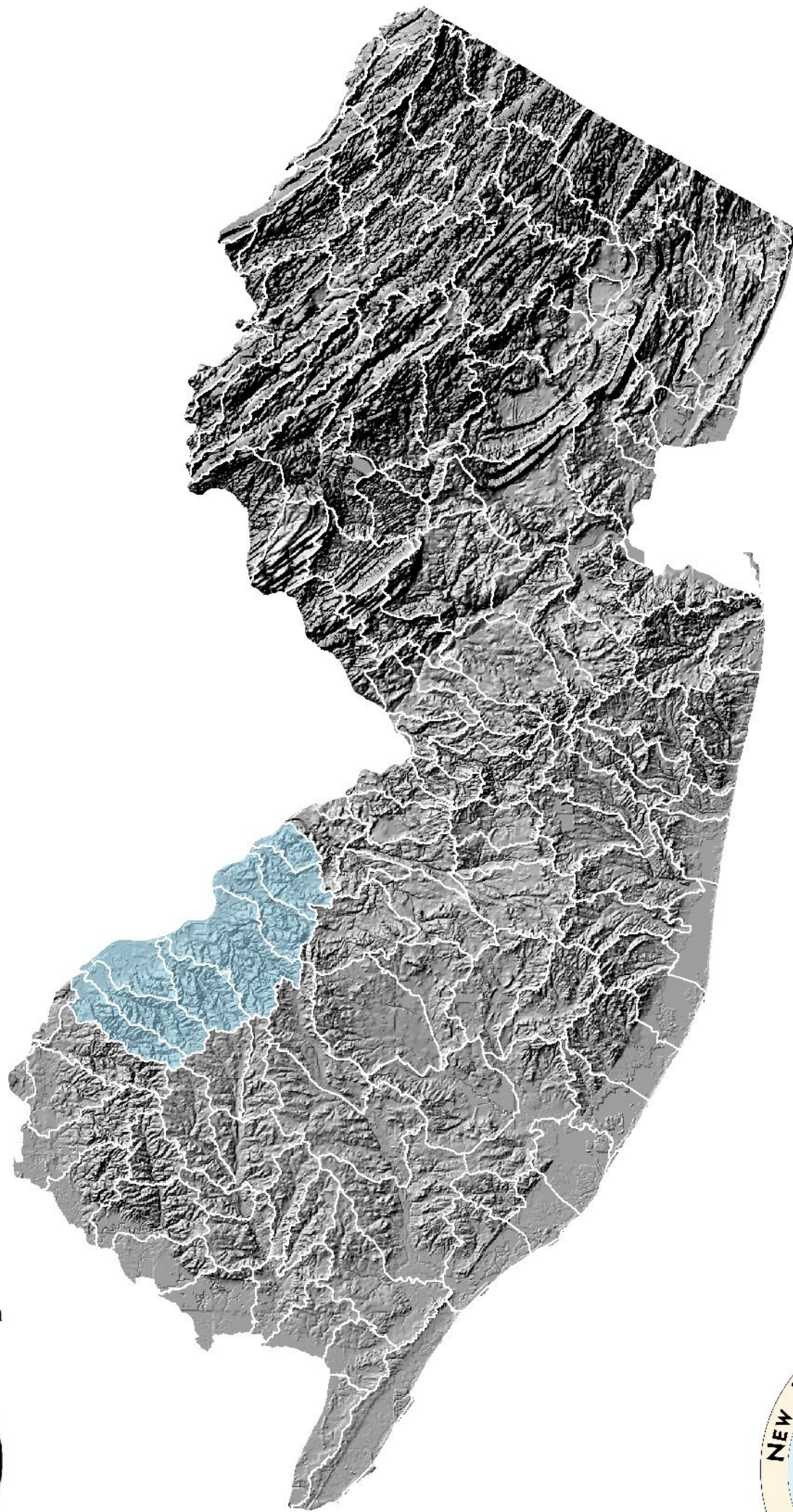


New Jersey Water Withdrawals, Uses, Transfers, and Discharges by HUC11, 1990 to 1999

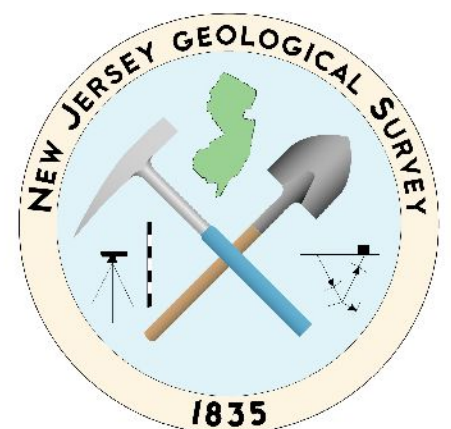
Appendix 18: HUC11 Tables, Figures and Maps WMA 18 - Lower Delaware



Let's protect our earth



NEW JERSEY DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Water Withdrawals, Transfers and Discharges for POMPESTON CREEK / SWEDE RUN --- 02040202090

| | | |
|---------------|------------------------------------|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Pompeston Creek / Swede Run | 02040202090 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|--------------|--------------|------------|--------------|------------|------------|--------------|--------------|--------------|--------------|--------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 0 | 0 | 0 | 0 | 0 | 0 | 3,470 | 6,907 | 7,465 | 6,930 | 2,477 |
| other | 8 | 15 | 13 | 17 | 17 | 18 | 15 | 35 | 18 | 27 | 18 |
| sum | 8 | 15 | 13 | 17 | 17 | 18 | 3,485 | 6,942 | 7,483 | 6,957 | 2,496 |
| ground-water:³ | | | | | | | | | | | |
| confined | 31 | 44 | 36 | 20 | 19 | 26 | 10 | 93 | 110 | 89 | 48 |
| unconfined | 1,145 | 1,112 | 706 | 963 | 885 | 834 | 242 | 199 | 343 | 528 | 696 |
| sum | 1,177 | 1,156 | 741 | 984 | 903 | 860 | 252 | 292 | 453 | 617 | 744 |
| total withdrawals: | 1,184 | 1,171 | 754 | 1,001 | 920 | 878 | 3,737 | 7,235 | 7,936 | 7,575 | 3,239 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|------|------|------|------|-------|-------|---------|---------|---------|---------|---------|
| imports ¹¹ | 881 | 948 | 977 | 934 | 1,009 | 1,040 | 791 | 905 | 954 | 827 | 927 |
| exports ¹¹ | 728 | 706 | 447 | 610 | 562 | 530 | 2,356 | 4,516 | 4,962 | 4,740 | 2,016 |
| net | 153 | 242 | 531 | 324 | 446 | 511 | (1,566) | (3,611) | (4,008) | (3,913) | (1,089) |

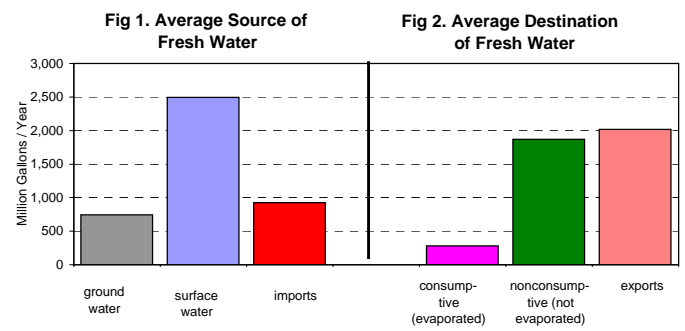


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 1,149 | 1,195 | 1,093 | 1,129 | 1,180 | 1,185 | 1,904 | 3,104 | 3,339 | 3,146 | 1,842 |
| consumptive | 150 | 158 | 140 | 155 | 151 | 159 | 238 | 391 | 461 | 400 | 240 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| consumptive | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 17 | 19 | 17 | 2 | 1 | 3 | 1 | 61 | 52 | 47 | 22 |
| consumptive | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 7 | 6 | 5 | 2 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 2 | 4 | 3 | 4 | 3 | 4 | 3 | 6 | 7 | 6 | 4 |
| consumptive | 18 | 33 | 29 | 34 | 31 | 36 | 24 | 55 | 63 | 58 | 38 |
| 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 | 1,168 | 1,218 | 1,113 | 1,135 | 1,184 | 1,193 | 1,908 | 3,171 | 3,398 | 3,199 | 1,869 |
| consumptive | 169 | 193 | 171 | 190 | 182 | 196 | 263 | 452 | 530 | 463 | 281 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 87.3% | 86.3% | 86.7% | 85.7% | 86.7% | 85.9% | 87.9% | 87.5% | 86.5% | 87.4% | 86.9% |
| consumptive | 12.7% | 13.7% | 13.3% | 14.3% | 13.3% | 14.1% | 12.1% | 12.5% | 13.5% | 12.6% | 13.1% |

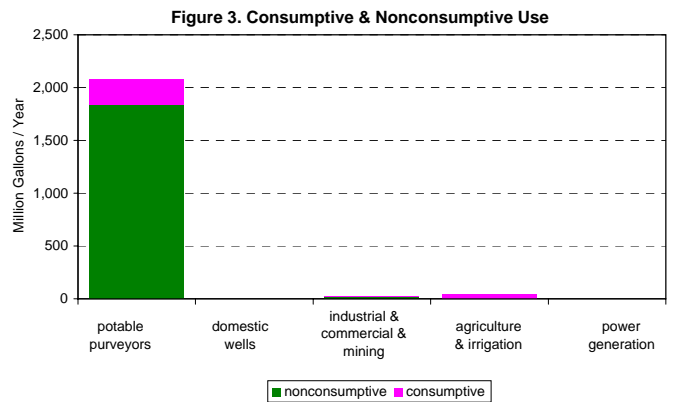


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive |
| potable purveyors | 434 | 0 | 458 | 32 | 480 | 167 | 470 | 41 | 1,842 | 240 |
| domestic wells | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| industrial & commercial & mining | 3 | 0 | 6 | 1 | 9 | 1 | 4 | 0 | 22 | 2 |
| agricultural & non-agricultural irrig. | 0 | 1 | 1 | 5 | 3 | 26 | 1 | 6 | 4 | 38 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 437 | 1 | 465 | 38 | 492 | 194 | 475 | 47 | 1,869 | 281 |

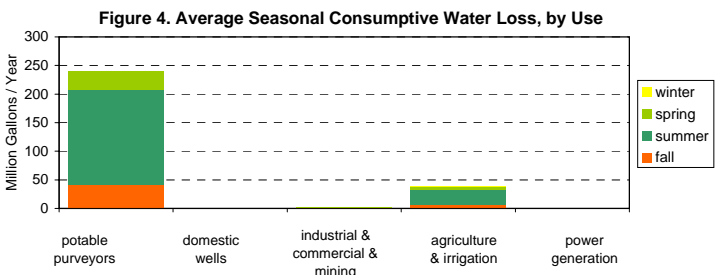


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| generated in HUC11 | 1,098 | 1,230 | 1,264 | 1,328 | 1,370 | 1,177 | 1,420 | 1,276 | 1,238 | 1,231 | 1,263 |
| imported to HUC11 | 153 | 200 | 216 | 223 | 227 | 198 | 211 | 197 | 196 | 191 | 201 |
| exported from HUC11 | 696 | 741 | 746 | 796 | 833 | 703 | 909 | 796 | 770 | 780 | 777 |

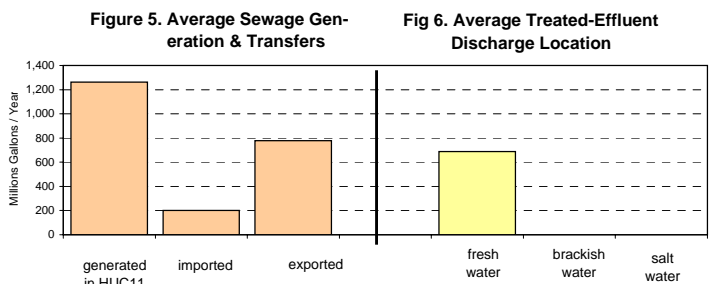


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|--------|
| surface water | 15,054 |
| ground water | 1,011 |
| total | 16,065 |

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

| Use Group | MGY |
|------------------|--------|
| agricultural | 174 |
| commercial | 0 |
| industrial | 164 |
| irrigation | 172 |
| mining | 0 |
| potable supply | 15,555 |
| power generation | 0 |
| total | 16,065 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 19.8 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 19.8 | sq. mi. |

(this HUC11 onshore area: 18.6 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|-------------------------|
| 1940 | 13,030 | - |
| 1950 | 15,247 | 17.0% |
| 1960 | 23,691 | 55.4% |
| 1970 | 34,173 | 44.2% |
| 1980 | 36,196 | 5.9% |
| 1990 | 34,083 | -5.8% |
| 2000 | 36,954 | 8.4% |
| 2010 | 39,473 | 6.8% est. ¹² |
| 2020 | 40,854 | 3.5% est. ¹² |
| 2030 | 42,351 | 3.7% est. ¹² |

--- Land Use of this HUC11:

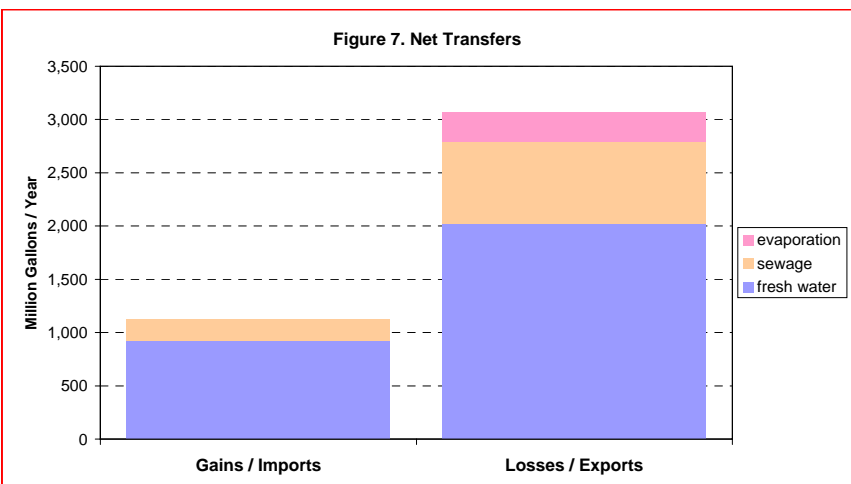
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 13.2% | 9.6% | -3.6% |
| barren | 2.9% | 2.7% | -0.2% |
| forest | 10.1% | 8.8% | -1.3% |
| urban | 57.6% | 63.1% | 5.5% |
| water | 6.6% | 6.6% | 0.0% |
| wetlands | 9.6% | 9.2% | -0.4% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

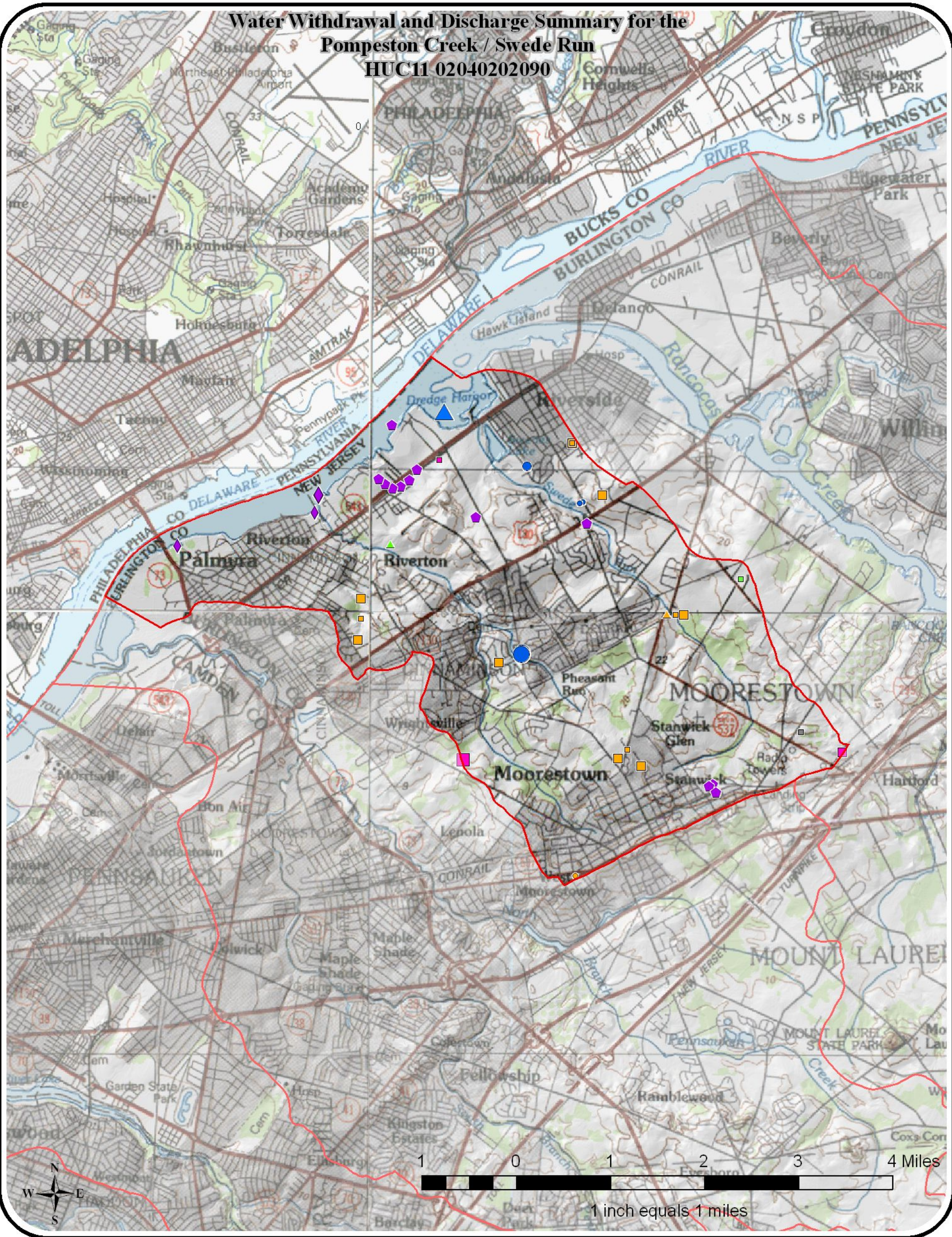
| location | # | name |
|----------------------|-------------|------------------|
| downstream: (if any) | 02040202100 | Pennsauken Creek |
| upstream: (if any) | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |



NOTES:

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

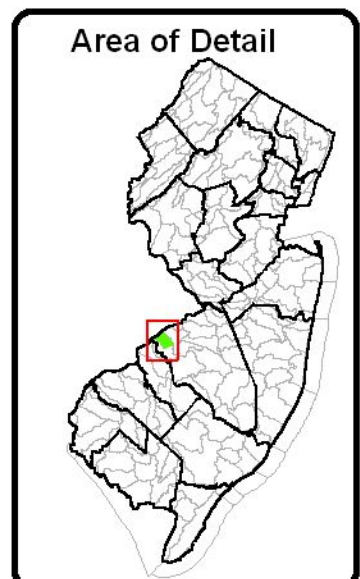
**Water Withdrawal and Discharge Summary for the
Pompeston Creek / Swede Run
HUC11 02040202090**



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

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

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for PENNSAUKEN CREEK --- 02040202100

| | | |
|---------------|-------------------------|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Pennsauken Creek | 02040202100 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| sum | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ground-water:³ | | | | | | | | | | | |
| confined | 4,051 | 5,265 | 4,461 | 4,565 | 4,619 | 4,656 | 4,033 | 3,876 | 3,807 | 3,950 | 4,328 |
| unconfined | 595 | 1,028 | 2,115 | 2,218 | 2,358 | 3,224 | 1,272 | 1,641 | 1,738 | 1,464 | 1,765 |
| sum | 4,645 | 6,293 | 6,576 | 6,782 | 6,977 | 7,880 | 5,304 | 5,517 | 5,545 | 5,414 | 6,093 |
| total withdrawals: | 4,645 | 6,293 | 6,576 | 6,782 | 6,977 | 7,880 | 5,304 | 5,517 | 5,545 | 5,414 | 6,093 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|-------|---------|---------|---------|---------|---------|---------|-------|-------|-------|---------|
| imports ¹¹ | 2,300 | 1,978 | 1,946 | 2,010 | 1,972 | 1,977 | 1,988 | 2,463 | 2,585 | 2,521 | 2,174 |
| exports ¹¹ | 2,670 | 3,872 | 4,354 | 4,625 | 4,727 | 5,630 | 3,151 | 3,421 | 3,558 | 3,373 | 3,938 |
| net | (371) | (1,894) | (2,408) | (2,615) | (2,755) | (3,653) | (1,163) | (959) | (974) | (851) | (1,764) |

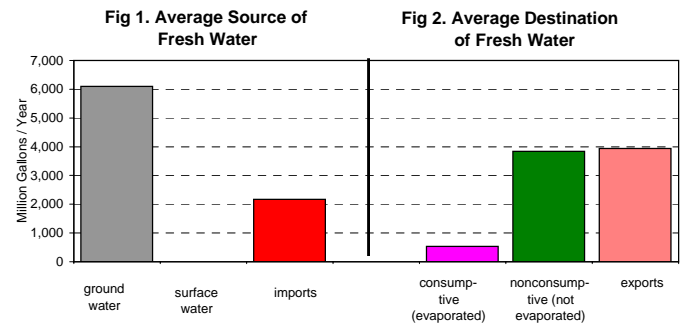


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 3,704 | 3,872 | 3,679 | 3,612 | 3,653 | 3,682 | 3,609 | 3,940 | 3,939 | 3,973 | 3,766 |
| consumptive | 469 | 513 | 469 | 496 | 476 | 485 | 445 | 530 | 549 | 520 | 495 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 50 | 50 | 50 | 50 | 50 | 50 | 51 | 51 | 51 | 51 | 50 |
| consumptive | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 71 | 0 | 0 | 0 | 33 | 0 | 40 | 0 | 0 | 0 | 14 |
| consumptive | 8 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 2 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 1 | 0 | 1 | 5 | 4 | 5 | 2 | 6 | 5 | 4 | 3 |
| consumptive | 7 | 2 | 6 | 43 | 40 | 44 | 15 | 55 | 48 | 34 | 29 |
| 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 | 3,826 | 3,922 | 3,730 | 3,667 | 3,741 | 3,737 | 3,701 | 3,997 | 3,995 | 4,028 | 3,835 |
| consumptive | 491 | 521 | 483 | 545 | 527 | 536 | 472 | 592 | 604 | 561 | 533 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 88.6% | 88.3% | 88.5% | 87.1% | 87.7% | 87.5% | 88.7% | 87.1% | 86.9% | 87.8% | 87.8% |
| consumptive | 11.4% | 11.7% | 11.5% | 12.9% | 12.3% | 12.5% | 11.3% | 12.9% | 13.1% | 12.2% | 12.2% |

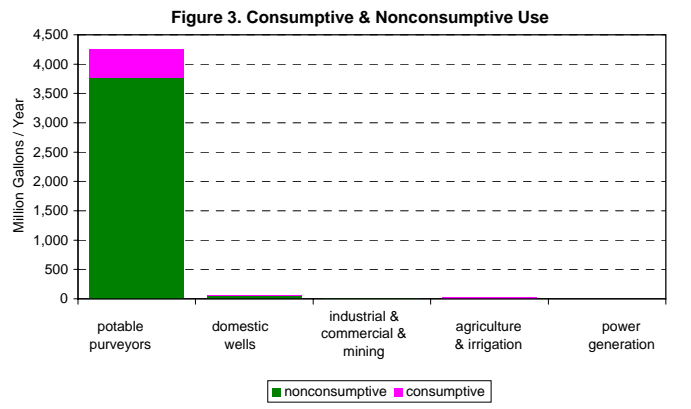


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 887 | 0 | 951 | 67 | 987 | 343 | 943 | 85 | 3,767 | 495 |
| domestic wells | 12 | 0 | 12 | 1 | 15 | 5 | 12 | 1 | 50 | 7 |
| industrial & commercial & mining | 1 | 0 | 3 | 0 | 7 | 1 | 3 | 0 | 14 | 2 |
| agricultural & non-agricultural irrig. | 0 | 0 | 1 | 5 | 2 | 18 | 1 | 6 | 3 | 29 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 899 | 0 | 966 | 73 | 1,011 | 366 | 959 | 93 | 3,835 | 533 |

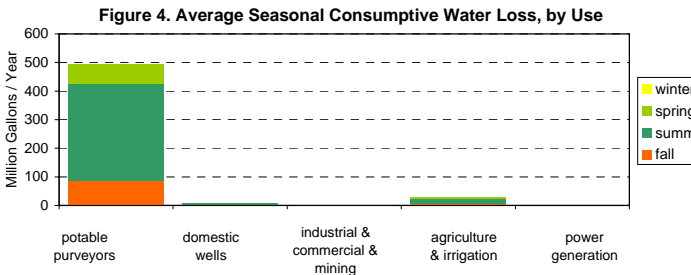


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| generated in HUC11 | 4,109 | 2,476 | 3,222 | 2,987 | 4,229 | 3,766 | 4,485 | 4,305 | 4,286 | 4,247 | 3,811 |
| imported to HUC11 | 560 | 553 | 575 | 598 | 622 | 499 | 662 | 581 | 534 | 545 | 573 |
| exported from HUC11 | 1,688 | 891 | 1,796 | 1,335 | 2,591 | 2,399 | 2,658 | 2,548 | 2,527 | 2,521 | 2,095 |

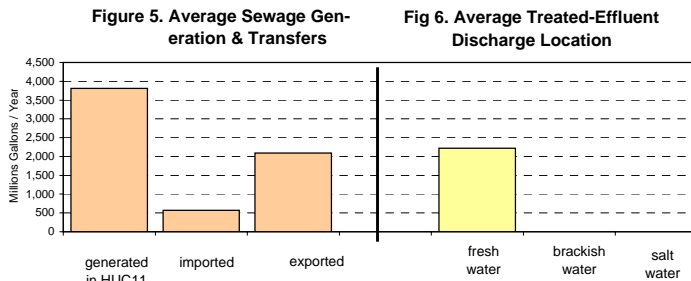


Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

| destination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| fresh water | 2,323 | 2,084 | 2,002 | 2,249 | 2,260 | 1,867 | 2,489 | 2,339 | 2,293 | 2,271 | 2,218 |
| 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: | 2,323 | 2,084 | 2,002 | 2,249 | 2,260 | 1,867 | 2,489 | 2,339 | 2,293 | 2,271 | 2,218 |

Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|-------|
| surface water | 0 |
| ground water | 4,509 |
| total | 4,509 |

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

| Use Group | MGY |
|------------------|-------|
| agricultural | 0 |
| commercial | 0 |
| industrial | 12 |
| irrigation | 71 |
| mining | 0 |
| potable supply | 4,426 |
| power generation | 0 |
| total | 4,509 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 36.4 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 36.4 | sq. mi. |

(this HUC11 onshore area: 36.2 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|-------------------------|
| 1940 | 18,617 | - |
| 1950 | 23,535 | 26.4% |
| 1960 | 43,516 | 84.9% |
| 1970 | 64,731 | 48.8% |
| 1980 | 73,313 | 13.3% |
| 1990 | 80,172 | 9.4% |
| 2000 | 87,151 | 8.7% |
| 2010 | 88,761 | 1.8% est. ¹² |
| 2020 | 90,451 | 1.9% est. ¹² |
| 2030 | 92,547 | 2.3% est. ¹² |

--- Land Use of this HUC11:

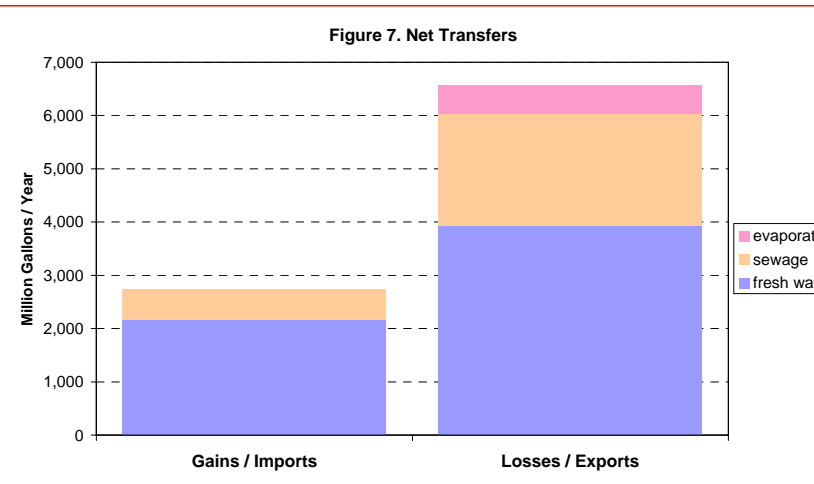
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 7.2% | 3.5% | -3.8% |
| barren | 3.1% | 1.5% | -1.6% |
| forest | 9.1% | 8.2% | -0.9% |
| urban | 63.4% | 71.3% | 7.8% |
| water | 2.1% | 2.2% | 0.1% |
| wetlands | 15.0% | 13.3% | -1.7% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

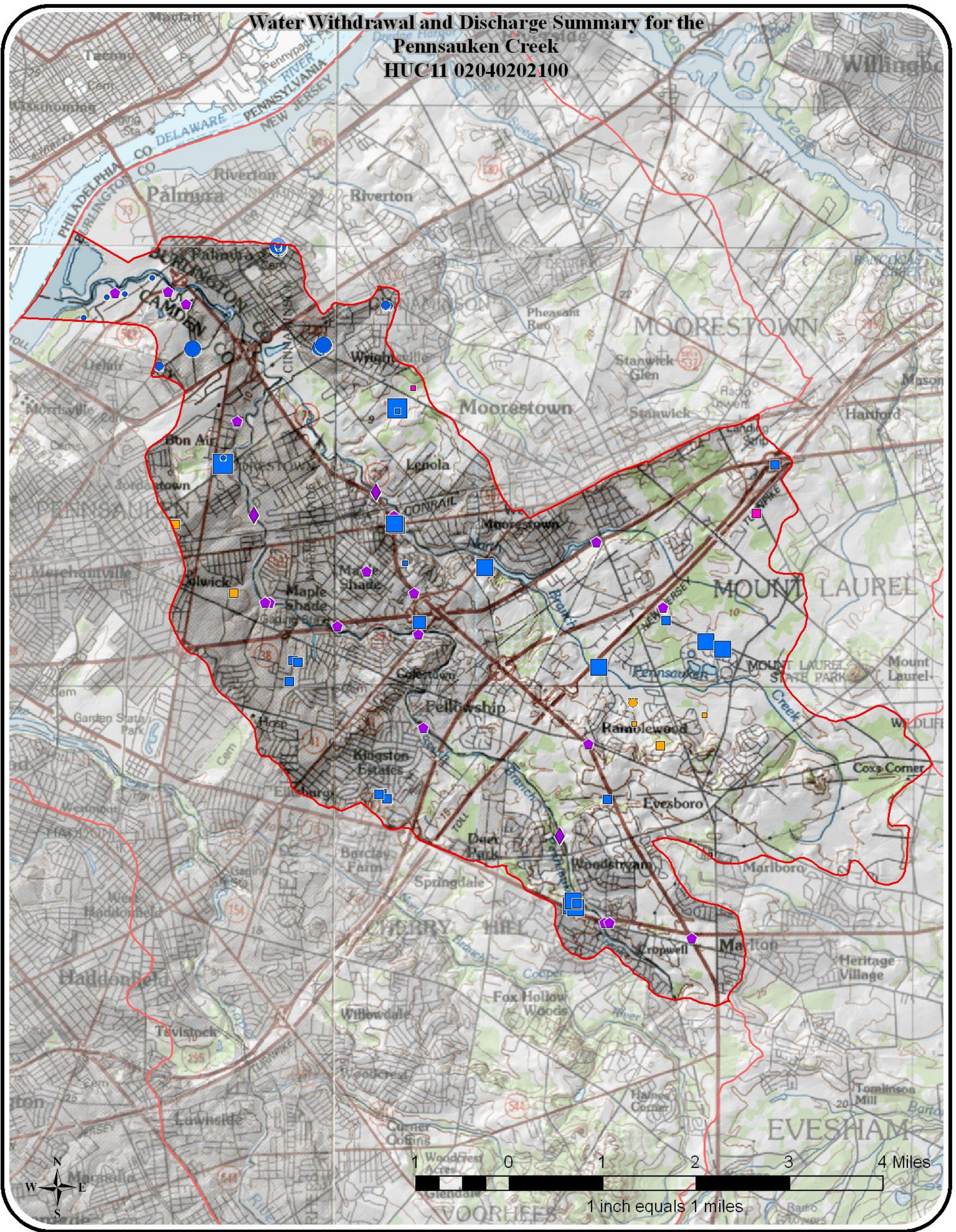
| location | # | name |
|-------------|-------------|--------------|
| downstream: | 02040202110 | Cooper River |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

Water Withdrawal and Discharge Summary for the Pennsauken Creek HUC11 02040202100



| 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 | |
|------------------------------------|-----|
| 1999 Withdrawal | |
| No 1999 Use | ●▲ |
| 1 - 50 MGY | ■●▲ |
| 51 - 100 MGY | ■●▲ |
| 101 - 500 MGY | ■●▲ |
| > 500 MGY | ■●▲ |
| MGY = millions of gallons per year | |

| Area of Detail | |
|------------------|---|
| Use Group | |
| Agricultural | ● |
| Commercial | ● |
| Industrial | ● |
| Irrigation | ● |
| Mining | ● |
| Not Classified | ● |
| Potable Supply | ● |
| Power Generation | ● |

Water Withdrawals, Transfers and Discharges for COOPER RIVER --- 02040202110

| | | | |
|---------------|-----------------------|--------------------|--|
| WMA: | Lower Delaware | 18 | |
| HUC11: | Cooper River | 02040202110 | |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|---------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 1,729 | 1,485 | 1,096 | 390 | 2 | 2 | 1 | 2 | 14 | 72 | 479 |
| other | 11 | 29 | 1 | 0 | 12 | 30 | 20 | 18 | 32 | 22 | 18 |
| sum | 1,740 | 1,515 | 1,096 | 390 | 14 | 31 | 21 | 20 | 46 | 94 | 497 |
| ground-water:³ | | | | | | | | | | | |
| confined | 12,659 | 10,089 | 5,996 | 5,670 | 5,762 | 5,481 | 9,392 | 7,566 | 7,495 | 7,545 | 7,765 |
| unconfined | 1,348 | 1,682 | 6,519 | 6,695 | 6,577 | 6,353 | 1,741 | 1,301 | 1,297 | 1,588 | 3,510 |
| sum | 14,007 | 11,770 | 12,514 | 12,365 | 12,339 | 11,834 | 11,133 | 8,867 | 8,792 | 9,133 | 11,275 |
| total withdrawals: | 15,747 | 13,285 | 13,611 | 12,755 | 12,353 | 11,865 | 11,154 | 8,887 | 8,838 | 9,227 | 11,772 |

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

| | | | | | | | | | | | |
|-----------------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| imports ¹¹ | 2,417 | 4,595 | 4,169 | 4,134 | 3,925 | 4,541 | 2,803 | 2,973 | 3,045 | 2,767 | 3,537 |
| exports ¹¹ | 4,887 | 4,112 | 4,596 | 4,465 | 4,433 | 4,243 | 3,749 | 3,137 | 3,157 | 3,271 | 4,005 |
| net | (2,471) | 483 | (427) | (330) | (508) | 298 | (946) | (164) | (112) | (504) | (468) |

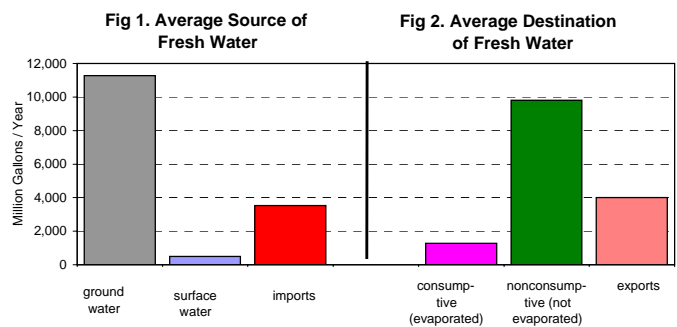


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 9,924 | 10,423 | 10,353 | 10,233 | 10,107 | 10,386 | 8,727 | 7,329 | 7,245 | 7,328 | 9,205 |
| consumptive | 1,167 | 1,351 | 1,292 | 1,300 | 1,239 | 1,274 | 1,041 | 942 | 1,027 | 916 | 1,155 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 33 | 33 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| consumptive | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 1,692 | 1,475 | 1,087 | 497 | 138 | 132 | 146 | 158 | 130 | 122 | 558 |
| consumptive | 191 | 167 | 123 | 59 | 18 | 18 | 20 | 21 | 18 | 17 | 65 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 3 | 7 | 4 | 4 | 5 | 6 | 6 | 6 | 9 | 13 | 6 |
| consumptive | 29 | 63 | 32 | 36 | 48 | 57 | 54 | 57 | 82 | 114 | 57 |
| 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 | 11,653 | 11,939 | 11,477 | 10,768 | 10,283 | 10,558 | 8,912 | 7,527 | 7,418 | 7,496 | 9,803 |
| consumptive | 1,392 | 1,585 | 1,452 | 1,399 | 1,310 | 1,353 | 1,119 | 1,024 | 1,131 | 1,051 | 1,282 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 89.3% | 88.3% | 88.8% | 88.5% | 88.7% | 88.6% | 88.8% | 88.0% | 86.8% | 87.7% | 88.4% |
| consumptive | 10.7% | 11.7% | 11.2% | 11.5% | 11.3% | 11.4% | 11.2% | 12.0% | 13.2% | 12.3% | 11.6% |

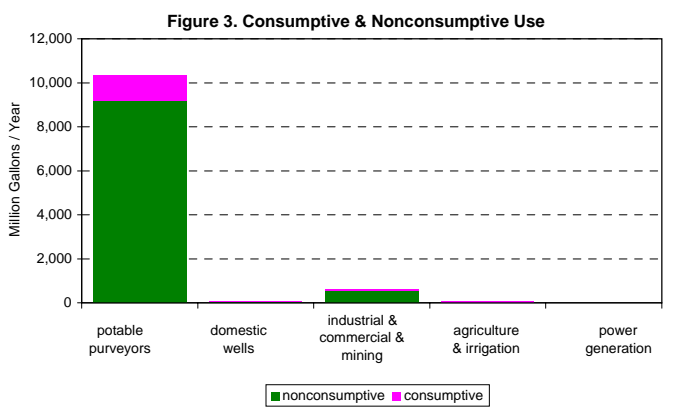


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 2,278 | 0 | 2,367 | 162 | 2,278 | 790 | 2,283 | 203 | 9,206 | 1,155 |
| domestic wells | 8 | 0 | 8 | 1 | 10 | 3 | 8 | 1 | 34 | 5 |
| industrial & commercial & mining | 124 | 14 | 143 | 17 | 153 | 18 | 137 | 16 | 558 | 65 |
| agricultural & non-agricultural irrig. | 0 | 2 | 1 | 7 | 4 | 37 | 1 | 11 | 6 | 57 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 2,410 | 16 | 2,519 | 186 | 2,445 | 848 | 2,429 | 231 | 9,804 | 1,282 |

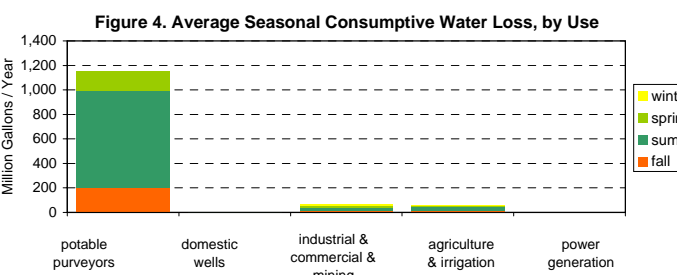


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | | | | | | | | | | | |
|---------------------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| generated in HUC11 | 3,480 | 245 | 3,780 | 1,756 | 6,996 | 6,285 | 7,150 | 6,788 | 6,712 | 6,702 | 4,989 |
| imported to HUC11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| exported from HUC11 | 2,354 | 76 | 3,780 | 1,756 | 6,996 | 6,285 | 7,150 | 6,788 | 6,712 | 6,702 | 4,860 |

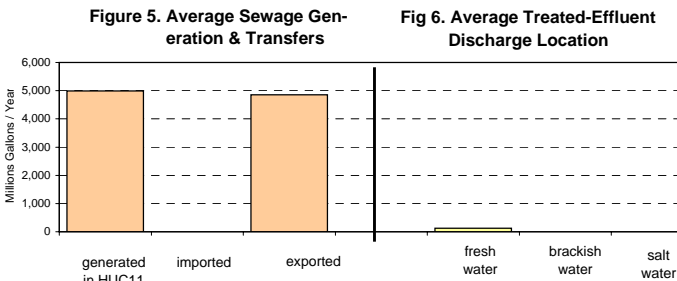


Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

| | | | | | | | | | | | |
|----------------|-------|------|------|------|------|------|------|------|------|------|---------|
| destination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
| fresh water | 1,125 | 169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |
| 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: | 1,125 | 169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 |

Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| | |
|---------------|-------|
| Water Source | MGY |
| surface water | 187 |
| ground water | 7,523 |
| total | 7,710 |

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

| | |
|------------------|-------|
| Use Group | MGY |
| agricultural | 58 |
| commercial | 0 |
| industrial | 112 |
| irrigation | 392 |
| mining | 180 |
| potable supply | 6,968 |
| power generation | 0 |
| total | 7,710 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 51.3 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 51.3 | sq. mi. |

(this HUC11 onshore area: 49.0 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|--------------------------|
| 1940 | 115,796 | - |
| 1950 | 131,424 | 13.5% |
| 1960 | 160,096 | 21.8% |
| 1970 | 182,701 | 14.1% |
| 1980 | 175,916 | -3.7% |
| 1990 | 185,256 | 5.3% |
| 2000 | 182,609 | -1.4% |
| 2010 | 180,424 | -1.2% est. ¹² |
| 2020 | 179,229 | -0.7% est. ¹² |
| 2030 | 176,863 | -1.3% est. ¹² |

--- Land Use of this HUC11:

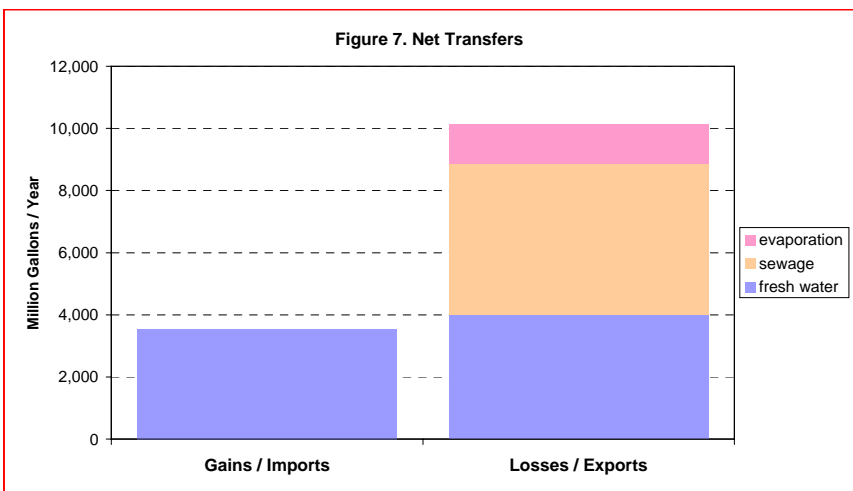
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 3.7% | 1.3% | -2.4% |
| barren | 1.6% | 2.0% | 0.3% |
| forest | 12.1% | 11.3% | -0.9% |
| urban | 67.9% | 71.3% | 3.4% |
| water | 5.9% | 5.9% | 0.0% |
| wetlands | 8.7% | 8.3% | -0.4% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

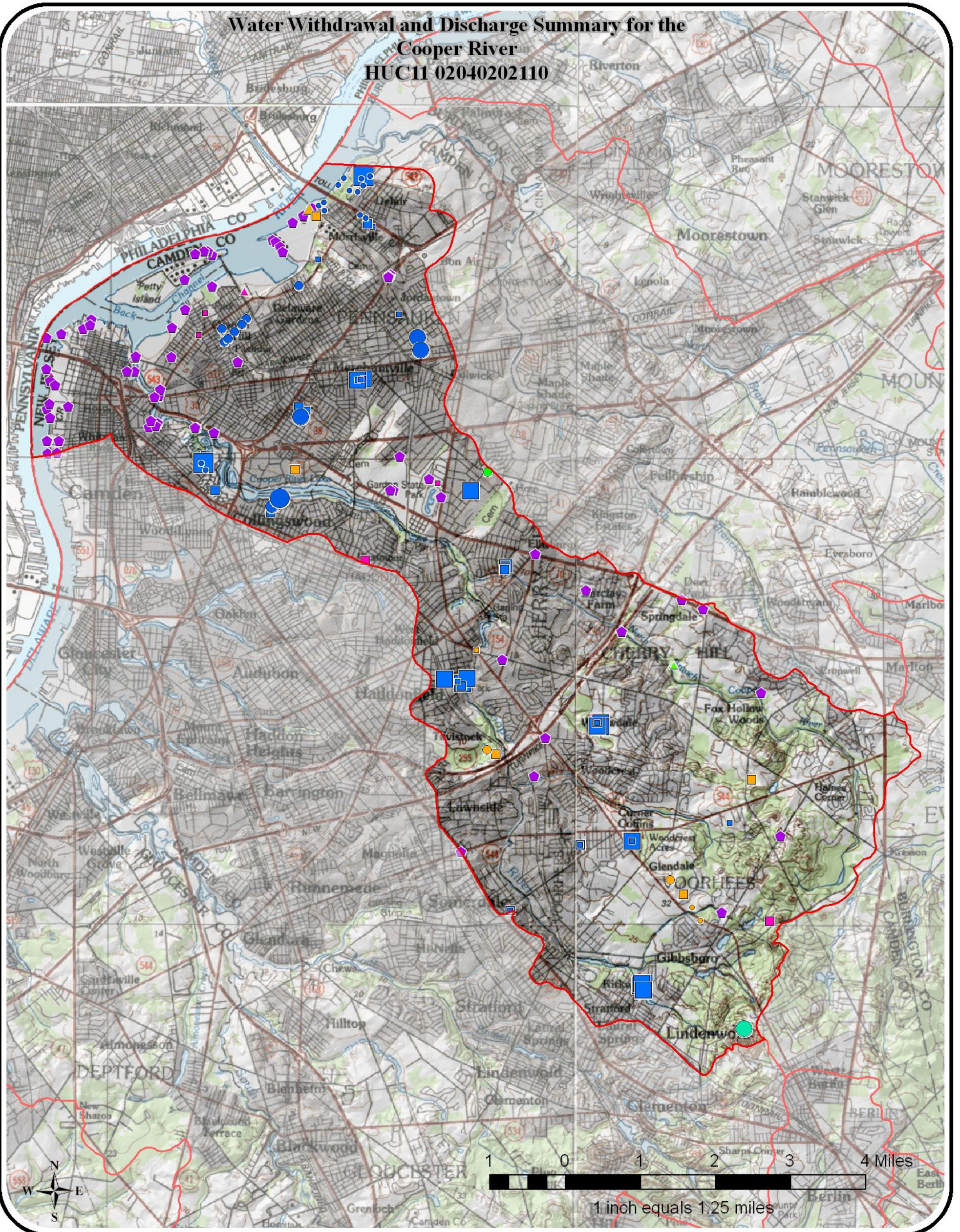
| location | # | name |
|-------------|-------------|---------------------------------------|
| downstream: | 02040202120 | Woodbury / Big Timber / Newton Creeks |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

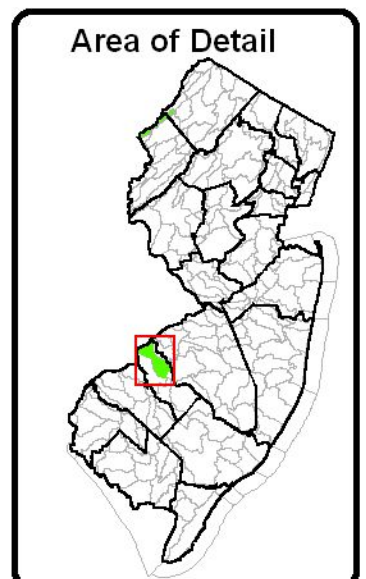
Water Withdrawal and Discharge Summary for the Cooper River HUC11 02040202110



| 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 | |
|-------------------------|-----|
| 1999 Withdrawal | |
| No 1999 Use | ●▲ |
| 1 - 50 MGY | ■●▲ |
| 51 - 100 MGY | ■●▲ |
| 101 - 500 MGY | ■●▲ |
| > 500 MGY | ■●▲ |
| Use Group | |
| Agricultural | ● |
| Commercial | ● |
| Industrial | ● |
| Irrigation | ● |
| Mining | ● |
| Not Classified | ● |
| Potable Supply | ● |
| Power Generation | ● |

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for WOODBURY / BIG TIMBER / NEWTON CREEKS --- 02040202120

| | | |
|---------------|--|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Woodbury / Big Timber / Newton Creeks | 02040202120 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 6,641 | 6,125 | 7,878 | 7,684 | 7,523 | 7,780 | 7,648 | 7,130 | 7,757 | 8,053 | 7,422 |
| other | 23 | 36 | 63 | 91 | 127 | 150 | 84 | 113 | 123 | 470 | 128 |
| sum | 6,664 | 6,162 | 7,942 | 7,775 | 7,649 | 7,931 | 7,732 | 7,243 | 7,879 | 8,524 | 7,550 |
| ground-water:³ | | | | | | | | | | | |
| confined | 10,070 | 10,663 | 8,184 | 7,878 | 8,381 | 8,510 | 7,460 | 6,925 | 6,806 | 6,552 | 8,143 |
| unconfined | 454 | 1,061 | 1,906 | 1,755 | 1,438 | 1,335 | 1,237 | 1,635 | 1,704 | 1,526 | 1,405 |
| sum | 10,524 | 11,724 | 10,090 | 9,633 | 9,819 | 9,845 | 8,697 | 8,559 | 8,510 | 8,079 | 9,548 |
| total withdrawals: | 17,188 | 17,885 | 18,032 | 17,407 | 17,468 | 17,776 | 16,429 | 15,802 | 16,390 | 16,602 | 17,098 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| imports ¹¹ | 5,450 | 5,797 | 6,251 | 6,738 | 6,436 | 6,703 | 5,570 | 5,175 | 5,266 | 5,216 | 5,860 |
| exports ¹¹ | 2,870 | 3,988 | 3,263 | 2,951 | 2,941 | 2,903 | 2,523 | 2,536 | 2,598 | 2,327 | 2,890 |
| net | 2,580 | 1,809 | 2,988 | 3,787 | 3,495 | 3,800 | 3,047 | 2,639 | 2,668 | 2,889 | 2,970 |

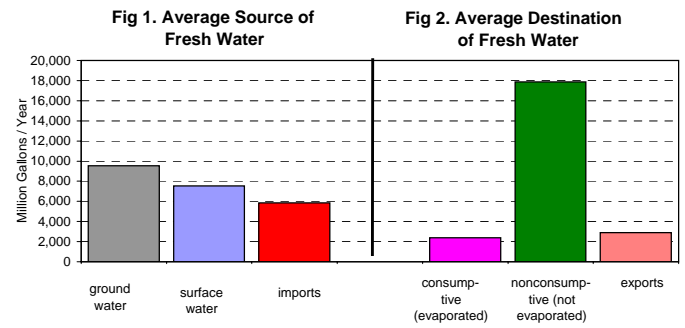


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 10,370 | 10,973 | 10,873 | 11,092 | 10,899 | 11,385 | 9,695 | 9,085 | 8,884 | 8,727 | 10,198 |
| consumptive | 1,276 | 1,457 | 1,380 | 1,480 | 1,405 | 1,468 | 1,157 | 1,251 | 1,299 | 1,173 | 1,335 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 59 | 59 | 61 | 61 | 62 | 63 | 64 | 65 | 65 | 66 | 62 |
| consumptive | 8 | 8 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 | 9 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 7,336 | 6,583 | 7,902 | 7,758 | 7,689 | 7,730 | 7,684 | 7,180 | 7,863 | 8,180 | 7,591 |
| consumptive | 815 | 731 | 878 | 862 | 854 | 859 | 854 | 798 | 874 | 909 | 843 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 11 | 10 | 14 | 15 | 27 | 29 | 17 | 21 | 22 | 58 | 22 |
| consumptive | 98 | 91 | 123 | 139 | 242 | 257 | 155 | 187 | 197 | 524 | 201 |
| 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 | 17,776 | 17,625 | 18,849 | 18,926 | 18,678 | 19,207 | 17,460 | 16,350 | 16,834 | 17,031 | 17,874 |
| consumptive | 2,198 | 2,287 | 2,390 | 2,489 | 2,509 | 2,593 | 2,175 | 2,244 | 2,379 | 2,616 | 2,388 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 89.0% | 88.5% | 88.7% | 88.4% | 88.2% | 88.1% | 88.9% | 87.9% | 87.6% | 86.7% | 88.2% |
| consumptive | 11.0% | 11.5% | 11.3% | 11.6% | 11.8% | 11.9% | 11.1% | 12.1% | 12.4% | 13.3% | 11.8% |

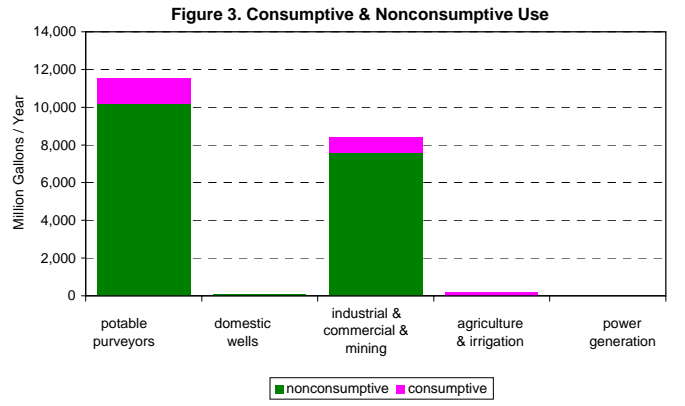


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 2,436 | 0 | 2,581 | 183 | 2,668 | 925 | 2,514 | 226 | 10,198 | 1,335 |
| domestic wells | 14 | 0 | 15 | 1 | 18 | 6 | 15 | 1 | 62 | 9 |
| industrial & commercial & mining | 1,838 | 204 | 1,889 | 210 | 1,957 | 217 | 1,907 | 212 | 7,591 | 843 |
| agricultural & non-agricultural irrig. | 0 | 2 | 3 | 29 | 15 | 136 | 4 | 34 | 22 | 201 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 4,288 | 207 | 4,488 | 423 | 4,658 | 1,285 | 4,439 | 473 | 17,874 | 2,388 |

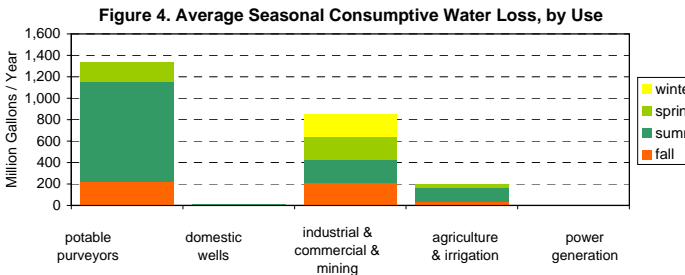


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|---------|
| generated in HUC11 | 6,171 | 1,963 | 6,074 | 3,155 | 10,011 | 9,024 | 10,290 | 9,943 | 9,683 | 9,661 | 7,597 |
| imported to HUC11 | 7,690 | 3,617 | 11,400 | 6,168 | 17,936 | 16,205 | 18,494 | 18,035 | 17,455 | 17,407 | 13,441 |
| exported from HUC11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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

| destination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|----------------|--------|-------|--------|-------|--------|--------|--------|--------|--------|--------|---------|
| fresh water | 13,150 | 5,494 | 17,473 | 9,323 | 27,947 | 25,229 | 28,784 | 27,979 | 27,137 | 27,068 | 20,958 |
| brackish water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| salt water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| sum: | 13,150 | 5,494 | 17,473 | 9,323 | 27,947 | 25,229 | 28,784 | 27,979 | 27,137 | 27,068 | 20,958 |

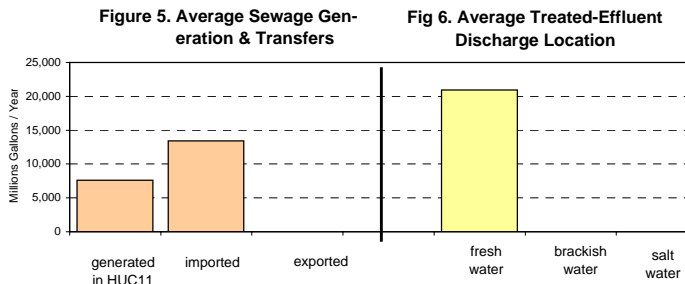


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|--------|
| surface water | 6,996 |
| ground water | 15,756 |
| total | 22,752 |

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

| Use Group | MGY |
|------------------|--------|
| agricultural | 351 |
| commercial | 0 |
| industrial | 11,835 |
| irrigation | 432 |
| mining | 0 |
| potable supply | 10,134 |
| power generation | 0 |
| total | 22,752 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 98.9 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 98.9 | sq. mi. |

(this HUC11 onshore area: 95.7 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|-------------------------|
| 1940 | 142,486 | - |
| 1950 | 174,878 | 22.7% |
| 1960 | 236,127 | 35.0% |
| 1970 | 274,630 | 16.3% |
| 1980 | 280,944 | 2.3% |
| 1990 | 292,417 | 4.1% |
| 2000 | 296,713 | 1.5% |
| 2010 | 300,626 | 1.3% est. ¹² |
| 2020 | 300,933 | 0.1% est. ¹² |
| 2030 | 301,322 | 0.1% est. ¹² |

--- Land Use of this HUC11:

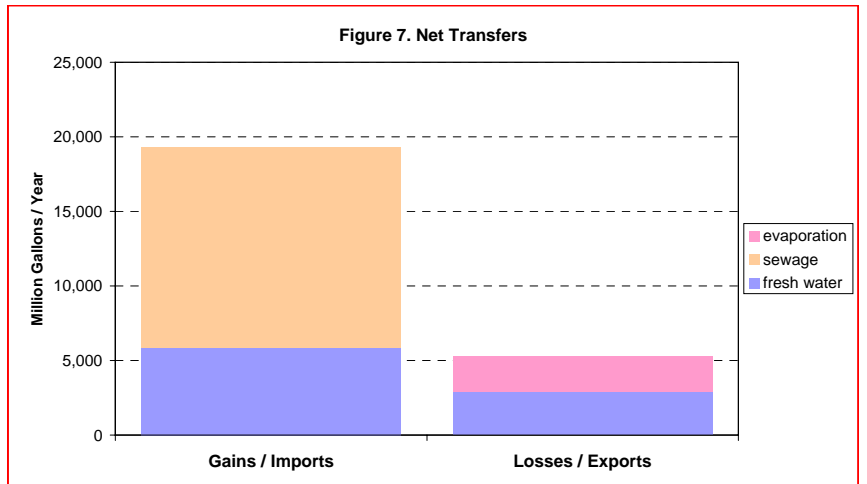
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 6.5% | 4.0% | -2.5% |
| barren | 1.8% | 2.4% | 0.6% |
| forest | 19.1% | 17.7% | -1.4% |
| urban | 57.6% | 61.1% | 3.5% |
| water | 5.3% | 5.2% | -0.1% |
| wetlands | 9.8% | 9.6% | -0.2% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

| location | # | name |
|-------------|-------------|--|
| downstream: | 02040202140 | Cedar Swamp / Repaupo Ck / Clonmell Ck |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

Water Withdrawals, Transfers and Discharges for MANTUA CREEK --- 02040202130

| | | |
|---------------|-----------------------|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Mantua Creek | 02040202130 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| other | 44 | 277 | 116 | 69 | 68 | 311 | 52 | 84 | 119 | 318 | 146 |
| sum | 44 | 277 | 116 | 69 | 68 | 311 | 52 | 84 | 119 | 318 | 146 |
| ground-water:³ | | | | | | | | | | | |
| confined | 2,476 | 3,218 | 3,360 | 3,378 | 2,558 | 2,828 | 2,350 | 2,880 | 2,507 | 2,372 | 2,793 |
| unconfined | 544 | 751 | 712 | 663 | 741 | 796 | 734 | 890 | 764 | 747 | 734 |
| sum | 3,020 | 3,968 | 4,072 | 4,040 | 3,298 | 3,623 | 3,084 | 3,770 | 3,272 | 3,119 | 3,527 |
| total withdrawals: | 3,064 | 4,245 | 4,188 | 4,110 | 3,366 | 3,934 | 3,136 | 3,854 | 3,390 | 3,437 | 3,673 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| imports ¹¹ | 834 | 802 | 754 | 748 | 1,237 | 1,187 | 1,201 | 1,135 | 1,159 | 1,052 | 1,011 |
| exports ¹¹ | 827 | 1,185 | 1,193 | 1,327 | 1,043 | 1,054 | 960 | 1,117 | 969 | 996 | 1,067 |
| net | 7 | (382) | (439) | (579) | 194 | 133 | 241 | 18 | 191 | 56 | (56) |

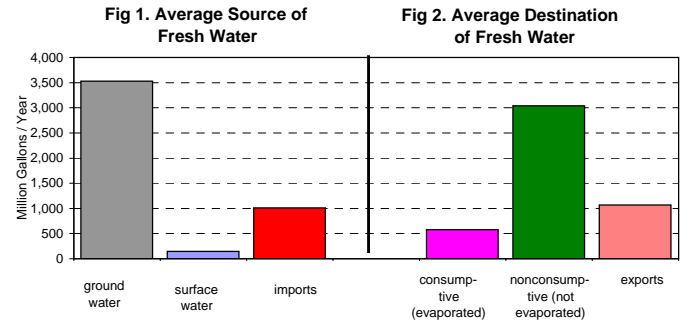


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 2,146 | 2,271 | 2,209 | 2,335 | 2,345 | 2,458 | 2,227 | 2,524 | 2,376 | 2,204 | 2,309 |
| consumptive | 268 | 303 | 285 | 325 | 313 | 343 | 288 | 350 | 341 | 317 | 313 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 152 | 153 | 155 | 156 | 158 | 159 | 160 | 161 | 163 | 164 | 158 |
| consumptive | 21 | 22 | 22 | 22 | 22 | 22 | 22 | 23 | 23 | 23 | 22 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 370 | 712 | 796 | 492 | 576 | 659 | 550 | 606 | 419 | 319 | 550 |
| consumptive | 43 | 81 | 90 | 57 | 66 | 76 | 63 | 71 | 49 | 38 | 63 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 7 | 32 | 19 | 13 | 8 | 35 | 7 | 14 | 21 | 43 | 20 |
| consumptive | 64 | 288 | 173 | 116 | 72 | 315 | 59 | 123 | 190 | 385 | 179 |
| 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 | 2,675 | 3,168 | 3,179 | 2,996 | 3,086 | 3,312 | 2,944 | 3,305 | 2,979 | 2,730 | 3,037 |
| consumptive | 397 | 694 | 570 | 520 | 474 | 756 | 433 | 566 | 602 | 763 | 578 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 87.1% | 82.0% | 84.8% | 85.2% | 86.7% | 81.4% | 87.2% | 85.4% | 83.2% | 78.2% | 84.0% |
| consumptive | 12.9% | 18.0% | 15.2% | 14.8% | 13.3% | 18.6% | 12.8% | 14.6% | 16.8% | 21.8% | 16.0% |

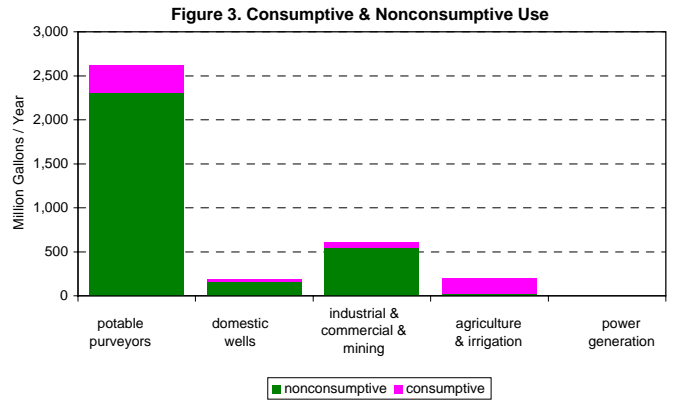


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive | Non-consumptive | Consumptive |
| potable purveyors | 534 | 0 | 569 | 42 | 634 | 220 | 574 | 51 | 2,311 | 313 |
| domestic wells | 36 | 0 | 37 | 3 | 46 | 16 | 39 | 4 | 158 | 22 |
| industrial & commercial & mining | 126 | 14 | 151 | 17 | 147 | 17 | 126 | 15 | 550 | 63 |
| agricultural & non-agricultural irrig. | 0 | 1 | 2 | 18 | 15 | 137 | 3 | 23 | 20 | 179 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 697 | 15 | 759 | 79 | 843 | 390 | 741 | 93 | 3,039 | 578 |

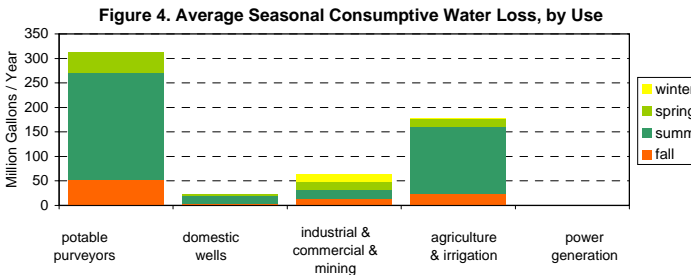


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| generated in HUC11 | 1,383 | 1,512 | 1,789 | 1,225 | 1,935 | 1,780 | 2,044 | 2,151 | 1,980 | 1,965 | 1,776 |
| imported to HUC11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| exported from HUC11 | 1,383 | 1,512 | 1,789 | 1,225 | 1,935 | 1,780 | 2,044 | 2,151 | 1,980 | 1,965 | 1,776 |

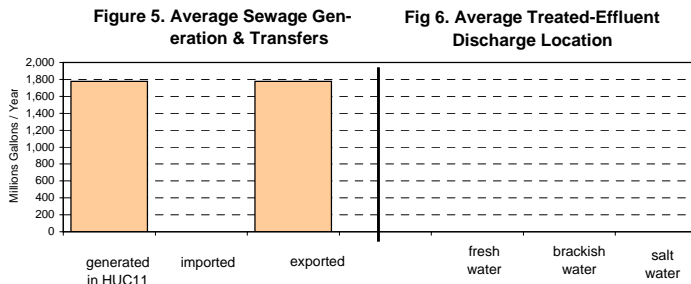


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|-------|
| surface water | 689 |
| ground water | 7,123 |
| total | 7,812 |

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

| Use Group | MGY |
|------------------|-------|
| agricultural | 3,310 |
| commercial | 0 |
| industrial | 964 |
| irrigation | 115 |
| mining | 116 |
| potable supply | 3,306 |
| power generation | 0 |
| total | 7,812 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 50.2 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 50.2 | sq. mi. |

(this HUC11 onshore area: 50.1 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|-------------------------|
| 1940 | 20,665 | - |
| 1950 | 25,800 | 24.8% |
| 1960 | 40,394 | 56.6% |
| 1970 | 53,041 | 31.3% |
| 1980 | 58,617 | 10.5% |
| 1990 | 66,783 | 13.9% |
| 2000 | 75,626 | 13.2% |
| 2010 | 81,113 | 7.3% est. ¹² |
| 2020 | 87,031 | 7.3% est. ¹² |
| 2030 | 91,963 | 5.7% est. ¹² |

--- Land Use of this HUC11:

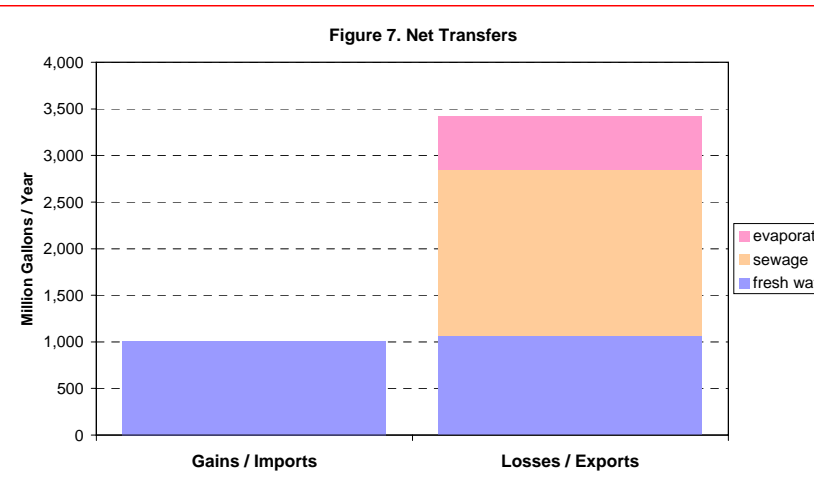
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 25.8% | 20.3% | -5.5% |
| barren | 2.4% | 2.3% | -0.1% |
| forest | 22.7% | 21.5% | -1.2% |
| urban | 38.3% | 45.3% | 7.0% |
| water | 2.1% | 2.1% | 0.0% |
| wetlands | 8.7% | 8.5% | -0.2% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

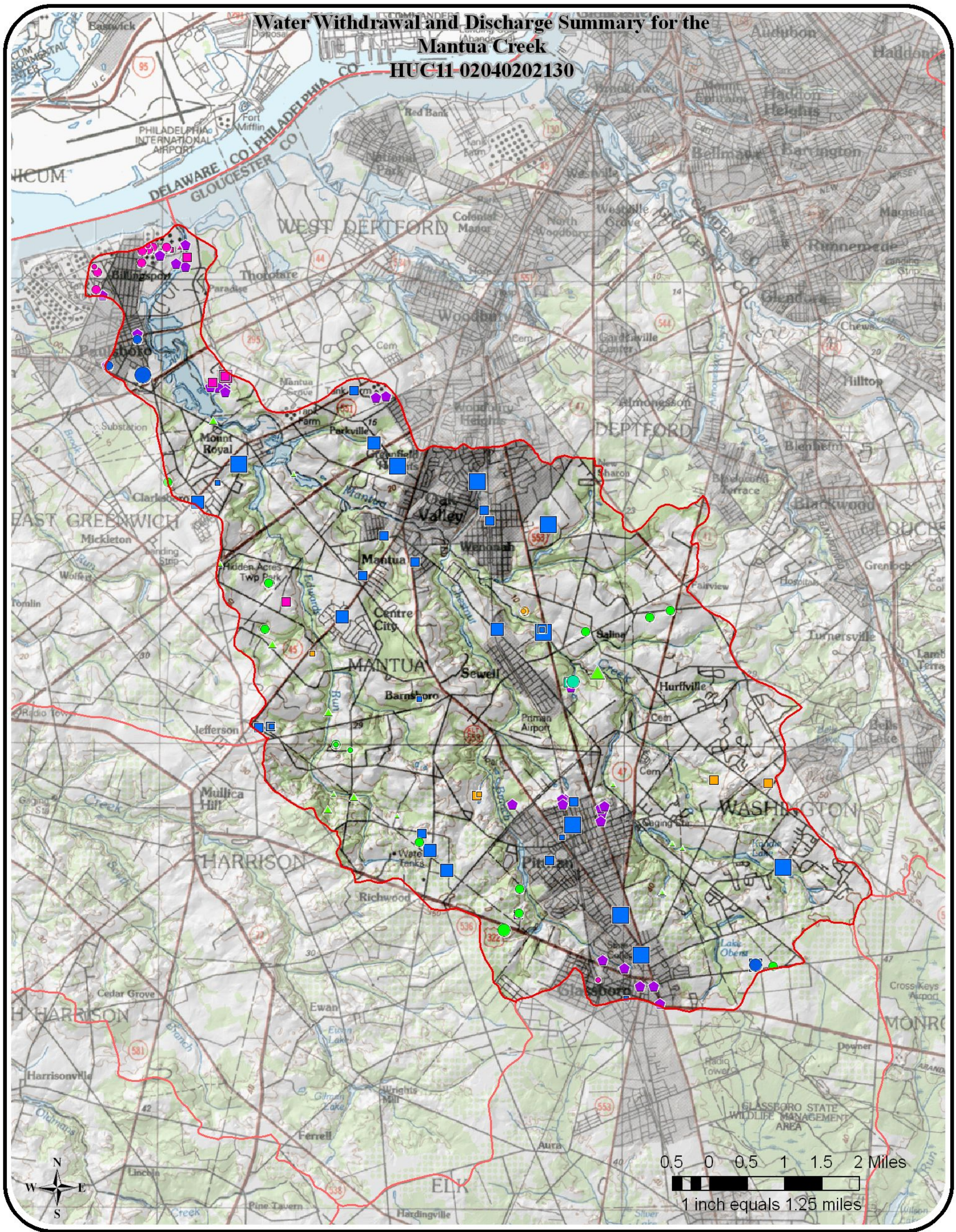
| location | # | name |
|-------------|-------------|--|
| downstream: | 02040202140 | Cedar Swamp / Repaupo Ck / Clonmell Ck |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

Water Withdrawal and Discharge Summary for the Mantua Creek HUC11-02040202130

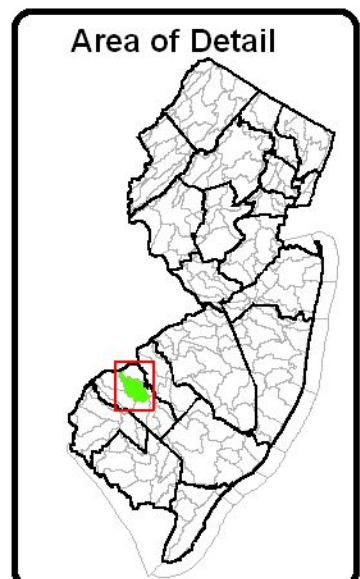


| Key for Discharge Data | |
|---------------------------------|---|
| 1999 Treated Effluent Discharge | |
| 0 - 50 MGY | ◆ |
| 50 - 100 MGY | ◆ |
| 100 - 500 MGY | ◆ |
| > 500 MGY | ◆ |
| Other Permitted Discharge | ◆ |

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

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

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for CEDAR SWAMP / REPAUPO CK / CLONMELL CK --- 02040202140

| | | |
|---------------|---|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Cedar Swamp / Repaupo Ck / Clonmell Ck | 02040202140 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 18,009 | 18,087 | 16,987 | 12,842 | 5,071 | 5,641 | 4,715 | 5,213 | 5,267 | 5,285 | 9,711 |
| other | 316 | 258 | 257 | 384 | 368 | 439 | 162 | 441 | 239 | 330 | 319 |
| sum | 18,324 | 18,345 | 17,244 | 13,226 | 5,439 | 6,079 | 4,876 | 5,654 | 5,506 | 5,615 | 10,031 |
| ground-water:³ | | | | | | | | | | | |
| confined | 1,669 | 945 | 866 | 970 | 849 | 874 | 971 | 1,111 | 1,839 | 1,067 | 1,116 |
| unconfined | 431 | 930 | 908 | 697 | 763 | 779 | 749 | 719 | 829 | 741 | 755 |
| sum | 2,100 | 1,876 | 1,774 | 1,667 | 1,612 | 1,652 | 1,721 | 1,829 | 2,669 | 1,808 | 1,871 |
| total withdrawals: | 20,425 | 20,221 | 19,018 | 14,893 | 7,051 | 7,732 | 6,597 | 7,483 | 8,174 | 7,423 | 11,902 |

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

| | | | | | | | | | | | |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| imports ¹¹ | 204 | 258 | 254 | 276 | 271 | 300 | 254 | 298 | 310 | 300 | 272 |
| exports ¹¹ | 16 | 25 | 24 | 26 | 27 | 29 | 33 | 35 | 33 | 31 | 28 |
| net | 187 | 232 | 230 | 250 | 244 | 271 | 221 | 262 | 277 | 269 | 244 |

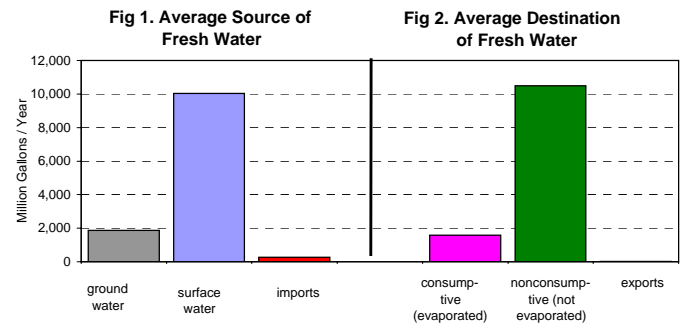


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 326 | 439 | 427 | 456 | 464 | 508 | 505 | 554 | 550 | 526 | 475 |
| consumptive | 35 | 65 | 57 | 67 | 63 | 71 | 64 | 81 | 165 | 73 | 74 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 46 | 46 | 47 | 48 | 49 | 50 | 51 | 53 | 54 | 55 | 50 |
| consumptive | 6 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 8 | 8 | 7 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 17,857 | 17,629 | 16,550 | 12,689 | 5,683 | 6,187 | 5,352 | 5,741 | 5,857 | 5,763 | 9,931 |
| consumptive | 1,988 | 1,965 | 1,846 | 1,415 | 639 | 696 | 601 | 639 | 653 | 642 | 1,108 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 33 | 28 | 31 | 45 | 39 | 48 | 24 | 68 | 55 | 65 | 44 |
| consumptive | 301 | 251 | 281 | 404 | 351 | 432 | 213 | 610 | 497 | 588 | 393 |
| 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 | 18,263 | 18,142 | 17,055 | 13,238 | 6,235 | 6,794 | 5,932 | 6,415 | 6,516 | 6,410 | 10,500 |
| consumptive | 2,330 | 2,287 | 2,191 | 1,893 | 1,059 | 1,205 | 885 | 1,337 | 1,323 | 1,311 | 1,582 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 88.7% | 88.8% | 88.6% | 87.5% | 85.5% | 84.9% | 87.0% | 82.7% | 83.1% | 83.0% | 86.9% |
| consumptive | 11.3% | 11.2% | 11.4% | 12.5% | 14.5% | 15.1% | 13.0% | 17.3% | 16.9% | 17.0% | 13.1% |

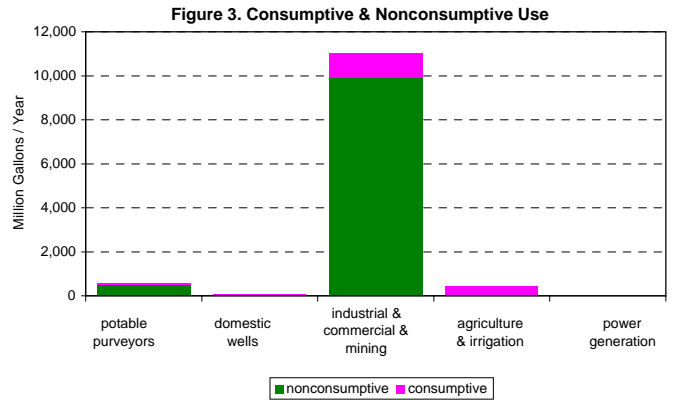


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 126 | 0 | 132 | 10 | 151 | 52 | 134 | 12 | 543 | 74 |
| domestic wells | 11 | 0 | 12 | 1 | 15 | 5 | 12 | 1 | 50 | 7 |
| industrial & commercial & mining | 2,334 | 260 | 2,378 | 266 | 2,720 | 304 | 2,499 | 279 | 9,931 | 1,108 |
| agricultural & non-agricultural irrig. | 0 | 0 | 4 | 37 | 32 | 288 | 8 | 68 | 44 | 393 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 2,472 | 260 | 2,525 | 313 | 2,917 | 649 | 2,653 | 360 | 10,568 | 1,582 |

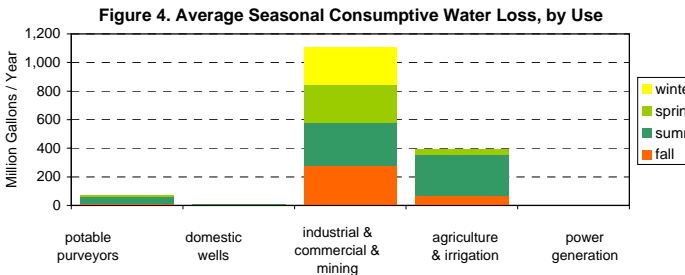


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|------|------|------|------|------|------|------|------|------|------|---------|
| generated in HUC11 | 388 | 543 | 656 | 569 | 770 | 684 | 786 | 782 | 777 | 815 | 677 |
| imported to HUC11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| exported from HUC11 | 388 | 412 | 475 | 344 | 517 | 473 | 548 | 576 | 533 | 524 | 479 |

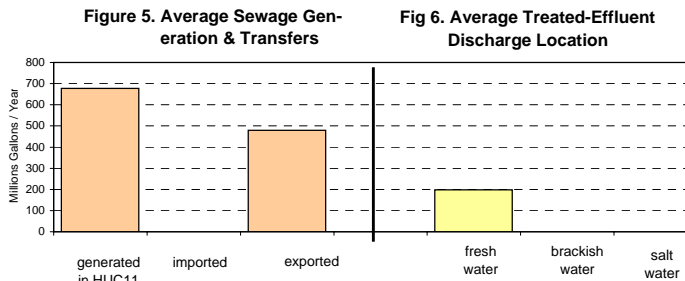


Table 6. Destination of Treated Effluent (Reclaimed-Water) Discharges⁹ in the HUC11 (millions of gallons)

| destination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|----------------|------|------|------|------|------|------|------|------|------|------|---------|
| fresh water | 0 | 131 | 181 | 225 | 253 | 211 | 237 | 205 | 245 | 291 | 198 |
| brackish water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| salt water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| sum: | 0 | 131 | 181 | 225 | 253 | 211 | 237 | 205 | 245 | 291 | 198 |

Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|--------|
| surface water | 4,667 |
| ground water | 11,568 |
| total | 16,235 |

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

| Use Group | MGY |
|------------------|--------|
| agricultural | 3,158 |
| commercial | 0 |
| industrial | 12,290 |
| irrigation | 74 |
| mining | 318 |
| potable supply | 395 |
| power generation | 0 |
| total | 16,235 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 41.0 | sq. mi. |
| upstream HUC11s | 50.2 | sq. mi. |
| total watershed | 91.2 | sq. mi. |

(this HUC11 onshore area: 36.0 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|--------------------------|
| 1940 | 7,237 | - |
| 1950 | 8,577 | 18.5% |
| 1960 | 9,904 | 15.5% |
| 1970 | 11,926 | 20.4% |
| 1980 | 12,534 | 5.1% |
| 1990 | 14,017 | 11.8% |
| 2000 | 14,838 | 5.9% |
| 2010 | 16,070 | 8.3% est. ¹² |
| 2020 | 17,676 | 10.0% est. ¹² |
| 2030 | 19,164 | 8.4% est. ¹² |

--- Land Use of this HUC11:

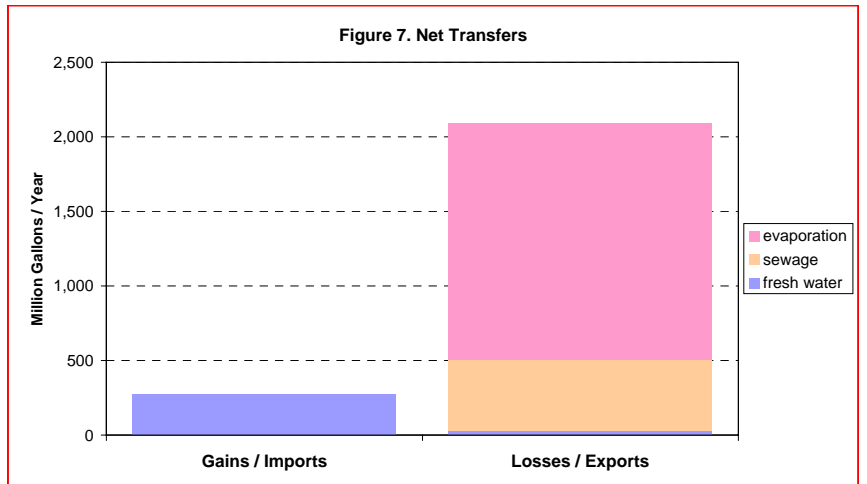
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 34.5% | 32.1% | -2.3% |
| barren | 1.4% | 1.4% | -0.1% |
| forest | 6.6% | 6.8% | 0.2% |
| urban | 16.0% | 18.3% | 2.3% |
| water | 14.5% | 14.5% | 0.0% |
| wetlands | 27.1% | 26.9% | -0.1% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

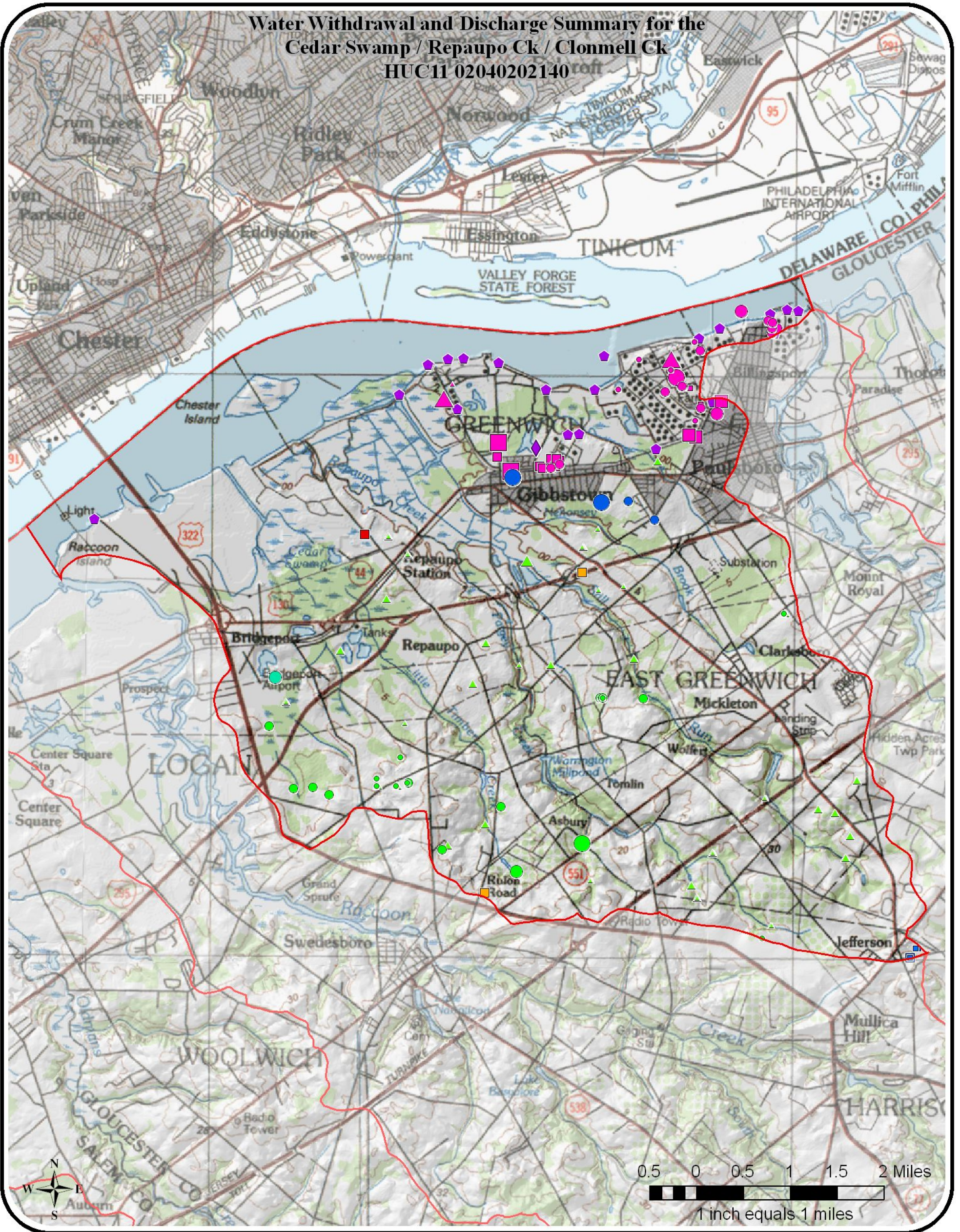
| location | # | name |
|----------------------|-------------|-----------------------------|
| downstream: (if any) | 02040202150 | Raccoon Creek / Birch Creek |
| upstream: (if any) | 02040202130 | Mantua Creek |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |
| | -- | -- |



NOTES:

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

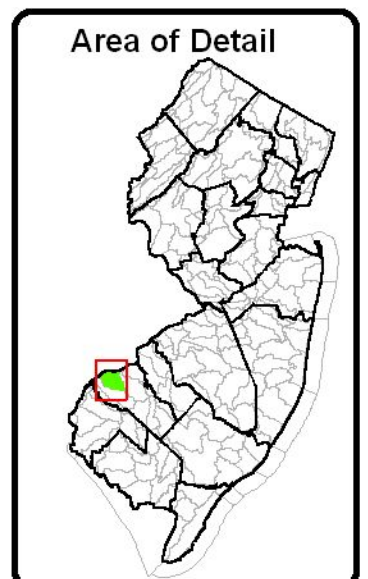
**Water Withdrawal and Discharge Summary for the
Cedar Swamp / Reapaupo Ck / Clonmell Ck
HUC11 02040202140**



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

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

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for RACCOON CREEK / BIRCH CREEK --- 02040202150

| | | |
|---------------|------------------------------------|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Raccoon Creek / Birch Creek | 02040202150 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|------------------------------------|------------|------------|------------|------------|------------|--------------|------------|--------------|--------------|--------------|--------------|
| surface water: ² | | | | | | | | | | | |
| Delaware River | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| other | 35 | 164 | 78 | 124 | 107 | 198 | 78 | 145 | 186 | 241 | 136 |
| sum | 35 | 164 | 78 | 124 | 107 | 198 | 78 | 145 | 186 | 241 | 136 |
| ground-water: ³ | | | | | | | | | | | |
| confined | 473 | 294 | 383 | 301 | 351 | 407 | 392 | 638 | 436 | 432 | 411 |
| unconfined | 213 | 466 | 479 | 474 | 504 | 563 | 523 | 705 | 696 | 626 | 525 |
| sum | 685 | 760 | 862 | 775 | 854 | 970 | 914 | 1,343 | 1,132 | 1,058 | 935 |
| total withdrawals: | 721 | 924 | 940 | 899 | 962 | 1,168 | 992 | 1,488 | 1,318 | 1,299 | 1,071 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| imports ¹¹ | 10 | 11 | 11 | 11 | 12 | 13 | 12 | 13 | 13 | 18 | 12 |
| exports ¹¹ | 86 | 131 | 135 | 142 | 154 | 173 | 148 | 173 | 188 | 175 | 150 |
| net | (76) | (121) | (125) | (130) | (142) | (161) | (136) | (160) | (175) | (158) | (138) |

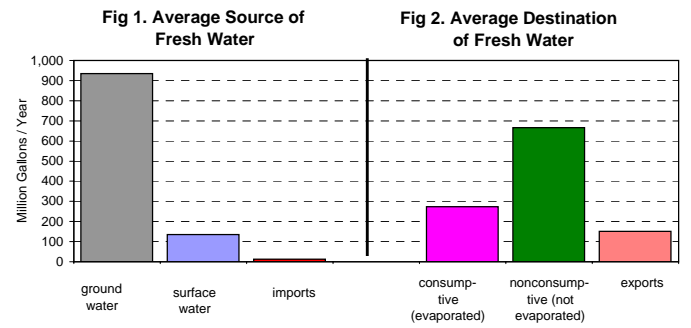


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 256 | 286 | 292 | 269 | 340 | 365 | 362 | 401 | 450 | 417 | 344 |
| consumptive | 35 | 39 | 40 | 37 | 47 | 51 | 47 | 58 | 63 | 61 | 48 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 159 | 161 | 164 | 167 | 172 | 175 | 179 | 185 | 191 | 197 | 175 |
| consumptive | 22 | 23 | 23 | 24 | 24 | 25 | 25 | 26 | 27 | 28 | 25 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 95 | 83 | 145 | 93 | 83 | 107 | 104 | 340 | 111 | 106 | 127 |
| consumptive | 12 | 12 | 24 | 18 | 15 | 18 | 15 | 42 | 17 | 15 | 19 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 7 | 20 | 13 | 16 | 14 | 27 | 14 | 33 | 28 | 32 | 20 |
| consumptive | 59 | 180 | 115 | 140 | 126 | 239 | 130 | 293 | 256 | 284 | 182 |
| 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 | 517 | 549 | 614 | 545 | 608 | 674 | 659 | 959 | 780 | 752 | 666 |
| consumptive | 128 | 254 | 202 | 219 | 212 | 333 | 217 | 419 | 363 | 388 | 273 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 80.1% | 68.4% | 75.3% | 71.4% | 74.2% | 66.9% | 75.2% | 69.6% | 68.2% | 66.0% | 70.9% |
| consumptive | 19.9% | 31.6% | 24.7% | 28.6% | 25.8% | 33.1% | 24.8% | 30.4% | 31.8% | 34.0% | 29.1% |

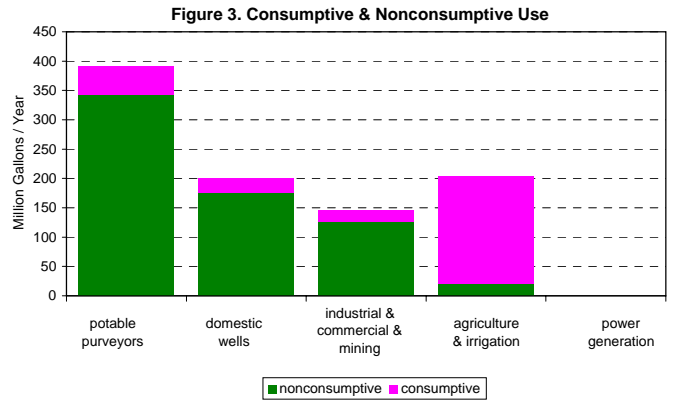


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 76 | 0 | 83 | 6 | 96 | 34 | 90 | 8 | 345 | 48 |
| domestic wells | 40 | 0 | 41 | 3 | 51 | 18 | 43 | 4 | 175 | 25 |
| industrial & commercial & mining | 27 | 4 | 30 | 4 | 33 | 6 | 36 | 5 | 127 | 19 |
| agricultural & non-agricultural irrig. | 0 | 1 | 2 | 18 | 16 | 140 | 3 | 24 | 20 | 182 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 144 | 4 | 156 | 31 | 196 | 198 | 171 | 41 | 666 | 273 |

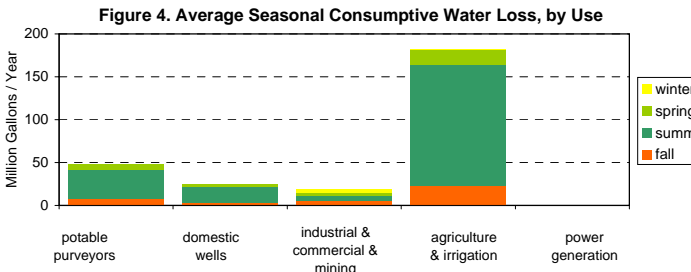


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|------|------|------|------|------|------|------|------|------|------|---------|
| generated in HUC11 | 323 | 318 | 328 | 316 | 394 | 357 | 433 | 427 | 416 | 396 | 371 |
| imported to HUC11 | 127 | 111 | 103 | 111 | 112 | 100 | 124 | 138 | 131 | 117 | 117 |
| exported from HUC11 | 100 | 110 | 130 | 89 | 140 | 129 | 148 | 156 | 143 | 142 | 129 |

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

| destination | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|----------------|------|------|------|------|------|------|------|------|------|------|---------|
| fresh water | 349 | 319 | 301 | 338 | 365 | 328 | 409 | 409 | 404 | 370 | 359 |
| 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: | 349 | 319 | 301 | 338 | 365 | 328 | 409 | 409 | 404 | 370 | 359 |

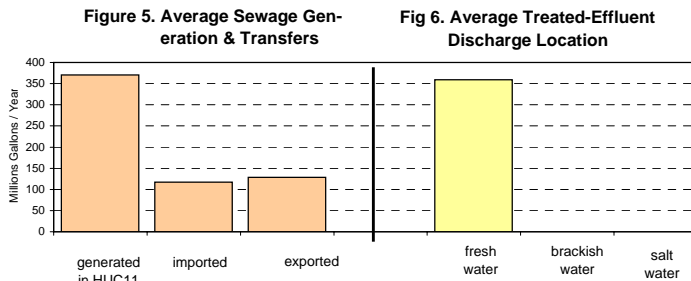


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|-------|
| surface water | 2,880 |
| ground water | 3,447 |
| total | 6,327 |

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

| Use Group | MGY |
|------------------|-------|
| agricultural | 5,189 |
| commercial | 105 |
| industrial | 124 |
| irrigation | 0 |
| mining | 0 |
| potable supply | 909 |
| power generation | 0 |
| total | 6,327 |

Table 9. HUC11 Descriptive Statistics

--- Area:

| | | |
|--------------------|------|---------|
| in this HUC11 only | 49.7 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 49.7 | sq. mi. |

(this HUC11 onshore area: 48.3 sq. mi.)

--- Population of this HUC11:

| Year | Population | Change |
|------|------------|--------------------------|
| 1940 | 6,184 | - |
| 1950 | 7,300 | 18.0% |
| 1960 | 7,968 | 9.1% |
| 1970 | 8,366 | 5.0% |
| 1980 | 9,723 | 16.2% |
| 1990 | 12,001 | 23.4% |
| 2000 | 16,914 | 40.9% |
| 2010 | 21,258 | 25.7% est. ¹² |
| 2020 | 26,514 | 24.7% est. ¹² |
| 2030 | 33,195 | 25.2% est. ¹² |

--- Land Use of this HUC11:

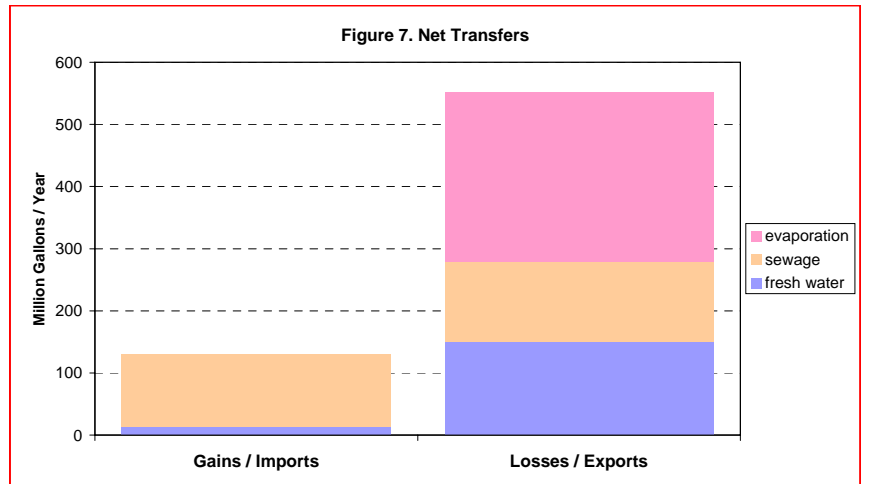
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 50.7% | 43.3% | -7.4% |
| barren | 1.0% | 1.6% | 0.6% |
| forest | 15.6% | 16.2% | 0.6% |
| urban | 11.8% | 18.1% | 6.3% |
| water | 5.7% | 5.7% | 0.1% |
| wetlands | 15.4% | 15.1% | -0.3% |

--- % of this HUC11 in:

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

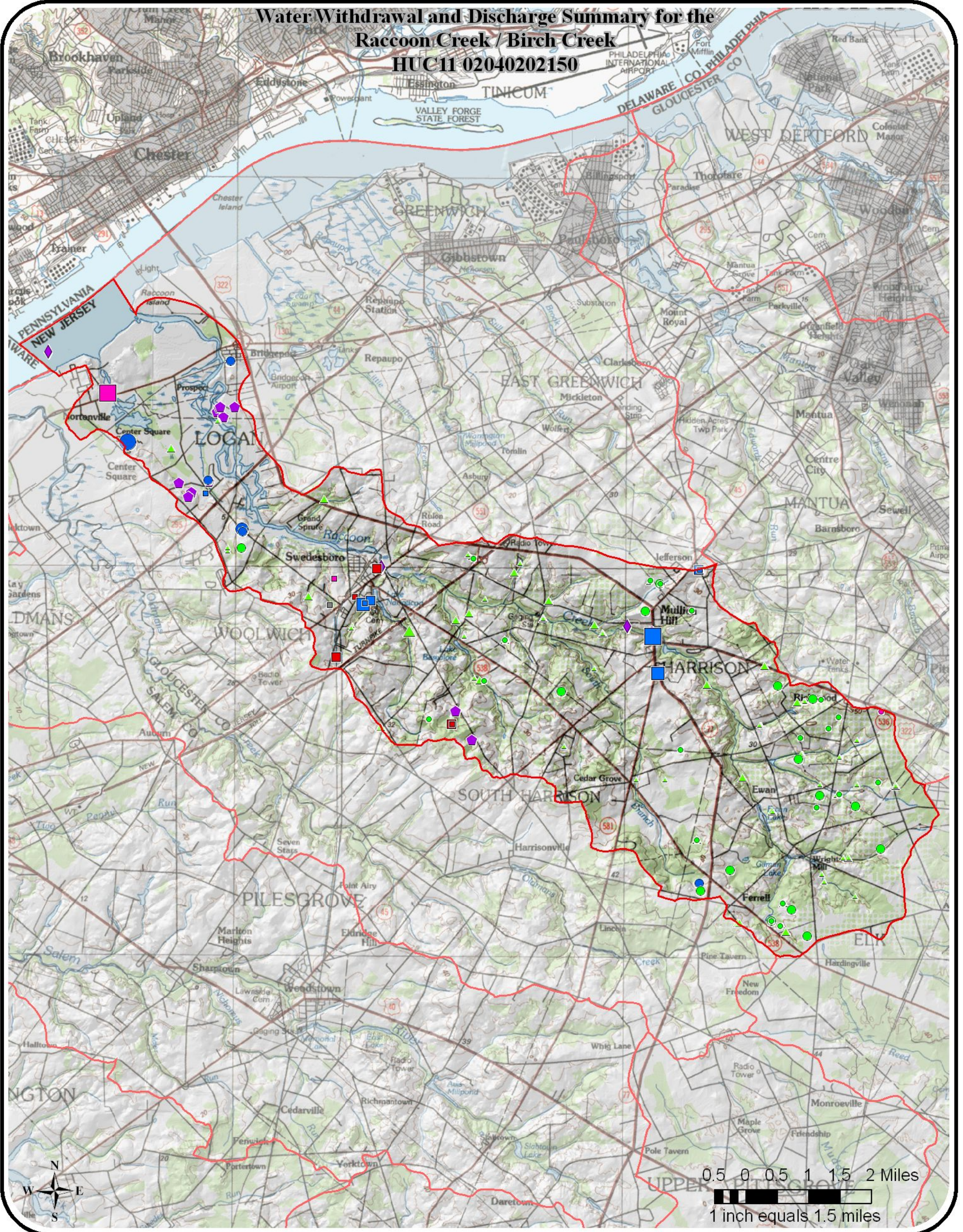
| location | # | name |
|-------------|-------------|---------------|
| downstream: | 02040202160 | Oldmans Creek |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

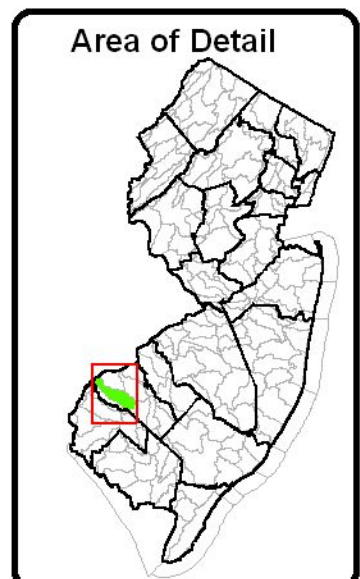
Water Withdrawal and Discharge Summary for the Raccoon Creek / Birch Creek HUC11 02040202150



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

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

MGY = millions of gallons per year



Water Withdrawals, Transfers and Discharges for OLDMANS CREEK --- 02040202160

| | | |
|---------------|-----------------------|--------------------|
| WMA: | Lower Delaware | 18 |
| HUC11: | Oldmans Creek | 02040202160 |

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

| Withdrawals (Q) | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------------------|------------|--------------|------------|------------|------------|--------------|--------------|--------------|--------------|--------------|--------------|
| surface water:² | | | | | | | | | | | |
| Delaware River | 0 | 0 | 0 | 0 | 153 | 518 | 454 | 542 | 562 | 505 | 273 |
| other | 298 | 630 | 335 | 383 | 240 | 412 | 183 | 823 | 795 | 920 | 502 |
| sum | 298 | 630 | 335 | 383 | 394 | 931 | 637 | 1,365 | 1,357 | 1,425 | 775 |
| ground-water:³ | | | | | | | | | | | |
| confined | 327 | 277 | 266 | 279 | 307 | 237 | 263 | 437 | 170 | 306 | 287 |
| unconfined | 182 | 193 | 178 | 241 | 180 | 241 | 184 | 247 | 429 | 447 | 252 |
| sum | 509 | 470 | 444 | 520 | 487 | 478 | 447 | 684 | 599 | 753 | 539 |
| total withdrawals: | 806 | 1,100 | 780 | 903 | 881 | 1,408 | 1,084 | 2,049 | 1,956 | 2,178 | 1,315 |

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

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|-----------------------|------|------|------|------|------|------|------|------|------|------|---------|
| imports ¹¹ | 8 | 9 | 9 | 11 | 11 | 10 | 8 | 21 | 33 | 31 | 15 |
| exports ¹¹ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| net | 8 | 9 | 9 | 11 | 11 | 10 | 8 | 21 | 33 | 26 | 15 |

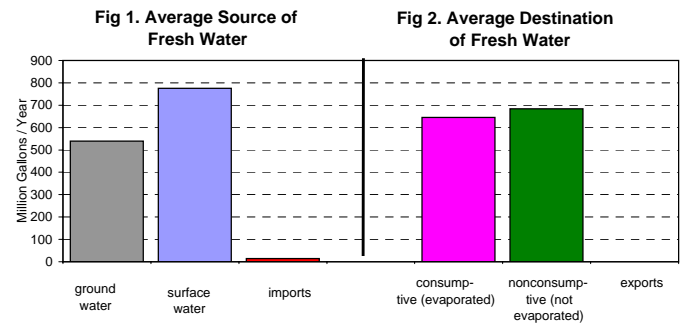


Table 3. Nonconsumptive⁴ & Consumptive⁵ Water Use⁶ in the HUC11, by Use Type (millions of gallons)

| Water use | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| potable purveyors | | | | | | | | | | | |
| nonconsumptive | 7 | 16 | 11 | 12 | 13 | 11 | 10 | 20 | 31 | 29 | 16 |
| consumptive | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 3 | 4 | 4 | 2 |
| domestic wells | | | | | | | | | | | |
| nonconsumptive | 92 | 93 | 95 | 98 | 101 | 103 | 106 | 110 | 114 | 117 | 103 |
| consumptive | 13 | 13 | 13 | 14 | 14 | 15 | 15 | 16 | 16 | 17 | 15 |
| industrial & commercial & mining | | | | | | | | | | | |
| nonconsumptive | 294 | 241 | 236 | 249 | 412 | 677 | 643 | 880 | 657 | 723 | 501 |
| consumptive | 33 | 27 | 26 | 28 | 46 | 75 | 71 | 98 | 73 | 80 | 56 |
| agricultural & non-agricultural irrigation | | | | | | | | | | | |
| nonconsumptive | 37 | 72 | 41 | 51 | 31 | 54 | 25 | 94 | 109 | 123 | 64 |
| consumptive | 337 | 645 | 365 | 462 | 275 | 482 | 222 | 849 | 985 | 1,111 | 573 |
| 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 | 430 | 422 | 383 | 410 | 555 | 845 | 783 | 1,105 | 911 | 993 | 684 |
| consumptive | 383 | 687 | 405 | 505 | 336 | 573 | 309 | 965 | 1,078 | 1,211 | 645 |
| PERCENTAGES: | | | | | | | | | | | |
| nonconsumptive | 52.9% | 38.0% | 48.6% | 44.8% | 62.3% | 59.6% | 71.7% | 53.4% | 45.8% | 45.1% | 51.4% |
| consumptive | 47.1% | 62.0% | 51.4% | 55.2% | 37.7% | 40.4% | 28.3% | 46.6% | 54.2% | 54.9% | 48.6% |

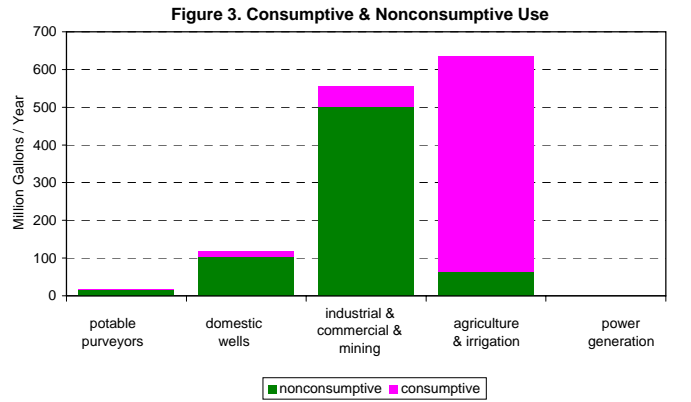


Table 4. Average Seasonal⁷ Use - Nonconsumptive⁴ & Consumptive⁵ (millions of gallons)

| Use Group | Winter | | Spring | | Summer | | Fall | | Yearly Avg. | |
|--|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|
| | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive | Noncon-sumptive | Consumptive |
| potable purveyors | 4 | 0 | 4 | 0 | 4 | 1 | 4 | 0 | 16 | 2 |
| domestic wells | 24 | 0 | 24 | 2 | 30 | 10 | 25 | 2 | 103 | 15 |
| industrial & commercial & mining | 123 | 14 | 115 | 13 | 142 | 16 | 122 | 14 | 501 | 56 |
| agricultural & non-agricultural irrig. | 0 | 1 | 6 | 56 | 50 | 449 | 8 | 68 | 64 | 573 |
| power generation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUM: | 150 | 14 | 149 | 70 | 226 | 477 | 159 | 84 | 684 | 645 |

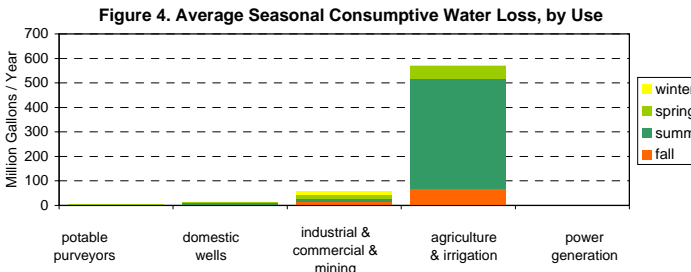


Table 5. Sewage Generation & Transfers⁸ in the HUC11 (millions of gallons)

| | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | average |
|---------------------|------|------|------|------|------|------|------|------|------|------|---------|
| generated in HUC11 | 70 | 61 | 56 | 59 | 57 | 51 | 63 | 75 | 70 | 62 | 62 |
| imported to HUC11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| exported from HUC11 | 70 | 61 | 56 | 59 | 57 | 51 | 63 | 75 | 70 | 62 | 62 |

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

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

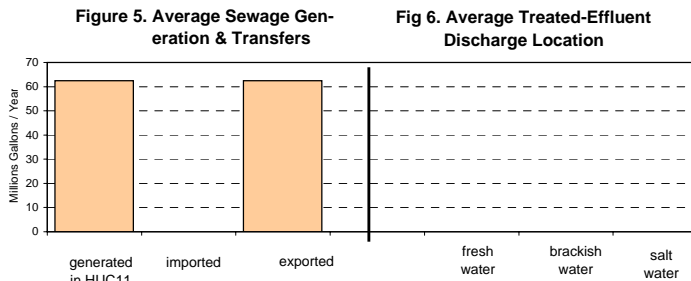


Table 7. 1999 Water Allocations¹⁰ in HUC11 by Water Source

| Water Source | MGY |
|---------------|-------|
| surface water | 4,424 |
| ground water | 4,846 |
| total | 9,269 |

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

| Use Group | MGY |
|------------------|-------|
| agricultural | 7,443 |
| commercial | 0 |
| industrial | 1,637 |
| irrigation | 115 |
| mining | 0 |
| potable supply | 74 |
| power generation | 0 |
| total | 9,269 |

Table 9. HUC11 Descriptive Statistics

--- **Area:**

| | | |
|--------------------|------|---------|
| in this HUC11 only | 44.0 | sq. mi. |
| upstream HUC11s | 0.0 | sq. mi. |
| total watershed | 44.0 | sq. mi. |

(this HUC11 onshore area: 43.8 sq. mi.)

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

| Year | Population | Change |
|------|------------|--------------------------|
| 1940 | 2,622 | - |
| 1950 | 2,994 | 14.2% |
| 1960 | 3,745 | 25.1% |
| 1970 | 3,496 | -6.6% |
| 1980 | 3,845 | 10.0% |
| 1990 | 4,698 | 22.2% |
| 2000 | 5,997 | 27.7% |
| 2010 | 7,889 | 31.5% est. ¹² |
| 2020 | 10,643 | 34.9% est. ¹² |
| 2030 | 13,114 | 23.2% est. ¹² |

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

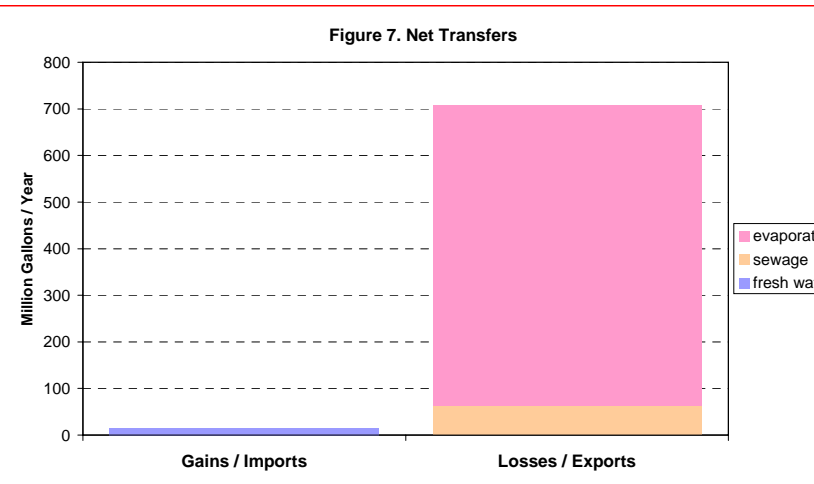
| Type | Year | | Change |
|----------|-------|-------|--------|
| | 1986 | 1995 | |
| ag. | 53.8% | 50.0% | -3.8% |
| barren | 0.8% | 1.1% | 0.3% |
| forest | 14.7% | 14.8% | 0.1% |
| urban | 8.7% | 12.2% | 3.6% |
| water | 2.3% | 2.2% | -0.1% |
| wetlands | 19.6% | 19.6% | 0.0% |

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

| | |
|------------|------|
| Pinelands: | 0.0% |
| Highlands: | 0.0% |

Table 10. Upstream and downstream HUC11s (in NJ)

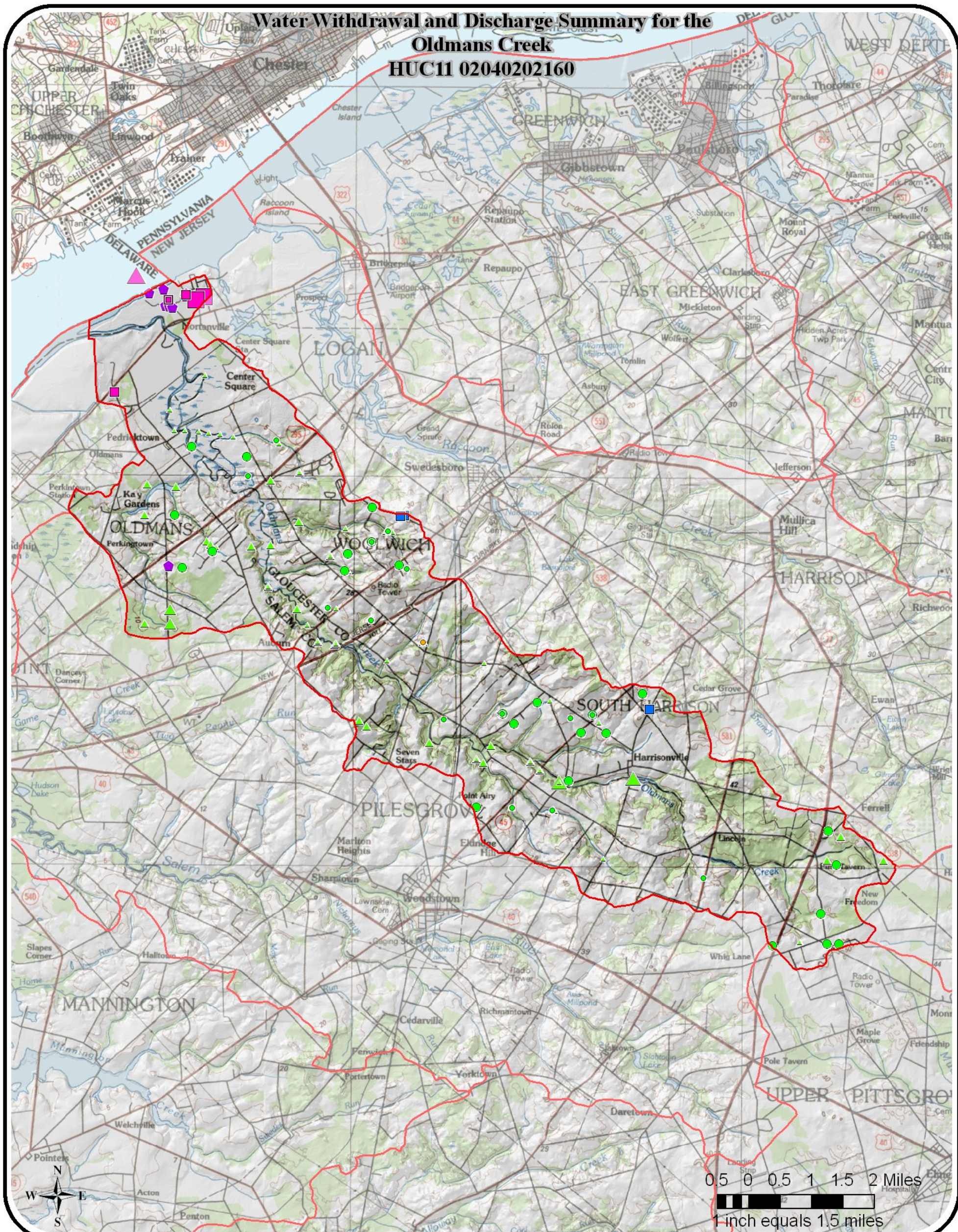
| location | # | name |
|-------------|-------------|--------------------------------|
| downstream: | 02040206020 | Pennsville / Penns Grove tribs |
| (if any) | -- | -- |
| upstream: | -- | -- |
| (if any) | -- | -- |



NOTES:

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

Water Withdrawal and Discharge Summary for the Oldmans Creek HUC11 02040202160



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

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

MGY = millions of gallons per year

