



## Lower Walkkill River (0202000704)

### Water Index Number

H-139-13 (portion 1)/P453a  
H-139-13 (portion 2)  
H-139-13- 2  
H-139-13- 3 thru 18  
H-139-13-10- 1  
H-139-13-11  
H-139-13-11- 4  
H-139-13-16  
H-139-13 (portion 3)  
H-139-13 (portion 4)  
H-139-13-20 thru 53

### Waterbody Name

Sturgeon Pond (1306-0037)  
[Walkkill River, Lower, Main Stem \(1306-0027\)](#)  
Swarte Kill and tribs (1306-0039)  
Minor Tribs to Lower Walkkill (1306-0040)  
Unnamed Trib to Walkkill, Upp, and tribs (1306-0041)  
Unnamed Trib to Walkkill, and mnr tribs (1306-0042)  
Kleine Kill and tribs (1306-0043)  
[Platte Kill and tribs \(1306-0044\)](#)  
[Walkkill River, Middle, Main Stem \(1306-0038\)](#)  
[Walkkill River, Upper, and minor tribs \(1306-0017\)](#)  
Minor Tribs to Middle Walkkill (1306-0061)

### Category

UnAssessed  
**MinorImpacts**  
UnAssessed  
UnAssessed  
UnAssessed  
UnAssessed  
UnAssessed  
**NoKnownImpact**  
**MinorImpacts**  
**MinorImpacts**  
UnAssessed

H-139-13-24	Dwaar Kill, Lower, and tribs (1306-0062)	<b>NoKnownImpct</b>
H-139-13-24	Dwaar Kill, Middle and tribs (1306-0063)	UnAssessed
H-139-13-24	Dwaar Kill, Upper, and tribs (1306-0064)	UnAssessed
H-139-13-28	Latterette Creek, Upper, and tribs (1306-0065)	UnAssessed
H-139-13-31	Borden Creek, Upper, and tribs (1306-0066)	UnAssessed
H-139-13-31- 1a-P546	Lake Osiris Lake (1306-0067)	UnAssessed
H-139-13-33	<b>Tin Brook, Lower, and tribs (1306-0068)</b>	<b>MinorImpacts</b>
H-139-13-33	Tin Brook, Upper, and tribs (1306-0069)	UnAssessed
H-139-13-41	<b>Mannayunk Kill and tribs (1306-0070)</b>	<b>NoKnownImpct</b>
H-139-13-47	Milburn Creek, Upper, and tribs (1306-0071)	UnAssessed
H-139-13-51	<b>Masonic Creek and tribs (1306-0072)</b>	<b>MinorImpacts</b>
H-139-13-51-P579a	Silver Lake (1306-0073)	UnAssessed
H-139-13-52	<b>Monhagen Brook and tribs (1306-0074)</b>	<b>Impaired Seg</b>
H-139-13-52-P598	<b>Monhagen Lake (1306-0075)</b>	<b>NoKnownImpct</b>
H-139-13-53-P623	Goshen Reservoir (1306-0076)	UnAssessed

# Wallkill River, Lower, Main Stem (1306-0027)

# Needs Verification

## Waterbody Location Information

Revised: 12/12/2016

**Water Index No:** H-139-13 (portion 2)  
**Hydro Unit Code:** Lower Wallkill River (0202000704)  
**Water Type/Size:** River/Stream 17.1 Miles  
**Description:** from Sturgeon Pond to Tuthill

**Water Class:** B  
**Drainage Basin:** Lower Hudson River  
**Reg/County:** 3/Ulster (56)

## Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	Impaired	Unconfirmed
Recreation	Impaired	Unconfirmed
Aquatic Life	Stressed	Known
Fish Consumption	Stressed	Suspected
<b>Conditions Evaluated</b>		
Habitat/Hydrology	Unknown	
Aesthetics	Unknown	

**Type of Pollutant(s)** (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known: Pathogens  
Suspected: Pesticides (DDT, dieldrin)  
Unconfirmed: - - -

**Source(s) of Pollutant(s)**

Known: Toxic/Contaminated Sediment  
Suspected: UNKNOWN SOURCE, Urban/Storm Runoff, Onsite/Septic Systems, Other/Non-Permitted Sanitary Discharge, Other Source (waterfowl)  
Unconfirmed: Municipal Discharges, Private/Commercial/Institutional Discharges,

## Management Information

**Management Status:** Verification of Problem Severity Needed  
**Lead Agency/Office:** DOW/BWAM  
**IR/305(b) Code:** Water with Insufficient Data (IR Category 3)

## Further Details

### Overview

Public Bathing and other recreational uses in this portion of the Wallkill River are known to experience minor impacts – that may rise to the level of impairment – due to pathogens. The likely sources of pathogens include urban/storm runoff and other nonpoint sources; residential onsite (septic) systems and/or other undisinfected wastewater discharges may also contribute to pathogen indicator levels. Aquatic life is also known to experience minor impacts from nutrients and silt/sediment loads, the result of urban/storm runoff, and other nonpoint sources, including extensive agricultural activities in the watershed. Stream channelization and other channel modifications to support agricultural operations also effect water quality and use support. The impacts of pesticide use in the watershed also raises some concerns regarding fish consumption.

### Use Assessment

This portion of the Wallkill River is a Class B waterbody, assessed for public bathing, general recreation use and support of aquatic life, but not for water supply use.

Recreational uses, including public bathing, experience impacts that may rise to the level of an impairment based on

sampling results collected by Riverkeeper. Additional sampling is recommended to verify the level of impact/impairment on the stream.

Aquatic life is evaluated as supported but stressed based on biological sampling that shows slight impacts. (DEC, DOW, BWAM, July 2014)

This waterbody is not included among the waterbody-specific health advisories for fish consumption, but monitoring of benthic sediment indicate the presence of contaminants. This information has been forwarded to the NYSDOH for evaluation of need for a waterbody-specific advisory or other appropriate action. (NYS DOH Health Advisories and DEC/FWMR, Habitat, January 2014)

#### Water Quality Information

Biological (macroinvertebrate) assessments of the Wallkill River near New Paltz (at Libertyville Road) and in Libertyville (off Albany Post Road) were conducted in 2012. Sampling results indicated moderate impact at the downstream site and slightly impacted water quality at Libertyville. Sampling results at sites in this reach have been consistently assessed as slightly impacted over the years. Most of the Wallkill is considered to have minor impacts, the result of agricultural nonpoint sources. The moderately impacted result was close to slightly impacted and sampling at this same site in 2007 revealed slight impacts that approach non-impacted conditions; follow-up sampling is recommended to confirm conditions. (DEC/DOW, BWAM/SBU, December 2016)

Bacteriological sampling for enterococcus in the river has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be at least stressed, and possibly rising to the level of impairment. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

In 1997 NYSDEC conducted a monitoring effort on Hudson River tributaries as part of the Contamination Assessment and Reduction Project (CARP) to evaluate potential sources of toxic chemicals to the Hudson and New York Harbor. Results from this monitoring found the Wallkill to have the highest concentrations of DDT (by factor of 10) and dieldrin of all tribs tested. Follow-up monitoring indicate the DDT source is located in the "black dirt" area (see Wallkill River segment 1306-0017). The study (Toxics Organics Survey: Hudson, Wallkill and Hackensack Rivers, Litten et al, DEC/DOW, BWAM, October 1999) concludes that while the impact of this source on the Hudson is unclear, it does affect the entire length of the Wallkill. High DDT concentrations were also confirmed by bottom sediment coring in the Sturgeon Pool (below New Paltz). This monitoring also found the highest concentrations to be in the uppermost layer of sediments; suggesting (but not proving) DDT releases are continuing. (DEC/DOW, BWAM/Special Studies Section and Sediment Assessment Unit, September 1999).

An extensive 1994 Biological Assessment of the river found slight water quality impacts along most of the length of the river. Evaluation of the monitoring results indicated nonpoint agricultural sources and siltation to be the likely causes of the impacts. These conditions represented a significant improvement over moderate to severe impacts documented in 1972 prior to the upgrade of sewage treatment plants serving Middletown, Wallkill, Montgomery and Walden. This portion of the river has historically suffered from high turbidity which colors the water. Urban runoff also affects the river aesthetics. (Wallkill River Biological Assessment Report, Bode et al, DEC/DOW, BWAM, September 1995)

#### Source Assessment

Specific sources of pollutants to the waterbody have not been definitively identified. However a number of possible likely bacteria sources present include urban/stormwater runoff, wastewater discharges, and waterfowl/wildlife. Elevated nutrient loads are attributed to agricultural activity, urban stormwater runoff and municipal wastewater loadings throughout the watershed. Contaminated sediment is the source of pesticides.

#### Management Actions

Additional sampling to verify the level of impact in this waterbody segment is recommended. Additional focus on

pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

#### Section 303(d) Listing

Lower Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard; and as a result the waterbody is more appropriately assigned to IR Category 3 as a water with insufficient data to make a listing decision. (DEC/DOW, BWAM, April 2016)

#### Segment Description

This segment includes the main stem of the Wallkill River from the inlet of Sturgeon Pond (P453a) to the Shawangunk Kill (-19) in Tuthill. The waters of this portion of the stream are Class B. Middle/Upper Wallkill River are listed separately.



# Wallkill River, Middle, Main Stem (1306-0038)

# Needs Verification

## Waterbody Location Information

Revised: 12/12/2016

**Water Index No:** H-139-13 (portion 3)  
**Hydro Unit Code:** Lower Wallkill River (0202000704)  
**Water Type/Size:** River/Stream 28 Miles  
**Description:** from Tuthill to Middletown

**Water Class:** B  
**Drainage Basin:** Lower Hudson River  
**Reg/County:** 3/Orange (36)

## Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Water Supply	N/A	-
Public Bathing	Impaired	Unconfirmed
Recreation	Impaired	Unconfirmed
Aquatic Life	Stressed	Known
Fish Consumption	Stressed	Unconfirmed
<b>Conditions Evaluated</b>		
Habitat/Hydrology	Unknown	
Aesthetics	Unknown	

**Type of Pollutant(s)** (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)  
Known: Pathogens  
Suspected: Pesticides (DDT, dieldrin)  
Unconfirmed: - - -

**Source(s) of Pollutant(s)**  
Known: Toxic/Contaminated Sediment  
Suspected: UNKNOWN SOURCE, Urban/Storm Runoff, Onsite/Septic Systems, Other/Non-Permitted Sanitary Discharge, Other Source (waterfowl)  
Unconfirmed: Municipal Discharges, Private/Commercial/Institutional Discharges,

## Management Information

**Management Status:** Verification of Problem Severity Needed  
**Lead Agency/Office:** DOW/BWAM  
**IR/305(b) Code:** Water with Insufficient Data (IR Category 3)

## Further Details

### Overview

Public Bathing and other recreational uses in this portion of the Wallkill River are known to experience minor impacts – that may rise to the level of impairment – due to pathogens. The likely sources of pathogens include urban/storm runoff and other nonpoint sources; residential onsite (septic) systems and/or other undischarged wastewater discharges may also contribute to pathogen indicator levels. Aquatic life is also known to experience minor impacts from nutrients and silt/sediment loads, the result of urban/storm runoff, and other nonpoint sources, including extensive agricultural activities in the watershed. Stream channelization and other channel modifications to support agricultural operations also effect water quality and use support. The impacts of pesticide use in the watershed also raises some concerns regarding fish consumption.

### Use Assessment

This portion of the Wallkill River is a Class B waterbody, assessed for public bathing, general recreation use and support of aquatic life, but not for water supply use.

Recreational uses, including public bathing, experience impacts that may rise to the level of an impairment based on

sampling results collected by Riverkeeper. Additional sampling is recommended to verify the level of impact/impairment on the stream.

Aquatic life is evaluated as supported but stressed based on biological sampling that shows slight impacts. (DEC, DOW, BWAM, July 2014)

This waterbody is not included among the waterbody-specific health advisories for fish consumption, but monitoring of benthic sediment indicate the presence of contaminants. This information has been forwarded to the NYSDOH for evaluation of need for a waterbody-specific advisory or other appropriate action. (NYS DOH Health Advisories and DEC/FWMR, Habitat, January 2014)

#### Water Quality Information

A biological (macroinvertebrate) survey of multiple sites on the Wallkill River between Tuthill and the NY-NJ state line was conducted in 2008. A single sample was also collected near Montgomery in 2012. The more recent sample found moderate impacts, while results of the 2008 SBU sampling found conditions of slightly impaired water quality at all seven sites (five sites are within this reach). Impact Source Determination (ISD) identified possible municipal/industrial influences, as well as domestic wastes. Enrichment impacts of development and agriculture are evident in the water quality assessments of both the 2008 survey, and a similar survey conducted in 1994. There were no differences seen in the biological communities above and below any of the wastewater discharges to the Wallkill River. The biological condition of the Wallkill River continues to reflect the land cover and land uses of this watershed and has not varied much since the 1994 survey. (DEC/DOW, BWAM/SBU, June 2005)

Bacteriological sampling for enterococcus in the river has been conducted by the Riverkeeper in 2014 and 2015 showing exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be at least stressed, and possibly rising to the level of impairment. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

In 1997 NYSDEC conducted a monitoring effort on Hudson River tributaries as part of the Contamination Assessment and Reduction Project (CARP) to evaluate potential sources of toxic chemicals to the Hudson and New York Harbor. Results from this monitoring found the Wallkill to have the highest concentrations of DDT (by factor of 10) and dieldrin of all tribs tested. Follow-up monitoring indicate the DDT source is located in the "black dirt" area (see Wallkill River segment 1306-0017). The study (Toxics Organics Survey: Hudson, Wallkill and Hackensack Rivers, Litten et al, DEC/DOW, BWAM, October 1999) concludes that while the impact of this source on the Hudson is unclear, it does affect the entire length of the Wallkill. High DDT concentrations were also confirmed by bottom sediment coring in the Sturgeon Pool (below New Paltz). This monitoring also found the highest concentrations to be in the uppermost layer of sediments; suggesting (but not proving) DDT releases are continuing. (DEC/DOW, BWAM/Special Studies Section and Sediment Assessment Unit, September 1999).

An extensive 1994 Biological Assessment of the river found slight water quality impacts along most of the length of the river. Evaluation of the monitoring results indicated nonpoint agricultural sources and siltation to be the likely causes of the impacts. These conditions represented a significant improvement over moderate to severe impacts documented in 1972 prior to the upgrade of sewage treatment plants serving Middletown, Wallkill, Montgomery and Walden. This portion of the river has historically suffered from high turbidity which colors the water. Urban runoff also affects the river aesthetics. (Wallkill River Biological Assessment Report, Bode et al, DEC/DOW, BWAM, September 1995)

#### Source Assessment

Specific sources of pollutants to the waterbody have not been definitively identified. However a number of possible to likely bacteria sources present include urban/stormwater runoff, wastewater discharges, and waterfowl/wildlife. Elevated nutrient loads are attributed to agricultural activity, urban stormwater runoff and municipal wastewater loadings throughout the watershed. Contaminated sediment is the source of pesticides.

### Management Actions

Additional sampling to verify the level of impact in this waterbody segment is recommended. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

### Section 303(d) Listing

Middle Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard; and as a result the waterbody is more appropriately assigned to IR Category 3 as a water with insufficient data to make a listing decision. (DEC/DOW, BWAM, April 2016)

### Segment Description

This segment includes the main stem of the Wallkill River from the Shawangunk Kill (-19) in Tuthill to Rio Grande (-53) near Middletown. The waters of this portion of the stream are Class B. Lower/Upper Wallkill River are listed separately.

# Wallkill River, Upper, and minor tribs (1306-0017)

# Minor Impacts

## Waterbody Location Information

Revised: 12/13/2016

<b>Water Index No:</b>	H-139-13 (portion 4)	<b>Water Class:</b>	C
<b>Hydro Unit Code:</b>	Middle Wallkill River (0202000702)	<b>Drainage Basin:</b>	Lower Hudson River
<b>Water Type/Size:</b>	River/Stream 59.7 Miles	<b>Reg/County:</b>	3/Orange (36)
<b>Description:</b>	stream and select tribs, above Middletown		

## Water Quality Problem/Issue Information

Uses Evaluated	Severity	Confidence
Water Supply	Unassessed	-
Public Bathing	Unassessed	-
Recreation	Stressed	Known
Aquatic Life	Stressed	Known
Fish Consumption	Stressed	Unconfirmed
<b>Conditions Evaluated</b>		
Habitat/Hydrology	Unassessed	
Aesthetics	Unassessed	

**Type of Pollutant(s)** (CAPS indicate Major Pollutants/Sources that contribute to an Impaired/Precluded Uses)

Known: Nutrients (phosphorus), Pathogens, Silt/Sediment  
Suspected: Pesticides (DDT)  
Unconfirmed: - - -

### Source(s) of Pollutant(s)

Known:  
Suspected:  
Unconfirmed:

## Management Information

**Management Status:** Verification of Source Needed  
**Lead Agency/Office:** DOW/Reg3  
**IR/305(b) Code:** Water Attaining All Standards (IR Category 1)

## Further Details

### Overview

Aquatic life, recreational uses and hydrologic/habitat conditions in this portion of the Wallkill River are known to experience minor impacts due to nutrient, silt/sediment loads, and pathogens. The primary sources of nutrients and silt/sediment is extensive agricultural activities in the watershed. Sources of pathogens are thought to include urban/stormwater runoff and municipal and residential wastewater discharges as well as agriculture. Stream channelization and other channel modifications to support agricultural operations also effect water quality and use support. The impacts of pesticide use in the watershed also raises some concerns regarding fish consumption. This area of the Wallkill watershed consists of a former lake bottom that was drained by canals and ditches to form the truck-farming region (primarily onions) generally referred to as the "black dirt" area. Within New York State, the region extends from the NY/NJ state border to the Pelletts Island area, just southeast of Middletown. The area has historically contributed considerable turbidity and sediment to the river. During periods of flooding/high flow, plant nutrients, fertilizers, and pesticides also likely enter the river.

### Use Assessment

This portion of the Wallkill River is a Class C waterbody, assessed for general recreation use and support of aquatic life, but not for water supply use or for public bathing.

Aquatic life is evaluated as supported but stressed based on biological sampling that shows slight impacts. This sampling can also be used to infer that there may be minor impacts to recreational (fishing) uses, although more specific sampling is necessary to confirm this is the case. (DEC, DOW, BWAM, July 2014)

This waterbody is not included among the waterbody-specific health advisories for fish consumption, but monitoring of benthic sediment indicate the presence of contaminants. This information has been forwarded to the NYSDOH for evaluation of need for a waterbody-specific advisory or other appropriate action. (NYS DOH Health Advisories and DEC/FWMR, Habitat, January 2014)

#### Water Quality Information

A biological (macroinvertebrate) survey of multiple sites on the Wallkill River between Tuthill and the NY-NJ state line was conducted in 2008. Results of the 2008 SBU sampling found conditions of slightly impaired water quality at all seven sites (five sites are within this reach). Impact Source Determination (ISD) identified possible municipal/industrial influences, as well as domestic wastes. Enrichment impacts of development and agriculture are evident in the water quality assessments of both the 2008 survey, and a similar survey conducted in 1994. There were no differences seen in the biological communities above and below any of the wastewater discharges to the Wallkill River. The biological condition of the Wallkill River continues to reflect the land cover and land uses of this watershed and has not varied much since the 1994 survey. (DEC/DOW, BWAM/SBU, June 2005)

Bacteriological sampling for enterococcus in the river has been conducted by the Riverkeeper in 2014 and 2015 show exceedences of the EPA recommended entero criteria for support of recreational uses. Although NYSDEC is considering the use of entero (or E-coli) criteria to replace the current coliform standards, it has not yet adopted these criteria as water quality standards. However while it is premature to use entero results to evaluate impairment, these results suggest it is appropriate to consider recreational uses to be stressed. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

In 1997 NYSDEC conducted a monitoring effort on Hudson River tributaries as part of the Contamination Assessment and Reduction Project (CARP) to evaluate potential sources of toxic chemicals to the Hudson and New York Harbor. Results from this monitoring found the Wallkill to have the highest concentrations of DDT (by factor of 10) and dieldrin of all tribs tested. Follow-up monitoring indicate the DDT source is located in the "black dirt" area (see Wallkill River segment 1306-0017). The study (Toxics Organics Survey: Hudson, Wallkill and Hackensack Rivers, Litten et al, DEC/DOW, BWAM, October 1999) concludes that while the impact of this source on the Hudson is unclear, it does affect the entire length of the Wallkill. High DDT concentrations were also confirmed by bottom sediment coring in the Sturgeon Pool (below New Paltz). This monitoring also found the highest concentrations to be in the uppermost layer of sediments. Fish tissue sampling in 1999 found contaminant levels did not exceed criteria for the protection of human health but there are concerns regarding the protection of piscivorous wildlife. (DEC/DOW, BWAM/Special Studies Section and Sediment Assessment Unit and DEC/DFWMR, Habitat, September 1999).

An extensive 1994 Biological Assessment of the river found slight water quality impacts along most of the length of the river. Evaluation of the monitoring results indicated nonpoint agricultural sources and siltation to be the likely causes of the impacts. These conditions represented a significant improvement over moderate to severe impacts documented in 1972 prior to the upgrade of sewage treatment plants serving Middletown, Wallkill, Montgomery and Walden. This portion of the river has historically suffered from high turbidity which colors the water. Urban runoff and municipal discharges upstream and across the state line in New Jersey are also thought to impact water quality. (Wallkill River Biological Assessment Report, Bode et al, DEC/DOW, BWAM/SBU, September 1995)

#### Source Assessment

Specific sources of pathogens to the waterbody have not been definitively identified. However a number of possible likely bacteria sources present include urban/stormwater runoff, wastewater discharges, and waterfowl/wildlife. Elevated nutrient loads are attributed to agricultural activity, urban stormwater runoff and municipal wastewater loadings throughout the watershed. Contaminated sediment is the source of pesticides.

#### Management Actions

Additional sampling to verify the level of impact in this waterbody segment is recommended. Additional focus on pathogen indicators and recreational use support in selected Hudson River tribs is under consideration for the next NYSDEC RIBS monitoring effort in the Lower Hudson River Basin in 2017-18. (DEC/DOW, BWAM, April 2016)

#### Section 303(d) Listing

Upper Wallkill River is not included on the current (2016) NYS Section 303(d) List of Impaired/TMDL Waters. The waterbody was suggested and considered for listing during development of the 2016 List. However, although enterococcus levels were found to be elevated, NYSDEC has not adopted an entero standard for general recreation use. Therefore it is not appropriate to list the waterbody at this time. (DEC/DOW, BWAM, April 2016)

#### Segment Description

This segment includes the portion of the stream and selected/smaller tribs above Rio Grande (-53) near Middletown. The waters of this portion of the stream are Class C. Tribs to this reach/segment, including Rio Grande, are also Class C. Quaker Creek (-59), Pochuck Creek (-61), Rutgers Creek (-62) and Lower/Middle Wallkill River are listed separately.

# Dwaar Kill, Lower, and tribs (1306-0062)

NoKnownImpct

## Waterbody Location Information

Revised: 12/20/2007

**Water Index No:** H-139-13-24      **Drain Basin:** Lower Hudson River  
**Hydro Unit Code:**                      **Str Class:** C  
**Waterbody Type:** River      **Reg/County:** 3/Ulster Co. (56)  
**Waterbody Size:** 24.5 Miles      **Quad Map:** WALDEN (O-24-4)  
**Seg Description:** stream and tribs, from mouth to near Co Route 89

## Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
NO USE IMPAIRMNT		

### Type of Pollutant(s)

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

### Source(s) of Pollutant(s)

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

## Resolution/Management Information

**Issue Resolvability:** 8 (No Known Use Impairment)  
**Verification Status:** (Not Applicable for Selected RESOLVABILITY)  
**Lead Agency/Office:** n/a      **Resolution Potential:** n/a  
**TMDL/303d Status:** n/a

## Further Details

### Water Quality Sampling

A biological (macroinvertebrate) assessment of Dwaar Kill near Walkkill (at Bates Road) was conducted in 2002. Sampling results indicated non-impacted water quality conditions. The fauna was diverse and all screening criteria for waters having no known impacts were met. The sample was sorted in the lab to family level and results were found to support the field assessment. (DEC/DOW, BWAM/SBU, December 2004)

### Segment Description

This segment includes the portion of the stream and all tribs from the mouth to a point 0.5 mile below unnamed trib (-9) near County Route 89. The waters of this portion of the stream are Class C. Tribs to this reach/segment are also Class C. Middle/Upper Dwaar Kill are listed separately.

# Tin Brook, Lower, and tribs ( 1306-0068)

# MinorImpacts

## Waterbody Location Information

Revised: 12/20/2007

**Water Index No:** H-139-13-33      **Drain Basin:** Lower Hudson River  
**Hydro Unit Code:**                      **Str Class:** A  
**Waterbody Type:** River      **Reg/County:** 3/Orange Co. (36)  
**Waterbody Size:** 11.4 Miles      **Quad Map:** WALDEN (O-24-4)  
**Seg Description:** stream and tribs, from mouth to Walden

## Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

### Type of Pollutant(s)

Known: ---  
Suspected: NUTRIENTS (phosphorus), SILT/SEDIMENT  
Possible: D.O./Oxygen Demand

### Source(s) of Pollutant(s)

Known: ---  
Suspected: MUNICIPAL, URBAN/STORM RUNOFF  
Possible: Industrial

## Resolution/Management Information

**Issue Resolvability:** 1 (Needs Verification/Study (see STATUS))  
**Verification Status:** 3 (Cause Identified, Source Unknown)  
**Lead Agency/Office:** DOW/Reg3      **Resolution Potential:** Medium  
**TMDL/303d Status:** n/a

## Further Details

### Overview

Aquatic life support in Tin Brook is thought to experience minor impacts/threats due to nutrient and organic inputs and siltation from point discharges and nonpoint urban runoff sources.

### Water Quality Sampling

A biological (macroinvertebrate) assessment of Tin Brook in Walden (at Route 52) was conducted in 2002. Sampling results indicated slightly impacted water quality conditions. The fauna was dominated by facultative midges and scuds and Impact Source Determination indicated that municipal/industrial inputs and siltation were the most likely cause of the impacts. Although aquatic life is supported in the stream, nutrient biotic evaluation indicates the level of eutrophication is sufficient to threaten aquatic life support. (DEC/DOW, BWAM/SBU, June 2005)

### Segment Description

This segment includes the portion of the stream from the mouth to/including unnamed trib (-3) above Walden. The waters of this portion of the stream are Class C to the Walden STP pumping station overflow, and Class A for the remainder of the reach. Tribs to this reach/segment are Class B,C(T). Upper Tin Brook is listed separately.



# Masonic Creek and tribs (1306-0072)

# MinorImpacts

## Waterbody Location Information

Revised: 12/18/2007

**Water Index No:** H-139-13-51      **Drain Basin:** Lower Hudson River  
**Hydro Unit Code:**                      **Str Class:** B  
**Waterbody Type:** River      **Reg/County:** 3/Orange Co. (36)  
**Waterbody Size:** 23.2 Miles      **Quad Map:** MIDDLETOWN (P-23-1)  
**Seg Description:** entire stream and tribs

## Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

Use(s) Impacted	Severity	Problem Documentation
Aquatic Life	Stressed	Known

### Type of Pollutant(s)

Known: ---  
Suspected: NUTRIENTS, UNKNOWN TOXICITY, Silt/Sediment  
Possible: ---

### Source(s) of Pollutant(s)

Known: ---  
Suspected: AGRICULTURE, URBAN/STORM RUNOFF, Streambank Erosion  
Possible: ---

## Resolution/Management Information

**Issue Resolvability:** 1 (Needs Verification/Study (see STATUS))  
**Verification Status:** 2 (Problem Verified, Cause Unknown)  
**Lead Agency/Office:** ext/WQCC      **Resolution Potential:** Medium  
**TMDL/303d Status:** n/a

## Further Details

### Overview

Aquatic life support in Masonic Creek are known to experience minor impacts due to nutrients and silt/sediment from nonpoint sources. Toxicity was also noted at the sampling site.

### Water Quality Sampling

A biological (macroinvertebrate) assessment of Masonic Creek in Middletown (at Mud Mills Road) was conducted in 2002. Sampling results indicated slightly impacted water quality conditions. The fauna was heavily dominated by facultative midges and the stream contained significant amounts of silt-laden filamentous algae. Impact Source Determination suggested toxicity was the primary source of impact. Although aquatic life is supported in the stream, nutrient biotic evaluation indicates the level of eutrophication is sufficient to stress aquatic life support. (DEC/DOW, BWAM/SBU, June 2005)

### Segment Description

This segment includes the entire stream and all tribs. The waters of the stream are Class B. Tribs to this reach/segment are also Class B.

# Monhagen Brook and tribs ( 1306-0074)

Impaired Seg

## Waterbody Location Information

Revised: 12/18/2007

**Water Index No:** H-139-13-52      **Drain Basin:** Lower Hudson River  
**Hydro Unit Code:**                      **Str Class:** C  
**Waterbody Type:** River      **Reg/County:** 3/Orange Co. (36)  
**Waterbody Size:** 25.9 Miles      **Quad Map:** MIDDLETOWN (P-23-1)  
**Seg Description:** entire stream and tribs

## Water Quality Problem/Issue Information

(CAPS indicate MAJOR Use Impacts/Pollutants/Sources)

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

### Type of Pollutant(s)

Known: NUTRIENTS (phosphorus), Salts  
Suspected: UNKNOWN TOXICITY, D.O./Oxygen Demand  
Possible: - - -

### Source(s) of Pollutant(s)

Known: URBAN/STORM RUNOFF  
Suspected: Agriculture  
Possible: Deicing (stor/appl), Other Sanitary Disch

## Resolution/Management Information

**Issue Resolvability:** 1 (Needs Verification/Study (see STATUS))  
**Verification Status:** 4 (Source Identified, Strategy Needed)  
**Lead Agency/Office:** DOW/Reg3      **Resolution Potential:** Medium  
**TMDL/303d Status:** 1\*

## Further Details

### Overview

Aquatic life support, recreational use and aesthetics in Monhagen Brook are impaired by a various pollutants from point and urban nonpoint sources.

### Water Quality Sampling

A biological (macroinvertebrate) survey of Monhagen Brook at multiple sites in the vicinity of Middletown was conducted in 2004. Sampling results indicated slightly to moderately impacted water quality conditions. All sites revealed similar assessments that straddle the line between slight and moderate impacts. Water quality at the upstream sites were assessed as slightly impacted. These sites were littered with refuse and urban debris. Water quality decreased to moderately impacted downstream. Impact Source Determination indicated a range of causes, but nutrient enrichment and urban runoff sources are the most likely factors influencing water quality. A continuing rise in chlorides in the stream (specific conductance increased by 250% between 1986 and 204) is indicative of increases in urban nonpoint loadings of pollutants. Such increases - also noted in other developing watersheds of the Lower Hudson River Basin - are of concern and warrant continued monitoring. (Monhagen Brook Biological Assessment Report, Bode et al., DEC/DOW, BWAM/SBU, February 2005)

#### Previous Sampling

Biological assessment reports were also conducted on Monhagen Brook in 1992 and 1986. These reports document the improvement in water quality from severely impacted in 1986, prior to the Middletown WWTP upgrade and re-routing of the effluent outfall to the Wallkill River in 1989. (DEC/DOW, BWAM/SBU, February 2005)

#### Section 303(d) Listing

Monhagen Brook is not 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. It is recommended that the segment be added to Part 1 of the List as a waterbody segment requiring the development of a TMDL or other strategy to attain water quality standards for phosphorus.

#### Segment Description

This segment includes the entire stream and all tribs. The waters of the stream are Class C. Tribs to this reach/segment, including Draper Brook (-5), are primarily Class C; with unnamed trib (-2) designated Class B.



## Lake Uses

This lake waterbody is designated class A, suitable for use as a water supply, public bathing beach, general recreation and aquatic life support. Water quality monitoring by NYSDEC focuses primarily on support of general recreation and aquatic life. Samples to evaluate the bacteriological condition and bathing use of the lake or to evaluate contamination from organic compounds, metals or other inorganic pollutants have not been collected as part of the CSLAP monitoring program. Monitoring to assess potable water supply and public bathing use is generally the responsibility of state and/or local health departments.