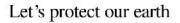
# New Jersey Water Withdrawals, Uses, Transfers, and Discharges by HUC11, 1990 to 1999

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







NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION



WMA:	I	Pompton,	Pequann	ock, Wan	aque, and	Ramapo		03									
HUC11:			Pequ	annock F	River			02	20301030	)50	]						
Table 1. Freshwater <sup>1</sup>	Withdrawa	ls in the HU	C11 (millio	ons of call	o <i>ns</i> )												
Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average	Fig	1. Average So Fresh Wate			e Destinatior Sh Water	า
face water: <sup>2</sup> Delaware River	0	0	0	0	0	0	0	0	0	0	0	20,000			01110		
other sum	21,900 21,900	20,349 20,349	16,370 16,370	15,824 15,824	16,887 16,887	15,101 15,101	17,303 17,303	12,962 12,962	17,057 17,057	17,530 17,530	17,128 17,128	18,000 + 16,000 +					
und-water: <sup>3</sup>	21,900										17,120	× 14,000					
confined unconfined	0 1,528	0 1,296	0 1,177	0 1,321	0 1,279	0 1,295	0 1,299	0 1,367	0 1,446	0 1,362	0 1,337	ହୁ 12,000 + କୁ 10,000 +					
sum	1,528	1,296	1,177	1,321	1,279	1,295	1,299	1,367	1,446	1,362	1,337	<sup>0</sup> 8,000					
total withdrawals:	23,428	21,645	17,547	17,145	18,166	16,396	18,602	14,330	18,503	18,892	18,465	₹ <sub>4,000</sub>					·
Table 2. Freshwater In	norts To S	. Exports Er	om the HI	IC11 (milli	ons of gallo	ne)						2,000 +			·····		
imports <sup>11</sup>	589	659	729	707	560	547	511	515	546	651	601	ground	surface	imports	consump- tive	nonconsump- tive (not	exports
exports <sup>11</sup> net	22,054 (21,465)	20,342 (19,683)	16,327 (15,598)	15,916 (15,209)	<u>16,934</u> (16,374)	15,105 (14,558)	17,353 (16,842)	13,058 (12,543)	17,236 (16,689)	17,655 (17,003)	17,198 (16,596)	water	water		(evaporated)	evaporated)	
ilot	(21,100)	(10,000)	(10,000)	(10,200)	(10,011)	(11,000)	(10,012)	(12,010)	(10,000)	(11,000)	(10,000)						
Table 3. Nonconsump	tive⁴ & Co	nsumptive⁵	Water Us	e <sup>6</sup> in the H	IUC11, by Us	se Type (mi	llions of g	allons)									
Water use	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average						
able purveyors nonconsumptive	1,208	1,192	1,184	1,165	1,029	1,066	990	1,000	1,013	1,081	1,093	1,400	Figure 3. C	onsumptive &	Nonconsumptive	Use	
consumptive	141	149	139	142	126	129	118	130	138	140	135						
nestic wells nonconsumptive	538	540	546	552	558	563	567	572	577	583	560	1,200 +					
consumptive	76	76	77	78	79	79	80	81	81	82	79	1,000 +					
ustrial & commercial & mi nonconsumptive	1111g 0	2	2	0	0	0	0	0	0	0	0	Se 800 -					
consumptive cultural & non-agricultura	0 Lirrigation	2	2	0	0	0	0	0	0	0	0	- 008 - 008 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009 - 009					
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0	500 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 -					
consumptive	0	0	0	0	0	0	0	0	0	0	0						
ver generation nonconsumptive	0	0	0	0	0	0	0	0	0	0	0	200 —					
consumptive SUM:	0	0	0	0	0	0	0	0	0	0	0	0		, industri	al &	1	
nonconsumptive	1,746	1,735	1,732	1,716	1,587	1,629	1,558	1,572	1,590	1,664	1,653	potable purveyor:	domest s wells	commerc	cial & agricultu		wer eration
consumptive PERCENTAGES:	217	227	218	219	205	209	198	210	220	222	214			minin	g 5	Ū	
nonconsumptive	88.9%	88.4%	88.8%	88.7%	88.6%	88.7%	88.7%	88.2%	87.9%	88.2%	88.5%			nonconsumptiv	e consumptive		
consumptive	11.1%	11.6%	11.2%	11.3%	11.4%	11.3%	11.3%	11.8%	12.1%	11.8%	11.5%						
	.7																
Table 4. Average Seas		- Nonconsu nter		<b>Consump</b> oring		ons of gallo. Imer	1 1	all	Year	y Avg.			e 4. Average S	easonal Cons	umptive Water L	oss, by Use	
Use Group	Noncon-	Consump-	Noncon-	Consump-	Noncon-	Consump-	Noncon-	Consump	Noncon-	Consump	-	160					]
potable purveyors	sumptive 273	tive 0	sumptive 285	tive 20	sumptive 267	tive 92	sumptive 269	tive 23	sumptive 1,094	tive 135	_	נו 140 +					winter
domestic wells	128	0	132	10	163	57	137	12	560	79	_	/v2 100 + ■ 80 +					winter
ustrial & commercial & mining	0	0	0	0	0	0	0	0	0	0		9 60 -					summer
agricultural & non-	0	0	0	0	0	0	0	0	0	0	_	ue 40 +	-				fall
agricultural irrig. power generation	0	0	0	0	0	0	0	0	0	0	_	≥ 20 +					
SUM:	402	0	417	29	430	149	406	36	1,654	214	-	potable	domestic	industrial &	agriculture	power	
												purveyors	wells	commercial 8 mining	& irrigation	generation	
Table 5. Sewage Gene			the HUC1 1992			1005	1000	1007	1000	1000	0101055	Figure	5. Average Se		Fig 6. Averag		uent
generated in HUC11	1990 610	1991 575	638	1993 641	1994 621	1995 567	1996 630	1997 655	1998 624	1999 605	average 617	700 -	eration & Tr	ansters	Dischar	ge Location	
imported to HUC11 xported from HUC11	5 601	6 565	12 623	9 628	13 604	13 550	14 610	12 639	12 607	14 588	11 601	600					
	001	500	023	020	004	550	010	039	007	000	001	× 500 -					
												90 400 - 9 300 -					
Table 6. Destination o												S 300 - ≌ 200 -					
destination fresh water	1990 14	1991 17	1992 27	1993 22	1994 29	1995 30	1996 34	1997 28	1998 29	1999 31	average 26	≅ 100 -					
brackish water	0	0	0	0	0	0	0	0	0	0	0	o []	,,L		freeb	brackish	
salt water	0	0	0 27	0 22	0 29	0 30	0 34	0 28	0 29	0 31	0 26	generated in HUC11	imported	exported	fresh water	brackish water	salt water
sum:				66	23	30	J <del>4</del>	20	23	51	20						

1999 Water Anoua Water Source MGY Water Source 19,410 surface water ground water 1,354 total 20,764

Table 8. 1999 Water Allocations<sup>10</sup> in HUC11 by Water Use Group MGY Use Group agricultural 0 0 0 0 commercial industrial irrigation mining potable supply 20,764 power generation 0

Table 9. H	IUC11 Desc	riptive S	tatistics							
Area:										
in this HU	IC11 only	86.8	sq. mi.							
upstream		79.2	sq. mi.							
total wa		166.0	sq. mi.							
iotai wa	leisileu	100.0	sy. m.							
(this HUC11 of	onshore area:	86.8	sq. mi.)							
Population of this HUC11:										
Year	Population									
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							
Landlloo	of this HUC									
Lanu Use	Yea									
Туре	1986	1995	<ul> <li>Change</li> </ul>							
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:									
Pinel	ands:	0.0%								
Highl	ands:	100.0%								

location	#	name	
downstream:	02030103110	Pompton River	
(if any)			
upstream:	02030103070	Wanaque River	
(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.

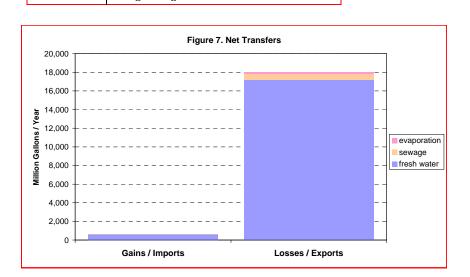
8 Sewage generation and transfers are based on intersection of sever service areas with HUC11s.
 9 Based on discharge volumes reported under NJPDES program.

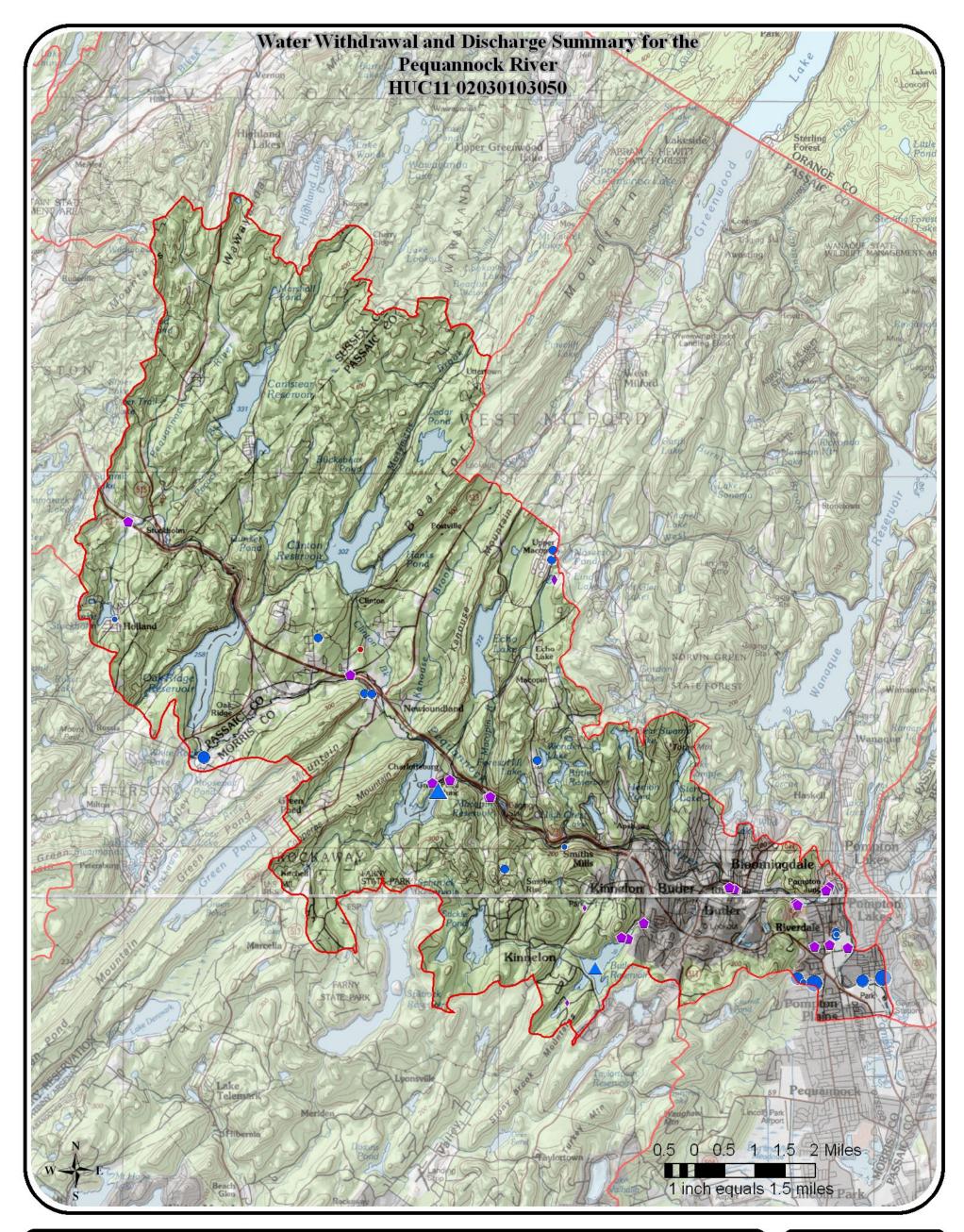
10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999. 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.

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.



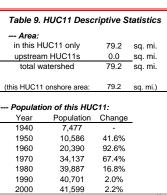


$\bigcap$	Key for Dis	scharge Da	ta			Key fo	r Witho	drawal Data			Area of Detail
_19	1999 Treated Effluent Discharge			Source		1999	Withdra	wal	Use Group		
	0 - 50	MGY	•	GW Confined		No 1999	Use	<b>H</b> ØA	Agricultural	۲	2 Det H
	50 - 100	MGY	•	GW Unconfined	$\bigcirc$	1 - 50	MGY		Commercial	•	SIZ.
	100 - 500	MGY	•	SW	$\bigtriangleup$	51 - 100	MGY		Industrial	•	KASCA.
	> 500	MGY	•			101 - 500	MGY		Irrigation	•	a tot
Oth	ner Permitted	Discharge				101 000			Mining	•	ALL SI
		J				> 500	MGY		Not Classified		
									Potable Supply	•	The former of the second secon
	MG						fgallons	per year	Power Generation	•	

WMA:	F	Pompton, F	Pequanno	ock, Wan	aque, and	Ramapo		03				
HUC11:			War	aque Riv	ver			02	0301030	)70		
Table 1. Freshwater <sup>1</sup>	Withdrawal	s in the HU	11 (millio	ns of gally	nas)							
Withdrawals (Q)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average	Fig 1. Average Source of Fig 2. Average Destination Fresh Water of Fresh Water
Delaware River other	0 37,490	0 44,801	0 45,759	0 48,768	0 47,319	0 49,013	0 42,474	0 41,521	0 39,916	0 39,191	0 43,625	
und-water: <sup>3</sup>	37,490	44,801	45,759	48,768	47,319	49,013	42,474	41,521	39,916	39,191	43,625	8 35,000 +
confined unconfined	0 1,326	0 1,330	0 1,358	0 1,382	0 1,311	0 1,338	0 1,258	0 1,236	0 1,241	0 1,440	0 1,322	2 30,000
sum total withdrawals:	1,326 38,817	1,330 46,131	1,358 47,117	1,382 50,150	1,311 48,630	1,338 50,351	1,258 43,731	1,236 42,757	1,241 41,157	1,440 40,630	1,322 44,947	Ø 20,000            § 15,000            ¥ 10,000
Table 2. Freshwater In												5,000
imports <sup>11</sup> exports <sup>11</sup>	2,612 37,639	18,167 40,644	19,970 41,596	22,624 42,506	15,993 43,922	25,015 41,877	3,882 41,305	13,557 41,499	20,191 41,689	28,053 39,090	17,006 41,177	ground surface imports consump- nonconsump- exports water water (evaporated) evaporated
net	(35,026)	(22,477)	(21,626)	(19,882)	(27,929)	(16,862)	(37,423)	(27,942)	(21,497)	(11,037)	(24,170)	(orapolato) orapolato)
Table 3. Nonconsump Water use	tive <sup>4</sup> & Cor 1990	nsumptive⁵ 1991	Water Use 1992	<sup>6</sup> in the H 1993	<b>UC11, by Us</b> 1994	<b>e Type (mi</b> 1995	<b>llions of g</b> 1996	<b>allons)</b> 1997	1998	1999	average	
ble purveyors												Figure 3. Consumptive & Nonconsumptive Use
nonconsumptive consumptive	692 81	729 94	725 92	750 98	638 78	646 74	637 70	640 77	646 81	835 117	694 86	800
nonconsumptive	411	413	415	418	422	424	427	431	434	437	423	
consumptive strial & commercial & mi	58 ning	58	58	59	59	60	60	61	61	62	60	600 +
nonconsumptive	0	0	0	0	0	0	0	0	0	0	0	§ 500
consumptive cultural & non-agricultura	0 al irrigation	0	0	0	0	0	0	0	0	0	0	ଞ 400 – ଟ୍ରୁରୁଷ ସେଥିବା କରିଥିଲେ କ
nonconsumptive consumptive	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	
er 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	0 industrial &
SUM: nonconsumptive consumptive	1,103 139	1,141 152	1,141 150	1,168 157	1,060 138	1,070 134	1,064 130	1,071 138	1,079 143	1,272 178	1,117 146	potable domestic initiusuiari agriculture power purveyors wells mining & irrigation generation
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%	
Table 4. Average Seas						•		- 11	) Veed			Figure 4. Average Seasonal Consumptive Water Loss, by Use
Use Group	Wiı Noncon-	Consump-		Consump-		mer Consump-			Noncon-		-	
potable purveyors	sumptive 174	tive 0	sumptive 179	tive 12	sumptive 172	tive 59	sumptive 170	tive 15	sumptive 694	tive 86	-	80
domestic wells ustrial & commercial &	97	0	100	7	123	43	103	9	423	60	_	ἕ 60 +
mining agricultural & non-	0	0	0	0	0	0	0	0	0	0	_	σ             40
agricultural irrig.	0	0	0	0	0	0	0	0	0	0	-	
power generation SUM:	0 271	0	0 278	0 19	0 295	0 102	0 273	0 24	0 1,117	0 146	-	0 potable domestic industrial & agriculture power purveyors wells commercial & & irrigation generation mining
Table 5. Sewage Gene	eration & Tr. 1990	<b>ansfers<sup>®</sup> in</b> 1991	the HUC11 1992	( <i>millions</i> 1993	<b>of gallons)</b> 1994	1995	1996	1997	1998	1999	average	Figure 5. Average Sewage Gen- eration & Transfers Discharge Location
generated in HUC11 imported to HUC11	415 0	399 0	466 0	484 0	505 0	461 0	519 0	472 0	511 0	506 0	474 0	
xported from HUC11	65	63	74	72	73	68	75	76	73	72	71	
Table 6. Destination o	f Treated E 1990	ffluent (Recl 1991	aimed-Wat 1992	<b>ter) Discha</b> 1993	arges <sup>®</sup> in the 1994	e HUC11 (m 1995	nillions of 1996	<b>gallons)</b> 1997	1998	1999	average	¥ 250 − − − − − − − − − − − − − − − − − − −
fresh water	350	336	392	413	433	393	444	396	438	433	403	
brackish water salt water	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	generated imported exported fresh brackish salt water water water
	350	336	392	413	433	393	444	396	438	433	403	in HUC11 water water water

Table 7. 1999 Water Allocations <sup>10</sup> in HUC11 by Water Source Water Source MGY surface water 0 ground water 1,037 total 1,037

Table 8. 1999 Water Allocations <sup>10</sup> in HUC11 by Water Use Group MGY Use Group agricultural 0 0 0 0 commercial industrial irrigation mining 1,037 potable supply power generation 0



location	#	name	
downstream:	02030103050	Pequannock River	
(if any)			
upstream:			
(if any)			

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	Ye	ar	Change	
туре	1986	1995	Change	
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 H	IUC11 in:			
Pinela	nds:	0.0%		
Highla	nds:	100.0%		

### 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.

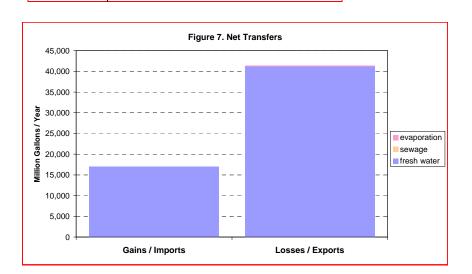
8 Sewage generation and transfers are based on intersection of sever service areas with HUC11s.
 9 Based on discharge volumes reported under NJPDES program.

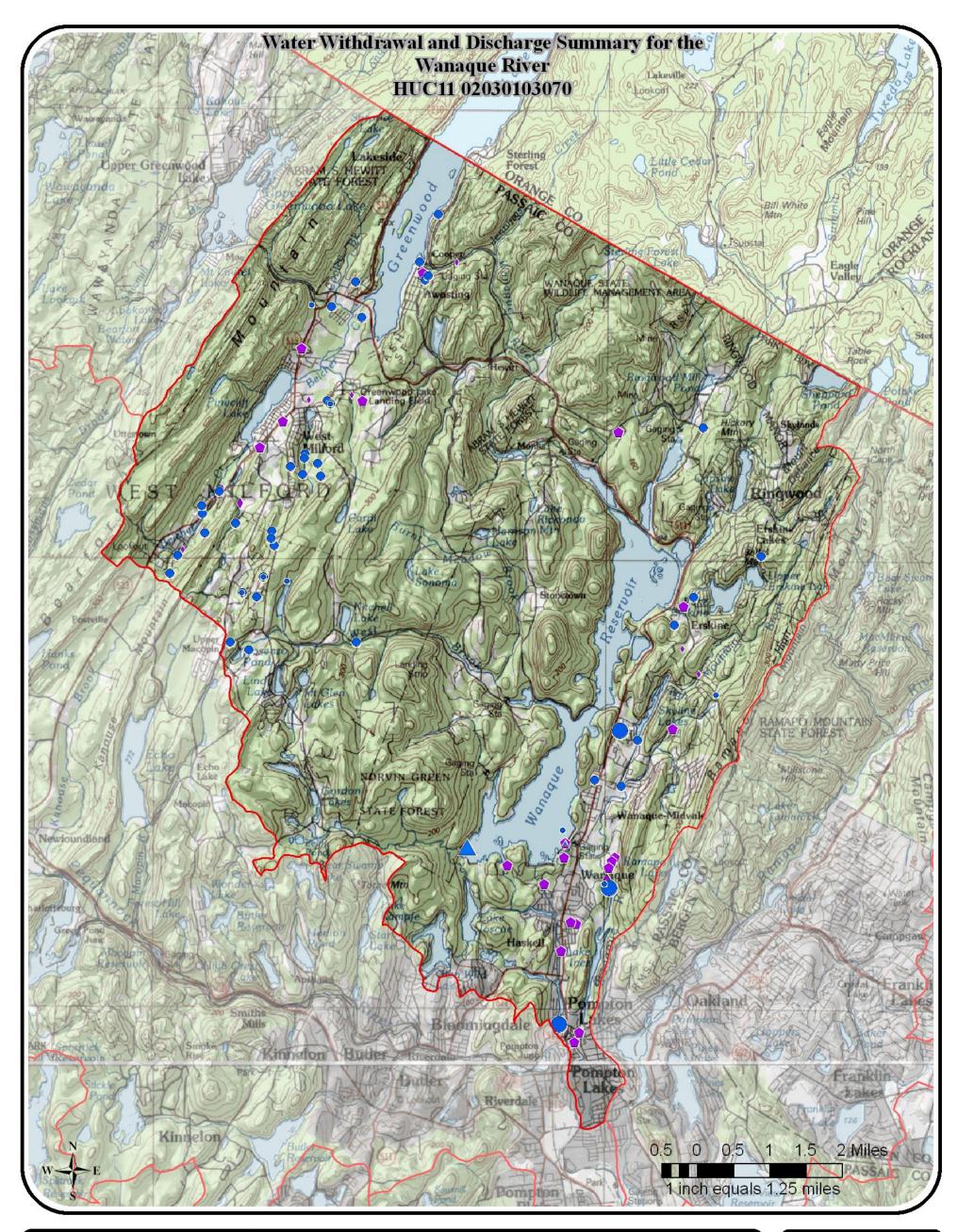
10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999. 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.

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.



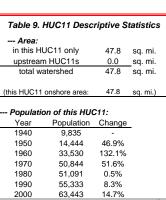


Key for Discharge Data	Key	for Withdrawal Data		Area of Detail
1999 Treated Effluent Discharge	Source 1	99 Withdrawal	Use Group	
0 - 50 MGY 🔸	GW Confined 🗌 No 1	99 Use ■●▲	Agricultural 😑	JZ Ed
50 - 100 MGY 🔶	GW Unconfined $\bigcirc$ 1 - 50	MGY ■●▲	Commercial 🛛 🔴	SIT.
100 - 500 MGY 🔶	SW 🛆 51 - 4	00 MGY ■●▲	Industrial 🛛 😑	457
> 500 MGY 🔶	101 -	500 MGY	Irrigation 🥚	a tra
Other Permitted Discharge 🔹		0 1_0	Mining 😑	ALL AL
5	> 500	MGY	Not Classified 📃 🌑	
			Potable Supply 📃 🔵	the second second
	MGY = millio	Power Generation 🥚		

WMA:	F	Pompton,	Pequanno	ock, War	aque, and	Ramapo		03				
HUC11:			Rai	mapo Riv	/er			02	0301031	00	]	
Table 1. Freshwater <sup>1</sup> Withdrawals (Q)	Withdrawa 1990	<b>s in the HU</b> 1991	<b>C11 (millic</b> 1992	ons of gall 1993	o <b>ns)</b> 1994	1995	1996	1997	1998	1999	average	Fig 1. Average Source of Fig 2. Average Destination
ace water: <sup>2</sup> Delaware River	0	0	0	0	0	0	0	0	0	0	0	Fresh Water of Fresh Water
other sum	1	3,451 3,451	10,639	5,451 5,451	4,064 4,064	9,326 9,326	241 241	2	0	8,785 8,785	4,196 4,196	5,000
Ind-water: 3												<sup>8</sup> 4,000
confined unconfined	0 2,347	0 2,627	0 2,353	0 1,484	0 2,456	0 2,577	0 2,490	0 2,622	0 1,457	0 2,920	0 2,333	ğ <sub>3,000</sub> — — — — — — — — — — — — — — — — — —
sum	2,347 2,347	2,627	2,353	1,484 6,935	2,456 6,520	2,577	2,490	2,622	1,457 1,458	2,920	2,333 6,529	
total withdrawals:	2,347	6,079	12,992	6,935	6,520	11,902	2,731	2,024	1,458	11,706	6,529	<sup>₹</sup> 1,000
able 2. Freshwater In	nports To &	Exports Fr	om the HU	C11 (milli	ons of gallo	ns)						
imports <sup>11</sup> exports <sup>11</sup>	507 658	671 4,151	836 11,263	1,763 5,731	900 4,688	975 10,015	963 921	998 729	1,948 326	1,000 9,539	1,056 4,802	ground surface imports consump- nonconsump- exports water water (consected) surgerited)
net	(152)	(3,480)	(10,428)	(3,968)	(3,788)	(9,040)	42	269	1,621	9,539 (8,539)	4,802 (3,746)	(evaporated) (evaporated)
Table 3. Nonconsump Water use	tive <sup>4</sup> & Co. 1990	nsumptive <sup>5</sup> 1991	Water Use 1992	e <sup>6</sup> in the H 1993	IUC11, by Us 1994	<b>se Type (mi</b> 1995	i <b>llions of g</b> 1996	<b>allons)</b> 1997	1998	1999	average	
ble purveyors												Figure 3. Consumptive & Nonconsumptive Use
nonconsumptive consumptive	1,672 217	1,989 284	1,986 262	2,268 350	2,110 310	2,239 323	2,200 296	2,280 333	2,457 345	2,417 357	2,162 308	3,000
estic wells												2,500
nonconsumptive consumptive	195 27	195 27	196 28	196 28	197 28	198 28	198 28	199 28	199 28	200 28	197 28	b 2.000 → 2.000
strial & commercial & mi					-							
nonconsumptive consumptive	30 4	41 5	33 4	33 4	7 1	11 2	4 1	0 0	35 4	82 9	27 3	<u><u><u></u></u> <u><u></u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> 1,500</u>
ultural & non-agricultura	l irrigation 0	0	0	4	4	4	4	4	4	4	4	
nonconsumptive consumptive	0	0 0	0 3	1 10	1 10	7	1 7	1 11	1 9	6	6	
er generation nonconsumptive	0	0	0	0	0	0	0	0	0	0	0	500 -
consumptive	0	0	0	0	0	0	0	0	0	0	0	o +
SUM: nonconsumptive	1,896	2,225	2,214	2,498	2,315	2,448	2,403	2,480	2,693	2,700	2,387	industrial & agriculture power commercial & agriculture power purveyors wells minion & irrigation generation
consumptive PERCENTAGES:	248	316	296	392	349	360	331	372	385	400	345	purveyors wens mining a migation generation
nonconsumptive	88.4%	87.6%	88.2%	86.4%	86.9%	87.2%	87.9%	87.0%	87.5%	87.1%	87.4%	■ nonconsumptive ■ consumptive
consumptive	11.6%	12.4%	11.8%	13.6%	13.1%	12.8%	12.1%	13.0%	12.5%	12.9%	12.6%	
Table 4. Average Seas	anal <sup>7</sup> Haa	Nonconci	immetica 4 8	Conourm	tive <sup>5</sup> (millio	no of collo	<b>no</b> )					
-	Wi	nter	Sp	ring	Sum	mer	F	all		y Avg.		Figure 4. Average Seasonal Consumptive Water Loss, by Use
Use Group	Noncon- sumptive	Consump- tive	Noncon- sumptive	Consump- tive	Noncon- sumptive	Consump- tive	Noncon- sumptive	Consump- tive	Noncon- sumptive	Consump tive	-	ğ 300
potable purveyors	503	0	532	39	633	219	544	50	2,211	309	_	250 - winter
domestic wells ustrial & commercial &	45	0	46	3	57	20	48	4	197	28	_	<sup>8</sup> / <sub>3</sub> 200 +
mining	4	0	6	1	8	1	10	1	27	3	-	<sup>™</sup> <sup>™   <sup>™</sup> <sup>™   <sup>™</sup></sup></sup>
agricultural & non- agricultural irrig.	0	0	0	1	0	4	0	1	1	6	_	
power generation SUM:	0 552	0	0 584	0 44	0 699	0 245	0 602	0 57	0 2,437	0 346	-	
	002	Ū				2.10	1 002		2,101	0.10		potable domestic industrial & agriculture power purveyors wells commercial & & irrigation generation mining
able 5. Sewage Gene	eration & Tr 1990	ansfers <sup>®</sup> in 1991	the HUC1 1992	1 (millions 1993	<b>of gallons)</b> 1994	1995	1996	1997	1998	1999	average	Figure 5. Average Sewage Gen- Fig 6. Average Treated-Effluent
enerated in HUC11	1,720	1,676	1,683	1,787	1,836	1,593	1,917	1,694	1,753	1,669	1,733	eration & Transfers Discharge Location
imported to HUC11 xported from HUC11	0 1,357	0 1,349	0 1,345	0 1,426	0 1,494	0 1,277	0 1,574	0 1,390	0 1,431	0 1,339	0 1,398	
		1		,	1			,	,	,	<u> </u>	
Table 6. Destination o destination	f Treated E 1990	ffluent (Rec 1991	laimed-Wa 1992	<b>ter) Disch</b> 1993	arges <sup>®</sup> in the 1994	e HUC11 (n 1995	nillions of 1996	<b>gallons)</b> 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	0 0	0 0	0 0	0 0	0 0	generated imported exported fresh brackish salt
salt water			339	361	342	316	343	304	322	329	334	generated imported exported water water water water

Table 7. 1999 Water Allocations <sup>10</sup> in HUC11 by Water Source												
Water Source		MGY	_									
surface water		46,520										
ground water		2,820										
	total	49,341										

Table 8. 1999 Water Allocations <sup>10</sup> Water Use Group	in HUC11 by
Use Group	MGY
agricultural	0
commercial	0
industrial	123
irrigation	30
mining	0
potable supply	49,188
power generation	0



location	#	name	
downstream:	02030103110	Pompton River	
(if any)			
upstream:			
(if any)			

Type	Yea	ar	- Change
Land Use			
2030	73.900	5.9%	est.12
2020	69,788	3.9%	est.12
2010	67,138	5.8%	est."

Туре -	1986	1995	- Change		
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 H	IUC11 in:				
Pinela	nds:	0.0%			
Highla	nds:	71.0%			

### 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.

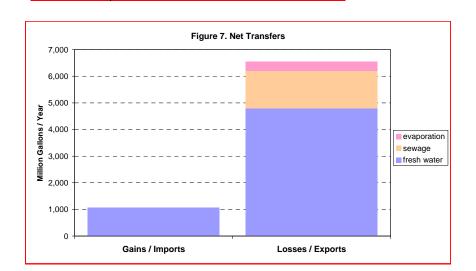
8 Sewage generation and transfers are based on intersection of sever service areas with HUC11s.
 9 Based on discharge volumes reported under NJPDES program.

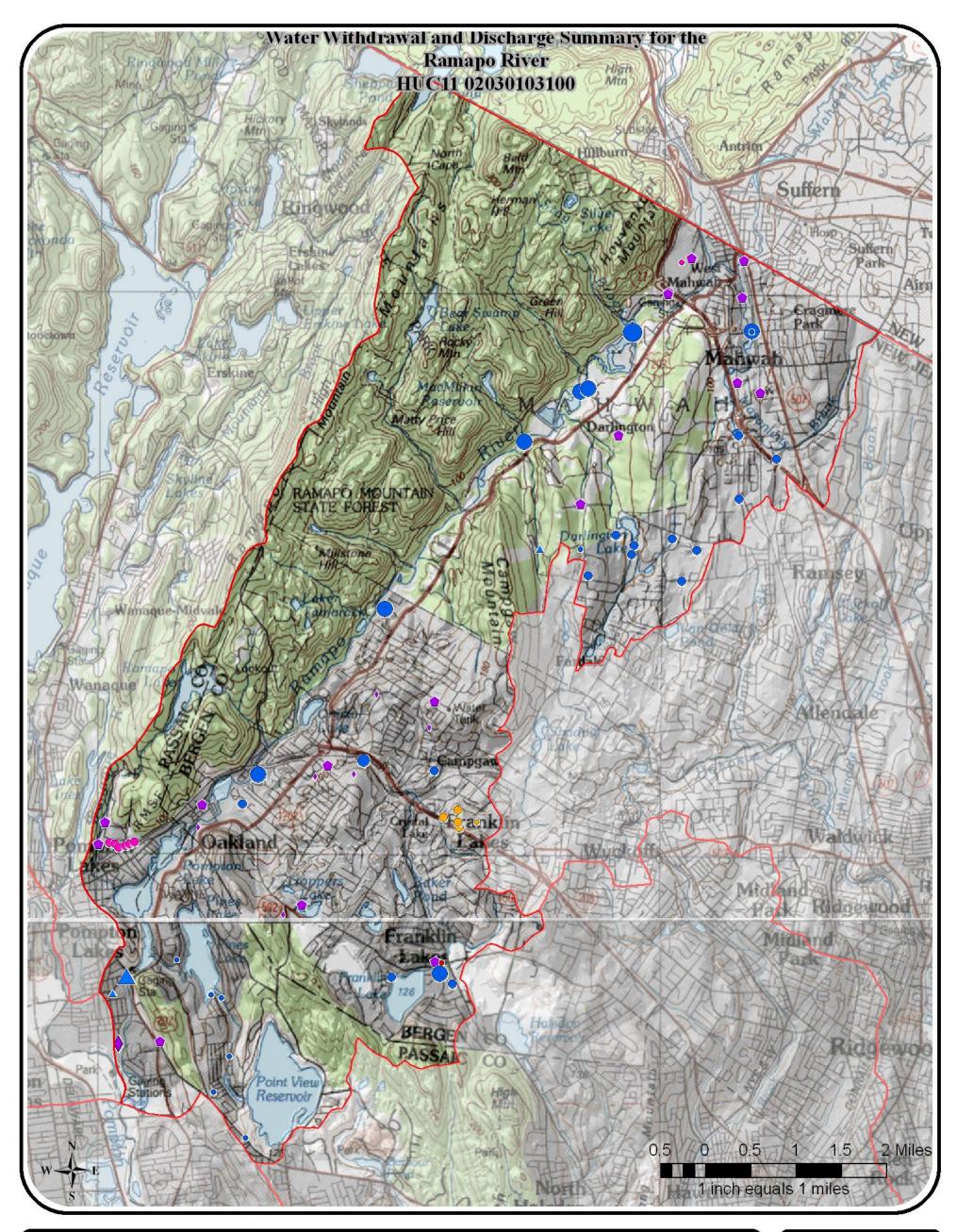
10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999. 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.

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.





ſ	Key for Dis	scharge Da	ta		Area of Detail					
19	1999 Treated Effluent Discharge So		Source		1999	Withdra	awal	Use Group	-    k k k	
	0 - 50	MGY	•	GW Confined		No 1999	Use	<b>H</b> ØA	Agricultural	• Fred
	50 - 100	MGY	•	GW Unconfined	$\bigcirc$	1 - 50	MGY		Commercial	• 1 5 5 E.
	100 - 500	MGY	•	SW	$\bigtriangleup$	51 - 100	MGY		Industrial	• 457
	> 500	MGY	•			101 - 500	MGY		Irrigation	•
Ot	her Permitted	Discharge				101 000			Mining	
		Jeeninge				> 500	MGY		Not Classified	
									Potable Supply	
				MGY = millions of gallons per year <b>Power Genera</b>						

WMA:	F	ompton, I	Pequanno	ock, Wan	aque, and	Ramapo		03				
HUC11:	UC11: Pompton River				02	0301031	10					
Table 1. Freshwater <sup>1</sup> Withdrawals (Q)	Withdrawal 1990	<b>s in the HUC</b> 1991	<b>C11 (millio</b> 1992		<b>ns)</b> 1994	1005	1996	1997	1998	1000	overage	Fig 1. Average Source of Fig 2. Average Destination
ace water: <sup>2</sup> Delaware River	0	0	0	1993 0	0	1995 0	0	0	0	1999 0	average 0	Fresh Water of Fresh Water
other	3,896 3,896	19,602 19,602	14,404 14,404	24,032 24,032	15,465 15,465	22,988 22,988	4,884	16,928 16,928	27,049	24,118 24,118	17,337 17,337	
ind-water: 3												
confined unconfined	0 646	0 982	0 901	0 1,079	0 981	0 1,019	0 1,022	0 1,088	0 1,169	0 1,142	0 1,003	
sum total withdrawals:	646 4,542	982 20,584	901 15,305	1,079 25,111	981 16,447	1,019 24,007	1,022 5,906	1,088 18,015	1,169 28,219	1,142 25,260	1,003 18,340	
Table 2. Freshwater In										050		2,000
imports <sup>11</sup> exports <sup>11</sup>	995 4,344	991 20,229	947 14,969	1,114 24,764	1,007 16,098	958 23,652	941 5,549	1,040 17,631	1,047 27,811	952 24,876	999 17,992	ground surface imports tive two (not water water (evaporated) evaporated)
net	(3,349)	(19,237)	(14,022)	(23,650)	(15,091)	(22,694)	(4,608)	(16,591)	(26,764)	(23,924)	(16,993)	
Table 3. Nonconsump	tive <sup>4</sup> 8 Co	nsumptivo <sup>5</sup>	Water Lles	o <sup>6</sup> in tha ⊔	UC11 by U-	a Tune (mi	llions of a	allone)				
Water use	1990	1991	1992	1993	1994	1995 (mi	1996 1	<b>alions)</b> 1997	1998	1999	average	
ble purveyors nonconsumptive	945	1,080	1,037	1,160	1,057	1,035	1,036	1,124	1,147	1,063	1,069	Figure 3. Consumptive & Nonconsumptive Use
consumptive estic wells	111	142	126	157	140	136	134	150	158	138	139	1,200
nonconsumptive	89	89	90	90	90	91	91	91	92	92	91	
consumptive strial & commercial & mi	13 ning	13	13	13	13	13	13	13	13	13	13	
nonconsumptive consumptive	1 0	1 0	1 0	2 0	1 0	1 0	1 0	1 0	1 0	0 0	1 0	
cultural & non-agricultura	l irrigation							0	-		-	
nonconsumptive consumptive	3 30	2 19	2 14	4 36	5 48	4 33	2 21	4 40	4 39	3 26	3 31	Ē 400 −
er generation nonconsumptive	0	0	0	0	0	0	0	0	0	0	0	200
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	industrial & agriculture power purveyors wells mining & irrigation generation
consumptive PERCENTAGES:	155	174	153	206	201	182	168	203	210	177	183	nonconsumptive consumptive
nonconsumptive consumptive	87.0% 13.0%	87.1% 12.9%	88.1% 11.9%	85.9% 14.1%	85.2% 14.8%	86.1% 13.9%	87.1% 12.9%	85.7% 14.3%	85.5% 14.5%	86.8% 13.2%	86.4% 13.6%	
Table 4. Average Seas	sonal <sup>7</sup> Use	- Nonconsu	mptive <sup>4</sup> &	Consump	tive⁵ (millio	ns of gallo	ns)					
Use Group	Wir Noncon-		Sp	ring Consump-	Sum Noncon-	-	F	all	Yearl			Figure 4. Average Seasonal Consumptive Water Loss, by Use
	sumptive	tive	sumptive	tive	sumptive	tive	sumptive	tive	sumptive	tive	-	
potable purveyors domestic wells	259 21	0	262 21	18 2	279 26	<u>97</u> 9	269 22	24 2	1,069 91	139 13	-	g 100 spring
ustrial & commercial & mining	0	0	0	0	0	0	0	0	1	0	-	
agricultural & non-	0	0	0	3	2	20	1	8	3	31	-	
agricultural irrig. power generation	0	0	0	0	0	0	0	0	0	0	-	
SUM:	280	0	283	23	308	126	292	34	1,164	183		potable domestic industrial & agriculture power purveyors wells commercial & & irrigation generation mining
Table 5. Sewage Gene	eration & Tr. 1990	ansfers <sup>®</sup> in 1991	the HUC11 1992	1 ( <i>millions</i> 1993	of gallons) 1994	1995	1996	1997	1998	1999	average	Figure 5. Average Sewage Gen-Fig 6. Average Treated-Effluent eration & Transfers Discharge Location
enerated in HUC11	2,001 1,202	1,582 1,130	1,673 1,245	1,727 1,256	1,785 1,208	1,679 1,099	1,833 1,220	1,773 1,279	1,720 1,215	1,670 1,175	1,744 1,203	2,000
xported from HUC11	950	1,003	1,245	1,081	1,163	1,099	1,220	1,279	1,215	1,065	1,082	
Table & Deatherston	f Tuesday 1 -	Huget /D-	oim114/	tor) Diret	9 :			and line - 1				
Table 6. Destination o destination	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average	
fresh water brackish water	2,252 0	1,709 0	1,884 0	1,902 0	1,829 0	1,666 0	1,848 0	1,938 0	1,840 0	1,780 0	1,865 0	
salt water sum:	0	0	0	0	0 1,829	0	0	0	0	0	0	generated imported exported fresh brackish salt in HUC11 water water water
cu.n.	,	,	,	,	,	.,250	,	,	,	,. 50	,	

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

## by

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

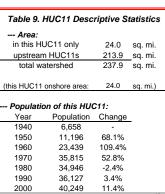


Table 10. Upstream and downstream HUC11s (in NJ)										
#	name									
02030103120	Passaic River Lower (Saddle to Pompton)									
02030103050	Pequannock River									
02030103070	Wanaque River									
02030103100	Ramapo River									
	# 02030103120 02030103050 02030103070									

2010	41,909	4.1%	est. 🖆
2020	43,146	3.0%	est.12
2030	45,575	5.6%	est.12

### - Land Use of this HUC11:

Turne	Ye	Change	
Туре -	1986	1995	Change
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 H			
Pinelar	nds:	0.0%	
Highlar	nds:	49.9%	

### 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.

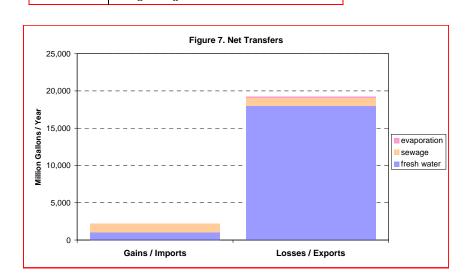
8 Sewage generation and transfers are based on intersection of sever service areas with HUC11s.
 9 Based on discharge volumes reported under NJPDES program.

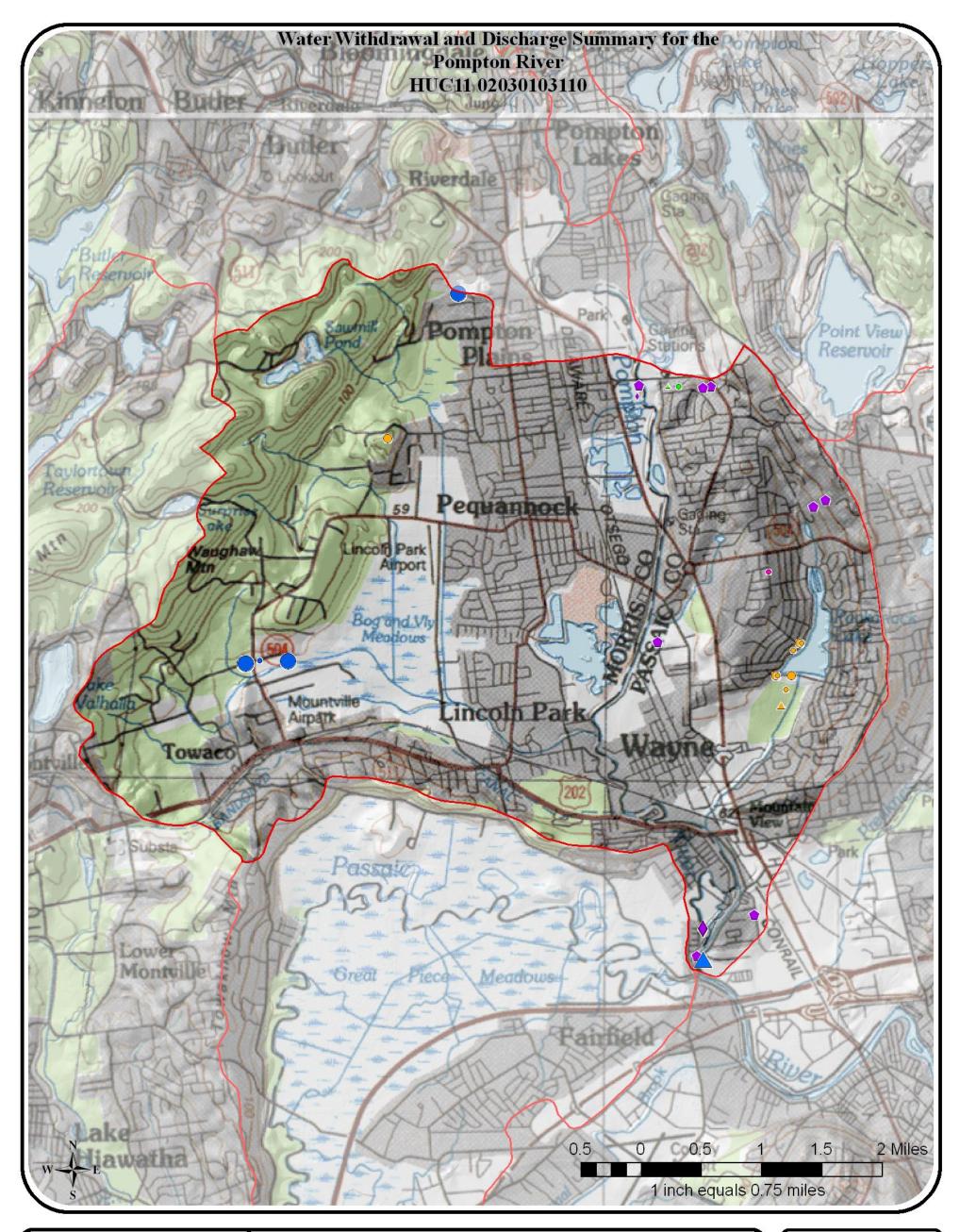
10 The allocated volume is calculated from allocation permits on file with the Bureau of Water Allocation, NJDEP, as of 1999. 11 Import and export volumes based on reported transfers between purveyors and on intersection of purveyor service areas with HUC11s.

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.





Ke	Key for Discharge Data Key for Withdrawal Data										
1999 T	999 Treated Effluent Discharge Source		1999	Withdra	wal	Use Group		LA.			
0 -	- 50	MGY	•	GW Confined		No 1999	Use		Agricultural	٠	1 Frid
50	) - 100	MGY	•	GW Unconfined	$\bigcirc$	1 - 50	MGY	■●▲	Commercial	•	1 5 5E
10	00 - 500	MGY	•	SW	$\bigtriangleup$	51 - 100	MGY		Industrial	•	1 45/7
> 5	500	MGY	•			101 - 500	MGY		Irrigation	•	
Other <b>F</b>	Permitted	Discharge							Mining		CHS SI
		J				> 500	MGY		Not Classified		
									Potable Supply		1 Start
					MGY	= millions o	fgallons	per year	Power Generation	•	