Amendment to the Sussex County Water Quality Management Plan and Upper Delaware Water Quality Management Plan

Total Maximum Daily Loads for Pathogens to Address 11 Lakes in the Northwest Water Region

Watershed Management Area 1
(Lake Winona, Lake Hopatcong, Green Valley Beach Campground, Forest Lake, Fox Hollow Lake, Lackawanna Lake, and Furnace Lake)
Watershed Management Area 2
(Crystal Springs Lake, Deer Trail Lake, Lake Mohawk, and Sleepy Valley Lake)

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Prepared by:
New Jersey Department of Environmental Protection
and

TETRA TECH, INC.

With assistance provided by:
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EXECUTIVE SUMMARY

In accordance with Section 305(b) and 303(d) of the Federal Clean Water Act (CWA), the State of New Jersey, Department of Environmental Protection (Department) is required to assess the overall water quality of the State's waters and identify those waterbodies with a water quality impairment for which TMDLs may be necessary. A TMDL is developed to identify all the contributors of a pollutant of concern and the load reductions necessary to meet the Surface Water Quality Standards (SWQS) relative to that pollutant. The Department fulfills its assessment obligation under the CWA through the Integrated Water Quality Monitoring and Assessment Report, which includes the Integrated List of Waterbodies, issued biennially. On October 4, 2004 the Department adopted the *2004 Integrated List of Waterbodies* as an amendment to the Statewide Water Quality Management Plan (36 NJR 4543(a)), as part of the Department's continuing planning process pursuant to the Water Quality Planning Act at N.J.S.A. 58:11A-7 and the Water Quality Management Planning rules at N.J.A.C. 7:15-6.4(a). The *2004 Integrated List of Waterbodies* identifies eleven lakes as impaired with respect to pathogens in the Northwest Water Region.

The Department has recently adopted the *2006 Integrated Water Quality Monitoring and Assessment Report*, including the *2006 Integrated List of Waterbodies*, which identifies impairments based on HUC 14 Assessment Units rather than stream segments associated with discrete monitoring locations. This change in assessment methodology allows establishment of a stable base of assessment units for which the attainment or non-attainment status of all designated uses within each subwatershed or assessment unit will be identified. In addition, lakes are assessed and listed separately when impaired. The *2006 Integrated List of Waterbodies* identifies eleven lakes that are impaired with respect to pathogens in the Northwest Water Region. A lake is determined to be impaired if it does not fully support primary contact recreation as evidenced by beach closings in accordance with Health Department standards. The water quality trigger for beach closings is exceedance of 200 cfu/100 ml of fecal coliform (NJDOH, 2004). TMDLs are adopted for the impaired lakes listed in Table 1.

Table 1. Lakes in the Northwest Water Region impaired for pathogens for which TMDLs are adopted.

TMDL Number	WMA	Lake Assessment Unit Name	County(s)*
1	1	Lake Winona	Morris/Sussex
2	1	Lake Hopatcong	Morris/ Sussex
3	1	Green Valley Beach Campground	Sussex
4	1	Forest Lake	Sussex
5	1	Fox Hollow Lake	Sussex

TMDL Number	WMA	Lake Assessment Unit Name	County(s)*
6	1	Lackawanna Lake	Sussex
7	1	Furnace Lake	Warren
8	2	Crystal Springs Lake	Sussex
9	2	Deer Trail Lake	Sussex
10	2	Lake Mohawk	Sussex
11	2	Sleepy Valley Lake	Sussex

*The drainage area/lakeshed for each lake may encompass municipalities beyond the identified County in which the lake is located.

Nonpoint and stormwater point sources are the primary sources of fecal coliform loads to the impaired lakes. Source loads were estimated for land uses in each watershed using the Watershed Treatment Model (WTM) (WTM, 2001). The WTM model is a series of spreadsheets that quantifies the loading of pathogen indicators based on land use distribution, stream network length in the watershed, and annual rainfall. Traditional point sources, i.e., treatment facilities that have a sanitary waste component, were considered de minimus due to the use of effective disinfection practices by these facilities. TMDLs were developed based on an analysis of the existing pathogen indicator data compared to Health Department indicator criteria and the loading capacity has been allocated among the point and nonpoint sources.

This report establishes eleven TMDLs that were adopted as amendments to the appropriate area-wide water quality management plan in accordance with N.J.A.C. 7:15-3.4(g). This report was developed consistent with EPA's May 20, 2002 guidance document entitled: "Guidelines for Reviewing TMDLs under Existing Regulations issued in 1992," (Sutfin, 2002) which describes the statutory and regulatory requirements for approvable TMDLs. These TMDLs were approved by EPA on September 28, 2007, and will be adopted as amendments to the Sussex County and Upper Delaware Water Quality Management Plans in accordance with N.J.A.C. 7:15-3.4 (g).

1.0 INTRODUCTION

In accordance with Section 303(d) of the Federal Clean Water Act (CWA) (33 U.S.C. 1315(B)), the State of New Jersey, Department of Environmental Protection (Department) is required biennially to prepare and submit to the EPA a report that identifies waters that do not meet or are not expected to meet water quality standards after implementation of technology-based effluent limitations or other required controls. This report is commonly referred to as the 303(d) List. In accordance with Section 305(b) of the CWA, the Department is also

required biennially to prepare and submit to the EPA a report addressing the overall water quality of the State's waters. This report is commonly referred to as the 305(b) Report or the Water Quality Inventory Report. The Integrated Water Quality Monitoring and Assessment Report combines these two assessments and assigns waterbodies to one of five sublists on the Integrated List of Waterbodies. Sublists 1 through 4 include waterbodies that are generally unimpaired (Sublist 1 and 2), have limited assessment or data availability (Sublist 3), are impaired due to pollution rather than pollutants, or have had a TMDL or other enforceable management measure approved by EPA (Sublist 4). Sublist 5 constitutes the traditional 303(d) list for waters impaired or threatened by one or more pollutants, for which a TMDL may be required.

In the New Jersey 2004 *Integrated Water Quality Monitoring and Assessment Report* the water quality impairments were identified by segment name and pollutant(s) or non-attained designated use responsible for the finding that the segment was impaired. Each segment was assessed using the data from one or more discrete monitoring locations that were determined to be representative of the water quality in that segment. This impaired segment delineation method was changed in 2006.

The *New Jersey 2006 Integrated Water Quality Monitoring and Assessment Report* now identifies impairments based on designated use attainment and then lists the parameters responsible for the non-attainment of the designated use. The assessments are conducted for each of the seven categories of designated use, which include aquatic life, recreational use (primary and secondary contact), drinking water, fish consumption, shellfish harvesting (if applicable), agricultural water supply use and industrial water supply use. In addition, lakes are assessed and listed separately if impaired. In the Northwest Water Region, the *2006 Integrated List of Waterbodies* currently identifies eleven lakes as impaired for pathogens. These lakes do not fully support primary contact recreation as evidenced by beach closings and water quality data that demonstrate exceedance of the water quality criterion that triggers closings.

A TMDL represents the assimilative or carrying capacity of a waterbody, taking into consideration point and nonpoint sources of pollutants of concern, natural background, and surface water withdrawals. A TMDL quantifies the amount of a pollutant a waterbody can assimilate and still conform to applicable water quality standards and support designated uses. The TMDL or loading capacity is allocated to known point and nonpoint sources in the form of waste load allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources, and a margin of safety (MOS).

Recent EPA guidance (Sutfin, 2002) describes the statutory and regulatory requirements for approvable TMDLs, as well as additional information generally needed for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations. These TMDLs address the following required items in the May 20, 2002 guideline document:

1. Identification of waterbody(ies), pollutant of concern, pollutant sources and priority ranking.
2. Description of applicable water quality standards and numeric water quality target(s).
3. Loading capacity – linking water quality and pollutant sources.
4. Load allocations.
5. Wasteload allocations.
6. Margin of safety.
7. Seasonal variation.
8. Reasonable assurances.
9. Monitoring plan to track TMDL effectiveness.
10. Implementation (USEPA is not required to and does not approve TMDL implementation plans).
11. Public Participation.

This report establishes eleven TMDLs for pathogens to address the impaired lakes in the Northwest Water Region. All of the impaired lakes were listed for fecal coliform and assigned a high priority on the *2004 Integrated List of Waterbodies* and a High priority ranking on the *2006 Integrated List of Waterbodies* Sublist 5. These TMDLs include management approaches to reduce pathogen contributions from various sources in order to attain applicable surface water quality standards and fully support the designated primary contact recreation use. These TMDLs affect the drainage areas of the impaired lakes due to the fact that the implementation measures must be applied to the contributing drainage areas, not just the impaired lakes. Following approval of the TMDLs by EPA, pathogens will be removed as a basis of impairment in the next Integrated List. In addition to the pathogen impairments, Lake Hopatcong was listed for mercury and unknown pollutants on the *2006 Integrated List*. These pollutants will be addressed in future TMDL efforts. A total phosphorus TMDL was approved by EPA in 2003 for Lake Hopatcong.

2.0 POLLUTANT OF CONCERN AND AREA OF INTEREST

The pollutant of concern for these TMDLs is pathogens. Standards are established in terms of indicator organisms which, when present in excess of the standard, suggest that the waterbody is not suitable for primary contact recreation because of an elevated risk of disease. New Jersey Surface Water Quality Standards (SWQS) include pathogen indicator criteria for the assessment of the recreational use (primary and secondary contact recreation) for all waterbodies. However, for lakes with bathing beaches, the New Jersey Health Department Standards N.J.A.C. 8:26-7.18 establish the basis for beach closings. These standards are more stringent than the Surface Water Quality Standards. As a result, the Health Department Standards will serve as the water quality target for these TMDLs. The Health Department Standards and SWQS are summarized as follows:

> **As stated in N.J.A.C. 8:26-7.18 Microbiological water quality standards for bathing beaches:**

The multiple-tube fermentation technique for fecal coliforms shall be conducted in accordance with the procedures set for in Method 9222D Fecal Coliform Membrane Filter Procedure or Method 9221E.2. Fecal Coliform MPN Procedure (A-1 medium) found in the 19th edition of "Standard Methods for the Examination of Water and Wastewater." American Public Health Association, incorporated herein by reference, as amended and supplemented. The estimated fecal coliform concentrations shall not exceed 200 fecal coliform per 100 milliliters.

As stated in N.J.A.C. 7:9B-1.14(d) of the New Jersey Surface Water Quality Standards Fresh Water 2 (FW2) waters:

1. Bacterial quality (Counts/100 ml)

    ii. Primary Contact Recreation:

        (2) E. Coli levels shall not exceed a geometric mean of 126/100 ml or a single sample maximum of 235/100 ml.

The lakes assessed as impaired based on water quality data and for which TMDLs have been developed are identified in Table 2 and depicted in Figures 1 and 2.

Table 2. Impaired Waterbodies as identified on the *2004 Integrated List of Waterbodies* and the *2006 Integrated List* for which Pathogen TMDLs are being adopted.

TMDL Number	WMA	Lake Assessment Unit Name	Lake Assessment Unit ID	2004 Status	2006 Status	County(s)*	Proposed Action
1	1	Lake Winona	Lake Winona-01	Sublist 5	Sublist 5	Morris/ Sussex	Adopt TMDL
2	1	Lake Hopatcong	Lake Hopatcong-01	Sublist 5	Sublist 5	Morris/ Sussex	Adopt TMDL
3	1	Green Valley Beach Campground	Green Valley Beach Campground-01	Sublist 5 (as Pequest River at Green Valley Beach Campground)	Sublist 5	Sussex	Adopt TMDL
4	1	Forest Lake	Forest Lake-01	Sublist 5	Sublist 5	Sussex	Adopt TMDL
5	1	Fox Hollow Lake	Fox Hollow Lake-01	Sublist 5	Sublist 5	Sussex	Adopt TMDL
6	1	Lackawanna Lake	Lackawanna Lake-01	Sublist 5	Sublist 5	Sussex	Adopt TMDL
7	1	Furnace Lake	Furnace Lake-01	Sublist 5	Sublist 5	Warren	Adopt TMDL
8	2	Crystal Springs Lake	Crystal Springs Pond -02	Sublist 5	Sublist 5	Sussex	Adopt TMDL
9	2	Deer Trail Lake	Deer Trail Lake-02	Sublist 5	Sublist 5	Sussex	Adopt TMDL

TMDL Number	WMA	Lake Assessment Unit Name	Lake Assessment Unit ID	2004 Status	2006 Status	County(s)*	Proposed Action
10	2	Lake Mohawk	Lake Mohawk-02	Sublist 5	Sublist 5	Sussex	Adopt TMDL
11	2	Sleepy Valley Lake	Sleepy Valley-02	Sublist 5	Sublist 5	Sussex	Adopt TMDL

*The drainage area/lakeshed for each lake may encompass municipalities beyond the identified County in which the lake is located.

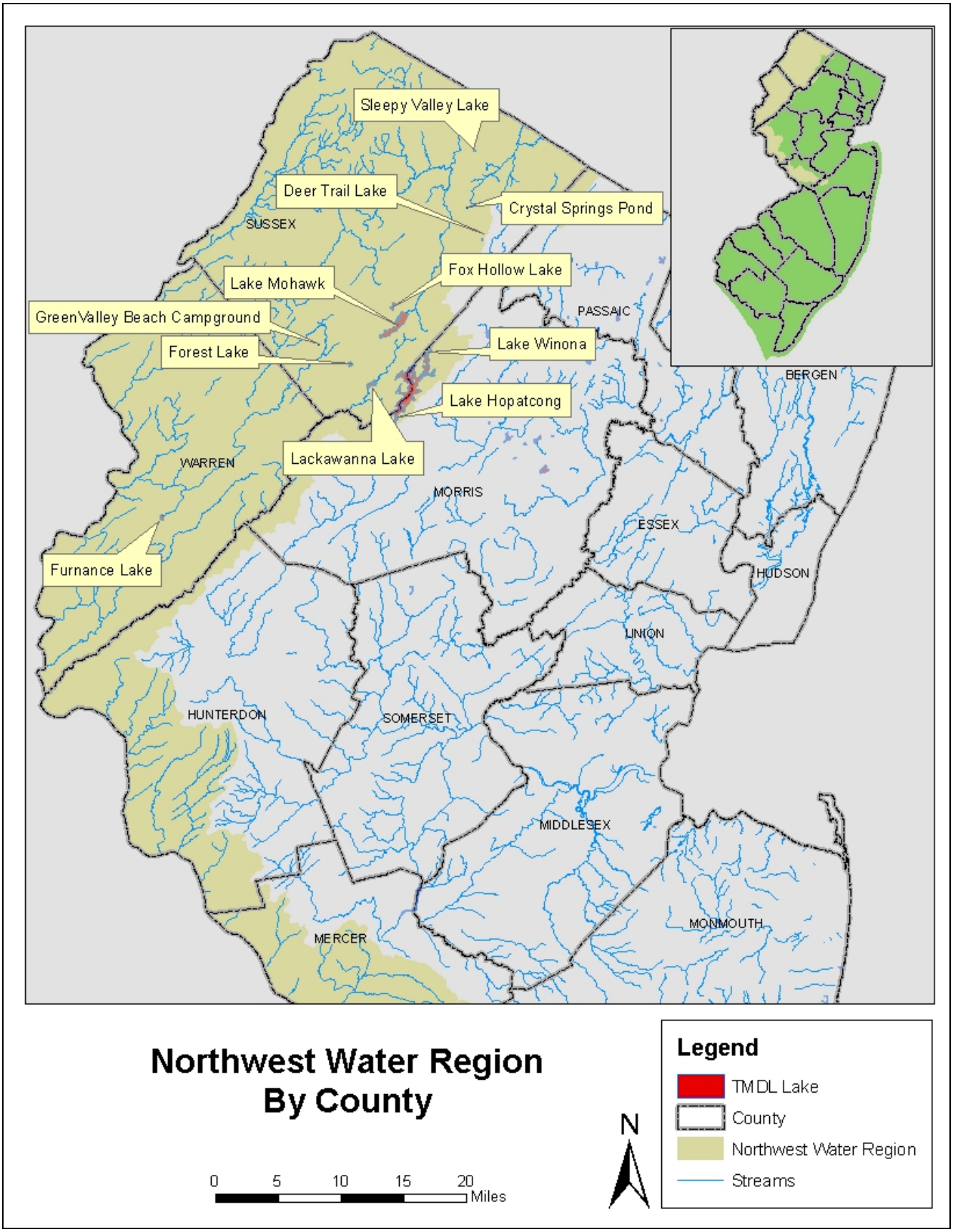

Figure 1. Pathogen impaired lakes in the Northwest Water Region by county.

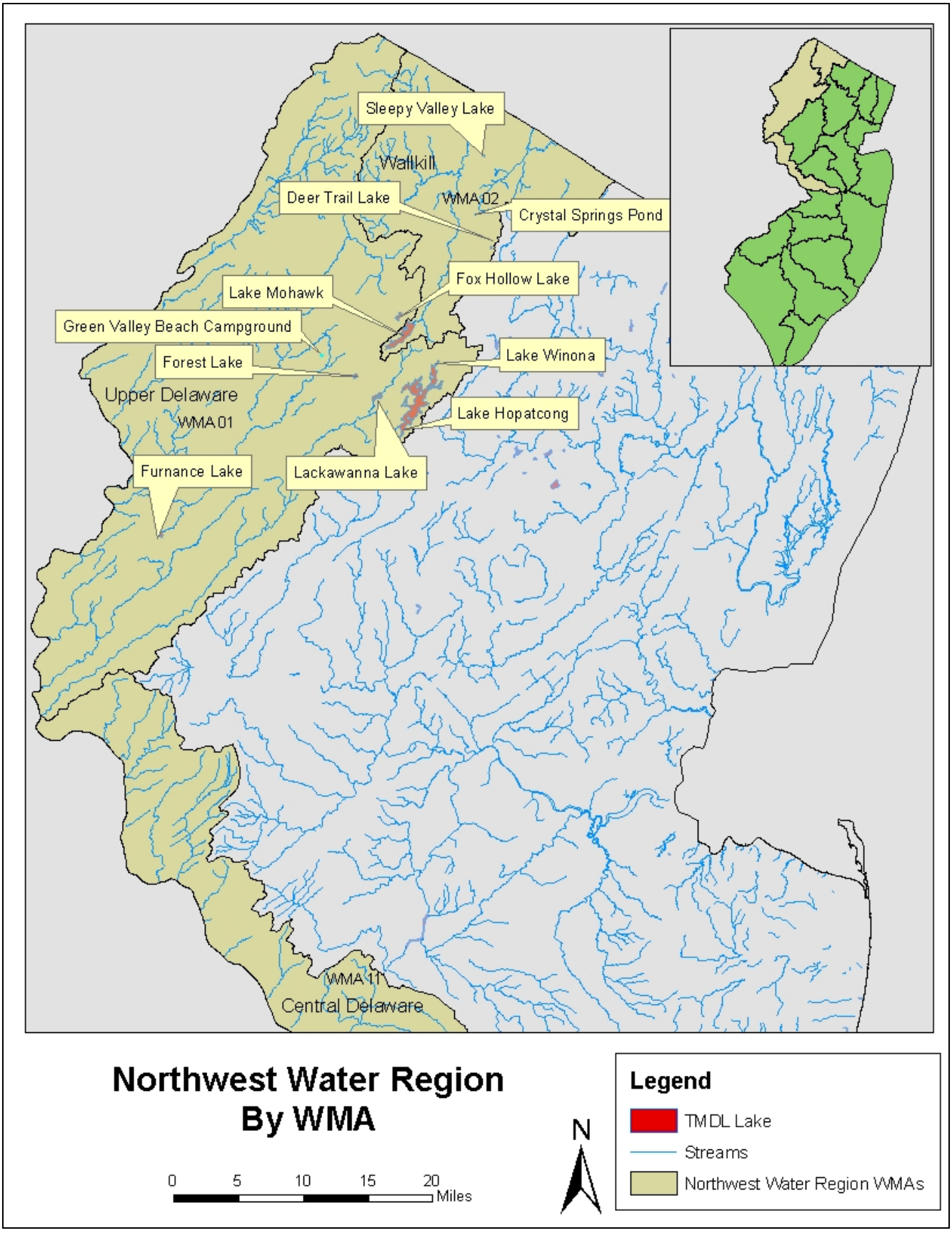

Figure 2. Pathogen impaired lakes in the Northwest Water Region by WMA.

Deer Trail Lake, Furnace Lake, Lackawanna Lake, Lake Hopatcong and Lake Winona are classified as Fresh Water 2 (FW2), Trout Maintenance (TM). All other impaired lakes addressed in this document are classified as FW2, Non-Trout (NT).

In all FW2 waters, the designated uses are (NJAC 7:9B-1.12):

1. Maintenance, migration and propagation of the natural and established aquatic biota;
2. Primary and secondary contact recreation;
3. Industrial and agricultural water supply;
4. Public potable water supply after conventional filtration treatment (a series of processes including filtration, flocculation, coagulation and sedimentation, resulting in substantial particulate removal but no consistent removal of chemical constituents) and disinfection; and
5. Any other reasonable uses.

3.0 SOURCE ASSESSMENT

A source assessment was conducted to identify and characterize potential pathogen sources that may be impacting water quality in the listed waters. Both point and nonpoint sources were considered in TMDL development. Source assessment also includes the determination of the relative contribution of the primary bacteria sources to facilitate proper management responses through TMDL implementation. A variety of information was used to characterize possible pathogen sources including land use information gathered for each watershed, point source information, literature sources, and other available data.

3.2 Assessment of Point Sources

For TMDL development purposes, point sources include domestic and industrial wastewater treatment plants that discharge to surface waters, as well as surface water discharges of stormwater subject to regulation under the National Pollutant Discharge Elimination System (NPDES). This includes facilities with individual or general industrial stormwater permits, Tier A municipalities, and federal, interstate agency, state, and county facilities regulated under the New Jersey Pollutant Discharge Elimination System (NJPDES) municipal stormwater permitting program. Tier A municipalities are generally located within the more densely populated regions of the state or along the coast. These municipalities meet the population size requirements of EPA's Municipal Separate Storm Sewer System (MS4) program for regulating urban stormwater discharges. Stormwater point sources, like stormwater nonpoint sources, derive their pollutant loads from runoff from land surfaces and load reduction is accomplished through the use of best management practices (BMPs). The distinction is that stormwater point sources are regulated under the Clean Water Act (under the MS4 program). Stormwater point sources will be addressed through the management practices required through the MS4 permits.

Wastewater treatment facilities and Tier A municipalities that directly discharge to the pathogen impaired lakes in the Northwest Water Region are identified in Appendix B. Per Department NJPDES Regulation, N.J.A.C. 7:14A-12.5(a), "All wastewater that could contain pathogenic organisms such as fecal coliform and/or enterococci organisms shall be subject to continuous year round disinfection prior to discharge into surface waters." Therefore, loads from wastewater treatment facilities were considered de minimus, consistent with previous pathogen TMDLs developed by the Department. The NJPDES permit limits for these point sources will not be changed as a result of these TMDLs and will remain a 200 cfu/100 ml monthly geometric mean and a 400 cfu/100 ml weekly geometric mean.] Stormwater loads from Tier A MS4 systems are point sources that can be significant. These loads were estimated using the watershed loading methods described in the nonpoint source section, as they will be addressed through BMPs.

3.3 Assessment of Nonpoint Sources

Nonpoint sources that may affect lakes include stormwater discharges that are not subject to regulation under the Clean Water Act, including Tier B municipalities, direct stormwater runoff from land surfaces, as well as malfunctioning sewage conveyance systems, failing or inappropriately located septic systems, and direct contributions from wildlife, livestock and pets. Tier B municipalities are generally located in more rural, non-coastal regions of the state.

Watershed Treatment Model (WTM) (WTM, 2001), a steady-state spreadsheet model, was chosen to estimate nonpoint source bacteria loads for these TMDLs. WTM simulates loadings generated by watershed washoff processes. The WTM model was selected because it encompasses local rainfall data and stream length information to better tailor load estimates. In addition, it has been successfully applied in previous coastal TMDL studies, including the development of pathogen TMDLs for impaired shellfish waterbodies in New Jersey. The goal of applying WTM is to characterize all the point and nonpoint sources, as available data allows, in the existing system and to determine their relative contributions to the waterbody of interest. The loading values thus derived serve as the reference point from which reductions are made to meet TMDL targets.

The WTM model is a series of spreadsheets that quantifies the loading of pathogen indicators based on land use distribution, stream network length in the watershed, and annual rainfall. The model is designed as a planning level tool for watersheds that do not have sufficient data for complex modeling applications. Pathogen concentrations in runoff and receiving waters are highly variable due to many factors, therefore average annual land use loads derived using the WTM model are gross estimates. Although the WTM model has several tiers of data specificity, loading estimates can be calculated with simple land use data, as they were for these lake TMDLs. Land use loads are calculated on an annual basis by using a series of coefficients for runoff volume and pathogen loading derived from scientific literature. General land use categories are assigned either a coefficient that is then multiplied by an annual runoff volume to calculate an annual load (e.g., urban land uses) or an annual unit

area load that is applied as a function of land use (e.g., rural land uses). These coefficients are presented in Table 3 and discussed in the WTM user manual (Caraco, 2001). According to the WTM user manual, the urban loading coefficient was based on the median urban runoff value derived from Nationwide Urban Runoff Program (NURP) monitoring data (Pitt, 1998). Loading values for rural land uses were taken from Horner et. al., 1994. Note that barren land is not represented in the WTM model, therefore it was assumed that the forest loading value was reasonable for this land use type.

Table 3. Default WTM land use categories and loading variables.

WTM Land Use	Corresponding New Jersey Land Uses	Average % Impervious Cover	Fecal Coliform Conc. (MPN/100 ml) or Annual Load (billion/acre)
Low Density Residential	Low Density Residential, Rural Residential, Recreational Land, Athletic Fields	19	20,000
Medium Density Residential	Medium Density Residential, Mixed Residential, Mixed Urban or Built-Up, Other Urban or Built-Up, Military Reservations, No Longer Military	35	20,000
High Density Residential	High Density Residential	56	20,000
Commercial	Commercial Services	71	20,000
Roadway	Transportation/Communication/Utilities	39	20,000
Industrial	Industrial, Industrial/Commercial	78	20,000
Forest	Forest/Wetland	0	Load: 12 billion/acre
Rural	Agriculture	0	Load: 39 billion/acre
Barren (replaced "Vacant Lots" category in WTM)	Barren	2	Load: 12 billion/acre (estimated)

The watershed for each TMDL waterbody was delineated using the Hydrologic Unit Coverage (HUC-14 digit) developed by NJDEP, digital elevation model (DEM) data, the National Hydrography Dataset (NHD) stream coverage for New Jersey, and ArcHydro, a watershed delineation tool available as an extension for the ArcGIS geospatial mapping software suite. Land use data for each watershed was obtained from the 2002 land use coverage developed for New Jersey's WMAs. Land use categories were consolidated into broader groups for use in estimating land-based loads using the WTM model and for presenting the loading results. The percent impervious information for each land use category was derived from the percent impervious information in the Department's GIS land use coverage, averaged across similar land uses. The bacterial loads for urban areas in each watershed were calculated based on the default fecal coliform concentration literature value for urban land uses, the average percent impervious cover, and the annual runoff volume calculated by the WTM model. Agricultural, forest, and barren land use loads were calculated based on the specific loading rate for each category. The literature loading rate for forested land was applied to wetland areas to estimate a wetland land use load. Waterways were not included in loading calculations based on WTM model assumptions.

Direct contributions from illicit discharges, livestock, pets, and wildlife (e.g. seagulls, geese, and other waterfowl in particular) were not estimated based on the lack of site-specific information needed to represent these sources. Population estimates, bacteria production rates, and other information would be needed to estimate these sources. Bacteria may also be present in the sediment in some areas, as a result of contamination from stormwater, failing septic systems, malfunctioning sewer systems, agricultural runoff, and other sources. For these TMDLs, the loads contributed by wildlife, sediment, and the other sources were assumed to be included in the land use loading coefficients.

The drainage area and land use distribution of the impaired watersheds are presented in Table 4. Maps of the watershed land use distributions are presented in Appendix C.

Table 4. Land use area distributions for impaired watersheds in the Northwest Water Region.

WMA	Lake Assessment Unit ID	Agriculture		Barren Land		Forest		Urban		Water		Wetland		Total Area
		km²	%	km²	%	km²	%	km²	%	km²	%	km²	%	km²
1	Forest Lake-01	0.00	0.0	0.00	0.0	0.37	34.8	0.50	47.4	0.19	17.9	0.00	0.0	1.05
1	Fox Hollow Lake-01	0.05	1.3	0.02	0.5	1.27	35.0	1.28	35.1	0.40	10.9	0.63	17.3	3.64
1	Furnace Lake-01	0.89	12.7	0.07	1.0	4.09	58.1	1.04	14.7	0.24	3.4	0.71	10.1	7.04
1	Green Valley Beach Campground-01	0.05	40.8	0.00	0.0	0.01	12.3	0.04	37.4	0.01	8.6	0.00	0.9	0.12
1	Lackawanna Lake-01	0.47	1.4	0.36	1.1	22.35	65.2	5.89	17.2	1.80	5.2	3.44	10.0	34.31
1	Lake Hopatcong-01	0.01	0.0	1.00	1.5	31.90	48.5	16.81	25.6	10.91	16.6	5.11	7.8	65.73
1	Lake Winona-01	0.00	0.0	0.00	0.0	2.54	73.7	0.48	14.1	0.04	1.2	0.38	11.0	3.44
2	Crystal Springs Pond -02	0.00	0.0	0.01	3.7	0.03	9.5	0.24	83.8	0.01	3.0	0.00	0.0	0.28
2	Deer Trail Lake-02	0.00	0.0	0.00	0.0	0.60	72.5	0.17	20.4	0.04	5.1	0.02	2.0	0.83
2	Lake Mohawk-02	0.00	0.0	0.01	0.1	2.79	25.2	5.02	45.4	3.11	28.1	0.14	1.2	11.06
2	Sleepy Valley-02	0.00	0.0	0.02	0.5	1.80	54.0	0.91	27.2	0.25	7.6	0.36	10.7	3.34

4.0 WATER QUALITY ANALYSIS

Relating pathogen sources to concentrations of indicator organisms in the impaired waters is distinguished from quantifying that relationship for other pollutants given the inherent variability in population size and dependence not only on physical factors such as temperature and soil characteristics, but also on less predictable factors such as re-growth media. Since bacteria loads and concentrations can vary many orders of magnitude over short distances and over time at a single location, dynamic water quality models can be very difficult to calibrate. Options available to control nonpoint sources of bacteria typically include measures such as sewage infrastructure improvements, goose management strategies, pet waste ordinances, agricultural conservation management plans, and septic system replacement and maintenance. The effectiveness of these control measures is not easily measured relative to observed ambient concentrations. Given these considerations, detailed water quality modeling was not selected for determining the load reductions needed to attain standards and support the designated primary contact recreation use.

Fecal coliform data collected by county and township municipal health departments were used as the basis for TMDL development for the listed pathogen impaired lakes. These data were reviewed to identify potential data excursions in accordance with the Quality Assurance Project Plan (QAPP) that was developed for this study (QAPP, 2007). The percent reduction required to meet New Jersey bathing beach requirements was calculated based on comparing the maximum fecal coliform concentration recorded for each lake to the TMDL target (200 cfu/100 ml). The data available for each lake are included in Appendix D.

4.1 Seasonal Variation/Critical Conditions

The technical approach used to develop these TMDLs includes consideration of seasonal variability and critical conditions. The TMDL lakes are listed as impaired based on the designated primary contact bathing use. Water quality criteria for bathing beaches are established by the New Jersey Department of Health (NJDOH), which conducts monitoring at the municipal level in support of meeting the applicable criteria. Bathing beaches are typically in use during the late spring and summer months and data collection efforts are coordinated to coincide with this time period (May-September). TMDL loading reductions are based on the single sample maximum concentration identified in the record of observed in-lake water quality, therefore, TMDL development is based on the highest concentration observed for the time period of greatest exposure. Seasonal variability is of less importance because of the need to meet NJDOH bathing beach requirements during the summer critical condition period. TMDL loads are presented as average annual loads, which incorporate the summer critical condition period and the average load contributed during the other seasons.

4.2 Margin of Safety

A Margin of Safety (MOS) is provided to account for "lack of knowledge concerning the relationship between effluent limitations and water quality" (40 CFR 130.7(c)). For these TMDLs, both an implicit and explicit Margin of Safety (MOS) were incorporated. An implicit

MOS was incorporated by using conservative assumptions, including treating fecal coliform as a conservative substance (source loads were estimated without including die-off rates, soil incorporation, etc.) and using conservative methods to estimate land-based loads. In addition, a 5% explicit MOS was calculated for each lake.

5.0 TMDL CALCULATIONS

Pathogen load percent reductions were calculated by comparing the maximum fecal coliform concentration recorded for each lake to the TMDL target concentration (200 cfu/100 ml). Load capacities were the remaining loads after applying the required reductions on the current loads. In addition, 5% of the load capacity was reserved as the explicit MOS (see example below). The percent reduction specified for each lake was applied equally to pathogen sources in each watershed except in cases where load reductions could be met without reducing the loads contributed by forest, wetlands and barren lands: in such cases these loadings were not reduced in the TMDL allocation. In cases where load reductions on these land use sources were greater than or equal to 99.5%, the percent reduction specified for each lake was applied equally to all pathogen sources including forest and barren land loads.

Percent Reduction = (1 – TMDL target conc./max conc.) x 100
Load Capacity = (1 – percent reduction) * overall current load (using WTM)
MOS = 5% * Load capacity
Overall percent reduction = 1 – (Load capacity – MOS) / overall current load
Overall current load = agricultural and urban land use loads + forest, wetland and barren land loads

When $1 - \frac{Load\ Capacity - MOS - Forest, Wetland\ and\ Barren\ Land\ Load}{Agricultural\ and\ Urban\ LandUseLoad} \geq 99.5\%$,

Require the same percent reduction on Forest, Wetland and Barren land loads as on other land use loads;

Otherwise,

Zero percent reduction on Forest, Wetland and Barren lands loads

5.1 Wasteload Allocations and Load Allocations

WLAs were established for municipal stormwater discharges subject to regulation under the CWA. LAs were established for all stormwater sources that are not subject to regulation under the CWA and for all other nonpoint sources. Stormwater point sources that received a WLA were distinguished from stormwater sources receiving a LA on the basis of land use type and municipal tier designation (Tier A/Tier B).

This distribution of loading capacity between WLAs and LAs is consistent with recent EPA guidance that clarifies existing regulatory requirements for establishing WLAs for stormwater discharges (Wayland, November 2002). Stormwater discharges are captured

within the runoff sources quantified according to land use, as described previously. Distinguishing between regulated and unregulated stormwater is necessary in order to express WLAs and LAs numerically; however, "EPA recognizes that these allocations might be fairly rudimentary because of data limitations and variability within the system" (Wayland, November 2002, p.1). Therefore, allocations are established according to source categories as shown in Table 5. This demarcation between WLAs and LAs based on land use source categories is not perfect, but it represents the best estimate defined as narrowly as data allow. The Department acknowledges that there may be stormwater sources in the residential, commercial, industrial, and mixed urban runoff source categories that are not NJPDES-regulated. Nothing in these TMDLs shall be construed to require the Department to regulate a stormwater source under NJPDES that would not already be regulated as such, nor shall anything in these TMDLs be construed to prevent the Department from regulating a stormwater source under NJPDES.

Table 5. Assignment of WLAs and LAs for stormwater point sources and nonpoint sources.

Land Use Source Category	Municipal Tier	TMDL Allocation Type
High density residential	A	WLA
Medium density residential (incl. mixed residential, mixed urban, other urban, military reservations, and no longer military)	A	WLA
Low density residential (incl. rural residential, recreational land, and athletic fields)	A	WLA
Commercial	A	WLA
Industrial	A	WLA
Roadways	A	WLA
High density residential	B	LA
Medium density residential (incl. mixed residential, mixed urban, other urban, military reservations, and no longer military)	B	LA
Low density residential (incl. rural residential, recreational land, and athletic fields)	B	LA
Commercial	B	LA
Industrial	B	LA
Roadways	B	LA
Agricultural	N/A	LA
Forest/Wetland	N/A	LA
Barren land	N/A	LA

A summary of the WLAs, LAs, and MOS is provided for each lake in Table 6 and source loads and allocations are presented in Table 7. As described above, when the loads contributed by forest/wetland/barren lands were not reduced in the TMDL allocation table, the load reduction for urban lands and agricultural lands was increased proportionally to meet the overall percent reduction required for each lake. Note that the overall percent reduction shown in Tables 6 and 7 takes into account the 5% explicit MOS if not based on the previously established stream Fecal Coliform TMDL.

In cases where impaired lakeshed is hydrologically connected to a streamshed addresssed in an established Fecal Coliform TMDL or to another impaired lakeshed, different approaches were utilized to calculate the load reduction for each "nested" watershed.

Lakeshed connected with the Fecal Coliform TMDL established streamshed

If the entire lakeshed is located within the impaired streamshed, the more stringent overall percent reduction between the lake and the stream is applied to the lakeshed. When the streamshed is part of the lakeshed, the rivershed is treated as an upper stream "lake" shed. The same approach, as described below for the nested lakesheds, was used to determine the adjusted load reduction for different areas.

Lakeshed connected with another impaired lakeshed

The following methodology was used to determine the adjusted percent reduction for the nested lake watersheds:

1. Existing pathogen loads calculated for each lake watershed (using WTM) were reduced based on the overall percent reduction that was calculated from the observed lake water quality data. The reduced load was termed the target load.
2. The target load for the upstream watershed was subtracted from the target load of the downstream watershed, giving a target load for the downstream (local) watershed area. The existing load for the downstream (local) watershed was calculated similarly.
3. If the target load for the downstream (local) watershed area was less than or equal to zero, the downstream lake's higher percent reduction needed to be applied to the upper stream lakeshed. This means that the entire drainage area of the downstream lake is ruled by the downstream lake's reduction percentage.
4. If the target load of the downstream (local) watershed area was higher than zero, the percent difference between the existing and target loads for the downstream (local) watershed was calculated. This adjusted percent reduction superseded the original downstream lake percent reduction and was used as the required percent reduction for the downstream (local) watershed area while the upstream lakeshed stayed with the original overall percent reduction. The adjusted percent reduction would be higher than the original overall percent reduction for the downstream lake when the upstream lake required a less percent reduction than the downstream lake and less than the original value if the upstream lake required a higher percent reduction than the downstream lake.

Table 6. TMDL calculations for pathogen impaired lakes in the Northwest Water Region.

WMA	Lake Assessment Unit ID	WLA (10^6 colonies/yr)	LA (10^6 colonies/yr)	MOS (10^6 colonies/ yr)	TMDL (10^6 colonies/ yr)	Overall % Reduction	% MOS	Reduction from associated Stream TMDL
1	Forest Lake-01	5.13E+02	1.72E+01	2.79E+01	5.58E+02	98.42%	5.00%	
1	Fox Hollow Lake-01[c]	1.48E+03	1.23E+02	8.46E+01	1.69E+03	98.00%	N/A	98%
1	Furnace Lake-01[c]	0.00E+00	5.47E+03	2.88E+02	5.76E+03	93.00%	N/A	93%
1	Green Valley Beach Campground-01	7.85E-02	2.28E+02	1.20E+01	2.40E+02	90.50%	5.00%	
1	Lackawanna Lake-01	2.23E+04	5.77E+03	1.48E+03	2.95E+04	92.96%	5.00%	
1	Lake Hopatcong-01[b]	4.37E+04	3.35E+03	2.48E+03	4.96E+04	96.79%[b]	5.00%	
1	Lake Winona-01[a]	8.92E+02	1.64E+02	5.56E+01	1.11E+03	98.10%	5.00%	
2	Crystal Springs Pond -02	0.00E+00	5.02E+03	2.64E+02	5.28E+03	75.32%	5.00%	
2	Deer Trail Lake-02	0.00E+00	3.08E+03	1.62E+02	3.24E+03	74.25%	5.00%	
2	Lake Mohawk-02[d]	5.25E+03	1.50E+02	2.84E+02	5.68E+03	98.27%	5.00%	90%
2	Sleepy Valley-02[c]	0.00E+00	3.30E+03	1.74E+02	3.48E+03	95.00%	N/A	95%

a. within the watershed of Lake Hopatcong and stays with its own reduction

b. Reduction on the local Lake Hopatcong watershed is less than the original overall percent reduction (96.83%) after taking into account Lake Winona's higher reduction.

c. lake shed located within a stream watershed and goes with the stream's reduction

- Fox Hollow Lake is nested with the watershed of Paulins Kill at Balesville, on which a reduction of 98% was required (NJDEP, 2003).
- Furnace Lake is nested with the watershed of Pequest River at Pequest, on which a reduction of 93% was required (NJDEP, 2003).
- Sleepy Valley is nested with the watershed of Wallkill River near Unionville, on which a reduction of 95% was required (NJDEP, 2003).

d. lake shed located within a stream watershed and stays with its own reduction

- Lake Mohawk is nested with the watershed of Wallkill River at Sparta, on which a reduction of 90% was required (NJDEP, 2003).

Table 7. Northwest Water Region land-based load allocations.

WMA	Lake Assessment Unit ID	Overall % Reduction	Agriculture			Barren Land			Forest/Wetland			Urban Total (WLA)			Urban Total (LA)		
			Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)
1	Forest Lake-01	98%	0.00E+00	98%	0.00E+00	0.00E+00	98%	0.00E+00	1.09E+03	98%	1.72E+01	3.24E+04	98%	5.13E+02	0.00E+00	98%	0.00E+00
1	Fox Hollow Lake-01	98%	4.62E+02	98%	9.25E+00	5.83E+01	98%	1.17E+00	5.64E+03	98%	1.13E+02	7.42E+04	98%	1.48E+03	0.00E+00	98%	0.00E+00
1	Furnace Lake-01	93%	8.61E+03	93%	6.03E+02	2.16E+02	93%	1.51E+01	1.42E+04	93%	9.96E+02	0.00E+00	93%	0.00E+00	5.51E+04	93%	3.86E+03
1	Green Valley Beach Campground-01	91%	4.68E+02	92%	3.61E+01	0.00E+00	0%	0.00E+00	4.67E+01	0%	4.67E+01	1.02E+00	92%	7.85E-02	1.89E+03	92%	1.45E+02
1	Lackawanna Lake-01	93%	4.50E+03	93%	3.17E+02	1.07E+03	93%	7.52E+01	7.65E+04	93%	5.38E+03	3.16E+05	93%	2.23E+04	0.00E+00	93%	0.00E+00
1	Lake Hopatcong-01	97%	1.01E+02	97%	3.25E+00	2.97E+03	97%	9.56E+01	1.01E+05	97%	3.25E+03	1.36E+06	97%	4.37E+04	0.00E+00	97%	0.00E+00
1	Lake Winona-01	98%	0.00E+00	98%	0.00E+00	0.00E+00	98%	0.00E+00	8.64E+03	98%	1.64E+02	4.70E+04	98%	8.92E+02	0.00E+00	98%	0.00E+00
2	Crystal Springs Pond -02	75%	0.00E+00	76%	0.00E+00	3.11E+01	0%	3.11E+01	7.87E+01	0%	7.87E+01	0.00E+00	76%	0.00E+00	2.02E+04	76%	4.91E+03
2	Deer Trail Lake-02	74%	0.00E+00	88%	0.00E+00	0.00E+00	0%	0.00E+00	1.84E+03	0%	1.84E+03	0.00E+00	88%	0.00E+00	1.01E+04	88%	1.24E+03
2	Lake Mohawk-02	98%	0.00E+00	98%	0.00E+00	2.67E+01	98%	4.61E-01	8.67E+03	98%	1.50E+02	3.04E+05	98%	5.25E+03	0.00E+00	98%	0.00E+00

WMA	Lake Assessment Unit ID	Overall % Reduction	Agriculture			Barren Land			Forest/Wetland			Urban Total (WLA)			Urban Total (LA)		
			Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)	Existing Load (10^6 colonies/yr)	Percent Reduction	Allocated Load (10^6 colonies/yr)
2	Sleepy Valley-02	95%	1.33E+01	95%	6.63E-01	4.65E+01	95%	2.32E+00	6.41E+03	95%	3.21E+02	0.00E+00	95%	0.00E+00	5.96E+04	95%	2.98E+03

5.2 Reserve Capacity

Reserve capacity is an optional means of reserving a portion of the loading capacity to allow for future growth. Reserve capacities are not included for the lakes addressed in these TMDLs. Wastewater treatment facilities will continue to be required to achieve disinfection. Nonpoint source reduction strategies applied to land uses will be equally effective with respect to existing and future use of the land.

6.0 FOLLOW - UP MONITORING

Monitoring requirements for the listed lakes are established under NJDOH regulations for state bathing beaches. NJDOH regulations include sampling requirements before and during seasonal operation. Before bathing beaches are opened each year, NJDOH requires a pre-operational assessment, which includes

- A review of historical sampling and epidemiological data
- A field investigation of the bathing and surrounding areas to identify sources of potential contamination
- A sampling of waters in the bathing area and in areas of suspected sources of contamination

During the bathing season, NJDOH requires that bathing beach water be sampled one week prior to opening and at one-week intervals once in use. Samples are collected during periods of maximum user load and from depths used for bathing. In cases where water samples were found to meet the NJDOH water quality criterion for three consecutive months in the prior year, operators can apply for biweekly sampling responsibilities (NJDOH, 2004).

7.0 IMPLEMENTATION

Management measures are "economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint and stormwater sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint and stormwater source pollution control practices, technologies, processes, citing criteria, operating methods, or other alternatives" (USEPA, 1993).

Development of effective management measures depends on accurate source assessment. Coliform bacteria are contributed to the environment from a number of categories of sources including human, domestic or captive animals, agricultural practices, and wildlife. Coliform bacteria from these sources can reach waterbodies directly, through overland runoff, or through sewage or stormwater conveyance facilities. Each potential source will respond to one or more management strategies designed to eliminate or reduce that source of coliform bacteria. Each management strategy has one or more entities that can take lead responsibility to effect the strategy. Various funding sources are available to assist in accomplishing the management strategies. The Department will address the sources of impairment by matching strategies with sources, selecting responsible entities and aligning available resources to effect implementation.

For example, the stormwater discharged to the impaired waterbodies through "municipal separate storm sewer systems" (MS4s) are regulated under the Department's Municipal Stormwater Regulation Program. Under these rules and associated general permits, many municipalities (and various county, State, and other agencies) are required to implement various control measures that should substantially reduce bacteria loadings, including measures to eliminate "illicit connections" of domestic sewage and other waste to the MS4s. Measures that are currently in effect include ordinances to manage pet waste, prohibit feeding of unconfined wildlife on public property, clean catch basins, perform good housekeeping at maintenance yards, and provide related public education and employee training. These measures are required in accordance with the Department's Municipal Stormwater Regulation program. The Department has provided State funds as well as a portion of its Clean Water Act 319(h) pass through grant funds to assist municipalities in meeting these requirements.

Sewage conveyance facilities are potential sources of fecal coliform in that equipment failure or operational problems may result in the release of untreated sewage. These sources, once identified, can be eliminated through appropriate corrective measures that can be affected through the Department's enforcement authority. Inadequate on-site sewage disposal can also be a source of fecal coliform. Systems that were improperly designed, located or maintained may result in surfacing of effluent; illicit remedies such as connections to storm sewers or streams add human waste directly to waterbodies. Once these problems have been identified through local health departments, sanitary surveys, or other means, alternatives to address the problems can be evaluated and the best solution implemented. The New Jersey Environmental Infrastructure Financing Program, which includes New Jersey's State Revolving Fund, provides low interest loans to assist in correction of water quality problems related to stormwater and wastewater management.

Geese are migratory birds that are protected by the Migratory Bird Treaty Act of 1918 and other Federal and State Laws. Resident Canada geese do not migrate, but are nevertheless protected by this and other legislation. The United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS)-Wildlife Services program reports that the 1999 estimated population of non-migratory geese in New Jersey was 83,000. Geese may produce up to 1½ pounds of fecal matter a day and when the congregate in large numbers they can represent a locally significant source of coliform bacteria. This may warrant taking steps to reduce populations in areas with excessive populations.

Because geese are free to move about and commonly graze and rest on large grassy areas associated with schools, parks, golf courses, corporate lawns, and cemeteries, measures to reduce populations, where necessary, are best developed and conducted at the community level through a community-based goose damage management program. USDA's Wildlife Services program recommends that a community prepare a written Canada Goose Damage Management Plan that may include the following actions:

- Initiate a fact-finding and communication plan
- Enact and enforce a "no feeding" ordinance (already required per MS4 permits)
- Conduct goose damage control activities such as habitat modification

- Review and update land use policies
- Reduce or eliminate goose reproduction (permit required)
- Hunt geese to reinforce nonlethal actions (permit required)

Procedures such as handling nests and eggs, capturing and relocating birds, and the hunting of birds require a depredation permit from either the USDA APHIS Wildlife Services or U.S. Fish and Wildlife Services. Procedures requiring permits should be a last resort after a community has exhausted the other listed measures. The Department's draft guide *Management of Canada Geese in Suburban Areas, March 2001,* which may be found at www.state.nj.us/dep/watershedmgt under publications, provides extensive guidance on how to modify habitat to serve as a deterrent to geese as well as other prevention techniques such as education through signage and ordinances.

In coastal areas, other waterfowl are naturally present in significant numbers and vary seasonally with migratory patterns. Other wildlife contributions may include deer populations, which have been identified as a potential fecal coliform source in the impaired watersheds. The forested and low-density residential areas that provide deer habitat can be found in close proximity to the impaired watersheds. Deer have been evaluated in fecal coliform TMDLs by other States (e.g. Alabama and South Carolina) and could be a fecal coliform source in New Jersey. Management measures to reduce coliform bacteria contributed by wildlife are not generally practicable, but could respond to measures such as improved riparian buffers.

Agricultural activities are another example of potential sources of coliform bacteria. Possible contributors are direct contributions from livestock permitted to traverse streams and stream corridors, manure management from feeding operations, or use of manure as a soil fertilizer/amendment. Implementation of conservation management plans and best management practices are the best means of controlling agricultural sources of coliform bacteria. Several programs are available to assist farmers in the development and implementation of conservation management plans and best management practices. The Natural Resource Conservation Service is the primary source of assistance for landowners in the development of resource management pertaining to soil conservation, water quality improvement, wildlife habitat enhancement, and irrigation water management. The USDA Farm Services Agency performs most of the funding assistance. All agricultural technical assistance is coordinated through the locally led Soil Conservation Districts. The funding programs include:

- **The Environmental Quality Incentive Program (EQIP)** is designed to provide technical, financial, and educational assistance to farmers/producers for conservation practices that address natural resource concerns, such as water quality. Practices under this program include integrated crop management, grazing land management, well sealing, erosion control systems, agri-chemical handling facilities, vegetative filter strips/riparian buffers, animal waste management facilities and irrigation systems.

- **The Conservation Reserve Program (CRP)** is designed to provide technical and financial assistance to farmers/producers to address the agricultural impacts on water quality and to maintain and improve wildlife habitat. CRP practices include the establishment of filter

strips, riparian buffers and permanent wildlife habitats. This program provides the basis for the Conservation Reserve Enhancement Program (CREP).

- **The Conservation Reserve Enhancement Program** The New Jersey Departments of Environmental Protection and Agriculture, in partnership with the Farm Service Agency and Natural Resources Conservation Service, have established a $100 million dollar CREP agreement. The program matches $23 million of State money with $77 million from the Comodity Credit Corporation within USDA. Through CREP, financial incentives are offered for agricultural landowners to voluntarily implement conservation practices on agricultural lands. NJ CREP will be part of the USDA's Conservation Reserve Program (CRP). There will be a ten-year enrollment period, with CREP leases ranging between 10-15 years. The State intends to augment this program thereby making these leases permanent easements. The enrollment of farmland into CREP in New Jersey is expected to improve stream health through the installation of water quality conservation practices on New Jersey farmland.

Management strategies are summarized below in Table 8.

Table 8. Implementation management strategies.

Source Category	Responses	Potential Responsible Entity	Funding options
Human Sources			
Inadequate (per design, operation, maintenance, location, density) on-site disposal systems	Sanitary surveys, septic management programs/ordinances	Municipality	CWA 604(b) for confirmation of inadequate condition; Environmental Infrastructure Financing Program for construction of selected option
Inadequate or improperly maintained stormwater facilities; illicit connections	Measures required under Municipal Stormwater permitting program including any additional measures determined in the future to be needed through TMDL process	Municipality, State and County regulated entities, stormwater utilities	CWA 319(h); Environmental Infrastructure Financing Program for construction of selected option
Malfunctioning sewage conveyance facilities	Identify through source trackdown and repair	Owner of malfunctioning facility--compliance issue	User fees
Domestic/captive animal sources			
Pets	Pet waste ordinances	Municipalities for ordinance adoption and compliance	State source and CWA 319(h) assistance to municipalities to implement municipal stormwater regulations

Source Category	Responses	Potential Responsible Entity	Funding options
Horses, livestock, zoos	Confirm through source trackdown: SCD/NRCS develop conservation management plans	Property owner	EQIP, CRP, CREP
Agricultural practices	Confirm through source trackdown; SCD/NRCS develop conservation management plans, exercise CAFO/AFO authority if applicable	Property owner	EQIP, CRP, CREP
Wildlife			
Locally excessive populations of resident Canada geese or other waterfowl	Feeding ordinances; Goose Management BMPs	Municipality for ordinance; local community groups for BMPs	State source; CWA 319(h)
Indigenous wildlife	Confirm through trackdown; riparian buffer restoration; consider revising designated uses	State	State source

7.1 Specific Projects

In addition to the more generalized strategies described previously, a number of projects have been undertaken which are expected to aid in achieving the load reductions assigned to the impaired waterbodies. Ongoing activities to develop and implement watershed restoration plans are expected to result in additional specific projects to reduce pollutant loads.

Table 9. Northwest Water Region Outreach and Restoration Projects

WMA	FY	Funding Source	Recipient	Project Title	Grant Amount
1	2005	319(h)	Lake Hopatcong Commission	Implementation of Nonpoint Source Management Measures to Reduce the Phosphorus and Sediment Loads Entering Lake Hopatcong	$910,440
1	2006	CBT	Princeton Hydro, LLC	Refined Phosphorus TMDL and Restoration Plan for Lake Hopatcong and Lake Musconetcong	$94,000
1	2007	319(h)	Sussex County Municipal Utilities Authority, Wallkill River Watershed Management Group	Watershed Restoration Plan for the Paulins Kill Headwaters to Balesville: Three Phased Approach (Fox Hollow Lake)	$464,025

8.0 REASONABLE ASSURANCE

With the implementation of source reduction measures such as reducing the number of failing septic systems, leaching sewer lines, and controlling agricultural runoff, the Department has reasonable assurance that a significant improvement in the support of primary contact recreation in the impaired lakes will be attained. The results from on-going existing monitoring programs will be evaluated to determine effectiveness of the identified measures and if additional measures are needed.

9.0 PUBLIC PARTICIPATION

The Water Quality Management Planning Rules at N.J.A.C. 7:15-7.2 require the Department to initiate a public process prior to the development of each TMDL and to allow public input to the Department on policy issues affecting the development of the TMDL. Further, the Department shall adopt each TMDL as an amendment to the appropriate area-wide water quality management plan in accordance with procedures at N.J.A.C. 7:15-3.4(g). As part of the public participation process for the development and implementation of the subject TMDLs, the Department solicited information from stakeholder groups and from the general public directly and through a web posting beginning in October 2006. Additionally in November 2006, the list of impaired lakes was distributed to the New Jersey volunteering monitoring community, through the Watershed Watch Network. The Watershed Watch Network is a program acting as an umbrella for all of the volunteer monitoring programs within New Jersey. Interested parties had the opportunity to supply the Department with information about each via e-mail. The Department specifically solicited information regarding potential sources and/or current non point sources of pollution reduction projects within the impaired watersheds. Information received regarding potential sources of fecal contamination were assessed in the development of these TMDLs.

10.0 AMENDMENT PROCESS

Notice proposing these TMDLs appeared in the July 16, 2007 New Jersey Register and in a newspaper of general circulation in order to provide the public an opportunity to review the TMDL document and submit formal comments. In addition, a public hearing was held on August 17, 2007 at the New Jersey Department of Environmental Protection Public Hearing Room, 401 E. State St., Trenton, NJ 08608. There was an informal presentation from 1:00 p.m. to 2:00 p.m., followed by the public hearing from 2:00 p.m. until the end of testimony, whichever was earlier. One person attended the hearing and no testimony was given. Notice of the proposal and hearing was provided to affected counties, municipalities and lake associations in the watershed.

There were no comments received during the public notice period or at the public hearing. This TMDL was approved by EPA on September 28, 2007 and was adopted on October 19, 2009 as an amendment to the Sussex County and Upper Delaware Water Quality Management Plans in accordance with New Jersey's Water Quality Management Planning Rules at N.J.A.C. 7:15-3.4 (g).

APPENDIX A: REFERENCES

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APPENDIX B: NJPDES WASTEWATER TREATMENT FACILITIES, TIER A MUNICIPALITIES, TIER B MUNICIPALITIES

Northwest Water Region Wastewater Treatment Facilities

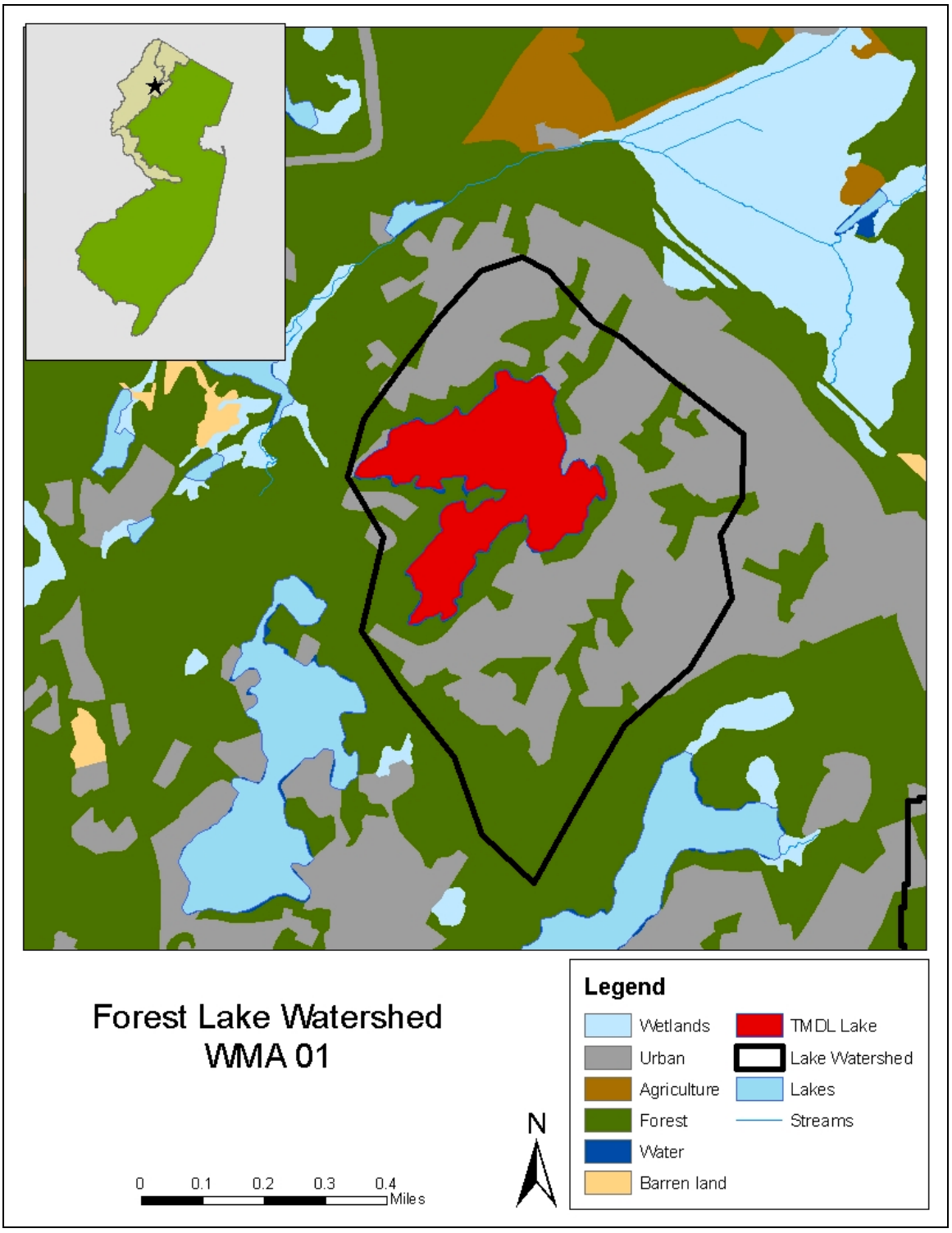
NJPDES ID	Facility Name	Pipe	FC Limit	Permit Category*	Receiving Waters/Associated Lake
NJ0021105	Jefferson Twp - Arthur Stanlick School	001A	NA	A	Lake Shawnee via unnamed trib/Lake Hopatcong
NJ0027049	Pope John XXIII High School	001A	NA	A	Fox Hollow Lake via unnamed trib

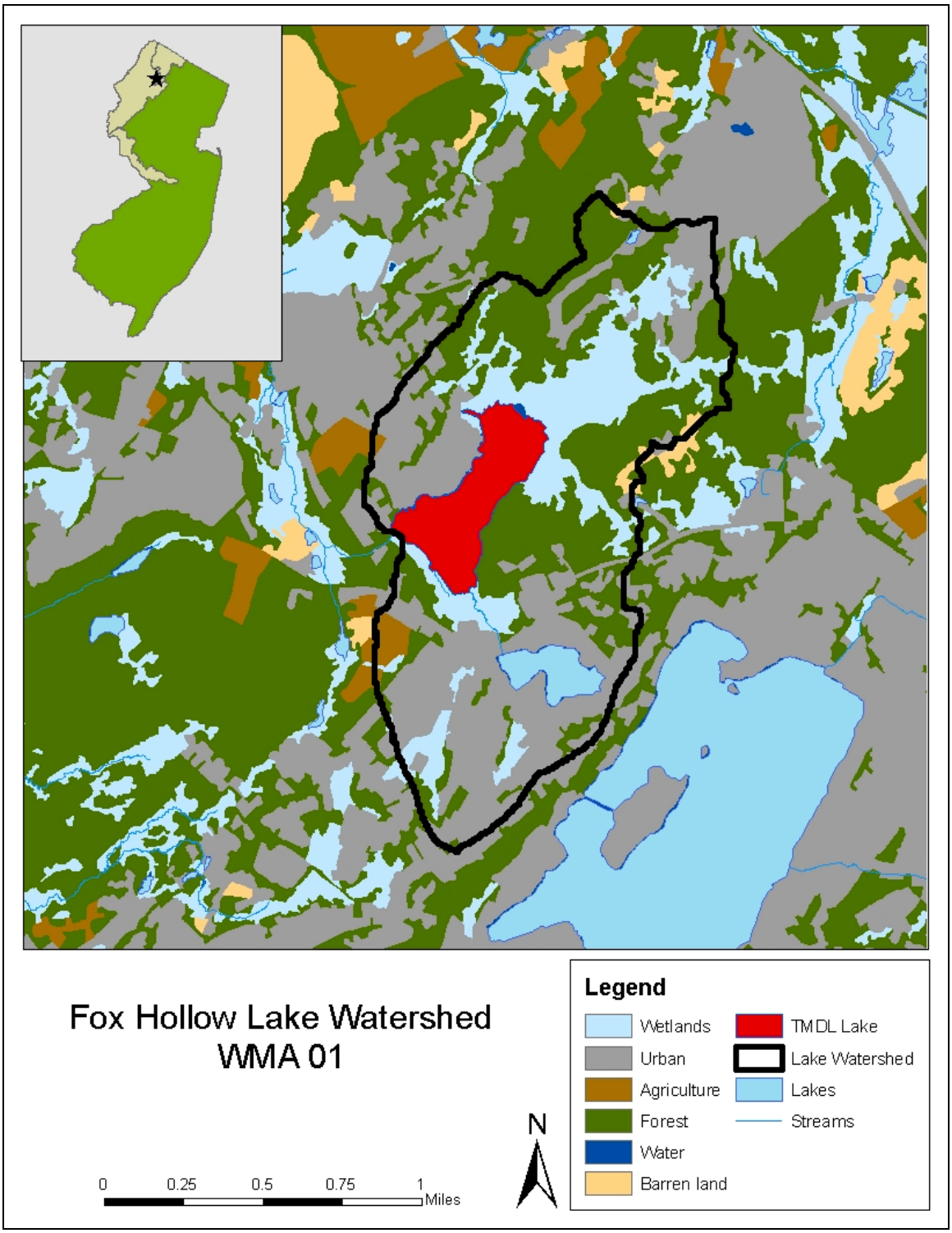
*Permit Categories: A = Sanitary Surface Water Discharge

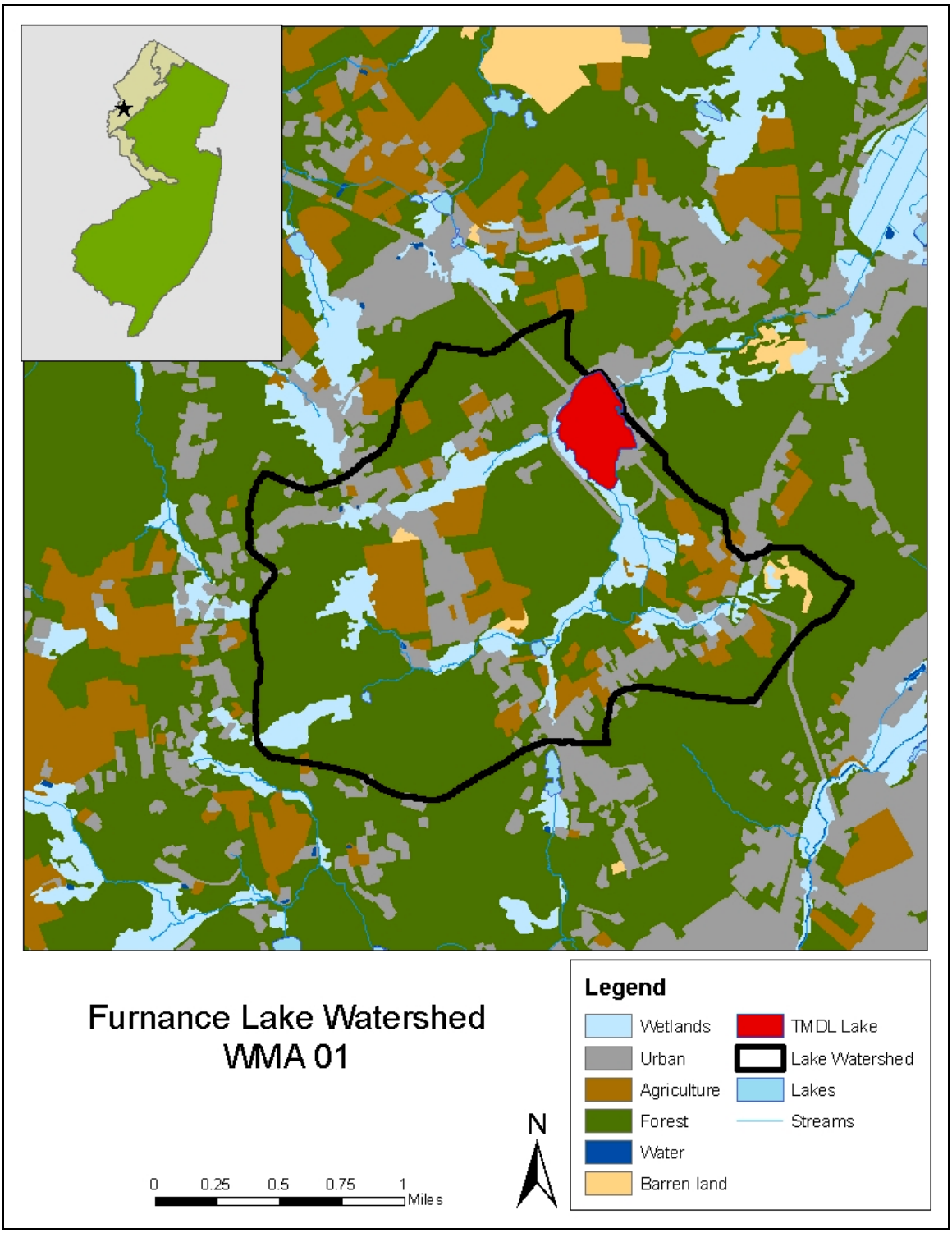
Northwest Water Region Tier A and Tier B Municipalities

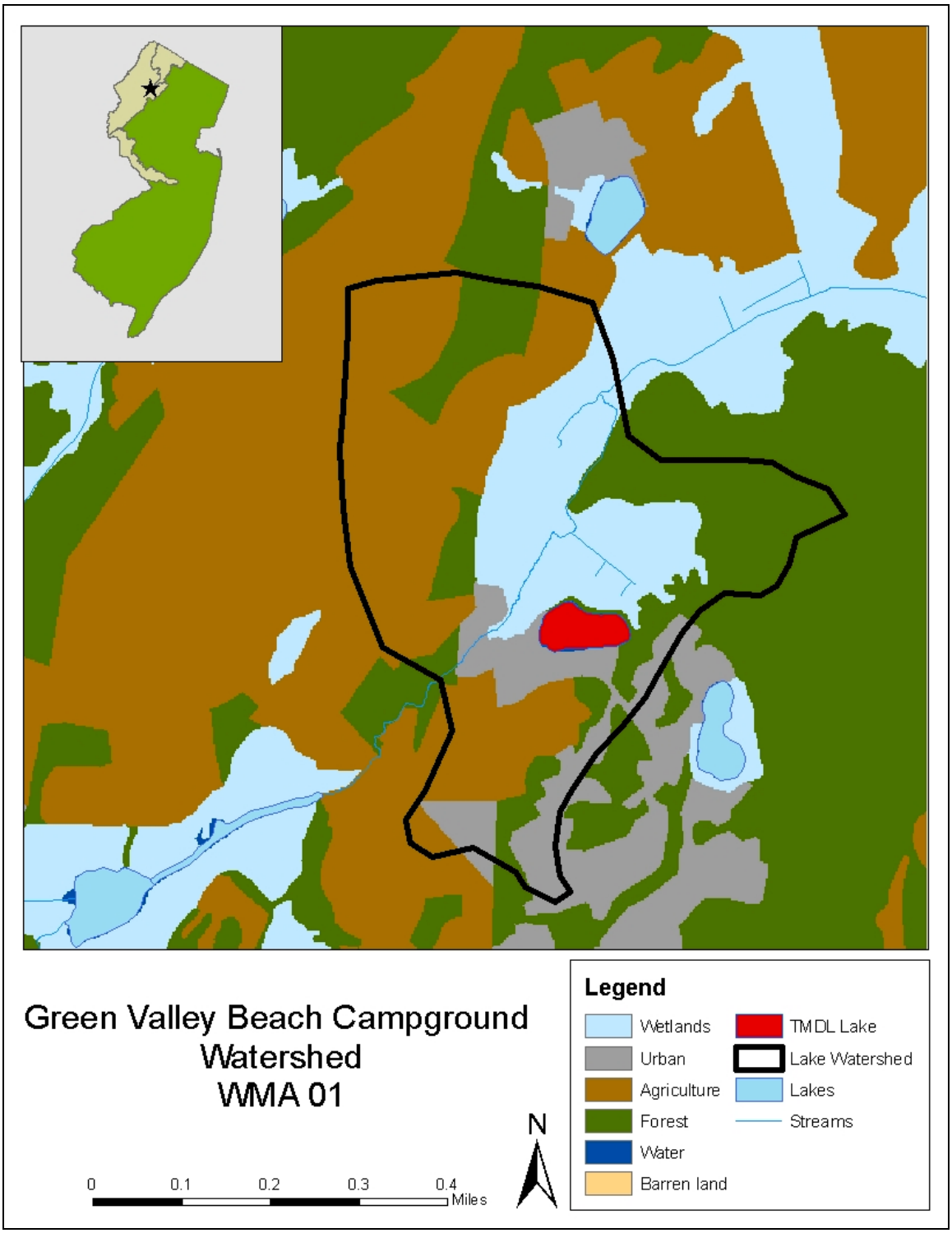
Tier	Watershed	Municipality	WMA	Permit #
A	Fox Hollow	Sparta Twp	1	NJG0148059
	Green Valley Beach Campground	Andover Twp	1	NJG0153290
	Lake Hopatcong	Sparta Twp	1	NJG0148059
		Jefferson Twp	1	NJG0151793
		Hopatcong Boro	1	NJG0147931
		Mount Arlington Boro	1	NJG0153265
		Roxbury Twp	1	NJG0152641
	Lackawanna Lake	Sparta Twp	1	NJG0148059
		Hopatcong Boro	1	NJG0147931
		Byram Twp	1	NJG0149209
	Forest Lake	Andover Twp	1	NJG0153290
		Byram Twp	1	NJG0149209
	Lake Winona	Sparta Twp	1	NJG0148059
		Jefferson Twp	1	NJG0151793
	Lake Mohawk	Sparta Twp	2	NJG0148059
		Andover Twp	2	NJG0153290
		Byram Twp	2	NJG0149209
B	Furnace Lake	White Twp	1	NJG0149683
		Oxford Twp	1	NJG0151904
		Washington Twp	1	NJG0150690
	Green Valley Beach Campground	Green Twp	1	NJG0152943
	Deer Trail Lake	Hardyston Twp	2	NJG0152269
	Crystal Springs Lake	Hardyston Twp	2	NJG0152269

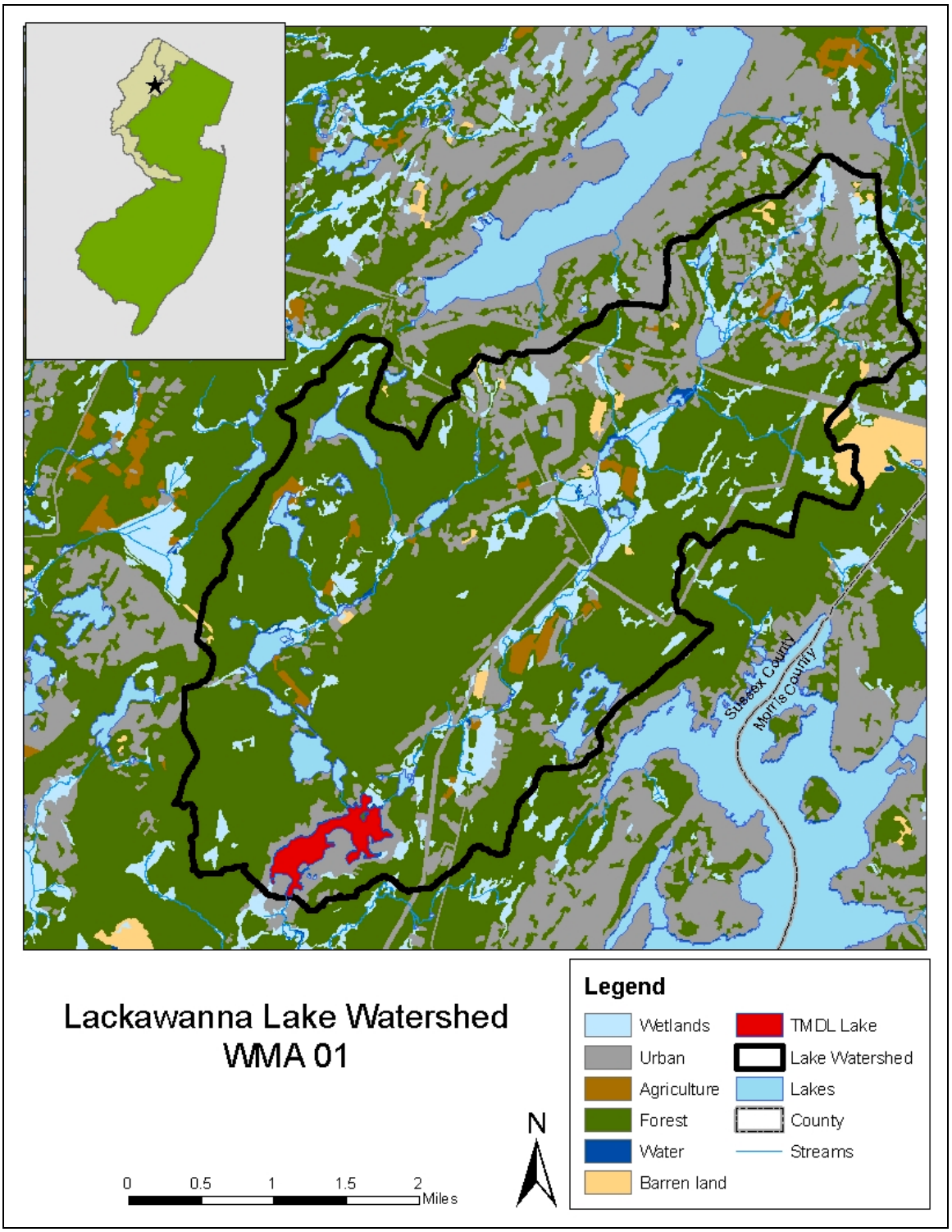
APPENDIX C: LAKE WATERSHED MAPS

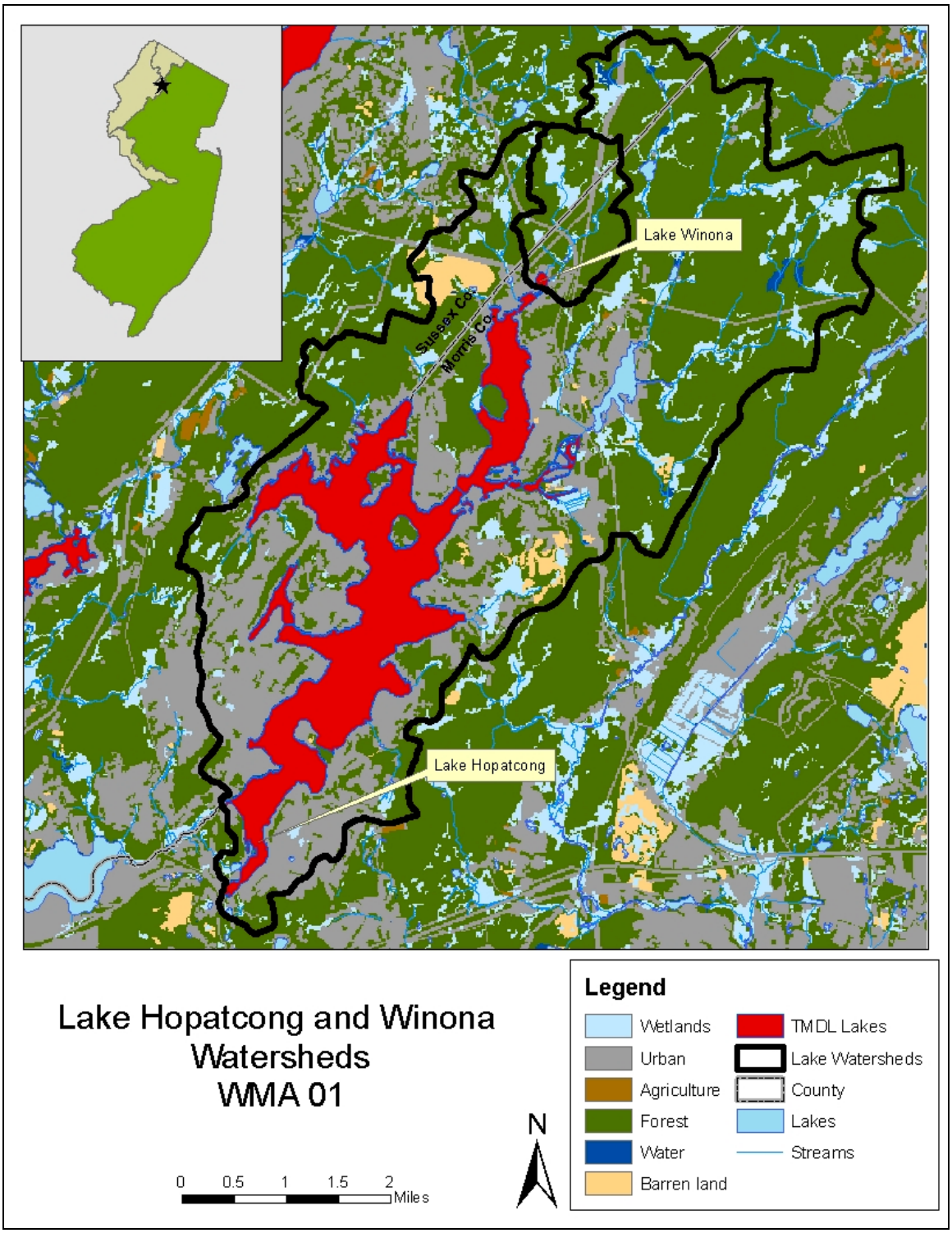


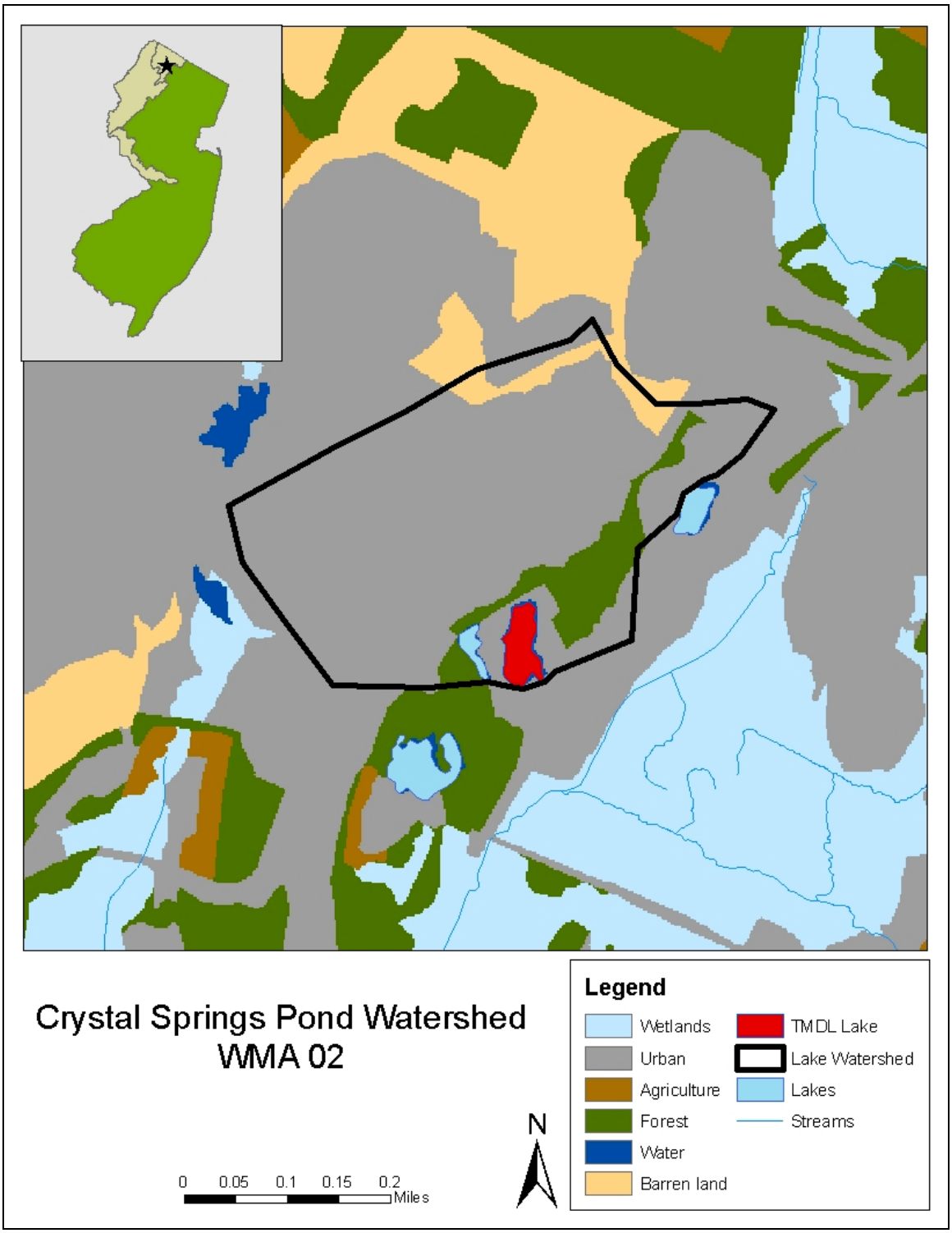

Fox Hollow Lake Watershed
WMA 01
0
0.25
0.5
0.75
1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

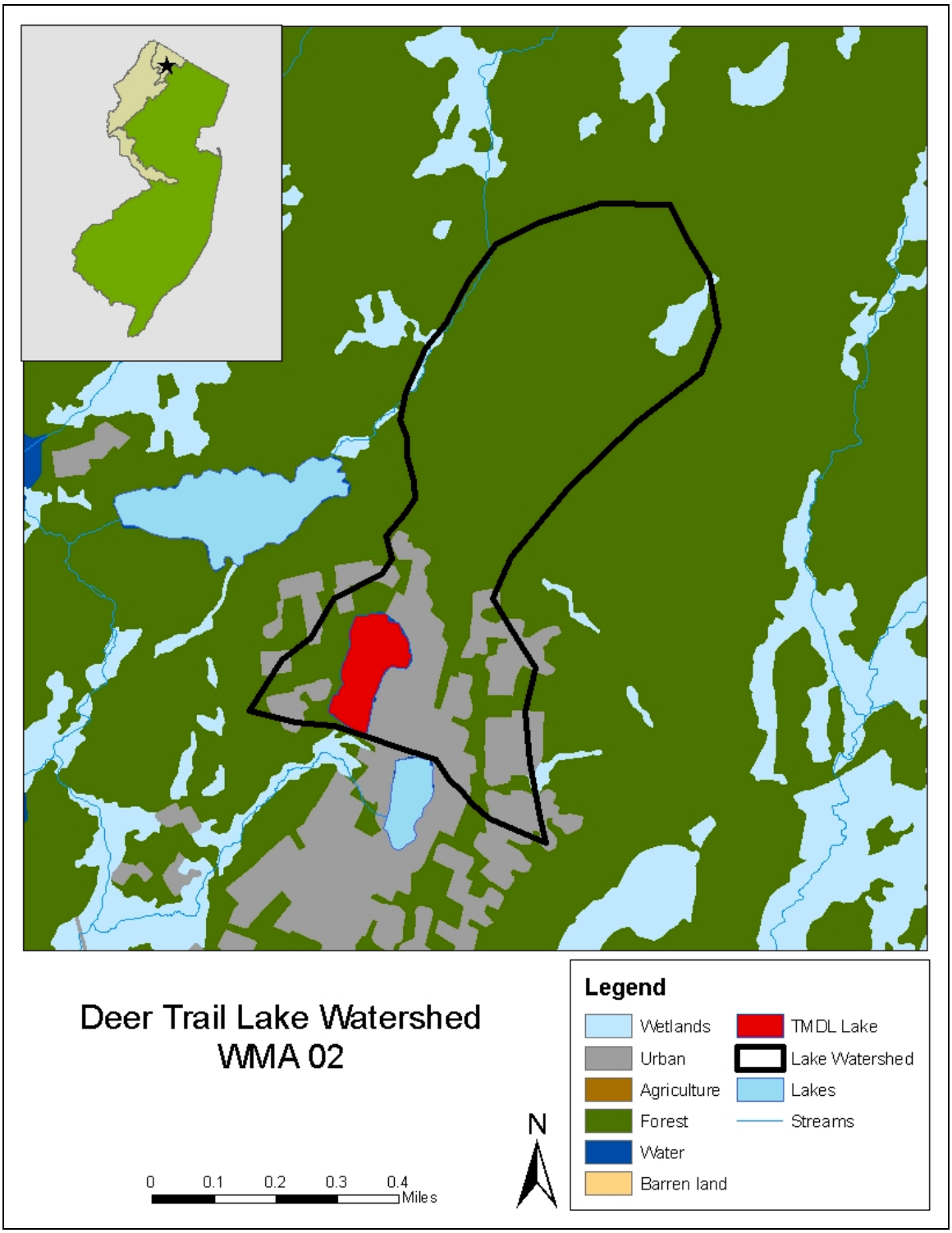

Furnance Lake Watershed
WMA 01
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams
N
0
0.25
0.5
0.75
1
Miles

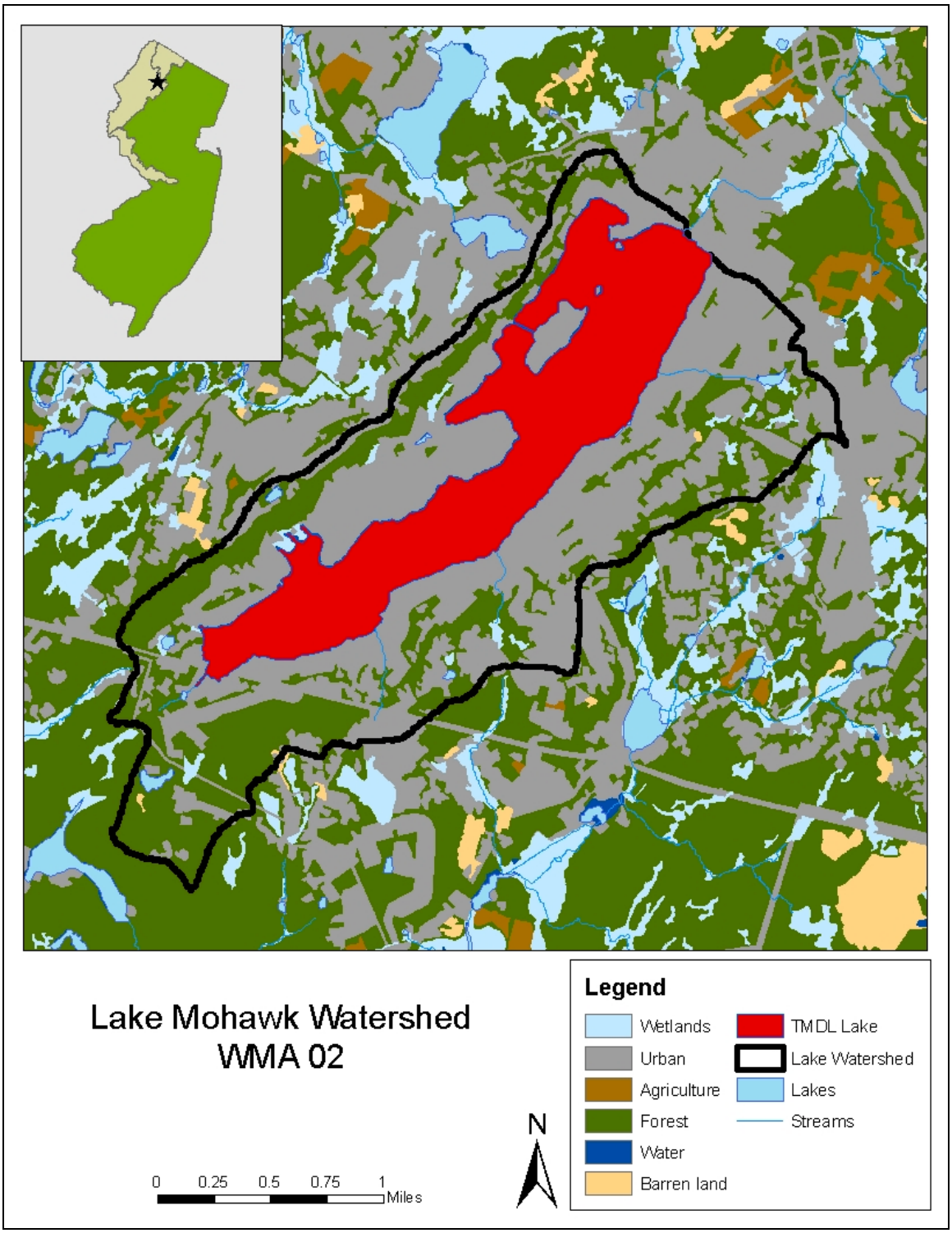

Green Valley Beach Campground
Watershed
WMA 01
0
0.1
0.2
0.3
0.4
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

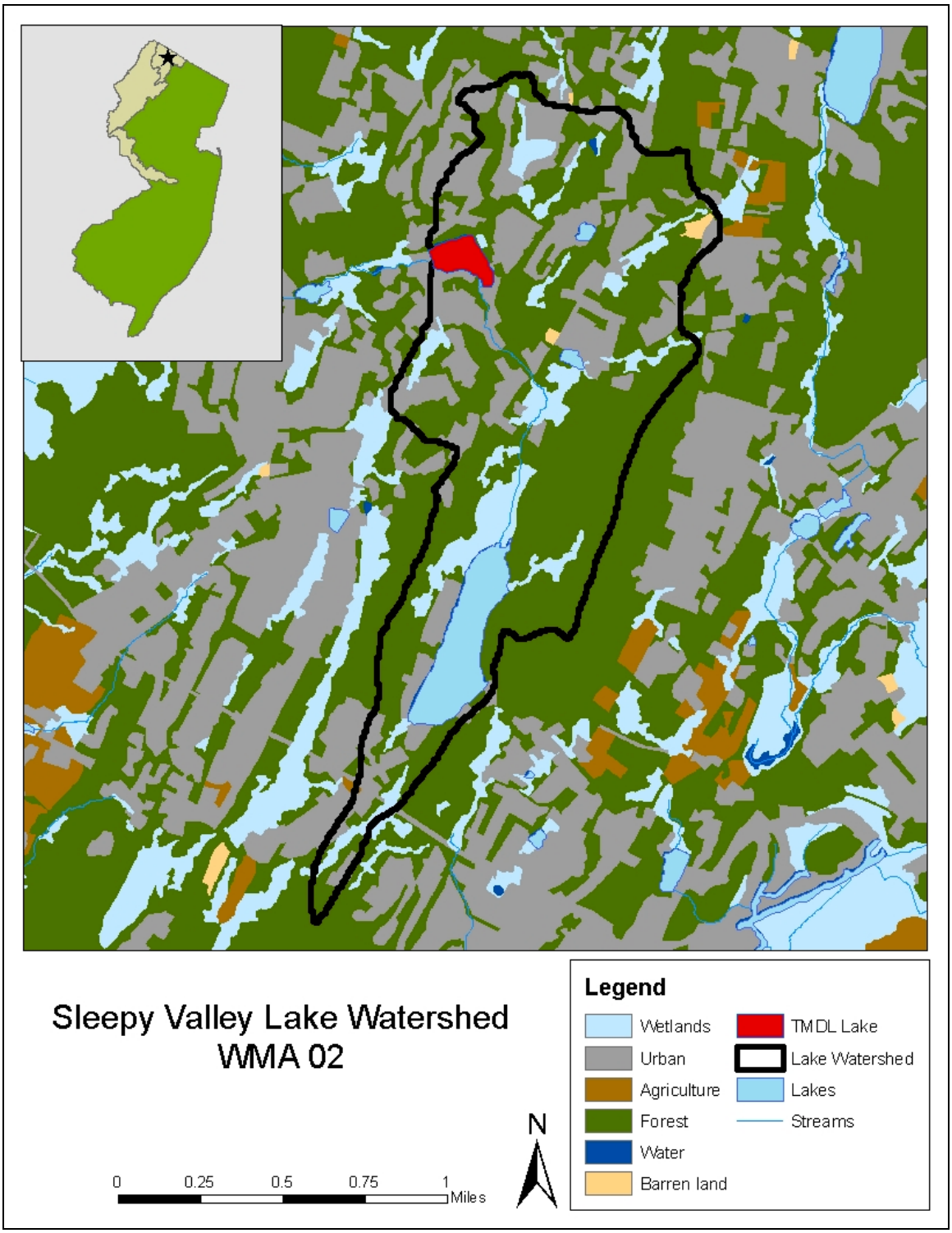

Sussex County
Morris County
Lackawanna Lake Watershed
WMA 01
0
0.5
1
1.5
2
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
County
Streams


Lake Winona
Lake Hopatcong
Sussex Co.
Morris Co.
Lake Hopatcong and Winona
Watersheds
WMA 01
0 0.5 1 1.5 2
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lakes
Lake Watersheds
County
Lakes
Streams


Crystal Springs Pond Watershed
WMA 02
0 0.05 0.1 0.15 0.2
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


Deer Trail Lake Watershed
WMA 02
0
0.1
0.2
0.3
0.4
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


Lake Mohawk Watershed
WMA 02
0 0.25 0.5 0.75 1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams


Sleepy Valley Lake Watershed
WMA 02
0
0.25
0.5
0.75
1
Miles
N
Legend
Wetlands
Urban
Agriculture
Forest
Water
Barren land
TMDL Lake
Lake Watershed
Lakes
Streams

APPENDIX D: NORTHWEST WATER REGION WATER QUALITY DATA

* Highlighted values are greater than 200 cfu/100 ml of fecal coliform bacteria

WMA 01

Forest Lake			
Stats:			
count	333	mean+3stdev	2657
median	10	% Reduction	98%
max	12000		
stdev	834	**no data excluded**	
mean	154		
mean+3stdev	2657		

DATA			
Station	**Date**	**Value**	**Remark**
SXL190402	05/18/98	2	K
SXL190402	06/03/98	2	K
SXL190402	06/17/98	2	K
SXL190402	07/01/98	30	
SXL190402	07/13/98	50	
SXL190402	07/31/98	30	
SXL190402	08/10/98	98	
SXL190402	08/17/98	1	
SXL190402	09/01/98	20	
SXL190403	05/18/98	2	K
SXL190403	06/03/98	20	
SXL190403	06/17/98	350	
SXL190403	06/20/98	2	K, RESAMPLE
SXL190403	06/22/98	2	K, RESAMPLE
SXL190403	07/01/98	60	
SXL190403	07/13/98	2	K
SXL190403	07/13/98	2	K
SXL190403	07/31/98	30	
SXL190403	07/31/98	2	K
SXL190403	08/14/98	40	
SXL190403	09/01/98	2	K
SXL190404	05/18/98	2	K
SXL190404	06/03/98	2	K
SXL190404	06/17/98	40	
SXL190404	07/01/98	2	K
SXL190404	07/13/98	20	
SXL190404	07/31/98	2	K
SXL190404	08/14/98	2	K
SXL190404	09/01/98	30	
SXL190405	05/18/98	150	
SXL190405	06/03/98	30	
SXL190405	06/17/98	120	
SXL190405	07/01/98	70	
SXL190405	07/13/98	20	
SXL190405	07/31/98	2	K
SXL190405	08/14/98	2	K
SXL190405	09/01/98	2	K
FOREST LAKE: BOARDWALK BEACH	05/24/99	190	
SXL190402	06/11/99	20	
SXL190402	06/18/99	10	K
SXL190402	07/05/99	10	K
SXL190402	07/22/99	20	
SXL190402	08/05/99	10	
SXL190402	08/17/99	10	K
SXL190402	08/02/99	40	
FOREST LAKE: COVE BEACH	05/24/99	10	
SXL190403	06/11/99	10	K
SXL190403	06/18/99	20	
SXL190403	07/05/99	10	K
SXL190403	07/22/99	10	K
SXL190403	08/05/99	10	K
SXL190403	08/17/99	10	K
SXL190403	09/02/99	30	
FOREST LAKE: HARBOR VIEW BEACH	05/24/99	**12000**	
SXL190404	05/28/99	680	beach closed, RESAMPLE
SXL190404	06/01/99	780	beach closed, RESAMPLE
SXL190404	06/11/99	10	K, RESAMPLE
SXL190404	06/18/99	10	K
SXL190404	06/25/99	10	K
SXL190404	07/05/99	10	K
SXL190404	07/09/99	10	K
SXL190404	07/15/99	10	K
SXL190404	07/22/99	10	
SXL190404	07/26/99	10	
SXL190404	08/05/99	20	
SXL190404	08/13/99	10	K
SXL190404	08/17/99	50	
SXL190404	08/27/99	180	
SXL190404	09/02/99	10	K
FOREST LAKE: MAIN BEACH	05/24/99	130	
SXL190405	06/11/99	160	
SXL190405	06/18/99	10	K
SXL190405	07/05/99	10	K
SXL190405	07/22/99	40	
SXL190405	08/05/99	10	
SXL190405	08/17/99	20	
SXL190405	09/02/99	20	

SXL190402	05/12/00	10	K
SXL190402	06/23/00	10	
SXL190402	06/27/00	10	K
SXL190402	07/05/00	20	
SXL190402	07/11/00	10	K
SXL190402	07/18/00	10	
SXL190402	08/01/00	40	
SXL190402	08/08/00	10	
SXL190402	08/15/00	40	
SXL190402	08/29/00	10	
SXL190403	05/12/00	10	K
SXL190403	06/23/00	10	K
SXL190403	06/27/00	10	K
SXL190403	07/05/00	10	K
SXL190403	07/11/00	20	
SXL190403	07/18/00	10	K
SXL190403	08/01/00	30	
SXL190403	08/08/00	10	K
SXL190403	08/15/00	100	
SXL190403	08/29/00	10	K
SXL190404	05/12/00	70	
SXL190404	06/23/00	10	K
SXL190404	06/27/00	10	K
SXL190404	07/05/00	40	
SXL190404	07/11/00	10	K
SXL190404	07/18/00	30	
SXL190404	08/01/00	20	
SXL190404	08/08/00	30	
SXL190404	08/15/00	20	
SXL190404	08/29/00	10	K
SXL190405	05/12/00	40	
SXL190405	06/23/00	10	K
SXL190405	06/27/00	10	K
SXL190405	07/05/00	10	K
SXL190405	07/11/00	10	K
SXL190405	07/18/00	60	

SXL190405	08/01/00	20	
SXL190405	08/08/00	10	
SXL190405	08/29/00	20	
Boardwalk Beach	05/17/01	10	K
Boardwalk Beach	06/07/01	10	K
Boardwalk Beach	06/15/01	10	K
Boardwalk Beach	06/19/01	10	K
Boardwalk Beach	06/26/01	10	K
Boardwalk Beach	07/12/01	10	K
Boardwalk Beach	07/24/01	10	K
Boardwalk Beach	07/29/01	10	K
Boardwalk Beach	08/01/01	10	K
Boardwalk Beach	08/07/01	10	K
Boardwalk Beach	08/16/01	10	K
Boardwalk Beach	08/23/01	8	
Cove Beach	05/17/01	10	K
Cove Beach	06/07/01	80	
Cove Beach	06/15/01	10	
Cove Beach	06/19/01	20	
Cove Beach	06/26/01	10	
Cove Beach	07/12/01	40	
Cove Beach	07/24/01	10	K
Cove Beach	07/29/01	380	
Cove Beach	08/01/01	10	K
Cove Beach	08/07/01	10	K
Cove Beach	08/16/01	140	
Harbor View Beach	05/17/01	10	K
Harbor View Beach	06/07/01	20	
Harbor View Beach	06/15/01	70	
Harbor View Beach	06/19/01	640	Beach closed voluntarily
Harbor View Beach	06/26/01	200	Beach reopened 6/29
Harbor View Beach	07/12/01	20	

Harbor View Beach	07/24/01	10	K
Harbor View Beach	07/29/01	10	K
Harbor View Beach	08/01/01	20	
Harbor View Beach	08/07/01	70	
Harbor View Beach	08/16/01	2400	Voluntary closure
Harbor View Beach	08/21/01	10	K
Main Beach	05/17/01	10	K
Main Beach	06/07/01	10	K
Main Beach	06/15/01	190	
Main Beach	06/19/01	200	
Main Beach	06/26/01	150	
Main Beach	07/12/01	10	
Main Beach	07/24/01	10	K
Main Beach	07/29/01	10	K
Main Beach	08/01/01	10	K
Main Beach	08/07/01	30	
Main Beach	08/16/01	40	
BOARDWALK BEACH	05/16/02	20	
BOARDWALK BEACH	05/31/02	10	K
BOARDWALK BEACH	06/05/02	50	
BOARDWALK BEACH	06/10/02	10	
BOARDWALK BEACH	06/25/02	10	K
BOARDWALK BEACH	06/28/02	10	
BOARDWALK BEACH	07/02/02	10	
BOARDWALK BEACH	07/15/02	10	K
BOARDWALK BEACH	07/26/02	10	K

BOARDWALK BEACH	07/31/02	10	K
BOARDWALK BEACH	08/13/02	20	
BOARDWALK BEACH	08/15/02	10	K
BOARDWALK BEACH	08/19/02	60	
BOARDWALK BEACH	08/22/02	40	
BOARDWALK BEACH	08/26/02	30	
COVE BEACH	05/16/02	50	
COVE BEACH	05/31/02	260	
COVE BEACH	06/05/02	10	K, RESAMPLE
COVE BEACH	06/10/02	10	
COVE BEACH	06/25/02	100	
COVE BEACH	06/28/02	310	
COVE BEACH	07/02/02	10	RESAMPLE
COVE BEACH	07/15/02	30	
COVE BEACH	07/26/02	10	
COVE BEACH	07/31/02	10	K
COVE BEACH	08/13/02	310	RESAMPLE
COVE BEACH	08/15/02	4900	RESAMPLE, CLOSED
COVE BEACH	08/19/02	40	RESAMPLE
COVE BEACH	08/22/02	130	
COVE BEACH	08/26/02	300	
HARBOR VIEW BEACH	05/16/02	10	K
HARBOR VIEW BEACH	05/31/02	10	
HARBOR VIEW BEACH	06/05/02	260	
HARBOR VIEW BEACH	06/10/02	20	RESAMPLE
HARBOR VIEW BEACH	06/25/02	40	
HARBOR VIEW BEACH	06/28/02	190	
HARBOR VIEW BEACH	07/02/02	30	

HARBOR VIEW BEACH	07/11/02	370	
HARBOR VIEW BEACH	07/15/02	10	RESAMPLE
HARBOR VIEW BEACH	07/26/02	140	
HARBOR VIEW BEACH	07/31/02	10	
HARBOR VIEW BEACH	08/13/02	10	
HARBOR VIEW BEACH	08/15/02	80	
HARBOR VIEW BEACH	08/19/02	160	
HARBOR VIEW BEACH	08/22/02	160	
HARBOR VIEW BEACH	08/26/02	100	
MAIN BEACH	05/16/02	10	K
MAIN BEACH	05/31/02	10	K
MAIN BEACH	06/05/02	100	
MAIN BEACH	06/10/02	30	
MAIN BEACH	06/25/02	220	HEAVY RAINS
MAIN BEACH	07/02/02	100	
MAIN BEACH	07/11/02	10	
MAIN BEACH	07/15/02	10	K
MAIN BEACH	07/26/02	80	
MAIN BEACH	07/31/02	20	
MAIN BEACH	08/13/02	40	
MAIN BEACH	08/15/02	5100	
MAIN BEACH	08/19/02	920	RESAMPLE
MAIN BEACH	08/22/02	200	RESAMPLE
MAIN BEACH	08/26/02	200	RESAMPLE
Forest Lake:Boardwalk Beach	05/30/03	10	K
	06/09/03	10	K
	06/16/03	10	K
	06/24/03	10	K
	06/27/03	10	

	06/30/03	80	
	07/07/03	20	
	07/24/03	10	
	08/11/03	40	
	08/20/03	20	
	08/25/03	60	
Forest Lake:Cove Beach	05/30/03	10	K
	06/09/03	10	K
	06/16/03	10	K
	06/24/03	10	K
	06/27/03	10	
	06/30/03	30	
	07/07/03	10	K
	07/24/03	230	
	07/29/03	10	K
	08/05/03	10	
	08/11/03	230	
	08/20/03	30	
	08/25/03	10	K
Forest Lake:Harborview Beach	05/30/03	40	
	06/09/03	10	K
	06/16/03	10	K
	06/24/03	10	K
	06/27/03	30	
	06/30/03	30	
	07/07/03	50	
	07/24/03	90	
	07/29/03	10	K
	08/05/03	60	
	08/11/03	60	
	08/20/03	3000	
	08/25/03	30	

Forest Lake:Main Beach	05/30/03	10	K
	06/09/03	20	
	06/16/03	70	
	06/24/03	330	
	06/27/03	140	
	06/30/03	70	
	07/07/03	80	
	07/24/03	60	
	07/29/03	10	
	08/05/03	10	
	08/11/03	80	
	08/20/03	10	
	08/25/03	60	
Forest Lake: Boardwalk	05/17/04	10	
	06/02/04	10	K
	06/09/04	1100	
	06/11/04	20	
	06/16/04	80	
	06/23/04	40	
	06/29/04	10	K
	07/06/04	10	K
	07/15/04	10	K
	07/20/04	10	
	07/26/04	10	K
	08/03/04	10	K
	08/10/04	10	K
	08/18/04	10	K
	08/25/04	10	K
Forest Lake: Cove	05/17/04	10	K
	06/02/04	10	K
	06/09/04	40	
	06/11/04	590	
	06/16/04	10	K
	06/23/04	30	

	06/29/04	30	
	07/06/04	40	
	07/15/04	10	K
	07/20/04	10	K
	07/26/04	10	K
	08/03/04	10	K
	08/10/04	10	K
	08/18/04	10	K
	08/25/04	30	
Forest Lake: Harborview	05/17/04	10	K
	06/02/04	40	
	06/09/04	510	preseason testing
	06/11/04	300	preseason testing
	06/16/04	40	
	06/23/04	10	K
	06/29/04	10	
	07/06/04	10	K
	07/15/04	40	
	07/20/04	10	
	07/26/04	10	K
	08/03/04	10	
	08/10/04	10	K
	08/18/04	10	
	08/25/04	110	
Forest Lake: Main	05/17/04	10	
	06/02/04	50	
	06/09/04	4900	
	06/11/04	50	
	06/16/04	90	
	06/23/04	110	
	06/29/04	30	
	07/06/04	40	
	07/15/04	100	
	07/20/04	10	K
	07/26/04	10	K

	08/03/04	30	
	08/10/04	10	K
	08/18/04	10	
	08/25/04	10	

Fox Hollow Lake			
count	116	mean+3stdev	2755
median	20	%reduction	80%
Max	9300		
stdev	868	**1 value excluded (9300)**	
mean	152	**Excluded. Next highest value in dataset is 1000. Also, there was no remark code and resample concentration is 50 (9300 possibly a data entry error)**	
mean+3stdev	2755		

STATION	DATE	VALUE	REMARK
SXL115	5/26/1998	10	K
SXL115	6/1/1998	100	
SXL115	6/8/1998	20	
SXL115	6/15/1998	370	
SXL115	6/17/1998	70	RESAMPLE
SXL115	6/22/1998	10	K
SXL115	6/29/1998	10	K
SXL115	7/6/1998	40	
SXL115	7/13/1998	10	K
SXL115	7/20/1998	40	
SXL115	7/27/1998	310	
SXL115	7/29/1998	170	RESAMPLE
SXL115	8/3/1998	40	
SXL115	8/10/1998	10	K
SXL115	8/17/1998	560	
SXL115	8/19/1998	120	RESAMPLE
SXL115	8/24/1998	20	
SXL115	8/31/1998	100	
Fox Hollow	5/24/1999	10	
SXL115	6/1/1999	10	K
SXL115	6/7/1999	10	K
SXL115	6/14/1999	40	
SXL115	6/21/1999	150	
SXL115	6/28/1999	10	
SXL115	7/6/1999	30	

SXL115	7/12/1999	10	K
SXL115	7/19/1999	20	
SXL115	7/26/1999	**310**	
SXL115	7/28/1999	**260**	Resample
SXL115	8/2/1999	**630**	
SXL115	8/4/1999	170	Resample
SXL115	8/9/1999	40	
SXL115	8/16/1999	30	
SXL115	8/23/1999	10	K
SXL115	8/30/1999	50	
Fox Hollow Lake	5/22/2000	70	
SXL115	5/30/2000	10	
SXL115	6/5/2000	10	K
SXL115	6/12/2000	170	
SXL115	6/19/2000	60	
SXL115	6/26/2000	30	
SXL115	7/5/2000	70	
SXL115	7/10/2000	10	K
SXL115	7/17/2000	20	
SXL115	7/24/2000	10	K
SXL115	7/31/2000	170	
SXL115	8/7/2000	**9300**	
SXL115	8/9/2000	50	Resample
SXL115	8/16/2000	20	
SXL115	8/21/2000	10	
SXL115	8/28/2000	70	
Fox Hollow Lake			
	5/23/2001	170	
	6/4/2001	8	
	6/11/2001	330	
	6/14/2001	112	
	6/18/2001	2	K
	6/25/2001	4	
	7/2/2001	96	
	7/9/2001	28	
	7/16/2001	18	
	7/23/2001	30	
	7/30/2001	40	
	8/6/2001	114	
	8/13/2001	4	
	8/20/2001	30	
	8/27/2001	18	

	5/20/2002	20	
	5/29/2002	20	
	6/3/2002	10	K
	6/10/2002	1000	
	6/14/2002	50	Resample
	6/17/2002	30	
	6/24/2002	360	
	6/26/2002	10	K
	7/1/2002	20	
	7/8/2002	50	
	7/15/2002	10	
	7/22/2002	10	
	7/29/2002	10	K
	8/5/2002	50	
	8/12/2002	10	
	8/19/2002	80	
	8/26/2002	40	
FOX HOLLOW LAKE	5/21/2003	10	
	5/28/2003	40	
	6/2/2003	10	
	6/9/2003	30	
	6/16/2003	**260**	
	6/18/2003	40	Resample
	6/23/2003	20	
	6/30/2003	140	
	7/7/2003	10	
	7/14/2003	10	K
	7/21/2003	10	
	7/28/2003	10	
	8/4/2003	30	
	8/11/2003	10	
	8/18/2003	10	K
	8/25/2003	10	K
FOX HOLLOW LAKE	5/24/2004	10	K
	6/2/2004	10	K
	6/7/2004	10	K
	6/14/2004	90	
	6/17/2004	10	K
	6/18/2004	20	
	6/21/2004	10	K
	6/28/2004	10	
	7/7/2004	10	

	7/12/2004	50	
	7/21/2004	10	
	7/26/2004	10	K
	8/2/2004	10	K
	8/9/2004	10	
	8/16/2004	10	
	8/23/2004	50	
	8/30/2004	10	

Furnace Lake			
count	122	mean+3stdev	589
median	30	%reduction	76%
max	840		
stdev	162	**no data excluded**	
mean	103		
mean+3stdev	589		

STATION	DATE	VALUE	REMARKS
WC3	5/5/1998	160	
WC3	5/26/1998	90	
WC3	6/2/1998	1	
WC3	6/9/1998	10	
WC3	6/16/1998	140	
WC3	6/23/1998	40	
WC3	6/30/1998	260	
WC3	7/7/1998	40	
WC3	7/14/1998	1	
WC3	7/21/1998	1	
WC3	7/28/1998	1	
WC3	8/4/1998	10	
WC3	8/11/1998	50	
WC3	8/18/1998	30	
WC3	8/25/1998	1	
WC3	9/1/1998	10	
WC3	5/11/1999	10	
WC3	5/18/1999	10	
WC3	5/25/1999	30	
WC3	6/1/1999	10	
WC3	6/8/1999	20	
WC3	6/15/1999	90	
WC3	6/22/1999	100	
WC3	6/29/1999	380	
WC3	7/2/1999	10	
WC3	7/6/1999	30	

WC3	7/13/1999	50	
WC3	7/20/1999	190	
WC3	7/27/1999	400	
WC3	7/29/1999	10	
WC3	8/3/1999	10	
WC3	8/10/1999	50	
WC3	8/17/1999	120	
WC3	8/24/1999	20	
WC3	8/31/1999	10	
Furnace Lake Beach	5/16/2000	180	
Furnace Lake Beach	5/23/2000	60	
Furnace Lake Beach	5/30/2000	80	
Furnace Lake Beach	6/5/2000	10	
Furnace Lake Beach	6/12/2000	420	
Furnace Lake Beach	6/14/2000	180	
Furnace Lake Beach	6/19/2000	50	
Furnace Lake Beach	6/27/2000	10	
Furnace Lake Beach	7/3/2000	70	
Furnace Lake Beach	7/10/2000	40	
Furnace Lake Beach	7/20/2000	550	
Furnace Lake Beach	7/24/2000	10	
Furnace Lake Beach	7/27/2000	180	
Furnace Lake Beach	7/31/2000	580	
Furnace Lake Beach	8/3/2000	10	
Furnace Lake Beach	8/7/2000	710	
Furnace Lake Beach	8/9/2000	10	
Furnace Lake Beach	8/15/2000	20	
Furnace Lake Beach	8/21/2000	170	
Furnace Lake Beach	8/28/2000	30	67.45346506

	5/17/2001	10	
	5/24/2001	90	
	5/31/2001	10	
	6/4/2001	10	
	6/11/2001	10	
	6/18/2001	20	
	6/25/2001	10	
	7/2/2001	10	
	7/9/2001	40	
	7/16/2001	10	
	7/23/2001	100	
	7/30/2001	30	
	8/6/2001	840	
	8/8/2001	410	
	8/9/2001	470	
	8/13/2001	10	
	8/13/2001	20	
	8/20/2001	20	
	8/20/2001	130	
	8/27/2001	20	33.73
FURNACE LAKE BEACH	6/24/2002	10	
	7/1/2002	10	
	7/8/2002	10	
	7/15/2002	10	
	7/22/2002	10	
	7/29/2002	10	
	8/5/2002	30	
	7/12/2002	180	
	8/19/2002	10	
	8/26/2002	10	**14.90**
Furnace Lake Beach	5/12/2003	40	
	5/20/2003	490	
	5/22/2003	10	
	5/27/2003	10	
	6/2/2003	80	
	6/9/2003	120	
	6/16/2003	40	
	6/23/2003	180	
	6/30/2003	30	
	7/7/2003	10	
	7/14/2003	30	
	7/21/2003	30	

	7/28/2003	60	
	8/4/2003	180	
	8/11/2003	100	
	8/18/2003	70	
	8/25/2003	40	**51.10**
FURNACE LAKE BEACH	05/24/04	40	
	06/01/04	10	
	06/07/04	600	
	06/10/04	10	
	06/16/04	20	
	06/23/04	30	
	06/29/04	10	
	07/06/04	10	
	07/13/04	110	
	07/19/04	120	
	07/29/04	190	
	08/02/04	600	
	0/03/2004	120	
	08/09/04	20	
	08/17/04	20	
	08/23/04	10	
	08/30/04	230	
	08/31/04	270	
	09/01/04	210	
	09/02/04	60	55.66

Green Valley Beach CG			
count	55	mean+3stdev	1855
median	50	% Reduction	91%
max	2000		
stdev	535	**no data excluded**	
mean	249		
mean+3stdev	1855		

STATION	DATE	VALUE	REMARK
	5/20/2003	10	
	6/26/2003	60	
	8/4/2003	160	
	5/7/2002	4	
	5/21/2002	30	
	5/28/2002	40	

	6/5/2002	10	
	6/11/2002	240	
	6/18/2002	120	RESAMPLE
	6/18/2002	120	
	6/26/2002	150	
	7/3/2002	60	
	7/8/2002	30	
	7/16/2002	30	
	7/23/2002	90	
	7/30/2002	130	
	8/6/2002	50	
	8/13/2002	10	K
	8/20/2002	10	K
	8/27/2002	10	K
	5/22/2001	2000	L not being used
	7/31/2001	10	
	8/7/2001	20	
	8/21/2001	420	lake not being used
SXL190801	5/24/2000	250	
SXL190801	5/26/2000	10	K
SXL190801	6/1/2000	80	
SXL190801	6/7/2000	180	
SXL190801	6/13/2000	3	
SXL190801	6/21/2000	2000	L
SXL190801	6/26/2000	2000	L, beach closed
SXL190801	6/27/2000	1330	
SXL190801	6/29/2000	1	K, resample beach reopened
SXL190801	7/5/2000	140	
SXL190801	7/11/2000	230	
SXL190801	7/18/2000	130	
SXL190801	7/25/2000	120	
SXL190801	8/1/2000	190	
SXL190801	8/7/2000	10	K
SXL190801	8/8/2000	90	
SXL190801	8/15/2000	10	K
SXL190801	8/22/2000	10	K
SXL190801	12/13/4611	700	
SXL190801	3/3/4612	40	RESAMPLE
SXL190801	3/10/4612	140	
SXL190801	3/17/4612	20	
SXL190801	3/24/4612	NEG	
SXL190801	3/31/4612	2000	L
SXL190801	6/15/4612	10	
SXL190801	6/23/4612	NEG	
SXL190801	6/30/4612	NEG	
SXL190801	7/7/4612	NEG	
SXL190801	9/21/4612	N20	
SXL190801	10/5/4612	10	
SXL190801	10/12/4612	70	
SXL190801	10/19/4612	50	
SXL190801	7/2/1998	40	
SXL190801	8/6/1998	2	K
SXL190801	8/27/1998	20	
SXL190801	9/3/1998	10	

Lake Lackawanna			
count	91	mean+3stdev	1051
median	60	%reduction	93%
max	2700		
stdev	306	**no data excluded**	
mean	134		
mean+3stdev	1051		

STATION	**DATE**	**VALUE**	**REMARK**
SXL190408	5/30/1998	730	
SXL190408	6/4/1998	90	RESAMPLE
SXL190408	6/5/1998	40	RESAMPLE
SXL190408	6/17/1998	510	
SXL190408	6/23/1998	30	RESAMPLE
SXL190408	6/25/1998	2	K
SXL190408	6/29/1998	90	
SXL190408	7/6/1998	290	
SXL190408	7/8/1998	60	RESAMPLE
SXL190408	7/13/1998	150	
SXL190408	7/20/1998	50	
SXL190408	7/27/1998	50	
SXL190408	8/3/1998	40	
SXL190408	8/10/1998	70	
SXL190408	8/18/1998	130	
SXL190408	8/31/1998	70	
SXL190408	9/1/1998	60	
LAKE LACKAWANNA: SPEERS BEACH	6/9/1999	30	
SXL190408	6/18/1999	20	
SXL190408	6/26/1999	20	
SXL190408	7/7/1999	120	
SXL190408	7/16/1999	10	K
SXL190408	7/22/1999	30	
SXL190408	7/29/1999	60	
SXL190408	8/6/1999	10	K
SXL190408	8/12/1999	60	
SXL190408	8/23/1999	30	
SXL190408	6/7/2000	430	
SXL190408	6/9/2000	10	K
SXL190408	6/22/2000	200	
SXL190408	6/27/2000	770	
SXL190408	7/2/2000	70	
SXL190408	7/14/2000	80	
SXL190408	7/21/2000	50	
SXL190408	8/3/2000	170	
SXL190408	8/8/2000	120	
SXL190408	8/16/2000	20	
SXL190408	8/22/2000	10	K
SXL190408	8/22/2000	10	K
Speers Beach	5/24/2001	2700	not presently in use
Speers Beach	5/30/2001	40	
Speers Beach	6/7/2001	130	
Speers Beach	6/9/2001	50	
Speers Beach	6/12/2001	30	
Speers Beach	6/19/2001	200	
Speers Beach	6/22/2001	40	
Speers Beach	6/29/2001	40	
Speers Beach	7/5/2001	100	
Speers Beach	7/12/2001	220	
Speers Beach	7/16/2001	70	
Speers Beach	7/24/2001	10	
Speers Beach	7/30/2001	10	
Speers Beach	8/7/2001	260	
Speers Beach	8/16/2001	100	
Speers Beach	8/23/2001	50	
Speers Beach	8/23/2001	50	
SPEERS BEACH	5/14/2002	130	
SPEERS BEACH	6/17/2002	170	
SPEERS BEACH	6/25/2002	210	
SPEERS BEACH	7/11/2002	30	
SPEERS BEACH	7/15/2002	30	
SPEERS BEACH	7/26/2002	20	

SPEERS BEACH	7/31/2002	80	
SPEERS BEACH	8/8/2002	30	
SPEERS BEACH	8/20/2002	30	
SPEERS BEACH	8/26/2002	200	
Lake Lackawanna:Speers Beach	5/27/2003	60	
	5/29/2003	200	
	6/17/2003	80	
	6/27/2003	20	
	6/30/2003	360	
	7/2/2003	70	
	7/7/2003	210	
	7/24/2003	80	
	7/28/2003	40	
	8/5/2003	70	
	8/11/2003	30	
Lake Lackawanna: Spears Beach	5/13/2004	90	
	6/9/2004	40	
	6/16/2004	20	
	6/23/2004	480	
	6/29/2004	50	
	7/6/2004	160	
	7/15/2004	70	
	7/20/2004	10	
	7/26/2004	10	
	8/3/2004	20	
	8/3/2004	20	
	8/10/2004	20	
	8/18/2004	40	
	8/25/2004	140	

Lake Hopatcong			
Stats with state Park			
count	825	mean+3stdev	1170
Median	20	%reduction	97%
max	6000		
stdev	357	**no data excluded**	
mean	98		
mean+3stdev	1170		

STATION	**DATE**	**VALUE**	**REMARK**
SXL191201	06/03/98	2	
SXL191201	06/17/98	5	

SXL191201	07/01/98	12	
SXL191201	07/15/98	1	
SXL191201	07/29/98	3	
SXL191201	08/05/98	1	K
SXL191201	08/19/98	1	
SXL191202	07/01/98	106	
SXL191202	07/15/98	22	
SXL191202	07/29/98	2	
SXL191202	08/12/98	18	
SXL191202	08/26/98	64	
SXL191202	09/09/98	41	
SXL191203	07/08/98	4	
SXL191203	07/22/98	29	
SXL191203	08/05/98	90	
SXL191203	08/19/98	28	
SXL191204	06/03/98	1	
SXL191204	06/17/98	15	
SXL191204	07/01/98	3	
SXL191204	07/15/98	1	K
SXL191204	07/29/98	2	
SXL191204	08/12/98	8	
SXL191204	08/26/98	3	
SXL191205	06/24/98	15	
SXL191205	07/08/98	4	
SXL191205	07/22/98	14	
SXL191205	08/05/98	26	
SXL191207	06/09/98	40	
SXL191207	07/02/98	10	K
SXL191207	07/06/98	30	
SXL191207	07/23/98	100	
SXL191207	08/20/98	10	K
SXL191208	06/09/98	50	
SXL191208	06/25/98	30	
SXL191208	07/02/98	200	
SXL191208	07/06/98	10	K
SXL191208	07/23/98	10	K
SXL191208	08/20/98	10	K
SXL191209	06/09/98	50	
SXL191209	07/02/98	9	
SXL191209	07/06/98	10	K
SXL191209	07/23/98	50	
SXL191209	08/20/98	10	K
SXL191210	07/03/98	20	
SXL191211	07/08/98	500	
SXL191211	07/10/98	168	RESAMPLE

SXL191211	07/22/98	179	
SXL191211	08/26/98	550	
SXL191211	08/28/98	65	RESAMPLE
SXL191212	07/08/98	16	
SXL191212	07/22/98	50	
SXL191212	08/05/98	22	
SXL191212	08/19/98	27	
SXL191213	07/08/98	6	
SXL191213	07/22/98	18	
SXL191213	08/05/98	15	
SXL191213	08/19/98	15	
SXL191213	09/02/98	12	
SXL191214	07/21/98	20	
SXL191214	08/21/98	20	
SXL191215	06/17/98	750	
SXL191215	06/19/98	7	RESAMPLE
SXL191215	07/01/98	875	
SXL191215	07/06/98	122	RESAMPLE
SXL191215	07/15/98	7	
SXL191215	07/22/98	106	
SXL191215	08/05/98	111	
SXL191216	06/24/98	99	
SXL191216	07/08/98	2	K
SXL191216	07/22/98	75	
SXL191216	08/05/98	13	
SXL191216	08/19/98	14	
SXL191217	06/24/98	1900	
SXL191217	06/26/98	2500	RESAMPLE
SPERRY SPRINGS	05/26/99	7	
SXL191201	06/09/99	16	
SXL191201	06/23/99	2	
SXL191201	07/07/99	2	
SXL191201	08/18/99	4	
SHADY LAWN BEACH CLUB	06/09/99	331	
SXL191202	06/10/99	2	RESAMPLE
SXL191202	06/23/99	100	
SXL191202	07/07/99	146	
SXL191202	07/21/99	248	
SXL191202	07/22/99	50	RESAMPLE
SXL191202	08/18/99	98	
SXL191202	09/01/99	44	
BECK LANE PROPERTIES	05/26/99	9	
SXL191204	06/09/99	5	

SXL191204	06/23/99	1	
SXL191204	07/07/99	1	K
SXL191204	08/18/99	2	
SXL191204	09/01/99	18	
ELBA POINT HOMEOWNERS	06/23/99	1	K
SXL191205	07/07/99	10	
SXL191205	08/04/99	17	
WILDWOOD SHORES POA	06/28/99	50	
SXL191207	07/13/99	20	
SXL191207	08/11/99	10	K
SXL191207	08/26/99	220	
WILDWOOD SHORES POA	06/28/99	80	
SXL191208	07/13/99	10	K
SXL191208	08/11/99	10	
SXL191208	08/26/99	340	
WILDWOOD SHORES POA	06/28/99	30	
SXL191209	07/13/99	10	K
SXL191209	08/11/99	10	K
SXL191209	08/26/99	350	
HOPATCONG GARDENS COMM. CLUB	07/01/99	10	
SXL191210	07/09/99	30	
SXL191210	07/18/99	10	
SXL191210	07/24/99	10	K
SXL191210	07/30/99	1800	
SXL191210	08/12/99	10	
SXL191210	08/29/99	30	
CRESCENT COVE	06/24/99	76	
SXL191211	07/07/99	212	
SXL191211	07/09/99	1	RESAMPLE K
SXL191211	07/22/99	1	K
SXL191211	08/04/99	1	K
SXL191211	08/18/99	102	
RANDAL BEACH CLUB	07/07/99	18	
SXL191213	07/21/99	18	
SXL191213	08/04/99	5	
SXL191213	08/18/99	1	K
SXL191213	09/01/99	54	
DOX INC	07/01/99	10	
SXL191214	08/19/99	120	
INGRAM COVE	06/09/99	130	

COMMUNITY			
SXL191215	06/16/99	1	K
SXL191215	06/30/99	394	
SXL191215	07/14/99	36	RESAMPLE
SXL191215	07/28/99	68	
HOMESTEAD BEACH	06/23/99	21	
SXL191216	07/07/99	12	
SXL191216	07/22/99	18	
SXL191216	08/04/99	36	
SXL191216	08/18/99	114	
SHAWNEE DOCK ASSOCIATION	08/12/99	10	K
SXL191218	08/19/99	10	
SXL191218	08/29/99	50	
BYRAM BAY COMMUNITY CLUB	06/10/99	64	
SXL191219	07/08/99	200	L
SXL191219	07/12/99	28	RESAMPLE
SXL191219	07/29/99	20	
COLONY CLUB	06/30/99	24	
SXL191220	07/14/99	1	K
SXL191220	07/28/99	1	K
SXL191220	08/11/99	1	K
SXL191220	08/25/99	6	
SXL191220	09/08/99	6	
SPERRY SPRINGS	05/24/00	10	K
SXL191201	06/07/00	60	
SXL191201	06/21/00	70	
SXL191201	07/05/00	10	K
SXL191201	07/19/00	10	
SXL191201	08/02/00	120	
SXL191201	08/16/00	90	
SHADY LAWN BEACH CLUB	06/05/00	30	
SXL191202	06/19/00	10	K
SXL191202	07/05/00	20	
SXL191202	07/17/00	520	
SXL191202	08/07/00	40	
SXL191202	08/21/00	30	
SXL191202	08/28/00	1600	TNTC
SXL191202	08/30/00	10	K
BECK LANE PROPERTIES	05/24/00	20	
SXL191204	06/07/00	20	
SXL191204	06/21/00	20	
SXL191204	07/05/00	10	K

SXL191204	07/19/00	10	K
SXL191204	08/02/00	1200	
SXL191204	08/07/00	370	
SXL191204	08/16/00	450	
SXL191204	08/28/00	10	K
ELBA POINT HOMEOWNERS	06/05/00	2	
SXL191205	06/20/00	8	
SXL191205	07/03/00	16	
SXL191205	07/19/00	2	K
SXL191205	08/01/00	48	
SXL191205	08/15/00	152	
SXL191205	08/29/00	12	
WILDWOOD SHORES POA Pebble	07/14/00	10	
SXL191207	07/30/00	40	
SXL191207	08/01/00	10	K
SXL191207	08/09/00	20	
SXL191207	08/17/00	10	
SXL191207	08/25/00	10	K
SXL191207	08/30/00	10	K
WILDWOOD SHORES POA lines	07/14/00	10	K
SXL191208	08/09/00	50	
SXL191208	08/17/00	20	
SXL191208	08/25/00	10	
SXL191208	08/30/00	10	
WILDWOOD SHORES POA Bass Rock	07/14/00	10	K
SXL191209	08/09/00	10	K
SXL191209	08/17/00	10	K
SXL191209	08/25/00	10	
SXL191209	08/30/00	10	K
HOPATCONG GARDENS COMM. CLUB	06/04/00	30	
SXL191210	06/21/00	20	
SXL191210	07/01/00	20	
SXL191210	07/21/00	70	
SXL191210	08/17/00	60	
CRESCENT COVE	06/29/00	288	
SXL191211	07/05/00	28	
SXL191211	07/19/00	24	
SXL191211	08/03/00	164	
SXL191211	08/21/00	44	
RANDAL BEACH CLUB	06/28/00	10	

SXL191213	07/12/00	20	
SXL191213	07/26/00	10	K
SXL191213	08/09/00	10	K
SXL191213	08/21/00	40	
DOX INC	07/02/00	150	
SXL191214	07/21/00	10	K
SXL191214	08/17/00	10	
SXL191214	08/22/00	10	K
INGRAM COVE COMMUNITY	05/25/00	144	
SXL191215	06/05/00	114	
SXL191215	06/20/00	20	
SXL191215	07/03/00	14	
SXL191215	07/19/00	28	
SXL191215	08/01/00	364	
SXL191215	08/03/00	280	
SXL191215	08/08/00	44	
SXL191215	08/15/00	184	
SXL191215	08/29/00	192	
HOMESTEAD BEACH	06/09/00	32	
SXL191216	06/21/00	20	
SXL191216	07/05/00	88	
SXL191216	07/19/00	64	
SXL191216	08/02/00	40	
SXL191216	08/21/00	112	
SHAWNEE DOCK ASSOCIATION	07/02/00	10	K
SXL191218	07/08/00	20	
SXL191218	07/21/00	50	
SXL191218	07/30/00	10	K
SXL191218	08/17/00	20	
SXL191218	08/22/00	100	
BYRAM BAY COMMUNITY CLUB	05/24/00	22	
SXL191219	06/22/00	76	
SXL191219	08/03/00	20	
SXL191219	08/17/00	40	
COLONY CLUB	07/19/00	10	
SXL191220	08/02/00	70	
SXL191220	08/16/00	500	followed flood conditions
SXL191220	08/28/00	160	
	06/05/01	10	K
	06/09/01	10	K

	06/19/01	70	
	06/25/01	80	
	07/12/01	50	
	07/16/01	20	
	07/30/01	20	
	08/06/01	10	K
	06/11/01	10	
	06/25/01	120	
	07/09/01	50	
	07/23/01	40	
	08/06/01	50	
	08/20/01	110	
	05/30/01	30	
	06/13/01	10	K
	06/27/01	20	
	07/10/01	200	
	07/25/01	10	K
	08/08/01	200	
	08/22/01	10	
	06/15/01	148	
	06/21/01	2	
	07/03/01	92	
	07/19/01	22	
	08/02/01	4	
	08/13/01	68	
Pebble Beach Ave	05/29/01	40	
Pebble Beach Ave	06/10/01	10	
Pebble Beach Ave	06/27/01	10	
Pebble Beach Ave	07/12/01	10	
Pebble Beach Ave	07/17/01	30	
Pebble Beach Ave	07/25/01	10	K
Pebble Beach Ave	08/03/01	10	K
Lines Ave	05/29/01	10	K
Lines Ave	06/10/01	210	
Lines Ave	07/12/01	20	
Lines Ave	07/17/01	10	K
Lines Ave	07/25/01	20	
Lines Ave	08/03/01	10	K
Lines Ave	08/16/01	40	

Bass Rock Road	05/29/01	30	
Bass Rock Road	06/10/01	20	
Bass Rock Road	06/27/01	10	K
Bass Rock Road	07/12/01	10	K
Bass Rock Road	07/17/01	10	
Bass Rock Road	07/25/01	10	
Bass Rock Road	08/03/01	10	K
Bass Rock Road	08/16/01	40	
	05/29/01	20	
	05/24/01	3	
	07/02/01	30	
	07/18/01	10	
	08/01/01	10	
	08/15/01	210	
	08/29/01	50	
	05/29/01	70	
	06/05/01	80	
	06/09/01	30	
	06/19/01	10	
	07/05/01	10	K
	07/30/01	10	K
	08/23/01	10	
	06/05/01	20	
	06/09/01	10	K
	06/19/01	110	
	06/25/01	150	
	07/05/01	70	
	07/12/01	40	
	07/16/01	10	K
	07/30/01	60	
	08/06/01	420	
	08/23/01	250	
	06/26/01	28	
	07/12/01	72	
	07/24/01	12	
	08/08/01	54	
	08/22/01	40	
	05/29/01	40	
	06/05/01	10	
	06/09/01	10	K
	06/19/01	40	
	06/25/01	60	
	07/05/01	20	
	07/12/01	20	
	07/16/01	10	K

	08/07/01	10	K
	08/23/01	10	K
	06/21/01	2	
	07/10/01	7	
	07/31/01	13	
	08/21/01	6	
	06/20/01	10	
	07/02/01	600	
	07/09/01	30	
	07/18/01	10	K
	08/01/01	20	
	08/15/01	530	
	08/29/01	810	
MAXIM DRIVE	05/28/02	10	K
MAXIM DRIVE	05/31/02	60	
MAXIM DRIVE	06/06/02	930	
MAXIM DRIVE	06/09/02	10	
MAXIM DRIVE	06/17/02	40	
MAXIM DRIVE	06/25/02	60	
MAXIM DRIVE	07/05/02	50	
MAXIM DRIVE	07/08/02	40	
MAXIM DRIVE	07/15/02	10	K
MAXIM DRIVE	08/12/02	10	K
MAXIM DRIVE	08/20/02	20	
W. SHORE DRIVE	06/26/02	50	
W. SHORE DRIVE	07/01/02	10	K
W. SHORE DRIVE	07/10/02	TNTC	
W. SHORE DRIVE	07/12/02	50	
W. SHORE DRIVE	07/24/02	70	
W. SHORE DRIVE	08/07/02	60	
W. SHORE DRIVE	08/21/02	17	
108 MAXIM DRIVE	06/03/02	20	
108 MAXIM DRIVE	06/17/02	70	
108 MAXIM DRIVE	07/01/02	10	K
108 MAXIM DRIVE	07/15/02	10	K
108 MAXIM DRIVE	07/29/02	4	

108 MAXIM DRIVE	08/12/02	10	K
ITHANELL ROAD	05/31/02	150	
ITHANELL ROAD	06/09/02	20	
ITHANELL ROAD	06/17/02	10	K
ITHANELL ROAD	06/25/02	20	
ITHANELL ROAD	07/05/02	5600	
ITHANELL ROAD	07/08/02	100	
ITHANELL ROAD	07/15/02	10	
ITHANELL ROAD	08/26/02	140	
19 PEBBLE BCH RD	06/08/02	30	
19 PEBBLE BCH RD	06/17/02	10	
19 PEBBLE BCH RD	07/05/02	40	
19 PEBBLE BCH RD	07/09/02	30	
19 PEBBLE BCH RD	07/16/02	10	
19 PEBBLE BCH RD	07/24/02	10	K
19 PEBBLE BCH RD	07/31/02	10	
19 PEBBLE BCH RD	08/07/02	10	K
19 PEBBLE BCH RD	08/15/02	60	
19 PEBBLE BCH RD	08/20/02	240	
19 PEBBLE BCH RD	08/27/02	10	K
31 LINES AVENUE	06/08/02	10	K
31 LINES AVENUE	06/17/02	30	
31 LINES AVENUE	07/05/02	70	
31 LINES AVENUE	07/09/02	310	
31 LINES AVENUE	07/12/02	50	
31 LINES	07/24/02	10	K

AVENUE			
31 LINES AVENUE	07/31/02	10	
31 LINES AVENUE	08/15/02	30	
31 LINES AVENUE	08/20/02	180	
31 LINES AVENUE	08/27/02	20	
3 BASS LAKE ROAD	06/08/02	80	
3 BASS LAKE ROAD	06/17/02	20	
3 BASS LAKE ROAD	06/26/02	60	
3 BASS LAKE ROAD	07/05/02	10	K
3 BASS LAKE ROAD	07/09/02	20	
3 BASS LAKE ROAD	07/16/02	10	K
3 BASS LAKE ROAD	07/24/02	10	K
3 BASS LAKE ROAD	07/31/02	80	
3 BASS LAKE ROAD	08/15/02	20	
3 BASS LAKE ROAD	08/20/02	100	
3 BASS LAKE ROAD	08/27/02	10	K
	06/14/02	240	
	06/18/02	122	
	06/24/02	139	
	07/01/02	330	
	07/03/02	460	
	07/08/02	105	
	07/15/02	91	
	07/24/02	200	
	07/29/02	100	
	08/01/02	34	
	08/01/02	1	K
	08/12/02	210	
	08/19/02	60	
	08/26/02	200	
	08/29/02	600	L
	07/05/02	20	
	07/08/02	10	K
	07/26/02	10	K

	07/31/02	40	
	08/12/02	10	K
	08/26/02	50	
COVE ROAD	05/31/02	10	
COVE ROAD	06/06/02	980	
COVE ROAD	06/09/02	10	
COVE ROAD	06/25/02	40	
COVE ROAD	07/05/02	160	
COVE ROAD	07/08/02	160	
COVE ROAD	07/31/02	40	
COVE ROAD	08/12/02	10	
COVE ROAD	08/20/02	240	
COVE ROAD	08/26/02	140	
MARINERS ROAD	06/11/02	18	
MARINERS ROAD	06/21/02	86	
MARINERS ROAD	07/10/02	150	
MARINERS ROAD	07/23/02	62	
MARINERS ROAD	08/08/02	24	
MARINERS ROAD	08/21/02	68	
18 CHINCOPEE AVE	06/04/02	10	
18 CHINCOPEE AVE	06/17/02	10	K
18 CHINCOPEE AVE			INACTIVE
	05/22/02	4	
	06/07/02	122	
	06/27/02	12	
	07/12/02	22	
	07/30/02	5	
	08/09/02	17	
	08/28/02	18	
Sperry Springs-Maxim Drive	05/29/03	10	K
	06/03/03	10	
	06/09/03	30	
	06/24/03	40	
	06/30/03	40	
	07/07/03	10	K
	07/14/03	40	
	07/21/03	30	
	07/28/03	10	K

	08/05/03	10	K
	08/11/03	10	K
	08/18/03	10	K
	08/25/03	10	
Shady Lawn Beach Club	07/02/03	10	K
	07/16/03	70	
	07/30/03	20	
	08/13/03	380	
	08/18/03	160	
	08/27/03	20	
Beck Lane Properties	05/28/03	10	
	06/11/03	110	
	06/25/03	10	
	07/08/03	10	K
	07/23/03	70	K
	08/06/03	30	
	08/20/03	12	
Elba Point Homeowners	05/14/03	10	
	05/30/03	10	K
	06/03/03	10	
	06/09/03	10	K
	06/24/03	20	
	06/30/03	10	K
	07/07/03	6000	L
	07/09/03	10	K
	07/14/03	20	
	07/21/03	20	
	07/28/03	10	
	08/05/03	310	
	08/08/03	110	
	08/11/03	130	
	08/18/03	20	
	08/25/03	10	K
Wildwood Shores POA Pebble Beach Rd	05/30/03	10	K
	06/03/03	70	
	06/09/03	10	
	06/27/03	10	K
	07/21/03	150	
	08/13/03	10	K
Wildwood	05/30/03	10	

Shores POA Lines Ave			
	06/03/03	50	
	09/06/03	10	K
	06/27/03	10	
	07/21/03	50	
	08/13/03	10	K
Wildwood Shores POA Bass Lake Rd	05/30/03	20	
	06/03/03	40	
	06/09/03	10	
	06/27/03	10	K
	07/21/03	40	
	08/13/03	30	
Crescent Cove	06/03/03	180	
	06/27/03	190	
	07/01/03	260	
	07/03/03	600	K
	07/07/03	10	L
	07/15/03	500	
	07/17/03	20	
	07/22/03	10	
	07/28/03	70	
	08/04/03	110	
	08/12/03	60	K
	08/18/03	20	
	08/25/03	20	
DOX Inc.	07/07/03	10	K
	07/14/03	20	
	07/21/03	10	K
	07/28/03	10	
	08/05/03	10	
	08/11/03	10	K
	08/18/03	20	
	08/25/03	20	
Ingram Cove Community	05/29/03	210	
	06/03/03	10	K
	06/09/03	20	
	06/24/03	10	K
	06/30/03	40	
	07/07/03	30	
	07/14/03	100	
	07/21/03	70	
	07/28/03	90	

	08/05/03	450	
	08/11/03	300	
	08/18/03	20	
	08/25/03	140	
Homestead Beach	06/23/03	20	
	07/08/03	82	
	07/25/03	144	
	08/13/03	94	
	08/25/03	20	
Byram Bay Community	06/06/03	34	
	07/03/03	36	
	07/18/03	32	
	08/06/03	52	
	08/20/03	53	
	08/29/03	13	
Sperry Springs	06/16/04	2100	
	06/18/04	10	
	06/23/04	10	
	06/29/04	280	
	07/01/04	10	K
	07/06/04	10	K
	07/15/04	90	
	07/20/04	30	
	07/26/04	50	
	08/03/04	10	K
	08/10/04	40	
	08/18/04	10	
	08/25/04	40	
Shady Lawn	06/02/04	20	
	06/16/04	10	K
	06/30/04	20	
	07/14/04	100	K
	07/28/04	20	
	08/11/04	20	
	08/25/04	40	
Beck Lane	05/17/04	10	
	06/02/04	20	
	06/16/04	10	K
	06/30/04	10	
	07/14/04	10	
	07/28/04	10	K
	08/11/04	10	K
	08/25/04	20	

Elba Point	05/17/04	10	
	06/02/04	20	
	06/22/04	20	
	06/30/04	20	
	07/14/04	10	K
	07/28/04	10	
	08/11/04	40	
	08/25/04	10	
Wildwood Shores Pebble Beach	06/01/04	10	
	06/10/04	10	K
	06/14/04	10	K
	06/22/04	10	
	07/07/04	10	K
	07/20/04	10	K
	08/02/04	10	K
	08/19/04	10	
	08/30/04	10	K
Wildwood Shores Lines Ave	06/01/04	10	K
	06/10/04	30	
	06/14/04	10	
	06/22/04	20	
	07/07/04	20	
	07/20/04	50	
	08/02/04	90	
	08/19/04	30	
	08/30/04	10	K
Wildwood Shores Bass Rock Lane	06/10/04	10	K
	06/14/04	10	
	06/22/04	10	
	07/07/04	10	K
	07/20/04	10	K
	08/02/04	10	K
	08/19/04	10	
	08/30/04	10	K
Crescent Cove	07/15/04	600	L
	07/07/04	70	
	07/15/04	600	L
	07/20/04	200	
	07/29/04	110	
	08/02/04	20	

	08/09/04	100	
	08/17/04	40	
	08/24/04	130	
Dox Inc.	07/06/04	10	K
	07/20/04	40	
	08/03/04	10	K
	08/18/04	10	
Ingram Cove Community	06/16/04	20	
	06/23/04	380	
	06/29/04	100	
	07/06/04	1	K
	07/15/04	40	
	07/20/04	130	
	07/23/04	130	
	07/26/04	430	
	08/10/04	40	
	08/25/04	120	
Homestead Beach	06/21/04	14	
	07/06/04	311	
	07/08/04	66	
	07/19/04	156	
	08/03/04	38	
	08/16/04	18	
Byram Beach Community Club	05/26/04	36	
	06/09/04	48	
	07/08/04	7	
	07/23/07	18	
	08/11/04	23	
	08/26/04	26	
Beach Center	05/18/98	16	
	05/26/98	10	
	06/01/98	60	
	06/08/98	6	
	06/15/98	2	
	06/22/98	1	
	06/29/98	12	
	07/06/98	1	K
	07/13/98	29	
	07/20/98	4	
	07/27/98	1	K
	08/03/98	46	
	08/10/98	24	

	08/17/98	6	
	08/24/98	4	
	08/31/98	23	
Beach Center	05/22/00	10	
Beach Center	05/30/00	1	
Beach Center	06/05/00	1	
Beach Center	06/12/00	110	
Beach Center	06/19/00	4	
Beach Center	06/26/00	52	
Beach Center	07/05/00	18	
Beach Center	07/10/00	52	
Beach Center	07/17/00	5	
Beach Center	07/24/00	110	
Beach Center	07/31/00	11	
Beach Center	08/07/00	1	
Beach Center	08/16/00	69	
Beach Center	08/21/00	1700	
Beach Center	08/23/00	52	
Beach Center	08/28/00	7	
	05/21/01	1	k
	05/29/01	6	
	06/04/01	3	
	06/11/01	7	
	06/18/01	5	
	06/25/01	2	
	07/02/01	22	
North	05/21/02	3	
North	05/31/02	9	
North	06/04/02	280	
North	06/06/02	1100	
North	06/07/02	390	
North	06/10/02	11	
North	06/18/02	14	
North	06/24/02	158	
North	07/02/02	100	
North	07/05/02	36	
North	07/08/02	101	
North	07/19/02	2380	
North	07/26/02	10	k
North	08/02/02	290	
North	08/05/02	10	
North	08/09/02	60	
North	08/16/02	80	
North	08/23/02	20	
North	08/30/02	110	

South	07/05/02	1	k
South	07/19/02	320	
South	07/26/02	10	k
South	08/02/02	360	
South	08/05/02	20	
South	08/09/02	40	
South	08/16/02	10	
South	08/23/02	70	
South	08/30/02	40	
North	05/23/03	10	
North	05/27/03	10	
North	06/02/03	10	
North	06/09/03	10	
North	06/16/03	10	
North	06/23/03	10	
North	07/01/03	70	
North	07/07/03	10	
North	07/15/03	20	
North	07/22/03	50	
North	07/28/03	20	
North	08/04/03	100	
North	08/18/03	20	
North	08/25/03	60	
South	05/23/03	10	
South	05/27/03	10	
South	06/02/03	10	
South	06/09/03	10	
South	06/16/03	10	
South	06/23/03	80	
South	07/01/03	200	
South	07/07/03	50	
South	07/15/03	10	
South	07/22/03	80	
South	07/28/03	10	
South	08/04/03	10	
South	08/18/03	10	
South	08/25/03	10	
North	05/18/04	10	
	05/24/04	20	
	06/03/04	10	k
	06/10/04	30	
	06/14/04	20	
	06/22/04	100	
	06/29/04	200	
	07/07/04	50	

	07/13/04	600	L
	07/14/04	50	
	07/20/04	180	
	07/26/04	10	k
	08/02/04	50	
	08/09/04	10	k
	08/17/04	20	
	08/23/04	30	
	08/30/04	10	
South	05/18/04	30	
	05/24/04	20	
	06/03/04	10	k
	06/10/04	10	
	06/14/04	30	
	06/22/04	30	
	06/29/04	150	
	07/07/04	90	
	07/13/04	70	
	07/20/04	330	
	07/23/04	30	
	07/26/04	10	k
	08/02/04	30	
	08/09/04	20	
	08/17/04	80	
	08/23/04	40	
	08/30/04	60	
North	08/29/05	70	
	08/22/05	10	k
	08/15/05	90	
	08/08/05	210	
	08/10/05	80	resample
	08/01/05	110	
	07/25/05	80	
	07/18/05	70	
	07/11/05	20	
	07/05/05	70	
	06/30/05	70	
	06/23/05	60	
	06/13/05	10	
	04/09/08	10	
	06/06/05	40	
	06/01/05	10	k
	05/26/05	10	k
	05/24/05	80	
	05/16/05	10	k

South	08/29/05	70	
	08/22/05	80	
	08/15/05	110	
	08/08/05	290	
	08/10/05	160	resample
	08/01/05	60	
	07/25/05	110	
	07/18/05	160	
	07/11/05	40	
	07/05/05	30	
	06/30/05	70	
	06/23/05	20	
	06/13/05	10	
	06/06/05	10	k
	06/01/05	10	k
	05/26/05	10	k
	05/24/05	530	
	05/16/05	10	

Lake Winona			
count	48	mean+3stdev	6920
median	75	% Reduction	98%
max	10000		
Stdev	2046	**no data excluded**	
mean	781		
mean+3stdev	6920		

Station	**Date**	**Value**	**Remarks**
Lake Winona Civic Association	06/22/99	10	
	06/29/99	14	
	07/08/99	3	
	07/15/99	44	
	07/19/99	4	
	07/26/99	26	
	08/04/99	1	
	08/09/99	1	K
	08/16/99	106	
	08/23/99	408	
	09/03/99	4	
	06/25/02	100	
	07/05/02	10	
	07/09/02	360	
	07/11/02	10	k
	07/15/02	90	
	07/26/02	20	
	07/31/02	130	
	08/13/02	10	k
	08/20/02	240	
	08/22/02	90	
	08/26/02	60	
Lake Winona Civic Association	05/30/03	550	
	06/03/03	100	
	06/09/03	90	
	06/15/03	90	
	06/24/03	40	
	06/30/03	10	k
	07/07/03	10	
	07/14/03	30	
	07/21/03	50	
	07/28/03	20	
	08/05/03	350	
	08/18/03	30	
	08/25/03	10	k
Lake Winona Civic Association	06/16/04	450	
	06/17/04	60	
	06/25/04	240	
	06/29/04	6700	
	07/01/04	10000	
	07/15/04	550	
	07/20/04	440	
	07/22/04	1100	
	07/26/04	50	
	08/03/04	6000	
	08/10/04	6000	
	08/18/04	300	
	08/25/04	2500	

WMA 02

Crystal Springs			
count	9	mean+3stdev	988
Median	250	%reduction	74%
Max	770		
stdev	254	**no data excluded**	
mean	227		
mean+3stdev	988		

STATION	**DATE**	**VALUE**	**REMARK**
SXHR136	07/27/00	**770**	
SXHR136	08/03/00	**360**	
SXHR136	08/14/00	**250**	
SXHR136	08/16/00	**300**	Resample
SXHR136	08/24/00	**320**	
SXHR136	08/29/00	10	
SXLHR136	06/08/99	10	K
SXLHR136	06/30/99	10	K
SXLHR136	08/04/99	10	K

Deer Trail Lake			
count	16	mean+3stdev	653
Median	7	%reduction	73%
Max	738		
stdev	190	**no data excluded**	
mean	84		
mean+3stdev	653		

STATION	**DATE**	**VALUE**	**REMARK**
SXL191112	07/07/98	1	
SXL191112	07/13/98	2	
SXL191112	07/28/98	5	
SXL191112	08/04/98	7	
SXL191112	08/11/98	9	
SXL191112	09/02/98	1	
	07/02/01	180	
	07/10/01	6	
	07/17/01	12	
	07/24/01	26	
	07/31/01	258	
	08/03/01	738	
	08/07/01	2	K
	08/15/01	82	
	08/22/01	2	K
	08/27/01	6	

Lake Mohawk			

count	1134	mean+3stdev	1516
median	20	% Reduction	98%
max	11000		
Stdev	476	**no data excluded**	
mean	89		
mean+3stdev	1516		

STATION	DATE	VALUE	REMARK
SXL102	05/18/98	10	K
SXL102	05/26/98	10	K
SXL102	06/01/98	210	
SXL102	06/03/98	10	K, RESAMPLE
SXL102	06/08/98	10	K
SXL102	06/15/98	50	
SXL102	06/22/98	10	K
SXL102	06/29/98	10	K
SXL102	07/06/98	10	K
SXL102	07/13/98	1200	
SXL102	07/16/98	30	RESAMPLE
SXL102	07/20/98	50	
SXL102	07/27/98	60	
SXL102	08/03/98	10	K
SXL102	08/10/98	280	
SXL102	08/12/98	90	RESAMPLE
SXL102	08/17/98	10	K
SXL102	08/24/98	100	
SXL102	08/31/98	220	
SXL102	09/02/98	60	
SXL103	05/18/98	30	
SXL103	05/26/98	10	K
SXL103	06/01/98	50	
SXL103	06/08/98	10	K
SXL103	06/15/98	10	K
SXL103	06/22/98	30	
SXL103	06/29/98	10	K
SXL103	07/06/98	10	K
SXL103	07/13/98	10	K
SXL103	07/20/98	10	K
SXL103	07/27/98	10	K
SXL103	08/03/98	10	K
SXL103	08/10/98	10	K
SXL103	08/17/98	10	K
SXL103	08/24/98	10	K
SXL103	08/31/98	10	K
SXL104	05/18/98	20	
SXL104	05/26/98	10	K
SXL104	06/01/98	100	
SXL104	06/08/98	10	K
SXL104	06/15/98	50	
SXL104	06/22/98	10	K
SXL104	06/29/98	10	K
SXL104	07/06/98	10	K
SXL104	07/13/98	30	
SXL104	07/20/98	40	
SXL104	07/27/98	20	
SXL104	08/03/98	10	K
SXL104	08/10/98	10	K
SXL104	08/17/98	10	K
SXL104	08/24/98	10	K
SXL104	08/31/98	10	K
SXL105	05/18/98	20	
SXL105	05/26/98	10	K
SXL105	06/01/98	650	
SXL105	06/03/98	40	RESAMPLE
SXL105	06/08/98	10	K
SXL105	06/15/98	20	
SXL105	06/22/98	20	
SXL105	06/29/98	10	K
SXL105	07/06/98	40	
SXL105	07/13/98	10	K
SXL105	07/20/98	10	K
SXL105	07/27/98	120	
SXL105	08/03/98	30	
SXL105	08/10/98	10	K
SXL105	08/17/98	10	K
SXL105	08/24/98	20	
SXL105	08/31/98	10	K
SXL106	05/18/98	360	
SXL106	05/20/98	40	RESAMPLE
SXL106	05/26/98	410	
SXL106	05/28/98	10	K
SXL106	06/01/98	290	
SXL106	06/03/98	50	RESAMPLE
SXL106	06/08/98	10	K
SXL106	06/15/98	50	
SXL106	06/22/98	10	K
SXL106	06/29/98	40	
SXL106	07/06/98	10	K
SXL106	07/13/98	10	K
SXL106	07/20/98	50	
SXL106	07/27/98	50	
SXL106	08/03/98	10	K
SXL106	08/10/98	20	
SXL106	08/17/98	30	
SXL106	08/24/98	70	
SXL106	08/31/98	60	
SXL108	05/18/98	130	
SXL108	05/26/98	130	
SXL108	06/01/98	90	
SXL108	06/03/98	70	
SXL108	06/08/98	210	
SXL108	06/15/98	20	RESAMPLE
SXL108	06/17/98	200	
SXL108	06/22/98	10	K
SXL108	06/29/98	10	K
SXL108	07/06/98	10	K
SXL108	07/13/98	30	
SXL108	07/20/98	10	K
SXL108	07/27/98	10	K
SXL108	08/03/98	10	K
SXL108	08/10/98	40	
SXL108	08/17/98	660	
SXL108	08/19/98	220	RESAMPLE
SXL108	08/24/98	70	
SXL108	08/31/98	10	K
SXL109	05/18/98	10	K
SXL109	05/26/98	10	K
SXL109	06/01/98	90	
SXL109	06/08/98	50	
SXL109	06/15/98	120	
SXL109	06/22/98	20	
SXL109	06/29/98	40	
SXL109	07/06/98	10	K
SXL109	07/13/98	10	K
SXL109	07/20/98	10	K
SXL109	07/27/98	20	
SXL109	08/03/98	10	K
SXL109	08/10/98	20	
SXL109	08/17/98	20	
SXL109	08/24/98	110	
SXL109	08/31/98	10	K
SXL111	05/18/98	20	
SXL111	05/26/98	10	K
SXL111	06/01/98	80	
SXL111	06/08/98	20	
SXL111	06/15/98	1200	
SXL111	06/17/98	120	RESAMPLE
SXL111	06/22/98	20	
SXL111	06/29/98	70	
SXL111	07/06/98	40	

SXL111	07/13/98	80	
SXL111	07/27/98	50	
SXL111	08/03/98	10	K
SXL111	08/10/98	10	K
SXL111	08/17/98	270	
SXL111	08/19/98	10	K, RESAMPLE
SXL111	08/24/98	160	
SXL111	08/31/98	60	
SXL112	05/18/98	10	K
SXL112	05/26/98	10	K
SXL112	06/01/98	160	
SXL112	06/08/98	10	K
SXL112	06/15/98	10	K
SXL112	06/22/98	10	K
SXL112	06/29/98	10	K
SXL112	07/06/98	30	
SXL112	07/13/98	60	
SXL112	07/20/98	20	
SXL112	07/27/98	10	K
SXL112	08/03/98	10	K
SXL112	08/10/98	10	K
SXL112	08/17/98	10	K
SXL112	08/24/98	10	K
SXL112	08/31/98	30	
SXL113	05/18/98	10	K
SXL113	05/26/98	10	K
SXL113	06/01/98	80	
SXL113	06/08/98	10	K
SXL113	06/15/98	50	
SXL113	06/22/98	10	K
SXL113	06/29/98	10	K
SXL113	07/06/98	10	K
SXL113	07/13/98	10	K
SXL113	07/20/98	20	
SXL113	07/27/98	50	
SXL113	08/03/98	30	
SXL113	08/10/98	10	K
SXL113	08/17/98	10	K
SXL113	08/24/98	10	K
SXL113	08/31/98	10	K
1	05/24/99	10	K
SXL101	06/01/99	**210**	
SXL101	06/03/99	12	Resample
SXL101	06/04/99	1	Resample
SXL101	06/07/99	20	
SXL101	06/14/99	10	K
SXL101	06/23/99	150	

SXL101	06/28/99	130	
SXL101	07/06/99	160	
SXL101	07/12/99	10	
SXL101	07/19/99	**280**	
SXL101	07/21/99	10	Resample
SXL101	07/26/99	40	
SXL101	08/02/99	10	K
SXL101	08/09/99	10	K
SXL101	08/16/99	50	
SXL101	08/23/99	90	
SXL101	08/30/99	40	
2	05/24/99	**380**	
SXL102	05/26/99	**240**	Resample
SXL102	05/27/99	84	Resample
SXL102	06/01/99	120	
SXL102	06/07/99	50	
SXL102	06/14/99	10	
SXL102	06/21/99	90	
SXL102	06/28/99	50	
SXL102	07/06/99	**270**	
SXL102	07/08/99	47	Resample
SXL102	07/09/99	4	Resample
SXL102	07/12/99	10	K
SXL102	07/19/99	40	
SXL102	07/26/99	**590**	
SXL102	07/28/99	120	Resample
SXL102	08/02/99	20	
SXL102	08/09/99	20	
SXL102	08/16/99	10	K
SXL102	08/23/99	100	
SXL102	08/30/99	30	
3	05/24/99	**4600**	
SXL103	05/26/99	70	Resample
SXL103	06/01/99	10	K
SXL103	06/07/99	10	K
SXL103	06/14/99	10	K
SXL103	06/21/99	10	K
SXL103	06/28/99	10	
SXL103	07/06/99	10	K
SXL103	07/12/99	50	
SXL103	07/19/99	10	K
SXL103	07/26/99	20	
SXL103	08/02/99	10	K
SXL103	08/09/99	50	
SXL103	08/16/99	10	
SXL103	08/23/99	10	K
SXL103	08/30/99	10	K

4	05/24/99	90	
SXL104	06/01/99	10	K
SXL104	06/07/99	20	
SXL104	06/14/99	30	
SXL104	06/21/99	30	
SXL104	06/28/99	90	
SXL104	07/06/99	**530**	
SXL104	07/08/99	29	Resample
SXL104	07/09/99	12	Resample
SXL104	07/12/99	10	
SXL104	07/19/99	20	
SXL104	07/26/99	60	
SXL104	08/02/99	10	K
SXL104	08/09/99	110	
SXL104	08/16/99	20	
SXL104	08/23/99	10	K
SXL104	08/30/99	30	
5	05/24/99	**310**	
SXL105	05/26/99	50	Resample
SXL105	06/01/99	30	
SXL105	06/07/99	10	
SXL105	06/14/99	30	
SXL105	06/21/99	40	
SXL105	06/28/99	60	
SXL105	07/06/99	40	
SXL105	07/12/99	10	
SXL105	07/19/99	80	
SXL105	07/26/99	70	
SXL105	08/02/99	10	K
SXL105	08/09/99	20	
SXL105	08/16/99	**450**	
SXL105	08/18/99	30	Resample
SXL105	08/23/99	40	
SXL105	08/30/99	10	
6	05/24/99	**11,000**	
SXL106	05/26/99	**510**	Resample
SXL106	05/26/99	104	Resample
SXL106	05/27/99	**1100**	Resample
SXL106	06/01/99	60	
SXL106	06/07/99	80	
SXL106	06/14/99	30	
SXL106	06/21/99	20	
SXL106	06/28/99	**450**	
SXL106	06/30/99	80	Resample
SXL106	07/06/99	**290**	
SXL106	07/08/99	163	Resample
SXL106	07/09/99	39	Resample

SXL106	07/12/99	10	
SXL106	07/19/99	30	
SXL106	07/26/99	10	K
SXL106	08/02/99	10	
SXL106	08/09/99	10	K
SXL106	08/16/99	60	
SXL106	08/23/99	10	K
SXL106	08/30/99	20	
Happy Valley	05/24/99	90	
SXL108	06/01/99	110	
SXL108	06/07/99	40	
SXL108	06/14/99	20	
SXL108	06/21/99	160	
SXL108	06/28/99	**480**	
SXL108	06/30/99	80	Resample
SXL108	07/06/99	40	
SXL108	07/12/99	**270**	
SXL108	07/19/99	50	
SXL108	07/26/99	20	
SXL108	08/02/99	10	K
SXL108	08/09/99	50	
SXL108	08/16/99	**210**	
SXL108	08/18/99	**490**	Resample
SXL108	08/23/99	40	
Tamarack	05/24/99	50	
SXL111	06/01/99	10	
SXL111	06/07/99	10	K
SXL111	06/14/99	80	
SXL111	06/21/99	90	
SXL111	06/28/99	**400**	
SXL111	06/30/99	50	Resample
SXL111	07/06/99	**330**	
SXL111	07/08/99	14	
SXL111	07/09/99	21	
SXL111	07/12/99	90	
SXL111	07/19/99	**2300**	
SXL111	07/21/99	140	Resample
SXL111	07/26/99	140	
SXL111	08/02/99	10	K
SXL111	08/09/99	10	
SXL111	08/16/99	160	
SXL111	08/23/99	10	K
SXL111	08/30/99	20	
Alpine	05/24/99	110	
SXL112	06/01/99	10	K
SXL112	06/07/99	10	
SXL112	06/14/99	10	

SXL112	06/23/99	10	K
SXL112	06/28/99	160	
SXL112	07/06/99	10	K
SXL112	07/12/99	10	K
SXL112	07/19/99	10	K
SXL112	07/26/99	10	K
SXL112	08/02/99	10	K
SXL112	08/09/99	10	
SXL112	08/16/99	50	
SXL112	08/23/99	10	K
SXL112	08/30/99	80	
Upper	05/24/99	**410**	
SXL113	05/26/99	10	Resample
SXL113	06/01/99	50	
SXL113	06/07/99	20	
SXlL13	06/14/99	20	
SXL113	06/23/99	10	K
SXL113	06/28/99	**400**	
SXL113	06/30/99	10	Resample
SXL113	07/07/99	60	
SXL113	07/12/99	**390**	
SXL113	07/14/99	10	K
SXL113	07/19/99	**580**	
SXL113	07/21/99	180	Resample
SXL113	07/26/99	90	
SXL113	08/02/99	20	
SXL113	08/09/99	10	
SXL113	08/16/99	40	
SXL113	08/23/99	10	K
SXL113	08/30/99	10	K
Lake Mohawk Beach 1	06/26/00	40	
SXL101	07/05/00	110	
SXL101	07/10/00	30	
SXL101	08/07/00	20	
SXL101	08/16/00	50	
SXL101	08/28/00	10	K
Lake Mohawk Beach 2	05/22/00	10	K
SXL102	05/30/00	10	K
SXL102	06/05/00	10	K
SXL102	06/12/00	10	
SXL102	06/19/00	10	
SXL102	06/26/00	10	K
SXL102	07/05/00	10	K
SXL102	07/10/00	60	
SXL102	07/17/00	10	K

SXL102	07/24/00	20	
SXL102	07/31/00	10	
SXL102	08/07/00	10	K
SXL102	08/16/00	60	
SXL102	08/21/00	10	
SXL102	08/28/00	20	
Lake Mohawk Beach 3	05/22/00	10	K
SXL103	05/30/00	10	K
SXL103	06/05/00	10	
SXL103	06/12/00	10	
SXL103	06/19/00	20	
SXL103	06/26/00	10	K
SXL103	07/05/00	10	K
SXL103	07/10/00	170	
SXL103	07/17/00	10	K
SXL103	07/24/00	70	
SXL103	07/31/00	10	K
SXL103	08/07/00	20	
SXL103	08/16/00	10	
SXL103	08/21/00	10	K
SXL103	08/28/00	10	K
Lake Mohawk Beach 4	05/22/00	10	K
SXL104	05/30/00	40	
SXL104	06/05/00	10	
SXL104	06/12/00	40	
SXL104	06/19/00	60	
SXL104	06/26/00	10	K
SXL104	07/05/00	10	
SXL104	07/10/00	40	
SXL104	07/12/00	10	K
SXL104	07/17/00	10	K
SXL104	07/24/00	20	
SXL104	07/31/00	10	K
SXL104	08/07/00	20	
SXL104	08/16/00	40	
SXL104	08/21/00	10	K
SXL104	08/28/00	20	
Lake Mohawk Beach 5	05/22/00	10	K
SXL105	05/30/00	10	K
SXL105	06/05/00	**7800**	
SXL105	06/07/00	10	Resample
SXL105	06/12/00	100	
SXL105	06/19/00	40	
SXL105	06/26/00	10	

SXL105	07/05/00	60	
SXL105	07/10/00	30	
SXL105	07/17/00	150	
SXL105	07/24/00	10	K
SXL105	07/31/00	80	
SXL105	08/07/00	40	
SXL105	08/16/00	20	
SXL105	08/21/00	10	
SXL105	08/28/00	100	
Lake Mohawk Beach 6	05/22/00	50	
SXL106	05/30/00	40	
SXL106	06/05/00	**440**	
SXL106	06/07/00	60	Resample
SXL106	06/12/00	30	
SXL106	06/19/00	10	
SXL106	06/26/00	40	
SXL106	07/05/00	10	
SXL106	07/10/00	50	
SXL106	07/17/00	40	
SXL106	07/24/00	60	
SXL106	07/31/00	30	
SXL106	08/07/00	60	
SXL106	08/16/00	10	K
SXL106	08/21/00	20	
SXL106	08/28/00	10	K
Lake Mohawk Happy Valley Beach	05/22/00	10	
SXL108	05/30/00	10	K
SXL108	06/05/00	10	
SXL108	06/12/00	30	
SXL108	06/19/00	20	
SXL108	06/26/00	50	
SXL108	07/05/00	20	
SXL108	07/10/00	20	
SXL108	07/17/00	10	
SXL108	07/24/00	20	
SXL108	07/31/00	30	
SXL108	08/07/00	20	
SXL108	08/16/00	30	
SXL108	08/21/00	10	K
SXL108	08/28/00	10	K
Lake Mohawk Tamarack Beach	05/22/00	**220**	
SXL111	05/30/00	**70**	

SXL111	06/05/00	**230**	
SXL111	06/07/00	50	Resample
SXL111	06/12/00	90	
SXL111	06/19/00	90	
SXL111	06/26/00	10	K
SXL111	07/05/00	40	
SXL111	07/10/00	30	
SXL111	07/17/00	30	
SXL111	07/24/00	10	K
SXL111	07/31/00	70	
SXL111	08/07/00	10	K
SXL111	08/16/00	40	
SXL111	08/21/00	40	
SXL111	08/28/00	60	
Lake Mohawk Alpine Beach	05/22/00	10	K
SXL112	05/30/00	10	K
SXL112	06/05/00	10	K
SXL112	06/12/00	**290**	
SXL112	06/14/00	20	Resample
SXL112	06/19/00	30	
SXL112	06/26/00	10	
SXL112	07/05/00	10	
SXL112	07/10/00	20	
SXL112	07/17/00	10	K
SXL112	07/24/00	10	K
SXL112	07/31/00	10	
SXL112	08/07/00	10	
SXL112	08/16/00	10	K
SXL112	08/21/00	10	
SXL112	08/28/00	30	
Upper Lake Mohawk	05/22/00	70	
SXL113	05/30/00	20	
SXL113	06/05/00	50	
SXL113	06/12/00	**700**	
SXL113	06/14/00	40	Resample
SXL113	06/19/00	140	
SXL113	06/26/00	10	
SXL113	07/05/00	30	
SXL113	07/10/00	30	
SXL113	07/17/00	50	
SXL113	07/24/00	10	
SXL113	07/31/00	30	
SXL113	08/07/00	40	
SXL113	08/16/00	10	K
SXL113	08/21/00	10	

SXL113	08/28/00	10	K
Beach 1	05/23/01	16	
Beach 1	06/04/01	12	
Beach 1	06/11/01	160	
Beach 1	06/18/01	90	
Beach 1	06/25/01	62	
Beach 1	07/02/01	14	
Beach 1	07/09/01	172	
Beach 1	07/16/01	30	
Beach 1	07/30/01	2	
Beach 1	08/06/01	28	
Beach 1	08/13/01	104	
Beach 1	08/20/01	796	
Beach 1	08/22/01	12	
Beach 1	08/27/01	52	
Beach 2	05/23/01	118	
Beach 2	06/04/01	104	
Beach 2	06/11/01	10	
Beach 2	06/18/01	138	
Beach 2	06/25/01	164	
Beach 2	07/02/01	56	
Beach 2	07/09/01	40	
Beach 2	07/16/01	54	
Beach 2	07/23/01	12	
Beach 2	07/30/01	16	
Beach 2	08/06/01	6	
Beach 2	08/13/01	196	
Beach 2	08/20/01	18	
Beach 2	08/27/01	6	
Beach 3	05/23/01	2	
Beach 3	06/04/01	2	
Beach 3	06/11/01	200	
Beach 3	06/18/01	92	
Beach 3	06/25/01	168	
Beach 3	07/02/01	16	
Beach 3	07/09/01	4	
Beach 3	07/16/01	20	
Beach 3	07/23/01	2	k
Beach 3	08/06/01	2	
Beach 3	08/13/01	6	
Beach 3	08/20/01	2	
Beach 3	08/27/01	2	
Beach 4	05/23/01	40	
Beach 4	06/04/01	40	
Beach 4	06/11/01	200	
Beach 4	06/18/01	136	
Beach 4	06/25/01	96	

Beach 4	07/02/01	62	
Beach 4	07/09/01	26	
Beach 4	07/16/01	2	K
Beach 4	07/23/01	2	K
Beach 4	07/30/01	18	
Beach 4	08/06/01	4	
Beach 4	08/13/01	26	
Beach 4	08/20/01	44	
Beach 4	08/27/01	6	
Beach 5	05/23/01	12	
Beach 5	06/04/01	30	
Beach 5	06/11/01	350	
Beach 5	06/14/01	164	
Beach 5	06/18/01	180	
Beach 5	06/25/01	44	
Beach 5	07/02/01	54	
Beach 5	07/09/01	186	
Beach 5	07/16/01	82	
Beach 5	07/23/01	12	
Beach 5	07/30/01	40	
Beach 5	08/06/01	164	
Beach 5	08/13/01	238	
Beach 5	08/20/01	8	
Beach 5	08/27/01	8	
Beach 6	05/23/01	84	
Beach 6	06/04/01	14	
Beach 6	06/11/01	6	
Beach 6	06/18/01	150	
Beach 6	06/25/01	298	
Beach 6	06/27/01	164	
Beach 6	07/02/01	70	
Beach 6	07/09/01	36	
Beach 6	07/16/01	36	
Beach 6	07/23/01	8	
Beach 6	08/06/01	68	
Beach 6	08/13/01	38	
Beach 6	08/20/01	54	
Beach 6	08/27/01	60	
Alpine	05/23/01	72	
Alpine	06/04/01	6	
Alpine	06/11/01	6	
Alpine	06/18/01	24	
Alpine	06/25/01	34	
Alpine	07/02/01	82	
Alpine	07/09/01	6	
Alpine	07/16/01	2	
Alpine	07/23/01	6	

Alpine	07/30/01	22	
Alpine	08/06/01	32	
Alpine	08/13/01	16	
Alpine	08/20/01	44	
Alpine	08/27/01	122	
Manitou	06/25/01	118	
Manitou	07/09/01	30	
Manitou	07/16/01	36	
Manitou	07/23/01	122	
Manitou	07/30/01	18	
Manitou	08/06/01	104	
Manitou	08/13/01	212	
Manitou	08/15/01	90	
Manitou	08/20/01	350	
Manitou	08/22/01	2	K
Manitou	08/27/01	262	
Manitou	08/30/01	30	
Upper	05/23/01	20	
Upper	06/04/01	52	
Upper	06/11/01	856	
Upper	06/14/01	188	
Upper	06/18/01	230	
Upper	06/20/01	176	
Upper	06/25/01	114	
Upper	07/02/01	98	
Upper	07/09/01	32	
Upper	07/16/01	68	
Upper	07/16/01	172	
Upper	07/23/01	2	K
Upper	07/30/01	2	
Upper	08/06/01	38	
Upper	08/13/01	4	
Upper	08/20/01	30	
Upper	08/27/01	10	
BEACH 1	05/20/02	2	
BEACH 1	05/29/02	50	
BEACH 1	06/03/02	10	
BEACH 1	06/10/02	10	K
BEACH 1	06/17/02	50	
BEACH 1	06/24/02	20	
BEACH 1	07/01/02	30	
BEACH 1	07/08/02	20	
BEACH 1	07/15/02	10	
BEACH 1	07/22/02	10	
BEACH 1	07/29/02	40	
BEACH 1	08/05/02	80	
BEACH 1	08/12/02	20	

BEACH 1	08/19/02	40	
BEACH 1	08/26/02	10	K
BEACH 2	05/20/02	70	
BEACH 2	05/29/02	720	
BEACH 2	05/31/02	91	Resample
BEACH 2	06/03/02	10	
BEACH 2	06/10/02	10	K
BEACH 2	06/17/02	10	
BEACH 2	06/24/02	10	K
BEACH 2	07/01/02	20	
BEACH 2	07/08/02	10	
BEACH 2	07/15/02	10	K
BEACH 2	07/22/02	160	
BEACH 2	07/29/02	40	
BEACH 2	08/05/02	70	
BEACH 2	08/12/02	10	K
BEACH 2	08/19/02	40	
BEACH 2	08/26/02	10	
BEACH 3	05/20/02	10	K
BEACH 3	05/29/02	10	K
BEACH 3	06/03/02	10	K
BEACH 3	06/10/02	10	K
BEACH 3	06/17/02	10	
BEACH 3	06/24/02	30	
BEACH 3	07/01/02	20	
BEACH 3	07/08/02	10	K
BEACH 3	07/15/02	10	K
BEACH 3	07/22/02	30	
BEACH 3	07/29/02	10	K
BEACH 3	08/05/02	10	
BEACH 3	08/12/02	10	K
BEACH 3	08/26/02	40	
BEACH 4	05/20/02	10	K
BEACH 4	05/29/02	200	
BEACH 4	05/31/02	11	Resample
BEACH 4	06/03/02	10	
BEACH 4	06/10/02	10	
BEACH 4	06/17/02	10	
BEACH 4	06/24/02	120	
BEACH 4	07/01/02	20	
BEACH 4	07/08/02	10	K
BEACH 4	07/15/02	30	
BEACH 4	07/22/02	110	
BEACH 4	07/29/02	60	
BEACH 4	08/05/02	10	K
BEACH 4	08/12/02	10	K
BEACH 4	08/19/02	20	

BEACH 4	08/26/02	10	K
BEACH 5	05/20/02	20	
BEACH 5	05/29/02	40	
BEACH 5	06/03/02	10	
BEACH 5	06/10/02	10	K
BEACH 5	06/17/02	10	
BEACH 5	06/24/02	70	
BEACH 5	07/01/02	200	
BEACH 5	07/08/02	180	
BEACH 5	07/15/02	60	
BEACH 5	07/22/02	40	
BEACH 5	07/29/02	40	
BEACH 5	08/05/02	10	
BEACH 5	08/12/02	10	K
BEACH 5	08/19/02	30	
BEACH 5	08/26/02	10	K
BEACH 6	05/20/02	100	
BEACH 6	05/29/02	20	
BEACH 6	06/03/02	20	
BEACH 6	06/10/02	10	
BEACH 6	06/17/02	10	K
BEACH 6	06/24/02	20	
BEACH 6	07/01/02	30	
BEACH 6	07/08/02	20	
BEACH 6	07/15/02	10	K
BEACH 6	07/22/02	50	
BEACH 6	07/29/02	30	
BEACH 6	08/05/02	10	
BEACH 6	08/12/02	30	
BEACH 6	08/19/02	40	
BEACH 6	08/26/02	20	
HAPPY VALLEY	05/20/02	20	
HAPPY VALLEY	05/29/02	130	
HAPPY VALLEY	06/03/02	10	
HAPPY VALLEY	06/10/02	10	K
HAPPY VALLEY	06/17/02	10	
HAPPY VALLEY	06/24/02	10	
HAPPY VALLEY	07/01/02	10	K
HAPPY VALLEY	07/08/02	40	
HAPPY	07/15/02	490	

VALLEY			
HAPPY VALLEY	07/17/02	330	Resample
HAPPY VALLEY	07/18/02	46	Resample
HAPPY VALLEY	07/19/02	163	Resample
HAPPY VALLEY	08/05/02	10	
HAPPY VALLEY	08/12/02	40	
HAPPY VALLEY	08/19/02	10	K
HAPPY VALLEY	08/26/02	30	
MANITOU	05/20/02	40	
MANITOU	05/29/02	10	
MANITOU	06/03/02	10	
MANITOU	06/10/02	30	
MANITOU	06/17/02	10	
MANITOU	06/24/02	180	
MANITOU	07/01/02	60	
MANITOU	07/08/02	40	
MANITOU	07/15/02	130	
MANITOU	07/22/02	90	
MANITOU	07/29/02	200	
MANITOU	08/05/02	10	K
MANITOU	08/12/02	20	
MANITOU	08/19/02	20	
MANITOU	08/26/02	50	
TAMARACK	05/22/02	10	K
TAMARACK	05/29/02	40	
TAMARACK	06/03/02	10	K
TAMARACK	06/10/02	20	
TAMARACK	06/17/02	10	K
TAMARACK	06/24/02	740	
TAMARACK	06/26/02	41	Resample
TAMARACK	07/01/02	40	
TAMARACK	07/08/02	10	
TAMARACK	07/15/02	40	
TAMARACK	07/22/02	40	
TAMARACK	07/29/02	80	
TAMARACK	08/05/02	50	
TAMARACK	08/12/02	30	
TAMARACK	08/19/02	10	
TAMARACK	08/26/02	10	K
ALPINE	05/20/02	20	
ALPINE	05/29/02	10	

ALPINE	06/03/02	20	
ALPINE	06/10/02	10	
ALPINE	06/17/02	10	
ALPINE	06/24/02	40	
ALPINE	07/01/02	10	
ALPINE	07/08/02	10	
ALPINE	07/15/02	30	
ALPINE	07/22/02	10	
ALPINE	07/29/02	10	
ALPINE	08/05/02	10	K
ALPINE	08/12/02	10	K
ALPINE	08/19/02	10	K
ALPINE	08/26/02	20	
	05/20/02	10	
	05/29/02	20	
	06/03/02	20	
	06/10/02	20	
	06/17/02	20	
	06/24/02	10	K
	07/01/02	150	
	07/08/02	20	
	07/15/02	900	
	07/17/02	40	Resample
	07/19/02	18	Resample
	07/22/02	10	
	07/29/02	40	
	08/05/02	10	
	08/12/02	20	
	08/19/02	10	
	08/26/02	10	
LAKE MOHAWK - BEACH 1	05/19/03	10	
	05/28/03	30	
	06/02/03	30	
	06/09/03	10	K
	06/16/03	10	K
	06/23/03	10	
	06/30/03	110	
	07/07/03	10	
	07/14/03	10	
	07/21/03	20	
	07/28/03	10	
	08/04/03	10	
	08/11/03	20	
	08/18/03	10	K
	08/25/03	10	K

LAKE MOHAWK BEACH 2	05/21/03	30	
	05/28/03	240	
	06/02/03	10	Resample
	06/09/03	10	
	06/16/03	20	
	06/23/03	10	K
	06/30/03	40	
	07/07/03	10	
	07/14/03	20	
	07/21/03	110	
	07/28/03	10	K
	08/04/03	20	
	08/11/03	40	
	08/25/03	10	K
LAKE MOHAWK BEACH 3	05/21/03	10	K
	05/28/03	10	
	06/02/03	10	
	06/09/03	10	K
	06/16/03	10	
	06/23/03	20	
	06/30/03	10	K
	07/07/03	10	
	07/14/03	40	
	07/21/03	40	
	07/28/03	10	K
	08/04/03	100	
	08/11/03	10	K
	08/18/03	70	
	08/25/03	10	K
LAKE MOHAWK BEACH 4	05/21/03	230	
	05/28/03	10	K, Resample
	06/02/03	10	K
	06/09/03	20	
	06/16/03	50	
	06/23/03	10	K
	06/30/03	10	K
	07/07/03	10	K
	07/14/03	10	K
	07/21/03	40	
	07/28/03	20	
	08/04/03	80	
	08/11/03	20	

	08/18/03	10	K
	08/25/03	20	
LAKE MOHAWK BEACH 5	05/21/03	40	
	05/28/03	20	
	06/02/03	30	
	06/09/03	10	
	06/16/03	80	
	06/23/03	20	
	06/30/03	60	
	07/07/03	10	
	07/14/03	50	
	07/21/03	140	
	07/28/03	70	
	08/04/03	100	
	08/11/03	20	
	08/18/03	10	
	08/25/03	50	
LAKE MOHAWK BEACH 6	05/21/03	870	
	05/28/03	90	Resample
	06/02/03	40	
	06/09/03	50	
	06/16/03	40	
	06/23/03	60	
	06/30/03	10	K
	07/07/03	10	
	07/14/03	50	
	07/21/03	20	
	07/28/03	10	K
	08/04/03	140	
	08/11/03	40	
	08/18/03	40	
	08/25/03	10	K
LAKE MOHAWK HAPPY VALLEY	05/19/03	10	K
	05/28/03	10	K
	06/02/03	40	
	06/09/03	20	
	06/16/03	210	
	06/18/03	10	K, Resample
	06/23/03	30	
	06/30/03	30	
	07/07/03	10	K

	07/14/03	40	
	07/21/03	10	
	07/28/03	40	
	08/04/03	40	
	08/11/03	80	
	08/18/03	200	
	08/20/03	10	
	08/25/03	10	
LAKE MOHAWK MANITOU	05/19/03	10	K
	05/28/03	1100	
	06/02/03	40	Resample
	06/09/03	10	
	06/16/03	30	
	06/23/03	10	
	06/30/03	130	
	07/07/03	60	
	07/14/03	20	
	07/21/03	50	
	07/28/03	10	
	08/04/03	340	
	08/06/03	20	Resample
	08/06/03	230	Resample
	08/08/03	10	Resample
	08/11/03	60	
	08/18/03	10	
	08/25/03	190	
LAKE MOHAWK TAMARACK	05/19/03	10	K
	05/28/03	10	
	06/02/03	10	
	06/09/03	40	
	06/16/03	100	
	06/23/03	40	
	06/30/03	20	
	07/07/03	20	
	07/14/03	280	
	07/16/03	110	Resample
	07/21/03	90	
	07/28/03	40	
	08/04/03	260	
	08/06/03	360	Resample
	08/06/03	20	Resample
	08/08/03	10	K, Resample
	08/11/03		

	08/18/03	10	
	08/25/03	10	K
LAKE MOHAWK ALPINE	05/21/03	60	
	05/28/03	10	K
	06/02/03	40	
	06/09/03	10	
	06/16/03	30	
	06/23/03	40	
	06/30/03	10	K
	07/07/03	10	
	07/14/03	80	
	07/21/03	30	
	07/28/03	70	
	08/04/03	140	
	08/11/03	180	
	08/18/03	10	K
	08/25/03	20	
LAKE MOHAWK UPPER LAKE	05/21/03	10	
	05/28/03	30	
	06/02/03	50	
	06/09/03	110	
	06/16/03	20	
	06/23/03	50	
	06/30/03	10	K
	07/07/03	10	
	07/14/03	10	K
	07/21/03	20	
	07/28/03	10	K
	08/04/03	70	
	08/11/03	100	
	08/18/03	10	K
	08/25/03	10	K
LAKE MOHAWK BEACH 1	05/24/04	**220**	
	06/02/04	10	Resample
	06/07/04	10	K
	06/14/04	10	
	06/21/04	10	K
	06/28/04	10	K
	07/07/04	10	
	07/15/04	**300**	
	07/21/04	10	K, Resample
	07/26/04	20	

	08/02/04	10	
	08/09/04	150	
	08/16/04	**340**	
	08/18/04	**340**	Resample
	08/23/04	**560**	Resample
	08/25/04	20	Resample
	08/30/04	10	K, Resample
LAKE MOHAWK BEACH 2	05/24/04	10	K
	06/02/04	40	
	06/07/04	10	K
	06/14/04	10	K
	06/21/04	10	
	06/28/04	20	
	07/07/04	10	K
	07/15/04	10	
	07/21/04	10	K
	07/26/04	20	
	08/02/04	30	
	08/09/04	10	
	08/16/04	20	
	08/23/04	40	
	08/30/04	10	K
LAKE MOHAWK BEACH 3	05/24/04	10	K
	06/02/04	10	K
	06/07/04	10	
	06/14/04	10	K
	06/21/04	10	
	06/28/04	20	
	07/07/04	10	K
	07/12/04	10	K
	07/21/04	10	K
	07/26/04	20	
	08/02/04	10	
	08/09/04	10	
	08/16/04	30	
	08/23/04	10	
	08/30/04	10	K
LAKE MOHAWK BEACH 4	05/24/04	40	
	06/02/04	30	
	06/07/04	10	
	06/14/04	30	
	06/21/04	10	

	06/28/04	10	K
	07/07/04	20	
	07/12/04	20	
	07/21/04	10	K
	07/26/04	10	
	08/02/04	10	
	08/09/04	10	
	08/16/04	10	K
	08/23/04	10	K
	08/30/04	10	K
LAKE MOHAWK BEACH 5	05/24/04	180	
	06/02/04	20	
	06/07/04	70	
	06/14/04	10	
	06/21/04	10	K
	06/28/04	10	K
	07/07/04	10	K
	07/12/04	20	
	07/21/04	10	
	07/26/04	60	
	08/02/04	20	
	08/09/04	10	K
	08/16/04	10	K
	08/23/04	30	
	08/30/04	**380**	
	09/02/04	10	K,Resample
LAKE MOHAWK BEACH 6	05/24/04	40	
	06/02/04	10	K
	06/07/04	10	K
	06/14/04	10	K
	06/21/04	10	K
	06/28/04	100	
	07/07/04	80	
	07/12/04	20	
	07/21/04	10	K
	07/26/04	30	
	08/02/04	20	
	08/09/04	10	K
	08/16/04	20	
	08/23/04	50	
	08/30/04	10	K
LAKE MOHAWK HAPPY	05/24/04	**490**	

VALLEY			
	06/02/04	70	Resample
	06/07/04	10	K
	06/14/04	10	K
	06/21/04	20	
	06/28/04	**220**	
	06/30/04	10	K, Resample
	07/07/04	10	K
	07/15/04	10	K
	07/21/04	10	k
	07/26/04	20	
	08/02/04	10	
	08/09/04	**200**	
	08/16/04	10	K
	08/23/04	40	
	08/30/04	**90**	
LAKE MOHAWK MANITOU	05/24/04	160	
	06/02/04	10	
	06/07/04	20	
	06/14/04	30	
	06/21/04	10	K
	06/28/04	190	
	07/07/04	80	
	07/15/04	10	K
	07/21/04	10	K
	07/26/04	60	
	08/02/04	20	
	08/09/04	10	
	08/16/04	40	
	08/23/04	100	
	08/30/04	10	K
LAKE MOHAWK TAMARACK	05/24/04	130	
	06/02/04	10	K
	06/07/04	50	
	06/14/04	90	
	06/21/04	180	
	06/28/04	70	
	07/07/04	10	K
	07/15/04	**6000**	L
	07/20/04	14	Resample
	07/21/04	10	K, Resample
	07/26/04	10	K,
	08/02/04	30	

	08/09/04	10	
	08/16/04	50	
	08/23/04	20	
	08/30/04	10	K
LAKE MOHAWK ALPINE	05/24/04	10	
	06/02/04	10	K
	06/07/04	10	K
	06/14/04	10	K
	06/21/04	10	K
	06/28/04	10	K
	07/07/04	10	K
	07/15/04	10	K
	07/21/04	10	K
	07/26/04	20	
	08/02/04	10	
	08/09/04	10	
	08/16/04	10	K
	08/23/04	40	
	08/30/04	10	K
LAKE MOHAWK UPPER LAKE	05/24/04	20	
	06/02/04	10	K
	06/07/04	10	K
	06/14/04	10	K
	06/21/04	20	
	06/28/04	10	
	07/07/04	10	K
	07/12/04	20	
	07/21/04	50	
	07/26/04	20	
	08/02/04	10	K
	08/09/04	10	K
	08/16/04	30	
	08/23/04	160	
	08/30/04	30	

Sleepy Valley			
count	67	mean+3stdev	1568
median	20	%reduction	91%
Max	2300		
stdev	460	**no data excluded**	
mean	189		
mean+3stdev	1568		

STATION	DATE	VALUE	REMARK
SXL192218	05/28/98	10	K
SXL192218	06/10/98	10	K
SXL192218	06/25/98	10	K
SXL192218	07/10/98	60	
SXL192218	07/22/98	10	K
SXL192218	08/15/98	10	K
SXL192218	08/21/98	10	K
SXL192218	09/02/98	20	
SXL192218	05/24/99	2300	
SXL192218	05/28/99	770	
SXL192218	06/04/99	90	
SXL192218	06/16/99	320	
SXL192218	06/30/99	10	K
SXL192218	07/16/99	30	
SXL192218	07/30/99	10	K
SXL192218	08/11/99	10	K
SXL192218	08/18/99	10	K
SXL192218	08/25/99	10	K
SXL192218	05/22/00	20	BEACH OPENED JULY 1
SXL192218	06/09/00	230	
SXL192218	06/22/00	190	
SXL192218	07/05/00	40	
SXL192218	07/18/00	130	
SXL192218	08/02/00	10	
SXL192218	08/16/00	10	K
SXL192218	08/30/00	10	
	05/30/01	110	
	06/13/01	40	
	06/27/01	140	
	07/11/01	2200	
	07/14/01	520	RESAMPLE
	07/14/01	190	NORTH BRACKET
	07/14/01	400	SOUTH BRACKET
	07/18/01	160	
	07/20/01	50	RESAMPLE
	07/20/01	20	NORTH BRACKET
	07/20/01	90	SOUTH BRACKET
	08/01/01	10	K

	08/15/01	10	K
	08/23/01	10	
	05/24/02	10	
	06/05/02	10	K
	06/19/02	10	
	06/26/02	500	
	06/28/02	180	RESAMPLE
	07/12/02	1	K
	07/26/02	70	
	08/07/02	10	
	08/20/02	80	
Tall Timbers POA	05/19/03	10	K
	06/04/03	250	
	06/10/03	10	RESAMPLE
	06/24/03	20	
	07/09/03	10	K
	07/23/03	420	BEACH CLOSED
	07/31/03	20	RESAMPLE
	08/06/03	560	BEACH CLOSED
	08/13/03	30	RESAMPLE
	08/19/03	10	
Tall Timbers	05/27/04	2000	
	06/08/04	40	
	06/23/04	10	K
	07/07/04	10	K
	07/21/04	10	
	08/03/04	10	
	08/18/04	10	K
	08/23/04	60	