

New Jersey Water Withdrawals, Uses, Transfers, and Discharges by HUC11, 1990 to 1999

Appendix 2: HUC11 Tables, Figures and Maps WMA 2 - Walkill



Let's protect our earth



NEW JERSEY DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Water Withdrawals, Transfers and Discharges for RUTGERS CREEK TRIBS --- 02020007000

WMA:	Walkill, Pochuck, and Papakating	02
HUC11:	Rutgers Creek tribs	02020007000

Table 1. Freshwater¹ Withdrawals in the HUC11 (millions of gallons)

Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
surface water:²											
Delaware River	0	0	0	0	0	0	0	0	0	0	0
other	0	0	0	0	0	0	0	0	0	0	0
sum	0	0	0	0	0	0	0	0	0	0	0
ground-water:³											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	10	11	11	11	11	11	12	12	12	12	11
sum	10	11	11	11	11	11	12	12	12	12	11
total withdrawals:	10	11	11	11	11	11	12	12	12	12	11

Table 2. Freshwater Imports To & Exports From the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
imports ¹¹	0	0	0	0	0	0	0	0	0	0	0
exports ¹¹	0	0	0	0	0	0	0	0	0	0	0
net	0	0	0	0	0	0	0	0	0	0	0

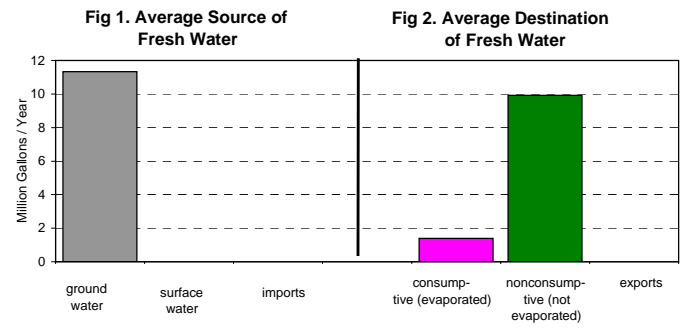


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
domestic wells											
nonconsumptive	9	9	9	10	10	10	10	11	11	11	10
consumptive	1	1	1	1	1	1	1	1	2	2	1
industrial & commercial & mining											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrigation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
power generation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
SUM:											
nonconsumptive	9	9	9	10	10	10	10	10	11	11	10
consumptive	1	1	1	1	1	1	1	1	2	2	1
PERCENTAGES:											
nonconsumptive	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%	87.7%
consumptive	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%	12.3%

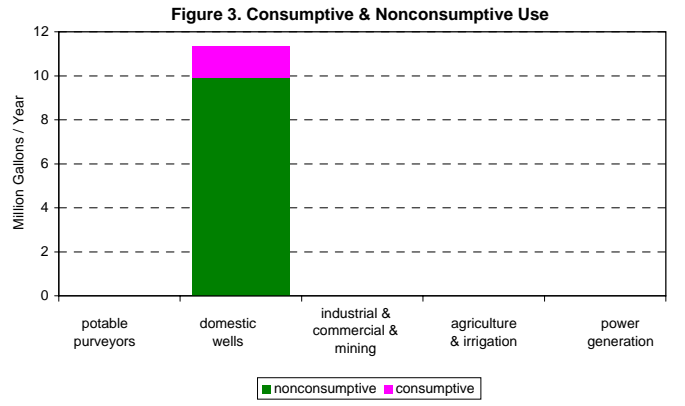


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive
potable purveyors	0	0	0	0	0	0	0	0	0	0
domestic wells	2	0	2	0	3	1	2	0	10	1
industrial & commercial & mining	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrig.	0	0	0	0	0	0	0	0	0	0
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	2	0	2	0	3	1	2	0	10	1

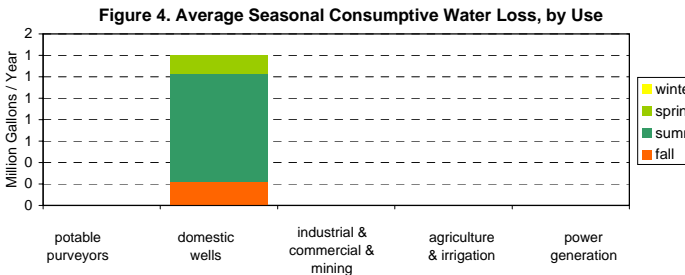


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	0	0	0	0	0	0	0	0	0	0	0
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	0	0	0	0	0	0	0	0	0	0	0

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	0	0	0	0	0	0	0	0	0	0	0
brackish water	0	0	0	0	0	0	0	0	0	0	0
salt water	0	0	0	0	0	0	0	0	0	0	0
sum:	0	0	0	0	0	0	0	0	0	0	0

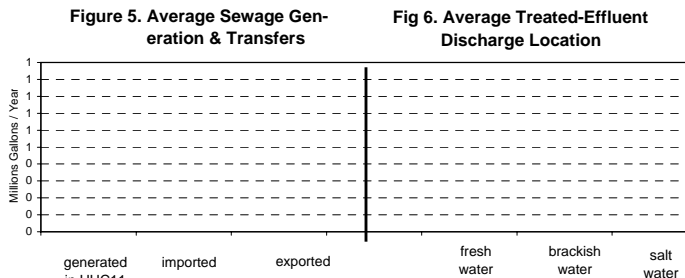


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

Water Source	MGY
surface water	0
ground water	0
total	0

Table 8. 1999 Water Allocations¹⁰ in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	0
irrigation	0
mining	0
potable supply	0
power generation	0
total	0

Table 9. HUC11 Descriptive Statistics

--- **Area:**

in this HUC11 only	3.2	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	3.2	sq. mi.

(this HUC11 onshore area: 3.2 sq. mi.)

--- **Population of this HUC11:**

Year	Population	Change
1940	107	-
1950	114	6.6%
1960	149	30.7%
1970	194	30.8%
1980	328	68.5%
1990	429	30.8%
2000	472	10.0%
2010	528	11.9% est. ¹²
2020	573	8.6% est. ¹²
2030	658	14.9% est. ¹²

--- **Land Use of this HUC11:**

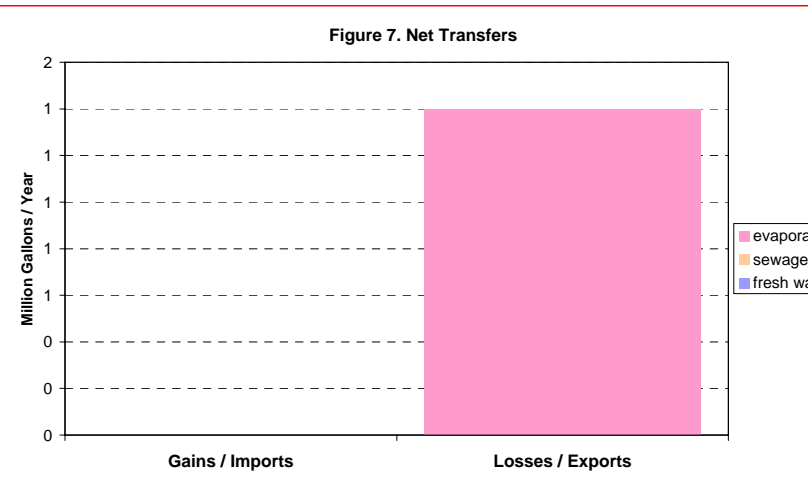
Type	Year		Change
	1986	1995	
ag.	10.7%	10.3%	-0.4%
barren	0.0%	0.1%	0.1%
forest	58.7%	58.1%	-0.6%
urban	3.3%	4.3%	0.9%
water	1.4%	1.4%	0.0%
wetlands	25.8%	25.8%	0.0%

--- **% of this HUC11 in:**

Pinelands:	0.0%
Highlands:	0.0%

Table 10. Upstream and downstream HUC11s (in NJ)

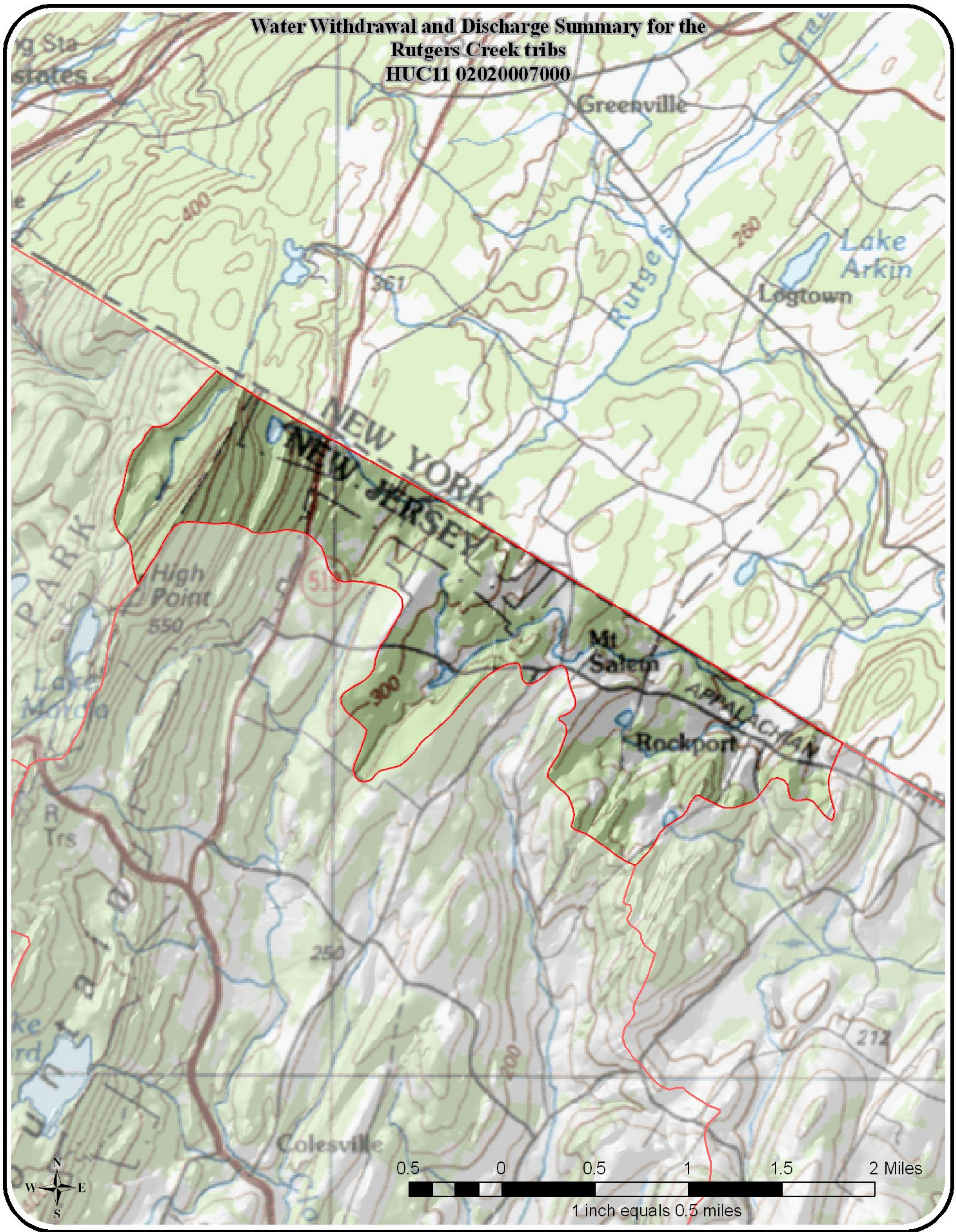
location	#	name
downstream: (if any)	#N/A	#N/A
upstream: (if any)	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--



NOTES:

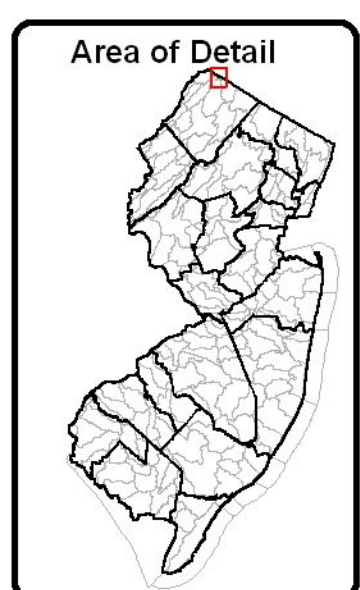
- 1 Salt and brackish water withdrawal and use is not included in this data.
- 2 This does not account for water released from onstream reservoirs for downstream intakes.
- 3 Includes both permitted ground-water withdrawals and estimated domestic well withdrawals.
- 4 Nonconsumptive water use refers to water used in the watershed but not evaporated.
- 5 Consumptive water use refers to water evaporated in the watershed. It does not include exports.
- 6 Use refers only to water actually used in that HUC11. It is equal to freshwater withdrawals + imports - exports.
- 7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
- 8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
- 9 Based on discharge volumes reported under NJPDES program.
- 10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999.
- 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.
- 12 Projected population estimates based on NJ Metropolitan Planning Organization estimates.
- 13 Subject to revision.
- 14 Withdrawals for offstream reservoirs are problematic and complicate Figures 1 and 2.

**Water Withdrawal and Discharge Summary for the
Rutgers Creek tribs
HUC11 02020007000**



Key for Discharge Data	
1999 Treated Effluent Discharge	
0 - 50 MGY	◆
50 - 100 MGY	◆
100 - 500 MGY	◆
> 500 MGY	◆
Other Permitted Discharge	◆

Key for Withdrawal Data	
Source	1999 Withdrawal
GW Confined □	No 1999 Use ■●▲
GW Unconfined ○	1 - 50 MGY ■●▲
SW △	51 - 100 MGY ■●▲
	101 - 500 MGY ■●▲
	> 500 MGY ■●▲
	MGY = millions of gallons per year
Use Group	
Agricultural	●
Commercial	●
Industrial	●
Irrigation	●
Mining	●
Not Classified	●
Potable Supply	●
Power Generation	●



Water Withdrawals, Transfers and Discharges for UPPER WALKILL RIVER --- 02020007010

WMA:	Walkill, Pochuck, and Papakating	02	
HUC11:	Upper Walkill River	02020007010	

Table 1. Freshwater¹ Withdrawals in the HUC11 (millions of gallons)

Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
<i>surface water:</i> ²											
Delaware River	0	0	0	0	0	0	0	0	0	0	0
other	510	530	525	552	360	335	355	356	333	347	420
sum	510	530	525	552	360	335	355	356	333	347	420
<i>ground-water:</i> ³											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	816	837	822	967	1,072	1,112	1,132	1,148	1,181	1,064	1,015
sum	816	837	822	967	1,072	1,112	1,132	1,148	1,181	1,064	1,015
total withdrawals:	1,326	1,367	1,347	1,519	1,432	1,447	1,487	1,504	1,514	1,411	1,435

Table 2. Freshwater Imports To & Exports From the HUC11 (millions of gallons)

imports ¹¹	58	57	56	61	74	72	73	79	85	112	73
exports ¹¹	414	419	414	464	401	388	408	412	397	372	409
net	(356)	(362)	(358)	(403)	(328)	(316)	(334)	(333)	(312)	(260)	(336)

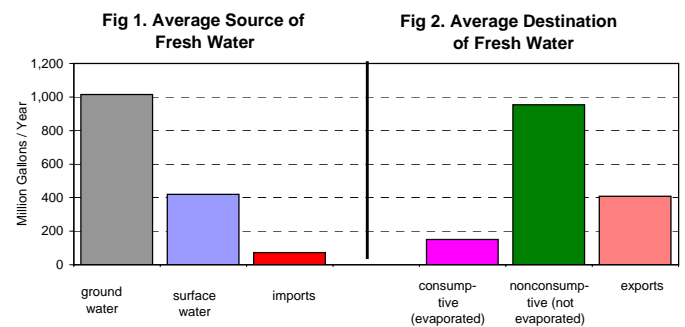


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
<i>potable purveyors</i>											
nonconsumptive	652	658	641	666	704	671	694	714	731	672	680
consumptive	78	82	76	79	80	82	90	88	97	88	84
<i>domestic wells</i>											
nonconsumptive	198	199	201	203	206	209	211	213	215	218	207
consumptive	28	28	28	29	29	29	30	30	30	31	29
<i>industrial & commercial & mining</i>											
nonconsumptive	9	10	15	99	52	69	75	53	72	65	52
consumptive	1	1	2	12	12	15	9	6	16	14	9
<i>agricultural & non-agricultural irrigation</i>											
nonconsumptive	0	3	2	3	2	5	4	7	2	4	3
consumptive	3	24	21	23	18	49	38	59	16	32	28
<i>power generation</i>											
nonconsumptive	2	2	10	14	17	11	9	9	13	19	11
consumptive	0	0	0	0	0	0	0	0	0	0	0
SUM:											
nonconsumptive	862	872	869	986	981	966	993	996	1,032	976	953
consumptive	110	136	128	143	140	174	166	183	160	165	150
PERCENTAGES:											
nonconsumptive	88.7%	86.5%	87.2%	87.3%	87.5%	84.7%	85.7%	84.5%	86.6%	85.6%	86.4%
consumptive	11.3%	13.5%	12.8%	12.7%	12.5%	15.3%	14.3%	15.5%	13.4%	14.4%	13.6%

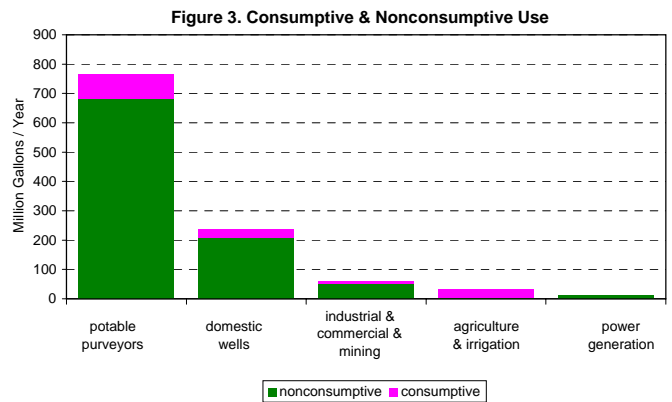


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive
potable purveyors	171	0	174	12	167	58	165	14	676	84
domestic wells	48	0	49	4	60	21	51	5	207	29
industrial & commercial & mining	11	1	14	2	14	3	14	2	52	9
agricultural & non-agricultural irrig.	0	0	1	6	2	16	1	5	3	28
power generation	2	0	2	0	3	0	3	0	11	0
SUM:	232	2	239	24	245	98	232	27	949	150

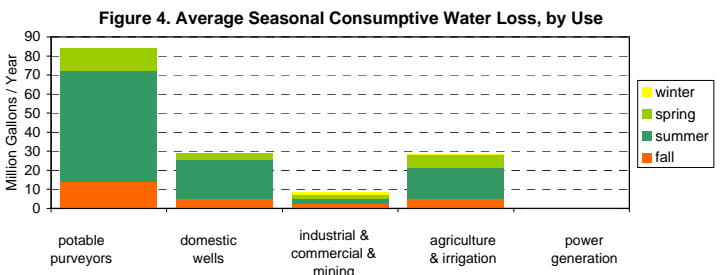


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

generated in HUC11	151	96	133	204	219	205	255	258	272	256	205
imported to HUC11	158	100	144	221	239	221	278	286	302	283	223
exported from HUC11	0	0	0	0	0	0	0	0	0	0	0

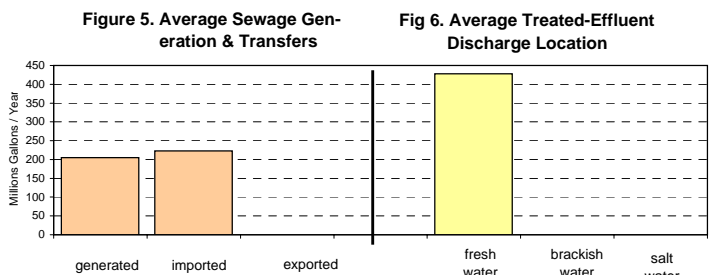


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

Water Source	MGY
surface water	209
ground water	1,263
total	1,472

Table 8. 1999 Water Allocations¹⁰ in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	37
industrial	96
irrigation	62
mining	37
potable supply	1,202
power generation	37
total	1,472

Table 9. HUC11 Descriptive Statistics

--- **Area:**

in this HUC11 only	61.0	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	61.0	sq. mi.

(this HUC11 onshore area: 61.0 sq. mi.)

--- **Population of this HUC11:**

Year	Population	Change
1940	8,199	-
1950	9,107	11.1%
1960	11,796	29.5%
1970	17,027	44.4%
1980	20,527	20.6%
1990	23,541	14.7%
2000	24,350	3.4%
2010	30,551	25.5% est. ¹²
2020	34,707	13.6% est. ¹²
2030	35,986	3.7% est. ¹²

--- **Land Use of this HUC11:**

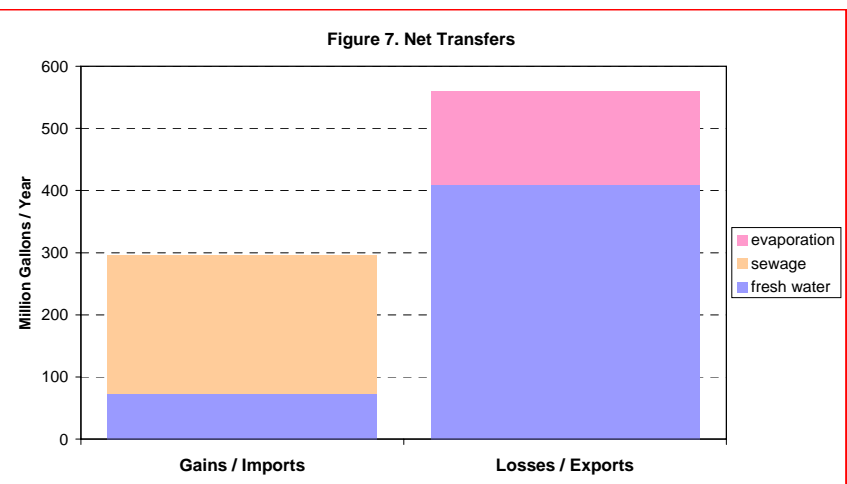
Type	Year		Change
	1986	1995	
ag.	12.0%	9.6%	-2.5%
barren	1.2%	1.8%	0.5%
forest	53.2%	53.5%	0.3%
urban	15.4%	16.9%	1.5%
water	4.5%	4.7%	0.2%
wetlands	13.6%	13.5%	-0.1%

--- **% of this HUC11 in:**

Pinelands:	0.0%
Highlands:	90.2%

Table 10. Upstream and downstream HUC11s (in NJ)

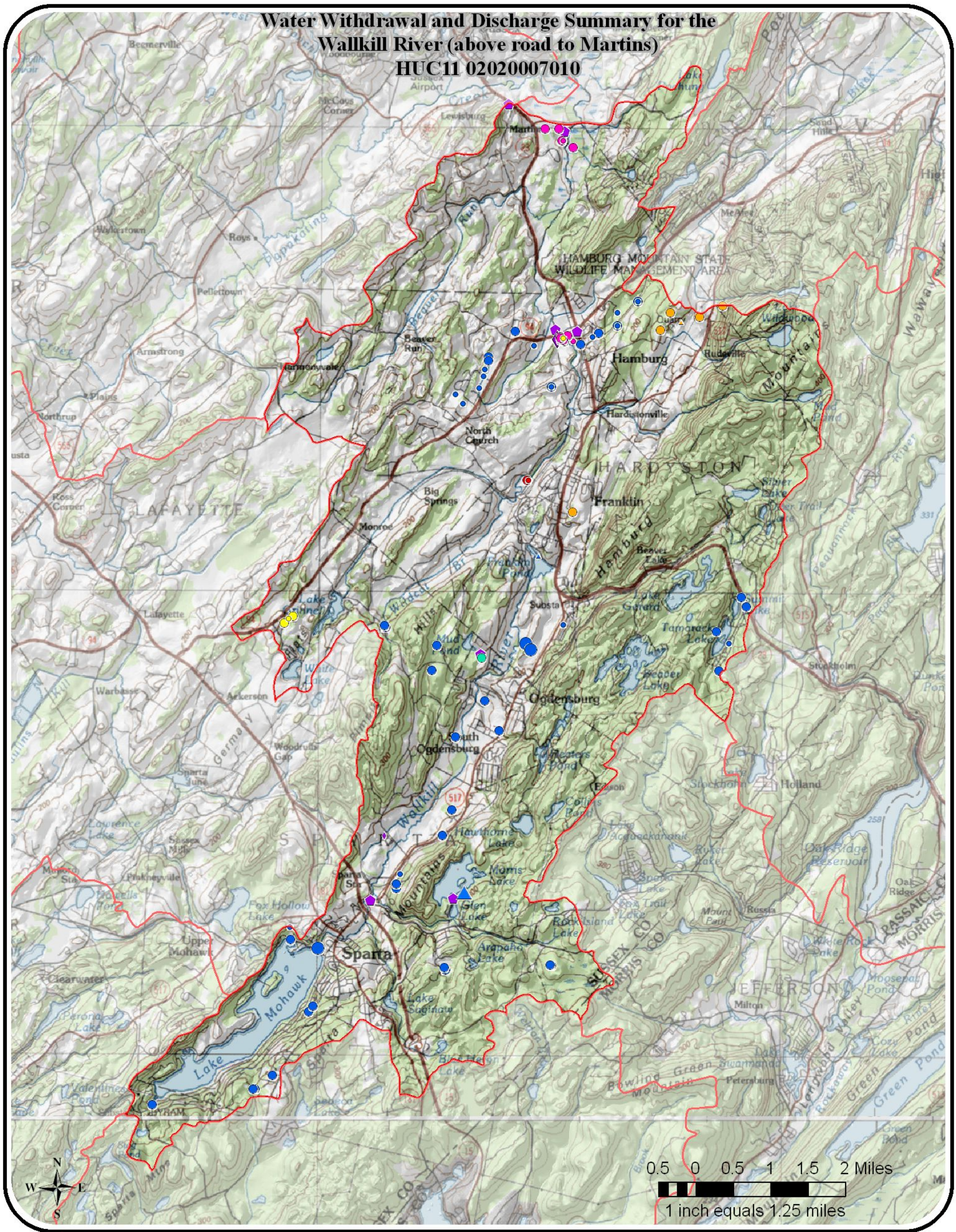
location	#	name
downstream:	02020007030	Walkill River (below road to Martins)
(if any)	--	--
upstream:	--	--
(if any)	--	--



NOTES:

- 1 Salt and brackish water withdrawal and use is not included in this data.
- 2 This does not account for water released from onstream reservoirs for downstream intakes.
- 3 Includes both permitted ground-water withdrawals and estimated domestic well withdrawals.
- 4 Nonconsumptive water use refers to water used in the watershed but not evaporated.
- 5 Consumptive water use refers to water evaporated in the watershed. It does not include exports.
- 6 Use refers only to water actually used in that HUC11. It is equal to freshwater withdrawals + imports - exports.
- 7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
- 8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
- 9 Based on discharge volumes reported under NJPDES program.
- 10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999.
- 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.
- 12 Projected population estimates based on NJ Metropolitan Planning Organization estimates.
- 13 Subject to revision.
- 14 Withdrawals for offstream reservoirs are problematic and complicate Figures 1 and 2.

Water Withdrawal and Discharge Summary for the Walkill River (above road to Martins) HUC11 02020007010

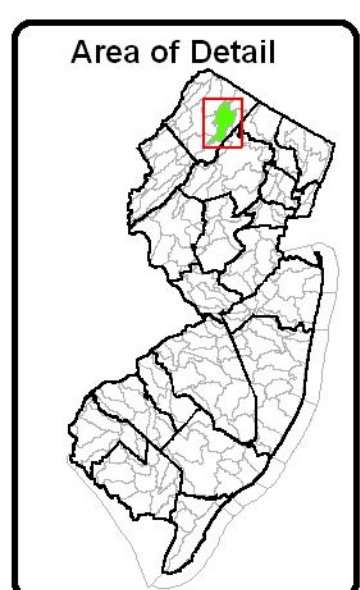


Key for Discharge Data	
1999 Treated Effluent Discharge	
0 - 50 MGY	◆
50 - 100 MGY	◆
100 - 500 MGY	◆
> 500 MGY	◆
Other Permitted Discharge	◆

Key for Withdrawal Data	
Source	
GW Confined	□
GW Unconfined	○
SW	△
1999 Withdrawal	
No 1999 Use	●▲
1 - 50 MGY	■●▲
51 - 100 MGY	■●▲
101 - 500 MGY	■●▲
> 500 MGY	■●▲

Use Group	
Agricultural	●
Commercial	●
Industrial	●
Irrigation	●
Mining	●
Not Classified	●
Potable Supply	●
Power Generation	●

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for PAKATING CREEK --- 02020007020

WMA:	Walkill, Pochuck, and Pakating	02
HUC11:	Papakating Creek	02020007020

Table 1. Freshwater¹ Withdrawals in the HUC11 (millions of gallons)

Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
<i>surface water:</i> ²											
Delaware River	0	0	0	0	0	0	0	0	0	0	0
other	108	127	66	102	84	114	76	95	88	113	97
sum	108	127	66	102	84	114	76	95	88	113	97
<i>ground-water:</i> ³											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	221	223	234	241	245	249	243	247	252	264	242
sum	221	223	234	241	245	249	243	247	252	264	242
total withdrawals:	329	#N/A	301	343	329	363	319	342	340	377	339

Table 2. Freshwater Imports To & Exports From the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
imports ¹¹	0	0	0	0	0	0	0	0	0	0	0
exports ¹¹	1	1	1	2	1	2	1	2	1	2	1
net	(1)	(1)	(1)	(1)	(1)	(2)	(1)	(1)	(1)	(2)	(1)

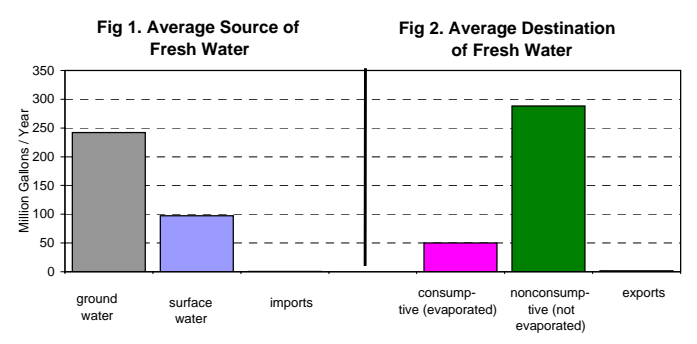


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
<i>potable purveyors</i>											
nonconsumptive	64	76	57	89	74	99	66	84	76	100	78
consumptive	8	13	6	9	9	12	9	10	11	12	10
<i>domestic wells</i>											
nonconsumptive	194	195	198	202	205	209	212	216	221	225	208
consumptive	27	28	28	28	29	29	30	30	31	32	29
<i>industrial & commercial & mining</i>											
nonconsumptive	0	0	0	0	0	0	0	0	0	7	1
consumptive	0	0	0	0	0	0	0	0	0	1	0
<i>agricultural & non-agricultural irrigation</i>											
nonconsumptive	4	4	1	1	1	1	0	0	0	0	1
consumptive	32	33	9	13	10	12	1	0	0	0	11
<i>power generation</i>											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
SUM:											
nonconsumptive	261	275	256	292	280	309	279	300	297	332	288
consumptive	66	74	43	50	48	53	40	41	42	44	50
PERCENTAGES:											
nonconsumptive	79.7%	78.8%	85.6%	85.4%	85.4%	85.4%	87.5%	88.0%	87.7%	88.3%	85.2%
consumptive	20.3%	21.2%	14.4%	14.6%	14.6%	14.6%	12.5%	12.0%	12.3%	11.7%	14.8%

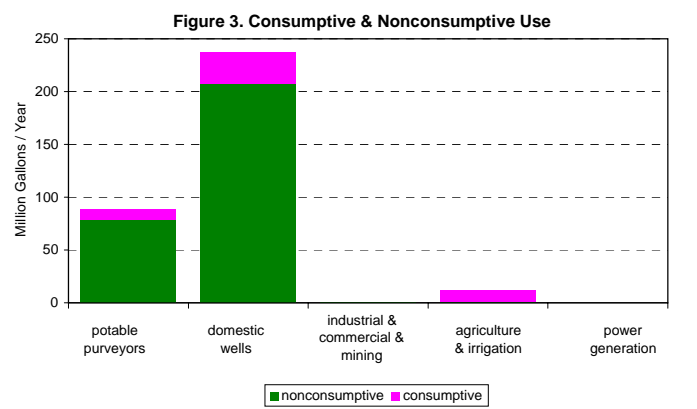


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive
potable purveyors	19	0	20	1	20	7	20	2	78	10
domestic wells	48	0	49	4	60	21	51	5	208	29
industrial & commercial & mining	0	0	0	0	0	0	0	0	1	0
agricultural & non-agricultural irrig.	0	0	0	2	1	7	0	2	1	11
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	66	0	69	7	81	35	72	9	288	50

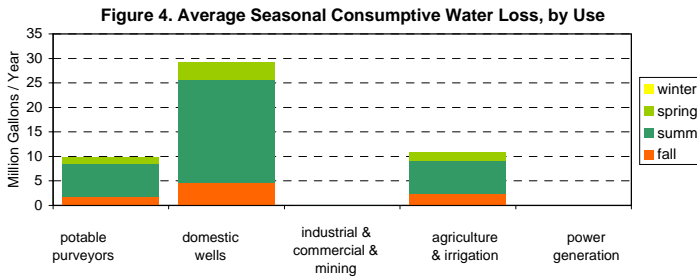


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	145	112	125	169	142	128	172	59	62	58	117
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	31	20	29	44	47	44	55	57	60	56	44

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	114	93	96	125	95	84	117	2	2	2	73
brackish water	0	0	0	0	0	0	0	0	0	0	0
salt water	0	0	0	0	0	0	0	0	0	0	0
sum:	114	93	96	125	95	84	117	2	2	2	73

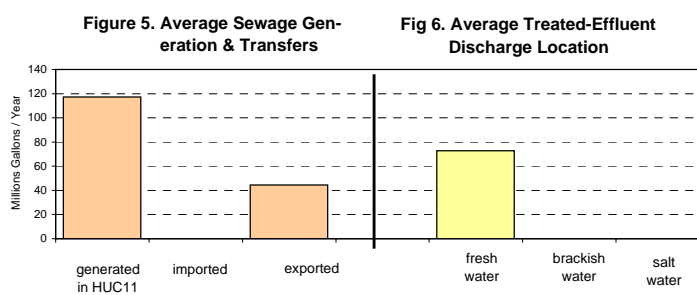


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

Water Source	MGY
surface water	242
ground water	5
total	246

Table 8. 1999 Water Allocations¹⁰ in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	5
irrigation	0
mining	0
potable supply	242
power generation	0
total	246

Table 9. HUC11 Descriptive Statistics

--- Area:

in this HUC11 only	60.6	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	60.6	sq. mi.

(this HUC11 onshore area: 60.6 sq. mi.)

--- Population of this HUC11:

Year	Population	Change
1940	3,613	-
1950	3,898	7.9%
1960	4,796	23.0%
1970	6,082	26.8%
1980	9,136	50.2%
1990	10,562	15.6%
2000	11,270	6.7%
2010	12,556	11.4% est. ¹²
2020	13,710	9.2% est. ¹²
2030	15,396	12.3% est. ¹²

--- Land Use of this HUC11:

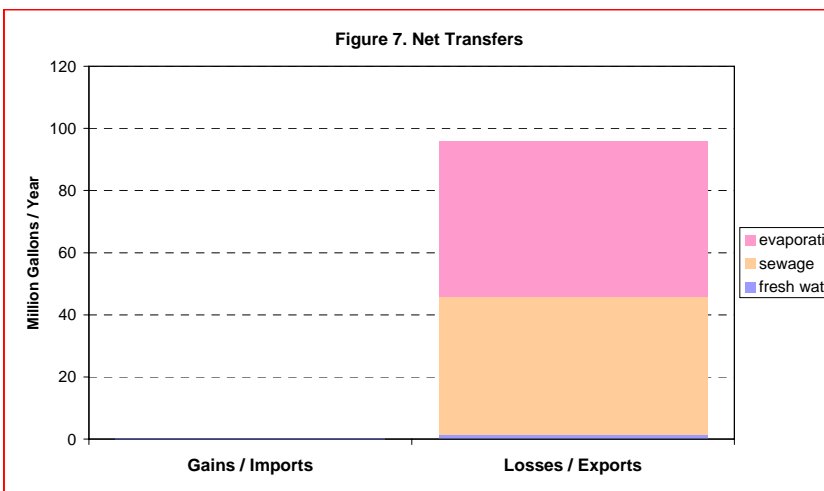
Type	Year		Change
	1986	1995	
ag.	31.2%	28.0%	-3.3%
barren	0.2%	0.5%	0.2%
forest	42.5%	42.7%	0.3%
urban	9.0%	11.8%	2.8%
water	1.3%	1.3%	-0.1%
wetlands	15.7%	15.7%	0.0%

--- % of this HUC11 in:

Pinelands:	0.0%
Highlands:	0.0%

Table 10. Upstream and downstream HUC11s (in NJ)

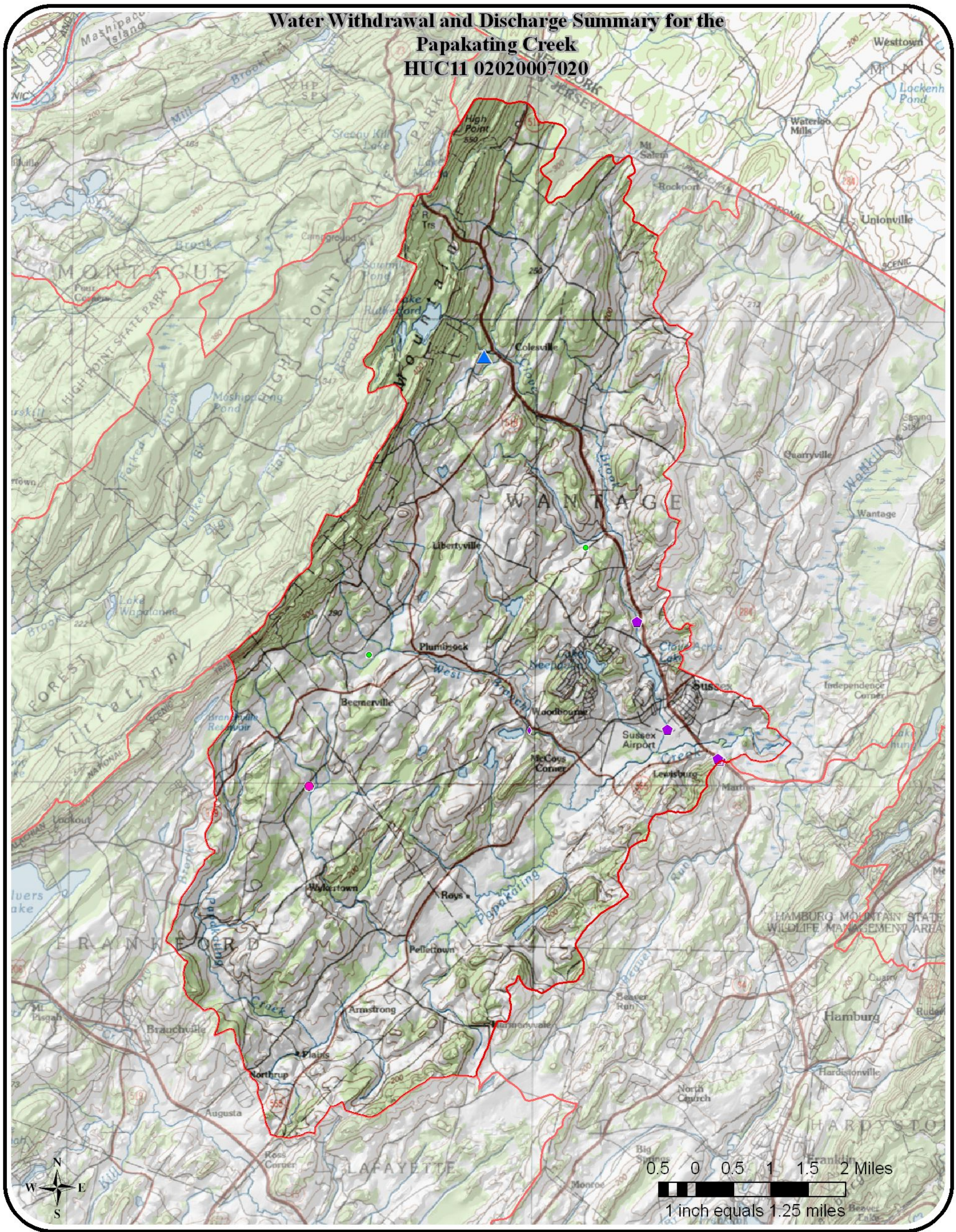
location	#	name
downstream:	02020007030	Walkill River (below road to Martins)
(if any)	--	--
upstream:	--	--
(if any)	--	--



NOTES:

- 1 Salt and brackish water withdrawal and use is not included in this data.
- 2 This does not account for water released from onstream reservoirs for downstream intakes.
- 3 Includes both permitted ground-water withdrawals and estimated domestic well withdrawals.
- 4 Nonconsumptive water use refers to water used in the watershed but not evaporated.
- 5 Consumptive water use refers to water evaporated in the watershed. It does not include exports.
- 6 Use refers only to water actually used in that HUC11. It is equal to freshwater withdrawals + imports - exports.
- 7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
- 8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
- 9 Based on discharge volumes reported under NJPDES program.
- 10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999.
- 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.
- 12 Projected population estimates based on NJ Metropolitan Planning Organization estimates.
- 13 Subject to revision.
- 14 Withdrawals for offstream reservoirs are problematic and complicate Figures 1 and 2.

Water Withdrawal and Discharge Summary for the Papakating Creek HUC11 02020007020

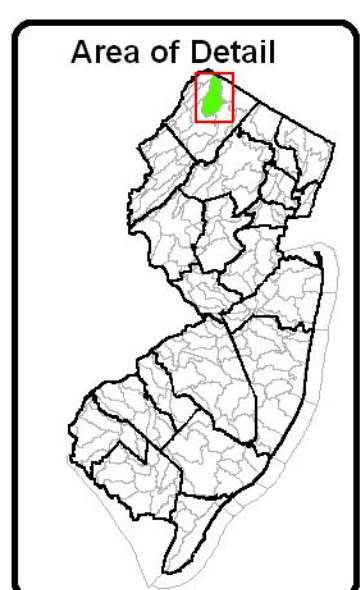


Key for Discharge Data	
1999 Treated Effluent Discharge	
0 - 50 MGY	◆
50 - 100 MGY	◆
100 - 500 MGY	◆
> 500 MGY	◆
Other Permitted Discharge	◆

Key for Withdrawal Data	
Source	1999 Withdrawal
GW Confined □	No 1999 Use ■●▲
GW Unconfined ○	1 - 50 MGY ■●▲
SW △	51 - 100 MGY ■●▲
	101 - 500 MGY ■●▲
	> 500 MGY ■●▲

Use Group	
Agricultural	●
Commercial	●
Industrial	●
Irrigation	●
Mining	●
Not Classified	●
Potable Supply	●
Power Generation	●

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for LOWER WALLKILL RIVER --- 02020007030

WMA:	Walkill, Pochuck, and Papakating	02
HUC11:	Lower Walkill River	02020007030

Table 1. Freshwater¹ Withdrawals in the HUC11 (millions of gallons)

Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
surface water:²											
Delaware River	0	0	0	0	0	0	0	0	0	0	0
other	0	0	0	0	0	0	0	0	0	0	0
sum	0	0	0	0	0	0	0	0	0	0	0
ground-water:³											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	158	165	167	163	179	167	173	177	187	189	173
sum	158	165	167	163	179	167	173	177	187	189	173
total withdrawals:	158	165	167	163	179	167	173	177	187	189	173

Table 2. Freshwater Imports To & Exports From the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
imports ¹¹	1	1	1	6	1	15	16	15	14	14	9
exports ¹¹	0	0	0	0	0	0	0	0	0	0	0
net	1	1	1	5	1	15	16	15	14	14	8

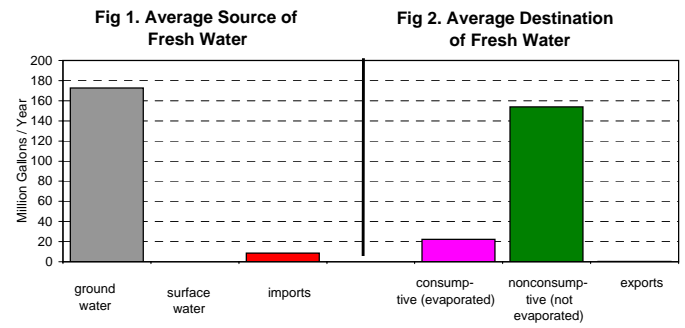


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	6	6	6	10	9	18	22	23	18	18	14
consumptive	1	2	2	1	3	2	3	3	4	4	3
domestic wells											
nonconsumptive	131	132	134	137	140	142	144	146	148	150	140
consumptive	18	19	19	19	20	20	20	20	21	21	20
industrial & commercial & mining											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrigation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
power generation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
SUM:											
nonconsumptive	137	138	140	147	149	160	166	168	165	168	154
consumptive	19	21	21	21	23	22	23	23	25	26	22
PERCENTAGES:											
nonconsumptive	87.8%	87.1%	86.9%	87.7%	86.7%	87.8%	87.9%	87.9%	87.0%	86.8%	87.4%
consumptive	12.2%	12.9%	13.1%	12.3%	13.3%	12.2%	12.1%	12.1%	13.0%	13.2%	12.6%

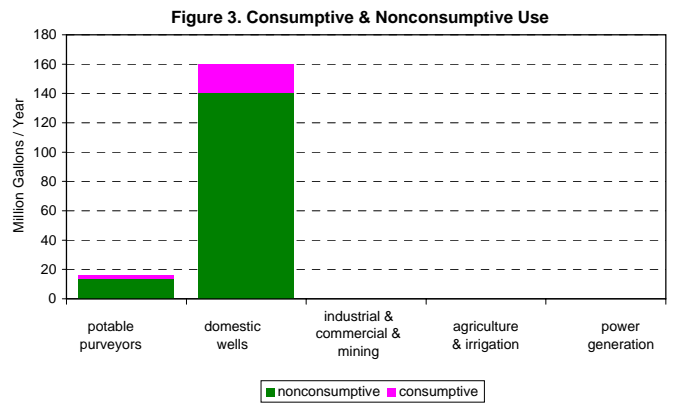


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive	Non-consumptive	Consumptive
potable purveyors	4	0	5	0	5	2	5	0	18	3
domestic wells	32	0	33	2	41	14	34	3	140	20
industrial & commercial & mining	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrig.	0	0	0	0	0	0	0	0	0	0
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	36	0	38	3	46	16	39	4	159	22

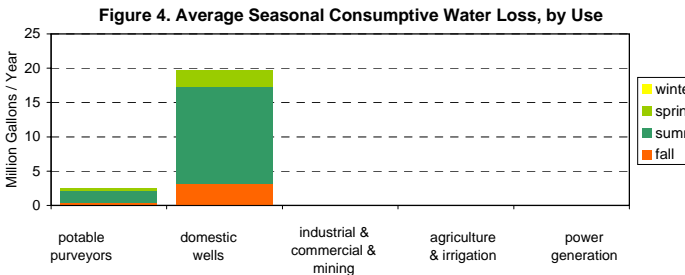


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	6	4	5	8	7	7	8	9	6	5	7
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	0	0	0	0	0	0	0	0	0	0	0

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	6	4	5	8	7	7	8	9	6	5	7
brackish water	0	0	0	0	0	0	0	0	0	0	0
salt water	0	0	0	0	0	0	0	0	0	0	0
sum:	6	4	5	8	7	7	8	9	6	5	7

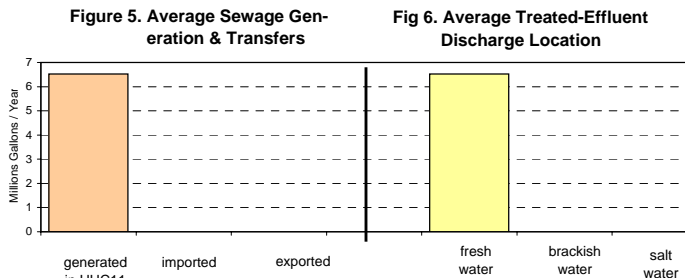


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

Water Source	MGY
surface water	0
ground water	74
total	74

Table 8. 1999 Water Allocations¹⁰ in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	0
irrigation	0
mining	0
potable supply	74
power generation	0
total	74

Table 9. HUC11 Descriptive Statistics

--- **Area:**

in this HUC11 only	29.2	sq. mi.
upstream HUC11s	121.6	sq. mi.
total watershed	150.8	sq. mi.

(this HUC11 onshore area: 29.2 sq. mi.)

--- **Population of this HUC11:**

Year	Population	Change
1940	850	-
1950	916	7.9%
1960	1,215	32.6%
1970	2,128	75.1%
1980	4,592	115.7%
1990	5,982	30.3%
2000	6,793	13.5%
2010	7,770	14.4% est. ¹²
2020	8,456	8.8% est. ¹²
2030	9,154	8.3% est. ¹²

--- **Land Use of this HUC11:**

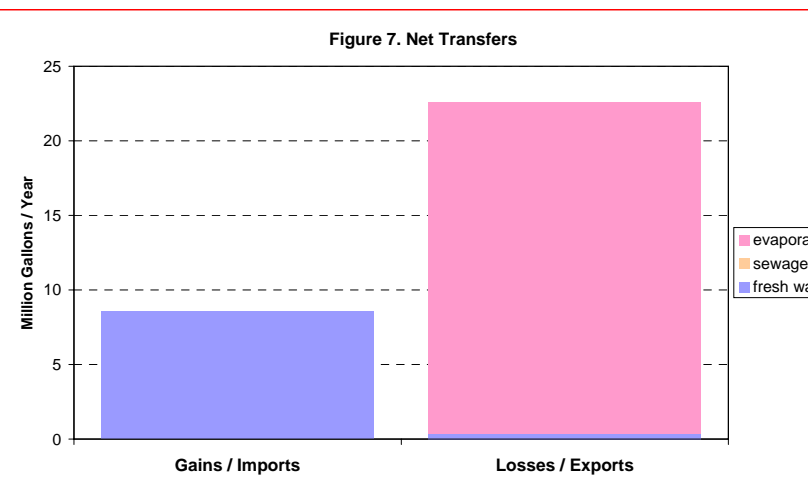
Type	Year		Change
	1986	1995	
ag.	25.4%	22.4%	-3.0%
barren	0.2%	0.3%	0.1%
forest	34.9%	35.7%	0.8%
urban	8.4%	10.6%	2.3%
water	1.6%	1.7%	0.1%
wetlands	29.5%	29.3%	-0.2%

--- **% of this HUC11 in:**

Pinelands:	0.0%
Highlands:	40.3%

Table 10. Upstream and downstream HUC11s (in NJ)

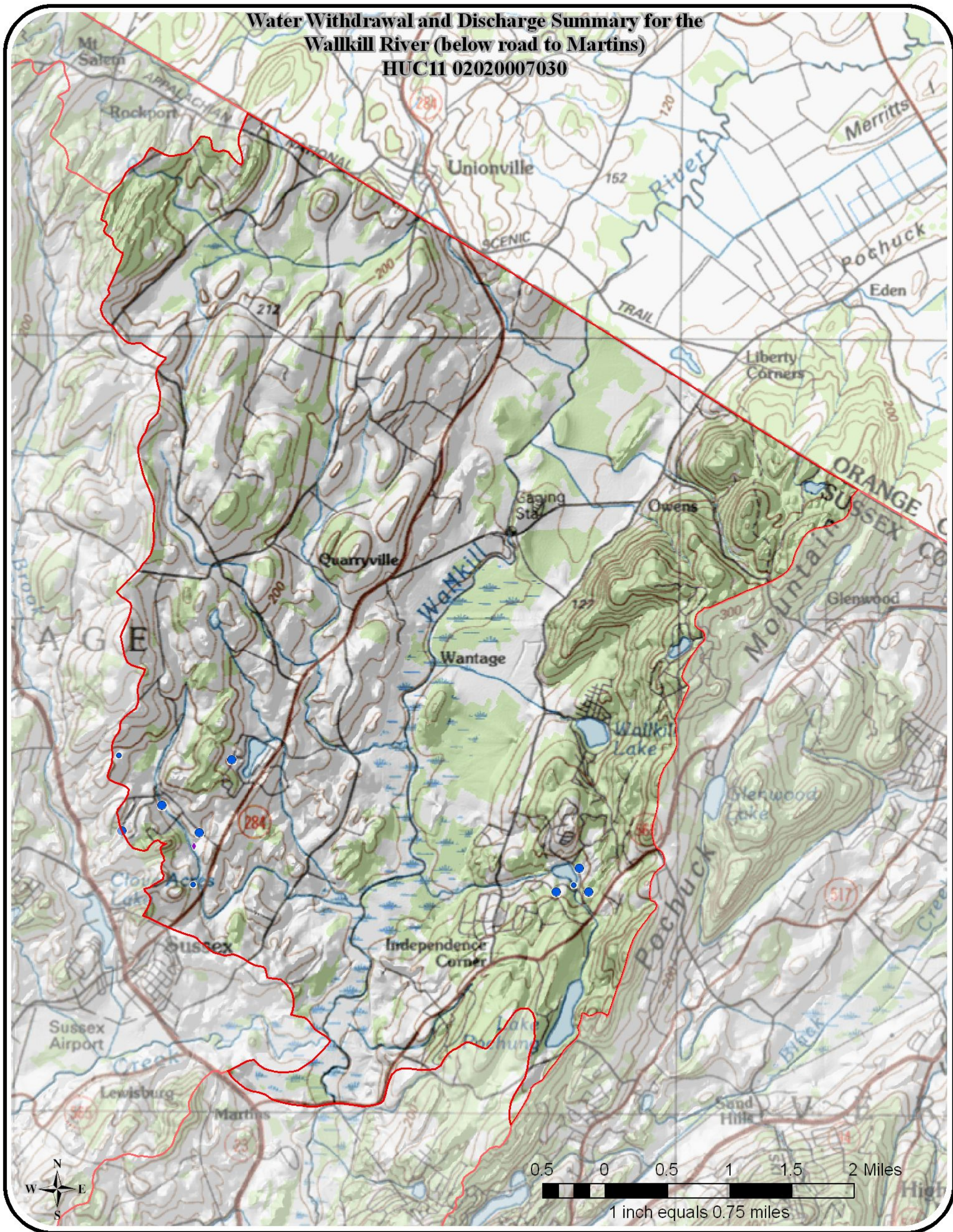
location	#	name
downstream:	#N/A	#N/A
(if any)		
upstream:	02020007010	Walkkill River (above road to Martins)
(if any)	02020007020	Papakating Creek
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--



NOTES:

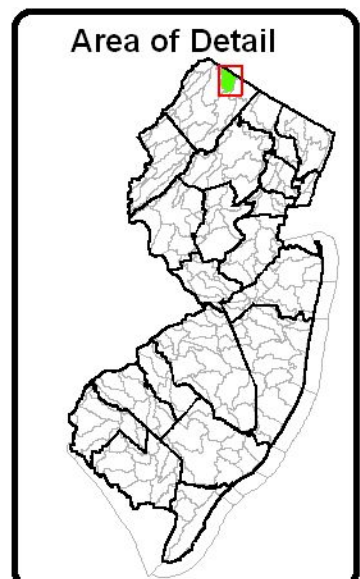
- 1 Salt and brackish water withdrawal and use is not included in this data.
- 2 This does not account for water released from onstream reservoirs for downstream intakes.
- 3 Includes both permitted ground-water withdrawals and estimated domestic well withdrawals.
- 4 Nonconsumptive water use refers to water used in the watershed but not evaporated.
- 5 Consumptive water use refers to water evaporated in the watershed. It does not include exports.
- 6 Use refers only to water actually used in that HUC11. It is equal to freshwater withdrawals + imports - exports.
- 7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
- 8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
- 9 Based on discharge volumes reported under NJPDES program.
- 10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999.
- 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.
- 12 Projected population estimates based on NJ Metropolitan Planning Organization estimates.
- 13 Subject to revision.
- 14 Withdrawals for offstream reservoirs are problematic and complicate Figures 1 and 2.

**Water Withdrawal and Discharge Summary for the
Wallkill River (below road to Martins)
HUC11 02020007030**



Key for Discharge Data	
1999 Treated Effluent Discharge	
0 - 50 MGY	◆
50 - 100 MGY	◆
100 - 500 MGY	◆
> 500 MGY	◆
Other Permitted Discharge	◆

Key for Withdrawal Data	
Source	1999 Withdrawal
GW Confined □	No 1999 Use ■●▲
GW Unconfined ○	1 - 50 MGY ■●▲
SW △	51 - 100 MGY ■●▲
	101 - 500 MGY ■●▲
	> 500 MGY ■●▲
	MGY = millions of gallons per year
	Use Group
	Agricultural ●
	Commercial ●
	Industrial ●
	Irrigation ●
	Mining ●
	Not Classified ●
	Potable Supply ●
	Power Generation ●



Water Withdrawals, Transfers and Discharges for POCHUCK CREEK --- 02020007040

WMA:	Walkill, Pochuck, and Papakating	02
HUC11:	Pochuck Creek	02020007040

Table 1. Freshwater¹ Withdrawals in the HUC11 (millions of gallons)

Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
surface water:²											
Delaware River	0	0	0	0	0	0	0	0	0	0	0
other	0	0	3	0	0	0	114	0	0	0	12
sum	0	0	3	0	0	0	114	0	0	0	12
ground-water:³											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	567	642	648	761	736	755	737	693	734	651	692
sum	567	642	648	761	736	755	737	693	734	651	692
total withdrawals:	567	642	651	761	736	756	852	693	734	651	704

Table 2. Freshwater Imports To & Exports From the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
imports ¹¹	0	0	0	0	0	0	0	0	0	0	0
exports ¹¹	0	0	0	6	0	20	22	21	19	19	11
net	0	0	0	(6)	0	(20)	(22)	(21)	(19)	(19)	(11)

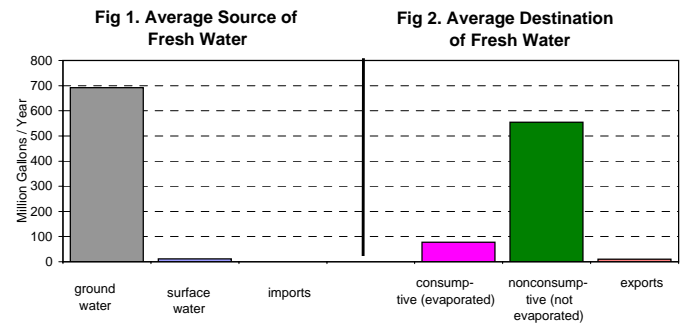


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	59	103	119	130	139	153	137	133	124	97	119
consumptive	8	23	22	24	32	30	28	24	24	19	23
domestic wells											
nonconsumptive	366	368	374	381	387	391	394	398	401	405	386
consumptive	51	52	53	54	54	55	55	56	56	57	54
industrial & commercial & mining											
nonconsumptive	14	28	20	95	28	37	156	16	79	17	49
consumptive	0	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrigation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
power generation											
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0
consumptive	0	0	0	0	0	0	0	0	0	0	0
SUM:											
nonconsumptive	438	499	513	605	554	581	687	547	604	519	555
consumptive	60	75	75	78	86	85	83	80	81	76	78
PERCENTAGES:											
nonconsumptive	88.0%	86.9%	87.3%	88.6%	86.5%	87.3%	89.2%	87.2%	88.2%	87.2%	87.7%
consumptive	12.0%	13.1%	12.7%	11.4%	13.5%	12.7%	10.8%	12.8%	11.8%	12.8%	12.3%

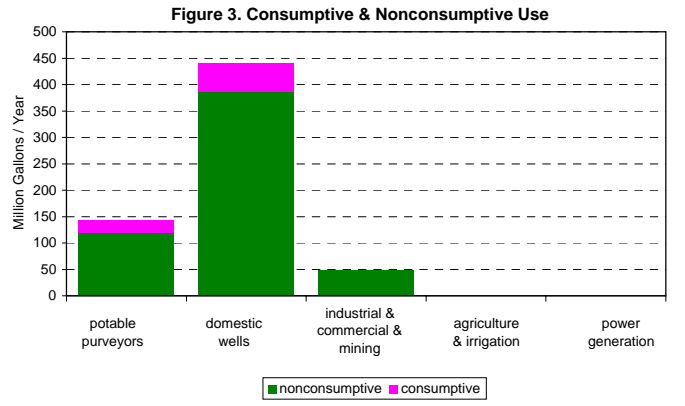


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive	Noncon-sumptive	Consumptive
potable purveyors	48	0	48	3	49	17	46	4	190	24
domestic wells	89	0	91	7	112	39	94	9	386	54
industrial & commercial & mining	16	0	7	0	21	0	5	0	49	0
agricultural & non-agricultural irrig.	0	0	0	0	0	0	0	0	0	0
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	153	0	146	10	182	56	145	13	626	79

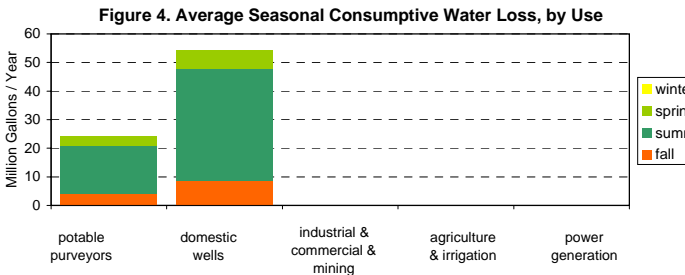


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	138	95	128	197	209	200	244	251	259	241	196
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	125	79	114	176	190	176	221	227	240	225	177

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	13	17	14	22	20	25	23	23	19	16	19
brackish water	0	0	0	0	0	0	0	0	0	0	0
salt water	0	0	0	0	0	0	0	0	0	0	0
sum:	13	17	14	22	20	25	23	23	19	16	19

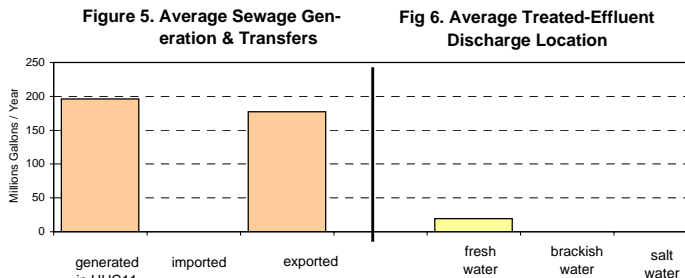


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

Water Source	MGY
surface water	0
ground water	1,187
total	1,187

Table 8. 1999 Water Allocations¹⁰ in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	656
industrial	0
irrigation	0
mining	0
potable supply	531
power generation	0
total	1,187

Table 9. HUC11 Descriptive Statistics

--- **Area:**

in this HUC11 only	54.3	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	54.3	sq. mi.

(this HUC11 onshore area: 54.3 sq. mi.)

--- **Population of this HUC11:**

Year	Population	Change
1940	1,173	-
1950	1,378	17.5%
1960	2,219	61.0%
1970	5,660	155.0%
1980	12,878	127.5%
1990	16,348	26.9%
2000	18,675	14.2%
2010	21,610	15.7% est. ¹²
2020	23,510	8.8% est. ¹²
2030	24,558	4.5% est. ¹²

--- **Land Use of this HUC11:**

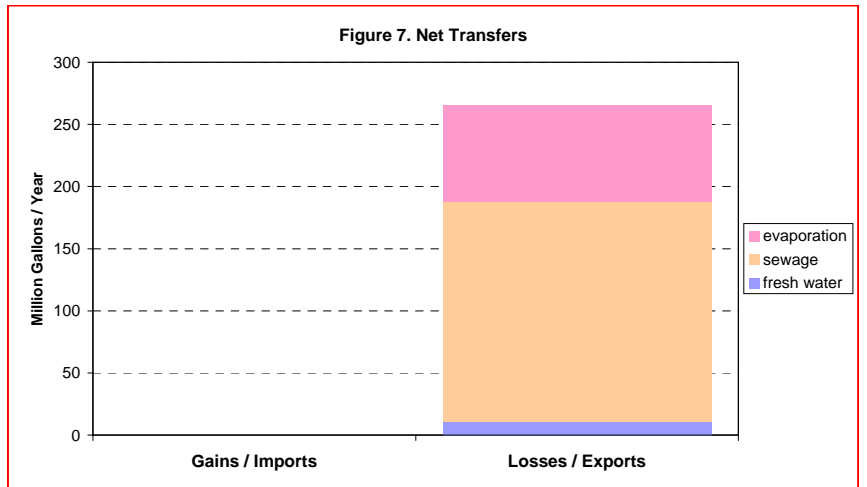
Type	Year		Change
	1986	1995	
ag.	7.7%	5.7%	-2.0%
barren	0.5%	0.4%	-0.1%
forest	57.4%	57.5%	0.1%
urban	14.5%	16.7%	2.2%
water	4.7%	4.8%	0.0%
wetlands	15.2%	15.0%	-0.2%

--- **% of this HUC11 in:**

Pinelands:	0.0%
Highlands:	100.0%

Table 10. Upstream and downstream HUC11s (in NJ)

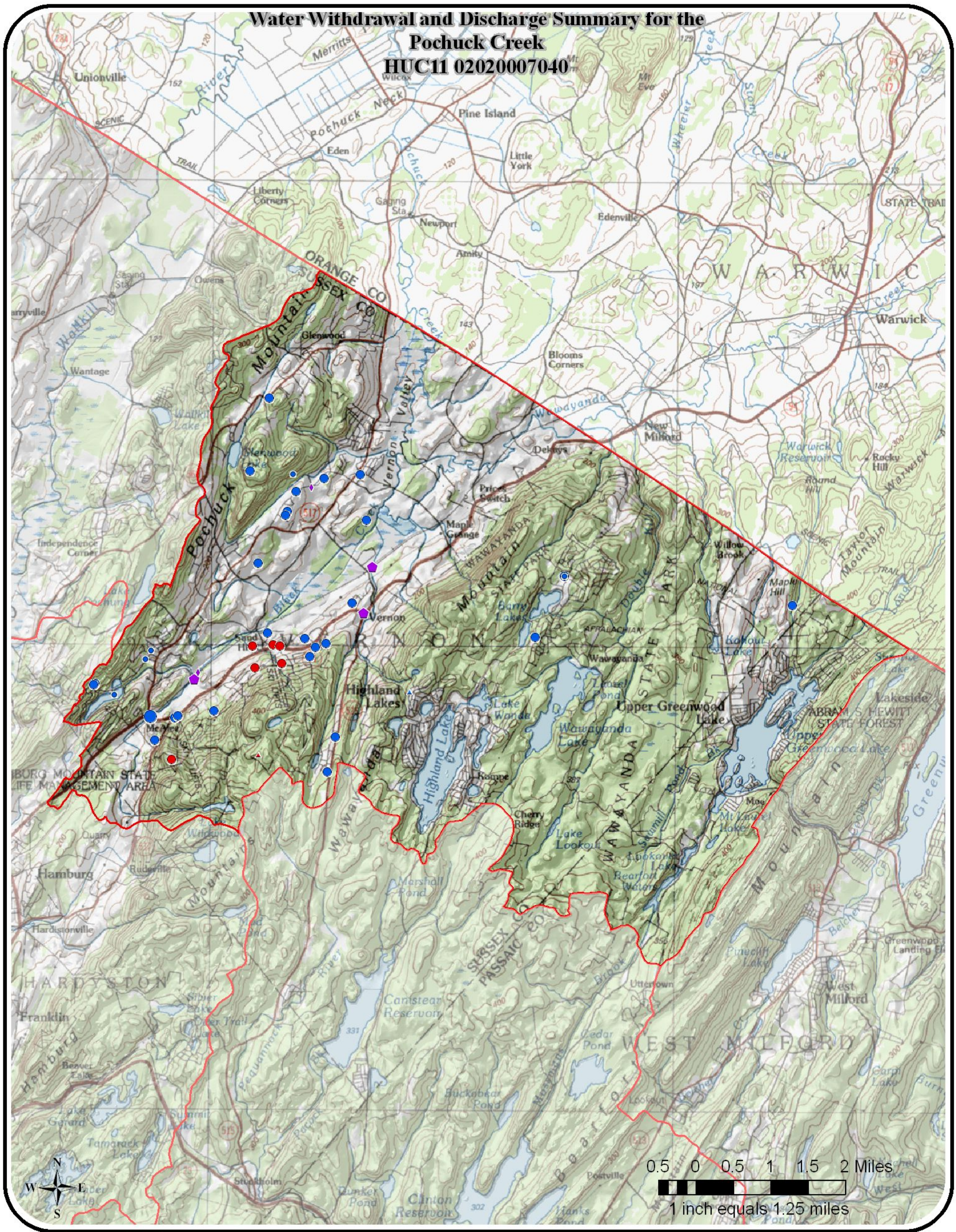
location	#	name
downstream: (if any)	#N/A	#N/A
upstream: (if any)	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--
	--	--



NOTES:

- 1 Salt and brackish water withdrawal and use is not included in this data.
- 2 This does not account for water released from onstream reservoirs for downstream intakes.
- 3 Includes both permitted ground-water withdrawals and estimated domestic well withdrawals.
- 4 Nonconsumptive water use refers to water used in the watershed but not evaporated.
- 5 Consumptive water use refers to water evaporated in the watershed. It does not include exports.
- 6 Use refers only to water actually used in that HUC11. It is equal to freshwater withdrawals + imports - exports.
- 7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
- 8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
- 9 Based on discharge volumes reported under NJPDES program.
- 10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999.
- 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.
- 12 Projected population estimates based on NJ Metropolitan Planning Organization estimates.
- 13 Subject to revision.
- 14 Withdrawals for offstream reservoirs are problematic and complicate Figures 1 and 2.

Water Withdrawal and Discharge Summary for the Pochuck Creek HUC11 02020007040



Key for Discharge Data	
1999 Treated Effluent Discharge	
0 - 50 MGY	◆
50 - 100 MGY	◆
100 - 500 MGY	◆
> 500 MGY	◆
Other Permitted Discharge	◆

Key for Withdrawal Data	
Source	1999 Withdrawal
GW Confined □	No 1999 Use ■●▲
GW Unconfined ○	1 - 50 MGY ■●▲
SW △	51 - 100 MGY ■●▲
	101 - 500 MGY ■●▲
	> 500 MGY ■●▲

Use Group	
Agricultural	●
Commercial	●
Industrial	●
Irrigation	●
Mining	●
Not Classified	●
Potable Supply	●
Power Generation	●

MGY = millions of gallons per year

