# Projects Under Development as of October 2000

# Anne Arundel County Bioreactor Project

SEVERN, MARYLAND
PROJECT UNDER DEVELOPMENT

**The Project Sponsor:** The Millersville Landfill and Resource Recovery Facility is located on a 565-acre parcel of land in Severn, Maryland, approximately 10 miles south of Baltimore. The facility is owned and operated by Anne Arundel County and is the only active municipal solid waste landfill in the county. The facility handles about 390 tons per day of solid waste, of which about 130 tons per day is recovered for reuse and recycling and the remaining 260 or so tons per day is landfilled. Since late 1997 the landfill has accepted primarily construction debris wastes, and relatively small quantities of curbside municipal solid waste. The facility serves about 660 customers, including businesses and residents.

**The Experiment:** Anne Arundel proposes to operate a small-scale, controlled, fully monitored, and evaluated bioreactor pilot project at the Millersville landfill. Through the use of leachate recirculation, the bioreactor landfill will facilitate microbiological processes to transform and stabilize the decomposable organic waste within five to ten years. Bioreactors provide accelerated waste biodegradation, a means for recovery of air space capacity, enhancement of landfill gas generation rates and leachate quality, and reduction of long-term risks associate with landfills. Bioreactors minimize long-term environmental risk and liability due to the controlled settlement of the solid waste during landfill operation, reduced potential for leachate migration into the subsurface environment, and the recovery of landfill gas during operation. The bioreactor project will involve injecting a controlled amount of liquids through injection devices into a three-quarter-acre area of the landfill over time and monitoring the results. Although this project has similar goals to other bioreactor landfill XL projects, this project provides EPA with the opportunity to obtain data on the differing impacts that geography, climate, construction, design, maintenance, and waste streams may have on the performance of the bioreactor system.

**The Flexibility:** Since the project requires the introduction of liquids into a small portion of the landfill, the county proposes to recirculate their leachate. If the available leachate quantities are incapable of supplying amounts sufficient for the bioreactor to work efficiently, the county would like to supplement it with onsite stormwater runoff. Anne Arundel County is requesting flexibility from the RCRA requirements that restrict liquid waste introduction into landfills unless the waste is either household waste (excluding septic waste), leachate, or gas condensate from the landfill.

**The Superior Environmental Performance:** Anticipated environmental benefits of this project include data gathering relevant to the following long-term goals:

- Reduced need for construction of new landfills and corresponding reduction (or elimination) of the land, air, and water impacts associated with landfill construction;
- Decreased concentration of most leachate constituents as cycling of leachate removes or reduces contaminants;
- Reduction in the amount of leachate requiring pretreatment;
- Reduction in the amount of leachate that the facility discharges to the local wastewater treatment plant, and subsequent discharge of effluent to the Patuxent River; and
- Reduction in post-closure care, maintenance, and risk.

# Chicago Regional Air Quality and Economic Development Strategy

CHICAGO, ILLINOIS
PROJECT UNDER DEVELOPMENT

**The Project Sponsor:** The Chicago Department of Environment (CDOE) is working with other metropolitan communities to address the area's designation of severe ozone nonattainment. This, in part, means that the region exceeds the ozone levels necessary to protect public health and the environment. The region's nonattainment status impacts regional health as well as regional economic development.

**The Experiment:** The Chicago Regional Air Quality and Economic Development Strategy project is innovative because it creates a framework for addressing mobile and area pollution sources. Under the current system, in order for a new major facility or a major modification to an existing facility to occur in a nonattainment region, the new source must achieve the lowest achievable emissions rate (LAER) and offset its projected emissions by reducing emissions further from existing sources. With this project, new sources must still achieve LAER; however, instead of acquiring their own emission offsets, new sources may utilize offsets acquired by the municipality. CDOE plans to test the concept of having Chicago and other regional municipalities create emissions reductions from their local activities as part of its Campaigns for Clean Air and Development. The reductions would be used to create a growth allowance that would be used in lieu of new source review offsets.

The growth allowance would be available to companies who locate in proposed "development zones." Section 173(a)(1)(B) of the Clean Air Act (CAA) would be employed to identify the development zones. Section 173(a)(1)(B) of the CAA states that a new or modified source of air pollution may be issued a permit to construct if it is located in a zone within the nonattainment area identified by EPA, in consultation with the Secretary of Housing and Urban Development, as a zone to which economic development should be targeted. The new emission source must also not exceed the allowance permitted for the pollutants for that area.

This experiment will strive to promote growth and development in areas locally designated for redevelopment, thereby encouraging brownfield redevelopment, reducing impervious surfaces in certain areas, and protecting habitat and green space at the fringe of the metropolitan areas.

**The Flexibility:** This project does not seek regulatory flexibility. It would, however, utilize the growth allowance developed from mobile and area emissions reductions in the Campaigns for Clean Air and Development in lieu of new source offsets for development in the development zones. This is an innovative way to account for the offsets needed for new or modified sources of pollution. In addition, Section 173(a)(1)(B) of the CAA has not yet been exercised. By employing this section of the CAA, this project will work toward preventing urban sprawl.

**The Superior Environmental Performance:** The superior environmental benefits that are expected to accrue from this project include:

- Exceeding what is necessary to demonstrate attainment of national air quality standards by using the proposed growth allowance;
- Retiring 40 percent of the emissions reduction generated, while retaining the remainder for sources to use in lieu of obtaining offsets;
- Creating an incentive to implement programs under the Clean Air Campaigns by directing cost savings to new growth in development zones;
- Achieving reductions in mobile and area pollution sources above Federal and state goals; and
- Promoting industry development in such a manner so as to encourage brownfield redevelopment, reduce impervious surfaces in certain areas, and protect habitat and green space at the fringe of the metropolitan areas.

# Crompton Corporation TBT Project

GREENWICH, CONNECTICUT
PROJECT UNDER DEVELOPMENT

**The Project Sponsor:** Crompton Corporation (Crompton), based in Connecticut, is a producer of tributyltin compounds (TBT), a compound used in the manufacturing of coatings for marine vessels. TBT-based paints assist in keeping ship hulls free of marine organisms by acting as both a biocide and as an agent that imparts a "self-polishing" quality to marine paints. In the late 1980s there was increasing concern about levels of TBT being found in the marine environment, in the vicinity of shipyards and marinas, and the toxic effects of such levels on various "non-target" marine organisms. In response to these concerns, in 1988 Congress passed the Organotin Antifouling Paint Control Act of 1988 (OAPCA). OAPCA aimed at reducing the amount of TBT loadings to the environment while permitting some continued use of TBT-based paints on large ocean-going vessels because of lower economic costs associated with the continued use of TBT-based paints. OAPCA also required that EPA and the Navy monitor TBT in the water column, tissues of marine organisms, and sediments over a ten-year period to determine whether the OAPCA-mandated regulatory restrictions on TBT use actually resulted in reduced TBT concentrations in the marine environment and no adverse effects in the marine environment, or to determine whether additional restrictions are needed. As a result, under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) EPA issued a data call-in (DCI) to Crompton and others who manufacture TBT-based paints to measure the adequacy of the current regulatory restrictions to protect "non-target" organisms. The 1989 DCI requires Crompton to monitor, for ten years, TBT concentrations in the water column, sediments, and the tissues of marine organisms at certain specified areas in the Great Lakes and other intercoastal waterways in the United States. To date, Crompton has gathered 1.25 years of data. The DCI data from Crompton and other registrants show a downward trend in TBT concentrations in the marine environment. These data are consistent with data gathered by the U.S. Navy, the National Oceanic and Atmospheric Administration, and the National Status and Trends Mussel Watch.

**The Experiment:** Crompton is proposing a reduction in the emission of hazardous air pollutants and volatile organic compounds (VOCs) from its plant in Taft, Louisiana.

**The Flexibility:** Crompton seeks to end required TBT monitoring under the DCI and to use the savings to decrease air emissions at its plant.

**The Superior Environmental Performance:** The following benefits in superior environmental performance will likely result from this project:

- Reduction in emissions of hazardous air pollutants—methyl chloride, toluene, and hexane—by approximately 4 tons per year;
- Reduction in emissions of certain VOCs by approximately 12 tons per year;
- Reduction in total hazardous waste production by 48,000 pounds per year; and
- Reduction in nonhazardous waste that is currently deep well injected.

# New Jersey Department of Environmental Protection Gold Track Program

STATE OF NEW JERSEY
PROJECT UNDER DEVELOPMENT

**The Project Sponsor:** In November 1996, the New Jersey Department of Environmental Protection (NJDEP) embarked upon the development of a tiered environmental performance system, the Silver and Gold Track Program, which rewards participating facilities for committing to high standards of environmental achievement. The Silver Track portion of the program was implemented in September of 1999 and includes baseline incentives such as expedited permitting, consolidated reporting, and facility recognition. As New Jersey continues to face numerous environmental management challenges related to its industrial history, the nature of its economy, high population density, and intensive land development patterns, the implementation of the Silver and Gold Track program is viewed as an innovative strategy to promote high standards of environmental protection throughout the state.

**The Experiment:** NJDEP is working on a statewide XL approach to its experimentation with the Gold Track Program for Environmental Performance. The Silver Track tier provides moderate levels of operational incentives that do not require the granting of Federal regulatory flexibility. In contrast, the Gold Track tier will seek to test the concept of providing some Federal regulatory flexibility based on a higher level of environmental commitment made by the participating facility. Under this project, NJDEP would be responsible for oversight of participating facilities and would be empowered to administer, via the XL mechanism and to the extent possible, all of the flexibility described in the Gold Track Final Project Agreement and media-specific Addenda.

**The Flexibility:** The Gold Track proposal will use the XL mechanism to enable NJDEP to negotiate Federal regulatory flexibility as an incentive under Gold Track. The FPA would include an outline of the process and criteria for admission into and administration of Gold Track. Specific regulatory flexibility would be presented and described in media-specific addenda to the FPA, followed by any necessary rulemaking to make the project legally enforceable.

**The Superior Environmental Performance:** The following represent the range of "beyond compliance" environmental benefits that could be expected from Gold Track participants:

- Reduced carbon dioxide ($CO_2$) emissions by 3.5 percent over 1990 levels by 2005;
- Increased use of environmental management systems;
- Enhanced recycling, water balance analysis, energy conservation, process change, or other substantive facility modifications which enhance environmental protection with reasonable milestone status reporting and program implementation deadlines;
- Reduced emissions of signature pollutants in addition to $CO_2$ (nitrogen oxides and volatile organic compounds), and certain hazardous air pollutants such as mercury; and
- Greater use of comprehensive facility monitoring and consolidated targeted environmental tracking and reporting.

# Port of Houston Authority

HOUSTON, TEXAS
PROJECT UNDER DEVELOPMENT

**The Project Sponsor:** The Port of Houston extends approximately 25 miles south of the City of Houston, and consists of both private and public terminals with more than 7,000 ships and 100,000 barges traveling through the port each year. The Port of Houston Authority (PHA) owns and operates public terminals and facilities along the Houston Ship Channel. In addition, there are a number of private terminal owners who operate a variety of cargo facilities, including a $15 billion petrochemical facility. A total of 156 million tons of cargo are shipped through the port annually, of which 26 million tons of cargo pass through PHA facilities. PHA oversees approximately 150 tenants who are engaged in a number of activities that have a direct impact on the marine environment.

**The Experiment:** PHA is proposing to test an advanced tenant environmental management and inspection program that has the potential to be used by other ports nationwide to improve the environmental compliance of poor tenants by developing an easy-to-use handbook that will describe the elements of, and process for, developing a highly effective tenant program. The tenant inspection and management program will allow EPA and state agencies to effectively reallocate resources to concentrate on those tenants that have poor compliance records and provide greater incentives for complying tenants.

**The Flexibility:** The regulatory flexibility for this project will be implemented through the development of an Environmental Response Policy in which EPA aims to clearly outline and agree to exercise their prosecutorial discretion in a manner favorable to the PHA. The Agency would look first to the tenants for remediation of violations for which tenants and PHA, in its capacity as an owner, are simultaneously potentially liable, in exchange for PHA undertaking the commitments outlined in the PHA's XL proposal.

**The Superior Environmental Performance:** The tenant environmental management program is expected to demonstrate superior environmental performance by:

- Improving environmental compliance;
- Encouraging proactive environmental management by requiring tenants to enroll in the TNRCC's permanent pollution prevention program; and
- Redirecting more enforcement resources to problem tenants.

In addition to implementing an inspection and compliance program, PHA will put in place an emissions reduction strategy that will reduce nitrogen oxides ($NO_x$) and particulate emissions from non-road equipment operated at PHA's facilities. The emissions reduction strategy will include the following:

- PuriNOX diesel fuel derivative will be used by PHA's yard haulers to reduce $NO_x$ and particulate matter in emissions. Yard haulers are non-road-going diesel trucks that are used to haul containers from ships to storage areas at the Port's cargo and container staging area. These vehicles are not subject to the EPA vehicle emissions standards. PHA currently operates a fleet of 293 of these vehicles. If fully implemented, PHA estimates use of Paranoias would result in a 342.1 ton per year reduction in $NO_x$ emissions and 49.8 ton per year reduction in particulate emissions.
- PHA will conduct a demonstration project to determine the feasibility of installing selective catalytic reduction (SCR) technology in its rubber tire gantry (RTG) cranes. If fully implemented, PHA estimates the installation of SCR technology in each of its 29 RTG cranes will reduce $NO_x$ emissions 189.7 tons per year and particulate emissions by 6.8 tons per year.