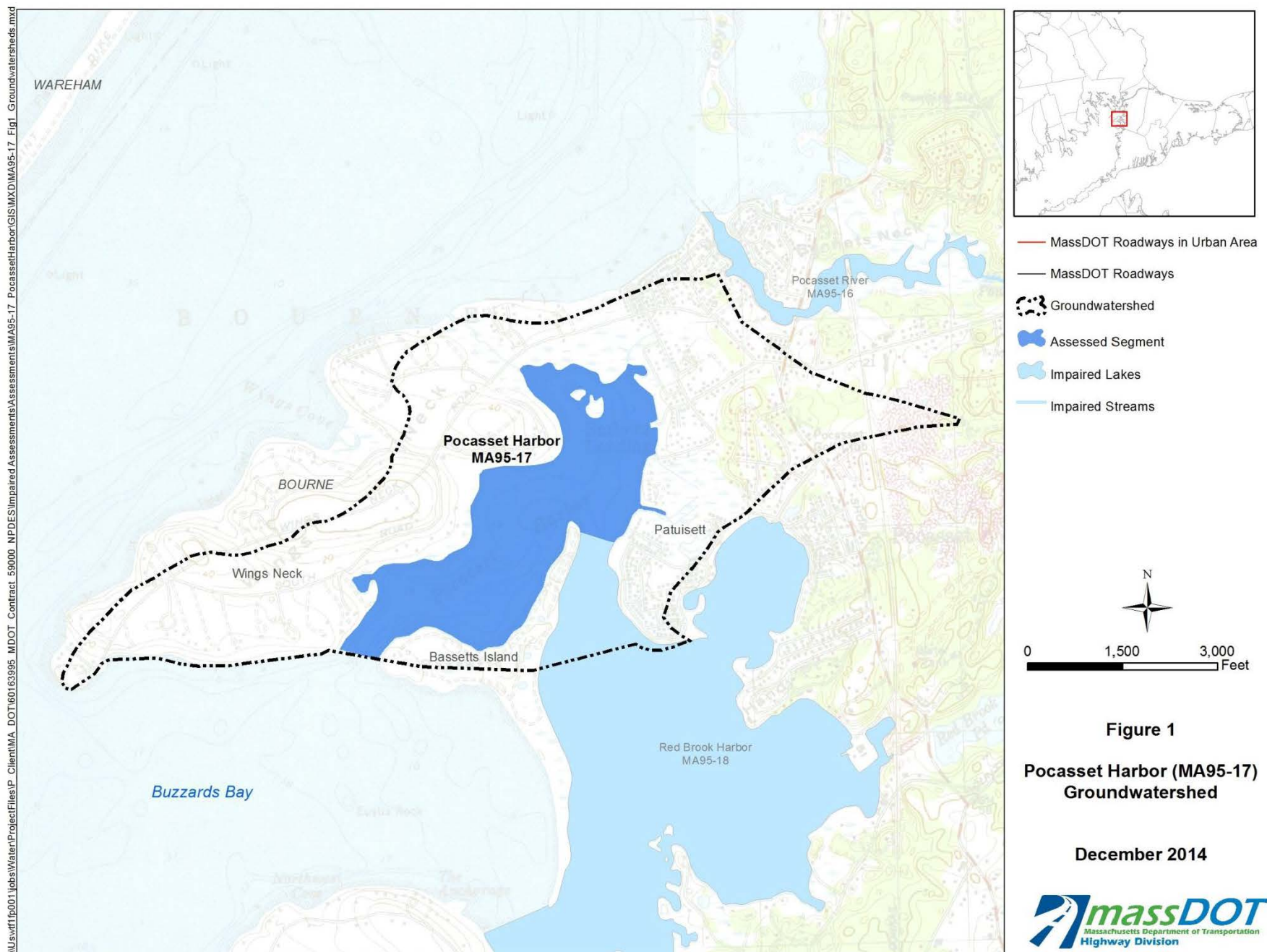
<sup>8</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>9</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14wlistp.pdf>

<sup>10</sup> MassDOT. December 2014. Description of MassDOT's Application of BMP 7R for Pathogen Related Impairments.

<sup>11</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)





## Impaired Waters Assessment for Great Sippewisset Creek (MA95-23)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Fecal Coliform</i>
	Category:	<i>4A (TMDL is completed)</i>
	Final TMDLs:	<i>Final Pathogen TMDL for the Buzzards Bay Watershed<sup>2</sup></i>
	WQ Assessment:	<i>Buzzards Bay Watershed 2000 Water Quality Assessment Report<sup>3</sup></i>
<b>Location</b>	Towns:	<i>Falmouth</i>
	MassDOT Roads:	<i>None</i>
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/>	7U (Non-TMDL Method) <input type="checkbox"/> No Discharge <input checked="" type="checkbox"/>

### Site Description

Great Sippewisset Creek (MA95-23) flows from the outlets of Beach Pond and Fresh Pond in Falmouth, Massachusetts to the mouth at Buzzards Bay. This segment consists of a tidal estuary that extends from the outlet of Fresh Pond and Quahog Pond. The segment is approximately 0.031 square miles and is located to the west of Route 28A. Figure 1 illustrates the groundwatershed for Great Sippewisset Creek (MA95-23). The watersheds and subwatersheds for Cape Cod were provided by USGS based on groundwater modeling developed under the Massachusetts Estuary Program (MEP) and contributing groundwater areas as delineated and published in the USGS 451 groundwater contributing areas data.<sup>4,5</sup> The Cape Cod watersheds are based on groundwater delineations and not ground surface topography. For groundwatershed assessments, if a discharge occurs inside the groundwatershed boundary, it is considered to be a discharge that contributes to

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, 2009. Final Pathogen TMDL for the Buzzards Bay Watershed. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/buzzbay1.pdf>

<sup>3</sup>MassDEP, 2003. Buzzards Bay Watershed 2000 Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/agencies/massdep/water/watersheds/buzzards-bay-watershed-2000.html>

<sup>4</sup>Walter, D.A., Masterson, J.P., and Hess K.M., 2004. Ground-Water Recharge Areas and Traveltimes to Pumped Wells, Ponds, Streams, and Coastal Water Bodies. Cape Cod, Massachusetts. Scientific Investigations Map 1-2857, 1 sheet. Available at: <http://pubs.usgs.gov/sim/2004/2857/>

<sup>5</sup>U.S. Geological Survey (USGS), 2009. Groundwater contributing areas for Cape Cod and Plymouth-Carver Regions of Massachusetts. Data Series 451 (1 of 3).

the impaired segment. If the discharge point is outside of the groundwater watershed boundary, it is not considered to contribute to the impaired segment.

The Division of Marine Fisheries has designated this entire segment as “prohibited” for the Shellfishing designated use based on data collected in both dry and wet weather periods over the years 1985- 2001 indicating high fecal coliform bacteria for the Great Sippewisset Creek Segment MA95-23. There are no known discharges other than MS4s; the Town of Falmouth has applied for coverage for these discharges under the general NPDES permit.<sup>2</sup>

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>6</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>7</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Great Sippewisset Creek is not proposed to change.

Due to the proximity of the MassDOT-owned roadway to the water body and groundwater watershed, a field visit was conducted to determine if drainage from the roadway was discharged within the groundwater watershed. The field visit indicated that a portion of Route 28A drains to an outfall that discharges to a tributary of Great Sippewisset Creek. However, the discharge point is located outside of the groundwater watershed delineation; therefore, it was determined that the MassDOT property does not discharge to Great Sippewisset Creek.

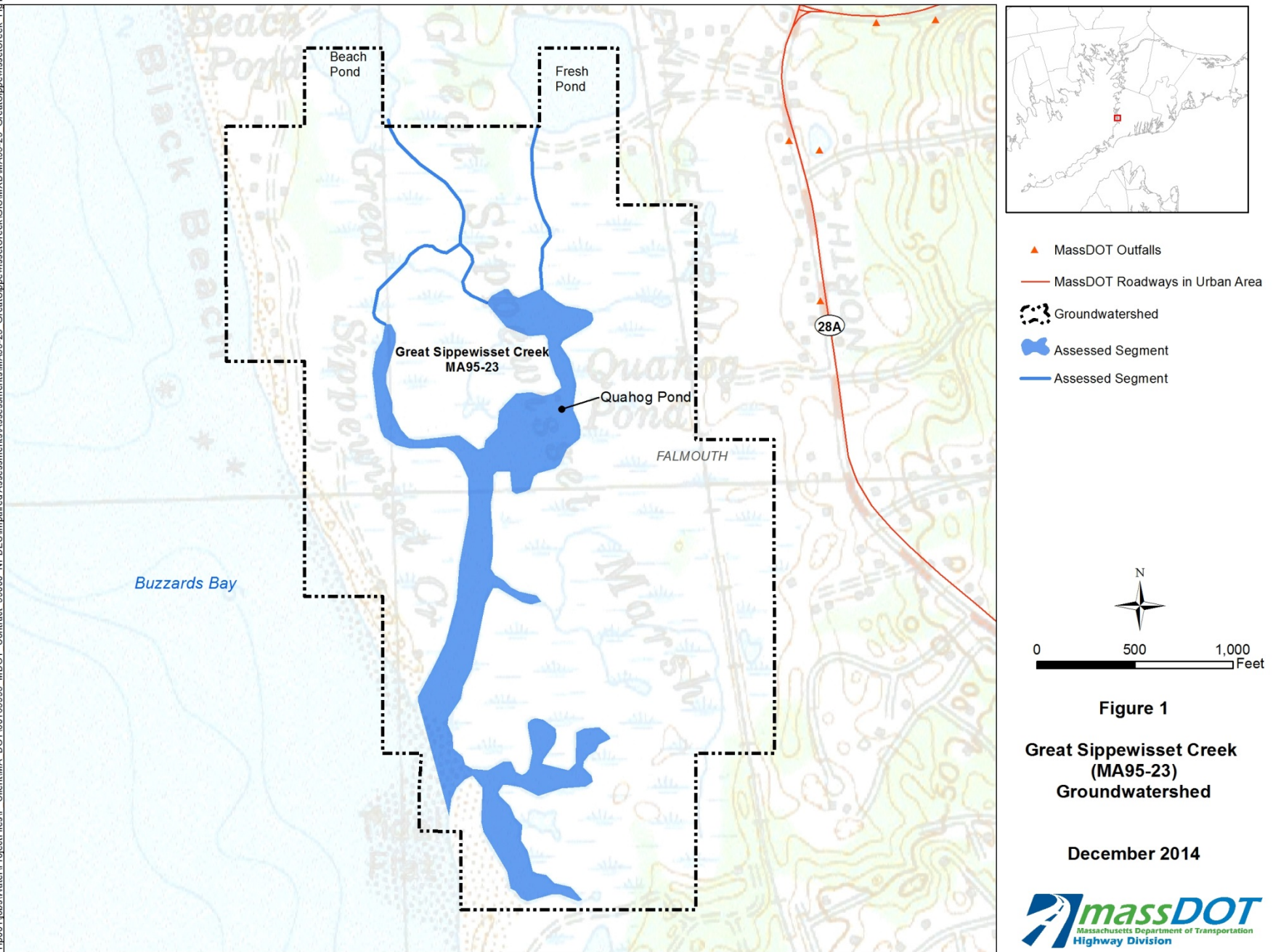
As defined in MassDOT’s assessment methodologies,<sup>8</sup> since this portion of MassDOT’s urban area property does not directly contribute stormwater runoff to Great Sippewisset Creek; further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

<sup>6</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>7</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>8</sup> MassDOT, July 22, 2010. BMP 7R: TMDL Watershed Review. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7R\\_TMDL\\_WatershedReview.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7R_TMDL_WatershedReview.pdf)





## Impaired Waters Assessment for Lovells Pond (MA96185)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Chlorophyll-a; Excess Algal Growth; Dissolved Oxygen; Phosphorus (Total); Secchi Disk Transparency</i>	
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>None</i>	
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report<sup>2</sup></i>	
<b>Location</b>	Towns:	<i>Barnstable</i>	
	MassDOT Roads:	<i>None</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Lovells Pond (MA96185) is 54-acre water body located north of Route 28 in southwestern Barnstable, Massachusetts. The groundwatershed to Lovells Pond is shown on Figure 1. The groundwatershed for this impaired segment is based on technical reports<sup>3</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST).

MassDEP's Water Quality Assessment Report<sup>4</sup> for this receiving water identified the Aquatic Life Use, Primary Contact Use, Secondary Contact Use and Aesthetics use as "impaired". The Aquatic

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, May 2011. *Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report*. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>3</sup>University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

<sup>4</sup>MassDEP, May 2011. *Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report*. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>



Life Use Impairment is caused by low dissolved oxygen, elevated chlorophyll-a and elevated total phosphorus. The source of these causes is considered to be internal nutrient recycling or it is otherwise unknown. The Primary Contact, Secondary Contact and Aesthetics Uses were all listed as “impaired” due to excess algal growth and poor Secchi disk transparency. The source of these causes is also considered to be internal nutrient recycling or it is otherwise unknown.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>1</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Lovells Pond is not proposed to change.

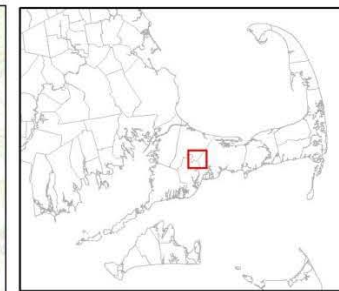
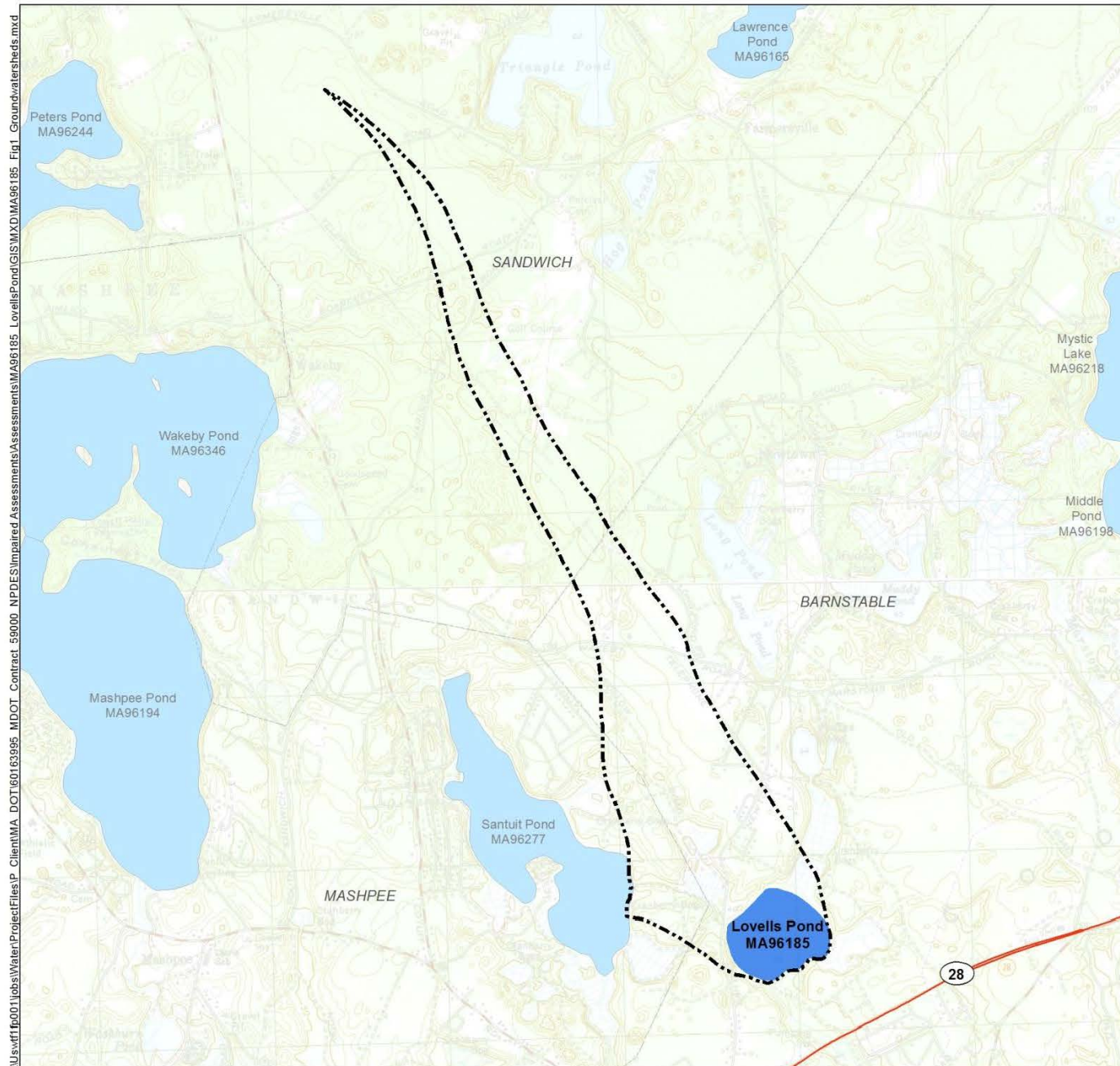
After review, it was determined that the MassDOT property does not discharge to Lovells Pond. Based on a review of the aeriels and watershed mapping, Route 28 is the closest MassDOT-owned property; however, it is approximately 1,500 feet away and is located outside of the watershed boundary.

As defined in MassDOT’s assessment methodologies,<sup>6</sup> since this portion of MassDOT’s urban area property does not directly contribute stormwater runoff to Lovells Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

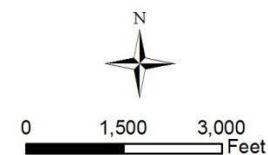
---

<sup>5</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlisp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. Description of MassDOT’s Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)



- MassDOT Roadways in Urban Area
- MassDOT Roadways
- - - Groundwatershed
- Assessed Segment
- Impaired Lakes



**Figure 1**  
**Lovells Pond (MA96185)**  
**Groundwatershed**

**December 2014**



## Impaired Waters Assessment for Lovers Lake (MA96186)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Secchi Disk Transparency</i>	
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>None</i>	
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report<sup>2</sup></i>	
<b>Location</b>	Towns:	<i>Chatham</i>	
	MassDOT Roads:	<i>None</i>	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Lovers Lake (MA96186) is a 37-acre Lake located in Chatham, Massachusetts. The groundwatershed to Lovers Lake is shown on Figure 1. An outlet structure is located on the northeast section of the Lake where it drains to a non-impaired stream segment. The groundwatershed for this impaired segment is based on technical reports<sup>3</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST).

---

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, 2009. *Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report*. Available at: [www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf](http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf)

<sup>3</sup>University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

MassDEP's Water Quality Assessment Report<sup>4</sup> for this receiving water identified the Primary Contact, Secondary Contact and Aesthetics Uses are "impaired" due to poor Secchi disk transparency. The cause of the impairment is unknown. The Aquatic Life Use was not assessed due to insufficient quality assured data; however, an "alert" status for this use is identified due to low dissolved oxygen concentrations. All other uses were not assessed.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>1</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Lovers Lake is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Lovers Lake. The closest MassDOT-owned property is Route 28 which is approximately 1,500 feet to the northeast. Stormwater runoff from the roadway appears to discharge to land outside of the groundwater watershed boundary for Lovers Lake or to a non-impaired stream segment that is also located outside of the groundwater watershed boundary (Figure 1).

As defined in MassDOT's assessment methodology,<sup>6</sup> since this portion of MassDOT's urban area property does not directly contribute stormwater runoff to Lovers Lake, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

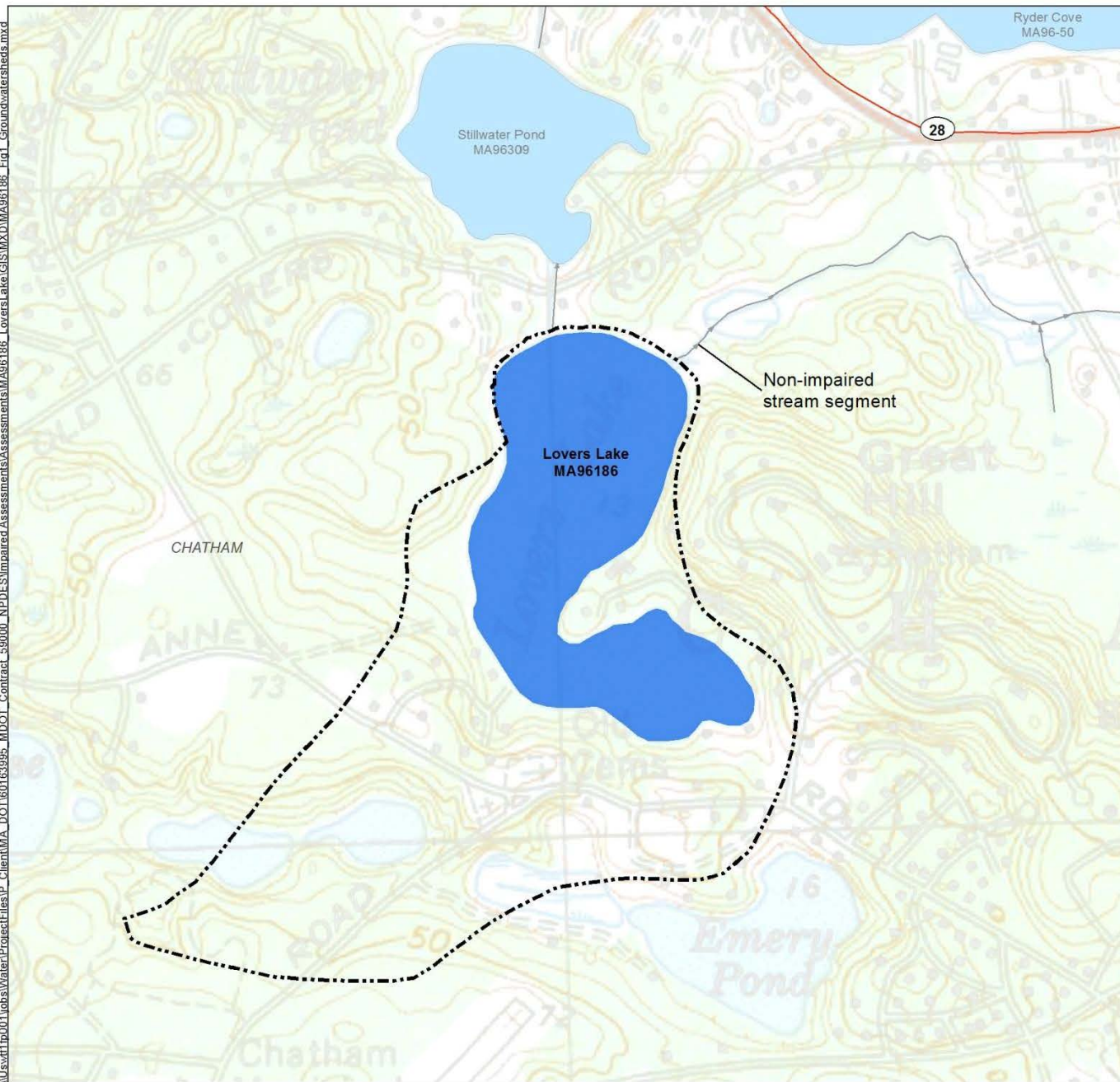
---

<sup>4</sup> MassDEP, 2009. *Cape Cod Coastal Drainage Areas 2004-2008 Water Quality Assessment Report*. Available at : [www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf](http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf)

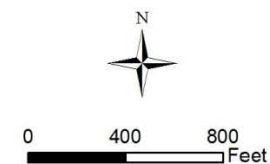
<sup>5</sup> MassDEP, June 2014. *Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act*. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14wlistp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. *Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method)*. [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7R\\_TMDL\\_WatershedReview.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7R_TMDL_WatershedReview.pdf)





- MassDOT Roadways in Urban Area
- Groundwatershed
- Assessed Segment
- Impaired Lakes
- Impaired Streams
- Non-Impaired Streams



**Figure 1**  
**Lovers Lake (MA96186)**  
**Groundwatershed**

**December 2014**





## Impaired Waters Assessment for Middle Pond (MA96198)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Dissolved Oxygen</i>
	Category:	<i>5 (Waters requiring a TMDL)</i>
	Final TMDLs:	<i>None</i>
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report<sup>2</sup></i>
<b>Location</b>	Towns:	<i>Barnstable</i>
	MassDOT Roads:	<i>None</i>
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/> 7U (Non-TMDL Method) <input checked="" type="checkbox"/> No Discharge <input checked="" type="checkbox"/>	

### Site Description

Middle Pond (MA96198) is located in Barnstable, Massachusetts, east of Route 149 and north of Route 28. The water body is located between Mystic Lake (MA96218) and Hamblin Pond (MA96126). The watershed to Middle Pond is shown on Figure 1. The groundwatershed for this impaired segment is based on technical reports<sup>3</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMASST).

<sup>1</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup> MassDEP, May 2011. *Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report*. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>3</sup> University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

Middle Pond receives flow from Mystic Lake, and flow from Middle Pond discharges to a stream located southwest of the lake.

MassDEP's Water Quality Assessment Report<sup>4</sup> for this receiving water identified the Aquatic Life Use as "impaired" due to low dissolved oxygen. Although the source is unknown, it is suspected to be phosphorus releases from anoxic sediments. All other uses were not assessed.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>5</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>6</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Middle Pond is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Middle Pond. Route 6 is the closest MassDOT-owned property; however, it is located over one mile away from Middle Pond and outside of the groundwatershed. Since the property is located outside of the groundwatershed boundary it has been determined that the stormwater runoff from the property does not directly contribute to Middle Pond.

As defined in MassDOT's assessment methodologies,<sup>7</sup> since this portion of MassDOT's urban property does not directly contribute stormwater runoff to Middle Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

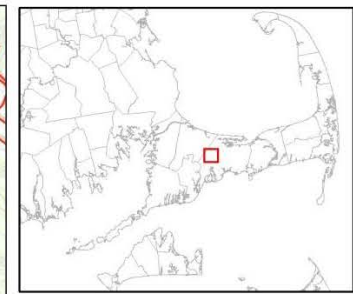
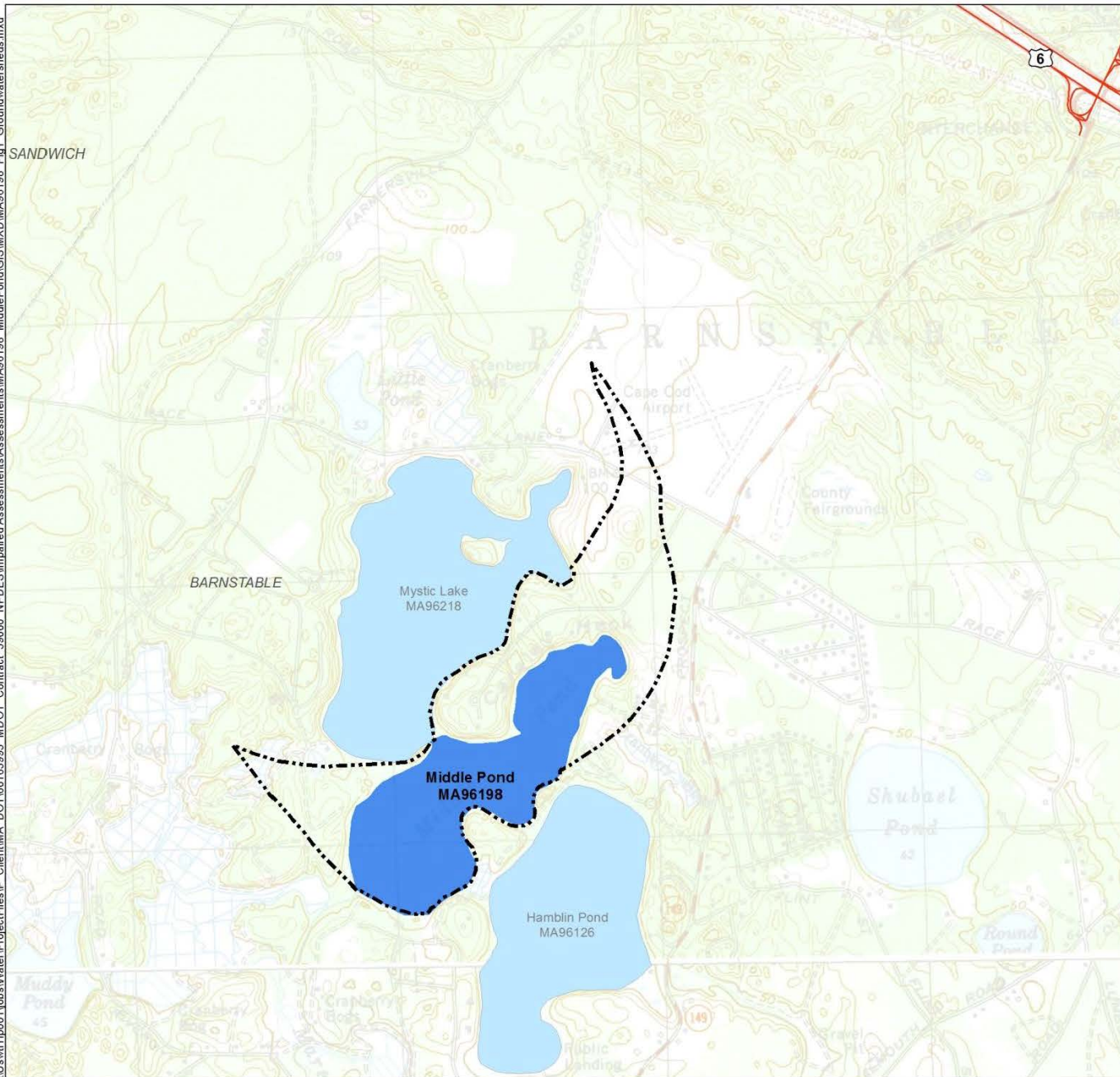
<sup>4</sup> MassDEP, May 2011. *Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report*. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>5</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

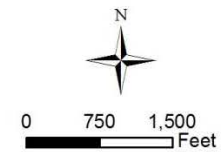
<sup>6</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14wlistp.pdf>

<sup>7</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)

\\ussf1p001\jobs\Water\ProjectFiles\P\_Client\MA\_DOT\60163995\_MDOT\_Contract\_59000\_NPDES\ImpairedAssessments\Assessments\MA96198\_MiddlePond\GIS\MXD\MA96198\_Fig1\_Groundwatersheds.mxd



- MassDOT Roadways in Urban Area
- Groundwatershed
- Assessed Segment
- Impaired Lakes



**Figure 1**  
**Middle Pond (MA96198)**  
**Groundwatershed**

**December 2014**





## Impaired Waters Assessment for Mystic Lake (MA96218)

### Summary

<b>Impaired Water<sup>1</sup></b>	Impairments:	Stormwater: <i>Dissolved Oxygen</i>
		Non-Stormwater: <sup>2</sup> <i>Non-native Aquatic Plants</i>
	Category:	<i>5 (Waters requiring a TMDL)</i>
	Final TMDLs:	<i>None</i>
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report<sup>3</sup></i>
<b>Location</b>	Towns:	<i>Barnstable</i>
	MassDOT Roads:	<i>None</i>
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/> 7U (Non-TMDL Method) <input checked="" type="checkbox"/> No Discharge <input checked="" type="checkbox"/>	

### Site Description

Mystic Lake (MA96218) is located in Barnstable, Massachusetts, east of Route 149 and north of Route 28. The water body is approximately 146 acres and is located north of Middle Pond (MA96198) and Hamblin Pond (MA96126). The groundwatershed to Mystic Lake is shown on Figure 1. Mystic Lake discharges to Middle Pond. The groundwatershed for this impaired segment is based on technical reports<sup>4</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDOT, December 2012. Impaired Waters Assessment for Impaired Waters with Impairments Unrelated to Stormwater. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3\\_ImpairedWatersAssessment\\_1.pdf#page=308](http://www.massdot.state.ma.us/Portals/8/docs/environmental/impairedWaters/Year3/Year3_ImpairedWatersAssessment_1.pdf#page=308)

<sup>3</sup>MassDEP, May 2011. Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>4</sup>University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST).

MassDEP's Water Quality Assessment Report<sup>5</sup> for this receiving water identified the Aquatic Life Use as "impaired" due to low dissolved oxygen. Although the source is unknown, it is suspected to be phosphorus releases from anoxic sediments. All other uses were not assessed.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>6</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>7</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Mystic Lake is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Mystic Lake. The closest MassDOT-owned properties within urban area are Route 6 and Route 28. Route 6 is located over 6,000 feet to the northeast and Route 28 is located more than 8,000 feet to the south. Since these properties are located outside of the watershed boundary and a great distance away, it has been determined that the stormwater runoff from these properties does not directly contribute to Mystic Lake.

As defined in MassDOT's assessment methodologies,<sup>8</sup> since MassDOT's urban area property does not directly contribute stormwater runoff to Mystic Lake further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

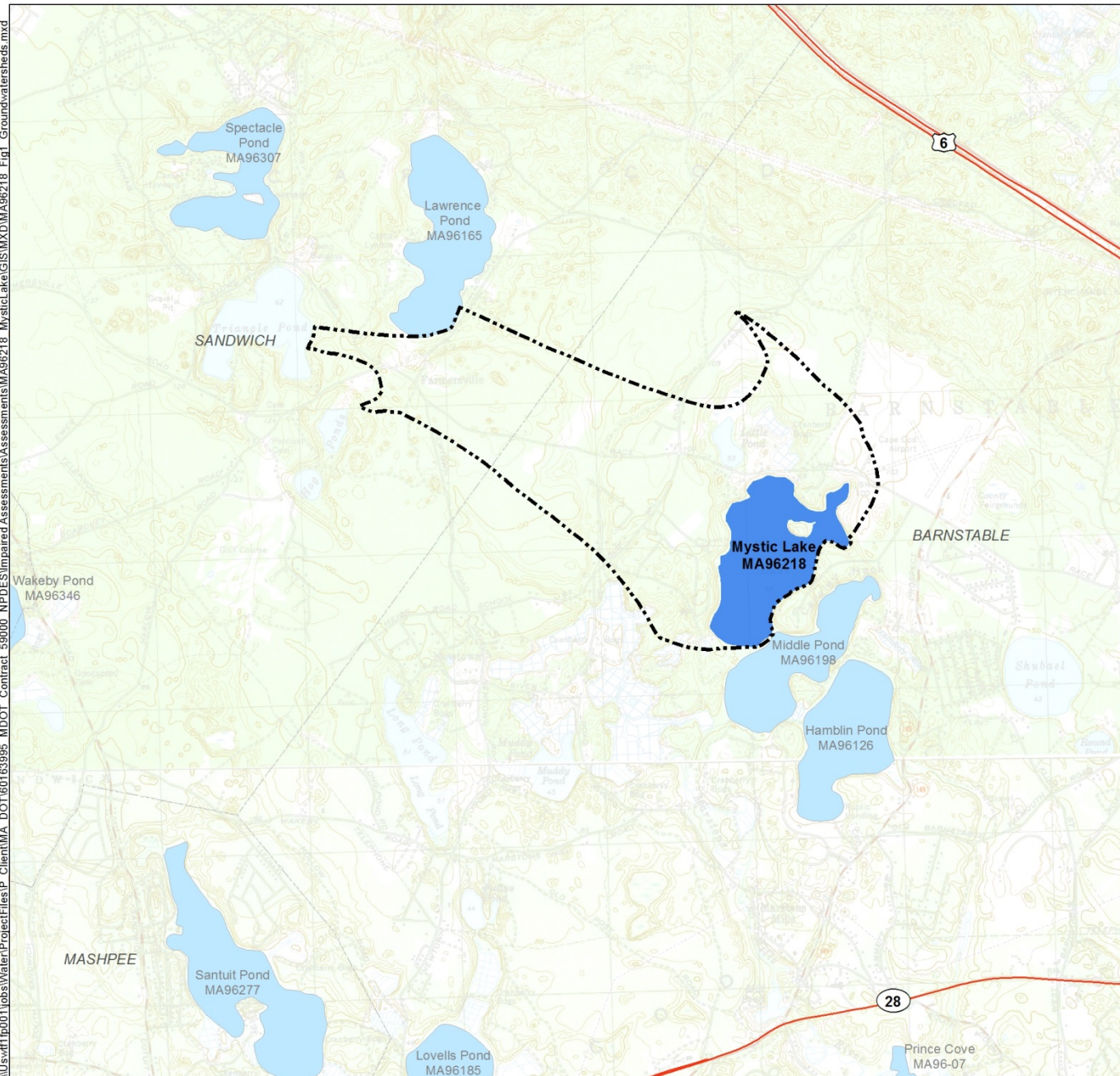
<sup>5</sup> MassDEP, May 2011. Cape Cod Coastal Drainage Areas 2004 – 2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>6</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

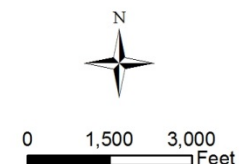
<sup>7</sup> MassDEP, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14wlistp.pdf>

<sup>8</sup> MassDOT, 6 April, 2011. Description of MassDOT's Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)

U:\work\1001\Jobs\Water\ProjectFiles\1001\MA DOT\60163995 MDOT Contract 59000 NPDES\Impaired Assessments\Assessments\MA96218 Mystic Lake\GIS\MXD\MA96218 Fig1 Groundwatersheds.mxd



- MassDOT Roadways in Urban Area
- MassDOT Roadways
- Groundwatershed
- Assessed Segment
- Impaired Lakes



**Figure 1**  
**Mystic Lake (MA96218)**  
**Groundwatershed**  
**December 2014**





## Impaired Waters Assessment for Stillwater Pond (MA96309)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Secchi disk transparency</i>	
	Category:	<i>5 (Waters requiring a TMDL)</i>	
	Final TMDLs:	<i>None</i>	
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report<sup>2</sup></i>	
<b>Location</b>	Towns:	Chatham	
	MassDOT Roads:	None	
<b>Assessment Method(s)</b>	7R (TMDL Method) <input type="checkbox"/>	7U (Non-TMDL Method) <input checked="" type="checkbox"/>	No Discharge <input checked="" type="checkbox"/>

### Site Description

Stillwater Pond (MA96309) is located in Chatham, Massachusetts, west of Route 28 and Ryder Cove (MA96-50). The Pond is approximately 18 acres in size. The watershed to Stillwater Pond is shown on Figure 1. The groundwatershed for this impaired segment is based on technical reports<sup>3</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMASST).

MassDEP's Water Quality Assessment Report<sup>2</sup> for this receiving water indicates that there is an anadromous fish passage by means of a wooden vertical slot fishway which allows herring to enter an unnamed tributary during certain tidal conditions and enter Stillwater Pond by way of elevation changes and a control structure. The report identifies an "alert" status for the Aquatic Life Use since there is insufficient quality assured data; however an "alert" status is designated due to low

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, May 2011. Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>3</sup>University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

dissolved oxygen concentrations. The Primary and Secondary Contact Uses and Aesthetic Use are designated as “impaired” due to poor Secchi disk transparency, but the source is unknown. All other uses have not been assessed.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>4</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>5</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Stillwater Pond (MA96309) is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Stillwater Pond. Route 28 is the closest MassDOT-owned property to Stillwater Pond, approximately 850 feet from the Pond and located outside of the watershed boundary. Due to the location and distance of this roadway, runoff is not considered to discharge to Stillwater Pond.

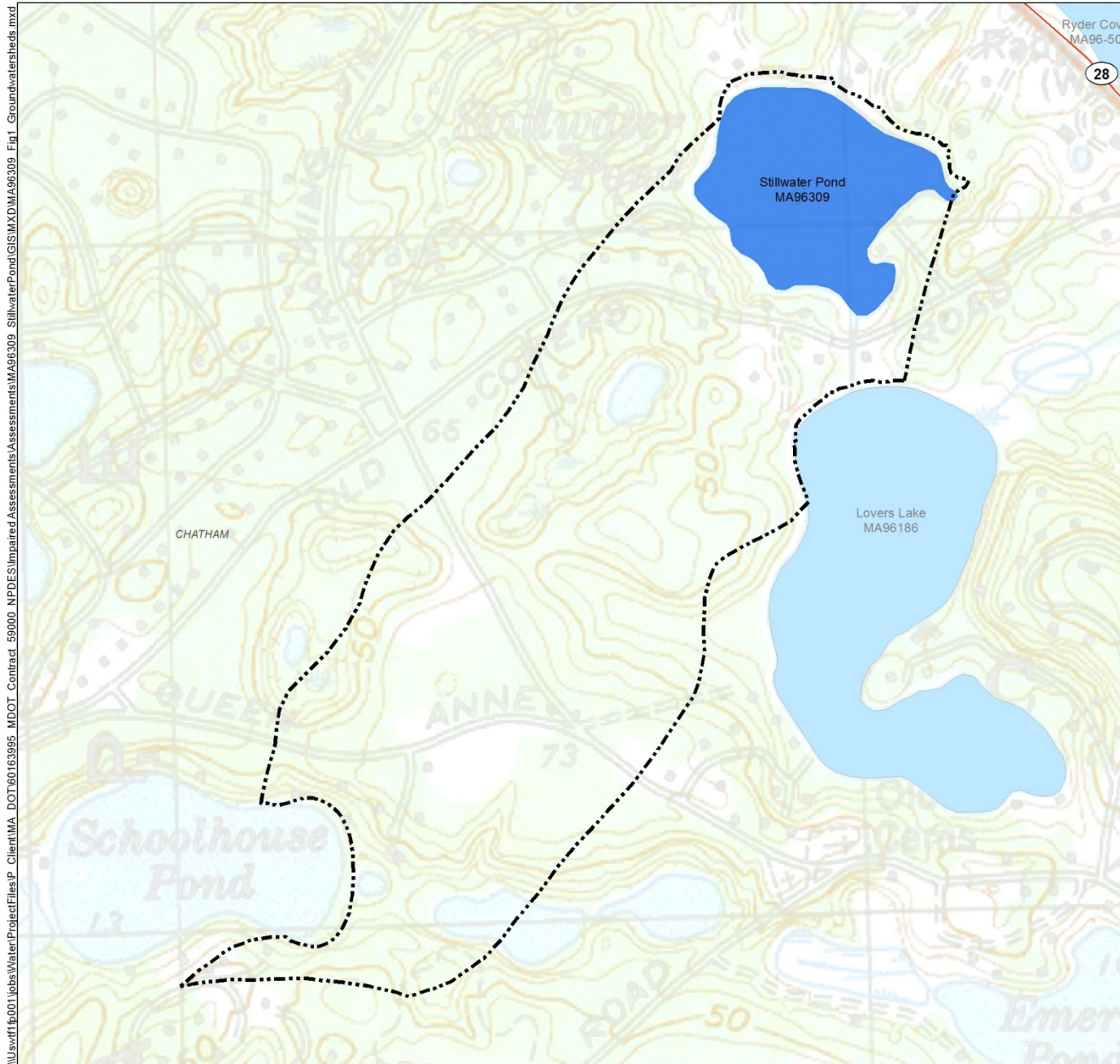
As defined in MassDOT’s assessment methodologies,<sup>6</sup> since MassDOT’s urban area property does not directly contribute stormwater runoff to Stillwater Pond, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

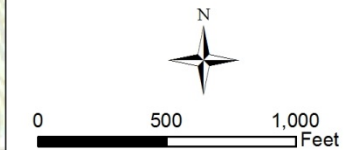
<sup>4</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>5</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>6</sup> MassDOT, 6 April, 2011. Description of MassDOT’s Application of Impervious Cover Method in BMP 7U (MassDOT Application of IC Method). [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7U\\_ImpairedWaterbodiesAssessment.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7U_ImpairedWaterbodiesAssessment.pdf)



- MassDOT Roadways in Urban Area
- MassDOT Roadways
- Groundwatershed
- Assessed Segment
- Impaired Lakes
- Impaired Streams



**Figure 1**  
**Stillwater Pond (MA96309)**  
**Groundwatershed**

**December 2014**





## Impaired Waters Assessment for Chase Garden Creek (MA96-35)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Fecal Coliform</i>
	Category:	<i>4A (TMDL is complete)</i>
	Final TMDLs:	<i>Final Pathogen TMDL for the Cape Cod Watershed<sup>2</sup></i>
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report<sup>3</sup></i>
<b>Location</b>	Towns:	<i>Dennis and Yarmouth</i>
	MassDOT Roads:	<i>None</i>
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/>	7U (Non-TMDL Method) <input type="checkbox"/> No Discharge <input checked="" type="checkbox"/>

### Site Description

Chase Garden Creek (MA96-35) is a small tidal estuary located in Dennis and Yarmouth, Massachusetts that covers approximately 83 acres. The water body extends from its source west of Route 6A in Dennis to the Creek's mouth at Cape Cod Bay. The groundwatersheds for Cape Cod were provided by USGS based on groundwater modeling developed under the Massachusetts Estuary Program (MEP) and contributing groundwater areas as delineated and published in the USGS 451 groundwater contributing areas data.<sup>4,5</sup> The Cape Cod watersheds are based on groundwater delineations and not ground surface topography.

According to MassDEP's *Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report*,<sup>3</sup> Chase Garden Creek is "impaired" for the Shellfish Harvesting Use, "supported" for the Primary and Secondary Contact Uses, and no other uses have been assessed.

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, 2009. Final Pathogen TMDL for the Cape Cod Watershed. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/capecod1.pdf>

<sup>3</sup>MassDEP, 2011. Cape Cod Drainage Areas 2004-2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>4</sup>Walter, D.A., Masterson, J.P., and Hess, K.M., 2004. Ground-Water Recharge Areas and Traveltimes to Pumped Wells, Ponds, Streams, and Coastal Water Bodies, Cape Cod, Massachusetts, Scientific Investigations Map I-2857, 1 sheet. Available at: <http://pubs.water.usgs.gov/sim20042857>

<sup>5</sup>U.S. Geological Survey (USGS). (2009). Groundwater contributing areas for Cape Cod and Plymouth-Carver Regions of Massachusetts. Data Series 451 (1 of 3).

The Massachusetts Division of Marine Fisheries (DMF) indicates that the Shellfish Harvesting Use in Chase Garden Creek is “prohibited” within 33% of this water body and conditionally approved within 67% of this water body; cause is indicated as elevated fecal coliform bacteria, source is cited as waterfowl and/or upstream sources. There are three discharges to Chase Garden Creek covered by NPDES permits: Aquaculture Research Corporation (Individual Permit MA005576), Town of Dennis (Phase II General Permit MAR041103), and Town of Yarmouth (Phase II General Permit MAR041176).<sup>6</sup>

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>7</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>8</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Chase Garden Creek is not proposed to change.

The closest MassDOT roadway is Route 6A (Cranberry Highway) approximately 500 feet east. Due to the proximity of the MassDOT owned roadway to the water body and groundwatershed, a field visit was conducted to determine if drainage from the roadway was discharged within the watershed. The field visit indicated that a portion of Route 6A discharges to a small wetland/tributary that flows to Chase Garden Creek. However, the discharge point is located outside of the groundwatershed; therefore, it was determined that the MassDOT property does not discharge to Chase Garden Creek.

As defined in MassDOT’s assessment methodologies,<sup>9</sup> since this portion of MassDOT’s urban area property does not directly contribute stormwater runoff to Chase Garden Creek, further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

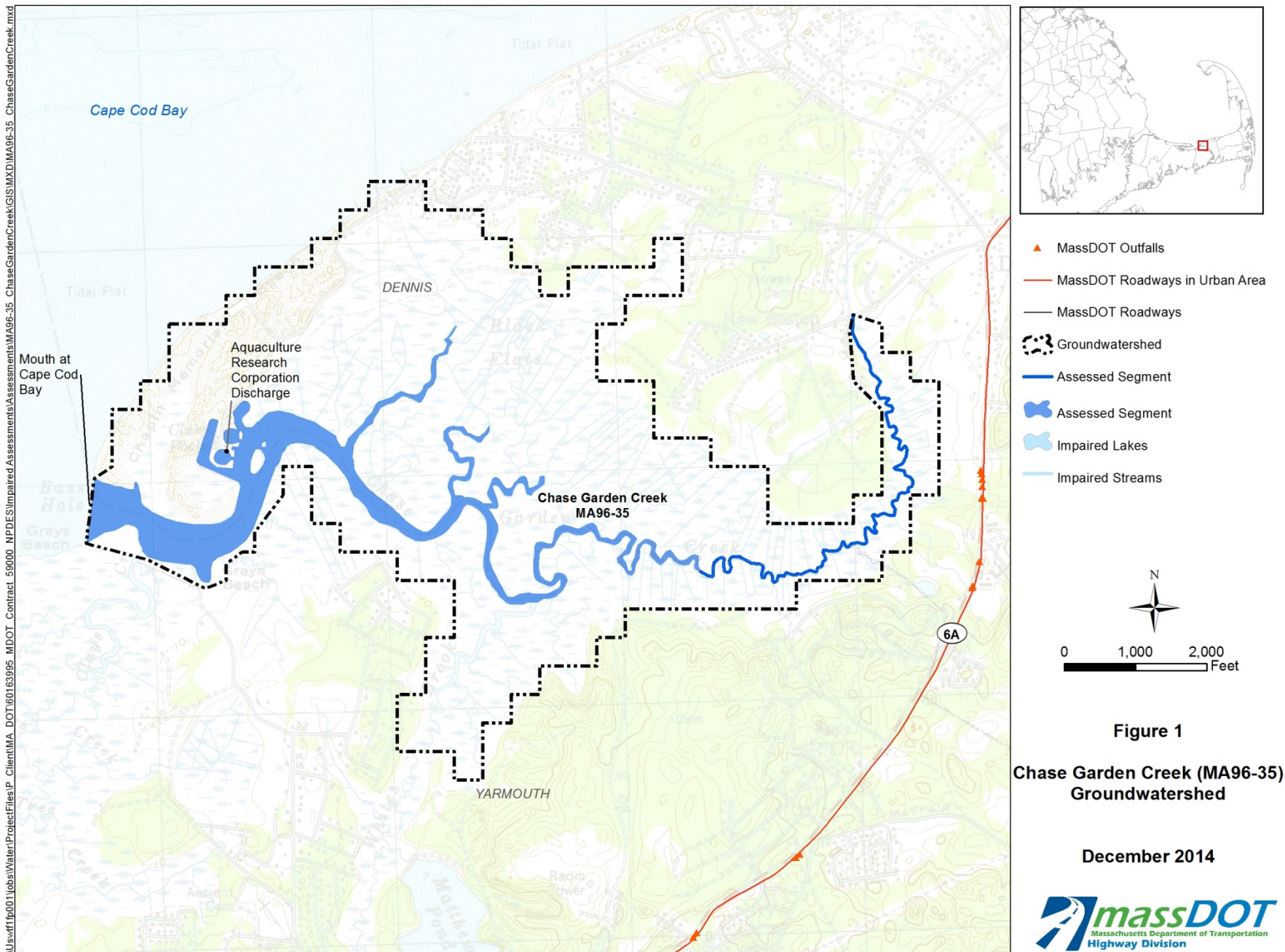
---

<sup>6</sup> MassDEP, 2011. Cape Cod Drainage Areas 2004-2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>7</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>8</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlistp.pdf>

<sup>9</sup> MassDOT, July 22, 2010. BMP 7R: TMDL Watershed Review. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7R\\_TMDL\\_WatershedReview.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7R_TMDL_WatershedReview.pdf)





## Impaired Waters Assessment for Seapuit River (MA96-64)

### Summary

<b>Impaired Water<sup>1</sup></b>	Stormwater Impairments:	<i>Fecal Coliform</i>
	Category:	<i>4A (TMDL is complete)</i>
	Final TMDLs:	<i>Final Pathogen TMDL for the Cape Cod Watershed August 2009 (CN: 252.0)<sup>2</sup></i>
	WQ Assessment:	<i>Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report<sup>3</sup></i>
<b>Location</b>	Towns:	Barnstable
	MassDOT Roads:	None
<b>Assessment Method(s)</b>	7R (TMDL Method) <input checked="" type="checkbox"/> 7U (Non-TMDL Method) <input type="checkbox"/> No Discharge <input checked="" type="checkbox"/>	

### Site Description

Seapuit River (MA96-64) is a small tidal estuary that is approximately 0.06 square miles in size and is located between Cotuit Inlet and West Bay Inlet. The segment extends from south of Osterville Grand Island to Cotuit Bay (MA96-63) and West Bay (MA96-65) in Barnstable, MA. The groundwatershed to Seapuit River is shown on Figure 1. The groundwatershed for this impaired segment is based on technical reports<sup>4</sup> developed by the Massachusetts Estuaries Project (MEP) which serve as the basis for the development of Total Maximum Daily Loads. The MEP team includes technical staff from USGS and the Cape Cod Commission and works collaboratively with MassDEP and the University of Massachusetts Dartmouth School of Marine Science and Technology (SMAST).

<sup>1</sup>MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>2</sup>MassDEP, 2009. Final Pathogen TMDL for the Cape Cod Watershed August 2009. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/a-thru-m/capecod1.pdf>

<sup>3</sup>MassDEP, 2011. Cape Cod Coastal Drainage Areas 2004-2008 Surface Water Quality Assessment Report. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/96wqar12.pdf>

<sup>4</sup>University of Massachusetts Dartmouth and MassDEP, 2006. Massachusetts Estuaries Project Linked Watershed-Embayment Model to Determine Critical Nitrogen Loading Thresholds for Three Bays, Barnstable, Massachusetts. Available at: <http://www.oceanscience.net/estuaries/3Bays.htm>

According to MassDEP's Water Quality Assessment Report<sup>3</sup> for this receiving water, Massachusetts Estuary Program models indicate that the flow through the Seapuit River is driven by the time difference in tidal stages. Therefore, flow goes from Cotuit Bay to West Bay and vice versa, depending on the tidal stage. The Water Quality Assessment report identified the Shellfish Harvesting Use as supported for 0.054 square miles, but impaired for 0.006 square miles due to elevated fecal coliform bacteria. Sources causing the impairment are cited as marina/boating pump-out releases and waterfowl. All other uses were not assessed.

This assessment has been completed based on the Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.<sup>5</sup> MassDEP has released a Proposed Massachusetts Year 2014 Integrated List<sup>6</sup> which has been reviewed for any proposed changes to the condition of the water bodies. The condition of Seapuit River is not proposed to change.

After review, it was determined that the MassDOT property does not discharge to Seapuit River. The closest MassDOT-owned property is Route 28, which is over two miles away. The roadway is located north of Cotuit Bay, North Bay and West Bay which are all located north of Seapuit River. Therefore, stormwater runoff is not considered to discharge Seapuit River.

As defined in MassDOT's assessment methodologies,<sup>7</sup> since this portion of MassDOT's urban area property does not directly contribute stormwater runoff to Seapuit River; further assessment of this water body is not warranted under the Impaired Waters Program. MassDOT will continue to implement the measures outlined in its Stormwater Management Plan (SWMP) statewide to minimize the impacts of stormwater from its property.

---

<sup>5</sup> MassDEP, 2013. Massachusetts Year 2012 Integrated List of Waters – Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at: <http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf>

<sup>6</sup> MassDOT, June 2014. Massachusetts Year 2014 Integrated List of Waters – Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. Massachusetts. Available at <http://www.mass.gov/eea/docs/dep/water/resources/07v5/14iwlstp.pdf>

<sup>7</sup> Massachusetts Department of Transportation (MassDOT), July 22, 2010. BMP 7R: TMDL Watershed Review. Available at: [http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP\\_7R\\_TMDL\\_WatershedReview.pdf](http://www.massdot.state.ma.us/Portals/8/docs/environmental/npdes/BMP_7R_TMDL_WatershedReview.pdf)

