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

Appendix 10: HUC11 Tables, Figures and Maps WMA 10 - Millstone







NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION



HUC11: able 1. Freshwater ¹ Withdrawals (Q) ce water: ² Delaware River other												
Table 1. Freshwater ¹ Withdrawals (Q) face water: ² Delaware River			Sto	ony Broo	k			02	20301050	90		
rface water: ² Delaware River other	Withdrawa 1990	Is in the HU 1991	C11 (millio 1992	ns of gallo 1993	o ns) 1994	1995	1996	1997	1998	1999	average	Fig 1. Average Source of Fig 2. Average Destination
other	0	0	0	0	0	0	0	0	0	0	0	4,000 Fresh Water of Fresh Water
sum	8	33	23	23	6	10	0	45 45	45 45	33	23	3,500
ound-water: 3			20	20	0	10	0	40	-10	00	20	
confined unconfined	0 708	0 680	0 758	0 736	0 841	0 771	0 712	0 646	0 692	0 788	733	<u>5</u> 2,000
sum	708 716	680 713	758	736 760	841 847	771	712	646 691	692 737	788 821	733 756	
										021	1 100	
Table 2. Freshwater I. imports ¹¹	mports To 8 3,077	3,115	om the HU 2,962	C11 (millic 3,203	ons of gallor 3,638	15) 3,637	3,519	3,610	3,640	3,706	3,411	ground surface imports tive tive tot
exports ¹¹ net	1,260 1,816	1,255 1,860	<u>1,318</u> 1,644	1,336 1,867	1,490 2,149	1,408	1,325 2,194	1,222 2,388	1,240 2,400	1,311 2,395	1,317 2,094	water water (evaporated)
T-11-0 N	4 . 0.			6					,	,		
Water use	1990	1991	1992	1993	1994	e Type (mi 1995	1996 1996	alions) 1997	1998	1999	average	
table purveyors nonconsumptive	1,901	1,922	1,801	1,925	2,299	2,298	2,221	2,334	2,360	2,425	2,149	Figure 3. Consumptive & Nonconsumptive Use
consumptive	211	220	204	252	278	285	266	291	302	314	262	
nonconsumptive	233	234	235	237	238	240	241	243	246	249	240	2,500 +
consumptive dustrial & commercial & r	33 nining	33	33	33	34	34	34	34	35	35	34	≥ 2,000 + 2 ,000 + 2 ,0
nonconsumptive	93	76	66	73	70	71	63	53	64	70	70	
ricultural & non-agricultur	ral irrigation	15	15	15	17	15	14	13	13	13	14	Ŭ 5 4 000
nonconsumptive consumptive	3 26	6 54	5 43	5 48	3 31	4 39	3 30	8 69	8 72	7 65	5 48	≣ 1,000
wer generation		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	2,229	2,238	2,107	2,240	2,611	2,614	2,528	2,638	2,678	2,752	2,463	industrial & agriculture power commercial & agriculture power purveyors wells mining & irrigation generation
PERCENTAGES:	202	07.40	07.70/	00.50/	07.00/	07.5%	00.00/	00.00/	90.49/	00.0%	07.00/	nonconsumptive consumptive
consumptive	88.8% 11.2%	87.4% 12.6%	87.7% 12.3%	86.5% 13.5%	87.9% 12.1%	87.5% 12.5%	88.0% 12.0%	86.6% 13.4%	86.4% 13.6%	86.6% 13.4%	87.3% 12.7%	
Table 4. Average Sea	isonal ⁷ Use	- Nonconsı	umptive ⁴ &	Consump	tive⁵ (millio	ns of gallo	ns)					
Use Group	Wi Noncon-	nter Consump-	Spr Noncon-	ring Consump-	Sum	mer Consump-	F Noncon-	all Consump	Yearl	y Avg. Consump		Figure 4. Average Seasonal Consumptive Water Loss, by Use
	sumptive	tive	sumptive	tive	sumptive	tive	sumptive	tive	sumptive	tive	_	ğ 250
domestic wells	571	0	569	38 4	518 70	24	523	45 5	2,180	263 34	-	
dustrial & commercial & mining	13	3	16	3	25	5	16	3	70	14		
agricultural & non-	0	0	1	7	3	30	1	10	5	48	-	
power generation	0	0	0	0	0	0	0	0	0	0	-	
SUM:	639	3	642	53	616	238	598	64	2,495	358		potable domestic industrial & agriculture power purveyors wells commercial & & irrigation generation mining
	orotion 9 Tr	ronoforo ⁸ in		(milliono)								
. uble 0. Gewage Gell	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	average	eration & Transfers Discharge Location
generated in HUC11 imported to HUC11	369 9	849 9	877 9	928 10	996 12	865 10	1,125 12	913 9	929 11	870 11	872 10	1,000
exported from HUC11	280	767	803	843	899	780	1,024	836	840	775	785	
Table 6. Destination	of Treated E	ffluent (Rec	laimed-Wa	ter) Discha	rges [°] in the	HUC11 (m	nillions of	gallons)				
destination fresh water	1990 99	<u>1991</u> 91	<u>1992</u> 83	1993 95	1994 109	1995	1996 113	1997 87	1998 100	1999 106	average 98	
brackish water	0	0	0	0	0	0	0	0	0	0	0	0 +
sait water sum:	0 99	91	83	95	109	<u>0</u> 95	113	87	100	106	0 98	generated imported exported water water water water

Water Source Water Source MGY 264 surface water ground water 718 total 982

Table 8. 1999 Water Allocations ¹⁰ in HUC11 by Water Use Group MGY Use Group 264 37 agricultural commercial industrial 185 irrigation 82 mining 0 414 potable supply power generation 0



Table 10. Upstream and downstream HUC11s (in NJ)								
location	#	name						
downstream:	02030105110	Millstone River (below/incl Carnegie Lk)						
(if any)								
upstream:								
(if any)								

2010	41,251	7.4%	est.12
2020	43,118	4.5%	est.12
2030	45,521	5.6%	est.12

- Land Use of this HUC11:

Tuno	Ye	ar	Change					
Type	1986	1995	Change					
ag.	27.0%	21.2%	-5.8%					
barren	1.3%	0.9%	-0.4%					
forest	31.0%	32.8%	1.8%					
urban	24.0%	28.7%	4.7%					
water	1.2%	1.2%	0.0%					
wetlands	15.4%	15.1%	-0.3%					
% of this HUC11 in:								
Pinela	nds:	0.0%						
Highla	nds:	0.0%						

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 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.

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Key for Discharge I	Data			Key for	Withd	rawal Data		Ì	Area of Detail
1999 Treated Effluent Dis	charge	Source		1999 \	Withdra	wal	Use Group		KAC
0 - 50 MGY	•	GW Confined		No 1999 l	Jse	H \$A	Agricultural		2 Dity
50 - 100 MGY	٠	GW Unconfined	\bigcirc	1 - 50	MGY		Commercial	•	5 St.
100 - 500 MGY	•	SW	\bigtriangleup	51 - 100	MGY		Industrial	•	The second
> 500 MGY	•			101 - 500	MGY		Irrigation	•	a true
Other Permitted Discharge	e 🍵						Mining		CHS Y
•				> 500	MGY		Not Classified		
							Potable Supply		Mart of
			MGY	= millions of	gallons	per year	Power Generation	•	

WMA:			Γ	Aillstone				10				
HUC11:			Upper	Millstone	River			02	0301051	00	I	
											1	
Table 1. Freshwater ¹ Withdrawals (Q)	Withdrawa 1990	s in the HU 1991	C11 (millio 1992	ns of gallo 1993	ns) 1994	1995	1996	1997	1998	1999	average	Fig 1. Average Source of Fig 2. Average Destination
Delaware River other	0 231	0 235	0 184	0 274	0 192	0 394	0 117	0 259	0 185	0 217	0 229	5,000
ound-water: ³	231	235	184	274 852	192 841	394 939	117	259	185	217	229	ig 4.000 +
unconfined sum	1,138 3,674	3,159 4,158	3,020 4,092	3,414 4,266	3,400 4,241	3,265 4,204	2,955 4,528	3,016 4,487	3,028 4,561	3,312 4,848	2,971 4,306	
total withdrawals:	3,905	4,393	4,276	4,540	4,434	4,599	4,645	4,746	4,746	5,065	4,535	1,000 +
Table 2. Freshwater II	nports To &	Exports Fr	om the HU	C11 (millio	ons of gallor	15) 2 687	2 546	2 625	2 657	2 702	2 509	around surface imports consump- nonconsump- exports
exports ¹¹	1,882	2,168	2,233	2,383	2,352	2,228	2,240	2,071	2,095	2,166	2,182	water water (evaporated)
liet	337	150	(31)	52	540	435	300	554	505	550	521	
Table 3. Nonconsump Water use	otive ⁴ & Co. 1990	nsumptive⁵ 1991	Water Use 1992	e ⁶ in the H 1993	UC11, by Us 1994	e Type (mi 1995	llions of g 1996	allons) 1997	1998	1999	average	
otable purveyors nonconsumptive consumptive	2,865 336	2,969 369	2,838 344	2,991 388	3,229 394	3,229 417	3,130 379	3,215 425	3,387 443	3,573 482	3,143 398	4,000 Figure 3. Consumptive & Nonconsumptive Use
omestic wells nonconsumptive	255 36	258 36	263 37	269 38	275 39	280 39	286 40	292 41	297 42	303 43	278 39	3,500
dustrial & commercial & m nonconsumptive	ining 220	197	229	228	277	224	749	717	589	620	405	
consumptive pricultural & non-agricultura	25 al irrigation	22	26	25	32	26	83	80	66	69	45	ق 1,500
nonconsumptive consumptive	52 470	67 600	50 454	63 566	53 481	83 750	28 255	53 475	45 404	53 473	55 493	[≣] 1,000 + 1 ,000 + 1
ower generation nonconsumptive consumptive	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
SUM: nonconsumptive	3,392 867	3,491	3,380	3,551	3,835	3,816	4,193	4,277	4,319	4,549	3,880 975	potable domestic industrial & agriculture power commercial & agriculture power purveyors wells mining & irrigation generation
PERCENTAGES: nonconsumptive	79.6%	77.3%	79.7%	77.7%	80.2%	75.6%	84.7%	80.7%	81.9%	81.0%	79.9%	nonconsumptive consumptive
consumptive	20.4%	22.7%	20.3%	22.3%	19.8%	24.4%	15.3%	19.3%	18.1%	19.0%	20.1%	
Table 4. Average Sea	sonal ⁷ Use Wi	- Nonconsu	I mptive⁴ & Sp	Consump ring	tive ⁵ (millio Sum	ns of gallo mer	ns) F	all	Yearl	v Ava.		Figure 4. Average Seasonal Consumptive Water Loss, by Use
Use Group	Noncon-	Consump-	Noncon-	Consump-	Noncon-	Consump-	Noncon-	Consump-	Noncon-	Consump- tive		<u>600</u> <u><u><u></u>500</u></u>
potable purveyors	778	0	801	56	790	274	783	68	3,152	398	-	g 400
ndustrial & commercial &	78	9	101	5 11	124	14	103	<u> </u>	405	45	-	5 300 + spring spring spring spring
mining agricultural & non-	1	13	7	65	35	313	11	102	55	/03	-	
agricultural irrig.	0	0	0	0	0	0	0	0	0		-	
SUM:	921	21	974	136	1,030	630	965	188	3,889	975	-	potable domestic industrial & agriculture power purveyors wells commercial & & irrigation generation mining
Table 5 Seware Gen	pration & Tr	ansfors ⁸ in	the HUC1	(millions)	of gallons)							Figure 5 Average Severage Con
deperated in HUC11	1990	1991 5 112	1992	1993	1994 6 503	1995	1996	1997	1998	1999	average	eration & Transfers Discharge Location
imported to HUC11	0	0	0	0	0	0	0	0	0	0	0	,000
exported from HUC11	3,032	3,879	4,174	4,617	4,892	4,298	5,277	4,786	4,769	4,732	4,446	
Table 6. Destination destination	of Treated E	ffluent (Rec	laimed-Wa	ter) Discha	rges ⁹ in the	e HUC11 (m	nillions of	gallons) 1997	1998	1999	average	
fresh water	451	1,233	1,487	1,541	1,611	1,574	1,799	1,713	1,764	1,642	1,482	
brackish water	0	0	0	0	0 0	0	0 0	0 0	0 0	0 0	0	neperated imported exported fresh brackish salt
salt water	U U					~	~					

Water S	ource	
Water Source	MGY	_
surface water	1,711	_
ground water	7,761	
total	9,471	

Table 8. 1999 Water Allocations ¹⁰	in HUC11 by
Water Use Group	
Use Group	MGY
agricultural	3,739
commercial	30
industrial	916
irrigation	350
mining	0
potable supply	4,436
power generation	0



able 10. Upstream and downstream HUC11s (in NJ)							
location	#	name					
downstream:	02030105110	Millstone River (below/incl Carnegie Lk)					
(if any)		· · · ·					
upstream:							
(if any)							

2010	100,940	18.6%	est. 🖆
2020	109,534	8.5%	est.12
2030	121,259	10.7%	est.12

- Land Use of this HUC11:

Type	Ye	ar	Change					
Type	1986	1995	Change					
ag.	35.3%	28.9%	-6.4%					
barren	1.5%	1.4%	-0.1%					
forest	11.0%	11.2%	0.3%					
urban	23.4%	30.2%	6.9%					
water	1.0%	1.1%	0.1%					
wetlands	27.9%	27.2%	-0.6%					
% of this HUC11 in:								
Pinela	nds:	0.0%						
Highla	nds:	0.0%						

NOTES:

1 Salt and brackish water withdrawal and use is not included in this data.

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9 Based on discharge volumes reported under NJPDES program.

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Key for Discharge Data		Key for Withdrawal Data	J	Area of Detail
1999 Treated Effluent Discharge	Source	1999 Withdrawal	Use Group	L The
0 - 50 MGY 🔸	GW Confined	No 1999 Use ■●▲	Agricultural 😑	FL EU
50 - 100 MGY 🔶	GW Unconfined 🛛 🔿	1-50 MGY ■●▲	Commercial 🛛 🔴	5 PE
100 - 500 MGY 🔶	SW $ riangle$	51-100 MGY ■●▲	Industrial 😑	K S C I
>500 MGY 🔶		101 - 500 MGY	Irrigation 🥚	a for the second
Other Permitted Discharge 🔹			Mining 😑	CHS XI
		> 500 MGY	Not Classified 📃 🌑	
			Potable Supply 🛛 🔵	No. T
	MG	Ƴ = millions of gallons per year	Power Generation 🥚	

HUC11: Table 1. Freshwater ¹ Withd Withdrawals (Q) 199 Irface water: ² 0 Delaware River 0 other 73 sum 73 confined 00 unconfined 92 total withdrawals: 99 Table 2. Freshwater Imports ¹¹ 4,7 exports ¹¹ 1,0 net 3,74 Table 3. Nonconsumptive ⁴ Water use 195	Trawals in the HU 90 1991 0 0 3 16 3 16 1 0 1 0 1 1,031 1 1,047 5 To & Exports F 56 4,907 14 1,034 42 3,872	Lower Millst C11 (millions of 1992 199 0 0 15 355 15 355 0 0 960 1,42 975 1,46 rom the HUC11 (1 4,815 5,10 1000 14	gallons) 33 1994 5 72 5 72 0 1,123 29 1,123 34 1,195 millions of gallon 1,195	1995 0 34 34 0 1,027 1,027 1,061	1996 15 0 25 7 25 7 0 986 1, 1,011 1,2	02030105 ⁻ 1997 1998 0 0 ¹ 2 144 ¹ 2 144 0 0 ¹ 41 1,113 ¹ 41 1,113	1999 0 82 82 0 1,185	average 0 57 57 0	Fig 1. Average Source of Fig 2. Average Destination of Fresh Water
Table 1. Freshwater Withd Withdrawals (Q) 199 unface water:2 Delaware River 0 other 73 73 round-water:3 confined 9 total withdrawals: 99 99 Table 2. Freshwater Imports 4,77 exports ¹¹ 1,0 net water use 199	Irawals in the HU 90 1991 90 0 3 16 3 16 0 0 2 1,031 16 1,047 5 To & Exports FI 56 4,907 14 1,034 42 3,872	C11 (millions of 1992 1992 1992 0 0 0 15 35 15 35 0 0 0 0 960 1,42 960 1,42 975 1,46 775 1,46 rom the HUC11 (14,815 4,815 5,10 1,000 1,42	gallons) 33 1994 5 72 5 72 0 29 1,123 29 1,123 34 1,195 millions of gallou	1995 0 34 34 0 1,027 1,027 1,061	1996 15 0 25 7 25 7 986 1,1 986 1,1 1,011 1,2	397 1998 0 0 '2 144 '2 144 0 0 !41 1,113 !41 1,113	1999 0 82 82 0 1,185	average 0 57 57 0	Fig 1. Average Source of Fig 2. Average Destination of Fresh Water
Withdrawals (Q) 195 Withdrawals (Q) 195 urface water: ² Delaware River 0 Delaware River 0 0 sum 73 73 round-water: ³ confined 92 total withdrawals: 99 Table 2. Freshwater Imports ¹¹ 4,73 exports ¹¹ 1,0 net 3,74 Table 3. Nonconsumptive ⁴ Water use 195	average and the first 90 1991 0 0 3 16 3 16 0 0 1/2 1,031 1/6 1,047 5 To & Exports Fi 56 4,907 14 1,034 42 3,872	1992 1992 1992 199 0 0 15 35 15 35 0 0 960 1,42 975 1,46 rom the HUC11 (1 4,815 5,11 1000 1,42	gain 1994 0 0 5 72 5 72 0 1,123 29 1,123 34 1,195 millions of gallon	1995 0 34 34 0 1,027 1,027 1,061	1996 1 0 25 7 25 7 0 0 986 1,1 986 1,7 1,011 1,2 1,011 1,2	997 1998 0 0 '2 144 '2 144 0 0 I41 1,113 I41 1,113	1999 0 82 82 0 1,185	average 0 57 57 0	Fig 1. Average Source of Fresh Water of Fresh Water
Delaware River other 0 other 7; sum round-water: 3 confined 92 total withdrawals: 99 Table 2. Freshwater Imports 4,7; exports ¹¹ net 3,74 Table 3. Nonconsumptive 4 195	0 0 3 16 3 16 0 0 12 1,031 12 1,031 16 1,047 5 To & Exports Fi 56 4,907 14 1,034 42 3,872	0 0 <u>15</u> <u>35</u> 15 <u>35</u> 0 0 <u>960</u> <u>1,42</u> <u>960</u> <u>1,42</u> <u>975</u> <u>1,46</u> <i>rom the HUC11 (1</i> 4,815 <u>5,10</u> 1,000 <u>1</u>	$\begin{array}{c cccc} 0 & 0 \\ \hline 5 & 72 \\ \hline 5 & 72 \\ 0 \\ \hline 29 & 1,123 \\ \hline 29 & 1,123 \\ \hline 29 & 1,123 \\ \hline 34 & 1,195 \\ \hline millions of aalloi \end{array}$	0 34 34 0 1,027 1,027 1,061	0 <u>25</u> 7 25 7 0 <u>986</u> 1,7 <u>986</u> 1,7 <u>1,011</u> 1,2	0 0 72 144 72 144 0 0 141 1,113 141 1,113	0 82 82 0 1,185	0 <u>57</u> 57 0	6,000 5,000 4,000 5,0000 5,0000 5,000 5,0000 5,00000000
Junce Image: Network round-water: ³ confined 0 unconfined 92 99 total withdrawals: 99 Table 2. Freshwater Imports ¹¹ 4,7: exports ¹¹ 1,0 net 3,72 Table 3. Nonconsumptive ⁴ Water use 195	16 0 0 1/2 1,031 1/2 1,031 1/6 1,047 1/6 1,047 5 70 & Exports F 56 4,907 14 1,034 42 3,872	15 35 0 0 960 1,42 960 1,42 975 1,46 rom the HUC11 (1 4,815 5,11 1,000 1,12	5 72 0 29 1,123 29 1,123 34 1,195 millions of gallor	0 1,027 1,027 1,061	25 7 0 <u>986 1,7</u> <u>986 1,7</u> 1,011 1,2	111 72 144 0 0 141 1,113 141 1,113	82 0 1,185	57 0	5,000
confined 0 unconfined 92 sum 92 total withdrawals: 99 Table 2. Freshwater Imports 4,7 exports ¹¹ 4,7 net 3,74 Table 3. Nonconsumptive ⁴ Water use	0 0 12 1,031 12 1,031 16 1,047 s To & Exports Fi 56 4,907 14 1,034 42 3,872	0 0 <u>960</u> 1,42 <u>960</u> 1,42 <u>975</u> 1,46 rom the HUC11 (1 4,815 5,10 1,000 1 14	0 29 1,123 29 1,123 64 1,195 millions of gallor	0 1,027 1,027 1,061	0 <u>986 1, 1</u> <u>986 1, 1</u> 1,011 1,2	0 0 141 1,113 141 1,113	0 1,185	0	< 4,000 m
Sum 92 total withdrawals: 99 Table 2. Freshwater Imports 99 Table 3. Nonconsumptive 4,7' water use 1,0	1,031 1,031 1,047 5 70 & Exports F 56 4,907 14 3,872	960 1,44 975 1,46 rom the HUC11 (1 4,815 5,10	<u>29 1,123</u> 64 1,195 millions of gallor	1,027 1,061	<u>986 1,</u> 1,011 1,2	141 1,113	1,100	1 092	₩ 3,000 +
Table 2. Freshwater Imports imports ¹¹ 4,7; exports ¹¹ 1,0 net 3,74 Table 3. Nonconsumptive ⁴ 199	5 To & Exports Fi 56 4,907 14 1,034 42 3,872	rom the HUC11 (1 4,815 5,10	millions of gallo	1,001	1,011 1,	213 1 257	1,185	1,092	₫ <u>§</u> 2,000
Table 2. Freshwater Imports imports ¹¹ 4,7: exports ¹¹ 1,0 net 3,72 Table 3. Nonconsumptive ⁴ 199	56 & Exports F 56 4,907 14 1,034 42 3,872	rom the HUC11 (1 4,815 5,10	millions of gallo				1,201	1,110	² 1,000
exports ¹¹ 1,0 net 3,72 Table 3. Nonconsumptive ⁴ 199	14 1,034 42 3,872	1,000 1.1/	03 5.605	1s) 5.578	5.325 5.3	391 5.334	5.600	5.241	ground surface imports consump- nonconsump- exports
Table 3. Nonconsumptive ⁴ Water use 199		3.815 3.96	<u>43 1,209</u> 50 4,395	<u>1,113</u> 4,465	<u>1,043</u> <u>1,1</u> <u>4,282</u> <u>4,2</u>	<u>131 1,140</u> 259 4,194	1,192	1,102	water water (evaporated)
Table 3. Nonconsumptive ⁴ Water use 199		0,010 0,00	1,000	1,100	1,202 1,2	.,	1,100	1,100	
	& Consumptive⁴ 90 1991	⁵ Water Use ⁶ in th 1992 199	he HUC11, by Us 93 1994	i e Type (millio 1995	ons of gallor 1996 19	1s) 997 1998	1999	average	
nonconsumptive 3,4	63 3,611	3,519 3.68	85 4,141	4,112	3,921 3,9	995 3,923	4,165	3,853	Figure 3. Consumptive & Nonconsumptive Use
consumptive 39 Iomestic wells	9 427	402 468	8 492	502	457 4	94 504	543	469	4,500
nonconsumptive 56 consumptive 79	63 566 9 80	573 578 81 81	8 584 1 82	591 83	595 5 ¹ 84 {	99 602 34 85	606 85	586 82	
ndustrial & commercial & mining nonconsumptive 11	2 123	123 14	6 143	140	148 1	33 72	84	122	
consumptive 12 gricultural & non-agricultural irrigat	2 14 tion	15 17	17	16	17 1	5 9	9	14	
nonconsumptive 5 consumptive 44	5 10 4 89	8 44 71 392	4 13 2 118	8 72	7 1 64 1	5 20 34 178	17 151	15 131	³ ↓ 1,500 +
ower generation nonconsumptive	0	0 0	0	0	0	0 0	0	0	
consumptive 0 SUM:	0	0 0	0	0	0	0 0	0	0	0 + martine and the second sec
nonconsumptive 4,1- consumptive 53	43 4,310 5 609	4,222 4,45 568 955	53 4,880 9 709	4,851 674	4,671 4,7 622 7	741 4,617 28 775	4,871 788	4,576 697	potable domestic commercial & agriculture power purveyors wells mining & irrigation generation
PERCENTAGES: nonconsumptive 88.6	6% 87.6%	88.1% 82.3	3% 87.3%	87.8%	88.2% 86	.7% 85.6%	86.1%	86.8%	nonconsumptive consumptive
consumptive 11.4	4% 12.4%	11.9% 17.7	'% 12.7%	12.2%	11.8% 13	.3% 14.4%	13.9%	13.2%	
Table 4. Average Seasonal ⁷	Use - Nonconsi	umptive ⁴ & Cons	umptive ⁵ (millic	ons of gallons	.)				
Use Group Nonc	Winter con- Consump-	Spring Noncon- Consu	Sum ump- Noncon-	mer Consump- N	Fall	Year sump- Noncon-	ly Avg. Consump-		Figure 4. Average Seasonal Consumptive Water Loss, by Use
sump	tive tive	sumptive tive	e sumptive	tive su	umptive ti	ve sumptive	tive 469		
domestic wells 13	1 <u>2</u> 0 14 0	138 10) 171	59	143 1	3 586	82		<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></u><u></u><u></u><u></u><u></u><u></u><u></u></u></u>
mining 30	0 3	32 4		4	30	3 122	14		ලී 200 – පු
agricultural irrig.	0 1	3 24	+ 8	76	3 3	1 15	131		
SUM: 1,1	76 5	1,161 104	4 1,136	460	1,118 1	29 4,591	697		potable domestic industrial & agriculture power
									purveyors wells commercial & & irrigation generation mining

Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source Water Source MGY surface water 282 ground water 716 total 998

Table 8. 1999 Water Allocations ¹⁰ in HUC11 by

Water Use Group MGY Use Group agricultural 49 37 commercial industrial 280 irrigation 345 mining 0 potable supply 286 power generation 0

Table 9. HUC11 Descriptive Statistics --- Area: in this HUC11 only 130.4 sq. mi. <u>154.2</u> sq. mi. 284.6 sq. mi. upstream HUC11s total watershed 130.4 sq. mi.) (this HUC11 onshore area Population of this HUC11: Year 1940 Population Change 22,000 30,808 40.0% 1950 1960 46,172 49.9% 1970 64,430 39.5% 1980 71,991 11.7% 1990 92.805 28.9% 2000 118,255 27.4%

Table 10. Upstream and downstream HUC11s (in NJ)									
location	#	name							
downstream:	02030105120	Raritan R Lower (Lawrence to Millstone)							
(if any)									
upstream:	02030105090	Stony Brook							
(if any)	02030105100	Millstone River (above Carnegie Lake)							

2010	130,789	10.6%	est. 🐃
2020	144,060	10.1%	est.12
2030	155,288	7.8%	est.12

- Land Use of this HUC11:

Turne	Ye	Change						
туре	1986	1995	Change					
ag.	28.2%	22.5%	-5.7%					
barren	1.7%	2.0%	0.4%					
forest	25.6%	25.5%	-0.1%					
urban	26.5%	32.5%	6.0%					
water	1.1%	1.1%	0.0%					
wetlands	16.9%	16.3%	-0.6%					
% of this HUC11 in:								
Pinela	nds:	0.0%						
Highla	nds:	0.0%						

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 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.

2006 New Jersey Water Supply Plan V3.0 NJ Department of Environmental Protection - Land Use Management - New Jersey Geological Survey & Division of Water Supply





ſ	Key for Di	scharge Da	ata	Key for Withdrawal Data							Area of Detail
_19	999 Treated E	ffluent Discl	harge	Source		1999	Withdra	wal	Use Group		LA.
	0 - 50	MGY		GW Confined		No 1999	Use	H ¢A	Agricultural	٠	2 Det
	50 - 100	MGY	•	GW Unconfined	\bigcirc	1 - 50	MGY		Commercial	•	5 FE
	100 - 500	MGY	•	SW	\bigtriangleup	51 - 100	MGY		Industrial	•	K K K
	> 500	MGY	•			101 - 500) MGY		Irrigation	•	1 The
Ot	her Permittec	d Discharge				101 000			Mining		63533
		J				> 500	MGY		Not Classified		
									Potable Supply		No. And
				MGY = millions of gallons per year Power Generation						•	