

The Compilation of Costs table presents a compilation of costs in 2020 U.S. dollars for a suite of mitigation strategies. References marked with an asterisk are listed in [USEPA \(2015\)](#). For a summary of 31 individual oxygenation or aeration case studies, see [Wagner \(2015\)](#). Note: For ranges of costs/acre or costs/acre/year in the referenced citations, table data may represent averages for the ranges presented. NA = Not Available.

Compilation of costs (2020 U.S. dollars) for a suite of mitigation strategies

LOCALE	WATER BODY	TREATMENT	CAPITAL COSTS (\$/ACRE)	O&M COSTS (\$/ACRE)	DURATION OF EFFECTIVENESS (DAYS)	REFERENCE
AERATION						
FL	Lakes	Circulators	385-4,527	116-2,182	NA	Cooke et al. (2005) in Wagner (2015)
MA	Onota Lake (617 acres)	Deep-hole system	700	91	NA	Berkshire Regional Planning Commission (2004)*
MA	Lovers Lake and Stillwater Pond (55.5 acres)	Hypolimnetic aeration	1,904	106	15	ENSR Corporation (2008)*
MA	Lovers Lake and Stillwater Pond (55.5 acres)	Artificial circulation	2,352	157	15	ENSR Corporation (2008)*
MN	Twin Lake (20 acres)	Solar circulator hypolimnetic dispersal	7,793	277	20	Chandler (2013)*
MN	Twin Lake (20 acres)	Bottom bubbler	12,992	1,939	20	Chandler (2013)*
New England	Lakes (3)	Mechanical mixing	10,000-50,000 per device	Requires power and maintenance		NEIWPC (2015)
NY	Lakes	Surface aeration (oxygenation and circulation)	150-2,500			NYDEC (2019)
NY	Lakes	Hypolimnetic aeration or oxygenation	>2,500			NYDEC (2019)
USA	Lakes (33)	Circulators	399 (>133-acre lake), 4,050 (<25-acre lake)			Cooke et al. (2005) in Wagner (2015)

USA?	Unknown lakes	Hypolimnetic aerators		2,039 765 for large lakes	10	Cooke et al. (2005) in Wagner (2015)
ALGAEICIDES						
New England	Lake surface blooms	Surface application	100			NEIWPC (2015)
NY	Lakes		5-25/acre-ft		<1	NYDEC (2019)
ALUM TREATMENT						
MA	Lovers Lake and Stillwater Pond (28.25 acres)		9,026	0	15	ENSR Corporation (2008)*
MA	Morses Pond (104.5 acres)	Annual treatment 2008-2016	1,620	253	18	Wagner (2017)
MN	Keller Lake (72 acres)		914	0	NA	Barr (2005)*
MN	Kohlman Lake (74 acres)		2,509	0	NA	Barr (2005)*
MN	Spring Lake (409 acres)		2,837	0	10-32	Barr (2005)*
MN	Twin Lake (19 acres)		8,624	0	1.5	Chandler (2013)*
New England	Lakes	Alum	280-5,000		Variable	NEIWPC (2015)
NY	Lakes	Alum or lanthanum-substituted clay	100-500			NYDEC (2019)
NY	Cossayuna Lake (35 acres)		726	0	NA	The LA Group (2001)*
SD	Lake Mitchell (877 acres)	4-year assumed whole-lake treatment	247	0	NA	Osgood (2002)*

WA	Green Lake (259 acres)		10,241	0	10	Herrera Environmental Consultants (2003)*
WA	Lake Ketchum (25.5 acres)	Treating sediment	8,736	0	4	Burghdorff & Williams (2012)*
WA	Lake Ketchum (25.5 acres)	Treating water column	1,614	0	1	Burghdorff & Williams (2012)*
WA	Lake Lawrence (330 acres)	Alum+ monitoring	3,350	619 (/month)	20	Tetra Tech (2004)*
WA	Lake Hicks (4 acres)		13,690	0	>10	King County (2005)*
WI	Cedar Lake (1,120 acres)	Alum twice/year, assume 1/2 lake	2,200	0	10	Cedar Lake Protection & Rehab District (2013)*
WI	E. Alaska Lake (41 acres)		4,640	0	NA	Hoyman (2011)*
BARLEY STRAW						
MD	Lake Williston (67 acres)	500 bales + 3,200 labor	85	0	1	Calculated from Sellner et al. (2015)
MN	Twin Lake (20 acres)		619	0	NA	Chandler (2013)*
New England	Lakes	225 lbs/acre	500	0	Full season	NEIWPCC (2015)
BIOMANIPULATION						
NY		Stocking piscivorous fish to control planktivorous fish	100-2,000			NYDEC (2019)
MN	Twin Lake (20 acres)	Removing, adding, and monitoring fish	15,646	0	NA	Chandler (2013)*
DREDGING						

MA	Lovers Lake and Stillwater Pond (19 acres)		91,100	0	10	ENSR Corporation (2008)*
MD	E. Lake Linganore (~100 acres)		180,000	0	NA	Bohnel (2019)
MN	Keller Lake (72 acres)		17,594	0	NA	Barr (2005)*
MN	Kohlman Lake (74 acres)		26,375	0	NA	Barr (2005)*
MN	Twin Lake (20 acres)		142,342	0	NA	Chandler (2013)*
NY	Cossayuna Lake (35 acres)		29,305	0	NA	The LA Group (2001)*
WA	Lake Lawrence (330 acres)		95,452	4,766	50	Tetra Tech (2004)*
CLAY AND SURFACTANT FLOCCULATION						
CHN	Lake Tai	Kaolinite, soil	148-245	0	148-245	Pan et al. (2019)
CHN	Lake Tai	Kaolinite, soil + capping	3,648-8,197	0	3,648-8,197	Pan et al. (2019)
HERBICIDE TREATMENT						
NY	Cossayuna Lake (35 acres)	CuSO ₄ every year for 5 years	933	0	1	The LA Group (2001)*
HYDRAULIC MANIPULATION						
MN	Twin Lake (20 acres)		32,480	3,864	20	Chandler (2013)*
NY	Lakes			<10,000		NYDEC (2019)
PEROXIDE						
MD	Lake Anita Louise (5 acres)	350 lbs granular H ₂ O ₂ compound	486	0	>4	Mattheiss, Sellner, and Ferrier (2017)

MD	Spahrs Quarry (7 acres)	550 lbs granular H ₂ O ₂ compound	275	0	NA	Campbell and Sellner (in preparation)
ULTRASOUND						
New England	Lakes	20kHz-1MHz sound waves	2,400	Some (power, maintenance)	Variable	NEIWPC (2015)
NY	Lakes	20kHz-1MHz sound waves	5,000/unit	Some (power, maintenance)		NYDEC (2019)