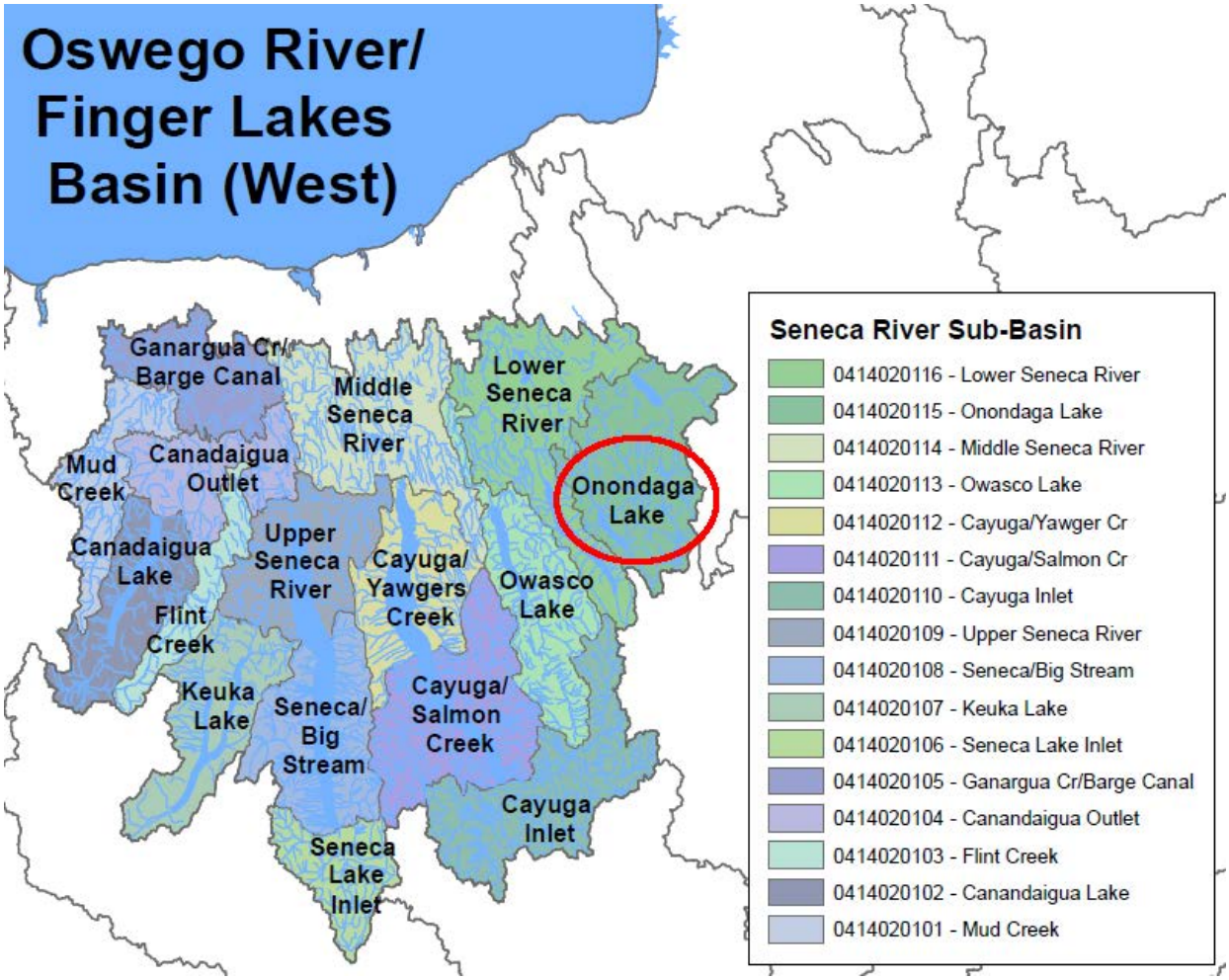

Onondaga Lake-Onondaga Creek
(0414020115)

Water Index Number	Waterbody Segment	Category
Ont 66-12-12	Onondaga Lake Outlet (0702-0020)	Impaired Seg
Ont 66-12-12-P154 (portion 1)	Onondaga Lake, northern end (0702-0003)	Impaired Seg
Ont 66-12-12-P154 (portion 2)	Onondaga Lake, southern end (0702-0021)	Impaired Seg
Ont 66-12-12-P154-	Minor Tribs to Onondaga Lake (0702-0022)	Impaired Seg
Ont 66-12-12-P154- 2	Bloody Brook and tribs (0702-0006)	Impaired Seg
Ont 66-12-12-P154- 3	Ley Creek and tribs (0702-0001)	Impaired Seg
Ont 66-12-12-P154- 4	Onondaga Creek, Lower (0702-0023)	Impaired Seg
Ont 66-12-12-P154- 4	Onondaga Creek, Middle, and tribs(0702-0004)	Impaired Seg
Ont 66-12-12-P154- 4	Onondaga Creek, Upper, and minor tribs (0702-0024)	MinorImpacts
Ont 66-12-12-P154- 4-11	West Branch Onondaga Creek and tribs (0702-0025)	Need Verific
Ont 66-12-12-P154- 4-P156,P158	Hiawatha Lake, Woodland Reservoir(0702-0026)	UnAssessed
Ont 66-12-12-P154- 5	Harbor Brook, Lower, and tribs (0702-0002)	Impaired Seg
Ont 66-12-12-P154- 5	Harbor Brook, Upper, and tribs (0702-0012)	UnAssessed
Ont 66-12-12-P154- 5-P158a	Westcott Reservoir (0702-0027)	UnAssessed
Ont 66-12-12-P154- 6	Ninemile Creek, Lower, and tribs (0702-0005)	Impaired Seg
Ont 66-12-12-P154- 6	Ninemile Creek, Upper, and tribs (0702-0028)	UnAssessed
Ont 66-12-12-P154- 6- 2	Geddes Brook and tribs (0702-0007)	Impaired Seg
Ont 66-12-12-P154- 6- 5-P165	Mud Pond (0702-0029)	UnAssessed
Ont 66-12-12-P154- 6-P175	Otisco Lake (0702-0011)	MinorImpacts
Ont 66-12-12-P154- 6-P175	Minor Tribs to Otisco Lake (0702-0030)	UnAssessed
Ont 66-12-12-P154- 6-P175- 3-P176	Smith Hollow Pond (0702-0031)	UnAssessed
Ont 66-12-12-P154- 6-P175-16	Spafford Creek and tribs (0702-0032)	UnAssessed

Onondaga Lake Outlet (0702-0020) Impaired Seg

Waterbody Location Information

Revised: 08/13/2007

Water Index No: Ont 66-12-12
Hydro Unit Code: 04140201/380 **Str Class:** B
Waterbody Type: River
Waterbody Size: 0.7 Miles
Seg Description: entire stream from mouth to Onondaga Lake

Drain Basin: Oswego-Seneca-Oneida
Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: BALDWINSVILLE (I-15-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Suspected
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Suspected
RECREATION	Impaired	Suspected

Type of Pollutant(s)

Known: Metals (mercury), Priority Organics (PCBs, dioxin)
Suspected: D.O./OXYGEN DEMAND, AMMONIA, NUTRIENTS (phosphorus), Unknown Toxicity
Possible: - - -

Source(s) of Pollutant(s)

Known: LANDFILL/LAND DISP., OTHER SOURCE (Onondaga Lake outflow), Industrial, Municipal
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: ext/OLP
TMDL/303d Status: 3c*

Resolution Potential: Medium

Further Details

Public bathing, recreational uses, aquatic life support and fish consumption in Onondaga Lake Outlet are thought to be impaired by impacts from Onondaga Lake. These impacts include a variety of pollutants from municipal wastewater discharges, CSOs, urban runoff, and past industrial operations and uses. Though water quality in the lake is improving, considerable additional actions - many of which are underway - are necessary to restore these uses of the lake. This range of efforts are being addressed through the activities of the Onondaga Lake Partnership.

NYSDEC Rotating Intensive Basin Studies (RIBS) Intensive Network monitoring of Onondaga Lake Outlet in Lakeland, Onondaga County, (at Long Branch Road) was last conducted in 1989-90. During this sampling the biological (macroinvertebrate) sampling results indicated moderately to severely impacted water quality conditions. Although these results are heavily influenced by lake habitat conditions. Water column sampling revealed ammonia,

dissolved solids, and organics (methylene chloride) to be parameters of concern. Elevated levels of various other organics and metals were also noted. Toxicity testing of the water column showed significant reproductive impacts in one sample. (DEC/DOW, BWAM/RIBS, January 2001)
Fish consumption advisories for Onondaga Lake also applies to this connected water. The NYSDOH health advisory for the lake recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Onondaga Lake Outlet not is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. However this updated assessment suggests it is appropriate to include this waterbody on the 2008 List. Due to the multiple and ongoing CSO remediation efforts, it is recommended that the waterbody be added to Part 3c of the List as a waterbody for which TDML development is deferred pending the implementation and evaluation of other restoration measures.

This segment includes the entire stream. The waters of the stream are Class B. Onondaga Lake is listed separately.

Onondaga Lake, Northern End (0702-0003) Impaired

Waterbody Location Information

Revised: 10/20/2014

Water Index No: Ont 66-12-12-P15
Hydro Unit Code: 0414020115 **Class:** B
Waterbody Type: Lake 1710.7 Acres
Seg Description: northwestern portion

Drain Basin: Oswego River (Finger Lakes) Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co (34)

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Problem Documentation
Water Supply	N/A	-
Public Bathing	Fully Supported	Known
Recreation	Fully Supported	Known
Aquatic Life	Fully Supported	Suspected
Fish Consumption	Impaired	Known
Conditions Evaluated		
Habitat/Hydrology	Fair	
Aesthetics	Fair	

Type of Pollutant(s) (CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Known: METALS (Mercury), PRIORITY ORGANICS (PCBs), PRIORITY ORGANICS (Dioxin)
Suspected: Low D.O./Oxygen Demand
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: TOXIC/CONTAMINATED SEDIMENT Combined Sewer Overflow (CSOs), Urban/Storm Runoff
Suspected: - - -
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: DEC/DER
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview
This portion of Onondaga Lake is assessed as an impaired waterbody due to fish consumption that is known to be impaired by mercury and PCBs from contaminated sediments, the result of past industrial activities. Long considered one of the most polluted lakes in nation, Onondaga Lake water quality has greatly improved over the past 10 years and now supports most uses.

Use Assessment
Northern Onondaga Lake is a Class B waterbody, suitable for use as a public bathing beach, general recreation and support of aquatic life, but not as a water supply.

Public bathing and other recreation use are fully supported although currently there are no designated public beaches on the lake. Previous assessments had indicated these uses to be impaired; however data for the period from 2002-2012 show pathogen (coliform) standards for protection of contact recreation to be consistently met. (DEC/DOW, BWAM and Region 7, October 2014)

Aquatic life is also considered to be fully supported in the lake, based on the number and variety of fish species. Since 2000 over 50 species have been documented in the lake. These include both warm and cool water species, though it should also be noted that several of the species, including alewife and round goby, are invasive. Some cold water species have also been found in the lake although these species are not supported year-round due to higher temperatures and lower levels of dissolved oxygen in the summer. Because the lake is designated a warmwater rather than cold water fishery, the lack of cold water fish year-round does not influence the evaluation of fully supported aquatic life. There remains some concern regarding reduced summer dissolved oxygen levels at lower depths of the lake; this results in the designation of full support as being suspected. (DEC/DOW and DFWMR, BWAM and Region 7, October 2014)

Fish consumption in Onondaga Lake is restricted and considered to be impaired due to contamination resulting in a NYS DOH health advisory that recommends eating no walleye, carp, channel catfish, white perch, or larger (greater than 15 inches) largemouth or smallmouth bass due to elevated mercury, PCB and dioxin levels. Consumption of smaller bass and most other species is limited to no more than one meal per month. The source of this contamination is c contaminated sediment, the result of past industrial activity and discharges. The advisory for this lake was first issued prior to 1998-99. (2013-14 NYS DOH Health Advisories and DEC/FWMR, Habitat, January 2014).

Lake habitat has greatly improved in conjunction with the water quality improvements. Overall habitat is considered to be fair due to the presence of invasive fish species that could impact the lake ecosystem. Aesthetics in the lake have also improved, but are still considered to be fair due to the ongoing remedial activity on the lake and tribs, and urban runoff and wet-weather impacts. (DEC/DOW, BWAM and Region 7, October 2014)

Water Quality Information

Routine monitoring of Onondaga Lake is conducted by the Onondaga County Department of Water Environment Protection (WEP) through its Ambient Monitoring Program (AMP). The AMP was implemented in 1998 in accordance with the ACJ to measure the progress and effectiveness of the County's fifteen-year plan for wastewater collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The County issues annual water quality reports that are available on their website (http://www.ongov.net/wep/we1503.html). The AMP sampling confirms significant water quality improvement in the lake over the past decade. Specific findings include: ammonia concentrations in the lake have declined and since 2007 have met standards for protection of aquatic life; total phosphorus levels have declined from over 100 ug/l in the 1990s to an average of just above 20 ug/l – the NYS guidance value for recreational use – for the period 2007-12; bacteria levels that meet standards in most of the lake 100% of the time, with a single location along the southwestern shoreline where standards are met 80% of the time; dissolved oxygen levels have remained above 4 mg/l in the upper lake waters since 1999; increases in fishery habitat and the number of fish species; the disappearance of algal blooms in the lake since 2007. (Onondaga County WEP/AMP, July 2013)

Source Assessment

Historically, pollutants of concern in Onondaga Lake have been generally the result of two broad categories of sources: those related to wastewater collection, treatment and discharge; and those related to past industrial operations and uses. Impacts related to wastewater include high levels of phosphorus, ammonia and nitrite and bacterial contamination. However these impacts have been substantially reduced due to improved treatment at the Metropolitan Syracuse Wastewater Treatment Plant (Metro) and ongoing progress to abate combined sewer

overflows (CSOs), and nonpoint source pollution from the watershed's urban and agricultural areas.

Past industrial activity and discharges have also resulted in a number of impairments to the lake. The most significant of these is mercury contamination. Approximately 7 million cubic yards of Onondaga Lake sediments were contaminated with mercury, resulting in mercury levels in the flesh of lake fish that exceed federal food standards. Other toxic substances such as PCBs and chlorinated benzenes have also been detected in the lake ecosystem. Mercury, however, remains the contaminant of most concern because of its persistence in the fish found in the lake. Between 1946 and 1970, about 165,000 pounds of mercury were discharged to the lake from the Allied-Signal facility. The Onondaga Lake federal Superfund National Priorities List (NPL) includes a number of hazardous waste sites owned by Allied-Signal (now Honeywell International) and other potentially responsible parties (PRP).

Management Action

Agreement to address wastewater issues in the Lake was reached in 1998 with the signing of the Onondaga Lake Amended Consent Judgment which specifies projects to be undertaken to improve the water quality of Onondaga Lake and achieve full compliance with state and federal water quality regulations. The ACJ outlined a list of more than thirty specific projects to be undertaken over a 15-year timeframe. The ACJ projects include improvements and upgrades to the Onondaga County Metro sewage treatment plant, the elimination and/or reduction of the impacts of the CSOs on the lake and its tributaries, and a lake and tributary monitoring program (the AMP) designed to evaluate the impacts of the improvement projects on the water quality of the lake and tributary streams. At this point, most of these projects have been completed and water quality has been significantly improved. Additional information regarding the implementation and results of these efforts can be found at the Onondaga Lake Watershed Partnership website (http://www.olwp.org). (Onondaga Lake Watershed Partnership and DEC/DOW, Region 7, October 2014)

In 2007 the Federal Court approved an agreement requiring Honeywell International Inc. (the successor to Allied-Signal Inc.) to remediate the contaminated sediments in the bottom of the lake. The $451 million remediation plan involves dredging contaminated sediments, capping approximately 580 acres of lake bottom sediments, and restoring habitat. Under the direction of NYSDEC, Honeywell is currently working with a team of scientists, engineers and federal, state and municipal leaders on implementation of a restoration strategy for the Lake that includes dredging, sediment containment and capping, and wastewater treatment. The dredging effort is expected to be completed in 2014. (DEC/DER and Region 7, October 2014)

In addition to Onondaga Lake being designated a Superfund site, other associated subsites around the lake and along the tributaries that are sources of contamination have also been determined to be part of the Superfund site. They are: Geddes Brook/Ninemile Creek, Willis Avenue, LCP Bridge Street, Wastebed B/Harbor Brook, Semet Tar Beds, Town of Salina Landfill, Lower Ley Creek, Ley Creek PCB Dredging, General Motors/Inland Fisher Guide, National Grid/Hiawatha Boulevard, and Wastebeds 1-8. The cleanup of each of these sites is being addressed through separate remediation plans. Investigations and long-term remedial actions at the various subsites are being performed by potentially responsible parties pursuant to enforcement agreements between these parties and the State. In addition, EPA has contributed over $16.5 million to the state for various activities at the site including investigations, coordination and management at subsites, implementation of a citizen involvement plan, creation of a site-wide database, and establishment of a comprehensive enforcement program. (DEC/DER and Region 7, October 2014)

Section 303(d) Listing

Onondaga Lake, Northern End, is included on the current (2014) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 2b of the List as an impaired waterbody due to fish consumption for mercury, PCBs and dioxin. The waterbody is also included on Appendix B of the List as a waterbody not meeting dissolved oxygen standards, which may largely be the result of natural morphology of the lake. This waterbody was first listed on the 1998 List. (DEC/DOW, BWAM, October 2014)

Segment Description
This segment includes the area of the lake northwest of a line from a point on the west shore 0.25 mile northwest of unnamed trib (5a) to a point on the east shore 0.6 miles southeast of Bloody Brook (-2).

Onondaga Lake, Southern End (0702-0021) Impaired

Waterbody Location Information

Revised: 10/20/2014

Water Index No: Ont 66-12-12-P15
Hydro Unit Code: 0414020115 **Class:** C
Waterbody Type: Lake 1277.4 Acres
Seg Description: southeastern portion

Drain Basin: Oswego River (Finger Lakes) Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co (34)

Water Quality Problem/Issue Information

Uses Evaluated	Severity	Problem Documentation
Water Supply	N/A	-
Public Bathing	N/A	-
Recreation	Stressed	Known
Aquatic Life	Fully Supported	Suspected
Fish Consumption	Impaired	Known
Conditions Evaluated		
Habitat/Hydrology	Fair	
Aesthetics	Fair	

Type of Pollutant(s) (CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Known: METALS (Mercury), PRIORITY ORGANICS (PCBs), PRIORITY ORGANICS (Dioxin)
Suspected: Pathogens, Low D.O./Oxygen Demand
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: TOXIC/CONTAMINATED SEDIMENT, Combined Sewer Overflow (CSOs), Urban/Storm Runoff
Suspected: - - -
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: DEC/DER
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview
This portion of Onondaga Lake is assessed as an impaired waterbody due to fish consumption that is known to be impaired by mercury and PCBs from contaminated sediments, the result of past industrial activities. Recreational uses are considered to be stressed due to periodic pathogens from combined sewer overflows and urban/storm/rural runoff. Long considered one of the most polluted lakes in nation, Onondaga Lake water quality has greatly improved over the past 10 years and now supports most uses.

Use Assessment
Southern Onondaga Lake is a Class C waterbody, suitable for general recreation use and support of aquatic life,

but not as a water supply, or public bathing beach.

Recreation use is considered to be stressed due to occasionally high pathogen levels and other pollutants from combined sewer overflows and urban runoff during wet-weather events. Previous assessments had indicated recreational use to be impaired, but conditions have generally improved to the point that uses are frequently supported. There is so concerns regarding new point and nonpoint sources in lake tribs that impact the Lake primarily during wet-weather. (DEC/DOW, BWAM and Region 7, October 2014)

Aquatic life is also considered to be fully supported in the lake, based on the number and variety of fish species. Since 2000 over 50 species have been documented in the lake. These include both warm and cool water species, though it should also be noted that several of the species, including alewife and round goby, are invasive. Some cold water species have also been found in the lake although these species are not supported year-round due to higher temperatures and lower levels of dissolved oxygen in the summer. Because the lake is designated a warmwater rather than cold water fishery, the lack of cold water fish year-round does not influence the evaluation of fully supported aquatic life. There remains some concern regarding reduced summer dissolved oxygen levels at lower depths of the lake; this results in the designation of full support as being suspected. (DEC/DOW and DFWMR, BWAM and Region 7, October 2014)

Fish consumption in Onondaga Lake is restricted and considered to be impaired due to contamination resulting in a NYS DOH health advisory that recommends eating no walleye, carp, channel catfish, white perch, or larger (greater than 15 inches) largemouth or smallmouth bass due to elevated mercury, PCB and dioxin levels. Consumption of smaller bass and most other species is limited to no more than one meal per month. The source of this contamination is contaminated sediment, the result of past industrial activity and discharges. The advisory for this lake was first issued prior to 1998-99. (2013-14 NYS DOH Health Advisories and DEC/FWMR, Habitat, January 2014).

Lake habitat has greatly improved in conjunction with the water quality improvements. Overall habitat is considered to be fair due to the presence of invasive fish species that could impact the lake ecosystem. Aesthetics in the lake have also improved, but are still considered to be fair due to the ongoing remedial activity on the lake and tribs, and urban runoff and wet-weather impacts. (DEC/DOW, BWAM and Region 7, October 2014)

Water Quality Information

Routine monitoring of Onondaga Lake is conducted by the Onondaga County Department of Water Environment Protection (WEP) through its Ambient Monitoring Program (AMP). The AMP was implemented in 1998 in accordance with the ACJ to measure the progress and effectiveness of the County's fifteen-year plan for wastewater collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The County issues annual water quality reports that are available on their website (http://www.ongov.net/wep/we1503.html). AMP sampling confirms significant water quality improvement in the lake over the past decade. Specific findings include: ammonia concentrations in the lake have declined and since 2007 have met standards for protection of aquatic life; total phosphorus levels have declined from over 100 ug/l in the 1990s to an average of just over 20 ug/l – the NYS guidance value for recreational use – for the period 2007-12; bacteria levels that meet standards in most of the lake most of the time, with only occasional exceedances of the standard along the southern shoreline; dissolved oxygen levels have remained above 4 mg/l in the upper lake waters since 1999; increases in fishery habitat and the number of fish species; the disappearance of algal blooms during the summer recreation period in the lake since 2007. (Onondaga County WEP/AMP, July 2013)

Source Assessment

Historically, pollutants of concern in Onondaga Lake have been generally the result of two broad categories of sources: those related to wastewater collection, treatment and discharge; and those related to past industrial operations and uses. Impacts related to wastewater include high levels of phosphorus, ammonia, nitrite and bacterial contamination. However these impacts have been substantially reduced due to improved treatment at the Metropolitan Syracuse Wastewater Treatment Plant (Metro) and ongoing progress to abate combined sewer overflows (CSOs), and nonpoint source pollution from the watershed's urban and agricultural areas.

Past industrial activity and discharges have also resulted in a number of impairments to the lake. The most significant of these is mercury contamination. Approximately 7 million cubic yards of Onondaga Lake sediments were contaminated with mercury, resulting in mercury levels in the flesh of lake fish that exceed federal food standards. Other toxic substances such as PCBs and chlorinated benzenes have also been detected in the lake ecosystem. Mercury, however, remains the contaminant of most concern because of its persistence in the fish found in the lake. Between 1946 and 1970, about 165,000 pounds of mercury were discharged to the lake from the Allied-Signal facility. The Onondaga Lake federal Superfund National Priorities List (NPL) includes a number of hazardous waste sites owned by Allied-Signal (now Honeywell International) and other potentially responsible parties (PRP).

Management Action

Agreement to address wastewater issues in the Lake was reached in 1998 with the signing of the Onondaga Lake Amended Consent Judgment which specifies projects to be undertaken to improve the water quality of Onondaga Lake and achieve full compliance with state and federal water quality regulations. The ACJ outlined a list of more than thirty specific projects to be undertaken over a 15-year timeframe. The ACJ projects include improvements and upgrades to the Onondaga County Metro sewage treatment plant, the elimination and/or reduction of the impacts of the CSOs on the lake and its tributaries, and a lake and tributary monitoring program (the AMP), designed to evaluate the impacts of the improvement projects on the water quality of the lake and tributary streams. At this point, most of these projects have been completed and water quality has been significantly improved. Additional information regarding the implementation and results of these efforts can be found at the Onondaga Lake Watershed Partnership website (http://www.olwp.org). (Onondaga Lake Watershed Partnership and DEC/DOW, Region 7, October 2014)

In 2007 the Federal Court approved an agreement requiring Honeywell International Inc. (the successor to Allied-Signal Inc.) to remediate the contaminated sediments in the bottom of the lake. The $451 million remediation plan involves dredging contaminated sediments, capping approximately 580 acres of lake bottom sediments, and restoring habitat. Under the direction of NYSDEC, Honeywell is currently working with a team of scientists, engineers and federal, state and municipal leaders on implementation of a restoration strategy for the Lake that includes dredging, sediment containment and capping, and wastewater treatment. The dredging effort is expected to be completed in 2014. (DEC/DER and Region 7, October 2014)

In addition to Onondaga Lake being designated a Superfund site, other associated subsites around the lake and along the tributaries that are sources of contamination have also been determined to be part of the Superfund site. They are: Geddes Brook/Ninemile Creek, Willis Avenue, LCP Bridge Street, Wastebed B/Harbor Brook, Semet Tar Beds, Town of Salina Landfill, Lower Ley Creek, Ley Creek PCB Dredging, General Motors/Inland Fisher Guide, National Grid/Hiawatha Boulevard, and Wastebeds 1-8. The cleanup of each of these sites is being addressed through separate remediation plans. Investigations and long-term remedial actions at the various subsites are being performed by potentially responsible parties pursuant to enforcement agreements between these parties and the State. In addition, EPA has contributed over $16.5 million to the state for various activities at the site including investigations, coordination and management at subsites, implementation of a citizen involvement plan, creation of a site-wide database, and establishment of a comprehensive enforcement program. (DEC/DER and Region 7, October 2014)

Section 303(d) Listing

Onondaga Lake, Southern End, is included on the current (2014) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 2b of the List as an impaired waterbody due to fish consumption for mercury, PCBs and dioxin, and is included on Part 3b as an impaired water for which TMDL development is deferred pending evaluation of other restoration measures. However this updated assessment, based on the most recent monitoring data, suggests that the suspected impacts to water quality and uses are not sufficient to warrant continued listing. This water should be considered for delisting for pathogens during the next update of the List. The waterbody is also included on Appendix B of the List as a waterbody not meeting dissolved oxygen standards, which may largely be the result of natural morphology of the lake. This waterbody was first listed on the 1998 List. (DEC/DOW, BWAM, October 2014)

Segment Description

This segment includes the area of the lake southeast of a line from a point on the west shore 0.25 mile northwest of unnamed trib (5a) to a point on the east shore 0.6 miles southeast of Bloody Brook (-2).

Minor Tribs to Onondaga Lake (0702-0022) Impaired Seg

Waterbody Location Information

Revised: 07/13/2007

Water Index No: Ont 66-12-12-P154-
Hydro Unit Code: 04140201/380 **Str Class:** C
Waterbody Type: River
Waterbody Size: 8.9 Miles
Seg Description: total length of selected tribs to Onondaga Lake

Drain Basin: Oswego-Seneca-Oneida Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: SYRACUSE WEST (I-16-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND, OTHER INORGANICS (cyanide), AMMONIA, NUTRIENTS (nitrite), PATHOGENS, Aesthetics (floatables), Metals, Priority Organics (PCBs, other)
Suspected: - - -
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, LANDFILL/LAND DISP. (multiple), OTHER SANITARY DISCH, URBAN/STORM RUNOFF, Industrial
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7
TMDL/303d Status: 3c*

Resolution Potential: Medium

Further Details

Recreational uses and aquatic life support in these minor tribs to Onondaga Lake are impaired by pathogens, low dissolved oxygen, nutrients (ammonia, nitrite) and a variety of other pollutants from CSOs and other sewer collection system discharge, urban runoff, and past industrial operations and uses. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier.

Sawmill Creek, East Flume and Trib -5a are impacted by a number of pollutant sources including CSO discharges, other sewer system discharges, urban runoff and industrial activities. Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other

consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. (DEC/DOW, Region 7, January 2007)

A biological (macroinvertebrate) assessment of Sawmill Creek in Liverpool (at Route 370) was conducted in 2001. Sampling results indicated moderately impacted water quality conditions. Toxic discharges were indicated as the primary cause of the impacts. These results are consistent with sampling results from 1995 and 1989. (DEC/DOW, BWAM/SBU, June 2005)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to these tributary waters. A NYS DOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYS DOH Health Advisories and DEC/FWMR, Habitat, December 2006).

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

These tribs are not currently included on the NYS 2006 Section 303(d) List of Impaired Waters. However this updated assessment indicates that uses are impaired by pathogens, nutrients (ammonia, nitrite), cyanide and low dissolved oxygen and inclusion of the lake on the 2008 list for these pollutants is recommended. Due to the ongoing sewer system upgrades, site remediation and other efforts, it is recommended that the lake be included of Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. (DEC/DOW, BWAM, July 2007)

Additional information regarding activities to address pollution and restore uses in the waters and tributaries of Onondaga Lake can be found at the Onondaga Lake Partnership website (http://www.onlakepartners.org)

This segment includes the total length of selected/smaller tribs to Otisco Lake. Tribs within this segment, including Sawmill Creek (-1), East Flume, and unnamed trib (-5a), are Class C. Bloody Brook (-2), Ley Creek (-3), Onondaga Creek (-4), Harbor Brook (-5) and Ninemile Creek (-6) are listed separately.

Bloody Brook and tribs (0702-0006) Impaired Seg

Waterbody Location Information

Revised: 07/13/2007

Water Index No: Ont 66-12-12-P154- 2
Hydro Unit Code: 04140201/380 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 1.0 Miles
Seg Description: entire stream and tribs

Drain Basin: Oswego-Seneca-Oneida Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: SYRACUSE WEST (I-16-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: PATHOGENS, Aesthetics (floatables), Metals, Priority Organics
Suspected: D.O./Oxygen Demand
Possible: - - -

Source(s) of Pollutant(s)

Known: LANDFILL/LAND DISP. (Martin Marietta), OTHER SANITARY DISCH, URBAN/STORM RUNOFF, Industrial (Martin Marietta)
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7
Resolution Potential: Medium
TMDL/303d Status: 4a->3c*

Further Details

Public bathing, recreational uses and aquatic life support in Bloody Brook are impaired by pathogens and a variety of other pollutants from municipal collection system bypasses, urban runoff, and past industrial operations and uses. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier.

Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation

activities and projects. Since the most recent sampling raw sewage bypasses at the Liverpool pump station have been minimized and now occur only during the most severe or extensive wet-weather events. (DEC/DOW, Region 7, January 2006)

The Lockheed Martin (formerly, Martin Marietta) facility is a significant source of impacts to the stream. A CERCLA investigation of the Bloody Brook site is being conducted. NYS-DEC is monitoring the project and evaluating the investigative documents. The project is currently in the Remedial Investigation/Feasibility Study (RI/FS) phase. (DEC/DER, January 2007)

A biological (macroinvertebrate) assessment of Bloody Brook in Liverpool (at Route 370) was conducted in 2001. Sampling results indicated moderately impacted water quality conditions. The fauna was dominated by tolerant worms, midges, and scuds, with no EPT species present. A previous biological survey at multiple sites along the stream and its tribs was conducted in 1994. That survey found moderately or severely impacted conditions at all sites. The goal of the survey was to characterize inmpacts from the Martin Marietta facility but because the upstream sites were impacted (by sewage and/or urban runoff) the impacts below the facility could not be attributed to this specific discharge. Poor habitat limited the assessment at most sites. Higher than expected heavy metals and PCB concentrations were found in crayfish tissue at some sites. (DEC/DOW, BWAM/SBU, June 2005)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to this tributary water. A NYS DOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYS DOH Health Advisories and DEC/FWMR, Habitat, December 2006).

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

Bloody Brook is not currently included on the NYS 2006 Section 303(d) List of Impaired Waters. However this updated assessment indicates that uses are impaired by pathogens and inclusion of the lake on the 2008 list for this pollutant is recommended. Due to the ongoing sewer system upgrades, site remediation and other efforts, it is recommended that the lake be included of Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. (DEC/DOW, BWAM, July 2007)

Additional information regarding activities to address pollution and restore uses in the waters and tributaries of Onondaga Lake can be found at the Onondaga Lake Partnership website (http://www.onlakepartners.org).

This segment includes the entire stream and all tribs. The waters of the stream are Class B from the mouth to unnamed trib (-1) and Class C for the remainder of the reach. Tribs to this reach/segment are Class C. Although the lower portion of this stream is designated a Class B water, the present character of the waterway may support of this use unlikely.

Ley Creek and tribs (0702-0001) Impaired Seg

Waterbody Location Information

Revised: 07/13/2007

Water Index No: Ont 66-12-12-P154- 3
Hydro Unit Code: 04140201/380 **Str Class:** C*
Waterbody Type: River
Waterbody Size: 26.1 Miles
Seg Description: entire stream and tribs

Drain Basin: Oswego-Seneca-Oneida Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: SYRACUSE WEST (I-16-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: OTHER INORGANICS (cyanide), AMMONIA, Aesthetics (floatables), Priority Organics
Suspected: D.O./Oxygen Demand, Nutrients (phosphorus), Unknown Toxicity
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, LANDFILL/LAND DISP. (Salina Landfill, other), URBAN/STORM RUNOFF, Industrial
Suspected: - - -
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7 **Resolution Potential:** Medium
TMDL/303d Status: 3c,3c* (Waterbody Being Addressed by Other Means, more)

Further Details

Public bathing, recreational uses and aquatic life support in Ley Creek are impaired by pathogens and a variety of other pollutants from urban runoff, and past industrial operations and uses. Cyanide has been found in samples collected by Onondaga County and is impacting water quality. This and other tribs to Onondaga Lake are also sources of nutrient loading to Onondaga Lake; these loadings are being addressed though implementation of TMDL plans for Onondaga Lake. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier.

Ley Creek is impacted by a number of pollutant sources including CSO discharges urban runoff, industrial activities, airport runoff and a municipal landfill. Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. The completion of the Hiawata Blvd Regional Treatment Facility (RTF) has addressed much of the impact from previously identified raw sewage discharges and has reduced CSOs discharges in the watershed. The (RTF) provides overflow storage, removes solids, and disinfects combined sewer overflow (CSO) discharge for the Syracuse North Side area and serves as a demonstration project for other effort being undertaken by Onondaga County. (DEC/DOW, Region 7, January 2006)

Impacts from the Salina Town Landfill site (7-34-036) have also been documented. The site was a municipally operated landfill which during the time it was in operation received domestic, commercial and industrial wastes, including hazardous waste from the General Motors Fisher Guide Division. A Remedial Investigation/Feasibility Study (RI/FS) identified VOCs and PCBs in the soil at the site which contribute to the known groundwater contamination as well as leachate outbreaks to Ley Creek, documenting that the existing cover was not adequate. A full 6NYCRR Part 360 closure is required. The Department and EPA issued a Proposed Remedial Action Plan calling for on-site treatment of the leachate and a Record of Decision was signed in March 2007. An RI/FS is also underway at the former General Motors Fisher Guide site (7-34-057) located at the upstream portion of the creek. (DEC/DER, Region 7, Jul 2007)

A biological (macroinvertebrate) assessment of Bloody Brook in Mattydale (at LeMoyne Avenue) was conducted in 2001. Sampling results indicated moderately impacted water quality conditions. No mayflies were present in the sample and aquatic toxicity was apparent. The assessment is similar to results from 1995, and represents an improvement from 1989-90 when the site was identified as severely impacted. (DEC/DOW, BWAM/SBU, June 2005)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to this tributary water. A NYS DOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYS DOH Health Advisories and DEC/FWMR, Habitat, December 2006).

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

Ley Creek is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. The creek is listed for the pollutants phosphorus, ammonia and unknown toxicity and is included on Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. This updated assessment indicates that uses are impaired by pathogens and cyanide as well and the inclusion of the lake on the 2008 list for these pollutants is recommended. Due to the multiple and ongoing remediation efforts, it is recommended that the listings for pathogens and cyanide also be added to Part 3c. (DEC/DOW, BWAM, July 2007)

Additional information regarding activities to address pollution and restore uses in the waters and tributaries of Onondaga Lake can be found at the Onondaga Lake Partnership website (http://www.onlakepartners.org)

This segment includes the entire stream and all tribs. The waters of the stream are Class C from the mouth to the sewage treatment plant outfall near Beartrap Creek (-1), Class B from there to the confluence of North and South

Branches, and Class C for the remainder of the reach, which is considered to be North Branch. Tribs to this reach/segment, including Beartrap Creek (-1), South Branch (-2) and Sanders Creek (-3), are primarily Class C,C(T), with a portion designated Class B.

Onondaga Creek, Lower, and tribs (0702-0023) Impaired

Waterbody Location Information

Revised: 4/01/2016

Water Index No:	Ont 66-12-12-P154- 4	**Water Class:**	C
Hydro Unit Code:	Onondaga Lake-Onondaga Creek (0414020115)	**Drainage Basin:**	Oswego-Seneca-Oneida
Water Type/Size:	River/Stream 2.8 Miles	**Reg/County:**	7/Onondaga (34)
Description:	stream and tribs, from mouth to Syracuse		

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	N/A	-
Recreation	Impaired	Known
Aquatic Life	Impaired	Known
Fish Consumption	Stressed	Known
Conditions Evaluated		
Habitat/Hydrology	Poor	
Aesthetics	Fair	

Type of Pollutant(s)

Known:	PATHOGENS, NUTRIENTS (phosphorus), TURBIDITY, Silt/Sediment, Chloride/Salts (TDS), Aesthetics (floatables)
Suspected:	Low D.O./Oxygen Demand, Metals (mercury), Priority Organics
Unconfirmed:	- - -

Source(s) of Pollutant(s)

Known:	COMB. SEWER OVERFLOW, URBAN/STORM RUNOFF, STREAMBANK EROSION (mudboils), Industrial
Suspected:	Other Sanitary Discharge, Landfill/Land Disp.
Unconfirmed:	- - -

Management Information

Management Status:	Strategy Implementation Scheduled or Underway
Lead Agency/Office:	DEC/Reg7
IR/305(b) Code:	Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

This portion of Onondaga Creek is assessed as an impaired waterbody due to recreational uses and aquatic life that are known to be impaired by pathogens and a variety of other pollutants from CSOs, urban runoff, and past industrial operations and uses. This and other tribs to Onondaga Lake are also sources of nutrient loading to Onondaga Lake; these loadings are being addressed though implementation of TMDL plans for Onondaga Lake. Other sewer collection system discharges are also possible sources of impact. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier. Silt and sediment from upstream sources are also a concern. Extensive stream channel modification (straightening, channelization, culverts) also impairs the aquatic habitat of the stream. Impacts /Impairments to the creek are being addressed through enforceable control requirements of Amended Consent Judgement (ACJ) and other consent orders with Onondaga County and other municipalities

Use Assessment
This portion of Onondaga Creek is a Class C waterbody, suitable for general recreation use and support of aquatic life, but not as a water supply or for public bathing.

Aquatic life is evaluated as impaired based on biological sampling that shows significant impacts. This sampling can also be used to infer that there are significant impacts to recreational (fishing) uses. Recreational uses are also evaluated as impaired based on pathogen sampling results. (DEC/DOW, BWAM/SBU and Onondaga County DWEP, AMP, April 2016)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to this tributary water. A NYSDOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997–98. (2006–07 NYSDOH Health Advisories and DEC/DFWMR, Habitat, December 2006).

Water Quality Information
A biological (macroinvertebrate) survey of Onondaga Creek at multiple sites between Syracuse and Tully Farms was conducted in 2008. Sampling results at 6 sites on the stream indicated slightly to moderately impacted water quality conditions. Results at the one site within the Lower Onondaga Creek portion – in Syracuse (at Kirkpatrick Street) – reflect moderately impacted (poor) water quality, with sensitive taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally expected. Complex, municipal/industrial wastes – likely attributed to CSO discharges – were identified as the source of impairment at the site. These results are consistend with previous sampling at the site. Aquatic life is considered to be impaired. (Stream Tributary to Onondaga Lake Biological Assessment Report, Smith etal., DEC/DOW, BWAM/SBU, January 2010)

The Onondaga County Department of Water Environment Protection (OCDWEP) Ambient Monitoring Program (AMP) collects chemical, physical and biological data for Onondaga Lake and lake tributaries. The most recent results for Lower Onondaga Creek (Kirkpatrick Street) show routine contravention of pathogen standards. There are also elevated levels of silt and solids which are considered to be associated with the nature hydrogeology of the watershed. Sampling results show that nitrogen (ammonia and nitrite), and heavy metals (including mercury) meet standards. (OCDWEP, AMP, January 2016)

Source Assessment
Sources of pollutants to the waterbody are CSO discharges, urban and other nonpoint runoff consistent with highly developed urban centers.

Much of the silt/solids and turbidity load is attributed to the natural hydrogeology of the area. Natural brine springs also affect water quality and macroinvertebrate populations in this reach of the creek. The discharge of salty water begins upstream of Spencer Street, but the largest source (approximately 1 cfs of 40% saturated brine) occurs between Spencer and the Kirkpatrick Streets This spring may actually be an old brine well that was never sealed. In the late 1800s and early 1990s there were many old wells in this section of the city that tapped this salty source for cooling purposes and then discharged the water to Onondaga Creek. For example, the Niagara Mohawk cooling wells which were shut–down in the early 1990s were discharging about 25% of the salt load to the lake at that time. (USGS, Ithaca, August 2007)

There are various other present and former industrial sources that impact the creek in Syracuse. Former Niagara Mohawk manufactured gas plants (7–34–059, 7–34–060) have been identified as possible contributors of pollutants to the creek. The contaminants of concern include volatile organic compounds, PAHs, heavy metals.

Management Actions
Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements

of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. There are currently 13 combined sewer basins along Onondaga Creek that have been or are scheduled to be separated into independent stormwater and sanitary conveyance systems as part of the CSO Abatement Program. In addition, Regional Treatment Facilities at Midland Avenue and Clinton Street to treat CSO discharges have been proposed. Progress on these efforts will proceed over the period of the Court Order based on coordination with the County and the City of Syracuse. (DEC/DOW, Region 7, January 2007)

Section 303(d) Listing

Lower Onondaga Creek is included on the current (2016) NYS 2006 Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 3c of the List as an impaired waterbody for which TMDL development is deferred pending the evaluation of other restoration efforts for nutrients (phosphorus), ammonia and pathogens. However this updated assessment suggests that waterbody should be considered for delisting for ammonia during the next update of the List. The waterbody is also included on Part 3a of the List as an impaired waterbody for which TMDL development is deferred pending verification of the impairment for turbidity. This listing reflects the elevated levels of silt, solids and turbidity that are are thought to be ther result of natural hydrogeology (brine springs, mudboils). This waterbody was first listed on the 1998 List for nutrients and ammonia; pathogens was added in 2008 and turbidity in 2010. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and all tribs from the mouth to Temple Street in Syracuse. The waters of this portion of the stream are Class C. Middle/Upper Onondaga Creek is listed separately.

Onondaga Creek, Middle, and tribs (0702-0004) Impaired

Waterbody Location Information

Revised: 4/01/2016

Water Index No: Ont 66-12-12-P154- 4
Hydro Unit Code: Onondaga Lake-Onondaga Creek (0414020115)
Water Type/Size: River/Stream 17.5 Miles
Description: stream and tribs, from Syracuse to Nedrow

Water Class: B
Drainage Basin: Oswego-Seneca-Oneida
Reg/County: 7/Onondaga (34)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	Impaired	-
Recreation	Impaired	Known
Aquatic Life	Impaired	Known
Fish Consumption	Fully Supported	Unconfirmed
Conditions Evaluated		
Habitat/Hydrology	Poor	
Aesthetics	Fair	

Type of Pollutant(s)

Known: PATHOGENS, NUTRIENTS (phosphorus), TURBIDITY, silt/Sediment, Aesthetics (floatables)
Suspected: Chloride/Salts (TDS)
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, URBAN/STORM RUNOFF, STREAMBANK EROSION (mudboils), Industrial
Suspected: Other Sanitary Discharge, Landfill/Land Disp.
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: DEC/Reg7
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

This portion of Onondaga Creek is assessed as an impaired waterbody due to recreational uses and aquatic life that are known to be impaired by pathogens and a variety of other pollutants from CSOs, urban runoff, and past industrial operations and uses. This and other tribs to Onondaga Lake are also sources of nutrient loading to Onondaga Lake; these loadings are being addressed though implementation of TMDL plans for Onondaga Lake. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier. Silt and sediment from upstream sources are also a concern. Extensive stream channel modification (straightening, channelization, culverts) also impairs the aquatic habitat of the stream. Impacts /Impairments to the creek are being addressed through enforceable control requirements of Amended Consent Judgement (ACJ) and other consent orders

with Onondaga County and other municipalities

Use Assessment
This portion of Onondaga Creek is a Class B waterbody, suitable for public bathing, general recreation use and support of aquatic life, but not as a water supply.

Aquatic life is evaluated as impaired based on biological sampling that shows significant impacts. This sampling can also be used to infer that there are significant impacts to recreational (fishing) uses. Public bathing use and other recreational uses are also evaluated as impaired based on pathogen sampling results and turbidity. (DEC/DOW, BWAM/SBU and Onondaga County DWEP, AMP, April 2016)

There are no health advisories in place limiting the consumption of fish from this waterbody (beyond the general advice for all waters). Fish consumption is considered to be fully supported based on the absence of any waterbody-specific advisory, but is noted as unconfirmed since routine monitoring of contaminants in fish is limited. (NYS DOH Health Advisories and DEC/DOW, BWAM, January 2014)

Water Quality Information
A biological (macroinvertebrate) survey of Onondaga Creek at multiple sites between sSracuse and Tully Farms was conducted in 2008. Sampling results at 6 sites on the stream indicated slightly to moderately impacted water quality conditions. Results at the one site within the Middle Onondaga Creek portion – in Syracuse (at Route 173) – reflect moderately impacted (poor) water quality, with sensitive taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally expected. Complex, municipal/industrial wastes – likely attributed to CSO discharges – were identified as the source of impairment at the site. These results are consistend with previous sampling at the site. Aquatic life is considered to be impaired. (Stream Tributary to Onondaga Lake Biological Assessment Report, Smith etal., DEC/DOW, BWAM/SBU, January 2010)

The Onondaga County Department of Water Environment Protection (OCDWEP) Ambient Monitoring Program (AMP) collects chemical, physical and biological data for Onondaga Lake and lake tributaries. The most recent results for Middle Onondaga Creek (Dorwin Ave) show routine contravention of pathogen standards. There are also elevated levels of silt and solids which are considered to be associated with the nature hydrogeology of the watershed. Sampling results show that nitrogen (ammonia and nitrite), and heavy metals (including mercury) meet standards. (OCDWEP, AMP, January 2016)

Source Assessment
Sources of pollutants to the waterbody are CSO discharges, urban and other nonpoint runoff consistent with highly developed urban centers. This portion of the stream also experiences significant sediment load and turbidity from in-stream bed load/erosion of clay and silt, exacerbated by the Tully Valley mudboils. Much of the Onondaga Creek stream bed downstream from the mudboil area is covered with sediments discharged from the mudboils. The muddy sediments reduce habitat suitable for aquatic insects and other life, reduce fish spawning and plant growth and significantly contribute to the sediment loading to Onondaga Lake. Onondaga Creek contributes more than 50% of the annual tributary sediment load to the lake due in large part to the mudboils. (Onondaga Lake Partnership, 2006)

Management Actions
Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. There are currently 13 combined sewer basins along Onondaga Creek that have been or are scheduled to be separated into independent stormwater and sanitary conveyance systems as part of the CSO Abatement Program. In addition, Regional Treatment Facilities at Midland Avenue and Clinton Street to treat CSO discharges have been proposed. Progress on these efforts will proceed over the period of the Court Order based on coordination with the County and the City of Syracuse. (DEC/DOW, Region 7, January 2007)

Since 1992, the Onondaga Lake Partnership has supported, through the efforts of the United States Geologic Survey

with Onondaga County and other municipalities

Use Assessment
This portion of Onondaga Creek is a Class B waterbody, suitable for public bathing, general recreation use and support of aquatic life, but not as a water supply.

Aquatic life is evaluated as impaired based on biological sampling that shows significant impacts. This sampling can also be used to infer that there are significant impacts to recreational (fishing) uses. Public bathing use and other recreational uses are also evaluated as impaired based on pathogen sampling results and turbidity. (DEC/DOW, BWAM/SBU and Onondaga County DWEP, AMP, April 2016)

There are no health advisories in place limiting the consumption of fish from this waterbody (beyond the general advice for all waters). Fish consumption is considered to be fully supported based on the absence of any waterbody-specific advisory, but is noted as unconfirmed since routine monitoring of contaminants in fish is limited. (NYS DOH Health Advisories and DEC/DOW, BWAM, January 2014)

Water Quality Information
A biological (macroinvertebrate) survey of Onondaga Creek at multiple sites between sSracuse and Tully Farms was conducted in 2008. Sampling results at 6 sites on the stream indicated slightly to moderately impacted water quality conditions. Results at the one site within the Middle Onondaga Creek portion – in Syracuse (at Route 173) – reflect moderately impacted (poor) water quality, with sensitive taxa reduced, and the distribution of major taxonomic groups significantly different from what is naturally expected. Complex, municipal/industrial wastes – likely attributed to CSO discharges – were identified as the source of impairment at the site. These results are consistend with previous sampling at the site. Aquatic life is considered to be impaired. (Stream Tributary to Onondaga Lake Biological Assessment Report, Smith etal., DEC/DOW, BWAM/SBU, January 2010)

The Onondaga County Department of Water Environment Protection (OCDWEP) Ambient Monitoring Program (AMP) collects chemical, physical and biological data for Onondaga Lake and lake tributaries. The most recent results for Middle Onondaga Creek (Dorwin Ave) show routine contravention of pathogen standards. There are also elevated levels of silt and solids which are considered to be associated with the nature hydrogeology of the watershed. Sampling results show that nitrogen (ammonia and nitrite), and heavy metals (including mercury) meet standards. (OCDWEP, AMP, January 2016)

Source Assessment
Sources of pollutants to the waterbody are CSO discharges, urban and other nonpoint runoff consistent with highly developed urban centers. This portion of the stream also experiences significant sediment load and turbidity from in-stream bed load/erosion of clay and silt, exacerbated by the Tully Valley mudboils. Much of the Onondaga Creek stream bed downstream from the mudboil area is covered with sediments discharged from the mudboils. The muddy sediments reduce habitat suitable for aquatic insects and other life, reduce fish spawning and plant growth and significantly contribute to the sediment loading to Onondaga Lake. Onondaga Creek contributes more than 50% of the annual tributary sediment load to the lake due in large part to the mudboils. (Onondaga Lake Partnership, 2006)

Management Actions
Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. There are currently 13 combined sewer basins along Onondaga Creek that have been or are scheduled to be separated into independent stormwater and sanitary conveyance systems as part of the CSO Abatement Program. In addition, Regional Treatment Facilities at Midland Avenue and Clinton Street to treat CSO discharges have been proposed. Progress on these efforts will proceed over the period of the Court Order based on coordination with the County and the City of Syracuse. (DEC/DOW, Region 7, January 2007)

Since 1992, the Onondaga Lake Partnership has supported, through the efforts of the United States Geologic Survey

(USGS), a number of remedial activities to address impacts from the mudboils, including the diversion of surface water away from the mud boils, installation of a dam on the stream that flows from the mud boil area and drilling of wells to reduce pressure around the mud-boils. These efforts have been successful in reducing the amount of sediment flowing into the Onondaga Creek from 30 tons per day to less than 1 ton per day. See also Onondaga Creek, Upper, and tribs (segment 0702-0024). (Onondaga Lake Partnership, 2006)

Section 303(d) Listing

Middle Onondaga Creek is included on the current (2016) NYS 2006 Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 3c of the List as an impaired waterbody for which TMDL development is deferred pending the evaluation of other restoration efforts for nutrients (phosphorus), ammonia and pathogens. However this updated assessment suggests that waterbody should be considered for delisting for ammonia during the next update of the List. The waterbody is also included on Part 3a of the List as an impaired waterbody for which TMDL development is deferred pending verification of the impairment for turbidity. This listing reflects the elevated levels of silt, solids and turbidity that are are thought to be ther result of natural hydrogeology (brine springs, mudboils). This waterbody was first listed on the 1998 List for nutrients and ammonia; pathogens and turbidity were added in 2008. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and all tribs from Temple Street in Syracuse to unnamed trib (-5b) in Nedrow. The waters of this portion of the stream are Class B. Tribs to this reach/segment, including Furnace Brook (-1), Kimber Brook (-5) and Cold Brook (-5a), are Class B and C,C(T),C(TS). Lower/Upper Onondaga Creek is listed separately.

Onondaga Creek, Upper, and minor tribs (0702-0024) Impaired

Waterbody Location Information

Revised: 4/01/2016

Water Index No: Ont 66-12-12-P154- 4
Hydro Unit Code: Onondaga Lake-Onodaga Creek (0414020115)
Water Type/Size: River/Stream 106.5 Miles
Description: stream and selected tribs, above Nedrow

Water Class: C
Drainage Basin: Oswego-Seneca-Oneida
Reg/County: 7/Onondaga (34)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Pollutants/Sources)

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	N/A	-
Recreation	Stressed	Known
Aquatic Life	Impaired	Known
Fish Consumption	Fully Supported	Unconfirmed
Conditions Evaluated		
Habitat/Hydrology	Fair	
Aesthetics	Fair	

Type of Pollutant(s)

Known: TURBIDITY, SILT/SEDIMENT, Chloride/Salts (TDS), Nutrients (phosphorus)
Suspected: - - -
Unconfirmed: - - -

Source(s) of Pollutant(s)

Known: STREAMBANK EROSION (mudboils), Agriculture
Suspected: - - -
Unconfirmed: - - -

Management Information

Management Status: Strategy Implementation Scheduled or Underway
Lead Agency/Office: DEC/Reg7
IR/305(b) Code: Impaired Water Requiring a TMDL (IR Category 5)

Further Details

Overview

This portion of Onondaga Creek is assessed as an impaired waterbody due to aquatic life that is known to be impaired by silt/sedimentation and other impacts of Tully Valley mudboils and salt mining in the valley. Nutrient enrichment has also been noted throughout the stream. Recreation is also considered to be stressed by high turbidity caused by these same sources.

Use Assessment

This portion of Onondaga Creek is a Class C waterbody, suitable for general recreation use and support of aquatic life, but not as a water supply or for public bathing.

Aquatic life is evaluated as impaired based on biological sampling that shows significant impacts. This sampling can also be used to infer that there are impacts to recreational (fishing) uses. Recreational uses are also stressed by silt/sediment and turbidity in the stream. (DEC/DOW, BWAM/SBU, April 2016)

There are no health advisories in place limiting the consumption of fish from this waterbody (beyond the general advice for all waters). Fish consumption is considered to be fully supported based on the absence of any waterbody-specific advisory, but is noted as unconfirmed since routine monitoring of contaminants in fish is limited. (NYS DOH Health Advisories and DEC/DOW, BWAM, January 2014)

Water Quality Information

A biological (macroinvertebrate) survey of Onondaga Creek at multiple sites between sSracuse and Tully Farms was conducted in 2008. Sampling results at 6 sites on the stream indicated slightly to moderately impacted water quality conditions. Results at the four sites within the Upper Onondaga Creek portion – in Cardiff (2), Tully Valley, and Tulley Farms – reflect slightly impacted water quality above the mudboils and moderately impacted (poor) water quality below. At the moderately impacted sites sensitive taxa are reduced, and the distribution of major taxonomic groups are significantly different from what is naturally expected. Nutrient enrichment was also a factor influencing conditions in this reach. These results are consistent with previous sampling at the site. Aquatic life is considered to be impaired. (Stream Tributary to Onondaga Lake Biological Assessment Report, Smith etal., DEC/DOW, BWAM/SBU, January 2010)

Source Assessment

Sedimentation and high specific conductance – a result of the turbid groundwater discharges – have been identified as the major source of impairment at the site. This portion of the stream experiences significant sediment load and turbidity from in-stream bed load/erosion of clay and silt, exacerbated by the Tully Valley mudboils. Much of the Onondaga Creek stream bed downstream from the mudboil area is covered with sediments discharged from the mudboils. The muddy sediments reduce habitat suitable for aquatic insects and other life, reduce fish spawning and plant growth and significantly contribute to the sediment loading to Onondaga Lake. Onondaga Creek contributes more than 50% of the annual tributary sediment load to the lake due in large part to the mudboils. (Onondaga Lake Partnership, 2006)

Management Actions

Since 1992, the Onondaga Lake Partnership has supported, through the efforts of the United States Geologic Survey (USGS), a number of remedial activities to address impacts from the mudboils, including the diversion of surface water away from the mud boils, installation of a dam on the stream that flows from the mud boil area and drilling of wells to reduce pressure around the mud-boils. These efforts have been successful in reducing the amount of sediment flowing into the Onondaga Creek from 30 tons per day to less than 1 ton per day. See also Onondaga Creek, Upper, and tribs (segment 0702-0024). (Onondaga Lake Partnership, 2006)

Efforts to address the water quality impacts to the stream also include enforceable control requirements of Amended Consent Judgement (ACJ), however thee efforts are largely focused farther downstream of the upper creek reach. (DEC/DOW, Region 7, January 2007)

Section 303(d) Listing

Upper Onondaga Creek is included on the current (2016) NYS 2006 Section 303(d) List of Impaired/TMDL Waters. The waterbody is included on Part 3a of the List as an impaired waterbody for which TMDL development is deferred pending verification of the impairment for turbidity. This listing reflects the elevated levels of silt, solids and turbidity that are are thought to be the result of natural hydrogeology (brine springs, mudboils). This waterbody was first listed for turbidity on the 2008 List. (DEC/DOW, BWAM, April 2016)

Segment Description

This segment includes the portion of the stream and selected/smaller tribs above unnamed trib (-5b) in Nedrow. The

waters of this portion of the stream are Class C,C(T). Tribs to this reach/segment, including Commissary Creek (-8), Kennedy Creek (-9), Rattlesnake Gulf/Fall Creek (-19) and Rainbow Creek (-20), are Class C,C(T),C(TS). Lower/Middle Onondaga Creek and West Branch Onondaga Creek (-11) are listed separately.

West Branch Onondaga Creek and tribs (0702-0025) Need Verific

Waterbody Location Information

Revised: 07/16/2007

Water Index No: Ont 66-12-12-P154- 4-11
Hydro Unit Code: 04140201/370 **Str Class:** C(T)
Waterbody Type: River
Waterbody Size: 48.2 Miles
Seg Description: entire stream and tribs

Drain Basin: Oswego-Seneca-Oneida Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: SOUTH ONONDAGA (J-16-1)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Threatened	Suspected

Type of Pollutant(s)

Known: - - -
Suspected: NUTRIENTS (sdf)
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: AGRICULTURE
Possible: - - -

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: DOW/BWAM
Resolution Potential: Medium
TMDL/303d Status: n/a

Further Details

Aquatic life support in West Branch Onondaga Creek is thought to experience minor threats due to nutrient loadings from nonpoint sources.

A biological (macroinvertebrate) assessment of West Branch Onondaga Creek in South Onondaga (at Route 80) was conducted in 2001. Sampling results indicated slightly impacted water quality conditions. Mayflies and stoneflies were present in the fauna, but filter-feeding caddisflies were overwhelmingly dominant. Nonpoint source nutrient enrichment was identified as the primary influence on the fauna. Although aquatic life is supported in the stream, nutrient biotic evaluation suggests the level of eutrophication is sufficient to threaten aquatic life support. (DEC/DOW, BWAM/SBU, June 2005)

This segment includes the entire stream and all tribs. The waters of the stream are Class C(T). Tribs to this reach/segment are Class C,C(T),C(TS).

Harbor Brook, Lower, and tribs (0702-0002) Impaired Seg

Waterbody Location Information

Revised: 07/13/2007

Water Index No: Ont 66-12-12-P154- 5
Drain Basin: Oswego-Seneca-Oneida
Hydro Unit Code: 04140201/380 **Str Class:** B
Seneca/Clyde Rivers
Waterbody Type: River
Reg/County: 7/Onondaga Co. (34)
Waterbody Size: 4.9 Miles
Quad Map: SYRACUSE WEST (I-16-4)
Seg Description: stream and tribs, from mouth to Taunton

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
PUBLIC BATHING	Impaired	Known
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: AESTHETICS (floatables), AMMONIA, NUTRIENTS (phosphorus), PATHOGENS, Priority Organics (PCBs, other)
Suspected: - - -
Possible: D.O./Oxygen Demand

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, LANDFILL/LAND DISP. (Waste Bed B), URBAN/STORM RUNOFF, Industrial
Suspected: Other Sanitary Disch
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7
Resolution Potential: Medium
TMDL/303d Status: 3c,3c* (Waterbody Being Addressed by Other Means, more)

Further Details

Public bathing, recreational uses and aquatic life support in Harbor Brook are impaired by pathogens and a variety of other pollutants from CSOs, urban runoff, and past industrial operations and uses. This and other tribs to Onondaga Lake are also sources of nutrient loading to Onondaga Lake; these loadings are being addressed though implementation of TMDL plans for Onondaga Lake. Other sewer collection system discharges are also possible sources of impact. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier.

Harbor Brook is impacted by a number of pollutant sources including CSO discharges, urban runoff and industrial activities. Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. There are currently 14 active CSO discharge points to the stream. Measures to address these include the completed Harbor Brook Floatables Control Facility which uses an instream netting device to collect floatables in Harbor Brook prior to its discharge into Onondaga Lake. This project complements the proposed Harbor Brook In-Water System which is intended to reduce combined sewer overflows, urban stormwater, and non-point source pollutants from Harbor Brook entering Onondaga Lake by capturing, storing, and treating these loads. (DEC/DOW, Region 7, January 2007)

Impacts from the Harbor Brook/Waste Bed B site (7-34-075) have also been documented. The primary contaminants of concern at the site known at this time include benzene, toluene, xylene (BTX), naphthalene, and mercury. Harbor Brook sediments within the site are also contaminated and contaminants in these sediments may be accumulating in fish. The Preliminary Site Assessment has been completed and an RI/FS is underway. In addition, the design of two IRMs, for the East Flume and a barrier wall along Onondaga Lake and Harbor Brook, are also underway. (DEC/DER, Region 7, July 2007)

A biological (macroinvertebrate) assessment of Harbor Brook in Syracuse (at Hiawatha Blvd) was conducted in 2001. Sampling results indicated severely impacted water quality conditions. The fauna consisted almost entirely of tolerant worms and midges. The previous sampling in 1995 revealed condition to be in the moderately impacted range, but the actual difference between the two samples is small. Municipal/industrial discharges and decomposable organic wastes were identified as the primary cause of the impacts. (DEC/DOW, BWAM/SBU, June 2005)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to this tributary water. A NYS DOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYS DOH Health Advisories and DEC/FWMR, Habitat, December 2006).

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

Harbor Brook is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. The creek is listed for the pollutants phosphorus and ammonia and is included on Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. This updated assessment indicates that uses are impaired by pathogens and the inclusion of the lake on the 2008 list for this pollutant is recommended. Due to the multiple and ongoing CSO remediation efforts, it is recommended that the listing for pathogens also be added to Part 3c. (DEC/DOW, BWAM, July 2007)

Additional information regarding activities to address pollution and restore uses in the waters and tributaries of Onondaga Lake can be found at the Onondaga Lake Partnership website (http://www.onlakepartners.org)

This segment includes the portion of the stream and all tribs from the mouth to the Syracuse City line near Taunton. The waters of this portion of the stream are Class C from the mouth to the upper end of the underground reach at

Gifford Street and Class B for the remainder of the reach. Tribs to this reach/segment are Class C,C(T). Upper Harbor Brook is listed separately.

Ninemile Creek, Lower, and tribs (0702-0005) Impaired Seg

Waterbody Location Information

Revised: 07/18/2007

Water Index No: Ont 66-12-12-P154- 6
Drain Basin: Oswego-Seneca-Oneida
Hydro Unit Code: 04140201/360 **Str Class:** C
Seneca/Clyde Rivers
Waterbody Type: River
Reg/County: 7/Onondaga Co. (34)
Waterbody Size: 32.3 Miles
Quad Map: SYRACUSE WEST (I-16-4)
Seg Description: stream and selected tribs, from mouth to Camillus

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: NUTRIENTS (phosphorus), PATHOGENS, Aesthetics (floatables), Metals (mercury), Priority Organics (PCBs, dioxin)
Suspected: Ammonia
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, LANDFILL/LAND DISP., URBAN/STORM RUNOFF, Industrial, Tox/Contam. Sediment
Suspected: OTHER SANITARY DISCH
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7
Resolution Potential: Medium
TMDL/303d Status: 3c (Waterbody Being Addressed by Other Means)

Further Details

Recreational uses and aquatic life support in this portion of Ninemile Creek are impaired by pathogens and a variety of other pollutants from CSOs, urban runoff, and past industrial operations and uses. This and other tribs to Onondaga Lake are also sources of nutrient loading to Onondaga Lake; these loadings are being addressed though implementation of TMDL plans for Onondaga Lake. Other sewer collection system discharges are also possible sources of impact. Fish consumption is also restricted as a result of a health advisory for Onondaga Lake that extends to tribs up to the first impassable barrier.

Ninemile Creek is impacted by a number of pollutant sources including CSO discharges, urban runoff and industrial activities. Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. (DEC/DOW, Region 7, January 2007)

Impacts from industrial hazardous waste sites along the lower portion of the creek have been documented in the Geddes Brook/Ninemile Creek Baseline Ecological Risk Assessment prepared for the Onondaga Lake Project in 2003. These sites include the Solvay Landfill site which is currently undergoing a Part 360 grant closure, the Pass and Seymour site which is undergoing Remedial Investigation through the Brownfields Cleanup Program, the Matthews Avenue Landfill (Honeywell) site which is being considered for inclusion in the Brownfields Cleanup Program, and a number of other sites (State Fair Landfill, Frazer and Jones Foundry, Stanton Foundry) were remediation activities are not currently underway. (DEC/DER, Region 7, July 2007)

A biological (macroinvertebrate) assessment of Ninemile Creek in Lakeland (at State Fair Blvd) was conducted in 2001. Sampling results indicated severely impacted water quality conditions. The fauna was heavily dominated by tolerant worms and midges. Sewage wastes were identified as the primary contributor to the impacts. The previous sampling in 1995 revealed condition to be in the moderately impacted range, but 1989-90 sampling also reflected severely impacted conditions. Poor habitate influences the sampling results to some degree. (DEC/DOW, BWAM/SBU, June 2005)

Fish consumption advisories for Onondaga Lake (and all tribs to the first barrier) also applies to this tributary water. A NYS DOH health advisory that recommends eating no walleye, and no more than one meal per month of carp, channel catfish, white perch or other species because of elevated levels of mercury, PCBs and dioxin. The source of these contaminants is past industrial operations and discharges to the lake. The advisory for this lake was first issued prior to 1997-98. (2006-07 NYS DOH Health Advisories and DEC/FWMR, Habitat, December 2006).

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

Ninemile Creek is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. The creek is listed for the pollutant phosphorus and is included on Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. This updated assessment indicates that uses are impaired by pathogens and the inclusion of the lake on the 2008 list for this pollutant is recommended. Due to the multiple and ongoing CSO remediation efforts, it is recommended that the listing for pathogens also be added to Part 3c. (DEC/DOW, BWAM, July 2007)

Additional information regarding activities to address pollution and restore uses in the waters and tributaries of Onondaga Lake can be found at the Onondaga Lake Partnership website (http://www.onlakepartners.org)

This segment includes the portion of the stream and selected/smaller tribs from the mouth to/including unnamed tribs (-5) in Camillus. The waters of this portion of the stream are Class C,C(T). Tribs to this reach/segment, including Beaver Meadow Brook (-4), are Class C. Upper Ninemile Creek and Geddes Brook (-2) are listed separately.

Geddes Brook and tribs (0702-0007) Impaired Seg

Waterbody Location Information

Revised: 07/18/2007

Water Index No: Ont 66-12-12-P154- 6- 2
Hydro Unit Code: 04140201/360 **Str Class:** C
Waterbody Type: River
Waterbody Size: 12.4 Miles
Seg Description: entire stream and tribs

Drain Basin: Oswego-Seneca-Oneida
Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: SYRACUSE WEST (I-16-4)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Fish Consumption	Stressed	Known
AQUATIC LIFE	Impaired	Known
RECREATION	Impaired	Known
Aesthetics	Stressed	Known

Type of Pollutant(s)

Known: AMMONIA, PATHOGENS, Aesthetics (floatables), Metals (mercury), Priority Organics (PCBs, dioxin)
Suspected: Nutrients
Possible: - - -

Source(s) of Pollutant(s)

Known: COMB. SEWER OVERFLOW, LANDFILL/LAND DISP., URBAN/STORM RUNOFF, Industrial, Tox/Contam. Sediment
Suspected: OTHER SANITARY DISCH
Possible: - - -

Resolution/Management Information

Issue Resolvability: 3 (Strategy Being Implemented)
Verification Status: 5 (Management Strategy has been Developed)
Lead Agency/Office: DEC/Reg7 **Resolution Potential:** Medium
TMDL/303d Status: 3c (Waterbody Being Addressed by Other Means)

Further Details

Aquatic life support and recreational uses in Geddes Brook are thought to be impaired due to ammonia and other pollutants from CSOs, urban runoff, and past industrial operations and uses.

Geddes Brook is impacted by a number of pollutant sources including CSO discharges, urban runoff and industrial activities. Efforts to address the water quality impacts to the stream are ongoing. These include enforceable control requirements of Amended Consent Judgement (ACJ), other consent orders with Onondaga County and other municipalities to address sanitary sewer overflows, active remediation of identified hazardous waste sites and other rehabilitation activities and projects. (DEC/DOW, Region 7, January 2007)

Impacts from industrial hazardous waste sites along the lower portion of the creek have been documented in the Geddes Brook/Ninemile Creek Baseline Ecological Risk Assessment prepared for the Onondaga Lake Project in 2003. These sites include the Solvay Landfill site which is currently undergoing a Part 360 grant closure, the Pass and Seymour site which is undergoing Remedial Investigation through the Brownfields Cleanup Program, the Matthews Avenue Landfill (Honeywell) site which is being considered for inclusion in the Brownfields Cleanup Program, and a number of other sites (State Fair Landfill, Frazer and Jones Foundry, Stanton Foundry) were remediation activities are not currently underway. (DEC/DER, Region 7, July 2007)

A biological (macroinvertebrate) assessment of Geddes Brook in Camillus (at Horan Road) was conducted in 2001. Sampling results indicated slightly impacted water quality conditions. Municipal/industrial sources were identified as the primary source of the impact. This assessment represents an improvement over sampling in 1989 which found moderately impacted conditions. No explanation for the apparent improvement has been noted. This site is above the portion of the creek more significantly impacted by industrial activities and may not be fully representative of the entire stream. (DEC/DOW, BWAM/SBU, June 2005)

The Onondaga County Department of Water Enviornment Protection (OCDWEP) Ambient Monitoring Program (AMP) was implemented in 1998 in accordance with the ACJ to measure the progress and effectctiveness of teh County's fifteen-year plan for collection system and treatment plant improvements. The AMP measures chemical, physical and biological data for Onondaga Lake, the lake tributaries, Onondaga Outlet and the Seneca River. The OCDWEP publishes and Annual Onondaga Lake Report that evaluates and summarizes the findings of the AMP. (Onondaga County DWEP, 2006)

Geddes Brook is currently included on the NYS 2006 Section 303(d) List of Impaired Waters. The creek is listed for the pollutant ammonia and is included on Part 3c of the list as a waterbody segment for which TMDL Development may be Deferred Due to Other Restoration Measures. This updated assessment indicates that uses are impaired by pathogens and the inclusion of the lake on the 2008 list for this pollutant is recommended. Due to the multiple and ongoing CSO remediation efforts, it is recommended that the listing for pathogens also be added to Part 3c. (DEC/DOW, BWAM, July 2007)

This segment includes the entire stream and all tribs. The waters of this portion of the stream are Class C,C(T). Tribs to this reach/segment are also Class C,C(T).

Otisco Lake (0702-0011) MinorImpacts

Waterbody Location Information

Revised: 07/10/2007

Water Index No: Ont 66-12-12-P154- 6-P175
Hydro Unit Code: 04140201/360 **Str Class:** AA
Waterbody Type: Lake
Waterbody Size: 2214.3 Acres
Seg Description: entire lake

Drain Basin: Oswego-Seneca-Oneida
Seneca/Clyde Rivers
Reg/County: 7/Onondaga Co. (34)
Quad Map: MARCELLUS (J-15-2)

Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Water Supply	Threatened	Possible
Aquatic Life	Stressed	Known
Recreation	Stressed	Known

Type of Pollutant(s)

Known: D.O./OXYGEN DEMAND, Silt/Sediment
Suspected: Algal/Weed Growth, Nutrients
Possible: - - -

Source(s) of Pollutant(s)

Known: - - -
Suspected: AGRICULTURE, STREAMBANK EROSION
Possible: On-Site/Septic Syst

Resolution/Management Information

Issue Resolvability: 1 (Needs Verification/Study (see STATUS))
Verification Status: 3 (Cause Identified, Source Unknown)
Lead Agency/Office: ext/WQCC **Resolution Potential:** Medium
TMDL/303d Status: n/a

Further Details

Aquatic life support and recreational uses in Otisco Lake are thought to experience minor impacts due to periodic low dissolved oxygen levels. Suspended sediment and other loads from various nonpoint sources also contribute to these impacts. Water supply uses in Otisco Lake may experience minor threats due to various activities in the watershed. The designation of this waterbody as a threatened water is reflective of a need to protect its particular resource value, rather than specifically identified threats.

Otisco Lake is best characterized as eutrophic due to its chlorophlyy a, water clarity and hypolimnetic dissolved oxygen levels. Findings also suggest that trophic conditions within the lake have increased over the past several decades. Total phosphorus and chlorophyll a levels have increased since the 1970s. The hypolimnion of the lake become anoxic during the summer and early fall. Though it is unclear whether the anoxic conditions have human causes or are natural in origin. (Water Quality Study of the Finger Lakes, DEC/DOW, July 2001)

Otisco Lake is segmented by a causeway that stretches across the southern end of the lake. The two portions of the lake are connected by a narrow break in the causeway. The southern end of the lake is quite shallow and receives a large percentage of the flow into the lake. Due to the limited mixing between the two portions of the lake, water quality in the two segments are significantly different with the southern end having higher concentrations of phosphorus and chlorophyll a and lower water clarity. The southern end of Otisco Lake is charaterized by high turbidity and occasional algal blooms. (Water Quality Study of the Finger Lakes, DEC/DOW, July 2001)

In addition to the use impacts outlined above, the segment is considered a highly valued water resource due to its drinking water supply classification. Class A/AA surface waters of the state that serve as the source of potable water for significant populations are typically categorized as potentially threatened. The inclusion of this waterbody on the DEC/DOW Priority Waterbodies List as a Threatened water is a reflection of the particular resource value reflected in this designation and the need to provide additional protection, rather than any specifically identified threats. (DEC/DOW, BWAM, January 2006)