TABLE DR1. LIST OF YEARS WITH NO DATA AVAILABLE (I.E., WITH NO MONTHLY AVERAGE).

Lake	Abbr.	No. of Years	Periods with no data available
Ontario			
	Cape	16	1899 - 1913, 1915
	Olco	2	1998- 99
	PWel	24	1932- 55
	Roch	44	1908- 34, 1936- 52
Erie			
	Buff	17	1870 - 1886
	Erie	2	1998- 99
	Marb	2	1998- 99
	Tole	27	1878 - 1903, 1909- 10
Huron			
	DeTo	40	1897- 98, 1900, 1904- 33, 1937- 43
	Lake	2	1998-99
Michigan			
	Holl	49	1898, 1901- 02, 1904, 1909- 34, 1936- 40, 1943- 55, 1957- 58
	Ludi	38	1898- 99, 1901- 02, 1907, 1909- 34, 1938, 1940- 43, 1948- 49
	StuB	6	1920- 21, 1923- 24, 1926, 1998
Superior			
	Dulu	6	1974- 79
	Gran	1	1998
	Onto	1	1998
	Poin	5	1945- 49
	TwoH	48	1888- 98, 1901- 29, 1932- 34, 1936- 40

TABLE DR2. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE ONTARIO.

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Burl	Cape					18.8 ± 1.8	20.0 ± 0.7
Burl	Cobo					13.5 ± 1.2	12.3 ± 0.8
Burl	Kngs					18.5 ± 1.7	22.5 ± 0.7
Burl	Olco					8.9 ± 0.9	8.7 ± 0.9
Burl	Oswe					13.9 ± 1.6	15.5 ± 0.7
Burl	PWel					4.4 ± 0.9	5.3 ± 0.8
Burl	Roch					13.3 ± 1.2	9.8 ± 0.7
Burl	Toro				21.2 ± 2.0	11.2 ± 1.0	7.9 ± 0.7
Cape	Cobo				-11.5 ± 1.9	-8.2 ± 1.5	-7.7 ± 0.4
Cape	Kngs	5.8 ± 0.6			-4.5 ± 2.2	2.4 ± 1.1	2.5 ± 0.2
Cape	Olco				-14.7 ± 2.6	-11.0 ± 1.4	-11.3 ± 0.6
Cape	Oswe	-2.1 ± 0.6			-2.8 ± 0.4	-4.8 ± 1.2	-4.5 ± 0.2
Cape	PWel				-12.2 ± 2.4	-14.9 ± 1.7	-14.7 ± 0.3
Cape	Roch				-7.7 ± 1.1	-8.2 ± 1.3	-10.2 ± 0.2
Cape	Toro	-11.6 ± 0.9			-11.2 ± 0.7	-12.1 ± 1.7	-12.1 ± 0.2
Cobo	Kngs				9.1 ± 2.3	7.9 ± 1.5	10.2 ± 0.4
Cobo	Olco				1.5 ± 2.4	-3.7 ± 0.9	-3.6 ± 0.7
Cobo	Oswe				6.8 ± 1.6	2.9 ± 1.4	3.2 ± 0.4
Cobo	PWel				-7.4 ± 3.1	-9.2 ± 1.0	-7.0 ± 0.5
Cobo	Roch				3.3 ± 1.3	0.2 ± 1.1	-2.5 ± 0.4
Cobo	Toro			-1.3 ± 1.0	-1.5 ± 1.6	-3.3 ± 1.0	-4.4 ± 0.4
Hami	Toro			0.8 ± 6.4			
Kngs	Olco				-7.4 ± 2.6	-10.0 ± 1.2	-13.8 ± 0.6
Kngs	Oswe	-7.9 ± 0.6	-7.6 ± 0.4	-7.5 ± 0.2	-1.2 ± 1.5	-7.4 ± 1.0	-7.0 ± 0.3
Kngs	PWel				-19.9 ± 2.8	-15.5 ± 1.6	-17.2 ± 0.4
Kngs	Roch				-6.0 ± 1.5	-7.7 ± 1.1	-12.7 ± 0.3
Kngs	Toro	-17.4 ± 0.9	-16.4 ± 0.6		-8.9 ± 2.2	-14.5 ± 1.6	-14.6 ± 0.3
Olco	Oswe				4.9 ± 1.6	5.2 ± 1.0	6.8 ± 0.6
Olco	PWel				-6.6 ± 2.8	-5.6 ± 0.7	-3.4 ± 0.7
Olco	Roch				4.0 ± 1.5	5.1 ± 0.7	1.1 ± 0.6
Olco	Toro			6.6 ± 1.5	3.9 ± 1.7	3.0 ± 0.7	-0.8 ± 0.6
Oswe	PWel				-9.5 ± 2.0	-9.9 ± 1.4	-10.2 ± 0.4
Oswe	Roch			-3.8 ± 0.5	-6.1 ± 0.4	-5.6 ± 1.6	-5.7 ± 0.3
Oswe	Toro	-9.4 ± 0.9	-8.8 ± 0.7	-8.5 ± 0.5	-11.3 ± 0.9	-7.2 ± 1.5	-7.6 ± 0.3
PDal	Toro			1.3 ± 0.6			
PWel	Roch				11.6 ± 2.4	9.0 ± 1.1	4.5 ± 0.4
PWel	Toro			-0.6 ± 0.7	-1.3 ± 2.0	2.7 ± 1.0	2.6 ± 0.4
Roch	Toro				-5.5 ± 0.8	-3.5 ± 1.1	-1.9 ± 0.3

TABLE DR3. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE ERIE.

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Barc	BarP					-8.0 ± 4.2	-14.8 ± 2.5
Barc	Buff					6.3 ± 2.0	1.3 ± 2.1
Barc	Clev					-9.1 ± 3.3	-8.5 ± 2.1
Barc	Erie					-7.3 ± 1.6	-10.8 ± 2.4
Barc	Erio			3.8 ± 2.1		-9.3 ± 3.4	-8.3 ± 2.4
Barc	Fair					2.9 ± 2.5	-20.4 ± 3.0
Barc	Ferm					-9.7 ± 4.8	-8.3 ± 2.5
Barc	Kngv					-7.6 ± 4.2	-9.0 ± 2.4
Barc	Marb					-8.3 ± 4.6	-7.1 ± 2.4
Barc	Monr					-14.2 ± 5.1	-14.7 ± 6.3
Barc	PCol					-1.2 ± 1.8	-4.4 ± 2.2
Barc	PDov					-0.4 ± 1.5	-0.5 ± 2.4
Barc	PSta			4.6 ± 2.3		-9.4 ± 2.4	-6.1 ± 2.2
Barc	StuP					16.7 ± 1.9	3.4 ± 2.6
Barc	Tole					-7.8 ± 4.9	-7.3 ± 2.1
BarP	Buff				19.8 ± 5.9	18.7 ± 4.8	16.1 ± 1.4
BarP	Clev				7.0 ± 3.7	9.0 ± 2.3	6.3 ± 1.4
BarP	Erie				6.2 ± 4.9	-0.2 ± 4.1	4.0 ± 1.8
BarP	Erio				6.8 ± 4.9	7.3 ± 2.2	6.5 ± 1.8
BarP	Fair					-1.4 ± 2.8	-5.6 ± 2.6
BarP	Ferm					6.7 ± 1.7	6.5 ± 1.9
BarP	Kngv			2.0 ± 2.5	0.6 ± 6.0	5.6 ± 1.6	5.8 ± 1.8
BarP	Marb				6.6 ± 3.2	7.0 ± 1.9	7.7 ± 1.8
BarP	Monr					8.6 ± 2.3	0.1 ± 6.1
BarP	PCol					13.1 ± 4.6	10.4 ± 1.5
BarP	PDov				14.6 ± 5.0	14.5 ± 4.3	14.3 ± 1.8
BarP	PSta				6.7 ± 3.7	5.5 ± 3.6	8.7 ± 1.5
BarP	StuP				14.5 ± 7.9	19.1 ± 4.8	18.2 ± 2.1
BarP	Tole			2.7 ± 2.7	4.7 ± 3.0	4.7 ± 2.2	7.5 ± 1.5
Buff	Clev	-5.8 ± 1.2			-9.0 ± 0.5	-9.9 ± 4.5	-9.8 ± 0.3
Buff	Erie				-8.8 ± 2.1	-11.5 ± 2.1	-12.1 ± 1.2
Buff	Erio				-7.2 ± 3.0	-9.5 ± 3.8	-9.6 ± 1.1
Buff	Fair					-21.9 ± 2.9	-21.7 ± 2.2
Buff	Ferm					-12.3 ± 5.3	-9.6 ± 1.3
Buff	Kngv				-8.9 ± 4.3	-11.8 ± 4.6	-10.3 ± 1.2
Buff	Marb				-7.3 ± 2.7	-9.1 ± 4.9	-8.4 ± 1.2
Buff	Monr					-26.1 ± 5.5	-16.0 ± 5.9
Buff	PCol	-6.4 ± 0.9		-5.8 ± 0.4		-5.1 ± 1.3	-5.7 ± 0.5
Buff	PDov				-3.1 ± 2.7	-2.5 ± 1.9	-1.8 ± 1.1
Buff	PSta	-0.3 ± 1.5			-0.5 ± 0.9	-6.1 ± 3.3	-7.4 ± 0.5
Buff	StuP				-0.1 ± 1.6	1.5 ± 1.1	2.1 ± 1.6
Buff	Tole				-4.5 ± 1.0	-7.8 ± 5.7	-8.6 ± 0.4
Clev	Erie				-1.2 ± 1.5	-3.2 ± 3.0	-2.3 ± 1.2
Clev	Erio				-0.1 ± 2.2	0.0 ± 1.4	0.2 ± 1.1
Clev	Fair			-6.9 ± 3.6		-16.6 ± 1.4	-11.9 ± 2.2
Clev	Ferm					-2.4 ± 2.6	0.2 ± 1.3
Clev	Kngv				-0.5 ± 2.8	-2.7 ± 1.9	-0.5 ± 1.2
Clev	Marb			0.6 ± 1.3	0.8 ± 1.3	-0.3 ± 2.2	1.4 ± 1.2
Clev	Monr					-12.0 ± 2.9	-6.2 ± 5.9
Clev	PCol	-0.6 ± 1.2	0.3 ± 0.9			3.8 ± 4.0	4.1 ± 0.6
Clev	PDov				6.2 ± 2.1	6.8 ± 3.0	8.0 ± 1.1
Clev	PSta	5.5 ± 1.5	4.9 ± 1.1	4.1 ± 0.5	5.8 ± 0.9	2.4 ± 2.2	2.4 ± 0.6
Clev	StuP				10.2 ± 3.2	8.7 ± 3.5	11.9 ± 1.6
Clev	Tole			2.1 ± 0.7	1.8 ± 0.7	0.1 ± 3.1	1.2 ± 0.5
Erie	Erio				1.0 ± 2.9	2.5 ± 2.9	2.5 ± 1.6
Erie	Fair					-5.0 ± 2.2	-9.6 ± 2.5
Erie	Ferm					4.8 ± 4.8	2.5 ± 1.8
Erie	Kngv				2.6 ± 3.0	3.7 ± 4.0	1.8 ± 1.7
Erie	Marb				2.5 ± 2.2	4.0 ± 4.3	3.7 ± 1.7
Erie	Monr					-2.0 ± 4.8	-3.9 ± 6.0
Erie	PCol					6.9 ± 1.9	6.4 ± 1.3
Erie	PDov				5.3 ± 2.6	9.6 ± 1.4	10.3 ± 1.6
Erie	PSta			1.1 ± 2.1	0.2 ± 2.2	1.9 ± 1.9	4.7 ± 1.3
Erie	StuP				10.7 ± 4.2	15.4 ± 1.8	14.2 ± 2.0

TABLE DR3. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE ERIE (CONTINUED…)

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Erie	Tole				2.4 ± 2.4	1.8 ± 4.8	3.5 ± 1.3
Erio	Fair					-14.1 ± 1.4	-12.1 ± 2.5
Erio	Ferm					-1.7 ± 2.7	0.0 ± 1.7
Erio	Kngv				2.9 ± 4.0	-1.7 ± 2.0	-0.7 ± 1.6
Erio	Marb				-0.3 ± 1.9	-0.3 ± 2.4	1.2 ± 1.6
Erio	Monr					-4.3 ± 3.0	-6.4 ± 6.0
Erio	PCol					5.5 ± 3.7	3.9 ± 1.2
Erio	PDov				6.1 ± 4.4	7.3 ± 3.0	7.8 ± 1.6
Erio	PSta			5.5 ± 2.0	2.2 ± 3.2	-0.5 ± 2.1	2.2 ± 1.2
Erio	StuP				10.7 ± 4.2	10.3 ± 3.5	11.7 ± 1.9
Erio	Tole				-0.5 ± 2.6	-2.7 ± 3.1	1.0 ± 1.2
Fair	Ferm					14.1 ± 3.3	12.1 ± 2.6
Fair	Kngv					10.1 ± 2.6	11.4 ± 2.5
Fair	Marb					13.8 ± 3.0	13.3 ± 2.5
Fair	Monr					-8.0 ± 3.7	5.7 ± 6.3
Fair	PCol					15.8 ± 3.0	16.0 ± 2.3
Fair	PDov					19.9 ± 2.4	19.9 ± 2.5
Fair	PSta					12.9 ± 1.4	14.3 ± 2.3
Fair	StuP					22.3 ± 2.9	23.8 ± 2.7
Fair	Tole					13.0 ± 3.6	13.1 ± 2.2
Ferm	Kngv					-0.4 ± 1.4	-0.7 ± 1.8
Ferm	Marb					1.4 ± 1.3	1.2 ± 1.8
Ferm	Monr					-2.7 ± 1.1	-6.4 ± 6.0
Ferm	PCol					6.6 ± 5.2	3.9 ± 1.4
Ferm	PDov					7.6 ± 4.9	7.8 ± 1.7
Ferm	PSta					-0.8 ± 4.1	2.2 ± 1.4
Ferm	StuP					10.5 ± 5.2	11.7 ± 2.1
Ferm	Tole			1.6 ± 1.3		-1.4 ± 1.3	1.0 ± 1.4
Kngv	Marb				3.1 ± 2.3	1.6 ± 1.4	1.9 ± 1.7
Kngv	Monr					5.2 ± 1.7	-5.7 ± 6.0
Kngv	PCol					7.2 ± 4.6	4.6 ± 1.3
Kngv	PDov				8.8 ± 3.8	8.6 ± 4.1	8.5 ± 1.6
Kngv	PSta				-4.8 ± 3.6	-0.3 ± 3.4	2.9 ± 1.3
Kngv	StuP				11.0 ± 6.6	12.6 ± 4.5	12.4 ± 2.0
Kngv	Tole				4.7 ± 2.6	-0.7 ± 2.1	1.7 ± 1.3
Marb	Monr					-5.5 ± 1.5	-7.6 ± 6.0
Marb	PCol					4.6 ± 4.9	2.7 ± 1.3
Marb	PDov				5.4 ± 3.0	6.2 ± 4.5	6.6 ± 1.6
Marb	PSta				-1.0 ± 2.7	-1.3 ± 3.8	1.0 ± 1.3
Marb	StuP				7.4 ± 3.5	9.0 ± 4.9	10.5 ± 2.0
Marb	Tole				0.0 ± 1.1	-2.0 ± 1.8	-0.2 ± 1.3
Monr	PCol					7.2 ± 5.5	10.3 ± 5.9
Monr	PDov					11.0 ± 5.0	14.2 ± 6.0
Monr	PSta					6.8 ± 4.4	8.6 ± 5.9
Monr	StuP					24.1 ± 5.3	18.1 ± 6.1
Monr	Tole			6.6 ± 4.3		3.6 ± 1.4	7.4 ± 5.9
PCol	PDov					1.9 ± 1.5	3.9 ± 1.2
PCol	PSta	6.1 ±	4.6 ± 1.2	3.8 ± 0.6		-1.0 ± 2.9	-1.7 ± 0.7
PCol	StuP			4.6 ± 2.4		4.6 ± 0.9	7.8 ± 1.7
PCol	Tole					-2.3 ± 5.4	-2.9 ± 0.6
PDov	PSta			-7.0 ± 2.3	-5.7 ± 3.1	-8.1 ± 1.8	-5.6 ± 1.2
PDov	StuP				8.0 ± 3.5	4.6 ± 1.4	3.9 ± 1.9
PDov	Tole				4.7 ± 3.7	-8.5 ± 4.9	-6.8 ± 1.2
PSta	StuP				11.4 ± 3.3	12.0 ± 2.3	9.5 ± 1.7
PSta	Tole				-2.8 ± 1.3	-2.2 ± 4.0	-1.2 ± 0.6
StuP	Tole				-10.3 ± 4.5	-12.2 ± 5.5	-10.7 ± 1.6

TABLE DR4. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE MICHIGAN-HURON.

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Calu	Coll	31.7 ± 2.1			29.1 ± 1.5	26.7 ± 3.9	27.0 ± 1.0
Calu	DeTo3					27.0 ± 3.2	27.7 ± 1.1
Calu	Esse3				10.5 ± 2.0	8.0 ± 2.1	9.1 ± 1.1
Calu	Gode	10.4 ± 2.4			8.9 ± 1.0	8.5 ± 3.5	8.9 ± 1.0
Calu	Gree3				5.0 ± 2.3	3.0 ± 2.1	4.2 ± 1.1
Calu	Harb	12.5 ± 1.8			13.2 ± 1.1	11.7 ± 2.9	10.5 ± 1.0
Calu	Harr				13.3 ± 3.2	16.1 ± 2.9	18.4 ± 1.3
Calu	Holl				3.6 ± 1.6	3.2 ± 1.9	2.5 ± 1.1
Calu	Kewa					-0.9 ± 1.8	1.9 ± 1.9
Calu	Lake				11.0 ± 1.9	9.6 ± 2.6	10.4 ± 0.7
Calu	Litt					34.3 ± 3.9	37.4 ± 1.2
Calu	Ludi				-5.3 ± 1.8	-3.0 ± 2.4	-1.8 ± 1.1
Calu	Mack	20.1 ± 2.1			22.1 ± 1.1	20.5 ± 3.3	20.4 ± 1.0
Calu	Milw3	-4.9 ± 1.2		-4.5 ± 0.7	-2.4 ± 1.0	-5.1 ± 1.8	-4.0 ± 1.0
Calu	Parr				29.2 ± 3.7	32.2 ± 4.0	34.7 ± 1.2
Calu	PInl				17.0 ± 3.9	16.7 ± 2.7	19.8 ± 1.3
Calu	StuB	7.6 ± 1.8			10.5 ± 1.4	6.9 ± 2.3	6.6 ± 1.0
Calu	Thes	31.4 ± 2.1			29.4 ± 1.3	31.1 ± 3.4	31.2 ± 1.0
Calu	Tobe				15.3 ± 5.0	24.5 ± 3.8	27.1 ± 1.2
Coll	DeTo3					3.0 ± 1.8	0.7 ± 1.1
Coll	Esse3				-13.7 ± 2.1	-15.1 ± 3.1	-17.9 ± 1.1
Coll	Gode	-20.4 ± 1.5	-20.6 ± 1.6	-18.9 ± 0.4	-18.7 ± 0.7	-18.2 ± 1.5	-18.1 ± 1.0
Coll	Gree3				-17.1 ± 2.2	-20.2 ± 3.9	-22.8 ± 1.1
Coll	Harb	-19.2 ± 0.6			-15.8 ± 0.4	-14.5 ± 1.6	-16.5 ± 1.0
Coll	Harr				-4.2 ± 2.8	-6.0 ± 1.6	-8.6 ± 1.3
Coll	Holl				-19.8 ± 3.0	-23.8 ± 3.2	-24.5 ± 1.1
Coll	Kewa					-22.1 ± 3.5	-25.1 ± 1.9
Coll	Lake				-11.7 ± 2.1	-14.0 ± 2.0	-16.6 ± 0.7
Coll	Litt					14.9 ± 1.9	10.4 ± 1.2
Coll	Ludi				-31.8 ± 2.0	-30.7 ± 3.0	-28.8 ± 1.1
Coll	Mack	-11.3 ± 1.2			-7.2 ± 0.7	-5.9 ± 2.1	-6.6 ± 1.0
Coll	Milw3	-36.3 ± 1.8			-31.4 ± 0.8	-32.4 ± 3.7	-31.0 ± 1.0
Coll	Parr			12.0 ± 1.2	12.2 ± 1.9	11.0 ± 1.1	7.7 ± 1.2
Coll	PInl				-0.6 ± 3.6	-3.0 ± 2.7	-7.2 ± 1.3
Coll	StuB	-24.1 ± 1.5			-19.1 ± 0.8	-20.8 ± 3.3	-20.4 ± 1.0
Coll	Thes	0.0 ± 0.9		1.8 ± 0.6	1.7 ± 0.7	4.1 ± 1.7	4.2 ± 1.0
Coll	Tobe			4.2 ± 1.8	4.3 ± 2.9	3.4 ± 1.3	0.1 ± 1.2
DeTo3	Esse3					-19.3 ± 2.7	-18.6 ± 1.2
DeTo3	Gode					-21.0 ± 1.9	-18.8 ± 1.1
DeTo3	Gree3					-24.3 ± 3.1	-23.5 ± 1.2
DeTo3	Harb					-15.3 ± 1.6	-17.2 ± 1.1
DeTo3	Harr					-9.9 ± 1.3	-9.3 ± 1.4
DeTo3	Holl					-26.2 ± 2.4	-25.2 ± 1.1
DeTo3	Kewa					-27.6 ± 2.6	-25.8 ± 2.0
DeTo3	Lake					-17.9 ± 2.0	-17.3 ± 0.8
DeTo3	Litt					9.9 ± 1.7	9.7 ± 1.3
DeTo3	Ludi					-34.2 ± 2.1	-29.5 ± 1.1
DeTo3	Mack					-6.1 ± 1.1	-7.3 ± 1.1
DeTo3	Milw3					-31.8 ± 2.9	-31.7 ± 1.1
DeTo3	Parr					6.5 ± 1.7	7.0 ± 1.3
DeTo3	PInl					-9.0 ± 1.5	-7.9 ± 1.4
DeTo3	StuB					-22.4 ± 2.4	-21.1 ± 1.1
DeTo3	Thes			3.2 ± 0.8		2.7 ± 1.1	3.5 ± 1.1
DeTo3	Tobe					-1.4 ± 1.5	-0.6 ± 1.3
Esse3	Gode				-3.3 ± 2.9	-1.6 ± 2.9	-0.2 ± 1.1
Esse3	Gree3				-4.9 ± 1.4	-5.0 ± 2.2	-4.9 ± 1.3
Esse3	Harb			1.7 ± 1.9	3.7 ± 1.3	4.5 ± 2.2	1.4 ± 1.1
Esse3	Harr				8.4 ± 2.3	10.8 ± 2.4	9.3 ± 1.4
Esse3	Holl				-7.8 ± 1.9	-6.2 ± 2.1	-6.6 ± 1.2
Esse3	Kewa					-6.3 ± 2.1	-7.2 ± 2.0
Esse3	Lake				1.1 ± 1.4	1.4 ± 1.9	1.3 ± 0.9
Esse3	Litt					30.5 ± 3.3	28.3 ± 1.3
Esse3	Ludi				-16.5 ± 1.7	-14.8 ± 2.4	-10.9 ± 1.2
Esse3	Mack				12.7 ± 1.8	14.4 ± 2.7	11.3 ± 1.1
Esse3	Milw3				-15.3 ± 1.8	-13.5 ± 2.2	-13.1 ± 1.1
Esse3	Parr				25.8 ± 3.4	27.3 ± 3.4	25.6 ± 1.3
Esse3	PInl				10.7 ± 3.1	12.5 ± 2.5	10.7 ± 1.4
Esse3	StuB				-4.7 ± 1.6	-3.4 ± 2.0	-2.5 ± 1.1
Esse3	Thes				16.7 ± 2.4	22.6 ± 2.9	22.1 ± 1.1
Esse3	Tobe				16.4 ± 4.0	20.3 ± 3.2	18.0 ± 1.3

TABLE DR4. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE MICHIGAN-HURON (CONTINUED…).

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Gode	Gree3				-0.8 ± 3.5	-3.4 ± 3.8	-4.7 ± 1.1
Gode	Harb	1.5 ± 1.2	3.7 ± 1.4	2.3 ± 0.4	2.3 ± 0.6	3.7 ± 1.4	1.6 ± 1.0
Gode	Harr				8.6 ± 4.9	9.8 ± 1.6	9.5 ± 1.3
Gode	Holl				-4.9 ± 3.8	-5.9 ± 2.9	-6.4 ± 1.1
Gode	Kewa					-3.4 ± 3.2	-7.0 ± 1.9
Gode	Lake			2.8 ± 1.6	3.8 ± 2.7	2.3 ± 1.9	1.5 ± 0.7
Gode	Litt					30.5 ± 2.3	28.5 ± 1.2
Gode	Ludi				-14.6 ± 2.4	-13.4 ± 2.9	-10.7 ± 1.1
Gode	Mack	9.4 ± 1.5	11.7 ± 1.5		11.6 ± 0.7	12.4 ± 2.2	11.5 ± 1.0
Gode	Milw3	-14.9 ± 1.8	-13.1 ± 1.6		-12.7 ± 0.9	-14.3 ± 3.3	-12.9 ± 1.0
Gode	Parr				26.8 ± 3.6	27.0 ± 1.9	25.8 ± 1.2
Gode	PInl				8.7 ± 5.8	11.9 ± 2.7	10.9 ± 1.3
Gode	StuB	-3.0 ± 1.5			-1.4 ± 0.8	-2.6 ± 3.1	-2.3 ± 1.0
Gode	Thes	20.7 ± 1.2	21.5 ± 1.6		20.8 ± 0.9	22.4 ± 1.9	22.3 ± 1.0
Gode	Tobe				16.9 ± 5.8	19.0 ± 1.9	18.2 ± 1.2
Gree3	Harb				8.1 ± 1.4	9.7 ± 3.1	6.3 ± 1.1
Gree3	Harr				13.1 ± 2.2	15.5 ± 3.1	14.2 ± 1.4
Gree3	Holl				-3.5 ± 1.5	-1.7 ± 2.0	-1.7 ± 1.2
Gree3	Kewa					1.3 ± 1.7	-2.3 ± 2.0
Gree3	Lake				6.1 ± 1.7	6.8 ± 2.9	6.2 ± 0.9
Gree3	Litt					33.6 ± 3.8	33.2 ± 1.3
Gree3	Ludi				-11.5 ± 1.3	-10.0 ± 2.1	-6.0 ± 1.2
Gree3	Mack				18.0 ± 2.1	19.4 ± 3.0	16.2 ± 1.1
Gree3	Milw3				-11.0 ± 1.7	-8.7 ± 1.8	-8.2 ± 1.1
Gree3	Parr				29.1 ± 2.7	31.7 ± 4.1	30.5 ± 1.3
Gree3	PInl				14.3 ± 2.8	16.0 ± 2.4	15.6 ± 1.4
Gree3	StuB			-1.7 ± 1.7	0.0 ± 1.6	1.3 ± 1.6	2.4 ± 1.1
Gree3	Thes				21.5 ± 2.4	27.5 ± 3.2	27.0 ± 1.1
Gree3	Tobe				17.9 ± 3.2	23.7 ± 3.8	22.9 ± 1.3
Harb	Harr			4.7 ± 1.2	4.9 ± 1.2	5.2 ± 0.9	7.9 ± 1.3
Harb	Holl				-11.9 ± 1.5	-8.7 ± 2.3	-8.0 ± 1.1
Harb	Kewa					-11.0 ± 2.6	-8.6 ± 1.9
Harb	Lake				-2.5 ± 1.1	-3.2 ± 0.9	-0.1 ± 0.7
Harb	Litt					24.8 ± 2.0	26.9 ± 1.2
Harb	Ludi				-20.2 ± 1.1	-13.6 ± 2.6	-12.3 ± 1.1
Harb	Mack	7.6 ± 1.2			9.1 ± 0.4	8.9 ± 1.8	9.9 ± 1.0
Harb	Milw3	-17.1 ± 1.5			-13.7 ± 0.4	-14.5 ± 2.9	-14.5 ± 1.0
Harb	Parr				21.7 ± 1.8	21.9 ± 1.8	24.2 ± 1.2
Harb	PInl				7.1 ± 2.3	6.8 ± 2.1	9.3 ± 1.3
Harb	StuB	-5.2 ± 1.2			-3.3 ± 0.6	-5.3 ± 2.5	-3.9 ± 1.0
Harb	Thes	19.2 ± 1.2			17.5 ± 0.6	18.7 ± 1.6	20.7 ± 1.0
Harb	Tobe				11.2 ± 2.6	14.2 ± 1.6	16.6 ± 1.2
Harr	Holl				-16.1 ± 2.1	-17.0 ± 2.3	-15.9 ± 1.4
Harr	Kewa					-15.9 ± 2.6	-16.5 ± 2.1
Harr	Lake				-6.8 ± 2.3	-8.1 ± 1.4	-8.0 ± 1.1
Harr	Litt					17.7 ± 1.7	19.0 ± 1.5
Harr	Ludi				-21.0 ± 2.1	-23.2 ± 2.2	-20.2 ± 1.4
Harr	Mack				6.9 ± 2.2	5.9 ± 1.5	2.0 ± 1.3
Harr	Milw3				-19.2 ± 2.8	-21.7 ± 2.8	-22.4 ± 1.3
Harr	Parr				17.5 ± 2.3	17.6 ± 1.7	16.3 ± 1.5
Harr	PInl				2.6 ± 2.6	1.4 ± 1.9	1.4 ± 1.6
Harr	StuB				-10.0 ± 2.1	-11.9 ± 2.4	-11.8 ± 1.3
Harr	Thes				11.3 ± 3.4	13.6 ± 1.5	12.8 ± 1.3
Harr	Tobe				6.6 ± 2.9	8.8 ± 1.6	8.7 ± 1.5
Holl	Kewa					-0.4 ± 1.4	-0.6 ± 2.0
Holl	Lake				10.3 ± 1.7	8.1 ± 2.3	7.9 ± 0.8
Holl	Litt					35.5 ± 3.2	34.9 ± 1.3
Holl	Ludi				-5.5 ± 1.4	-3.2 ± 1.5	-4.3 ± 1.1
Holl	Mack				24.7 ± 2.4	18.1 ± 2.4	17.9 ± 1.1
Holl	Milw3			-14.7 ± 1.3	-2.8 ± 1.4	-7.3 ± 1.6	-6.5 ± 1.1
Holl	Parr				32.8 ± 2.8	33.1 ± 3.4	32.2 ± 1.3
Holl	PInl				19.1 ± 2.6	18.2 ± 1.9	17.3 ± 1.4
Holl	StuB				5.8 ± 1.4	4.2 ± 1.4	4.1 ± 1.1
Holl	Thes				26.5 ± 2.9	30.2 ± 2.5	28.7 ± 1.1
Holl	Tobe				21.3 ± 3.7	25.5 ± 3.0	24.6 ± 1.3

TABLE DR4. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE MICHIGAN-HURON (CONTINUED).

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Kewa	Lake					6.9 ± 2.5	8.5 ± 1.8
Kewa	Litt					31.0 ± 3.4	35.5 ± 2.1
Kewa	Ludi					-5.2 ± 1.5	-3.7 ± 2.0
Kewa	Mack					20.1 ± 2.4	18.5 ± 1.9
Kewa	Milw3					-8.1 ± 1.3	-5.9 ± 1.9
Kewa	Parr					31.7 ± 3.7	32.8 ± 2.1
Kewa	PInl					17.0 ± 1.9	17.9 ± 2.1
Kewa	StuB			14.5 ± 3.3		4.9 ± 1.0	4.7 ± 1.9
Kewa	Thes					34.1 ± 2.8	29.3 ± 1.9
Kewa	Tobe					32.0 ± 3.5	25.2 ± 2.1
Lake	Litt					28.2 ± 2.5	27.0 ± 1.0
Lake	Ludi				-17.1 ± 1.9	-16.2 ± 2.4	-12.2 ± 0.8
Lake	Mack				12.9 ± 2.0	13.9 ± 2.2	10.0 ± 0.7
Lake	Milw3				-16.2 ± 1.8	-14.9 ± 2.5	-14.4 ± 0.7
Lake	Parr				22.8 ± 2.5	24.9 ± 2.3	24.3 ± 1.0
Lake	PInl				9.9 ± 3.1	10.6 ± 2.3	9.4 ± 1.1
Lake	StuB				-5.7 ± 1.6	-5.0 ± 2.4	-3.8 ± 0.7
Lake	Thes				16.4 ± 2.8	21.5 ± 2.2	20.8 ± 0.7
Lake	Tobe				11.7 ± 3.9	16.5 ± 2.2	16.7 ± 1.0
Litt	Ludi					-41.6 ± 3.0	-39.2 ± 1.3
Litt	Mack					-13.3 ± 1.8	-17.0 ± 1.2
Litt	Milw3					-39.3 ± 3.7	-41.4 ± 1.2
Litt	Parr					-3.2 ± 1.6	-2.7 ± 1.4
Litt	PInl					-14.4 ± 2.3	-17.6 ± 1.5
Litt	StuB					-30.5 ± 3.3	-30.8 ± 1.2
Litt	Thes			-20.4 ± 2.4		-4.4 ± 1.7	-6.2 ± 1.2
Litt	Tobe					-8.2 ± 1.5	-10.3 ± 1.4
Ludi	Mack				29.1 ± 1.4	23.7 ± 2.3	22.2 ± 1.1
Ludi	Milw3			-2.6 ± 1.5	0.9 ± 1.5	-3.6 ± 2.1	-2.2 ± 1.1
Ludi	Parr				38.7 ± 2.3	39.2 ± 3.2	36.5 ± 1.3
Ludi	PInl				22.0 ± 1.6	23.0 ± 1.4	21.6 ± 1.4
Ludi	StuB			11.6 ± 0.7	11.5 ± 0.9	10.3 ± 1.4	8.4 ± 1.1
Ludi	Thes				34.2 ± 1.5	37.1 ± 2.2	33.0 ± 1.1
Ludi	Tobe				28.4 ± 2.9	31.1 ± 2.9	28.9 ± 1.3
Mack	Milw3	-24.7 ± 1.5			-24.2 ± 0.6	-25.3 ± 2.9	-24.4 ± 1.0
Mack	Parr				8.2 ± 2.7	10.0 ± 2.0	14.3 ± 1.2
Mack	PInl			-6.8 ± 1.8	-4.3 ± 2.1	-4.3 ± 1.4	-0.6 ± 1.3
Mack	StuB	-12.8 ± 1.2		-13.9 ± 0.6	-12.0 ± 0.6	-14.0 ± 2.5	-13.8 ± 1.0
Mack	Thes	11.6 ± 1.2		9.2 ± 0.5	9.4 ± 0.8	10.1 ± 1.3	10.8 ± 1.0
Mack	Tobe				2.6 ± 3.6	3.1 ± 1.8	6.7 ± 1.2
Milw3	Parr				35.3 ± 3.6	37.2 ± 3.9	38.7 ± 1.2
Milw3	PInl				23.2 ± 3.4	22.9 ± 2.2	23.8 ± 1.3
Milw3	StuB	12.2 ± 1.2			12.5 ± 0.5	11.8 ± 1.7	10.6 ± 1.0
Milw3	Thes	36.0 ± 1.5			34.5 ± 1.1	36.8 ± 3.0	35.2 ± 1.0
Milw3	Tobe				22.8 ± 4.6	30.2 ± 3.6	31.1 ± 1.2
Parr	PInl				-15.1 ± 2.7	-14.3 ± 2.6	-14.9 ± 1.5
Parr	StuB				-27.2 ± 2.5	-28.0 ± 3.5	-28.1 ± 1.2
Parr	Thes				-4.2 ± 2.2	-2.4 ± 1.7	-3.5 ± 1.2
Parr	Tobe				-10.1 ± 3.2	-8.5 ± 1.3	-7.6 ± 1.4
PInl	StuB				-14.9 ± 1.8	-13.1 ± 1.6	-13.2 ± 1.3
PInl	Thes				10.2 ± 2.9	13.2 ± 1.7	11.4 ± 1.3
PInl	Tobe				9.0 ± 3.7	7.8 ± 2.4	7.3 ± 1.5
StuB	Thes	24.4 ± 1.2			23.7 ± 0.8	25.0 ± 2.6	24.6 ± 1.0
StuB	Tobe				16.2 ± 3.9	20.1 ± 3.2	20.5 ± 1.2
Thes	Tobe				-2.6 ± 2.9	-5.5 ± 1.4	-4.1 ± 1.2

TABLE DR5. COMPARISON OF RELATIVE VERTICAL VELOCITIES AND THEIR STANDARD DEVIATION IN CM/CENTURY BETWEEN GAUGES ON LAKE SUPERIOR.

Gauge pair		Coordinating Com., 1977	Tait and Bolduc, 1985	Carrera et al, 1991	Tushingham, 1992	This Study Method 1	This Study Method 3
Dulu	Gran				22.3 ± 1.2	19.4 ± 1.2	17.7 ± 0.9
Dulu	Gros				29.5 ± 4.1	28.6 ± 2.5	26.9 ± 0.8
Dulu	Marq3	11.3 ± 0.9			11.7 ± 0.4	13.1 ± 2.5	13.1 ± 0.4
Dulu	Mich	52.1 ± 1.5	50.9 ± 1.0		47.1 ± 0.9	50.2 ± 2.5	48.6 ± 0.4
Dulu	Onto				8.0 ± 1.9	8.5 ± 1.8	6.6 ± 0.8
Dulu	Poin	23.5 ± 1.2			25.8 ± 0.8	26.9 ± 2.6	25.3 ± 0.3
Dulu	Ross					55.1 ± 2.2	52.8 ± 0.9
Dulu	Thun	29.0 ± 1.2	29.9 ± 0.9	30.8 ± 0.4	29.9 ± 0.6	29.4 ± 1.5	27.7 ± 0.4
Dulu	TwoH			5.9 ± 0.5		4.9 ± 0.9	4.1 ± 0.6
Gran	Gros				9.5 ± 14	7.2 ± 1.8	9.2 ± 1.1
Gran	Marq3				-2.7 ± 1.8	-0.7 ± 1.3	-4.6 ± 0.9
Gran	Mich				22.5 ± 2.8	29.6 ± 1.8	30.9 ± 0.9
Gran	Onto				-15.0 ± 2.5	-12.1 ± 1.3	-11.1 ± 1.1
Gran	Poin				9.6 ± 2.0	9.0 ± 1.8	7.6 ± 0.8
Gran	Ross					35.0 ± 1.8	35.1 ± 1.1
Gran	Thun			15.3 ± 2.2	15.3 ± 3.5	10.0 ± 1.2	10.0 ± 0.9
Gran	TwoH					-11.9 ± 0.8	-13.6 ± 0.9
Gros	Marq3				-14.4 ± 4.0	-10.7 ± 1.4	-13.8 ± 0.8
Gros	Mich				17.1 ± 4.2	18.9 ± 1.4	21.7 ± 0.8
Gros	Onto				-20.5 ± 11.0	-20.7 ± 2.0	-20.3 ± 1.0
Gros	Poin			3.4 ± 4.0	3.4 ± 9.7	-0.2 ± 1.2	-1.6 ± 0.7
Gros	Ross					27.2 ± 2.0	25.9 ± 1.1
Gros	Thun				0.6 ± 5.1	0.2 ± 2.1	0.8 ± 0.8
Gros	TwoH					-21.4 ± 2.3	-22.8 ± 0.9
Marq3	Mich	40.8 ± 0.9	39.4 ± 0.8	35.4 ± 0.5	33.7 ± 0.8	33.9 ± 1.3	35.5 ± 0.4
Marq3	Onto			-7.5 ± 2.1	-12.4 ± 1.8	-9.4 ± 1.5	-6.5 ± 0.8
Marq3	Poin	12.2 ± 0.6			11.1 ± 0.5	10.6 ± 1.1	12.2 ± 0.3
Marq3	Ross					35.7 ± 1.9	39.7 ± 0.9
Marq3	Thun	17.7 ± 1.2	17.5 ± 1.1	18.7 ± 0.5	16.9 ± 0.6	13.0 ± 1.8	14.6 ± 0.4
Marq3	TwoH					-9.0 ± 1.8	-9.0 ± 0.6
Mich	Onto				-36.7 ± 2.7	-39.1 ± 1.7	-42.0 ± 0.8
Mich	Poin	-29.0 ± 0.9		-25.4 ± 0.5	-25.3 ± 0.8	-23.3 ± 1.3	-23.3 ± 0.3
Mich	Ross					5.7 ± 2.0	4.2 ± 0.9
Mich	Thun	-23.2 ± 1.5	-21.0 ± 1.2		-17.3 ± 1.0	-20.9 ± 2.0	-20.9 ± 0.4
Mich	TwoH					-45.0 ± 2.3	-44.5 ± 0.6
Onto	Poin	23.5 ± 1.2			20.5 ± 2.0	19.2 ± 1.8	18.7 ± 0.7
Onto	Ross					46.3 ± 2.0	46.2 ± 1.1
Onto	Thun				26.8 ± 2.5	21.1 ± 1.5	21.1 ± 0.8
Onto	TwoH					1.2 ± 1.7	-2.5 ± 0.9
Poin	Ross					25.8 ± 2.1	27.5 ± 0.8
Poin	Thun	5.8 ± 1.2			5.8 ± 0.9	2.5 ± 2.2	2.4 ± 0.3
Poin	TwoH					-20.5 ± 2.3	-21.2 ± 0.5
Ross	Thun			-27.4 ± 3.2		-24.9 ± 1.7	-25.1 ± 0.9
Ross	TwoH					-57.7 ± 2.2	-48.7 ± 0.9
Thun	TwoH					-23.8 ± 1.4	-23.6 ± 0.6

TABLE DR6 - COUNT OF OUTLIERS (MONTHLY LAKE LEVEL AVERAGES REJECTED DURING THIS STUDY) PER MONTH AND PER SITE FOR EACH LAKE

Gauge	Jan	Fev	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	# of meas.	% of outliers
Lake Ontario															
Burl	2	0	0	1	0	2	0	0	0	1	3	1	10	349	3%
Cape	7	7	6	4	1	0	3	4	1	3	2	9	47	997	5%
Cobo	2	1	3	1	1	0	1	0	1	1	1	1	13	531	2%
Kngs	3	1	2	2	2	0	0	0	1	1	2	2	16	1019	2%
Olco	0	0	1	0	0	0	0	0	0	0	0	0	1	377	0%
Oswe	9	8	11	13	4	2	4	2	2	5	8	9	77	1692	5%
PWel	0	1	0	1	1	0	0	3	1	0	3	1	11	567	2%
Roch	4	7	9	12	3	2	4	2	2	5	8	8	66	1143	6%
Toro	7	3	3	4	0	0	0	2	3	2	2	2	28	1018	3%
Total	34	28	35	38	12	6	12	13	11	18	29	33	269		
Lake Erie															
Barc	6	1	0	0	0	0	0	0	1	0	3	5	16	306	5%
BarP	0	0	0	0	0	0	0	0	0	2	4	5	11	411	3%
Buff	23	2	3	1	0	0	0	0	0	5	33	37	104	1434	7%
Clev	5	2	0	0	0	0	0	0	0	0	10	9	26	1692	2%
Erie	5	1	0	0	0	0	0	0	0	0	4	8	18	475	4%
Erio	0	0	0	0	0	0	0	0	0	0	0	1	1	510	0%
Fair	0	0	0	0	0	0	0	0	0	0	0	0	0	304	0%
Ferm	4	2	0	1	0	0	0	0	0	1	6	6	20	447	4%
Kngv	0	0	0	0	0	0	0	0	0	0	2	5	7	456	2%
Marb	5	0	0	1	0	0	0	0	0	1	4	8	19	465	4%
Monr	0	0	0	0	0	0	0	0	0	2	2	3	7	157	4%
PCol	16	0	0	0	0	0	0	0	0	1	15	19	51	900	6%
PDov	7	1	0	2	1	1	0	0	0	0	3	9	24	490	5%
PSta	1	0	0	0	0	0	0	0	0	0	1	0	2	884	0%
StuP	13	0	0	0	0	0	0	0	0	1	11	14	39	383	10%
Tole	25	15	12	8	2	0	0	1	3	11	50	44	171	1085	16%
Total	110	24	15	13	3	1	0	1	4	24	148	173	516		
Lake Michigan-Huron															
Calu	8	8	11	9	2	1	1	1	5	2	10	12	70	1160	6%
Coll	1	0	1	0	0	0	0	0	2	1	7	2	14	886	2%
DeTo3	0	0	0	0	0	0	0	0	1	0	0	0	1	686	0%
Esse3	3	2	6	6	1	0	0	0	0	1	10	5	34	587	6%
Gode	0	3	0	1	1	1	1	0	0	0	2	4	13	884	1%
Gree3	3	2	6	8	6	1	0	0	1	3	12	10	52	588	9%
Harb	1	1	1	3	0	0	0	0	0	0	1	2	9	1692	1%
Harr	0	0	0	1	0	0	0	0	0	0	0	0	1	416	0%
Holl	1	0	1	1	0	1	0	0	0	0	0	0	4	528	1%
Kewa	1	0	1	1	0	0	0	0	0	0	2	0	5	286	2%
Lake	0	0	0	0	0	1	1	0	1	0	1	0	4	507	1%
Litt	3	0	1	0	0	1	4	4	3	3	3	3	25	497	5%
Ludi	1	0	0	1	0	2	0	0	0	0	0	2	6	669	1%
Mack	0	2	2	0	0	0	0	0	0	0	2	0	6	1213	0%
Milw3	4	5	6	5	0	0	0	0	1	0	4	7	32	1687	2%
Parr	1	1	2	1	1	0	0	0	0	2	4	1	13	485	3%
PInl	0	1	0	0	0	0	0	0	0	0	0	1	2	431	0%
StuB	6	4	3	4	2	4	1	1	1	0	1	5	32	1016	3%
Thes	1	0	1	0	0	0	0	0	0	0	4	0	6	866	1%
Tobe	2	0	0	0	0	0	0	0	0	0	0	0	2	458	0%
Total	36	29	42	41	13	12	8	6	15	12	63	54	331		
Lake Superior															
Dulu	10	7	1	1	6	3	1	0	2	3	4	3	41	1571	3%
Gran	0	0	1	0	0	0	0	0	0	0	0	0	1	398	0%
Gros	7	1	0	2	2	2	2	3	0	2	4	27	454	6%
Marq3	6	2	1	1	5	3	1	0	1	2	3	1	26	1701	2%
Mich	2	0	0	0	1	1	1	0	0	1	2	3	11	834	1%
Onto	2	2	3	4	1	0	1	0	0	0	0	1	14	450	3%
Poin	8	1	0	0	0	0	0	0	0	1	2	1	13	768	2%
Ross	2	0	2	1	0	0	1	0	0	0	0	0	6	383	2%
Thun	0	0	1	0	0	0	0	0	0	0	0	0	1	839	0%
TwoH	1	2	0	0	1	0	1	0	0	1	0	1	7	581	1%
Total	38	15	9	9	16	9	8	2	6	8	13	14	147		