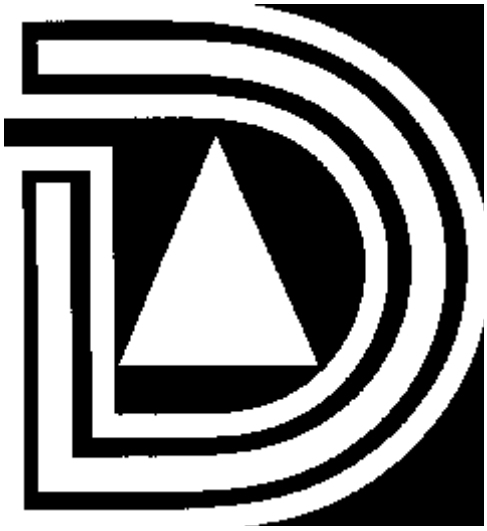
PILOT PRETREATMENT PROGRAM
PROJECT XL
FINAL PROJECT AGREEMENT



DENTON
City of Denton, Texas
Environmental Services Division

December, 1999

Pilot Pretreatment Program
Project XL Final Project Agreement

City of Denton, Texas

TABLE OF CONTENTS

Pilot Pretreatment Program
Project XL Final Project Agreement

City of Denton, Texas

Executive Summary

In a Federal Register Notice published on June 23, 1998, EPA requested proposals from Publicly Owned Treatment Works (POTWs) for projects based on environmental performance measures for wastewater pretreatment programs. In September 1998, the City of Denton submitted a proposal to EPA outlining the revision of the industrial user compliance inspection and monitoring schedule. Through the flexibility afforded by the XL program, the City of Denton intends to integrate the elements of the Phase II Storm Water Program and begin the development of a watershed protection program.

The goal of the National Pretreatment Program is the protection of the wastewater collection system and treatment facility, safety of workers, and biolsolids. By controlling the discharge of hazardous chemicals to the wastewater collection system, the treatment processes and integrity of receiving streams is protected. This is accomplished by consistent monitoring and inspection of industries and major commercial customers connected to the wastewater collection system.

The Phase I Storm Water Program established in 1987 was associated with the National Pollution Discharge Elimination System (NPDES). Phase I regulations covered discharges from municipal separate storm sewers (MS4) serving a minimum population of 100,000. In 1995, EPA expanded the Storm Water permit program to cover all non-phase I (Phase II) Storm Water discharges. On October 29, 1999, the Phase II final rule was signed by the EPA administrator. The Phase II rule requires the development of a Storm Water management plan to include 6 minimum measures related to pollution prevention and control of runoff.

The threat to life created by flash flooding in North Texas initiated the creation in 1998 of a flood warning system in the City of Denton Drainage Division. The automatic warning system is activated by rain and stream level detectors which signals the closure of gates and alerts response teams. Signals are transmitted by a SCADA system from remote locations to a Utilities dispatcher and automatic pager of first responders. The pilot XL project will investigate the possibility of coordinating the output from rain and stream detectors to activate automatic samplers.

In 1998, EPA awarded a grant to the City of Denton and University of North Texas to develop an electronic monitoring program for the Pecan Creek watershed. The grant derived from a presidential initiative mandating the establishment of a program called Environmental Monitoring for

Public Access and Community Tracking (EMPACT). The proposed EMPACT project entitled Environmental Condition On-line DFW Metroplex (ECOPLEX) will transmit real-time watershed monitoring data from remote sites to City of Denton websites and the Environmental Education Science and Technology Building on the UNT campus.

The combination of the XL pilot pretreatment project, City of Denton Drainage Division early warning system, and the ECOPLEX remote monitoring system provides the City of Denton with a unique opportunity to create an innovative state-of-the-art integrated monitoring system and watershed protection program. Such a system will provide the capability to detect contaminants with the potential to impact water quality and ultimately the aquatic environment and drinking water reservoir. The City of Denton plans to create buffer zones in undeveloped drainage basins within the boundaries of the watershed. These creekside buffer zones or conservation easements will reduce the runoff of agricultural and suburban pollutants. All monitoring efforts will be documented through the development and use of a database and mapping capabilities of geographic information systems (GIS) shared by the City of Denton and UNT. The achievement of these goals is made possible by the regulatory flexibility afforded by the Clean Water Action Plan and the synergy created by the concerted efforts of a diverse community of dedicated professionals.

I. OVERVIEW

This Final Project Agreement (FPA) is an outgrowth of the U.S. Environmental Protection Agency's (EPA) June 23, 1998 Federal Register Notice (Vol. 63, No. 120) requesting proposals from Publicly Owned Treatment Works (POTWs) for XL (eXcellence and Leadership) projects based on environmental performance measures for waste water Pretreatment Programs. The intent of this effort is to investigate ways of increasing the effectiveness of the Pretreatment Program and thus to obtain greater environmental benefit. EPA is willing to provide POTWs regulatory relief from programmatic requirements (e.g., specific monitoring frequencies, specific control mechanism issuance requirements, etc.), so that they can implement alternative programs that increase environmental benefits.

Purpose of Project XL and the FPA

Purpose of Project XL

Project XL, which stands for "eXcellence and Leadership," is a national pilot program to test the extent to which regulatory flexibility, and other innovative environmental approaches, can be used to achieve superior environmental performance and reduced economic burden. Through site-specific agreements with project sponsors, EPA is able to gather data and project experience that will help the Agency redesign current approaches to public health and environmental protection. Under Project XL, sponsors -- private facilities, multiple facilities, industry sectors, Federal facilities, communities, and states -- can implement innovative strategies that produce superior environmental performance, provide flexibility, cost savings, paperwork reduction or other benefits to sponsors, and promote greater accountability to stakeholders.

Purpose of This Final Project Agreement

This FPA is intended to be a joint statement of the plans and intentions of EPA, TNRCC and City of Denton (collectively "the parties") and to reflect the firm commitment of each party with regard to the project approved for implementation at Pecan Creek Water Reclamation Plant (the "Project"). This FPA is not, however, intended to create legal rights or obligations and is not an enforceable contract or a regulatory action such as a permit or rule. Nevertheless, some provisions of this FPA will be implemented through rulemaking, consent orders and/or permitting, the terms and conditions of which will be legally enforceable. This FPA will articulate that City of Denton intends to continue to attain environmental results that are measurably superior when compared to current and reasonably anticipated regulatory standards as contemplated by EPA's Project XL criteria. This FPA will identify the means to provide for environmental regulatory flexibility as requested by City of Denton as an incentive for superior environmental results. All parties to this FPA will strive for a high level of

cooperation, communication, and coordination to assure successful, effective, and efficient administration of the FPA and the Project.

Current Program Description

1. **Statistical data related to the treatment works**

City of Denton is permitted (TX 0047180) to discharge treated wastewater effluent from the Pecan Creek Water Reclamation Treatment Plant (design flow: 15 MGD) to Pecan Creek thence to Lake Lewisville in segment No. 0823 of the Trinity River Basin. This plant serves a rapidly expanding population of greater than 72,867 (1998). The industrial flow entering the plant represents approximately 8.9% of the average total daily flow (0.9958 MGD/11.149 MGD). City of Denton currently provides wastewater services to thirteen (13) significant industrial users (SIU) five (5) of which are categorical (metal finishing and electric power) industrial users (CIU) (Table 1).

2. **NPDES permit requirements related to the treatment plant and the Pretreatment Program**

The current NPDES (TX0047180) permit specifies 30-day average discharge limitations of 10mg/L $CBOD_5$, 15 mg/L TSS, 3mg/L ammonia, and 5 mg/L dissolved oxygen. The permit also requires that the final effluent shall contain no measurable total residual chlorine (<0.1mg/L) and the performance of monthly chronic biomonitoring. Discharge Monitoring Reports are submitted to EPA on a monthly schedule.

The NPDES permit requires the Pretreatment Program to fulfill all six (6) of the minimum requirements for an approved Pretreatment Program as established by the General Pretreatment Regulations [40 CFR403.8(f)(2)(v)]. These requirements are met through the following activities: annual inspection and analysis of effluent discharged from each SIU, control of discharge quality from industrial users with enforceable permits, self-monitoring and reporting by categorical industries, evaluation by SIUs of the need for development of a slug control plan, and the establishment, enforcement, and review of technically based local limits (TBLLs). The NPDES permit also requires the Pretreatment Program to perform the quarterly analysis for toxic pollutants of treatment facility influent, effluent, and de-watered sludge and the annual submission to EPA and TNRCC of an updated Pretreatment Program status report.

3. **Pretreatment Program Implementation Procedures**

Implementation of the Pretreatment Program is conducted by the City of Denton Environmental Services Division. Staff consists of four regular full-time and one temporary position. Analytical services are provided by the City of Denton Municipal Laboratory and contract laboratories. Funding for Pretreatment Program activities is budgeted annually by City of Denton Department of Utilities Environmental Services Division. Legal authority is provided by the City of Denton Code of Ordinances. The Federal General Pretreatment Regulations and Categorical Pretreatment Standards are incorporated into the ordinance. Discharge of pollutants from SIUs to the POTW is controlled by the issuance of discharge permits. Changes in the POTW user base are monitored by review of new requests for services, monthly reports of sewer taps, weekly review of new certificates of occupancy, Chamber of Commerce Directory of Manufacturers and Major Employers, regular monitoring and inspection activities. All permitted SIUs and a fraction of small quantity generators (SQG) are inspected annually. Collection and analysis of wastewater discharged from all permitted industrial users and "users of concern" is conducted annually according to a schedule approved by EPA. Random samples of wastewater discharge from new or previously uncharacterized nonresidential users are collected to assess compliance with discharge ordinance requirements. Self-monitoring reports are received twice annually from categorical industries. Excursions from permit or ordinance discharge limits are addressed according to an approved enforcement response plan. A summary of program status and compliance activities is reported annually to EPA.

4. Implementation procedures related to the Pretreatment Program that go beyond what is required by the NPDES permit.

The City of Denton Environmental Services Division has already initiated the implementation of several aspects of Storm Water and watershed protection. In 1992, City of Denton conducted a survey and dry weather screening of the storm water drainage system. In 1997, the Environmental Services Division conducted a joint study with the University of North Texas (UNT) to assess the possibility of integrating the compliance activities of the Storm Water program into the Pretreatment Program. As a result of that study, a UNT PhD candidate conducted a dry weather investigation and first flush sampling in each of three drainage basins in the City of Denton. Additionally, an Industrial Pretreatment /Storm Water Inspection checklist was developed and its use initiated in 1997 during inspections of categorical industries.

With the cooperation of the Water Communications Division, City of Denton has provided pollution prevention information to the public (Table 2). For several years, information related to the proper use of pesticides has been provided to customers of the Department of Utilities in the form of bill stuffers and announcements on a local cable television station.

5. **Historical measures that are indicators of the effectiveness of City of Denton Pretreatment Program.**

The following historical measures are indicative of the effectiveness of the City of Denton Pretreatment Program. For the period 1990-1997, influent loading for heavy metals has been reduced by the following magnitudes: cadmium (76%), chromium (44%), lead (84%), and nickel (62%). Concentration of metals in treated effluent has been below the detection limit with the exception of copper, which has been reduced 29% since 1995. Since 1995, concentrations of arsenic, chromium, nickel, silver and zinc in anaerobic sludge have been reduced by 74%. Concentration of metals in composted aerobic sludge currently meets the allowable limits for sale and during 1998 were reduced by the following magnitudes: arsenic (48%), chromium (32%), lead (21%), nickel (36%), and zinc (13%).

Why Regulatory Relief?

Some POTWs have mastered the programmatic aspects of the Pretreatment Program (identifying industrial users, permitting, monitoring, etc.) and want to move into more environmental performance-based processes. These POTWs have expressed an interest in being allowed to focus their resources on activities that they believe will provide greater environmental benefit than is achieved by complying with the current requirements. Some POTWs want to be able to make decisions on allocating resources based on the risk associated with the industrial contributions they receive or other factors. Others want to be able to focus more resources on ambient monitoring in their receiving waters and/or to integrate their Pretreatment Programs with
their storm water monitoring programs. In general, these POTWs want the opportunity to redirect limited resources away from currently required activities that they do not believe are benefiting the environment and toward activities that can achieve measurable improvements in the environment. Project XL was implemented to provide the flexibility to conduct these types of innovative projects.

City of Denton proposes to modify the industrial user inspection and monitoring schedule approved in 1993 at the time of a program modification. The approved schedule contains thirteen (13) Significant Industrial Users (SIUs) and seven (7) minor users. SIUs are determined on the basis of the 1992 definition in 40 CFR 403.3. By definition, SIUs are users subject to Categorical Pretreatment Standards, discharge an average of 25,000 gallons per day of process water or contribute a process wastestream which represents 5 percent or more of the POTW treatment plant capacity, or has a potential to adversely affect the POTW. Four (4) of the SIUs in the City of Denton are categorical users regulated by the standards listed in 40 CFR 433 - Metal Finishing Point Source Category and one (1) is regulated by 40 CFR 423 – Steam Electric Power Generating Point Source Category. The metal finishing industries in Denton are either electroplaters or use a corrosive preparatory process.

According to the approved monitoring and enforcement schedule, all SIUs and Minor Users are

inspected once/year and the wastewater discharged from the facilities is sampled and analyzed at least once/year. Samples are collected in either of two ways depending upon accessibility to

the wastewater service line. If it is possible to insert a programmable automatic sampler into a vault or manhole, the sampler is left in that location and the bottles are replaced every 24 hours for four (4) consecutive days. If it is not feasible to install auto samplers, grab samples are collected four (4) times/day for four (4) consecutive days.

Inspection of industrial users that have demonstrated compliance will be conducted biennially(every 2 years) (Attachment I). The four-day duration of monitoring site visits will be reduced to two random visits. Duration will be extended if two-day visits indicate non-compliance. Reducing our schedule of sampling visits will provide a greater element of surprise. City of Denton proposes to continue to sample all users once/year as stated in the approved Monitoring and Enforcement Schedule. Instead of sampling for four (4) consecutive days, City of Denton will sample two (2) days during each randomly scheduled event.

The results of the laboratory analysis of wastewater collected from industrial users are compared to approved standards to assess compliance. The quality of wastewater discharged from the processes which are performed by the categorical users is compared to federal standards for the Metal Finishing Point Source Category. The quality of the combined process and sanitary wastewater from categorical users and that discharged from all other users is assessed in comparison to local limits whish are published in the City of Denton Code of Ordinances. TBLLs are calculated using data accumulated during extensive sampling and analysis of wastewater from industrial users, representative domestic wastewater, and wastewater treatment plant processes. Acceptable limits are based upon the concentration of pollutants which can be discharged to the wastewater treatment facility without causing disruption of treatment processes or contamination of biosolids.

Annual efforts to inspect SQGs will be reduced from the ten percent (10%) fraction of the population as recommended by EPA in 1994 to less than five percent (5%) of the total number represented in the user survey. The impacted SQGs will be selected according to their potential to contribute contaminants to the POTW.

One of the greatest environmental benefits of the proposed regulatory relief will be the reapportionment of resources toward watershed protection. The City of Denton plans to continue with the integration of the proposed Phase II Storm Water Program requirements initiated in 1996. The project was funded by EPA and conducted by UNT and City of Denton to assess the potential integration of Storm Water and pretreatment program compliance activities. The flexibility afforded by the XL Pilot Project will allow the establishment of baseline water quality data against which the effectiveness of pollution prevention activities will be evaluated. Five of the elements of the Phase II

Storm Water Program are designed to reduce or eliminate the sources of contamination of Storm Water runoff (Attachment II). By implementing elements of Storm Water site inspections during industrial user facility inspections, potential point source problems can be addressed. Construction site erosion control will be assessed by engineers from City of Denton Water and Wastewater Utilities. Coordinated efforts with the Planning Department will be

established to provide sources for techniques and materials to prevent runoff from impervious surfaces. Reducing the frequency of industrial user (IU) inspections and visits, City of Denton can address problem sites such as recycling centers, junk yards, and salvage yards with a greater potential to contribute pollutants directly to the receiving streams.

The effectiveness of efforts to implement elements of the Phase II Storm Water Program will be assessed using a variety of methods. The location of sites of concern and monitoring stations in the watershed will be mapped with GIS (Figure 1). City of Denton intends to implement the use of remote monitoring equipment to detect real-time temperature, pH, conductivity, and dissolved oxygen (DO) as means of establishing baseline conditions. City of Denton will periodically collect water samples for screening analyses such as total suspended solids (TSS), alkalinity, phosphates, total Kjeldahl nitrogen (TKN), sulfates, and nine (9) metals listed as Texas Water Quality Standards (arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc). Full priority pollutant scans (126 Section 307 (A) Toxic Pollutants) will establish baseline pollutants of concern. The 126 priority pollutants will be modified to reflect pesticides and herbicides detected with greatest frequency by USGS and other organizations participating in the National Water Quality Assessment Program (NAWQA). Field and analytical data will be overlaid onto the GIS map. Researchers from UNT will attempt to integrate the use of "biosensors"(freshwater clams) to trigger collection of water samples by auto samplers if ambient conditions elicit a response from the clams. The effectiveness of source control may be demonstrated as a decrease of pollutants detected during baseline monitoring and a concurrent improvement in ambient water quality. The goal of this monitoring is the establishment of ecologically-based watershed assessment and protection.

II. PROCESS

Process for FPA Development/Stakeholder Involvement

In order for this project to get to the FPA development stage, the project was required to go through EPA's selection and screening process. After selection and screening, full development of this FPA occurred approximately over a 6 month time frame. During these 6 months, the project sponsor, EPA, the State, co-regulators, and other interested stakeholders negotiated the final language of this document.

The first step in FPA development consists of City of Denton convening all interested stakeholders through a public notice process to inform them of this pilot project proposal and to explore any issues that might have existed. The stakeholder involvement measures which will be enacted by City of Denton include the following: publication in the local newspaper and formal notification of industrial users and grassroots environmental organizations of scheduled public meetings and the potential impact and benefits of the proposed pilot XL Project. City of Denton will ensure and maintain continued stakeholder involvement over the duration of this project. The relevant stakeholders for this project included fourteen (14) Industrial Users, two (2) universities, Citizens for Healthy Growth, the Denton Branch of the Sierra Club, TNRCC regional office and headquarters, Denton County Environmental Health, and seventeen (17) national environmentally concerned organizations (Attachment III). The next step involved refining the issues and drafting a document that addressed all parties' concerns and ideas. This step encompassed several meetings. This FPA outlines the details of the project and each party's commitments. Specifically, the participants defined the innovation to be tested, what superior environmental performance must be achieved, what flexibility EPA and other co-regulators would need to provide, what conditions must be met, and how results will be monitored and reported. The Texas Natural Resource Conservation Commission was also given the opportunity to review and amend the draft document.

XL PROJECT DESCRIPTION

I. Scope

A. Describe existing Pretreatment Program requirements

1) Industrial waste survey requirements

When new users are identified, contact is initiated by a telephone call or a site visit during which a preliminary survey is conducted to assess the operation of the user. If the facility is determined to be a user of concern, a meeting and baseline monitoring of the wastewater is scheduled to assess the need to issue a discharge permit.

2) Permitting procedures

Discharge permits are issued to all SIUs. The discharge permit application requires the industrial user to provide a description of the manufacturing processes, process water consumption and discharge volumes, and the potential pollutant concentration in wastewater discharged from the facility.

3) Monitoring requirements

According to the requirements of our approved program, each permitted industrial user is inspected and its wastewater discharge is sampled and analyzed annually. Categorical industries submit self monitoring reports twice annually.

4) Enforcement procedures

Enforcement action is initiated for all violations of applicable discharge limits or for failure to submit the self-monitoring report within 30 days of the due date documented in the discharge permit. Categorical users are required by permit to notify the City of Denton within 24 hours of any exceedence of discharge limits. Non-compliance is addressed according to procedures outlined in an approved enforcement response plan.

5) Reporting requirements

All categorical industries must submit biannual self-monitoring reports. All significant industrial users must notify City of Denton of any slug discharge, upset or bypass of a pretreatment system, or any accidental discharges of any waste or material which may cause pollution to the wastewater system or into the environment. All new industrial users must notify City of Denton, EPA, and TNRCC of any discharge to the POTW which would be a hazardous waste under 40 CFR Part 261 if disposed of in another manner. Each year during the month of March, the City of Denton is required to submit a Pretreatment Program Status Report to EPA Region VI.

6) Local limits development requirements

Technically based local limits (TBLLs) were developed in 1993 in compliance with NPDES permit requirement to modify the City of Denton Pretreatment Program. The local limits were developed on the basis of process inhibition criteria, sludge disposal regulations, and the protection of receiving stream water quality. As a result of the TBLL development process, new discharge limits established in 1993 were 75% more stringent than limits established in 1984.

As a requirement for NPDES permit renewal in 1995, an assessment of the need to revise TBLLs (40 CFR 122.21 (j) (4)) revealed that current influent loading for pollutants of concern are considerably lower than the TBLL maximum headworks allowance.

7) Current resources (Equipment and personnel)

The City of Denton Pretreatment Program staff consists of four (4) full time positions. This staff also performs functions related to pollution abatement, onsite sewage facility regulation. The division has access to the use of two (2) 4WD pickup trucks. Monitoring and sampling equipment includes two (2) portable flow meters, eleven (11) automatic samplers, three (3) remote monitoring units, and field pH and dissolved oxygen meters.

8) Quality Assurance / Quality Control

The basis for acceptable quality assurance and quality control is comprised of all procedures associated with collection of representative industrial discharge samples, site inspections, review of self- monitoring reports and close scrutiny of all analytical results. Sample containers are cleaned and samples are preserved and analyzed according to 40 CFR Part 136. All sampling locations and sample

types are clearly identified for each major industrial user. Chains of custody are prepared for all samples analyzed by commercial laboratories. Samples analyzed by the City of Denton Municipal Laboratory are clearly labeled to include location and time of collection, initials of collector, analyses required, and preservation method. The samples are stored at 4^{o} C while en route to the laboratory and are logged in upon arrival at the laboratory. Analytical quality control follows the recommended protocol of calibration, duplication, and spike recovery, Method detection levels are dependent upon the capability of the instrumentation but protocol is designed to achieve recommended levels of analysis.

B. Proposed changes

1. Proposed industrial waste survey requirements

   No change

2. Proposed permitting procedures

   No change

3. Proposed monitoring requirements

   Compliance inspection and monitoring schedule will be revised to biennial inspections of major industrial users that have demonstrated compliance and more random discharge sampling for periods of shorter duration. Once baseline monitoring

has been completed and ambient conditions have been established, the result of pollution prevention efforts will be assessed with repeat monitoring.

4. Proposed enforcement procedures

   No change

5. Proposed reporting requirements

   No change

6. Proposed local limits development requirements

   The need to revise local limits will be assessed annually or at any time that conditions significantly change.

7. Proposed resources (Equipment and personnel)

   Remote monitoring equipment and additional assistance from graduate students from UNT.

8. Quality Assurance / Quality Control

   Procedures will follow EPA (QA/R-5) and TNRCC Clean Rivers Program Guidelines for water quality sampling and analysis.

9. Detailed description of expected benefits as a result of the proposed changes (e.g., influent, effluent and sludge; ambient water quality)

WASTEWATER COLLECTION SYSTEM MONITORING

The City of Denton anticipates that a reapportionment of a fraction of resources currently allocated to existing program activities will provide additional environmental benefits. Resources are primarily in the form of time and activities invested by 4 FT positions. By redirecting sampling efforts to lift station and collection system monitoring, a fraction of time currently dedicated to IU discharge monitoring and inspections will be allocated to the identification of previously undetected contributors to influent loading. During the past year, an increase in the concentration of nickel and lead in the wastewater treatment plant influent has been observed. Some of these

metals may originate in outlying regions of the collection system. In an attempt to identify the source of the nickel and lead, City of Denton will attempt to backtrack from lift stations to potential source contributors. City of Denton operates 20 Lift Stations distributed throughout the wastewater collection system (Figure 2). If efforts to identify the source of problem contaminants are successful, City of Denton will implement efforts to control the source through education, best management practices (BMP), compliance monitoring, and enforcement if necessary. Control of pollutants from remotely located contributors may result in an observable improvement in influent quality. If attempts to reduce pollutants by lift station monitoring and backtracking are unsuccessful, City of Denton will reevaluate their strategy. Expected benefits of more effective control of pollutant contributions to the wastewater collection system are reduced influent metals loading, improved quality of effluent discharged to the receiving stream and the continued production of Biosolids compost of class AAA quality.

WATERSHED PROTECTION

Storm Water BMPs

The most significant environmental benefit associated with this project will derive from the implementation of Phase II Storm Water compliance activities. The implementation of BMPs and measures to control the runoff of pollutants from parking lots, recycling centers, junkyards, and salvage yards should improve the quality of receiving streams. Erosion control measures such as installation of silt fences and other methods of runoff control at construction sites will be the focus of an inspector from the Department of Utilities. Construction with least disturbance will be recommended to developers. There are numerous BMPs available to reduce the rate of runoff from impervious surfaces and also to reduce the concentration of potential contaminants but swales and “biofilters” are generally a method of choice. BMPs will be provided to the Planning and Engineering Departments for recommendation to developers. City of Denton will recommend to the Drainage Department the use of “biofilters” in the City of Denton Storm Water collection system. Post-Construction Storm Water Development/ Redevelopment is addressed in a Planning and Zoning Commission guide and requires the design of drainage improvements to minimize damage caused by flooding, to limit the impact on adjacent developed properties, and to create

regional detention instead of on-site ponds.

Buffer Zone Development

The establishment of creekside buffer zones or conservation easements along Hickory and Clear Creeks should result in the reduction of nitrogen and phosphorous fertilizers, pesticides and herbicides identified by the NAWQA. City of Denton plans to either purchase property or encourage the implementation of protective practices in predominantly undeveloped drainage areas within the city boundary. Programs such as the Conservation Reserve Program (CRP) administered by the US Department of Agriculture (USDA)(Table 3) and Texas Forest Service Streamside Management Zone Guidance will provide the reference for program development. City of Denton hopes that these easements will be a minimum of 50-100 feet in width and that the diverse layers and network of vegetation will reduce runoff velocity, trap potential pollutants, and allow the return of biologically remediated water to the creek.

Public Education

The City of Denton Department of Utilities has already implemented some public education elements of the Phase II Storm Water Program. The Communication Division has developed a schedule by which various forms of media are used to educate utility customers in proper use and disposal of pesticides, herbicides, and automotive fluids. The Drainage Division has installed insignias on street curbs to identify the connection between storm drains and the drinking water reservoir.

Assessment of Effectiveness

The impact of efforts to control Storm Water runoff and pollution can be assessed by before and after implementation of elements of TNRCC Receiving Water Assessments (RWA) and Clean Rivers Program (CRP). Water quality and aesthetic indicators will be documented to assess the effectiveness of BMPs, buffer zones, and public education. Additional impact of public education may be reflected as a reduction in retail sales of pesticides and herbicides of concern. Water samples will be collected and analyzed for field parameters and TSS, alkalinity, phosphorous, TKN, sulfates, and the nine (9) metals listed as TNRCC

Water Quality Standards.

The control of runoff from point and non-point sources such as construction sites and agricultural land should result in a decrease in suspended solids, nitrogen and phosphorous fertilizers, and potentially toxic pollutants. A decrease in these contaminant loads should initiate a recuperative increase of dissolved oxygen levels, and an overall improvement in the aquatic habitat of receiving streams. The ultimate goal of all Storm Water pollution prevention measures is the protection of the aquatic environment and drinking water source. The flexibility provided by Project XL will allow greater focus and coordination of limited resources toward that protection.

II Agreement

A. Signatories

The Signatories to this Final Project Agreement are the United States Environmental Protection Agency (hereafter EPA), Texas Natural Resource Conservation Commission, and the City of Denton.

B. Significance of Agreement

The ultimate goal of this project is to investigate the possibility of developing an efficient and economically feasible approach to watershed protection for communities of population <100,000. The lessons learned from this project could be used to develop guidance for other POTWs of comparable size and resources.

C. Glossary

Terms and description of terms contained in this glossary are solely to assist the public in understanding this FPA. Therefore the terms contained in this glossary do not supersede, modify or otherwise affect any terms or definitions in State or Federal law or regulations.

1. Categorical Industrial User- an industrial user which is subject to a categorical standard promulgated by the U.S. EPA.

2. Categorical Standards (40 CFR 405-471)- Any regulation containing pollutant discharge limits promulgated by the EPA in accordance with Sections 307(b) and (c) of the Act (33 U.S.C. section 1317) which apply to a specific category of users and which appear in 40 CFR Chapter I, Subchapter N, Parts 405-471.

3. Code of Federal Regulations (CFR)- A publication of the United States Government containing all finalized federal regulations. Federal environmental regulations are found in volume 40 of the CFR, and the General Pretreatment Regulations are found at 40 CFR Part 403.

4. Effluent- Wastewater or other liquid, raw (untreated), partially or completely treated, flowing from an IU, treatment process, or treatment plant.

5. Grab sample- a quantity of wastewater collected from the wastestream without regard to the flow in the wastestream and over a period of time not to exceed fifteen (15) minutes.

6. Influent- Wastewater or other liquid, raw (untreated), partially or completely treated, flowing into a treatment process, or treatment plant.

7. Industrial User (IU)- any non-domestic source which introduces pollutants into a municipal wastewater collection system [(40 CFR 403.3(h)].

8. Lift Station- Locations in gravity-flow collection systems in which pumps raise wastewater to overcome obstacles caused by increases in elevation.

9. NPDES Permit- A National Pollutant Discharge Elimination System permit is the regulatory document issued by the EPA to control the discharge of pollutants from wastewater treatment facilities into waters of the U.S.

10. Pass Through- A discharge which exits the wastewater treatment facility into waters of the U.S. in quantities or concentrations which, alone or in conjunction with discharge or discharges from other sources, is a cause of a violation of any requirement of the City's discharge permit.

11. Pretreatment Program- a program established by the U.S. EPA to protect municipal wastewater treatment facilities, collection systems, and the environment from the adverse impact that may occur when hazardous or toxic wastes are discharged into a wastewater collection system.

12. Priority Pollutant Scan- The analysis of ambient water and wastewater influent for the concentration of any pollutants from a list (40 CFR 423 Appendix A) designated by EPA which includes 65 classes of pollutants and 126 individual pollutants.

13. Remote Monitoring Stations- Self-contained multidetector electronic instruments installed at remote locations in creeks and other water bodies to assess the ambient water quality and detect real-time changes of dissolved oxygen, pH, specific conductance, and temperature.

14. Technically Based Local Limits- Effluent discharge limits applicable to users of the City of Denton wastewater collection system and treatment plant in accordance with 40 CFR 403.5(c).

15. Toxic metals- Nine metals listed as Texas Natural Resources Conservation Commission (TNRCC) Ambient Water Quality Standards (cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc).

16. Watershed- the geographic delineation of an entire river (or creek) basin and the land that drains into it.

D. Duration of Agreement

This FPA will be in effect for the period of 5 years, unless it is terminated earlier. Prior to the end of the five-year period (at least 180 days), City of Denton may apply for a renewal or extension of the project period. A renewal or extension of the project period will be treated as a modification of the FPA, and is addressed in Section II.F., Modification of Agreement / Reopener. If City of Denton is not able to meet the performance goals of its Local Pilot Pretreatment Program, the Approval Authority may allow the performance measures to be adjusted if the primary objectives of the Local Pilot Pretreatment Program will be met. The revised Local Pilot Pretreatment Program must be approved in accordance with the procedures in 40 CFR § 403.18.

If the primary objectives of the proposal are not being met, the Approval Authority shall direct City of Denton to discontinue implementing the Local Pilot Pretreatment Program and resume implementation of its previously approved Pretreatment Program by amending the NPDES permit and/or any other implementation mechanism, site-rule, etc. accordingly. The Approval Authority will ensure that the City of Denton's NPDES permit includes a reopener clause with this requirement.

E. Enforceability of FPA

This FPA is not intended to create legal rights or obligations and is not an enforceable contract or a regulatory action such as a permit or rule. This applies to both the substantive and the procedural provisions of the FPA. Thus, for example, the FPA establishes procedures that the parties intend to follow with respect to termination under

the FPA. However, while the parties fully intend to follow these procedures, they are not legally obligated to do so. Because it is not legally enforceable, the FPA is not an agency "action" that could be reviewable; in addition, no action or omission by any party to the FPA could give rise to any claim against the party for penalties, damages or other compensation based solely on the claim that the action or omission was at variance with a provision or provisions of the FPA.

F. Modification of Agreement / Reopener

This Project is an experiment designed to test new approaches to environmental protection and there is a degree of uncertainty regarding the environmental benefits and costs associated with activities to be undertaken in this Project. Therefore, it may be appropriate to amend this Agreement at some point during its duration.

This Final Project Agreement may be amended by mutual agreement of all parties at any time during the duration of the Project. The parties recognize that amendments to this Agreement may also necessitate modification of legal implementation mechanisms *(such as a rule or permit*) or may require development of new implementation mechanisms. If the Agreement is amended, the City of Denton, EPA, and the State of Texas expect to work together with other regulatory bodies and stakeholders to identify and pursue any necessary modifications or additions to the implementation mechanisms in accordance with applicable procedures. If the parties agree to make a substantial amendment to this Agreement, the general public will receive notice of the amendment and be given an opportunity to participate in the process, as appropriate.

In determining whether to amend the Agreement, the parties will evaluate whether the proposed amendment meets Project XL acceptance criteria and any other relevant considerations agreed on by the parties. All parties to the Agreement will meet within ninety (90) days following submission of any amendment proposal (or within a shorter or longer period if all parties agree) to discuss evaluation of the proposed amendment. If all parties support the proposed amendment, the parties will (after appropriate stakeholder involvement) amend the Agreement.

G. Termination of Agreement

a.) Expectations

Although this Agreement is not legally binding and any party may withdraw from the Agreement at any time, it is the desire of the parties that it should remain in effect through the expected duration of 5 years, and be implemented as fully as possible unless one of the conditions below occurs:

1. Failure by any party to (a) comply with the provisions of the enforceable implementing mechanisms for this Project, or (b) act in accordance with the provisions of this Agreement. The assessment of the failure will take its nature and duration into account.

2. Failure of any party to disclose material facts during development of the Agreement.

3. Failure of the Project to provide superior environmental performance consistent with the provisions of this Agreement.

4. Enactment or promulgation of any environmental, health or safety law or regulation after execution of the Agreement, which renders the Project legally, technically or economically impracticable.

5. Decision by an agency to reject the transfer of the Project to a new owner or operator of the facility.

In addition, neither EPA nor Texas Natural Resources Conservation Commission intends to withdraw from the Agreement if the City of Denton does not act in accordance with this Agreement or its implementation mechanisms, unless the actions constitute a substantial failure to act consistently with intentions expressed in this Agreement and its implementing mechanisms. The decision to withdraw will, of course, take the failure's nature and duration into account.

The City of Denton will be given notice and a reasonable opportunity to remedy any substantial failure before EPA's withdrawal. If there is a disagreement between the parties over whether a "substantial failure" exists, the parties will use the dispute resolution mechanism identified in section H of this Agreement. EPA, the State of Texas and retain their discretion to use existing enforcement authorities, including withdrawal or termination of this Project, as appropriate. The City of Denton retains any existing rights or abilities to defend itself against any enforcement actions, in accordance with applicable procedures.

b. Termination Procedures

The parties agree that the following procedures will be used to withdraw from or terminate the Project before expiration of the Project term. They also agree that the implementing mechanism(s) will provide for withdrawal or termination consistent with these procedures.

1. Any party that wants to terminate or withdraw from the Project is expected to provide written notice to the other parties at least sixty (60) days before the withdrawal or termination.

2. If requested by any party during the sixty (60) day period noted above, the dispute resolution proceedings described in this Agreement may be initiated to resolve any dispute relating to the intended withdrawal or termination. If, following any dispute resolution or informal discussion, a party still desires to withdraw or terminate, that party will provide written notice of final withdrawal or termination to the other parties.

   If any agency withdraws or terminates its participation in the Agreement, the remaining agencies will consult with the City of Denton to determine whether the Agreement should be continued in a modified form, consistent with applicable federal or State law, or whether it should be terminated.

3. The procedures described in this Section apply only to the decision to withdraw or terminate participation in this Agreement. Procedures to be used in modifying or rescinding any legal implementing mechanisms will be governed by the terms of those legal mechanisms and applicable law. It may be necessary to invoke the implementing mechanism's provisions that end authorization for the Project (called "sunset provisions") in the event of withdrawal or termination.

c. Post-Project Compliance Period

1. Orderly Return to Compliance in the Event of Early Termination:

In the event of any termination not based upon the end of the expected minimum Project term, there will be an Interim Compliance Period to provide sufficient time consistent with permit modification procedures set forth in 40 CFR §§ 122.62 and 122.63 for City of Denton to come into compliance with the

regulations deferred under the Project. By the end of the Interim Compliance Period, City of Denton will comply with the applicable standards set forth in 40 C.F.R. Part 122 and 403. During the Interim Compliance Period, EPA Texas Natural Resource Conservation Commission will issue an order, permit, or other legally enforceable mechanism establishing an implementation schedule for the City of Denton's orderly return to compliance as soon as practicable, but no later than 6 months from the date of termination. The Interim Compliance Period is 6 months from the date on which EPA, Texas Natural Resource Conservation Commission or City of Denton provides written notice of final termination of the Project in accordance with Section G of this FPA. It is City of Denton's intent to be in full compliance with all applicable requirements above as soon as is practicable, as will be set forth in the implementation schedule.

2. Orderly Return to Compliance in the Event of Completion of Project Term:

In the event of termination based upon the end of the Project term, City of Denton will achieve compliance with all applicable requirements by the end of the minimum Project term, unless the Project is modified in accordance with Section F - Modification. City of Denton is expected to anticipate and plan for all activities necessary to come into compliance upon completion of the Project sufficiently in advance of the end of the Project term. Texas Natural Resource Conservation Commission may request a meeting with EPA and Texas Natural Resource Conservation Commission to discuss the timing and nature of any actions that City of Denton will be required to take to come into compliance with regulatory requirements that have been deferred under this Project and should request such a meeting at least 60 days in advance of the anticipated completion date of the project term. The parties expect that they will meet within thirty days of receipt of City of Denton's written request for such a discussion. At and following such meeting, the parties expect that they will engage in reasonable good faith discussions to identify the extent to which requirements deferred under this Project will apply after termination of the Project.

H. Dispute Resolution

Any dispute that arises with respect to the meaning, application, implementation, interpretation, amendment, termination or modification of the FPA will, in the first instance, be the subject of informal discussions. To initiate informal discussions, any party which believes it has a dispute with any other party will simultaneously notify all of the parties, in writing, setting forth the matter(s) in dispute.

If the dispute cannot be resolved by the parties within thirty (30) days of receipt of such notice (or such longer time as agreed to by the parties to the dispute), then one or both of the parties may invoke non-binding mediation by setting forth the nature of the dispute, with a proposal for its resolution, in a letter to the EPA Region 6 Regional Administrator, with a copy to all parties. The EPA Regional Administrator or the disputants may request an informal mediation meeting. The disputants may request an opinion from the Regional Administrator in lieu of or in addition to the mediation meeting. Any opinion, verbal or written, expressed by the Regional Administrator will be non-binding.

Nothing in this section will be construed to alter the parties' expectations regarding the ability to terminate or withdraw from the FPA set forth in the provision of section III, II, G, c, Termination of Agreement / Post Project Compliance Period.

I. Implementation

To implement the Project, the parties intend to take the following steps:

A. EPA expects to propose for public comment and promulgate a site-specific rule amending 40 C.F.R. Part 403 so as to amend application of specific requirements of Part 403 for the City of Denton Facility. The rule will provide the City of Denton regulatory flexibility from specifically-identified programmatic requirements so that they can implement alternative environmental programs. EPA and TRNCC will work together to issue any necessary permits, orders, or other actions to be undertaken to implement this project. It is expected that the site-specific rule will provide for Termination and a post-Project compliance period consistent with Section III, II, G, and will address the transfer procedures included in Section IV.5. The standards and reporting requirements set forth in Section I and III of this FPA will be implemented in the site-specific rule.

B. Texas Natural Resource Conservation Commission expects to propose for public comment and promulgate (subject to review of public comment and legislative approval, if necessary) a rule or rules adopting the site-specific requirements granted by EPA pursuant to Section VI.A. above. Texas Natural Resource Conservation Commission expects to propose for public comment (subject to review of public comment and applicable approval procedures) a permit or permits needed by the City of Denton under this Project.

C. Except as provided in any rule(s), compliance order(s), permit provisions or other implementation mechanisms that may be adopted to implement the Project, the parties do not intend that this FPA will modify or otherwise alter the applicability of existing or future laws or regulations to the City of Denton Facility.

D. By signing this FPA, EPA, the Texas Natural Resource Conservation Commission and City of Denton acknowledge and agree that they have the respective authorities and discretion to enter into this FPA and to implement the provisions of this Project, to the extent appropriate.

J. Reporting & Periodic Reviews

City of Denton is required to periodically report the progress of its pilot program, as set forth below. City of Denton's periodic report will describe its Local Pilot Pretreatment Program activities and accomplishments, including activities and accomplishments of any participating agencies and public involvement. The report will include an analysis of all environmental data collected over the reporting period and activities conducted to reduce pollutant loadings to the environment and any other activities that address the objectives of the Local Pilot Pretreatment Program.

The report following the fourth year of pilot program implementation will also include the findings of the pilot. This report will specifically address all objectives of the pilot program and provide measures related to the effectiveness of the program, as implemented, in meeting the objectives. The report will also include recommendations concerning the implementation of the Pretreatment Program at the local level.

The minimum report requirements will be detailed in City of Denton's NPDES permit. This requirement will be similar to the current requirement for City of Denton to annually report to the Approval Authority the status of its Pretreatment Program. See 40 CFR 403.12(i). At the discretion of the NPDES permitting authority, the report may be required more frequently than once per year. City of Denton is required to submit regulatory reports on the non-waived requirements of its Pretreatment Program.

K. Events Preventing Project Implementation / Unavoidable Delay

This section applies to provisions of this FPA that do not encompass enforceable, regulatory mechanisms. Enforceable mechanisms, such as permit provisions or rules, shall be subject to modification or enforcement as provided in applicable law.

Unavoidable delay" (for purposes of this Agreement) means any event beyond the control of any Party that causes delays or prevents the implementation of the Project

described in this Agreement, despite the Parties' best efforts to put their intentions into effect. An unavoidable delay can be caused by, for example, a fire or acts of war.

When any event occurs that may delay or prevent the implementation of this Project, whether or not it is avoidable, the Party to this Agreement who knows about it will immediately provide notice to the remaining Parties. Within ten (10) days after that initial notice, the Party should confirm the event in writing . The confirming notice should include: 1) the reason for the delay; 2) the anticipated duration; 3) all actions taken to prevent or minimize the delay; and 4) why the delay was considered unavoidable, accompanied by appropriate documentation.

If the Parties, agree that the delay is unavoidable, relevant parts of the Project schedule will be extended to cover the time period lost due to the delay. If they agree, they will also document their agreement in a written amendment to this Agreement. If the Parties don't agree, then they will follow the provisions for Dispute Resolution outlined below.

This section applies only to provisions of this Agreement that are not implemented by legal implementing mechanisms. Legal mechanisms, such as permit provisions or rules, will be subject to modification or enforcement as provided under applicable law.

III Requirements of NPDES Permit (revisions)

The pilot alternative Local Pretreatment Program will become an enforceable part of the POTW's NPDES permit. Provide a summary of the alternative program and attach a copy of the full description of the alternative program following the requirements of 40 CFR 403.9(b).

IV Analyses to Determine eligibility for a conditional variance

A. The following is information demonstrating that the City of Denton's Pretreatment Program meets the conditional variance.

1. The POTW is administering an Approved POTW Pretreatment Program. The City of Denton Industrial Pretreatment Program was approved by EPA on March 16, 1984 and modified on September 24, 1993. This approved program is operated in accordance with Section 402(b)(8) of the Clean Water Act and the general

Pretreatment Regulations (40CFR Part 403).

2. The POTW has a solid record of compliance. In general, this means that the POTW must not be the subject of a planned or ongoing judicial or administrative enforcement action, be in significant noncompliance with applicable requirements, or have outstanding obligations under (or be in violation of) an order or consent decree. Additionally, a POTW's history of compliance will also be considered; POTWs most likely to be included in the pilot program would be those which do not have a history or pattern of violations, violations resulting in serious threats or harms, or have other recent significant compliance problems.

   The City of Denton Industrial Pretreatment Program was audited for the EPA by TNRCC on March 1-3, 1994. Findings indicated that there were no significant compliance problems. An EPA Pretreatment Compliance Inspection in 1996 found that the City of Denton Pretreatment Program "looked good". An audit of the program conducted jointly by EPA and TNRCC in October 1999 is still in process of assessment.

3. The POTW has five years of influent, effluent, and sludge quality data, as well as three years of ambient water quality measurements for its receiving water or can demonstrate the ability to collect ambient data and therefore need not have in its possession three years of ambient water data.

   The POTW has at least five (5) years of influent, effluent, and sludge quality data, as well as ten (10) years of ambient water quality measurements for Pecan Creek, its receiving water.

B. Federal Implementation Mechanisms - description of Federal requirements to be met:

In addition to the requirements of the Clean Water Act and General Pretreatment Regulations, The City of Denton Pretreatment Program must meet the requirements in Section A of Part II of NPDES Discharge Permit No. TX0047180.

C. State Implementation Mechanisms - description of State requirements to be met

There are no state requirements for Pretreatment Program activities in current TNRCC Discharge Permit No. 10027-003.

V Environmental Benefits

How will project provide SEP?

This project was chosen as an XL Project because it has the potential to achieve environmental performance that is superior to what would have been achieved absent the XL Project. City of Denton has developed a qualitative baseline estimate of what would have happened to the environment absent the project and have compared that baseline estimate against the project's anticipated environmental performance to determine that the anticipated environmental performance will produce a level of environmental performance superior to the baseline (Table 4).

WASTEWATER COLLECTION SYSTEM MONITORING

The XL project will also allow the allocation of a portion of available resources to monitoring of lift station influent to identify those sections of the collection system contributing higher levels of problematic pollutants such as nickel and lead. Inspectors can track upstream in an attempt to identify sources of the elevated metals. More effective control of pollutant contributions to the wastewater collection system will reduce influent loading, improve the quality of effluent discharged to the receiving stream and ultimately preserve the continued production of class AAA compost.

All indications of noncompliance by Industrial Users whether derived from reporting deficiencies, exceedence of discharge limitations, or any other requirements of the General Pretreatment Regulations (40 CFR 403) will be addressed according to an enforcement response plan approved by EPA in 1993.

WATERSHED PROTECTION

Superior Environmental Performance

The City of Denton intends to utilize the flexibility granted by the XL Project to develop a watershed protection program for Pecan Creek. The ultimate goal of an effective watershed protection program is the preservation and improvement of the habitat of the tributaries to sustain the life cycle of the indigenous aquatic organisms and the ecosystem in which they exist. The accomplishment of this goal would also result in the improvement and protection of a primary source of drinking water in the region. The initial project will focus on establishing baseline ambient conditions of Pecan Creek with monitoring designed to assess the impact of pollution control measures. The information learned in the Pecan Creek watershed can be transferred to Hickory, Cooper, and Clear Creeks. These creeks are all tributaries of the Elm Fork of the Trinity River and drain into Lake Lewisville, a major water supply reservoir for the cities of Denton and Dallas as well as other customer cities. The XL

project will enable the City of Denton to develop the watershed protection program years earlier than would have normally occurred.

City of Denton has been monitoring Pecan Creek for ten (10) years at a site upstream from the wastewater treatment outfall. Other sites in the Pecan Creek drainage have been monitored quarterly. Parameters include ammonia, nine 99) toxic metals, fecal coliform concentration or heterotrophic plate counts and general characterization parameters. The accumulated baseline data for Pecan Creek will be supplemented with priority pollutant scans. Full priority pollutant scans (126 Section 307 (A) Toxic Pollutants) will establish baseline pollutants of concern. The list of 126 priority pollutants will be revised to reflect emphasis upon pesticides and herbicides detected with greatest frequency by USGS and other organizations participating in the National Water Quality Assessment Program (NAWQA). Detectable concentrations of potentially toxic pollutants will be used as indicators for assessment of effectiveness of control measures. The impact of efforts to control Storm Water runoff and pollution can be assessed with elements of TNRCC Receiving Water Assessments (RWA) and Clean Rivers Program (CRP). Water quality and aesthetic indicators will be documented to assess the effectiveness of BMPs, buffer zones, and public education. The impact of public education may be reflected as a reduction in retail sales of pesticides and herbicides of concern. The effectiveness of all proposed protective methods will be assessed by the measurement and analysis of water quality parameters. In situ field conditions will supplement the analysis of water samples for total suspended solids (TSS), alkalinity, phosphorous, total Kjeldahl nitrogen (TKN), sulfates, and the nine (9) metals listed as TNRCC Water Quality Standards (arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc). City of Denton intends to implement the use of remote monitoring equipment to detect real-time temperature, pH, conductivity, and dissolved oxygen (DO) as means of establishing baseline conditions and to indicate real-time changes as they occur.

Remote Monitoring Program

One of the greatest environmental benefits derived from this project will be the development of an effective automated monitoring program which reduce the demand for manpower and provide a greater degree of safety. This type of program once perfected can be replicated and utilized by other municipalities. The opportunity for innovation is enhanced by an EPA award to the City of Denton and UNT of a $485,000 EMPACT grant to set up an electronic monitoring program for the Pecan Creek Watershed. A satellite down link will be set up at UNT Environmental Education Science and Technology(EEESAT) building which can provide real time and near real time stream data linkage to UNT's web site at the EEESAT building. One innovative feature of this program will be the experimental use of biosensors

(freshwater clams) to detect pollutants of biological significance to alert personnel of the need to collect samples or to trigger automated monitoring equipment. A watershed monitoring plan will be developed with GIS to document location of sampling sites and drainage areas to sampling sites

Buffer Zone Development

The City of Denton Department of Utilities is planning to initiate the creation of an organizational mechanism for developing buffer zones along the undeveloped watersheds in this area. City of Denton have an opportunity to protect water quality by establishing conservation easements or by purchasing strips of land along both Hickory and Clear Creeks located in the less urbanized and more agricultural areas of the watershed. Maps will be developed to document protective buffer zones along drainage areas.

BASELINE ASSESSMENT

Wastewater Treatment Facility and Collection System Water Quality

The City of Denton has been monitoring wastewater influent and effluent quality quarterly for six (6) years in compliance with NPDES Permit requirements. City of Denton has also performed priority pollutant scans associated with development of Technically Based Local Limits in 1993 and NPDES and TNRCC wastewater discharge permit applications in 1996. The Municipal Laboratory has been analyzing influent and effluent total metals (cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) concentrations for eight (8) years on a weekly schedule from which loading calculations are developed. Effluent toxicity testing has been conducted for eight (8) years and the influent and effluent concentration of the pesticide, diazinon, has been analyzed concurrently for at least five (5) years. Influent quality of major lift stations has been monitored monthly for BOD, TSS, pH, and the nine (9) metals listed previously for eight (8) years. Wastewater solids have been monitored monthly for ten (10) years and composted biosolids ("Dynodirt") have been monitored for at least two (2) years.

Ambient Water Quality

For ten (10) years the City of Denton has monitored Pecan Creek at a site upstream from the WWTP discharge. Other sites in the Pecan Creek drainage have

been monitored quarterly. Parameters include ammonia, nine (9) toxic metals, fecal coliform concentration or heterotrophic plate counts and general characterization parameters. In 1992, a dry weather screening study of the Pecan Creek drainage was performed and in 1997/98, a screening study was performed on portions of Cooper and Hickory Creeks. In 1997 UNT and the City of Denton began a study of Pecan Creek to assess the impact of discharge from the Pecan Creek Water Reclamation Plant. This study was initiated in response to encouragement by TNRCC to develop a model which will more accurately predict the impact of wastewater effluent upon the downstream concentrations of dissolved oxygen in Pecan Creek and the backwaters of Lake Lewisville. This study is expected to continue through 2003.

During the first year of the XL pilot project, baseline levels for pollutants of concern in receiving streams of the watershed will be established. Initially the study will focus on diazinon and other contaminants of concern identified by priority pollutant scans. These are the pollutants which will be targeted during the first five (5) years of the project. If other pollutants are detected at significant levels during the baseline work then they may be added to the list of pollutants of greatest concern. City of Denton is setting as a goal the measurable reduction in the concentration of pollutants of greatest concern during the first five (5) years of the project.

Potential Benefits

This cumulative data will be used as baseline information to partially assess the effectiveness of efforts to reduce the pollutant load to the wastewater collection system and measures designed to protect the watershed. Other anticipated benefits include a potential reduction of the concentration of toxic metals in the "Dyno Dirt" class AAA composted biosolids produced at the Pecan Creek Water Reclamation Plant. The potential reduction of metals concentrations in the compost will be assessed in relation to the accumulated baseline data.All of these benefits depend upon the City's ability to allocate resources to maximize effort and minimize economic burden. The City of Denton firmly believes that with minor enhancement of our current organizational structure, a watershed protection program can be developed that will meet the intent of the Clean Water Act at a cost acceptable to rate payers.

IMPACT OF THE XL PROJECT

Diversity of Benefits

The proposed XL Pilot Project provides mutually beneficial opportunities for the environment, the educational community, and the City of Denton. In addition to the previously addressed benefits, project flexibility provides the opportunity to allocate resources towards the development of grant applications and projects which utilize the capabilities of UNT. UNT has an excellent Environmental Education/Water Quality Research Program. Our ability to devote resources to work with UNT on projects greatly enhances our abilities to address local environmental problems as well as provide students with hands-on training with real world environmental problems. The environmental benefits that are derived and the process that is developed may be published in professional journals.

Storm Water Phase II

As an incentive for the effort and resources invested in the development and implementation of this project, the City of Denton will request exemption from the development of a rigid schedule of performance measures to assess compliance with anticipated when the NPDES Phase II Storm Water requirements take effect. City of Denton will request that through the flexibility afforded by the XL Program, a modified storm water permit be issued on the effective date of the Phase II program. The negotiations between the parties on this portion of the proposal continues are currently taking place. The three parties will continue to coordinate, As the requirements of the Storm Water Phase II regulations become clearer, the three parties will continue to discuss the flexibility that may be possible through site specific changes. What can be done for the City will be determined. The three parties will allow us to work to develop an approach to ensure the goals of the proposal are achievable with the current team of personnel, and the approach will avoid financial burden imposed by the development of an additional division. Approval of this proposal by EPA and TNRCC and the associated reduction of potential fiscal demand will facilitate receiving the support of City Council to recruit an additional full time staff member to focus on conservation easement negotiation. If significant progress in the development of effective watershed protection has not been achieved within the interim five (5) year period of the modified permit/ XL pilot program period, the City of Denton will revert to the existing NPDES Phase II permitting approach.

VI. RIGHTS RETAINED AND PROJECT TRANSFER

1. Rights Retained:

Except as expressly provided in the legal implementation mechanisms, nothing in the FPA shall be construed to affect or limit either City of Denton's legal rights or the Agencies' rights to seek legal, equitable, civil, criminal or administrative relief regarding the enforcement of present or future applicable federal and state code, rules, or regulations with respect to the Facility or City of Denton.

Although City of Denton does not intend to challenge agency actions implementing the Project (including any rule amendments or adoptions, permit actions, or other action) that are consistent with this FPA, City of Denton nonetheless reserves any right it may have to appeal or otherwise challenge any and all agency actions implementing the Project. Nothing in this FPA is intended to limit any right City of Denton may have to administrative or judicial appeal or review of any modification or termination of those legal mechanisms in accordance with the applicable procedures for such review.

2. Transfer of Project Benefits and Responsibilities:

It is expected that the implementation mechanisms will allow for the transfer of City of Denton's rights and obligations under the Project to any future owner or operator upon request of City of Denton and such owner/operator, provided that the following conditions are met:

A. City of Denton will provide written notice of any such proposed transfer to EPA and [PARTIES] at least forty-five (90) days prior to the effective date of the transfer. The notice is expected to include identification of the proposed transferee, a description of the proposed transferee's financial and technical capability to assume the obligations associated with the Project, and a statement of the transferee's intention to sign the FPA as an additional party.

B. Within thirty (45) days of receipt of the written notice, it is expected that the Agencies will determine whether the transferee has demonstrated adequate financial and technical capability to carry out the Project and a willingness to sign the FPA. It is expected that the implementation mechanisms will provide that, as long as the demonstration has been made to the satisfaction and unreviewable discretion of the Agencies, and upon consideration of other relevant factors, the FPA will be modified to allow the proposed transferee to assume the rights and obligations of City of Denton.

In the event that transfer is disapproved by any agency, withdrawal or termination may be initiated, as provided in Section II G.

C. Upon approval of transfer under this section, EPA, Texas Natural Resource Conservation Commission, and City of Denton will amend the rule, permit and other implementing mechanism(s) (subject to public notice and comment) to legally transfer the rights and obligations of City of Denton under this project to the proposed transferee. The rights and obligations of this project remain with City of Denton prior to their final, legal transfer to the proposed transferee.

APPENDIX

A) XL Criteria

Since this pilot program is being administered under the Project XL program, the proposals must address the Project XL criteria: (Table 5)

1. Superior Environmental Performance

The City of Denton intends to utilize the flexibility granted by the XL Project to develop a watershed protection program for Pecan Creek. The ultimate goal of an effective watershed program is the protection of the aquatic habitat to sustain the life cycle of the indigenous organisms and ecosystem. The accomplishment of this goal would also result in the improvement and protection of a primary source of drinking water in the region. The initial project will focus on establishing baseline ambient conditions of Pecan Creek with monitoring designed to assess the impact of pollution control measures. The information learned in the Pecan Creek watershed can be transferred to Hickory, Cooper, and Clear Creeks. These creeks are all tributaries of the Elm Fork of the Trinity River. This watershed drains into Lake Lewisville, a major water supply reservoir for the cities of Denton and Dallas and several surrounding cities. The XL project will enable the City of Denton to develop the watershed protection program years earlier than would have normally occurred.

The ultimate goal of this project is to investigate the possibility of developing an efficient and economically feasible approach to watershed protection for communities of population <100,000. This will require the identification and prioritization of pollutants which pose the greatest threat to aquatic and human health. Once the pollutants are identified, the next step will be attempts to identify the sources and implement site-specific BMPs to control the pollutants at their source.

As stated in section V, Baseline Assessment of Ambient Water Quality, City of Denton has been monitoring Pecan Creek for ten (10) years. City of Denton will focus on Pecan Creek to develop and test the initial stages of the watershed monitoring program. Various technologies will be tested to determine most effective, least costly, and most efficient equipment: automatic samplers, remote water quality detection equipment, solar power technology, placement and installation of equipment, and data transfer.

Aerial photography of county-wide development will provide visual reference upon which to focus and correlate remote monitoring of storm event runoff to land use. GIS will be used to manage the anticipated large volume of water quality and rainfall data. This data will be layered onto maps of the watershed, tributaries, location of water level gauging stations, and sampling stations.

The concentrations of site-specific contaminants resulting from urban, suburban, and commercial site development will be identified. The magnitude of contaminant concentrations in Storm Water runoff from these sites will be evaluated by comparison to water quality parameters in tributaries of undeveloped watersheds. Site specific BMPs will be prioritized to control runoff in areas contributing greatest loads. The City of Denton proposes to create buffer zones and conservation easements in undeveloped sections of watersheds. The potential impact of these protective measures will be evaluated by comparison of WQ parameters to baseline data.

The City of Denton will investigate the possibility of combining Storm Water and industrial user permit requirements. As Industrial user permits are renewed, the information currently required on applications will be supplemented with requests for pollution prevention procedures implemented by users, estimates of impervious surface area. The revised discharge permits will require the development of pollution prevention procedures and measurable limits to assess the quality of Storm Water runoff from sites.

As stated previously in sections III and V, superior environmental performance (SEP) will be assessed quantitatively in a variety of ways. The accumulated baseline data for Pecan Creek will be supplemented with priority pollutant scans. Full priority pollutant scans (126 Section 307 (A) Toxic Pollutants) will establish baseline pollutants of concern. The list of 126 priority pollutants will be revised to reflect emphasis upon pesticides and herbicides detected with greatest frequency by USGS and other organizations participating in the National Water Quality Assessment Program (NAWQA). Detectable concentrations of potentially toxic pollutants will be used as indicators for assessment of effectiveness of control measures. The impact of efforts to control Storm Water runoff and pollution can be assessed with elements of TNRCC Receiving Water Assessments (RWA) and Clean Rivers Program (CRP). Water quality and aesthetic indicators will be documented to assess the effectiveness of BMPs, buffer zones, and public education. The impact of public education may be reflected as a reduction in retail sales of pesticides and herbicides of concern. The effectiveness of all proposed protective methods will be assessed by the measurement and analysis of water quality parameters. In situ field conditions will supplement the analysis of water samples for total suspended solids (TSS), alkalinity, phosphorous, total Kjeldahl nitrogen (TKN), sulfates, and the nine (9) metals listed as TNRCC Water Quality Standards (arsenic, cadmium, copper, lead, mercury, nickel, selenium, silver, and zinc). City of Denton intends to implement the use of remote monitoring equipment to detect real-time temperature, pH, conductivity, and dissolved oxygen (DO) as means of establishing baseline conditions and to indicate real-time changes as they occur.

2. Cost Savings and Paperwork Reduction

This project will provide savings from both financial burden and paperwork. Without XL

flexibility, the implementation of comprehensive Storm Water Program compliance activities would require the City of Denton to encumber the cost of developing an additional department or division. Without a relaxation of the programmatic activities associated with the City of Denton Pretreatment Program Monitoring and Enforcement schedule as approved in 1993, the efforts of staff to accomplish any Storm Water activities is significantly reduced. The reapportionment of City of Denton staff and resources and the combined involvement of UNT students and staff will allow the initiation of an innovative approach toward the accomplishment of Storm Water program requirements. The use of electronic remote monitoring and data transmission provides significant paperwork reduction.

3. Stakeholder Support

Two methods were used to inform stakeholders of the proceedings of this pilot project and the occurrence of the first public meeting on November 19, 1999. A public notice was published on October 5, 1999 in the Denton Record Chronicle and individual letters of invitation were mailed to a comprehensive list of 47 stakeholders. Stakeholders included sixteen (16) Industrial Users, two (2) universities, Citizens for Healthy Growth, the Denton Branch of the Sierra Club, TNRCC regional office and headquarters, Denton County Environmental Health, and seventeen (17) national environmentally concerned organizations. Fourteen (14) participants attended the first public meeting. These attendees were represented by staff of EPA, TNRCC, City of Denton, IUs, and UNT. Because of the accelerated schedule required to meet rulemaking and publication deadlines, the second public meeting occurred on December 10, 1999. Stakeholders were invited by direct telephone calls.

4. Innovation/Multi-Media Pollution Prevention

The basic premise of the proposed pilot project is innovation. The utilization of technology to accomplish the tasks which would otherwise require extensive demands from staff is a reflection of that innovation. Multiprobe remote water quality monitoring devices will be deployed in Pecan Creek to monitor baseline water quality and to assess the effects of storm events. UNT graduate students are developing “biosensors” which will detect changes in water quality which are potentially harmful to aquatic life. Electronic signals will be sent to automatic water samplers. These “smart” samples will be analyzed for identification of harmful contaminants. Additional indication of innovation is represented by the development by UNT of an EMPACT data access system which will provide to data accumulated by remote monitoring to citizens via City of websites and displays at the UNT EESAT Building.

City of Denton addresses pollution prevention throughout the year with a variety of methods. The Utilities Division Communications staff disseminates information to customers in the form of utility bill stuffers, newspaper ads, and public service announcements on a local cable television channel. Twice each year the City of Denton coordinates a household hazardous waste collection day with Safety Kleen Corporation. The Pretreatment Program staff provides pollution prevention guidance to IUs and SQGs during facility inspections and when assistance with proper waste disposal and reduction is requested.

5. Transferability

This pilot project is intended to test the application and development of technological methods to achieve Storm Water and watershed monitoring requirements with minimal demand upon personnel. There is a synergistic result from the combined efforts of City of Denton and UNT environmental sciences staff and students. The success of this pilot project will serve as a model for other municipalities with wastewater treatment facilities of comparable size. The lessons learned from this project could be used to develop watershed monitoring and protection guidance for those entities with comparably diminished resources.

6. Feasibility

The governing body of the City of Denton is in full support of the efforts of the Environmental Services Division in our efforts to initiate the proposed pilot project. Resources required for support of staff and equipment were approved in September 1999 for FY 1999-2000. City of Denton is very fortunate to have the enthusiastic cooperation from several departments and divisions of City of Denton in addition to help from UNT. The receipt of an EMPACT grant from EPA provides significant resources for student support and the development of innovative monitoring and data transfer technology.

7. Monitoring, Reporting and Evaluation

The measurement of specific water quality parameters will be established as baseline reference for comparison of water quality after the implementation of pollution prevention BMPs. The transmission of real-time watershed conditions to websites and EESAT Building on the UNT campus provides direct access by stakeholders to information. The success of efforts to implement pollution prevention measures will be evaluated as the degree of improvement of water quality after implementation. Implementation of the pilot project will commence upon approval by EPA and TNRCC and the project will receive continuous evaluation during the five (5) – year pilot project.

8. Shifting of Risk Burden

There is no known shifting of risk from one population to another associated with this proposed pilot project. Although the project is requesting some relaxation of programmatic aspects of the Pretreatment Program requirements, the City of Denton will continue to closely monitor IU compliance. One primary goal of this project is the use of remote sensing and sampling of the watershed and storm events. This greatly reduces the potential safety risks to staff and students in meeting compliance requirements of the Storm Water Program. The project must be consistent with Executive Order 12898 on Environmental Justice. These criteria are described in detail in the following Federal Register documents: 60 FR 27282, May 23, 1995 and 62 FR 19872, April 23, 1997.

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