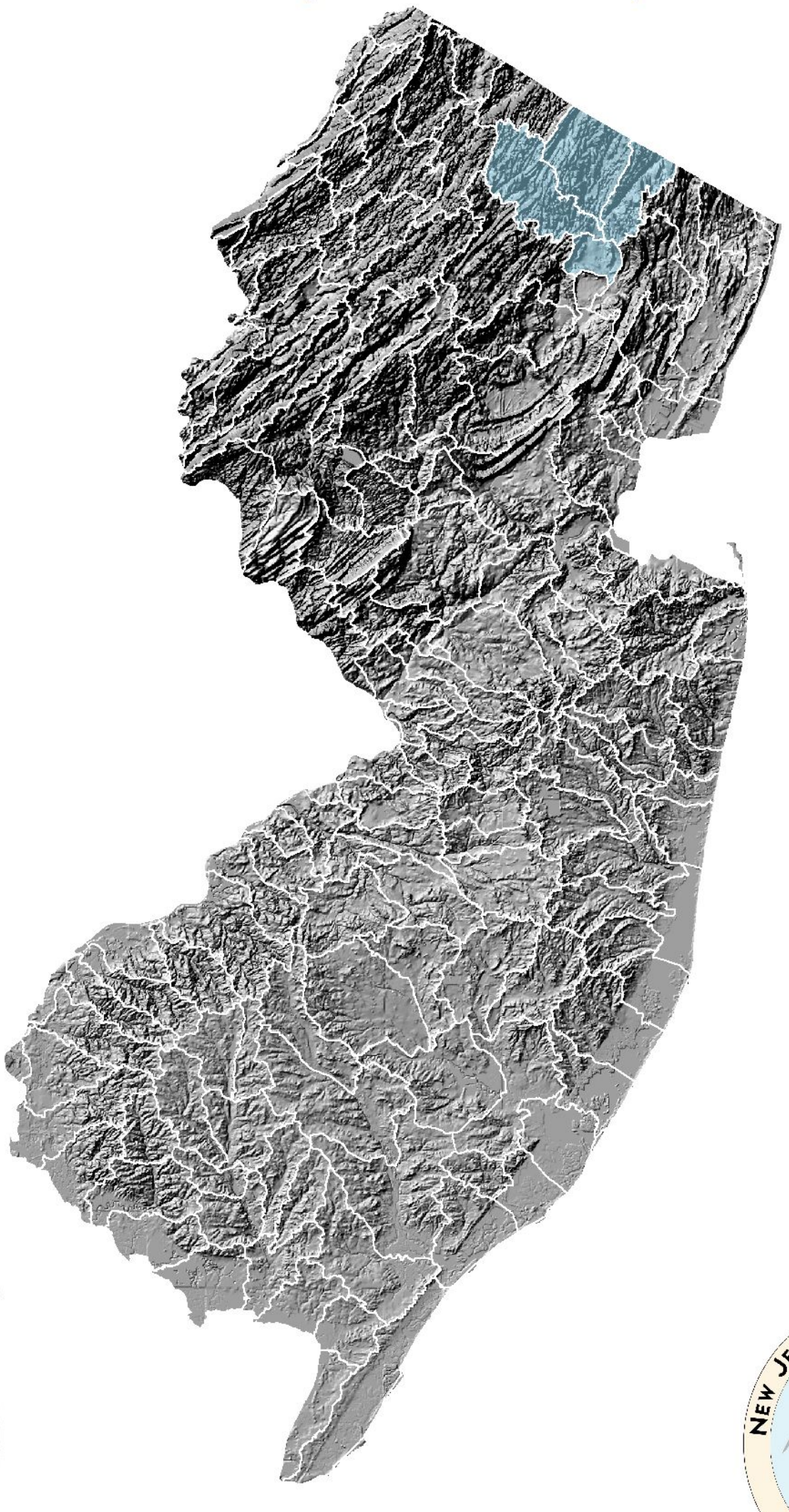
New Jersey Water Withdrawals, Uses, Transfers, and Discharges by HUC11, 1990 to 1999

Appendix 3: HUC11 Tables, Figures and Maps
WMA 3 - Pompton, Pequannock, Wanaque & Ramapo



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NEW JERSEY DEPARTMENT
OF ENVIRONMENTAL PROTECTION

NEW JERSEY GEOLOGICAL SURVEY
1835

Water Withdrawals, Transfers and Discharges for PEQUANNOCK RIVER --- 02030103050

WMA:	**Pompton, Pequannock, Wanaque, and Ramapo**	**03**
HUC11:	**Pequannock River**	**02030103050**

Table 1. Freshwater[1] 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	21,900	20,349	16,370	15,824	16,887	15,101	17,303	12,962	17,057	17,530	17,128
sum	21,900	20,349	16,370	15,824	16,887	15,101	17,303	12,962	17,057	17,530	17,128
ground-water:[3]											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	1,528	1,296	1,177	1,321	1,279	1,295	1,299	1,367	1,446	1,362	1,337
sum	1,528	1,296	1,177	1,321	1,279	1,295	1,299	1,367	1,446	1,362	1,337
total withdrawals:	23,428	21,645	17,547	17,145	18,166	16,396	18,602	14,330	18,503	18,892	18,465

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

imports[11]	589	659	729	707	560	547	511	515	546	651	601
exports[11]	22,054	20,342	16,327	15,916	16,934	15,105	17,353	13,058	17,236	17,655	17,198
net	(21,465)	(19,683)	(15,598)	(15,209)	(16,374)	(14,558)	(16,842)	(12,543)	(16,689)	(17,003)	(16,596)

Fig 1. Average Source of Fresh Water

Fig 2. Average Destination of Fresh Water

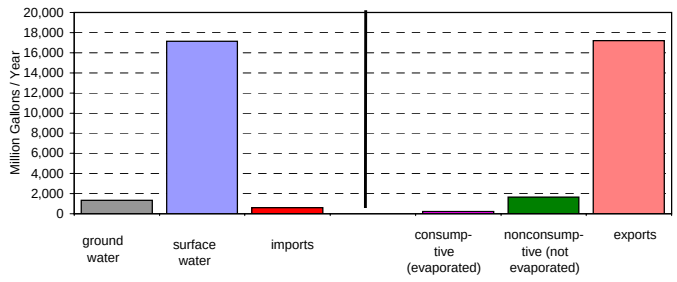

Table 3. Nonconsumptive[4] & Consumptive[5] Water Use[6] in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	1,208	1,192	1,184	1,165	1,029	1,066	990	1,000	1,013	1,081	1,093
consumptive	141	149	139	142	126	129	118	130	138	140	135
domestic wells											
nonconsumptive	538	540	546	552	558	563	567	572	577	583	560
consumptive	76	76	77	78	79	79	80	81	81	82	79
industrial & commercial & mining											
nonconsumptive	0	2	2	0	0	0	0	0	0	0	0
consumptive	0	2	2	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	1,746	1,735	1,732	1,716	1,587	1,629	1,558	1,572	1,590	1,664	1,653
consumptive	217	227	218	219	205	209	198	210	220	222	214
PERCENTAGES:											
nonconsumptive	88.9%	88.4%	88.8%	88.7%	88.6%	88.7%	88.7%	88.2%	87.9%	88.2%	88.5%
consumptive	11.1%	11.6%	11.2%	11.3%	11.4%	11.3%	11.3%	11.8%	12.1%	11.8%	11.5%

Figure 3. Consumptive & Nonconsumptive Use

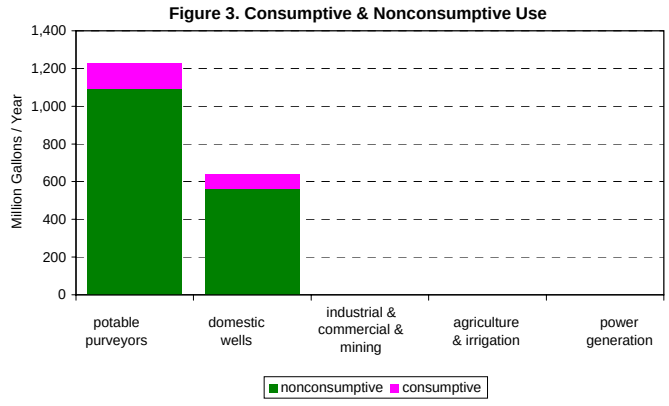

Table 4. Average Seasonal[7] Use - Nonconsumptive[4] & Consumptive[5] (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive
potable purveyors	273	0	285	20	267	92	269	23	1,094	135
domestic wells	128	0	132	10	163	57	137	12	560	79
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:	402	0	417	29	430	149	406	36	1,654	214

Figure 4. Average Seasonal Consumptive Water Loss, by Use

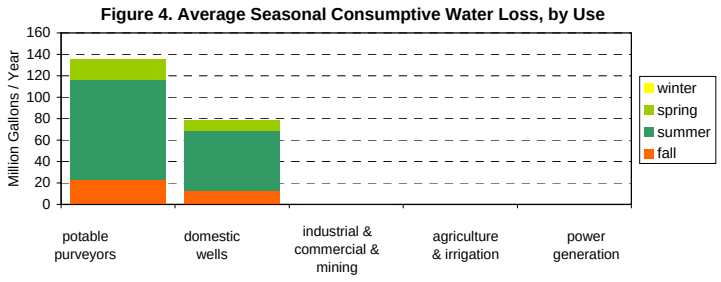

Table 5. Sewage Generation & Transfers[8] in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	610	575	638	641	621	567	630	655	624	605	617
imported to HUC11	5	6	12	9	13	13	14	12	12	14	11
exported from HUC11	601	565	623	628	604	550	610	639	607	588	601

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges[9] in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	14	17	27	22	29	30	34	28	29	31	26
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:	14	17	27	22	29	30	34	28	29	31	26

Figure 5. Average Sewage Generation & Transfers

Fig 6. Average Treated-Effluent Discharge Location

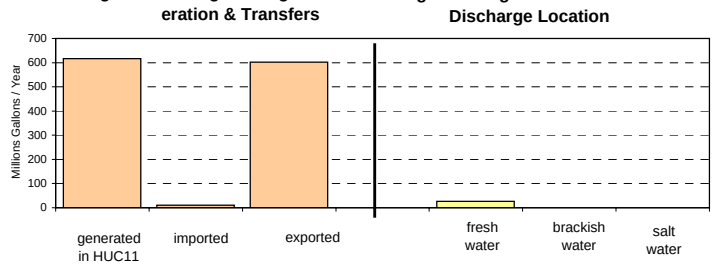

Table 7. 1999 Water Allocations[10] in HUC11 by Water Source

Water Source	MGY
surface water	19,410
ground water	1,354
total	20,764

Table 8. 1999 Water Allocations[10] in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	0
irrigation	0
mining	0
potable supply	20,764
power generation	0
total	20,764

Table 9. HUC11 Descriptive Statistics

--- Area:

in this HUC11 only	86.8	sq. mi.
upstream HUC11s	79.2	sq. mi.
total watershed	166.0	sq. mi.
(this HUC11 onshore area:	86.8	sq. mi.)

--- Population of this HUC11:

Year	Population	Change	
1940	9,143	-	
1950	12,375	35.4%	
1960	23,070	86.4%	
1970	35,926	55.7%	
1980	40,833	13.7%	
1990	42,812	4.8%	
2000	44,943	5.0%	
2010	49,326	9.8%	est.[12]
2020	52,037	5.5%	est.[12]
2030	55,682	7.0%	est.[12]

--- Land Use of this HUC11:

Type	Year		Change
	1986	1995	
ag.	0.3%	0.3%	0.0%
barren	0.5%	0.5%	0.1%
forest	68.3%	70.9%	2.6%
urban	13.6%	10.2%	-3.4%
water	5.6%	6.0%	0.5%
wetlands	11.6%	12.0%	0.3%

--- % of this HUC11 in:

Pinelands:	0.0%
Highlands:	100.0%

Table 10. Upstream and downstream HUC11s (in NJ)

location	#	name
downstream:	02030103110	Pompton River
(if any)		
upstream:	02030103070	Wanaque River
(if any)	--	--
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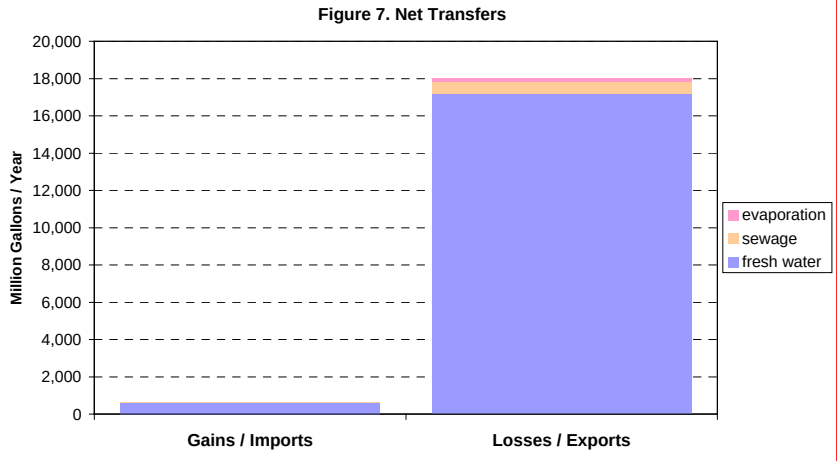
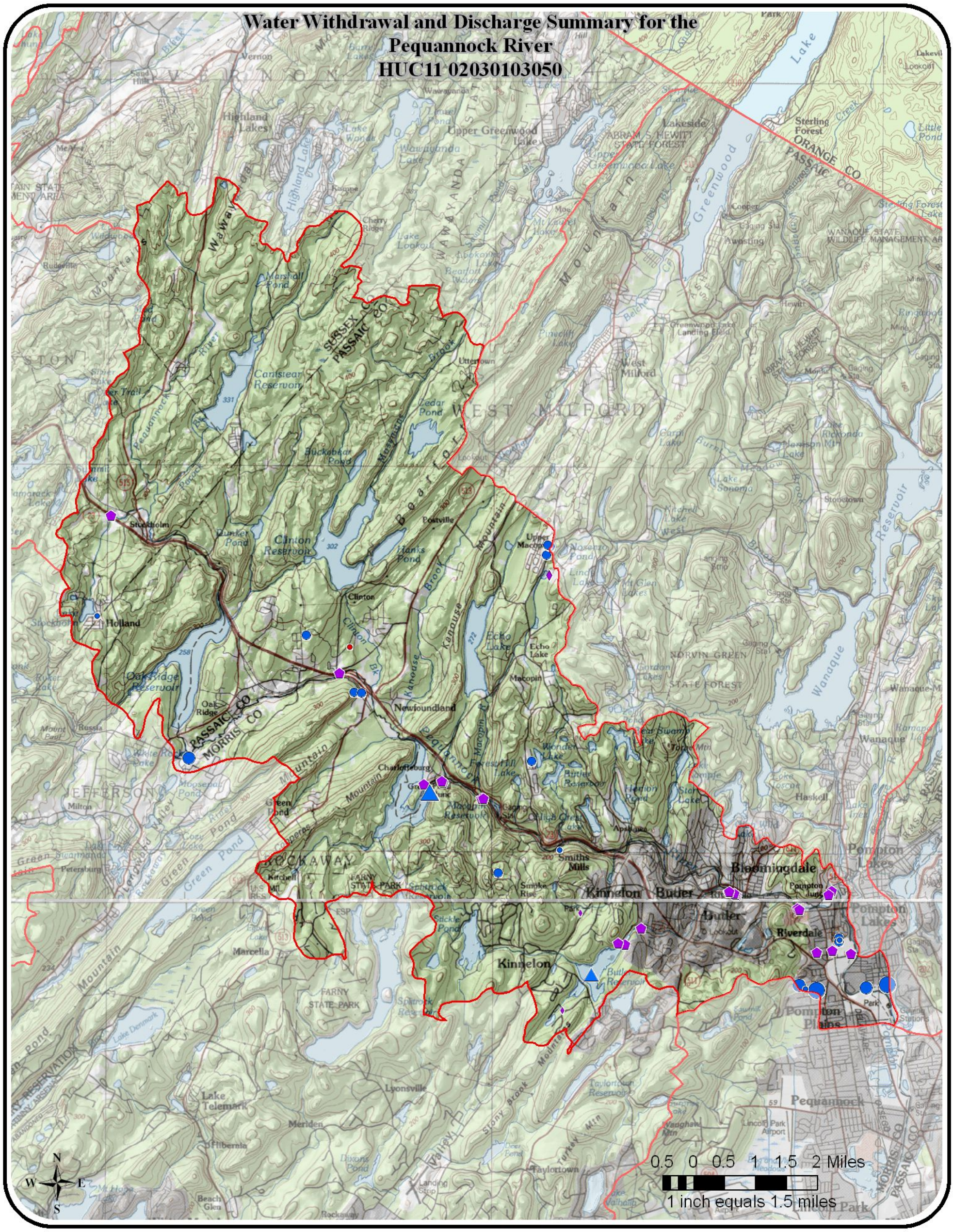
Figure 7. Net Transfers



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 Pequannock River HUC11 02030103050



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

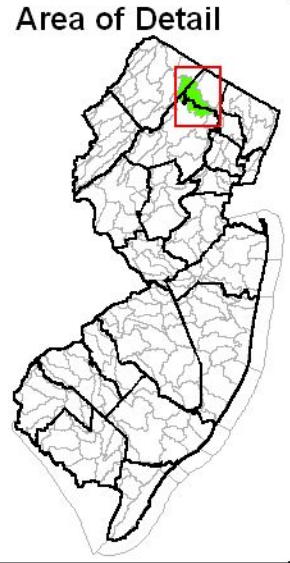
Source	
GW Confined	□
GW Unconfined	○
SW	△

1999 Withdrawal		
No 1999 Use		■●▲
1 - 50	MGY	■●▲
51 - 100	MGY	■●▲
101 - 500	MGY	■●▲
> 500	MGY	■●▲

MGY = millions of gallons per year

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

Area of Detail



Water Withdrawals, Transfers and Discharges for WANAQUE RIVER --- 02030103070

WMA:	**Pompton, Pequannock, Wanaque, and Ramapo**	**03**
HUC11:	**Wanaque River**	**02030103070**

Table 1. Freshwater[1] 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	37,490	44,801	45,759	48,768	47,319	49,013	42,474	41,521	39,916	39,191	43,625
sum	37,490	44,801	45,759	48,768	47,319	49,013	42,474	41,521	39,916	39,191	43,625
ground-water:[3]											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	1,326	1,330	1,358	1,382	1,311	1,338	1,258	1,236	1,241	1,440	1,322
sum	1,326	1,330	1,358	1,382	1,311	1,338	1,258	1,236	1,241	1,440	1,322
total withdrawals:	38,817	46,131	47,117	50,150	48,630	50,351	43,731	42,757	41,157	40,630	44,947

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

imports[11]	2,612	18,167	19,970	22,624	15,993	25,015	3,882	13,557	20,191	28,053	17,006
exports[11]	37,639	40,644	41,596	42,506	43,922	41,877	41,305	41,499	41,689	39,090	41,177
net	(35,026)	(22,477)	(21,626)	(19,882)	(27,929)	(16,862)	(37,423)	(27,942)	(21,497)	(11,037)	(24,170)

Fig 1. Average Source of Fresh Water

Fig 2. Average Destination of Fresh Water

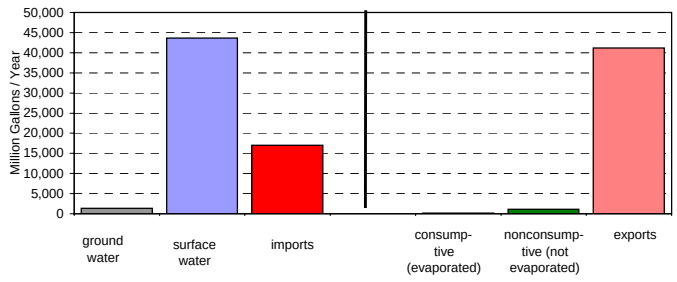


Table 3. Nonconsumptive[4] & Consumptive[5] Water Use[6] in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	692	729	725	750	638	646	637	640	646	835	694
consumptive	81	94	92	98	78	74	70	77	81	117	86
domestic wells											
nonconsumptive	411	413	415	418	422	424	427	431	434	437	423
consumptive	58	58	58	59	59	60	60	61	61	62	60
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	1,103	1,141	1,141	1,168	1,060	1,070	1,064	1,071	1,079	1,272	1,117
consumptive	139	152	150	157	138	134	130	138	143	178	146
PERCENTAGES:											
nonconsumptive	88.8%	88.2%	88.4%	88.2%	88.5%	88.9%	89.1%	88.6%	88.3%	87.7%	88.4%
consumptive	11.2%	11.8%	11.6%	11.8%	11.5%	11.1%	10.9%	11.4%	11.7%	12.3%	11.6%

Figure 3. Consumptive & Nonconsumptive Use

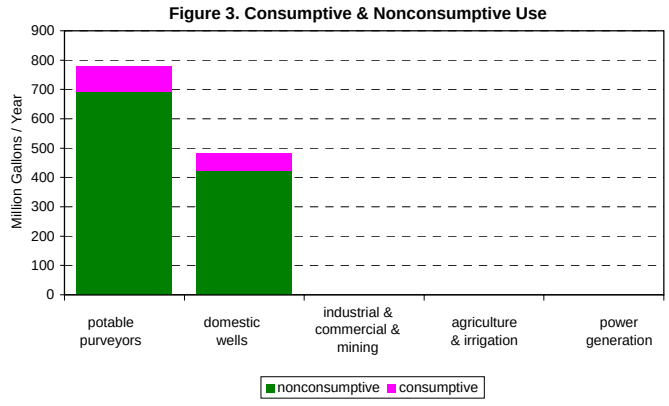


Table 4. Average Seasonal[7] Use - Nonconsumptive[4] & Consumptive[5] (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive
potable purveyors	174	0	179	12	172	59	170	15	694	86
domestic wells	97	0	100	7	123	43	103	9	423	60
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:	271	0	278	19	295	102	273	24	1,117	146

Figure 4. Average Seasonal Consumptive Water Loss, by Use

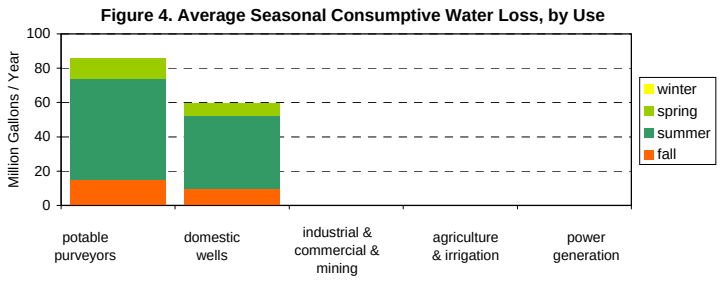


Table 5. Sewage Generation & Transfers[8] in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	415	399	466	484	505	461	519	472	511	506	474
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	65	63	74	72	73	68	75	76	73	72	71

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges[9] in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	350	336	392	413	433	393	444	396	438	433	403
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:	350	336	392	413	433	393	444	396	438	433	403

Figure 5. Average Sewage Generation & Transfers

Fig 6. Average Treated-Effluent Discharge Location

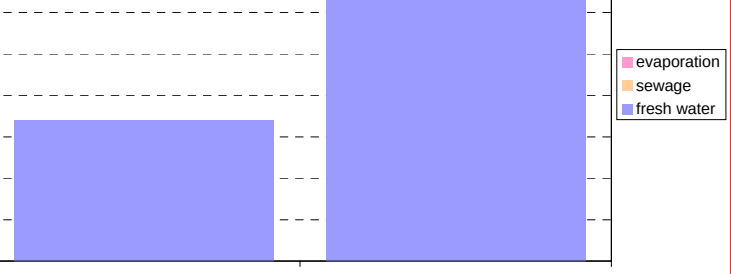


Table 7. 1999 Water Allocations[10] in HUC11 by Water Source

Water Source	MGY
surface water	0
ground water	1,037
total	1,037

Table 8. 1999 Water Allocations[10] in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	0
irrigation	0
mining	0
potable supply	1,037
power generation	0
total	1,037

Table 9. HUC11 Descriptive Statistics

--- Area:

in this HUC11 only	79.2	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	79.2	sq. mi.
(this HUC11 onshore area:	79.2	sq. mi.)

--- Population of this HUC11:

Year	Population	Change	
1940	7,477	-	
1950	10,586	41.6%	
1960	20,390	92.6%	
1970	34,137	67.4%	
1980	39,887	16.8%	
1990	40,701	2.0%	
2000	41,599	2.2%	
2010	43,940	5.6%	est.[12]
2020	45,297	3.1%	est.[12]
2030	47,991	5.9%	est.[12]

--- Land Use of this HUC11:

Type	Year		Change
	1986	1995	
ag.	0.4%	0.3%	-0.1%
barren	0.8%	0.5%	-0.3%
forest	67.4%	66.1%	-1.3%
urban	15.6%	16.6%	1.1%
water	8.8%	9.7%	1.0%
wetlands	7.0%	6.7%	-0.3%

--- % of this HUC11 in:

Pinelands:	0.0%
Highlands:	100.0%

Table 10. Upstream and downstream HUC11s (in NJ)

location	#	name
downstream:	02030103050	Pequannock River
(if any)		
upstream:	--	--
(if any)	--	--
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Figure 7. Net Transfers

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.
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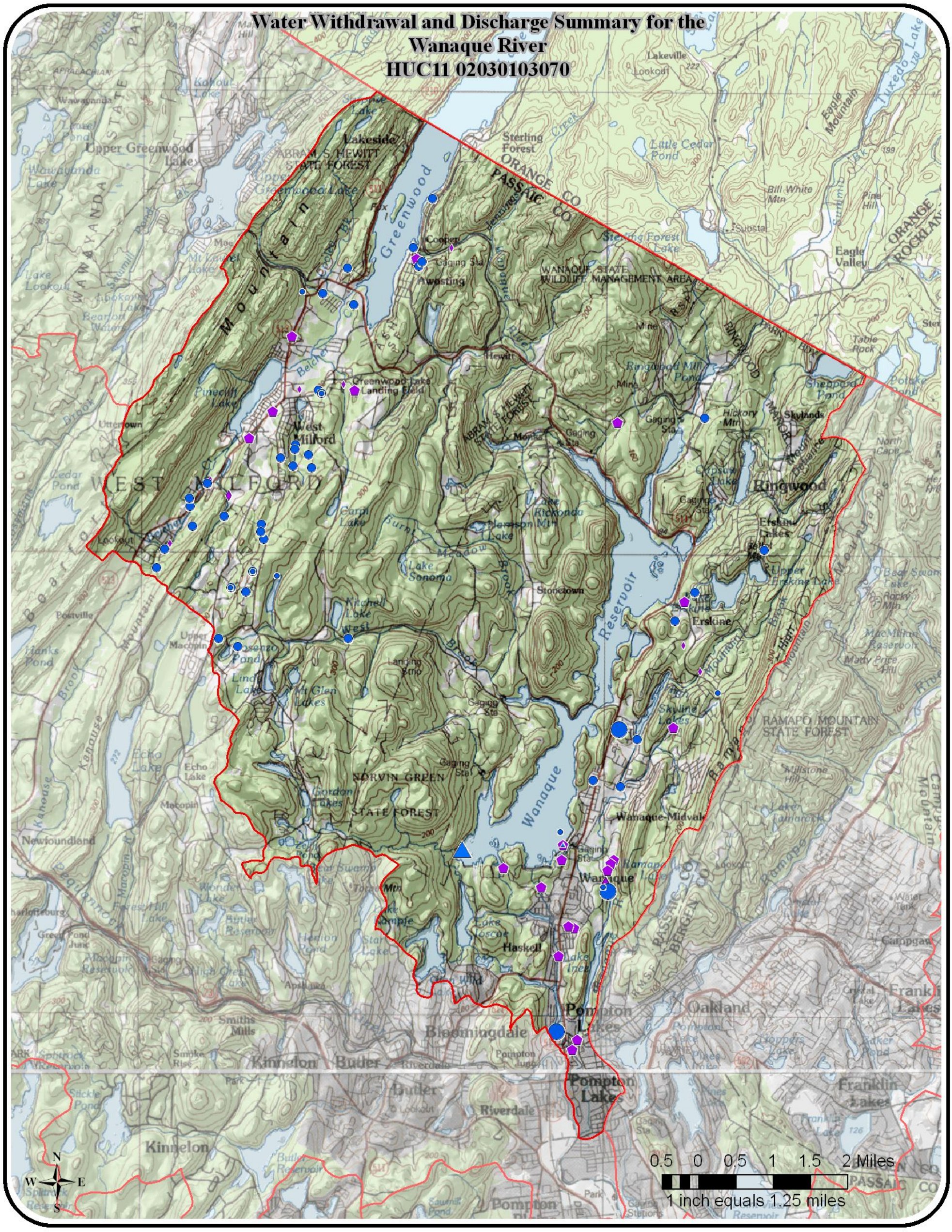
7 Winter is Jan, Feb, Dec of the same year; spring is March-May; summer is June-Aug; fall is Sept-Nov.
8 Sewage generation and transfers are based on intersection of sewer service areas with HUC11s.
9 Based on discharge volumes reported under NJPDES program.
10 The allocated volume is calculated from 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 Wanaque River HUC11 02030103070



Key for Discharge Data

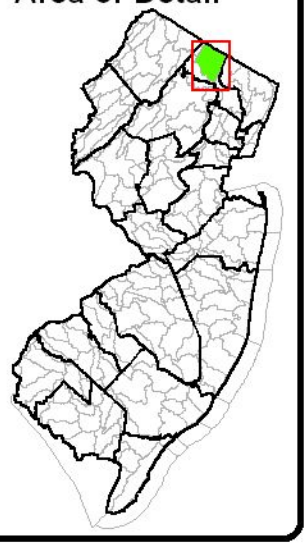
1999 Treated Effluent Discharge		
0 - 50	MGY	♦
50 - 100	MGY	♦
100 - 500	MGY	♦
> 500	MGY	♦
Other Permitted Discharge		⬟

Key for Withdrawal Data

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

MGY = millions of gallons per year

Area of Detail



Water Withdrawals, Transfers and Discharges for RAMAPO RIVER --- 02030103100

WMA:	**Pompton, Pequannock, Wanaque, and Ramapo**	**03**
HUC11:	**Ramapo River**	**02030103100**

Table 1. Freshwater[1] 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	1	3,451	10,639	5,451	4,064	9,326	241	2	0	8,785	4,196
sum	1	3,451	10,639	5,451	4,064	9,326	241	2	0	8,785	4,196
ground-water:[3]											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	2,347	2,627	2,353	1,484	2,456	2,577	2,490	2,622	1,457	2,920	2,333
sum	2,347	2,627	2,353	1,484	2,456	2,577	2,490	2,622	1,457	2,920	2,333
total withdrawals:	2,347	6,079	12,992	6,935	6,520	11,902	2,731	2,624	1,458	11,706	6,529

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

imports[11]	507	671	836	1,763	900	975	963	998	1,948	1,000	1,056
exports[11]	658	4,151	11,263	5,731	4,688	10,015	921	729	326	9,539	4,802
net	(152)	(3,480)	(10,428)	(3,968)	(3,788)	(9,040)	42	269	1,621	(8,539)	(3,746)

Fig 1. Average Source of Fresh Water

Fig 2. Average Destination of Fresh Water

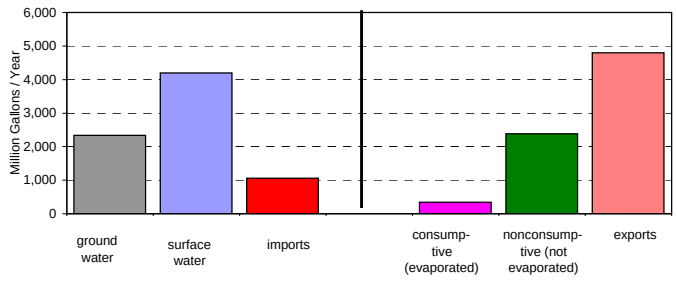


Table 3. Nonconsumptive[4] & Consumptive[5] Water Use[6] in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	1,672	1,989	1,986	2,268	2,110	2,239	2,200	2,280	2,457	2,417	2,162
consumptive	217	284	262	350	310	323	296	333	345	357	308
domestic wells											
nonconsumptive	195	195	196	196	197	198	198	199	199	200	197
consumptive	27	27	28	28	28	28	28	28	28	28	28
industrial & commercial & mining											
nonconsumptive	30	41	33	33	7	11	4	0	35	82	27
consumptive	4	5	4	4	1	2	1	0	4	9	3
agricultural & non-agricultural irrigation											
nonconsumptive	0	0	0	1	1	1	1	1	1	1	1
consumptive	0	0	3	10	10	7	7	11	9	6	6
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	1,896	2,225	2,214	2,498	2,315	2,448	2,403	2,480	2,693	2,700	2,387
consumptive	248	316	296	392	349	360	331	372	385	400	345
PERCENTAGES:											
nonconsumptive	88.4%	87.6%	88.2%	86.4%	86.9%	87.2%	87.9%	87.0%	87.5%	87.1%	87.4%
consumptive	11.6%	12.4%	11.8%	13.6%	13.1%	12.8%	12.1%	13.0%	12.5%	12.9%	12.6%

Figure 3. Consumptive & Nonconsumptive Use

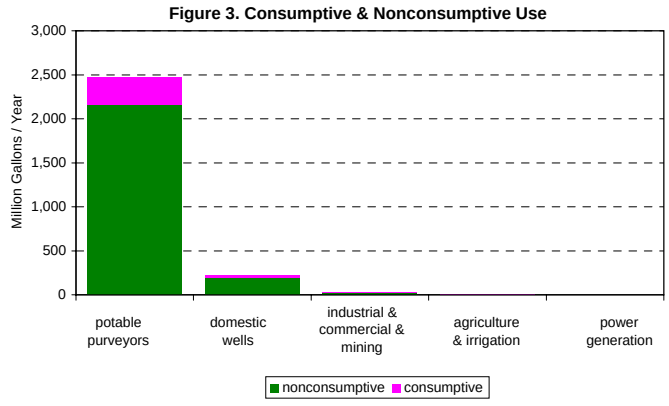


Table 4. Average Seasonal[7] Use - Nonconsumptive[4] & Consumptive[5] (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive
potable purveyors	503	0	532	39	633	219	544	50	2,211	309
domestic wells	45	0	46	3	57	20	48	4	197	28
industrial & commercial & mining	4	0	6	1	8	1	10	1	27	3
agricultural & non-agricultural irrig.	0	0	0	1	0	4	0	1	1	6
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	552	0	584	44	699	245	602	57	2,437	346

Figure 4. Average Seasonal Consumptive Water Loss, by Use

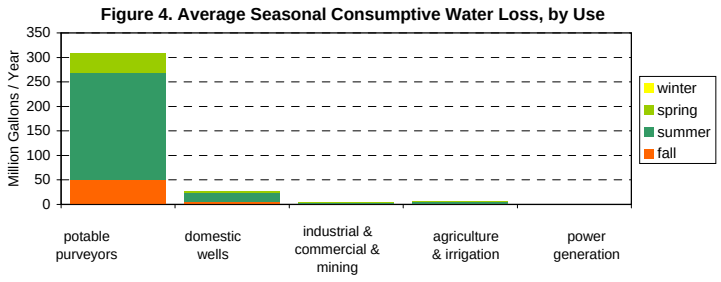


Table 5. Sewage Generation & Transfers[8] in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	1,720	1,676	1,683	1,787	1,836	1,593	1,917	1,694	1,753	1,669	1,733
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0
exported from HUC11	1,357	1,349	1,345	1,426	1,494	1,277	1,574	1,390	1,431	1,339	1,398

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges[9] in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	363	327	339	361	342	316	343	304	322	329	334
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:	363	327	339	361	342	316	343	304	322	329	334

Figure 5. Average Sewage Generation & Transfers

Fig 6. Average Treated-Effluent Discharge Location

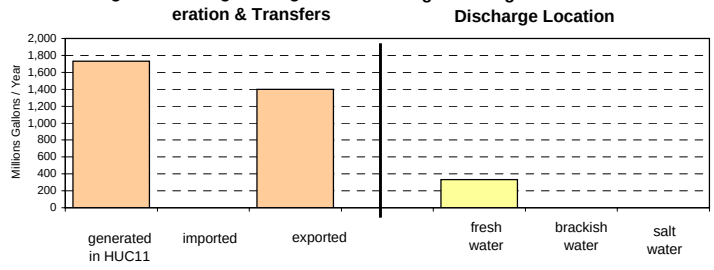


Table 7. 1999 Water Allocations[10] in HUC11 by Water Source

Water Source	MGY
surface water	46,520
ground water	2,820
total	49,341

Table 8. 1999 Water Allocations[10] in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	123
irrigation	30
mining	0
potable supply	49,188
power generation	0
total	49,341

Table 9. HUC11 Descriptive Statistics

--- Area:

in this HUC11 only	47.8	sq. mi.
upstream HUC11s	0.0	sq. mi.
total watershed	47.8	sq. mi.
(this HUC11 onshore area:	47.8	sq. mi.)

--- Population of this HUC11:

Year	Population	Change	
1940	9,835	-	
1950	14,444	46.9%	
1960	33,530	132.1%	
1970	50,844	51.6%	
1980	51,091	0.5%	
1990	55,333	8.3%	
2000	63,443	14.7%	
2010	67,138	5.8%	est.[12]
2020	69,788	3.9%	est.[12]
2030	73,900	5.9%	est.[12]

--- Land Use of this HUC11:

Type	Year		Change
	1986	1995	
ag.	0.5%	0.5%	0.0%
barren	0.2%	0.8%	0.5%
forest	51.3%	47.9%	-3.4%
urban	36.0%	39.2%	3.2%
water	5.1%	5.2%	0.1%
wetlands	7.0%	6.5%	-0.4%

--- % of this HUC11 in:

Pinelands:	0.0%
Highlands:	71.0%

Table 10. Upstream and downstream HUC11s (in NJ)

location	#	name
downstream:	02030103110	Pompton River
(if any)		
upstream:	--	--
(if any)	--	--
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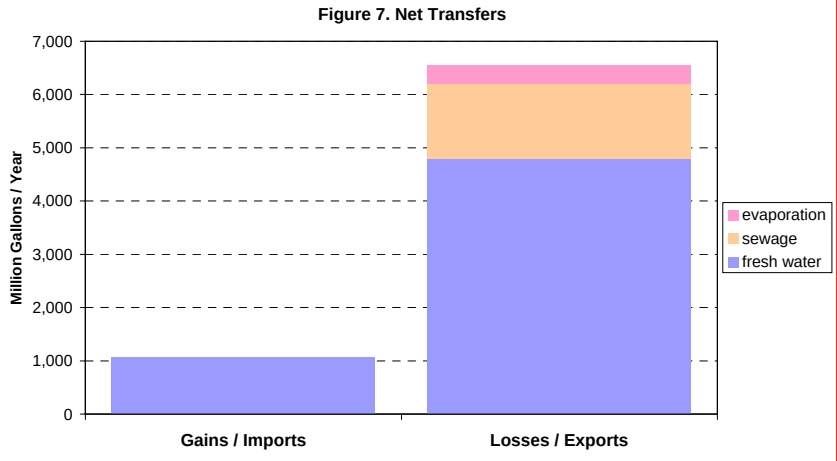
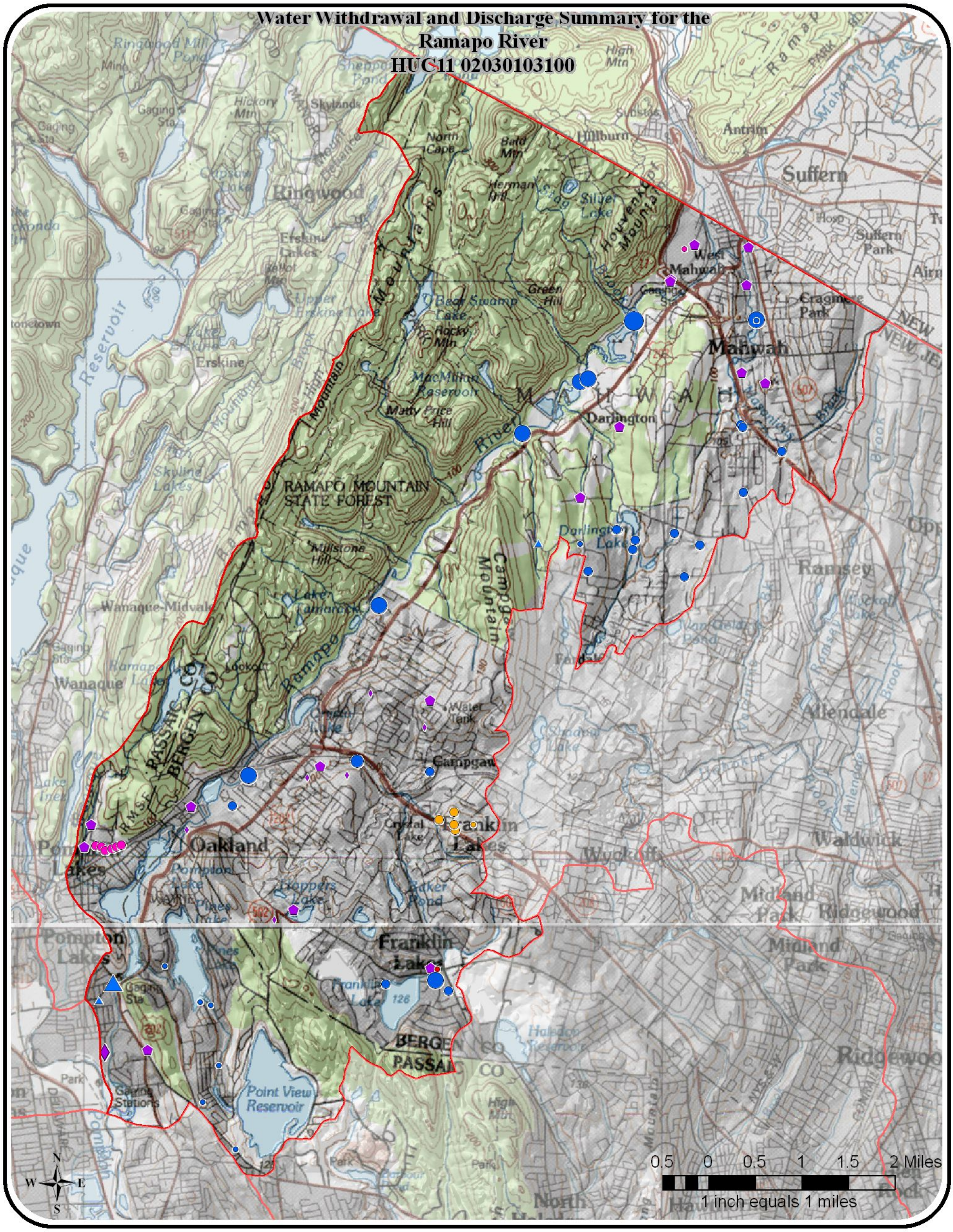
Figure 7. Net Transfers



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 Ramapo River HUC11 02030103100



Key for Discharge Data

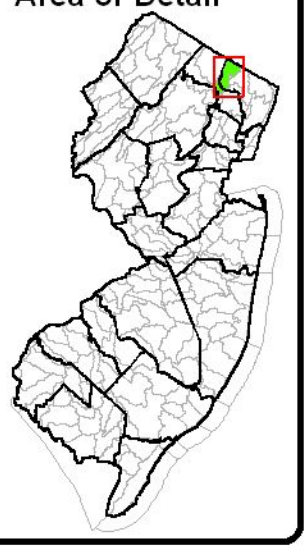
1999 Treated Effluent Discharge		
0 - 50	MGY	♦
50 - 100	MGY	♦
100 - 500	MGY	♦
> 500	MGY	♦
Other Permitted Discharge		⬟

Key for Withdrawal Data

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

MGY = millions of gallons per year

Area of Detail



Water Withdrawals, Transfers and Discharges for POMPTON RIVER --- 02030103110

WMA:	**Pompton, Pequannock, Wanaque, and Ramapo**	**03**
HUC11:	**Pompton River**	**02030103110**

Table 1. Freshwater[1] 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	3,896	19,602	14,404	24,032	15,465	22,988	4,884	16,928	27,049	24,118	17,337
sum	3,896	19,602	14,404	24,032	15,465	22,988	4,884	16,928	27,049	24,118	17,337
ground-water:[3]											
confined	0	0	0	0	0	0	0	0	0	0	0
unconfined	646	982	901	1,079	981	1,019	1,022	1,088	1,169	1,142	1,003
sum	646	982	901	1,079	981	1,019	1,022	1,088	1,169	1,142	1,003
total withdrawals:	4,542	20,584	15,305	25,111	16,447	24,007	5,906	18,015	28,219	25,260	18,340

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

imports[11]	995	991	947	1,114	1,007	958	941	1,040	1,047	952	999
exports[11]	4,344	20,229	14,969	24,764	16,098	23,652	5,549	17,631	27,811	24,876	17,992
net	(3,349)	(19,237)	(14,022)	(23,650)	(15,091)	(22,694)	(4,608)	(16,591)	(26,764)	(23,924)	(16,993)

Fig 1. Average Source of Fresh Water

Fig 2. Average Destination of Fresh Water

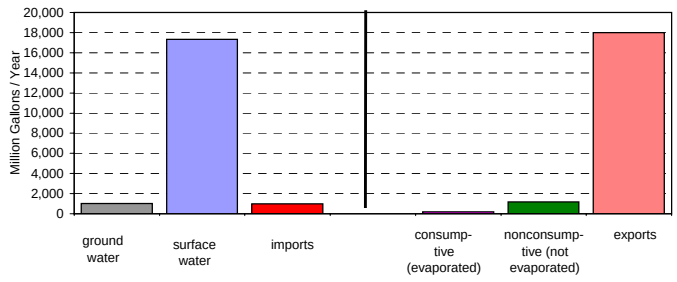


Table 3. Nonconsumptive[4] & Consumptive[5] Water Use[6] in the HUC11, by Use Type (millions of gallons)

Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
potable purveyors											
nonconsumptive	945	1,080	1,037	1,160	1,057	1,035	1,036	1,124	1,147	1,063	1,069
consumptive	111	142	126	157	140	136	134	150	158	138	139
domestic wells											
nonconsumptive	89	89	90	90	90	91	91	91	92	92	91
consumptive	13	13	13	13	13	13	13	13	13	13	13
industrial & commercial & mining											
nonconsumptive	1	1	1	2	1	1	1	1	1	0	1
consumptive	0	0	0	0	0	0	0	0	0	0	0
agricultural & non-agricultural irrigation											
nonconsumptive	3	2	2	4	5	4	2	4	4	3	3
consumptive	30	19	14	36	48	33	21	40	39	26	31
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	1,039	1,173	1,130	1,256	1,154	1,131	1,130	1,221	1,245	1,159	1,164
consumptive	155	174	153	206	201	182	168	203	210	177	183
PERCENTAGES:											
nonconsumptive	87.0%	87.1%	88.1%	85.9%	85.2%	86.1%	87.1%	85.7%	85.5%	86.8%	86.4%
consumptive	13.0%	12.9%	11.9%	14.1%	14.8%	13.9%	12.9%	14.3%	14.5%	13.2%	13.6%

Figure 3. Consumptive & Nonconsumptive Use

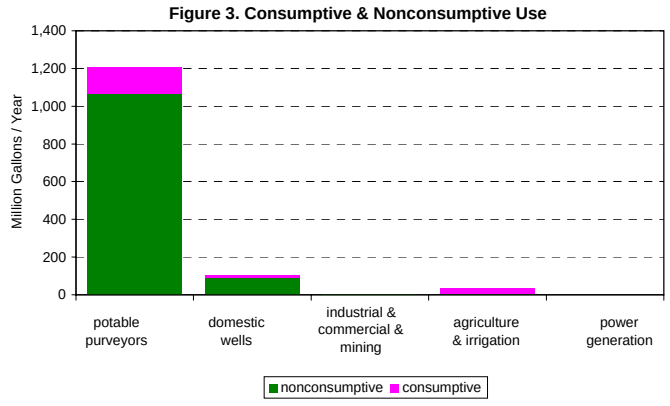


Table 4. Average Seasonal[7] Use - Nonconsumptive[4] & Consumptive[5] (millions of gallons)

Use Group	Winter		Spring		Summer		Fall		Yearly Avg.	
	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive	Noncon-sumptive	Consump-tive
potable purveyors	259	0	262	18	279	97	269	24	1,069	139
domestic wells	21	0	21	2	26	9	22	2	91	13
industrial & commercial & mining	0	0	0	0	0	0	0	0	1	0
agricultural & non-agricultural irrig.	0	0	0	3	2	20	1	8	3	31
power generation	0	0	0	0	0	0	0	0	0	0
SUM:	280	0	283	23	308	126	292	34	1,164	183

Figure 4. Average Seasonal Consumptive Water Loss, by Use

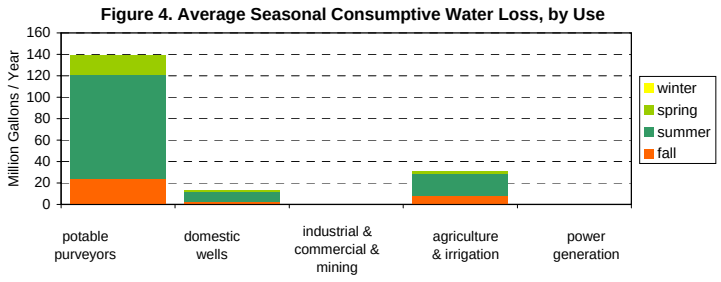


Table 5. Sewage Generation & Transfers[8] in the HUC11 (millions of gallons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
generated in HUC11	2,001	1,582	1,673	1,727	1,785	1,679	1,833	1,773	1,720	1,670	1,744
imported to HUC11	1,202	1,130	1,245	1,256	1,208	1,099	1,220	1,279	1,215	1,175	1,203
exported from HUC11	950	1,003	1,034	1,081	1,163	1,113	1,205	1,115	1,095	1,065	1,082

Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges[9] in the HUC11 (millions of gallons)

destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average
fresh water	2,252	1,709	1,884	1,902	1,829	1,666	1,848	1,938	1,840	1,780	1,865
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:	2,252	1,709	1,884	1,902	1,829	1,666	1,848	1,938	1,840	1,780	1,865

Figure 5. Average Sewage Generation & Transfers

Fig 6. Average Treated-Effluent Discharge Location

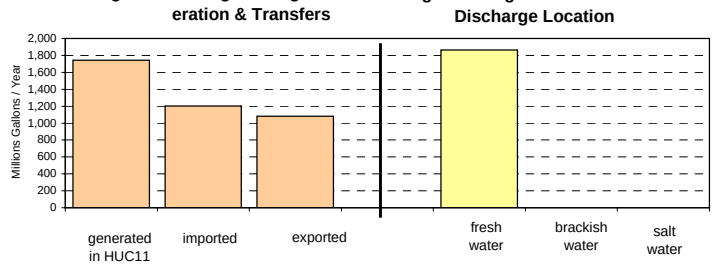


Table 7. 1999 Water Allocations[10] in HUC11 by Water Source

Water Source	MGY
surface water	93,019
ground water	1,291
total	94,310

Table 8. 1999 Water Allocations[10] in HUC11 by Water Use Group

Use Group	MGY
agricultural	0
commercial	0
industrial	0
irrigation	70
mining	0
potable supply	94,240
power generation	0
total	94,310

Table 9. HUC11 Descriptive Statistics

--- Area:

in this HUC11 only	24.0	sq. mi.
upstream HUC11s	213.9	sq. mi.
total watershed	237.9	sq. mi.
(this HUC11 onshore area:	24.0	sq. mi.)

--- Population of this HUC11:

Year	Population	Change	
1940	6,658	-	
1950	11,196	68.1%	
1960	23,439	109.4%	
1970	35,815	52.8%	
1980	34,946	-2.4%	
1990	36,127	3.4%	
2000	40,249	11.4%	
2010	41,909	4.1%	est.[12]
2020	43,146	3.0%	est.[12]
2030	45,575	5.6%	est.[12]

--- Land Use of this HUC11:

Type	Year		Change
	1986	1995	
ag.	1.9%	1.3%	-0.7%
barren	0.4%	0.8%	0.4%
forest	25.8%	22.3%	-3.5%
urban	49.6%	54.3%	4.7%
water	3.3%	3.4%	0.1%
wetlands	18.9%	17.9%	-1.0%

--- % of this HUC11 in:

Pinelands:	0.0%
Highlands:	49.9%

Table 10. Upstream and downstream HUC11s (in NJ)

location	#	name
downstream:	02030103120	Passaic River Lower (Saddle to Pompton)
(if any)		
upstream:	02030103050	Pequannock River
(if any)	02030103070	Wanaque River
	02030103100	Ramapo River
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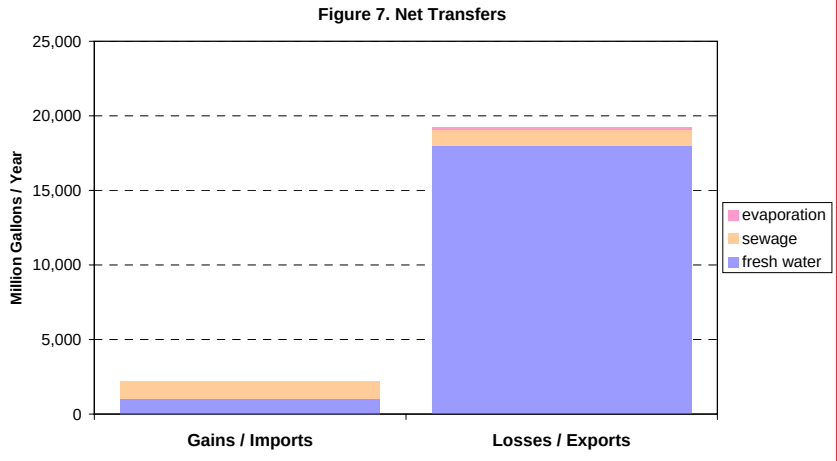
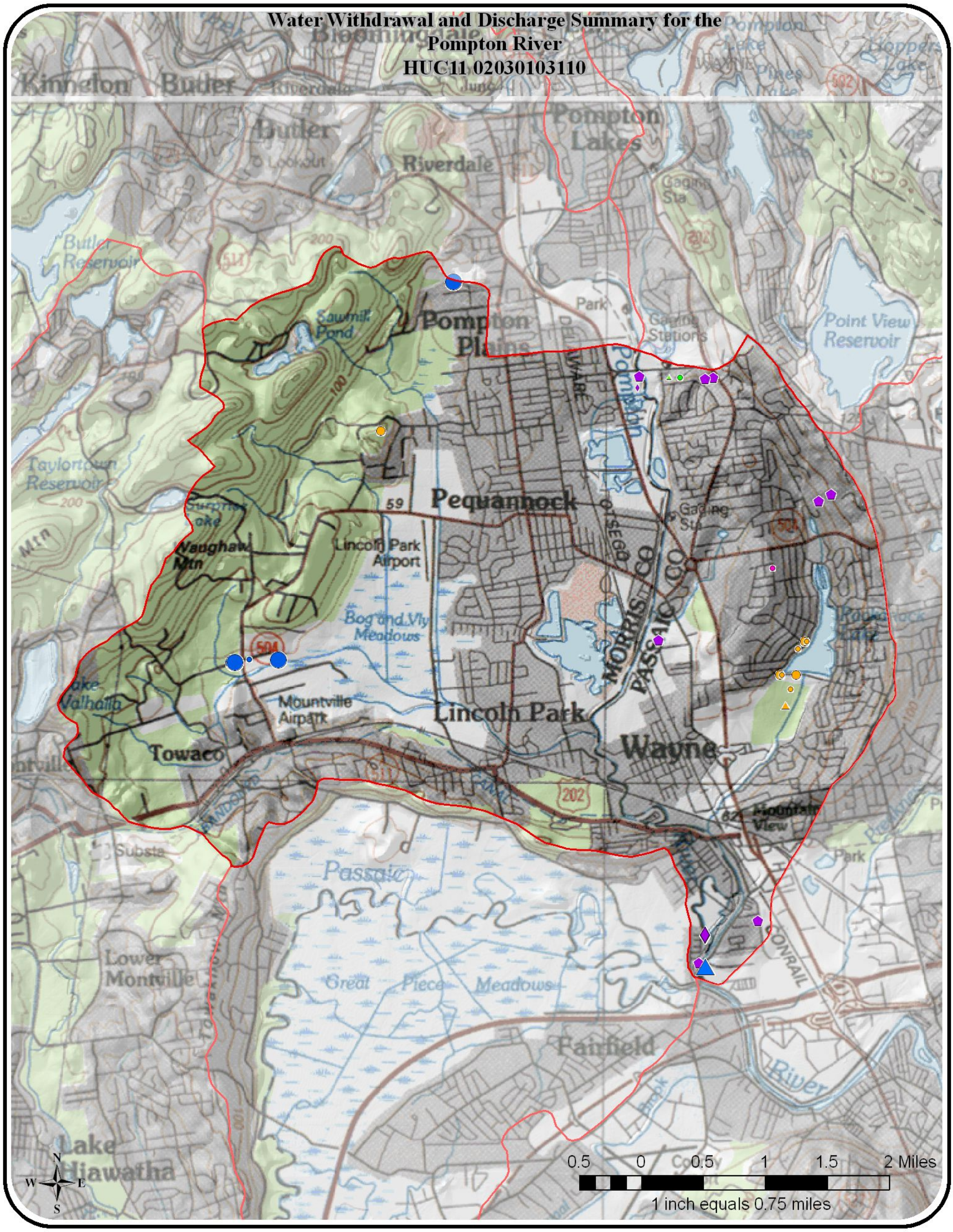
Figure 7. Net Transfers



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 Pompton River HUC11 02030103110



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	Use Group
GW Confined	No 1999 Use	Agricultural
GW Unconfined	1 - 50 MGY	Commercial
SW	51 - 100 MGY	Industrial
	101 - 500 MGY	Irrigation
	> 500 MGY	Mining
		Not Classified
		Potable Supply
		Power Generation

MGY = millions of gallons per year

Area of Detail