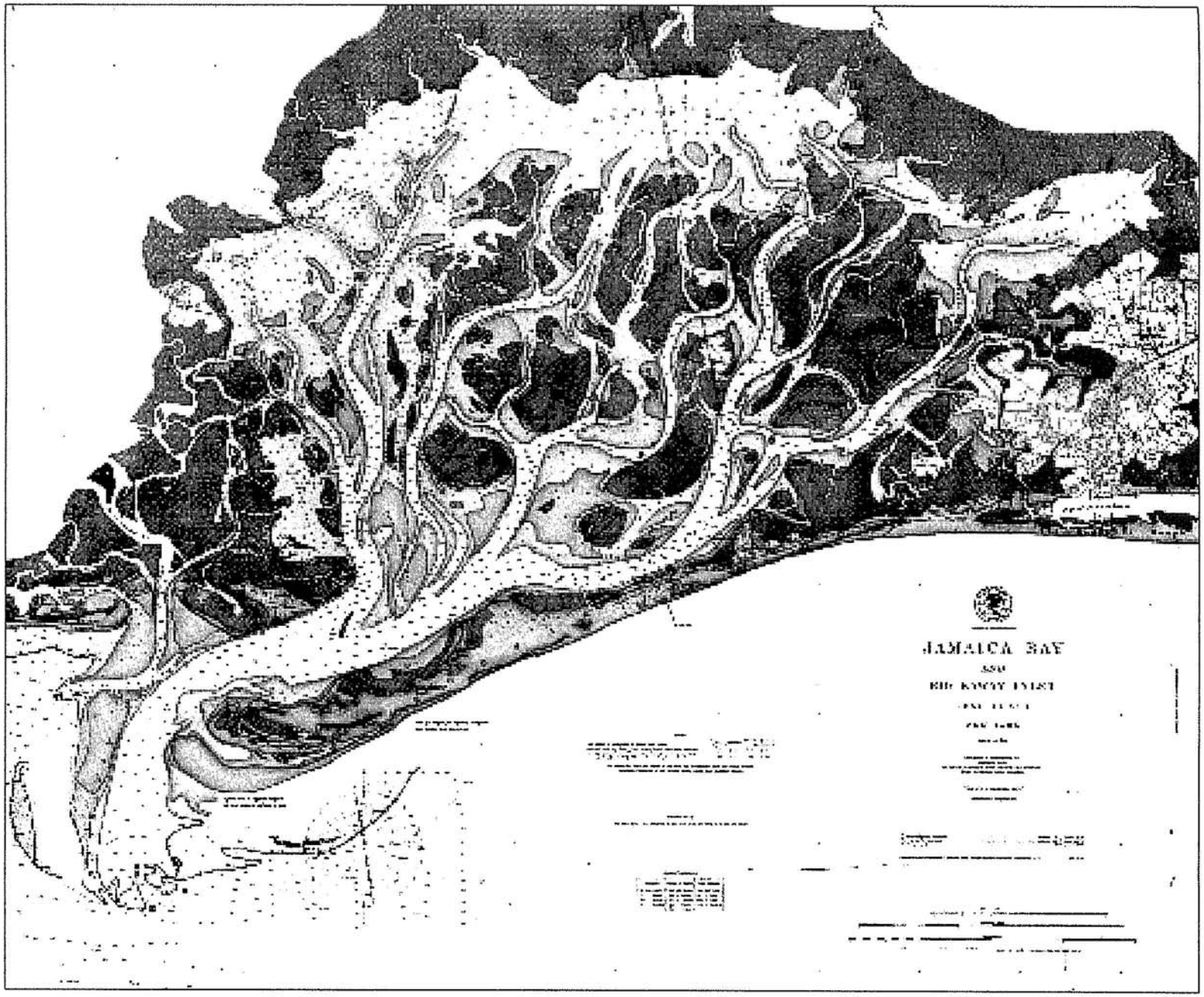
JAMAICA BAY AND ENVIRONS

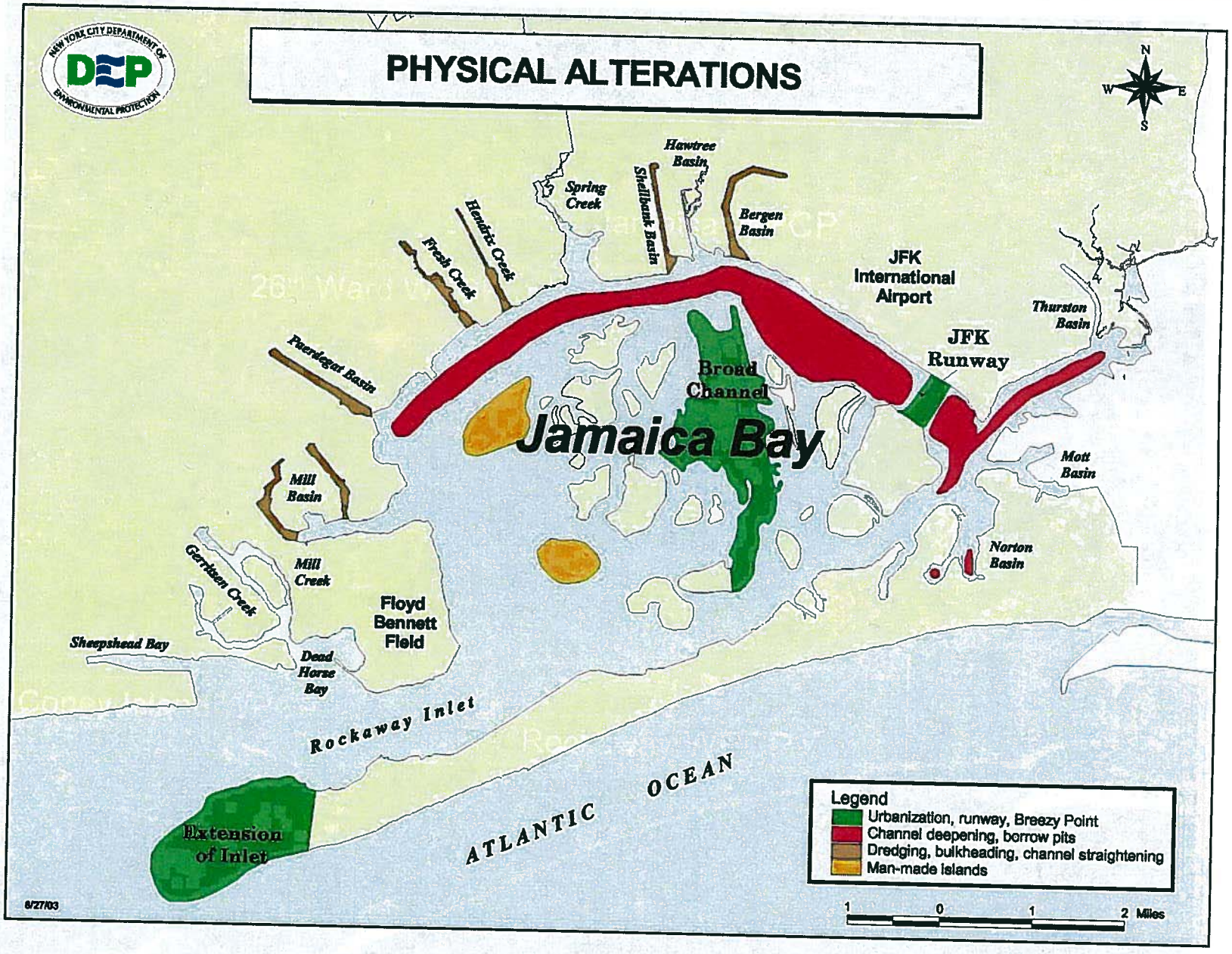
Comprehensive Jamaica Bay Water Quality Plan

FIGURE 1-1

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure1-1.indd



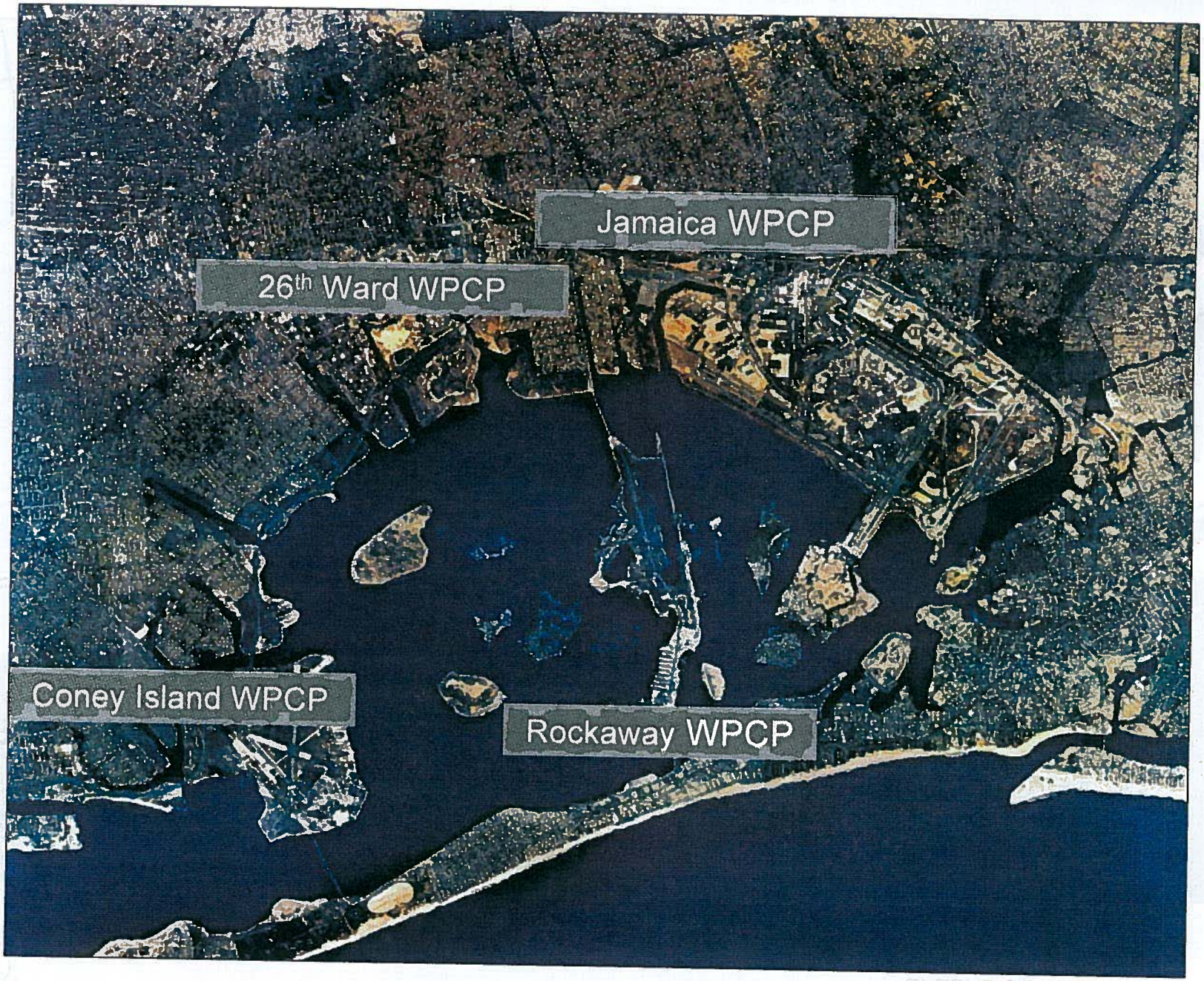
JAMAICA BAY, CIRCA 1897



PHYSICAL ALTERATIONS TO JAMAICA BAY

FIGURE 1-3

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure1-3.indd

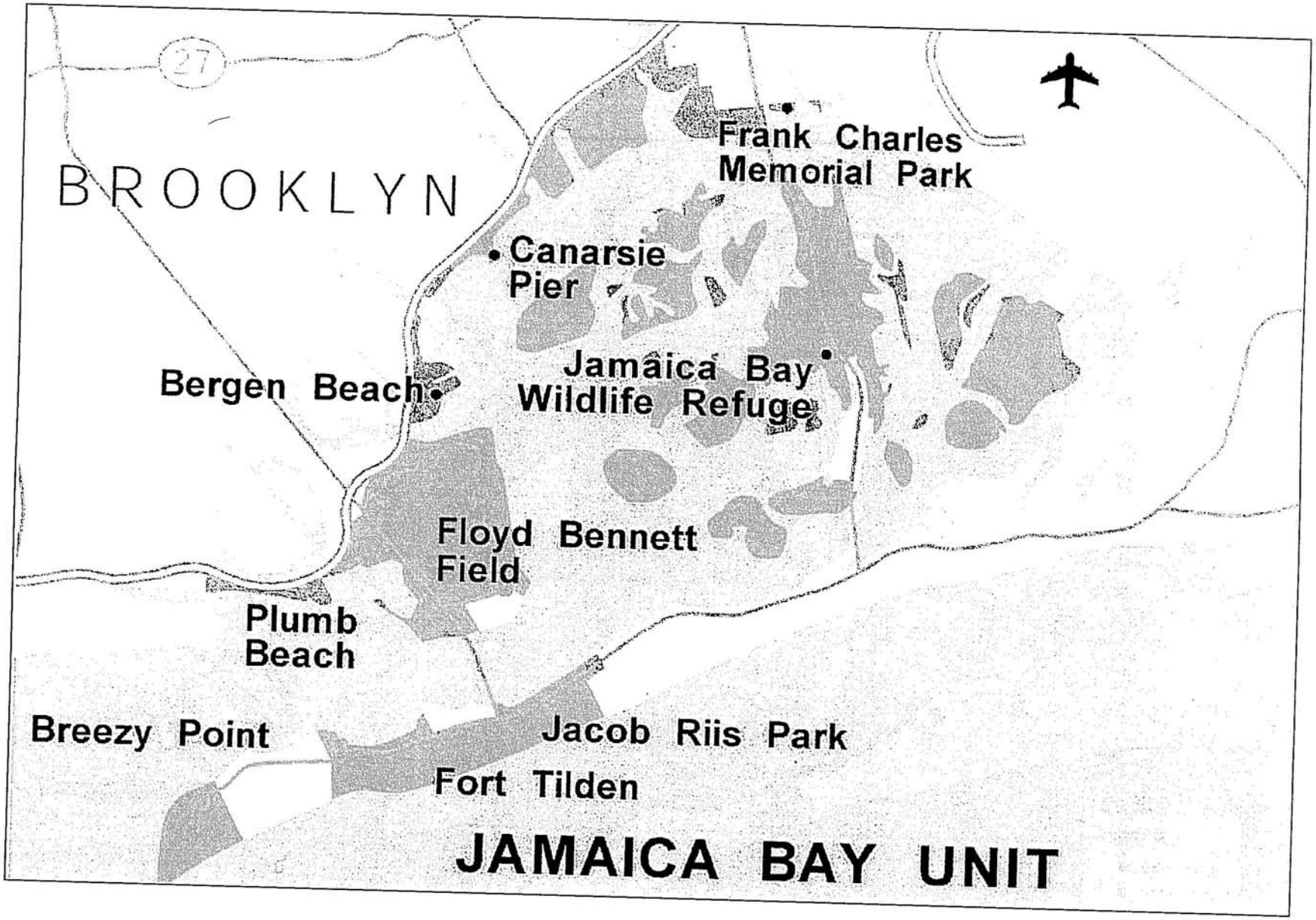


WPCP LOCATIONS

FIGURE 1-4

Comprehensive Jamaica Bay Water Quality Plan

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure1-4.indd



EXTENT OF JAMAICA BAY UNIT OF GATEWAY NATIONAL RECREATIONAL AREA

Comprehensive Jamaica Bay Water Quality Plan

FIGURE 1-5

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure1-5.indd

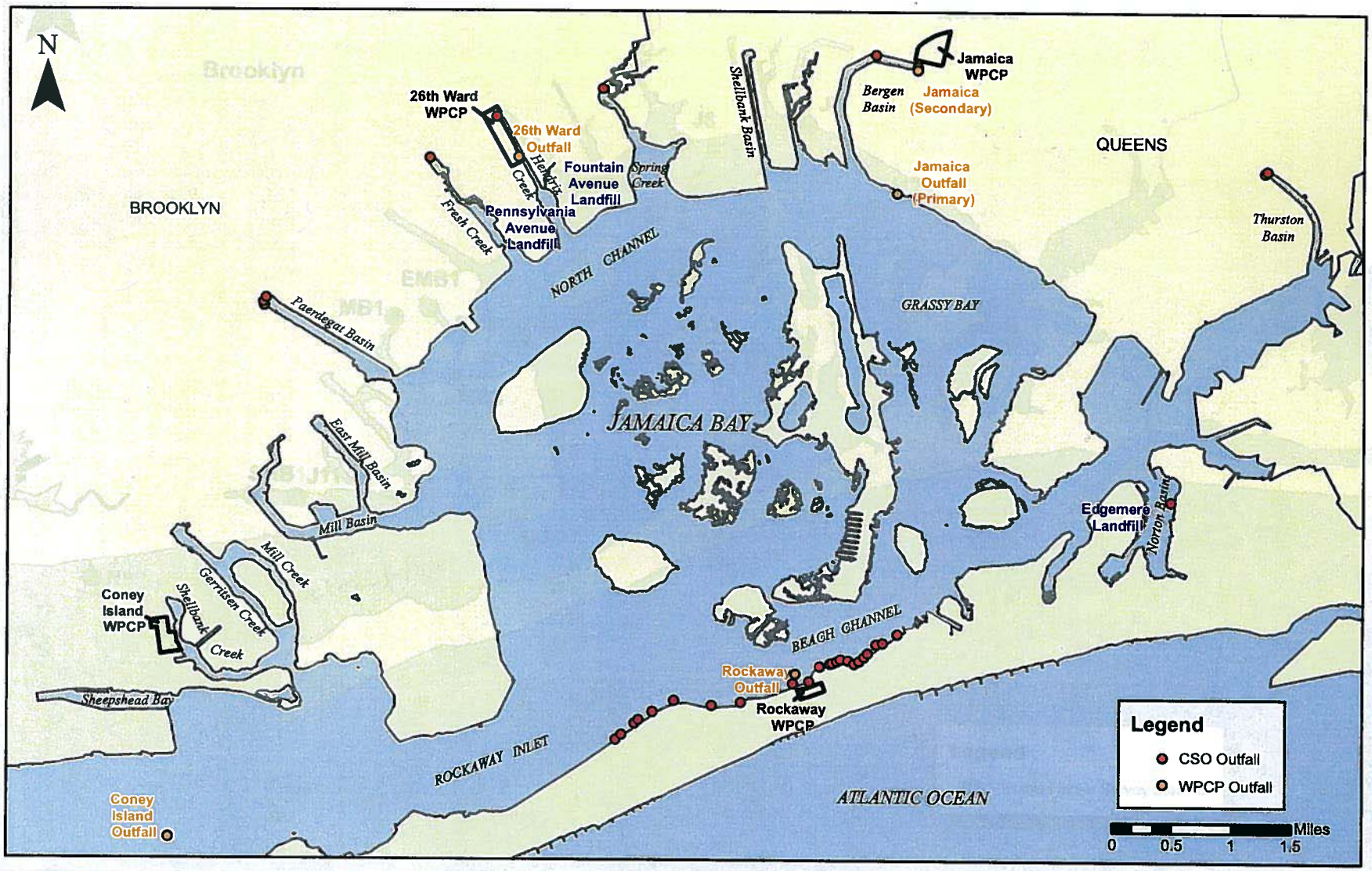


Figure 1-6. Distribution of Pollution Sources

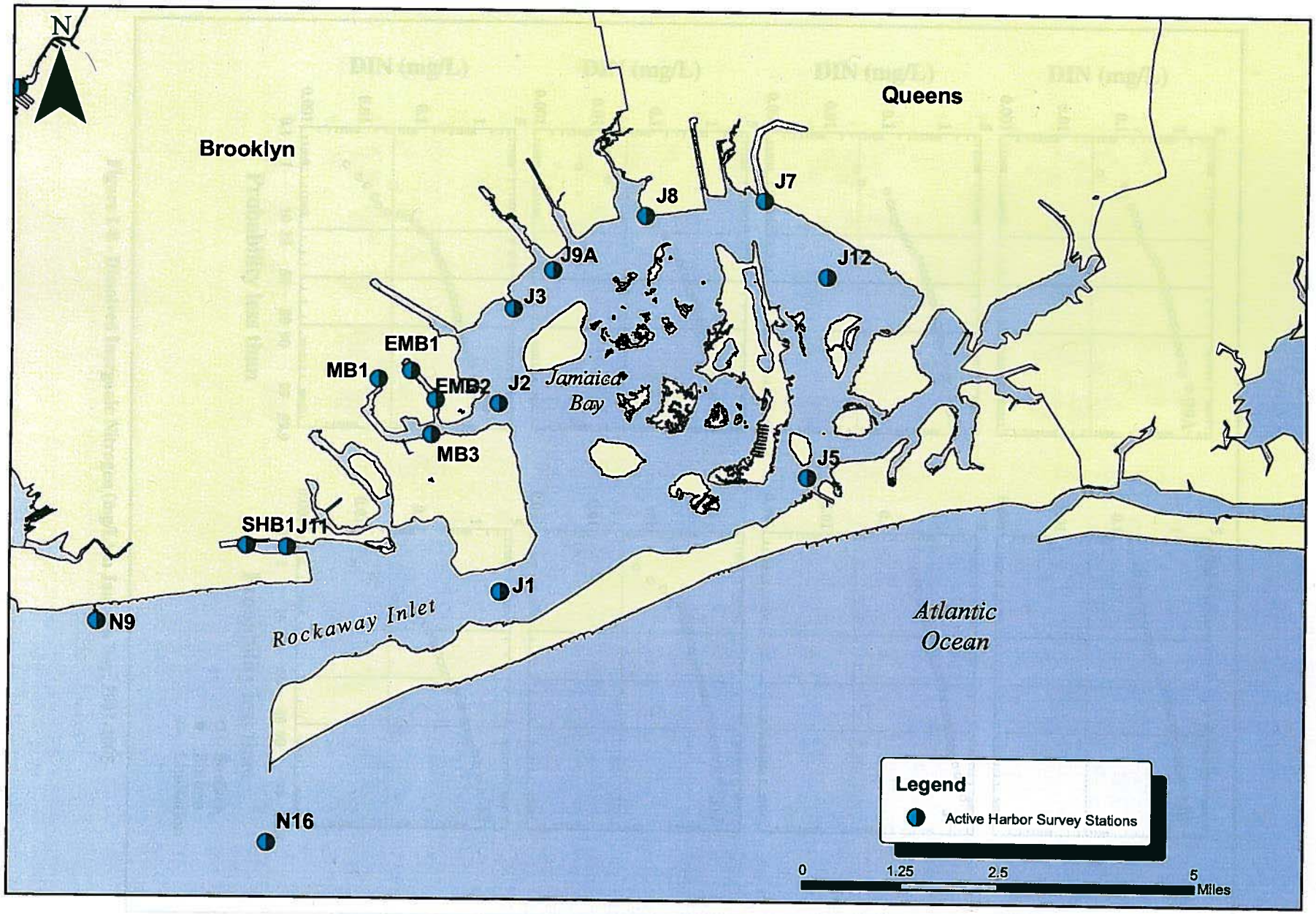


Figure 1-7 Active Harbor Survey Stations

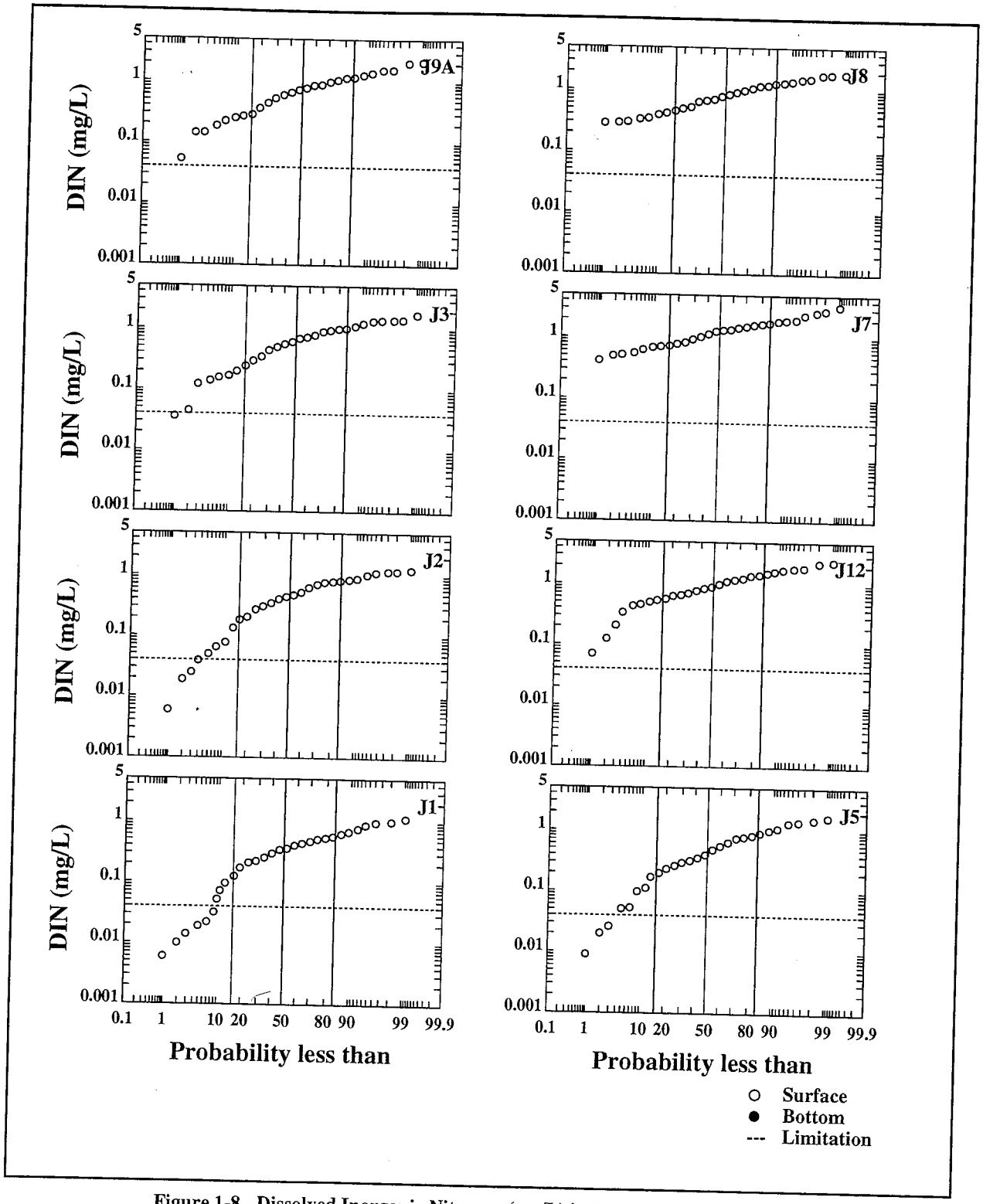


Figure 1-8 - Dissolved Inorganic Nitrogen (mg/L) in Jamaica Bay, 2001-2005

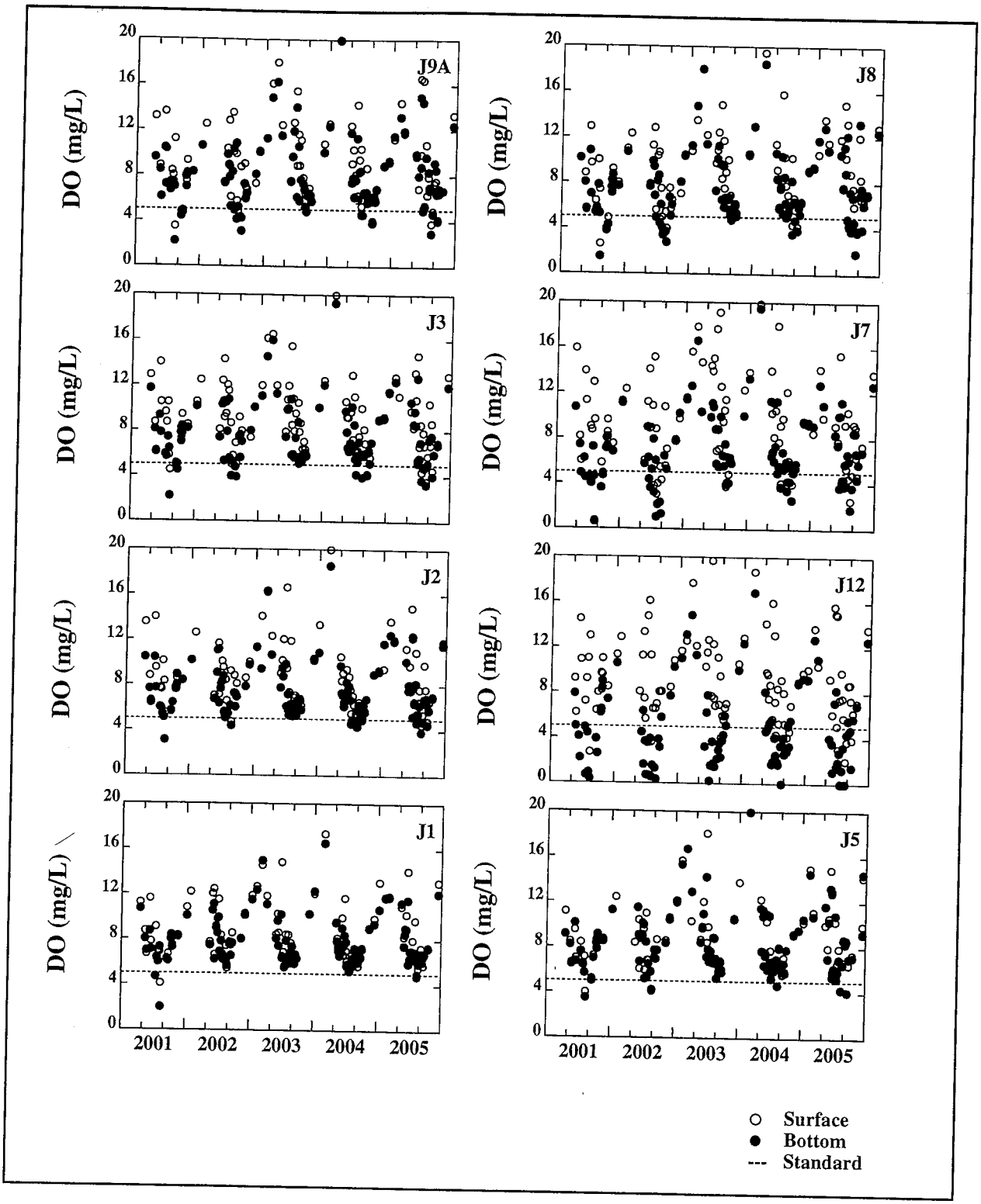


Figure 1-9 Dissolved Oxygen (mg/L) in Jamaica Bay, 2001-2005

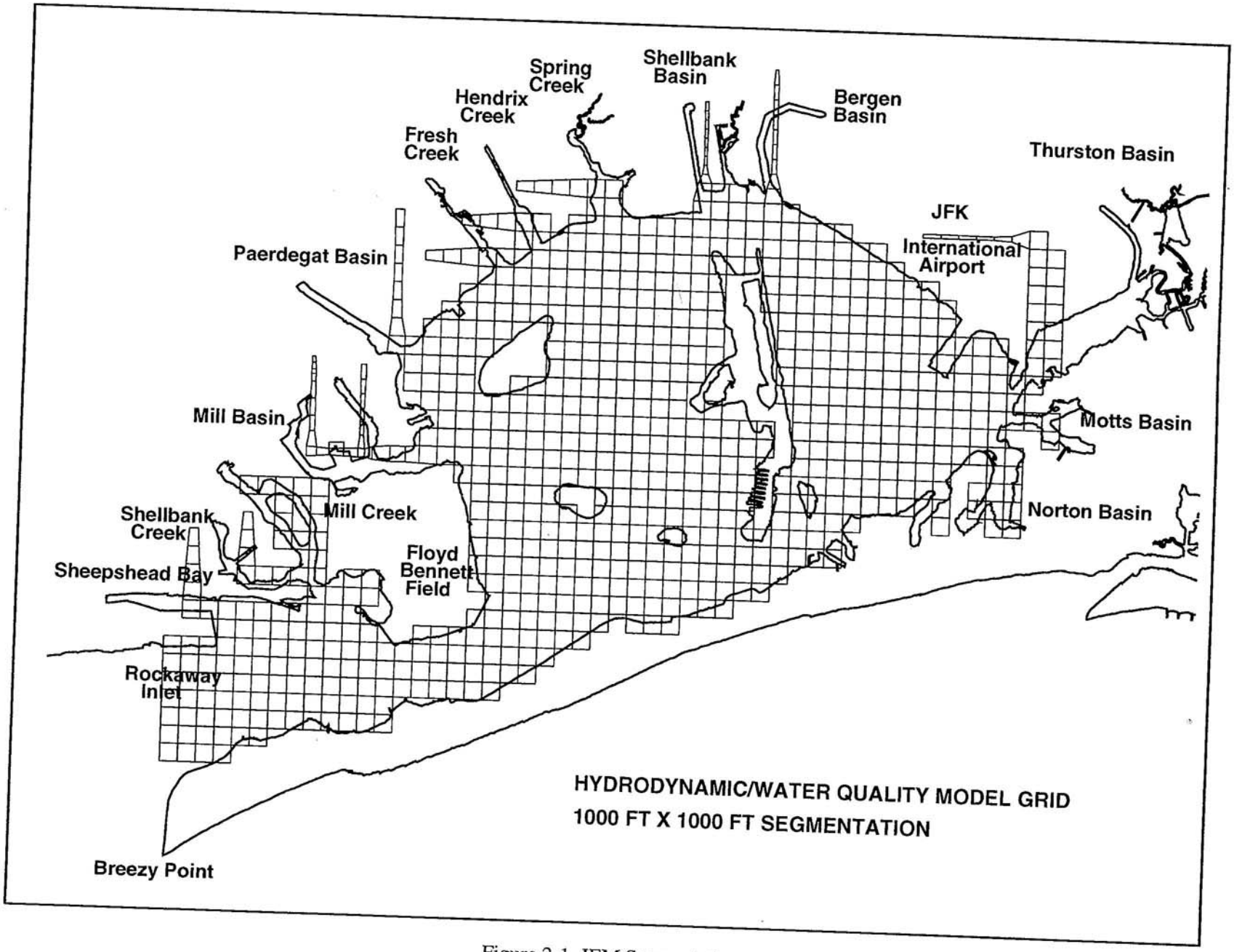


Figure 2-1. JEM Segmentation

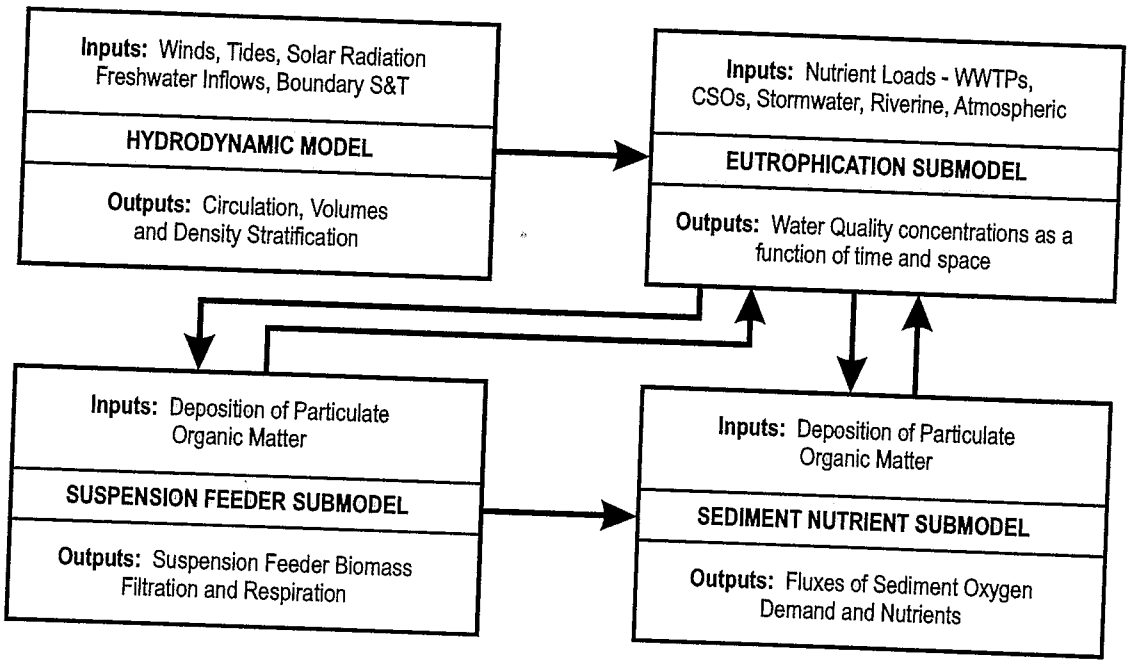


Figure 2-2. Jamica Bay Eutrophication Model

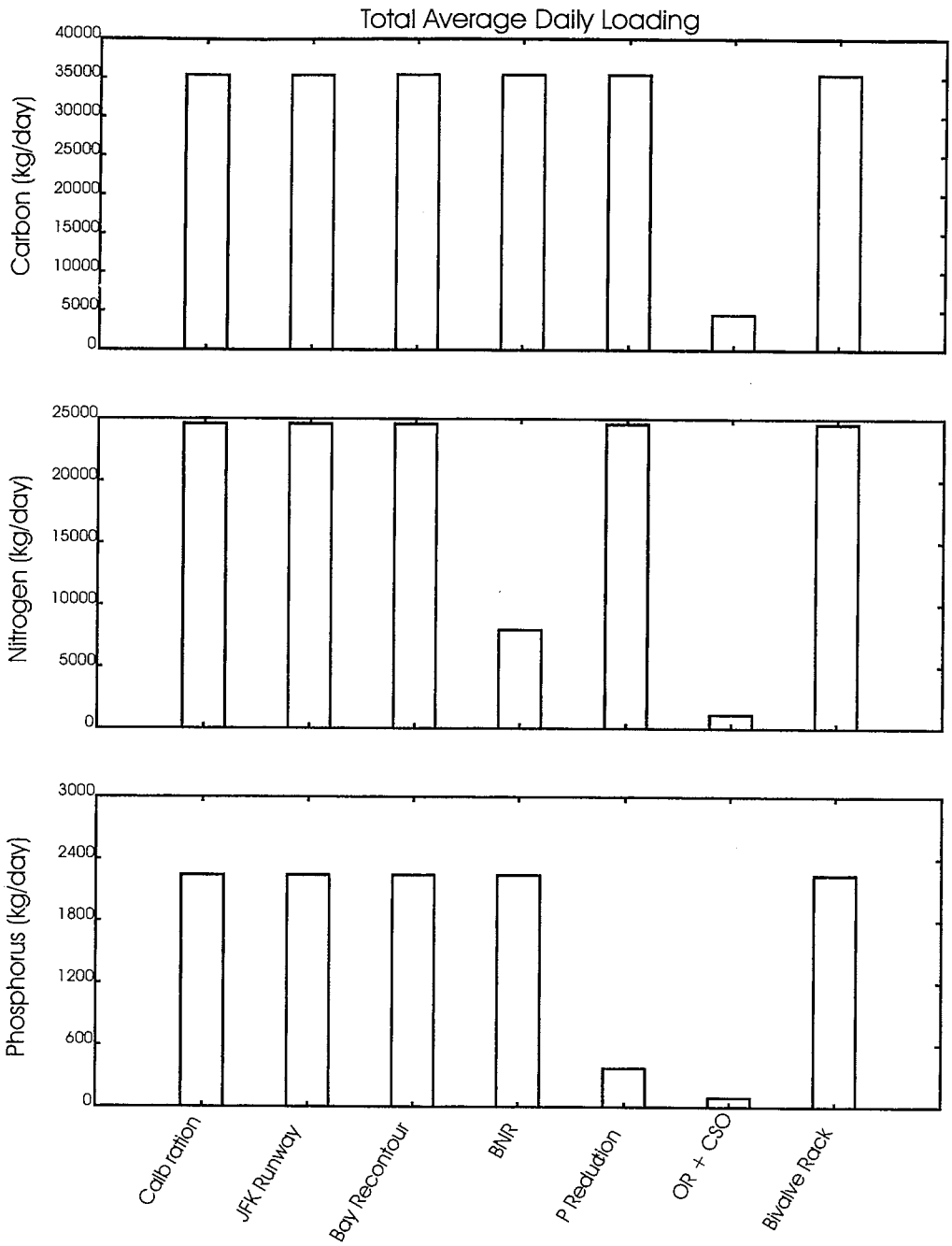


Figure 2-3. 1995 Jamaica Bay Water Quality Model Projection Loading

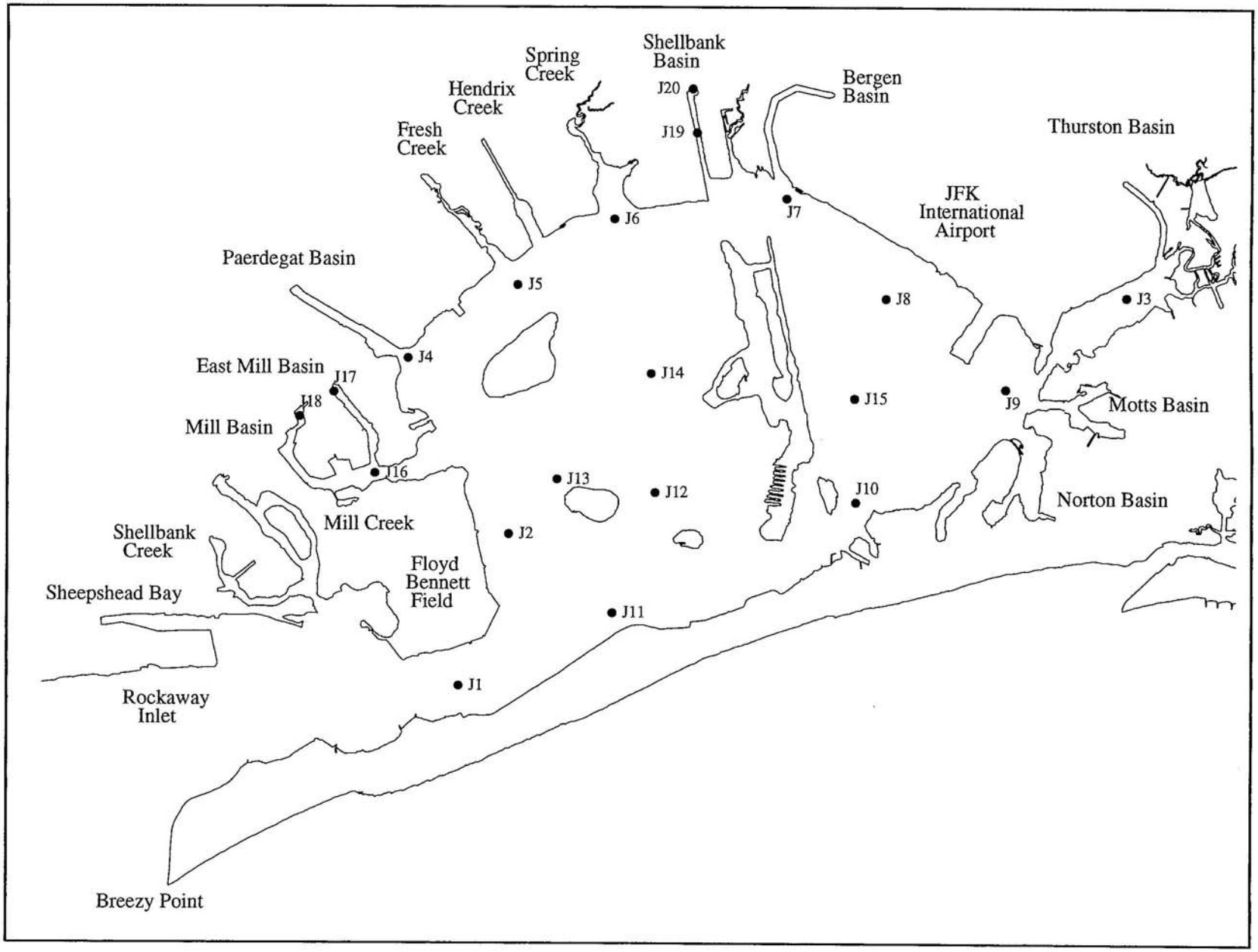


Figure 2-4. 1995-96 Water Quality Monitoring Stations

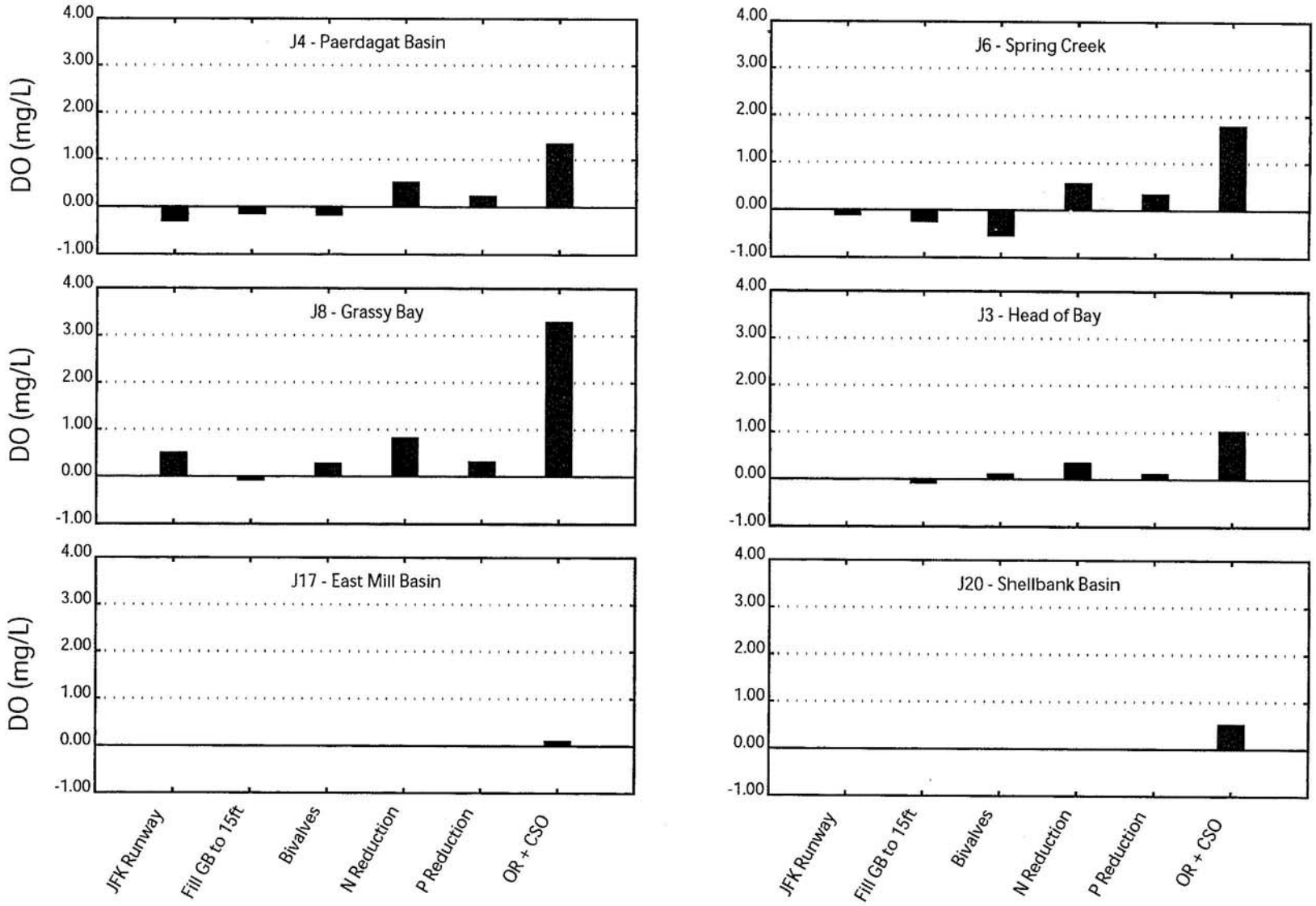


Figure2-5 Summer Bottom DO - Change in DO Minimum

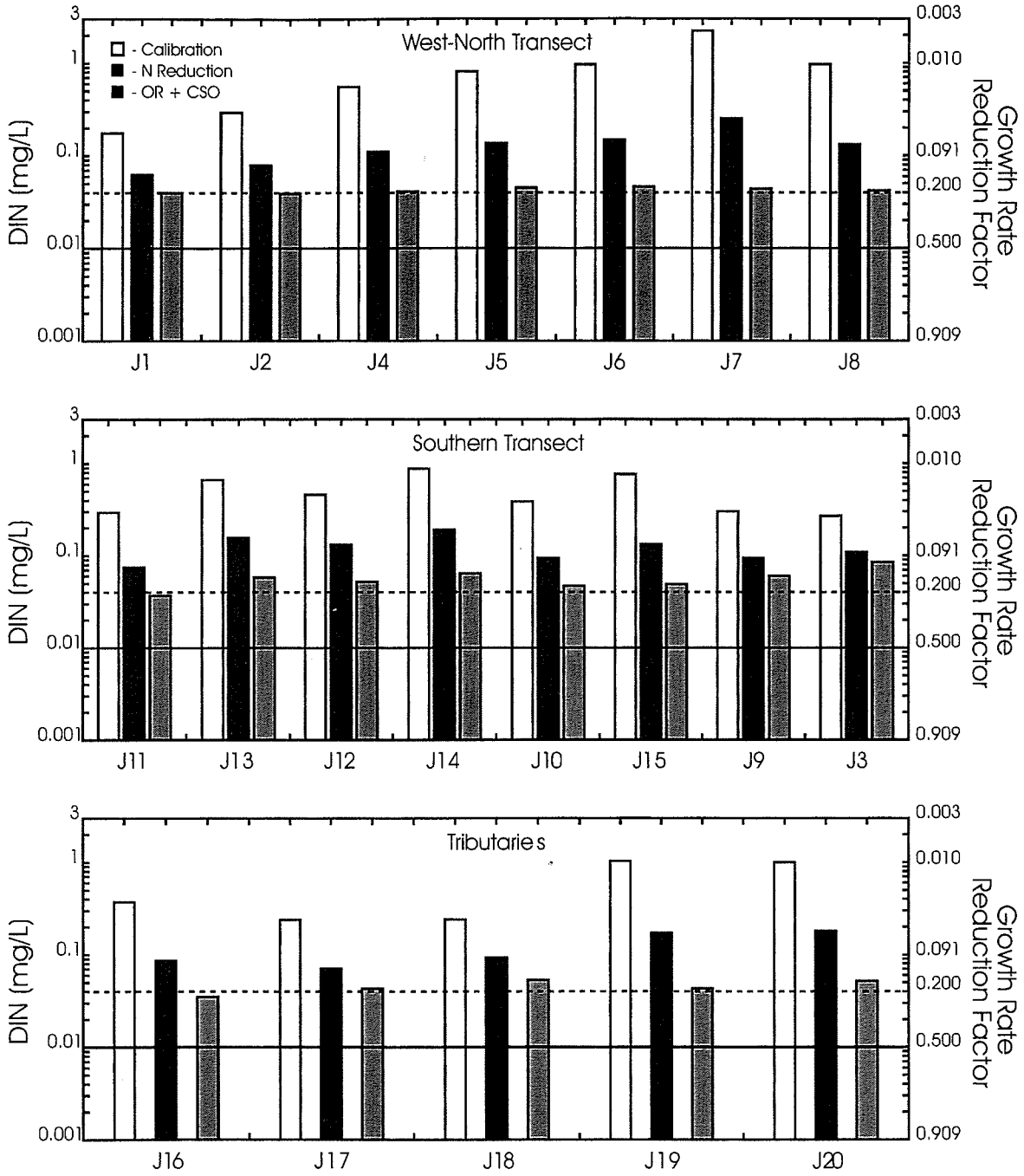


Figure 2-6. Summer Avg. Surface DIN Comparison
Calibration vs. N Reduction vs. Outfall + CSO

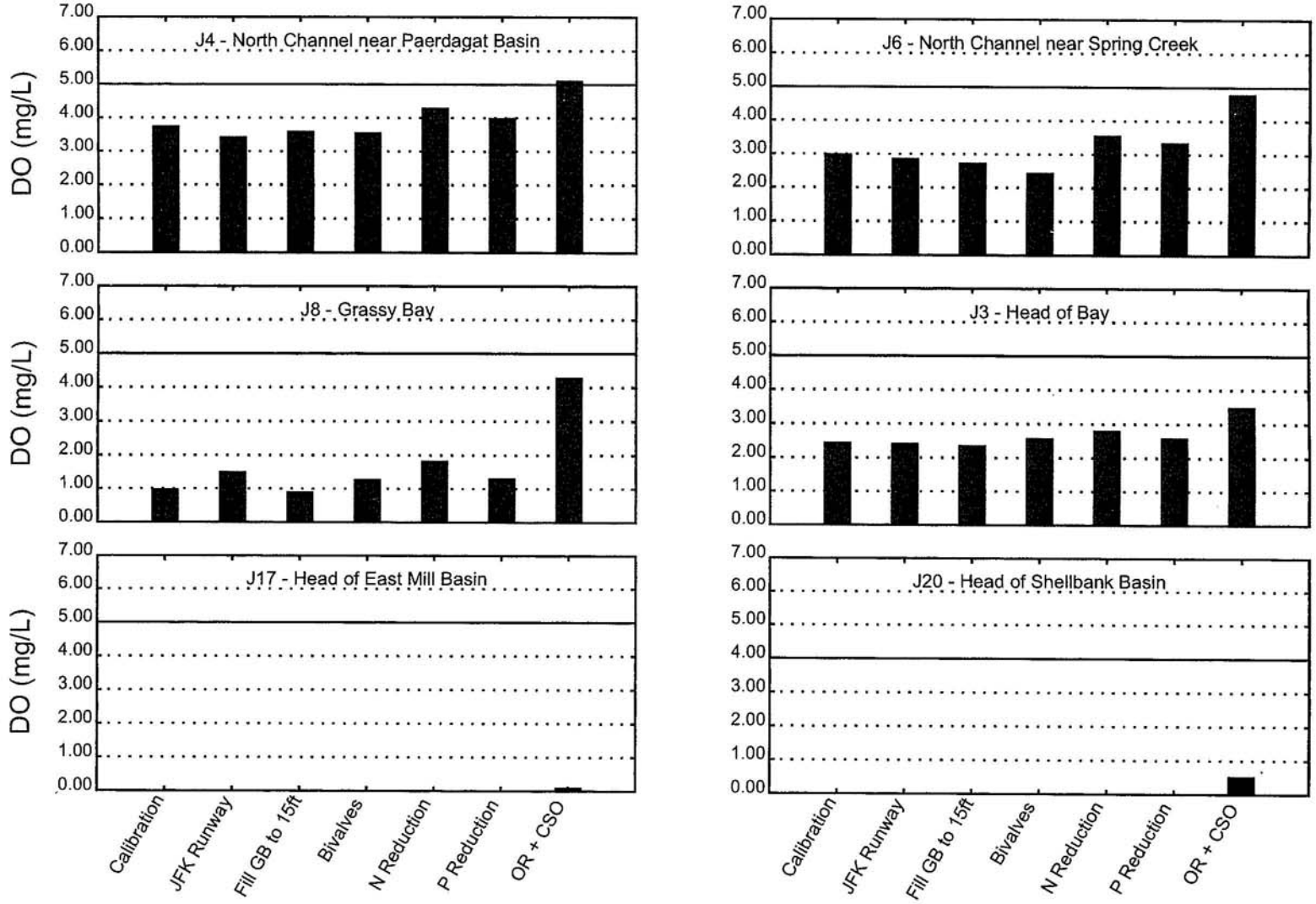


Figure 2-7. Summer Bottom DO - Estimated Minimum

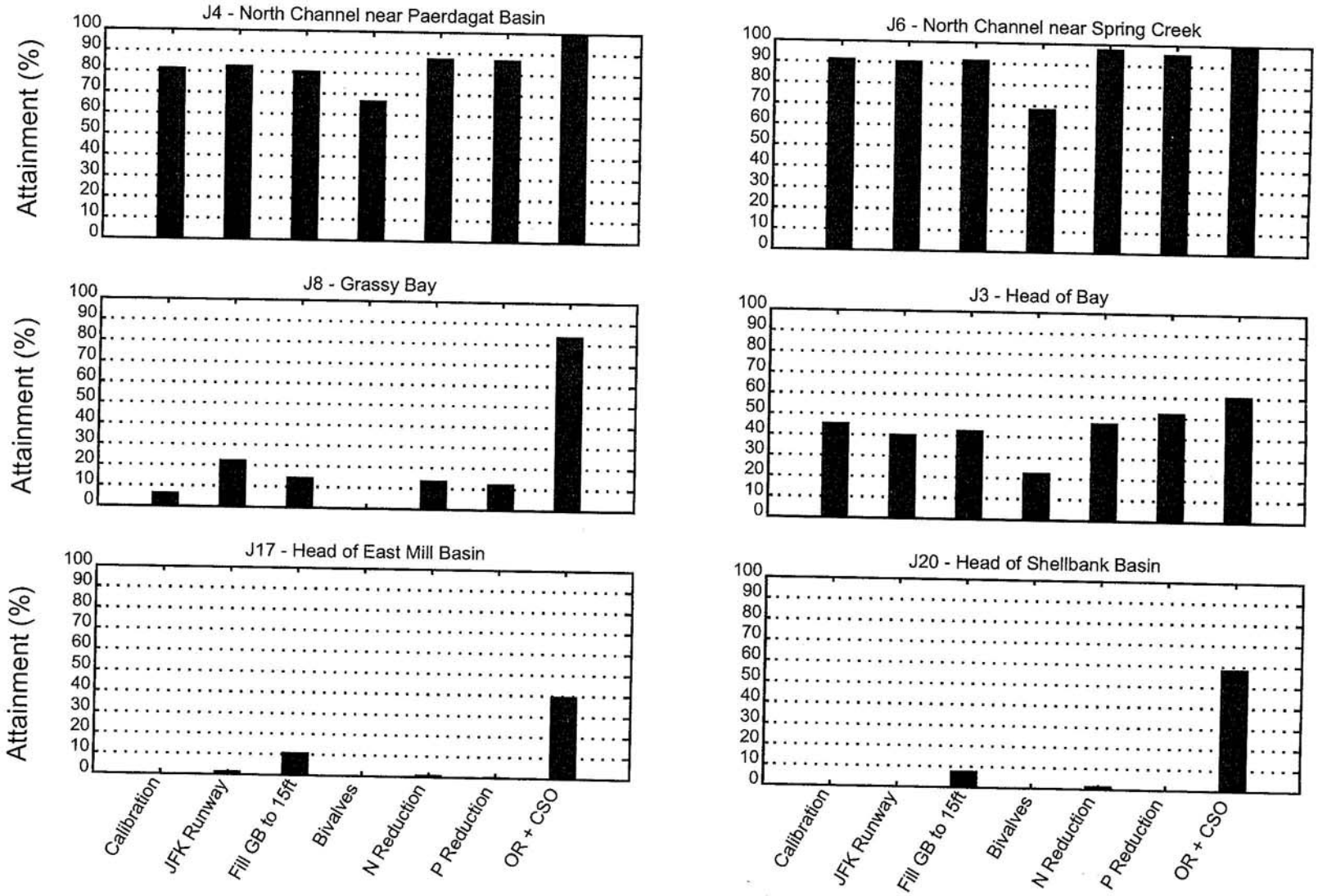


Figure 2-8. Summer Bottom DO - Percent Attainment with Water Quality Standards

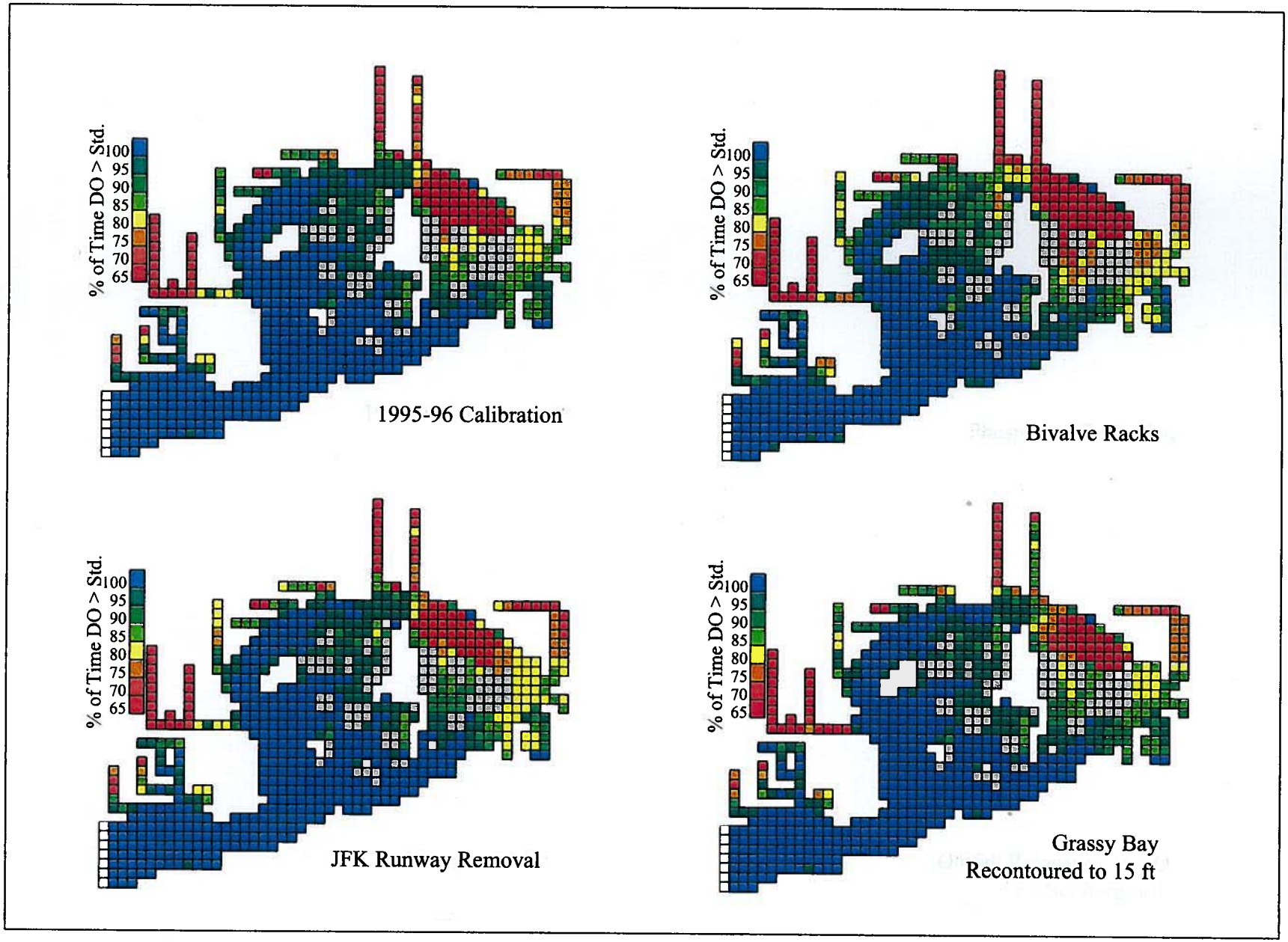


Figure 2-9. Annual Percent of Time Bottom DO Greater than Current NYSDEC Standards, Previous Analysis 1

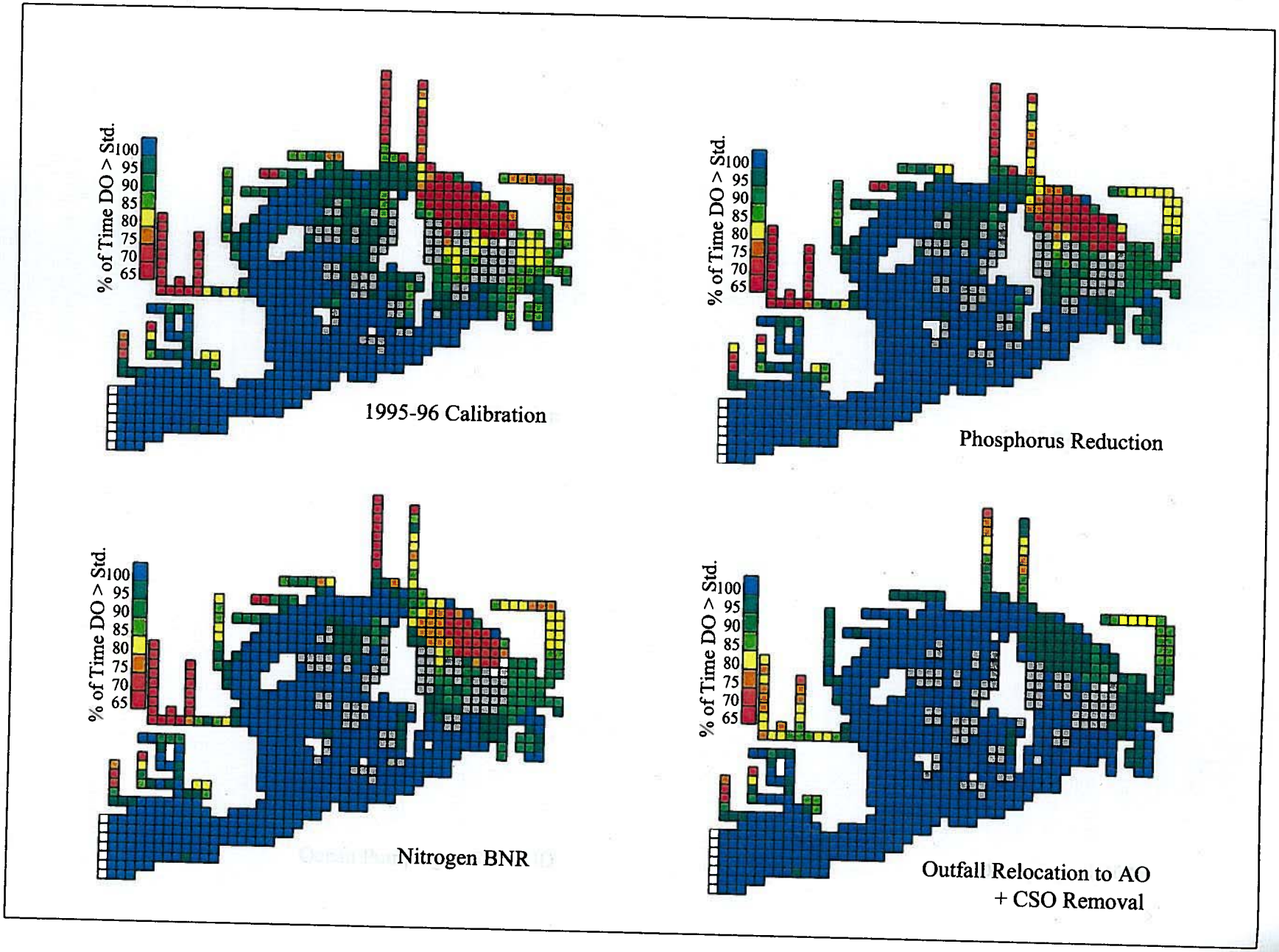


Figure 2-10. Annual Percent of Time Bottom DO Greater than Current NYSDEC Standards, Previous Analysis 2

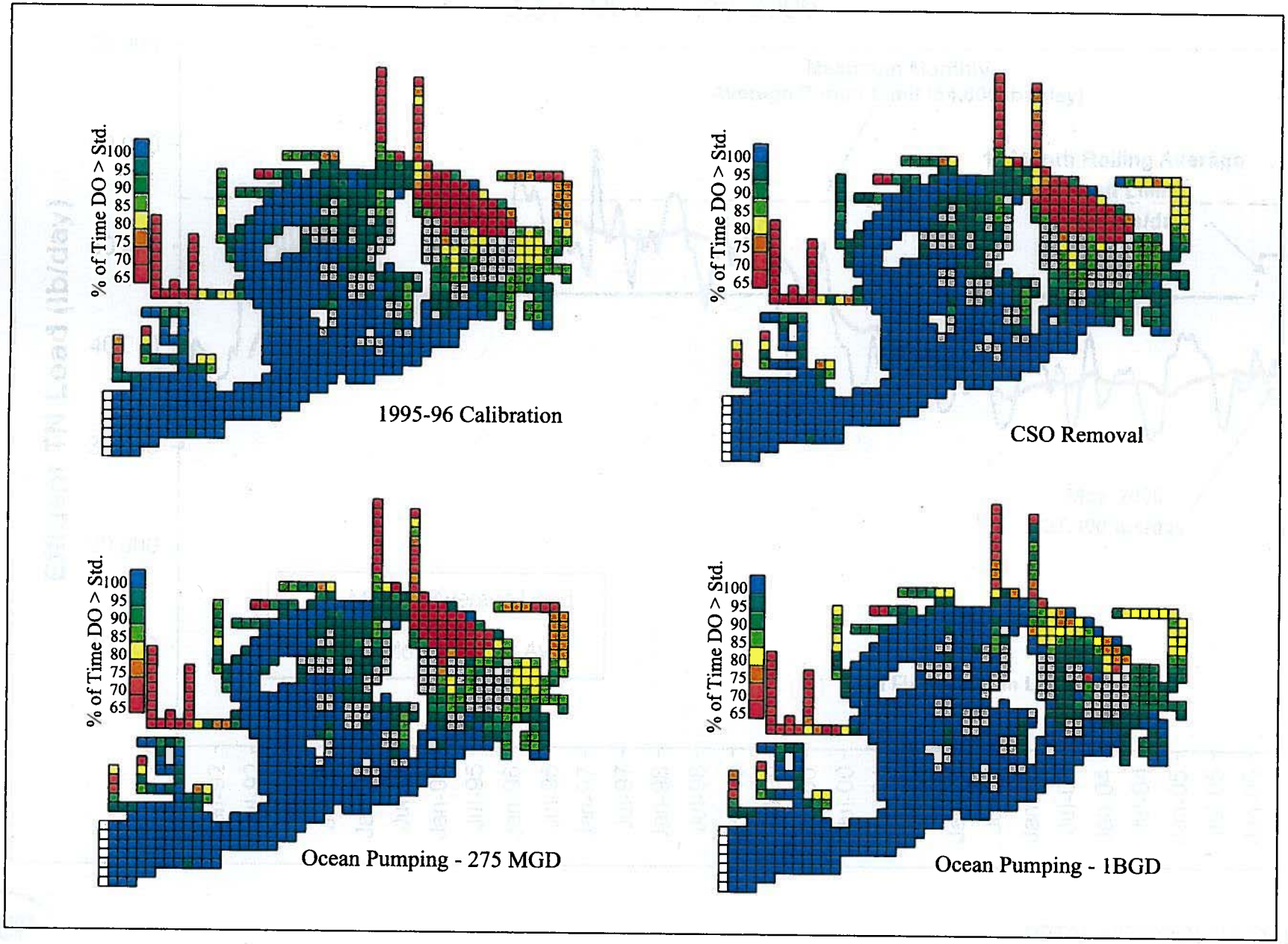
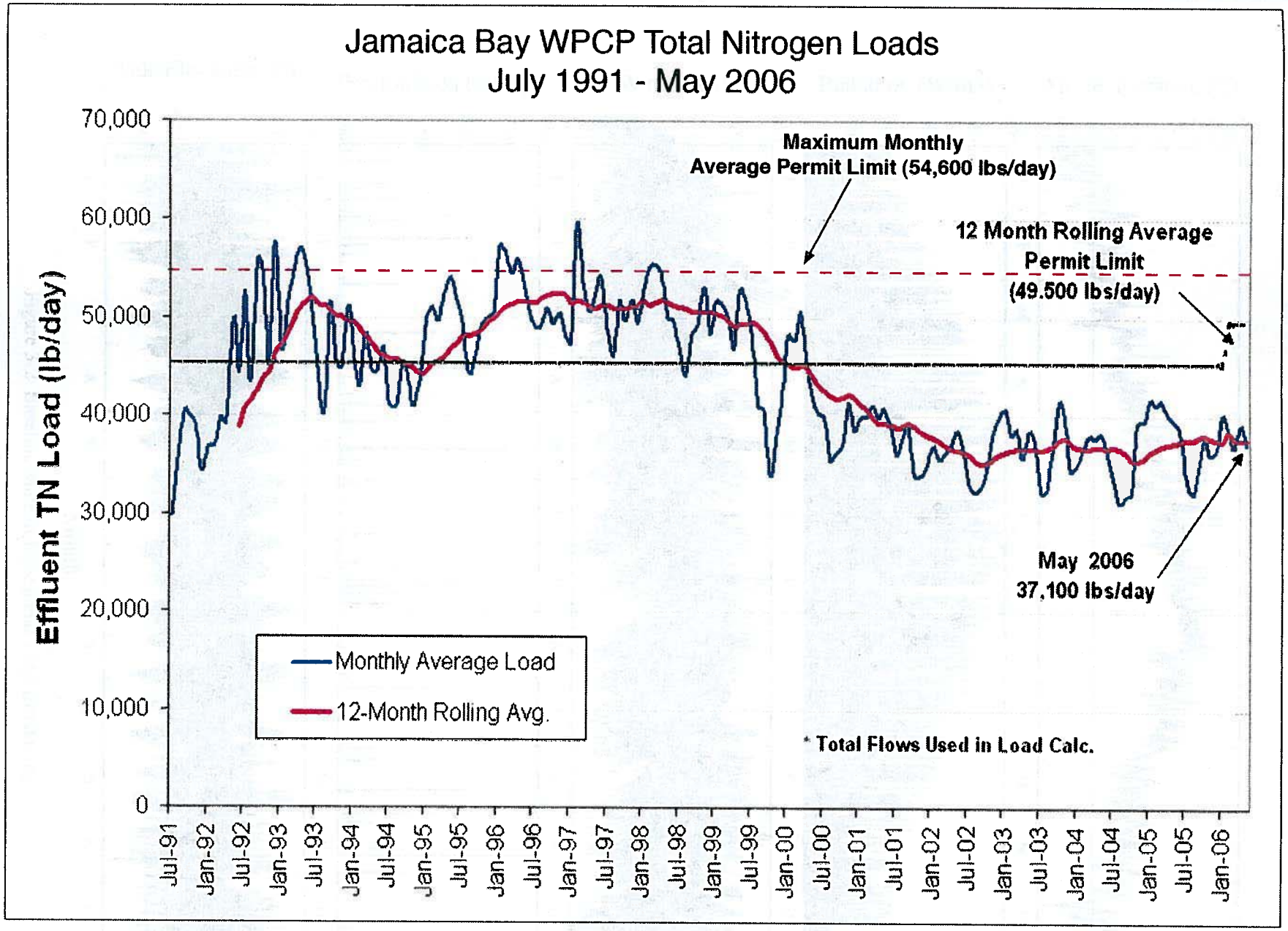


Figure 2-11 Annual Percent of Time Bottom DO Greater than Current NYSDEC Standards, Previous Analysis 3



TOTAL NITROGEN LOADING TO
JAMAICA BAY FROM WPCPS

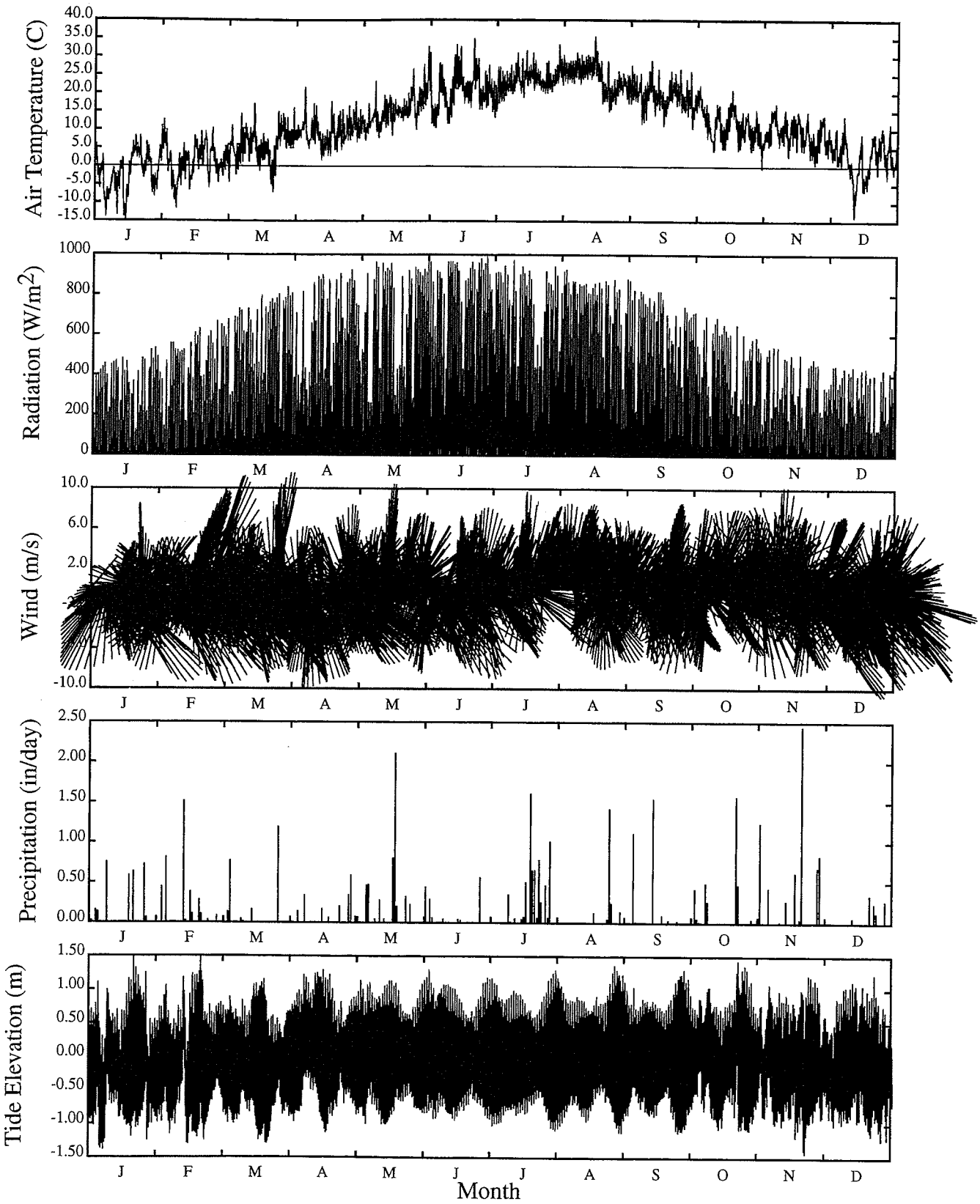
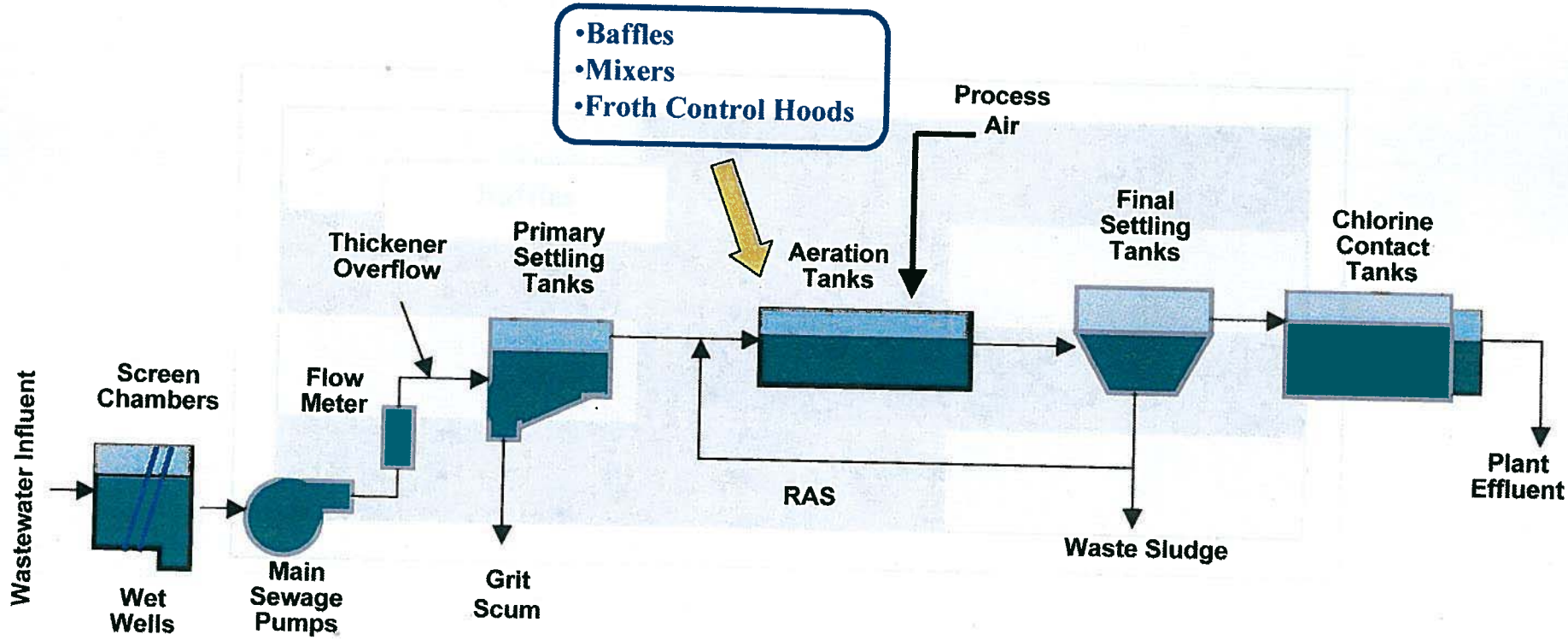


Figure 3-2 Baseline Meteorological and Tidal Conditions

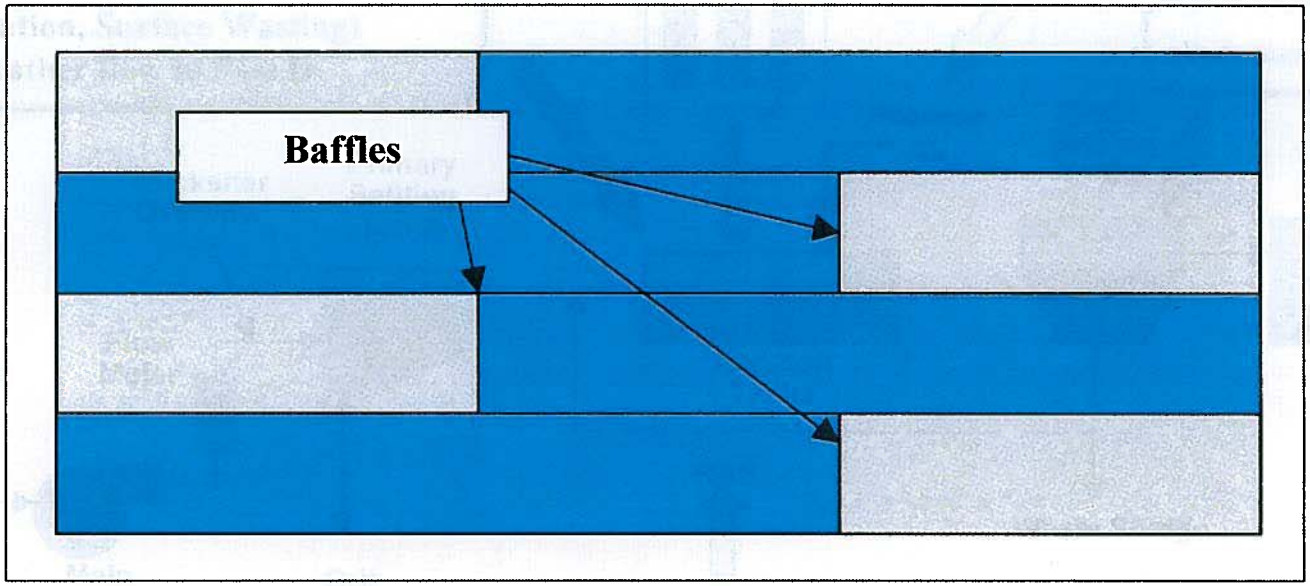


- Level 1 upgrades require minimal structural modifications

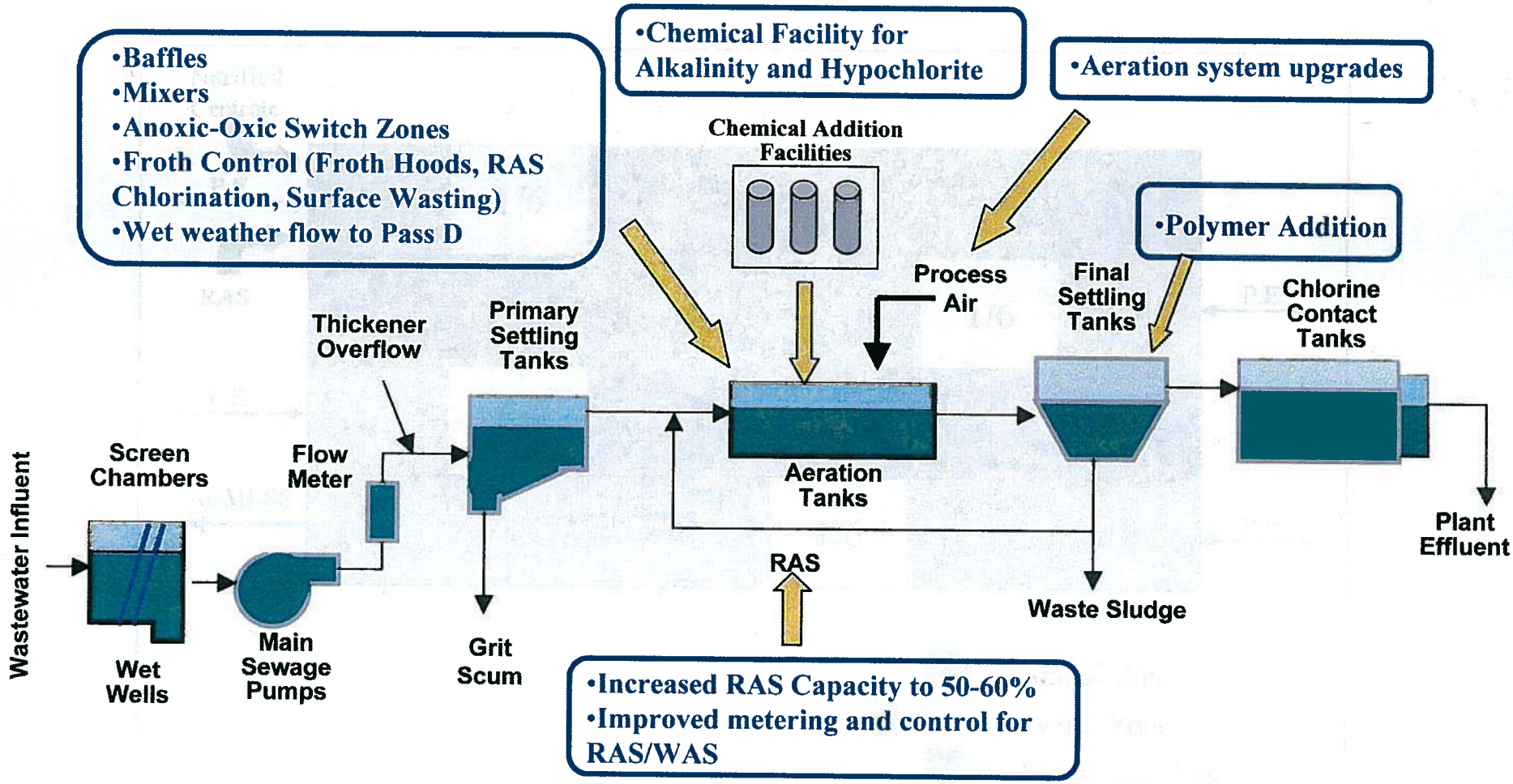
LEVEL 1 BNR TREATMENT

FIGURE 4-1

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure4-1.indd

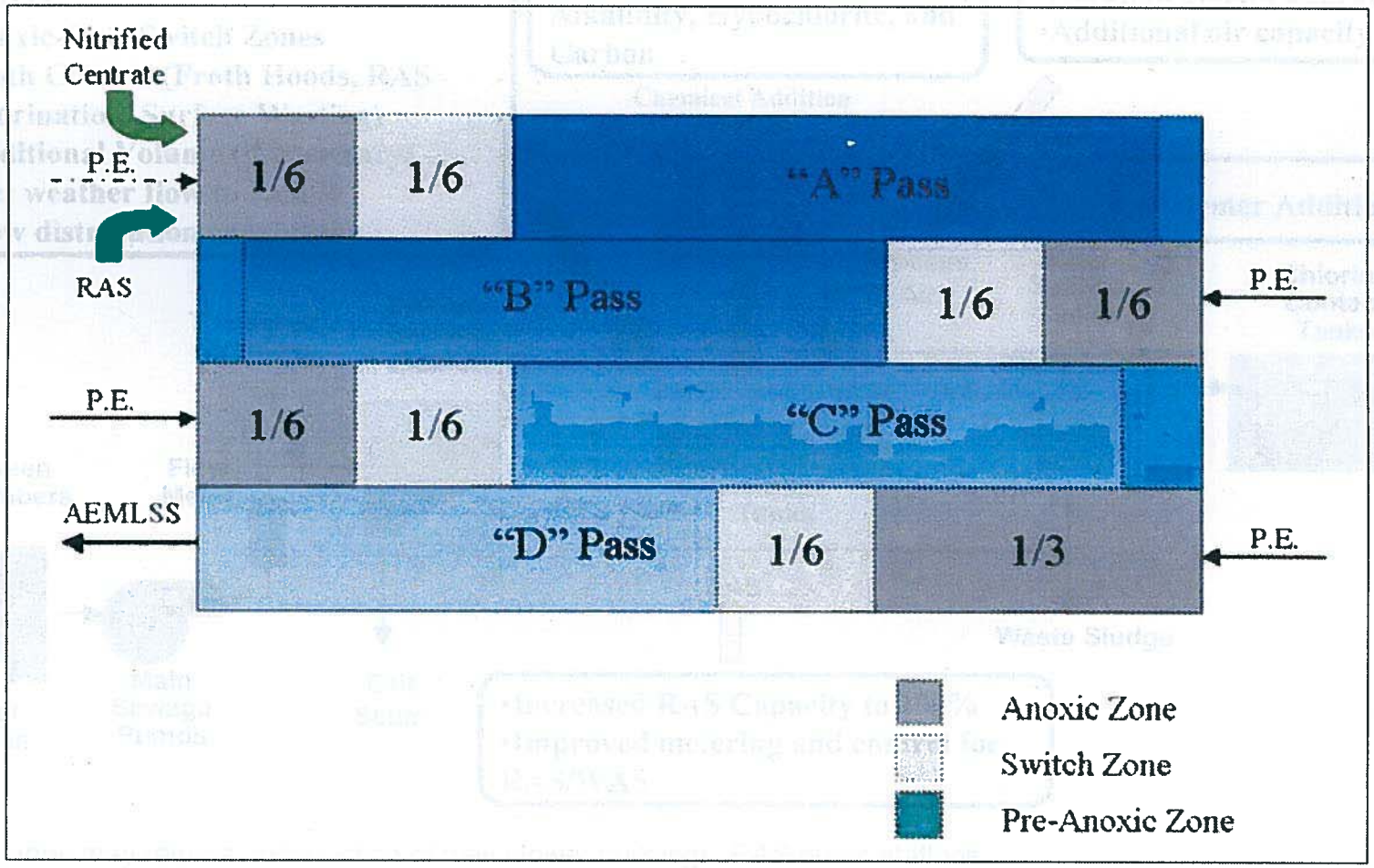


LEVEL 1 BAFFLE WALL LOCATIONS

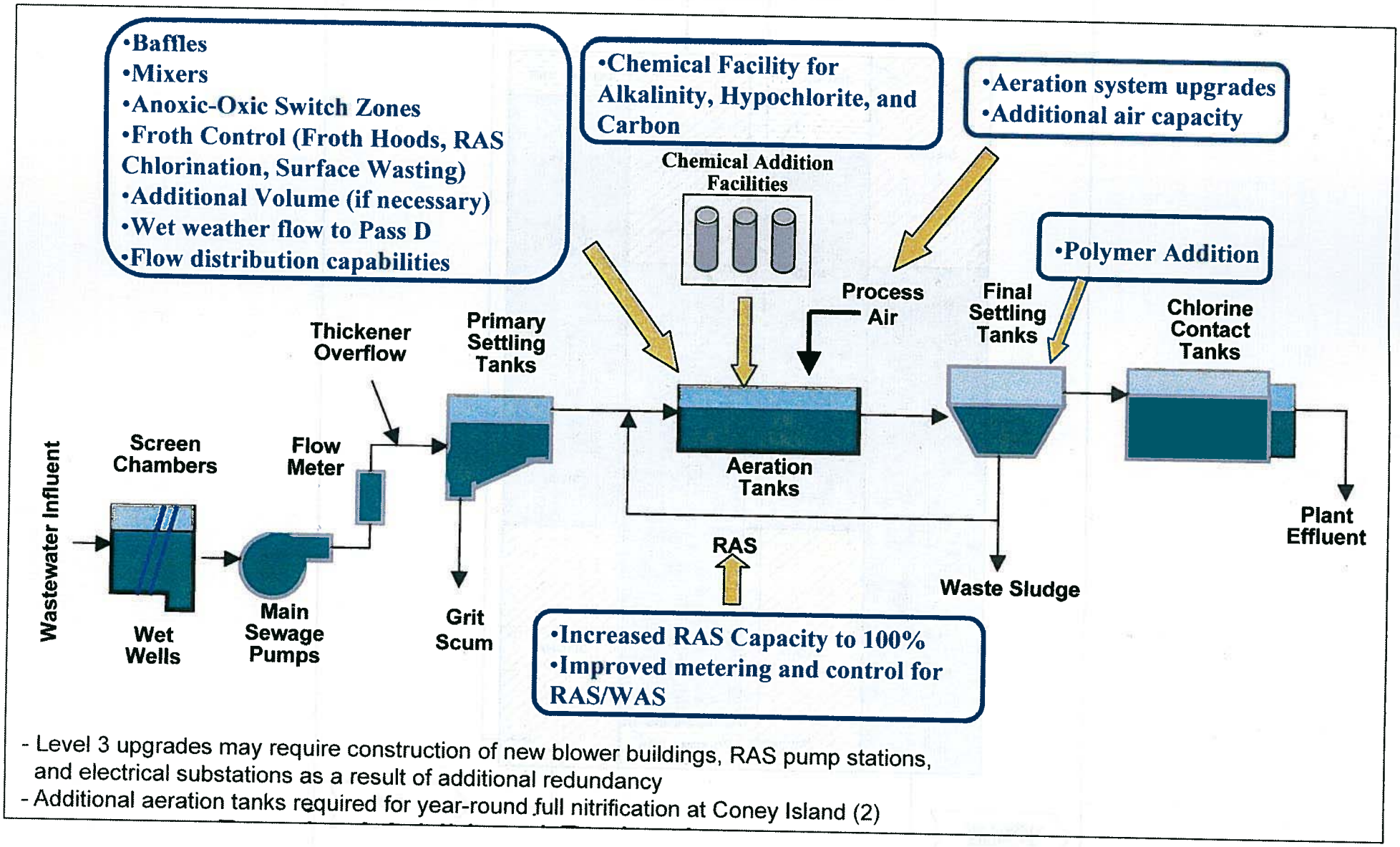


- Level 2 upgrades similar to the current upgrades underway in the Upper East River for compliance with Long Island Sound Study TMDL

LEVEL 2 BNR TREATMENT



LEVEL 2 BNR TREATMENT
AERATION TANK CONFIGURATION

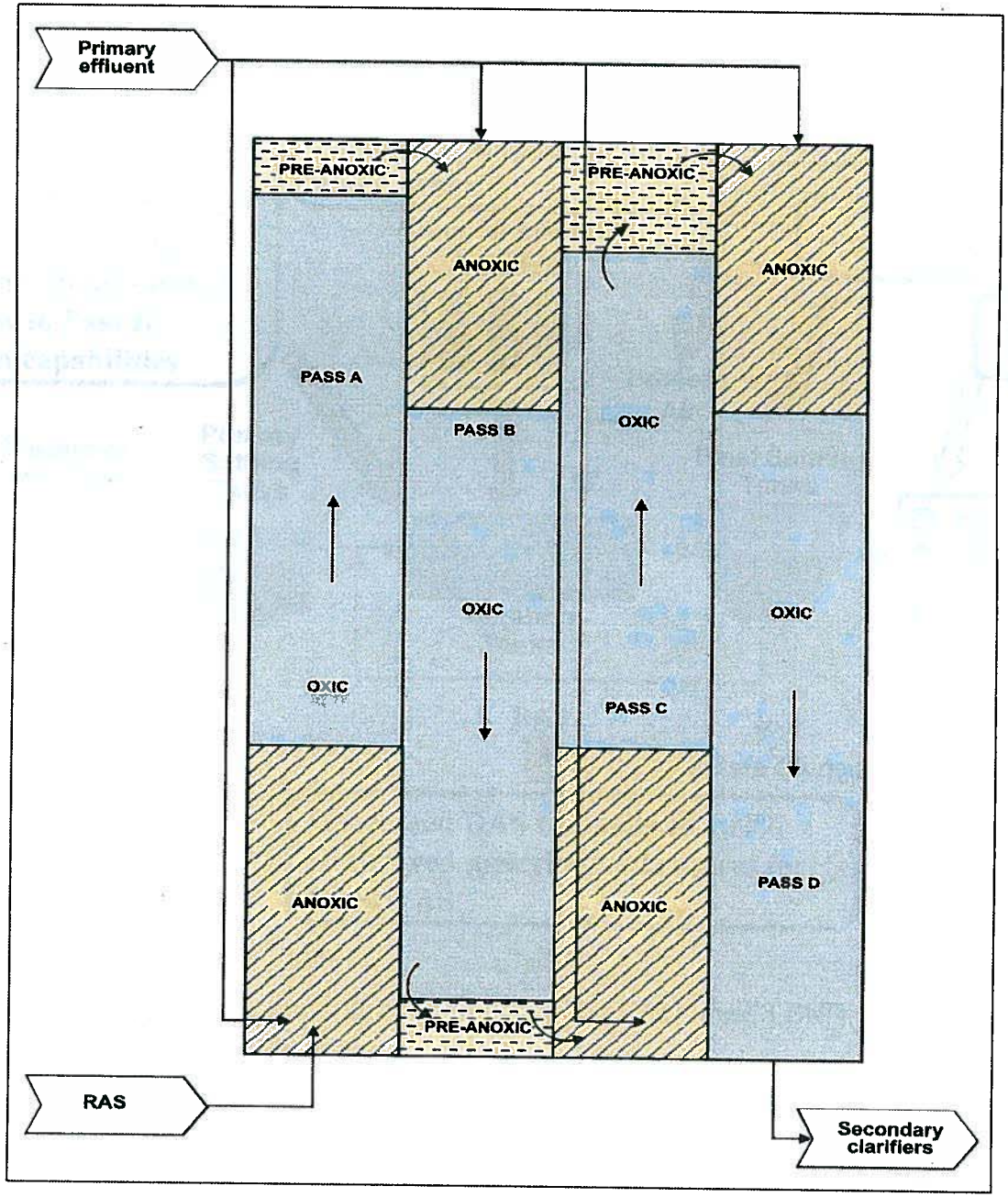


- Level 3 upgrades may require construction of new blower buildings, RAS pump stations, and electrical substations as a result of additional redundancy
- Additional aeration tanks required for year-round full nitrification at Coney Island (2)

LEVEL 3 BNR TREATMENT

FIGURE 4-5

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure4-5.indd

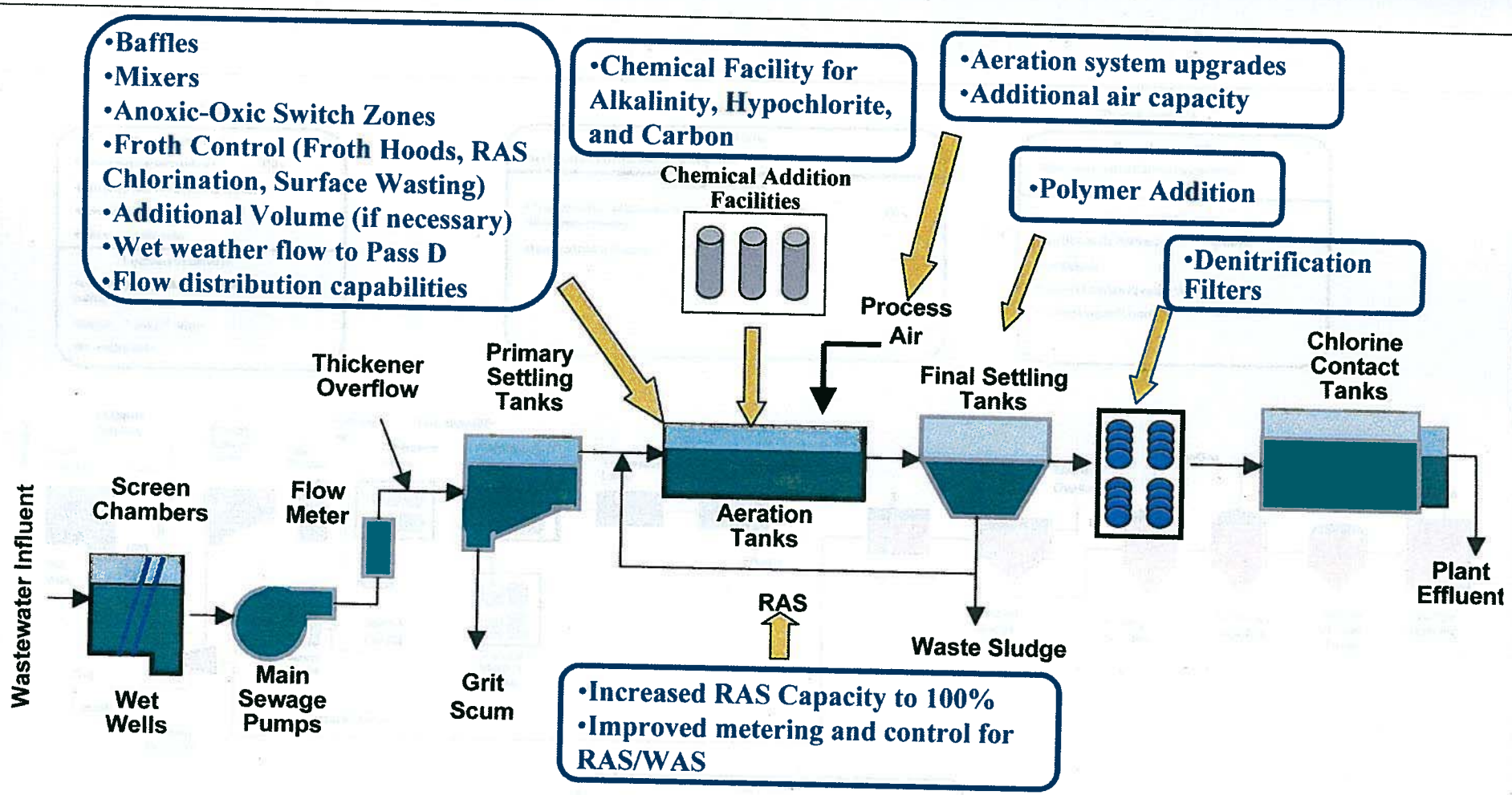


LEVEL 3 AERATION TANK CONFIGURATION

Comprehensive Jamaica Bay Water Quality Plan

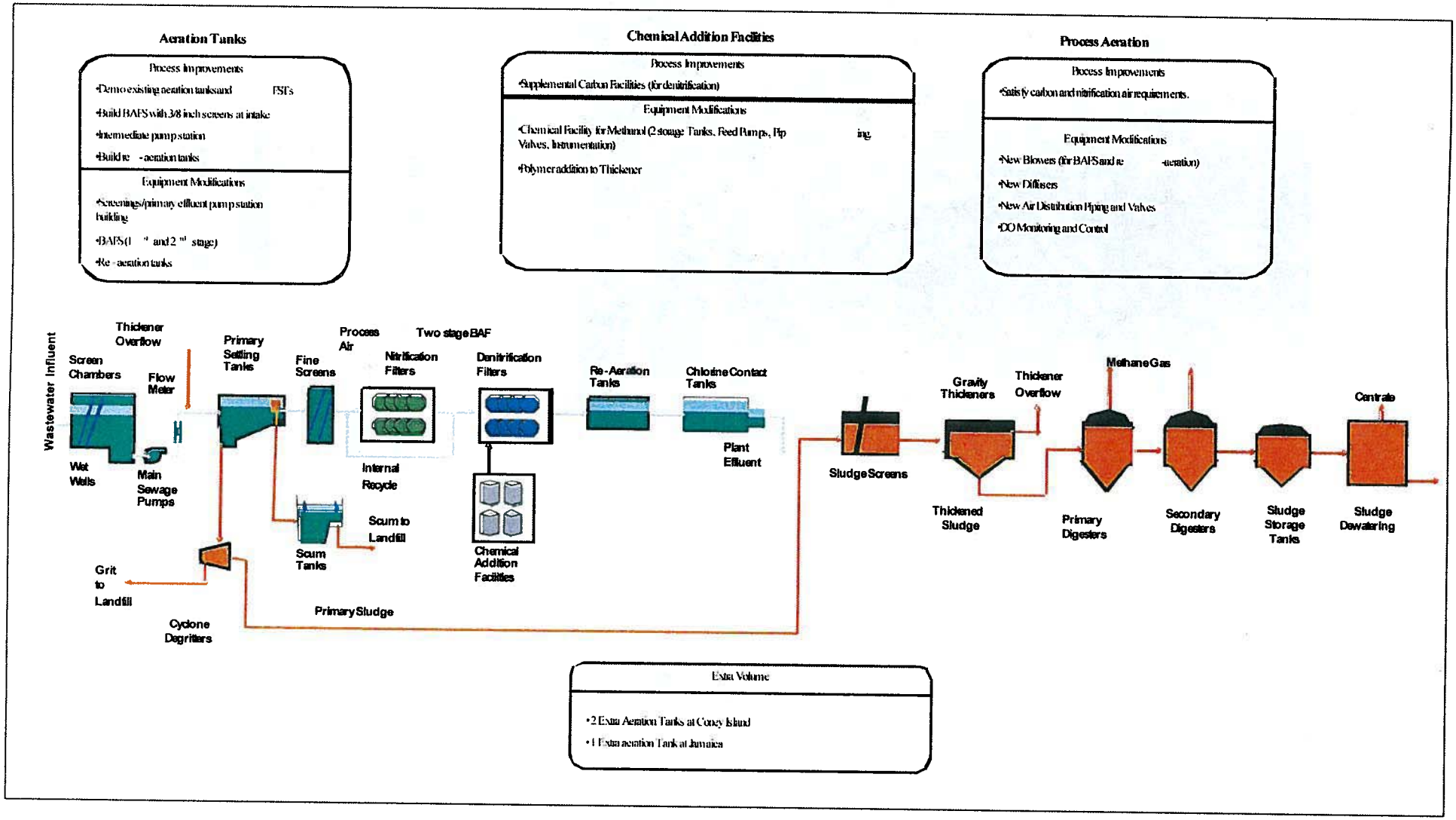
FIGURE 4-6

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure4-6.indd



- Denitrification Filters will require the WPCPs to be upgraded to either level 2 or level 3 BNR, and the construction of the filter as an add-on process
- Applicable at Jamaica Bay WPCPs with additional available space on-site (26th Ward and Rockaway WPCPs)

CONVENTIONAL LOT TREATMENT - DENITRIFICATION FILTERS



LOT BNR TREATMENT - BAFS
USED AT CONEY ISLAND AND JAMAICA

Comprehensive Jamaica Bay Water Quality Plan

FIGURE 4-8

M_Mac_Reports_TWS/krh/TWS.rpt/NYCDEP/1006/Figure4-8.indd