City of Fort Worth, Texas
Project XL Proposal

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Asbestos Management in the Demolition of Substandard Structures as a Nuisance Abatement

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I. Introduction

A. Description of the Community.

History And Background Of The City

The City of Fort Worth, sometimes called "Cowtown," is located in North Central Texas. Fort Worth is a home-rule municipality and the seat of Tarrant County. It is the 28th largest city in the United States[1], and comprises the western part of the Dallas/Fort Worth Consolidated Metropolitan Statistical Area (CMSA), the area often referred to as the D/FW Metroplex. During 1999, the City of Fort Worth is celebrating the 150th anniversary of its founding as a U.S. Army military outpost on the banks of the Trinity River.

The City of Fort Worth has a council-manager form of government. These two elements cooperate in the day-to-day operations of the City as well as in decisions that will have long-term effects on Fort Worth and its citizens. The City Council is composed of the mayor, who is elected at-large, and eight council members, each representing a district within the City. The mayor and council members serve for two-year terms. The City Council appoints the city manager, city secretary, city attorney, city auditor, municipal court judges and citizens who serve on the City's boards and commissions. The City Manager is responsible for administering and coordinating municipal operations and programs.

Fort Worth, In A Nutshell:

***Elevation**:* 600 feet above sea level
***Geographical Area**:* 300 square miles
***Estimated 1998 population**:* 471,135

Population breakdown (1990):
White: 56.50%
African American: 21.60%
Hispanic: 19.50%
Other: 2.40%

Median Age: 32.6
Household median income: $34,140
Number of single-family residences (1998): 131,686 (est.)
Number of multi-family residences (1998): 68,659 (est.)
Average daily commute: 49 minutes

[1] According to the 1990 census.

The City As An Environmental Leader

The City of Fort Worth prides itself on being a leader in the environmental arena. It has recently been awarded an EPA brownfields redevelopment pilot program grant, has received numerous national and regional awards for it storm water and wastewater programs, has the premiere household hazardous waste collection center in the state of Texas, and is recognized for its strides in environmental education.

Brownfields:

On March 12, 1999, Vice President Al Gore announced that the City had been accepted into the Brownfields Pilot Program by the Environmental Protection Agency, and will be given a $200,000 grant. The pilot, which will be administered by the Department of Environmental Management, will focus on the most industrialized parts of the City, with specific emphasis placed on Council Districts 2, 5, and 8, primarily in the eastern portions of the city. The minority populations in these communities (currently 69 percent, 65 percent, and 76 percent, respectively) have borne the brunt of the City's brownfields. Virtually all forms of commerce, except for convenience stores and gas stations, have vacated the area. These islands of small- to medium-sized abandoned properties have contributed to the deterioration of the neighborhood because of fewer job opportunities, potential increased health and safety hazards, and increased neighborhood crime.

Storm Water:

The Department of Environmental Management has received several prestigious awards for its storm water program.

The department's GIS-based Watershed Information Management System, developed to maximize storm water pollution control efforts in City watersheds, received the:

- EPA 1998 National Wastewater Excellence second place award for Outstanding Storm Water Management Program in the municipal category;

- Public Technology Inc. 1998 Technology Achievement Award, in the energy, environment and sustainable development category; and

- EPA Region 6 Regional Administrator's 1998 Environmental Excellence Award in the municipal category.

The department previously won the Regional Administrator's Environmental Excellence Award in 1995 for its stream sentinel (a.k.a. "fish in a bottle"). The sentinel is a device for in situ toxicity testing using fathead minnows or other native fish species, and was developed for screening water quality in storm sewer outfalls. It was recognized by the EPA as an "excellent cost-effective educational/monitoring tool."

The City's storm water management program won its first regional Environmental Excellence award in 1991, the first year of the awards, when the water quality division was a part of the Public Health Department.

Household Hazardous Waste:

In December 1997, the City opened a permanent household hazardous waste collection facility in response to the requirement in its NPDES permit to discharge storm water from the municipal separate storm sewer system into Waters of the United States.

Instead of limiting the program to the geographic boundaries of the City however, the City chose to create a regional program to help people dispose of household chemical wastes in an environmentally responsible manner. The Environmental Collection Center, operated by the Department of Environmental Management, is located at 6400 Bridge Street in Fort Worth, and is open to residents of Fort Worth and participating cities on Thursdays and Fridays from 11 a.m. until 7 p.m. and on Saturdays from 9 a.m. until 3 p.m. The City also operates a mobile collection unit called the Crud Cruiser to collect household hazardous waste during special neighborhood events.

The City of Fort Worth "Crud Cruiser" was on display in downtown Fort Worth during the Care for Cowtown Air festival in April of 1999.

In addition to Fort Worth residents, the residents of Arlington, Azle, Bedford, Burleson, Colleyville, Euless, Grand Prairie, Grapevine, Haltom City, Hurst, Newark, North Richland Hills, Rhome, Richland Hills, River Oaks, Saginaw, Stephenville, and Unincorporated Tarrant County may dispose of their household chemical waste at the Environmental Collection Center. Additionally, the Upper Trinity Regional Water District will operate a mobile collection unit in its operational area to collect household chemical waste from residents of those cities with which it has entered into a contract.

Education:

The Department of Environmental Management's "Conquer Your Crud" campaign to boost use of the Environmental Collection Center received several awards in early 1999. The campaign was recognized with a national Vision Award for its Crud Stoppers educational video that has been broadcast on Community Cable Television, and a silver ADDY Award from the Austin Advertising Federation in the Local Public Service Campaign category. The campaign also won a Best of Texas Award for speech writing from the Texas Public Relations Association.

An Academic Assistance Center's Web Page Selection Committee Award was given to the Department of Environmental Management in August 1998 for its web site. The page was recognized for its promotion of education to our youth and all Internet citizens, as well as for containing the "highest levels of education material, wholesome family values and constructive entertainment." On March 27, 1999, the web site received a four-star rating "Best of the Best" from the Galactic Galaxy Kids Safe Rated Search System. The web site was also featured in EPA Headquarters Internet Newsbrief - July 17, 1998.

Wastewater:

The City's Water Department also received regional and national Environmental Excellence Awards in 1998 from the Environmental Protection Agency for its outstanding operation of the Village Creek Wastewater Treatment Plant. The City received the second place National Operations and Maintenance Excellence Award in the large advanced plant category, and honorable mention in the National Beneficial Use of Municipal Wastewater Biosolids Excellence Awards Operating Projects Greater Than 5 mgd category.

The War On Urban Blight

Fort Worth has historically been known for its cattle industry; however, over the years manufacturing, distribution, and "hi-tech" activities have become a major part of the city's economy. Over the past 50 years, businesses have come and gone and as new industry was introduced, the practice of reusing industrial lands was abandoned in search for less expensive and environmentally clean property closer to the sprawling population centers of the city. The city has been fortunate in that its large industries (Lockheed Martin, Miller Brewing, American Airlines, Bell Helicopter, etc.) have remained viable and not resulted in large abandoned tracks of "brownfields." Much of the abandoned urban property within the City of Fort Worth are former small- to medium-sized manufacturing operations.

In recent years, the City has been waging a stepped up war on urban blight through the Code Compliance Division of the Department of City Services, and through special emphasis on property redevelopment and sustainable communities issues. In 1998, Code Compliance received direction from the City Council to demolish substandard commercial and multi-family residential structures, which included approximately fifty (50) facilities (as defined in NESHAP). [2] The commercial structures included bowling alleys, bars/taverns, grocery stores, automotive service stations/stores, strip centers, churches, and shopping malls.

This abandoned store near the Stockyards is typical of the substandard commercial facilities slated for demolition by the City of Fort Worth.

This boarded up hotel/apartment on Hemphill is typical of the substandard multi-family facilities slated for demolition by the City of Fort Worth.

[2] There were also approximately 500 small residential structures slated for demolition that do not fall within the NESHAP definition of facility.

Money allocated by the City Council to accomplish the task of demolition is exceeded only by the volume of structures that require nuisance demolition. Due to regulatory requirements, the City has only been able to demolish facilities with RACM remaining in place when the facility is in imminent danger of collapse. Based on the sampling data acquired through this process it appears that allowing RACM to remain in place during demolition will not adversely impact the environment or the health of the workers performing the work, and will allow the City to experience cost savings that could be applied to more demolition.

One example of a structure in danger of imminent collapse that Fort Worth demolished without prior abatement of RACM was a small commercial facility located at 1627 Amanda Avenue. This demolition project provides documentation that demolition without prior removal of RACM can be performed in a manner that is protective of human health and the environment. Air sampling results are summarized below. A copy of the full report is included as **Appendix A**.

Address: 1627 Amanda Avenue
Building Size: 1,385 square feet (SF)
Types of ACBM: Linoleum – 60% Chrysotile (525 SF)
Plaster Coating – 2 to 6% Chrysotile (2,320 SF)

Area Air Sample Results:

Sample ID	Location	Phase Contrast Microscopy (fibers/cc)	Transmission Electron Microscopy (structures/mm^2)
AM01	Downwind, northwest area	0.007	<11.5
AM02	Upwind, southwest area	0.001	<11.5
AM03	Upwind, southeast area	0.002	<11.5
AM04	Downwind, northeast area	0.005	<11.5
Note: PCM results are below the air clearance criteria (**0.01 f/cc**). TEM results are below the air clearance criteria (**70 s/mm^2**)			

A front view of 1627 Amanda Avenue prior to demolition.

View of Chrysotile plaster coating on the interior walls at 1627 Amanda Avenue.

The City has recently conducted ambient outdoor air sampling to determine background levels of asbestos. Air samples were analyzed by both phase contrast microscopy (PCM) and transmission electron microscopy (TEM). PCM results indicated airborne concentrations of 0.001 to 0.009 fibers/cc, and TEM results indicated airborne concentrations below laboratory detection limits (detection limits range from 10.2 to 19.6 structures/mm^2). The results will be compared to data obtained during active demolitions to document the potential impacts of the Fort Worth Method on the environment. A copy of the full Ambient Air Sampling Report is included as **Appendix B**.

Fort Worth has historically utilized and plans to continue to utilize contractors to perform the actual demolition work. In order to perform demolition work effectively, various types of heavy equipment are required that carry a large price tag. By utilizing contractors, Fort Worth avoids encumbering a large capital outlay associated with the purchase of demolition equipment. Additionally, the contractors perform demolitions on a daily basis and are more in touch with the specifics of the required tasks. Contractor experience plays a large role in the safety and effectiveness of demolition projects. OSHA training of workers requires time and money that is considered part of doing business for contractors but that would have to be absorbed by the City if it elected to train its own personnel for these tasks.

At this time, Fort Worth has one Enterprise Zone with a high level of incentives dedicated to inner city redevelopment areas. There is a tax abatement program in place that assigns strong emphasis on these geographical areas. The City has three Tax Increment Finance Districts (TIFs) in place, one of which is in a redevelopment area. One of the three TIFs was recently created in the Southside/Medical District. Two of the three TIFs are located within council districts 2, 5, and 8 (the primary focus of the Brownfields Project), with the third located in an adjacent district (District 9). **(see Map 1)**

Demolition Procedures: Current and Proposed

In order to demolish substandard structures that are not in danger of imminent collapse, the City of Fort Worth currently takes the following steps which includes compliance with 40 CFR §61.141:

***CURRENT* STEPS TO SUBSTANDARD FACILITY DEMOLITION:**

1. Code Compliance inspects facility.
2. Building Standards Commission declares facility substandard.
3. Environmental Management conducts asbestos assessment.
4. Asbestos removal specifications are developed if necessary.
5. City solicits contractor bids.
6. Texas Department of Health is provided 10-day notification.
7. Asbestos abatement occurs, if necessary.
8. Facility is demolished.
9. City places lien against property for all demolition costs.

The City of Fort Worth proposes an alternative method, called the Fort Worth Method, for the demolition of facilities in place of the current NESHAP requirements for the demolition of substandard structures that are not in imminent danger of collapse.

***PROPOSED* STEPS TO SUBSTANDARD FACILITY DEMOLITION:**

1. Code Compliance Inspects Facility.
2. Building Standards Commission Declares Facility Substandard.
3. Environmental Management conducts Asbestos Assessment.
4. City solicits Contractor Bids.
5. Texas Department of Health is provided **2-day** notification.
6. Facility is demolished without removing RACM (with certain exceptions).
7. City places lien against Property for all demolition costs.

This proposed alternative method is more fully described in Part II, "Project Description," below.

B. Contact information.

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Relevant Web pages:

Fort Worth Department of Environmental Management:
http://ci.fort-worth.tx.us/dem

Fort Worth Convention and Visitors' Bureau:
http://www.fortworth.com/

Fort Worth 150 - Honor the Past, Imagine the Future:
http://www.fortworth150.com/

EPA 1998 National Wastewater Management Excellence Awards
http://www.epa.gov/owmitnet/nexcel.htm

EPA - Brownfields Assessment Pilot, Fort Worth, Texas
http://www.epa.gov/swerosps/bf/html-doc/ftworth.htm

EPA Region 6 - Software, Tools, and Techniques: Fort Worth Stream Sentinel
http://www.epa.gov/earth1r6/6wq/ecopro/watershd/monitrng/tools/index.htm

EPA Region 6 - EPA Reclassifies Dallas/Fort Worth Air Quality
http://www.epa.gov/earth1r6/6xa/releases/020598.htm

EPA Headquarters Internet Newsbrief - July 17, 1998
http://www.epa.gov/natlibra/hqirc/inb/inb1998/inb0717.htm

II. Project Description

A. Project Summary.

The City of Fort Worth proposes an alternative method, hereinafter referred to as the Fort Worth Method, for the demolition of "facilities" in place of the current NESHAP requirements for the demolition of substandard structures that are not in imminent danger of collapse. However, if left standing, the facilities identified as substandard by the City will within a few years become structurally unsound. Instead of waiting for these buildings to reach such a state, the City proposes to be proactive and show that the demolition of facilities with RACM left in place is at least as protective as demolition with RACM removed and is potentially more protective than demolition of structurally unsound facilities with RACM in place. Based on the condition of the RACM, demolishing facilities while in moderate condition (substandard) may have much less impact than demolishing facilities in danger of imminent danger of collapse.

During the asbestos assessment of substandard structures that the City has demolished to date, Fort Worth has primarily encountered asbestos-containing building materials (ACBM) that include but are not limited to floor tile and associated mastic, transite material, roofing materials, joint compound (which, when treated as a wall system, is NOT considered ACBM), wall and ceiling texture, thermal system insulation, and miscellaneous other materials.

The primary steps involved in the demolition of facilities both currently under NESHAP and proposed under the Fort Worth Method are outlined in the following table.

BASIC STEPS TO PERFORM DEMOLITION	
WithOUT Project XL	***WITH Project XL***
1. Code Compliance Inspects Facility 2. Building Standards Commission Declares Facility Substandard 3. Environmental Management conducts Asbestos Assessment. 4. Asbestos Removal Specifications for RACM are developed if necessary. 5. City solicits Contractor Bids. 6. TDH is provided 10-day notification. 7. Asbestos Abatement of RACM occurs, if necessary. 8. Facility is demolished. 9. City places lien against Property for all demolition costs.	1. Code Compliance Inspects Facility 2. Building Standards Commission Declares Facility Substandard 3. Environmental Management conducts Asbestos Assessment. 4. City solicits Contractor Bids. 5. TDH is provided **2-day** notification. 6. Facility is demolished. 7. City places lien against Property for all demolition costs.
Note: Refer to Table 1 for further details.	

The Fort Worth Method's primary goal will be to protect the environment. Its secondary goal will be to provide a method that creates cost savings for municipalities performing nuisance demolitions. By using "wet" demolition methods, air monitoring, and proper handling/disposal techniques for the waste the City will protect the environment.

Based on the substantial reduction in the amount of tax dollars spent by the City on the demolition of substandard structures, the City will be able to increase the number of demolitions and in time reinvest the cost savings into the community.

Positive impacts on older urbanized areas will be shown due to the reduction in crime havens, increased aesthetic beauty, increased development potential, and increased community pride. The success of the Fort Worth Method will allow the cost savings over time to be applied towards other areas such as education, recreation centers, and parks while maintaining the same level of demolition.

IMPORTANT FACTORS	
WithOUT Project XL	***WITH Project XL***
1. Costly Asbestos Abatement. 2. Limited demolitions due to funding. 3. Texas Department of Health provided 10-day notification. 4. Redevelopment of urban areas hindered by costs. 5. Environmental Justice - communities potentially suffer disproportionate risks due to presence of abandoned and substandard structures. 6. City forced to expend funds unnecessarily.	1. **Increased** demolitions due to reduced costs. 2. Texas Department of Health provided **2-day** notification. 3. Redevelopment of urban areas **increased** by reduced costs. 4. Environmental Justice - **communities benefit** environmentally, socially, and economically from the removal of abandoned and substandard structures. 5. City allowed to utilize funds more **efficiently and effectively**.

Fort Worth will follow a "Phased" approach for the Fort Worth Method Project XL Pilot Study. Initially the City plans to demolish two structures that contain similar asbestos-containing building material. One of the two structures will be demolished in accordance with NESHAP, including removal of RACM. The other structure will be demolished by the Fort Worth Method, without removal of RACM. **(see Appendix I)** Data from these demolitions will then be analyzed by all stakeholders prior to continuing with future Fort Worth Method demolitions. As demolitions are completed, documentation and laboratory results will be forwarded to key stakeholders for review and comment. Based on the success of demolitions, Fort Worth will identify and demolish other structures. Through open communication with stakeholders and through documentation, Fort Worth will show that the Fort Worth Method is effective both in cost savings and protection of the environment.

The City of Fort Worth Department of Environmental Management will ensure by means of quality assurance/quality control (QA/QC) that all environmental assessment data generated and processed in connection with this Project XL is scientifically valid, of known precision and accuracy, of acceptable completeness, representative, and comparable and, where appropriate, legally defensible.

Because of the importance of QA/QC, it will be the policy of the Department of Environmental Management to conduct quality assurance activities on all asbestos assessments, demolitions, related field activities, and Project XL procurements so that data generated by these activities are in adherence with the QA/QC requirements. It will be our goal is ensure that all environmental assessment data generated is scientifically valid and is of acceptable completeness.

The Fort Worth Method and the City of Fort Worth Brownfields Redevelopment Pilot Program together will have a major impact on the redevelopment of targeted areas. With the City's increased ability to demolish substandard structures and address

environmental issues, neighborhoods will experience economic growth and revitalization. As job opportunities increase, the demand for quality housing will increase. As quality housing increases, the commercial and retail opportunites of the areas will increase. The overall impact of the Fort Worth Method and Brownfields Program will be far reaching and effects will be seen for years to come.

B. Specific Project Elements.

Fort Worth will perform the Project XL Pilot Study in phases. Phase I will entail the demolition of two similar structures; one under NESHAP and one under Fort Worth Method. Phase II will entail the review and analysis of data and information gathered during Phase I and information available from other resources as applicable. Phase III will include the performance of more demolitions as outlined below. Refer to Appendix I for further details on the project "Phases."

1. Declaration of Substandard Structure

In the City of Fort Worth, a structure is considered substandard when it does not meet the standards or specifications established in the City's Minimum Building Standards Code **(see Appendix C)**. This code requires that all structures comply with applicable standards established in the Building, Plumbing, Electrical, and Mechanical Codes, and requirements for the provision of utilities, sanitation and security. The Minimum Building Standards Code provides procedures to order the repair or demolition of structures that may endanger the life, health, and safety of the occupants or the public.

- If a structure does not meet the Minimum Building Standards Code, the Code Compliance Division of the Department of City Services will give the owner notice to bring the structure into compliance.

- If the structure is not brought into compliance, a hearing will be held before the City's Building Standards Commission (BSC). All owners, mortgagees, and lien holders of the property will be given notice and given an opportunity to comment at the hearing.

- The BSC may, after notice and hearing, declare a structure to be substandard, and specify in its written order a reasonable time for the structure to be vacated, secured, repaired, or demolished by the owner.

- If the BSC's order to vacate, secure, repair, remove, or demolish the building is not complied with within the allotted time, the City may demolish the building at the City's expense, and assess a lien against the subject property for costs. [3]

[3] By state law, this lien is subordinate only to tax liens. In many instances the outstanding taxes on the property may exceed the value of the property, and the City may never recover its demolition costs.

2. Asbestos Assessment and Abatement

Once the decision has been made that the City will proceed with the demolition of a structure, a thorough asbestos assessment of the facility will be conducted by an accredited and licensed (per State of Texas requirements) Asbestos Inspector.

- The assessment will identify asbestos-containing building materials (ACBM) and their locations in accordance with the Asbestos Hazard Emergency Response Act (AHERA) and Asbestos School Hazard Abatement Reauthorization Act (ASHARA) requirements.

- The assessment report will be compiled by the Asbestos Inspector and reviewed for completeness and quality by an Asbestos Consultant.

- The City does not have trained workers to conduct abatement of asbestos, and due to a conflict of interest prohibited by Texas Asbestos Health Protection Rules, § 295.37 "Licensing and Registration: Conflict of Interests," is unable to perform oversight of asbestos abatement activities. **(See Appendix H)**

- The Asbestos Assessment Report, an example of which is attached as **Appendix D**, would allow for the development of a demolition strategy and asbestos removal specifications if RACM consisting of spray-on fireproofing or large amounts of thermal system insulation (TSI) are encountered.

3. Worker protection

The City will require demolition contractors to comply with all applicable OSHA regulations for worker protection including but not limited to 29 CFR 1910 and 29 CFR 1926. The City will not seek any regulatory flexibility from OSHA requirements.

The City will contract with a Texas Department of Health-licensed Asbestos Consultant to provide oversight of the demolition process. The consultant will have a certified industrial hygienist (CIH) on staff. If asbestos abatement is required, the City will contract with a TDH-licensed asbestos abatement contractor.

4. Demolition and Wetting Methods

The City plans to demolish approximately ten to twenty facilities per year depending on the facility sizes under the Project XL Pilot Program.

- Facilities will be demolished one structure at a time.

- Demolition contractors will be certified and if necessary, State of Texas licensed Asbestos Abatement Contractors will be utilized.

- The demolition method [4] will vary by the size and type of facility and types of asbestos-containing building materials (ACBM). Multi-family residential structures typically range from one to four stories. Commercial structures typically range from one to two stories. A typical demolition will include:
  - One or more bulldozers for single story buildings.
  - Combination of bulldozers and track-hoes for multi-story buildings.
  - Wetting of structure utilizing fire hydrant water applied with a variable rate nozzle prior to demolition, during demolition and during loading. [5]
    - A "mist" of water will be applied to adequately wet the materials, control visible air emissions (i.e., no visible emissions), and control fiber releases.
    - Direct high pressure impact of ACM should not occur.
  - Collapsing structures inward (majority of the walls and interior components will be leveled on top of the building foundation) and loading debris prior to removal of the concrete slab if present.
  - Segregation of waste to the extent possible without adversely disturbing the ACBM. Waste not impacted by the ACBM will be treated as construction debris while all other materials will be treated asbestos contaminated waste.
  - Grading of site for future use.
- No engineering controls are planned to be in place during the demolition other than adequately wetting the demolition materials.

See the following pages for photographs
illustrating the use of variable rate nozzles.

[4] Demolitions will be performed by heavy equipment only. No explosives will be used to explode or implode structures, and burning will not be utilized to demolish structures.
[5] Because these facilities are being *demolished*, all on-site utilities, including water, have been turned off. Therefore, the water supply must come from nearby fire hydrants.

Variable Rate Nozzle Used with One-Inch Fire Hose

The "11-G" nozzle pictured above is used with a one inch fire hose. When fully opened, this nozzle delivers a maximum of 11 gallons of water per minute. This nozzle can deliver a concentrated streamof water (below left) or a fine mist (below right).

Variable Rate Nozzle Used with 2.5-Inch Fire Hose

The "30-G" nozzle pictured above is used with a two and one-half inch fire hose attached directly to a fire hydrant. When fully opened, this nozzle delivers a maximum of 30 gallons of water per minute. This nozzle can deliver variable rates of water flow, including the mist pictured below.

5. Storm Water Protection

Best management practices will be used to control runoff to the maximum extent practicable. Runoff from the job site will be controlled using a combination of natural drainage, manmade drainage channels, and silt fencing as applicable.

- Asbestos has not been identified as a priority or secondary pollutant in stormwater runoff within Fort Worth, and the City expects minimal, if any, asbestos impact on runoff from the Project Site. The USEPA relevant standards for asbestos are:
  - Drinking Water Standard: 7 million fibers/liter (40 CFR 141.23 (a)(4)(i))
  - Reportable Quantity: One pound (40 CFR 302.4 (a) Table 302.4).
    Note: The City does not expect to exceed either standard and actually expects to have minimal to no impact on runoff from asbestos and demolition debris.

- Demolition projects typically have a minimal to moderate amount of runoff depending on the site location and site conditions.

6. Air Monitoring and Soil Sampling

The City will work closely with a Certified Industrial Hygienist (CIH) to determine optimum sampling locations as well as adequate number of samples required.

Air Monitoring:

- Air quality will be monitored at each site by a trained, accredited and licensed Air Monitoring Technician to ensure that health of workers and the public is protected.

- Compliance monitoring will be conducted air pumps equipped with 0.8 micron mixed cellulose ester (MCE) filters.

- During the demolition process several area and personal air samples will be collected and field analyzed by PCM. The City plans on utilizing at a minimum:
  - One sample at each corner of the Project area in order to achieve full coverage (corners will be identified based on site conditions and prevailing winds);
  - One sample per heavy equipment unit; and
  - One personal sample at a minimum on workers in the work area who are not dedicated to a piece of machinery.

- The air samples will be field analyzed by Phase Contrast Microscopy (PCM), with at least one downwind sample and up to 50% of the machinery and

personal samples submitted for Transmission Electron Microscopy (TEM) analysis.

- The PCM results will be utilized to guide the sample selection for TEM analysis. The TEM analysis will be on a 12 to 24 hour turnaround initially in order to closely monitor the situation. By utilizing both PCM and TEM analysis, the City will be able to report the overall emissions as well as any asbestos fiber emissions.

- The City will collect data to show that the requirements for a Negative Exposure Assessment (NEA) have been met [29 CFR 1926.1101(f)(2)(iii)].

Soil Sampling:

Fort Worth will initially collect a minimum of three soil samples prior to demolition from each work site for analysis of asbestos. Samples will also be collected following demolition and final site cleanup from the same sampling points. Results of analysis will be compared. The work site will deemed "complete" when the before and after samples are not statistically different (if sample size is sufficient). Otherwise the before and after sample results will be compared, and as long as the differences are minimal, the site will deemed "complete".

7. Disposal

Segregation techniques will be used during demolition in an effort to reduce the amount of contaminated debris that has to be treated as asbestos contaminated waste. Segregation of waste will be the responsibility of the onsite NESHAP-trained individual.

- Demolition debris will be kept adequately wet throughout demolition and during handling and loading for transport to a waste disposal site. Typically, the demolition debris will be wetted during loading and then a final coat of water will be applied to the trailer once fully loaded and just prior to departure to the landfill.[1]

- Demolition debris will be loaded onto trailers using a front end loader or similar equipment. Typically, the contractor will use construction trailers capable of holding from 10 to 20 cubic yards of material.

- The City will require its contractors to cover with tarps all trucks transporting asbestos containing waste material to the landfill. Transportation will be immediate and by a direct route.

- The City will not mandate that its demolition contractors use a specific landfill for disposal. The job specifications for demolitions would state that disposal

[1] 40 CFR 61.150 (a)(3) states that "where the RACM is not removed …. adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed in bulk."

shall be in accordance with all Federal, State and local requirements. The contractors will be allowed to decide which landfill is a viable option. The City will not pay the contractors until it has received properly completed manifests.

- Vehicles used to transport asbestos-containing material will be clearly marked during loading and unloading of waste.

- The City will maintain waste disposal records for a minimum of two years.

8. Decontamination

The Fort Worth Method will utilize "wet" demolition techniques as specified in the NESHAP and currently performed by the regulated community. Extra care will be taken however, to reduce the potential release of asbestos fibers and potential contamination of other job sites by equipment. Heavy equipment involved in the handling of RACM debris may be handled by:

- Thoroughly rinsing the equipment components that come in contact with the RACM. On-site water supply (e.g., fire hose) will be utilized.

- Collection of rinse water on-site into natural depression, tarp lined area, "baby" pool, etc. The collection will be cleaned and disposable equipment will be disposed as part of the RACM debris.

- Trailers utilized to transport the RACM debris will be cleaned as above or lined with a disposable liner that will be disposed along with the final load at the licensed landfill.

- Hand tools if used will be thoroughly rinsed with the rinse water captured on-site in a similar manner to the heavy equipment.

- Workers handling or coming in contact with RACM debris will wear disposable Tyvek suits or equivalent, respirators (as necessary), and gloves (as necessary). All disposable safety equipment including used respirator cartridges will be disposed as RACM debris.

Final site cleanup will entail the grading of the site to allow for redevelopment.

9. Documentation

The City will prepare documentation for each demolition that will include a written description of the job, site diagram depicting facility and sampling points, photographs, analytical results, etc. Additionally, a camcorder will be utilized to videotape the demolition process under this program, and the City will provide copies of the videotapes to the EPA and key stakeholders for review.

III. Project XL Criteria

A. Superior Environmental Performance.

Fort Worth has identified several risk factors associated with performing and NOT performing the Fort Worth Method. Typical risk factors include air emissions, storm water runoff, and soil impact.

- **Air emissions**: Fort Worth will utilize "wet" demolition methods to control air emissions. The risk from air emissions associated with the Fort Worth Method is similar to the NESHAP demolition of a structure in danger of imminent collapse and is are deemed the primary risk factor associated with the Fort Worth Method. However, air sample results from prior "wet" demolitions indicate that when structures are properly wetted, the Fort Worth Method demolitions should have minimal impact on the air quality. While the existing standards for comparison have been primarily developed by OSHA for worker exposure, Fort Worth expects the emissions from the Fort Worth Method to be well below the criteria for "clean" air (70 structures/mm^2) following asbestos abatement.

- **Storm water Runoff**: Fort Worth will utilize Best Management Practices to control storm water runoff from project sites. Currently there are no storm water standards for asbestos, but rather simply total suspended solids (TSS). Due to the sensitive nature of the project, Fort Worth will take steps to reduce runoff and collect storm water on the project site. Storm drain inlet protection will be used in conjunction with on-site controls as necessary. No sampling data has been collected at this time, however by utilizing Best Management Practices the City expects to have minimal if any impact on storm water runoff.

- **Soil Impact**: Fort Worth will utilize limited soil sampling to initially assess potential impacts of on-site soils from the demolition process. Before and after analytical results will be compared to assess any potential impacts. Due to the grading of the site and thoroughness of demolition debris removal, Fort Worth expects to have a minimal if any impact on the site soil.

- **Risk Associated with NOT Demolishing Substandard Structures**: Fort Worth considers future safety issues to be associated with NOT performing the Fort Worth Method. These issues include but are not limited to criminal activity in the substandard structures left standing, and asbestos exposure of homeless persons who will inhabit these structures. This is discussed in other sections of this Proposal.

Tier 1: Is the Fort Worth Method equivalent to NESHAP?

The Fort Worth Method has one primary difference from the existing NESHAP, which is the handling of RACM. During the course of demolition the facility is adequately wetted and demolition will proceed in a manner that allows the non-ACBM to act as a barrier between the ACBM and the environment. By properly handling and wetting the

demolition debris, fiber releases will be controlled. The primary means of controlling a fiber release is and will be properly wetting the material.

The City has collected air samples in the past from demolition jobs (without prior removal of ACM) that included RACM, Category I, and Category II materials, as well as from asbestos abatement projects. These previously collected samples revealed the following results:

Point of Measure	Measured Airborne Concentration
Heavy equipment operator (personal sample)	BDL to 0.009 fibers/cc
Outside Area Samples during Demolition	BDL to 0.022 fibers/cc
Inside Area Samples during Abatement (under full containment)	0.001 to 0.060 fibers/cc
Note: Concentration determined by Phase Contrast Microscopy (PCM)	

A simple comparison of the above listed data reveals that all are below the OSHA Permissible Exposure Limit (PEL) of 0.1 fibers/cc and that the demolition risk of exposure is approximately 66% less than the abatement. The abatement was performed within full containment utilizing HEPA filtration prior to discharge to outdoor air, thus reducting overall impact on the outside environment. The maximum concentration of the "wet demolitions" was almost 5 times less than the PEL and just slightly over the PCM air clearance criteria. Based on initial sampling, respiratory protection and additional engineering controls would appear to be unnecessary (refer to the sampling results for 1627 Amanda Avenue that show air concentrations below clean air criteria by TEM standards).

Tier 2: How will the Fort Worth Method be superior?

Implementation of the Fort Worth Method will provide environmental performance superior to that which is realized under traditional approaches, and will serve to improve the community at large. The Fort Worth Method will maintain the level of environmental protection currently dictated by the asbestos NESHAP, as well as worker protection dictated by OSHA, while reducing the costs of demolition of substandard structures and reducing the amount of red tape required for compliance. The main positive to the process will be the revitalization of areas of the City that have become run down. This will aid in the economic growth of the involved neighborhoods, and reduce crime that results from the presence of substandard and abandoned structures. The Project XL pilot will complement the City's Brownfields Redevelopment Pilot Program, by opening up more land to facilitate the economic development of the distressed neighborhoods of Fort Worth.

The City is not the owner of the substandard structures targeted for nuisance abatement, and has no intention of acquiring ownership. However, the City is still responsible for adhering to state and federal standards as they apply to asbestos management when it makes the decision to demolish these structures through the nuisance abatement process. The City spends from one-half to two-thirds of the demolition costs managing the asbestos materials, by abating them prior to demolition. If the City were allowed alternatively to manage this waste via the Fort Worth Method described herein, the City would realize significant savings that could be returned to the program for the

performance of additional nuisance abatement of substandard structures. The Fort Worth Method should in the end provide local governments with more flexibility and funds to address the problem of urban blight.

The ability to document the effectiveness of wet demolition techniques and potentially allow for the development of NESHAP waivers based on the type of ACM and wetting technique is another benefit to this project. The project is intended to allow for the more effective "clean up" of the City of Fort Worth, but will also provide the EPA and Texas Department of Health (TDH) with solid scientific data for the potential revisiting of the asbestos NESHAP and Texas Asbestos Health Protection Act (TAHPA).

How will Fort Worth measure Environmental Performance?

Fort Worth will monitor the Environmental Performance of the Fort Worth Method by:

- Maintaining a strong QA/QC program to ensure results are scientifically defendable and appropriate to the project.
- Collecting air samples from the perimeter of the Project Sites along with personal air samples of the workers.
- Thoroughly documenting the project operations through photographs, field notes, analytical results, and videotape.

B. Cost Savings, Paperwork Reduction, and Economic Benefits.

Use of the Fort Worth Method to manage asbestos containing materials in structures being demolished will prove to be a tremendous cost savings to the City of Fort Worth. One recent example of demolition and disposal costs for a substandard structure by removal of asbestos containing materials prior to demolition was estimated at $29,925. Demolition and disposal for the same structure using the Fort Worth method cost the City $9,053. Cost savings are mostly realized from the asbestos abatement contractors' personnel costs, material costs, and personnel time. This will allow the City the freedom to demolish a greater number of substandard structures in a shorter period of time, reducing the risks inherent in unsafe abandoned structures. This will also assist in the revitalization of inner city areas, which are most likely to contain these structures.

C. Stakeholder Involvement.

Community involvement and support from community-based organizations, businesses and individuals will be critical to the success of the Fort Worth XL Project. We anticipate that the community will provide valuable advice and assistance in program development, implementation, review, and evaluation. The following agencies and organizations will be contacted directly and asked to participate in the Project XL process. Among these, the Environmental Protection Agency, the Occupational Safety and Health Administration, and the Texas Department of Health have already been contacted.

Government Agencies (Federal)
Environmental Protection Agency (Region 6)
Housing and Urban Development (HUD)
Occupational Safety and Health Administration (OSHA)
US Army Corps of Engineers

Government Agencies (State)
Texas Department of Health (TDH)
Texas Natural Resource Conservation Commission (TNRCC)

Municipal Associations
National League of Cities
North Central Texas Council of Governments
PTI
Texas Municipal League

Professional Associations
Academy of Certified Hazardous Materials Managers - Texas (DFW)
Air and Waste Management Association
American Indian Chamber of Commerce of Texas
American Industrial Hygiene Association
Fort Worth Association of Realtor's Inc.
Fort Worth Chamber of Commerce
Fort Worth Hispanic Chamber of Commerce
Fort Worth Metropolitan Black Chamber of Commerce
Society of Texas Environmental Professionals

Environmental Groups
Environmental Defense Fund
Natural Resources Defense Council
Sierra Club
Tarrant Coalition for Environmental Awareness
Texas Citizens for the Environment

Community Organizations
Fort Worth League of Neighborhood Associations
African American Summit for Peace, Justice and Equality
Near Southeast Community Development Corporation, Inc.

Notice to Stakeholders:

The following methods will be also used to contact and inform potential Stakeholders:

- Local Media: Notices public of public meetings and public notices and comment periods will be printed in the newspaper currently printing City legal notices. Stories will also be included in the City Page of the *Fort Worth Star-Telegram*. Local media will also be invited to report on the project, as it evolves.

- Internet: Notices of public meetings, public notices, comment periods, and other project information will be given a web presence on the Department of Environmental

Management's web site, located at http://ci.fort-worth.tx.us/dem. The presence will be interactive, providing a means for the community to ask questions and present opinions on the Project XL process.

- Fact Sheets: Fact sheets, announcing public meetings and notices, and information on project implementation, will be provided to parties included on the mailing list.

Public Meetings And Workshops

Public meetings and workshops will be conducted to inform the general public of project development, and to invite participation and comments. Public meetings may be held during development of the Final Project Agreement, based on public interest, or as decided by the primary participants. Public meetings will be used to explain in-depth what the project entails and the expected benefit to Fort Worth. This will provide the public with a forum to address concerns that may have concerning the Project XL process. Fort Worth will compile the questions, comments, and suggestions that arise from these and other public comment forums and provide them to EPA, OSHA, and TDH.

D. Innovation or Pollution Prevention.

The Fort Worth Method is an innovative alternative for NESHAPS compliance. It is structured to safeguard the environment and the health and safety of individuals, while providing local governments with more financial resources to tackle the problem of urban blight.

E. Transferability.

The Fort Worth Method can serve as a model for other local communities faced with large numbers of abandoned, substandard structures, and limited financial means to demolish them. If the NESHAPS regulations are ultimately amended by EPA to utilize the Fort Worth Method, all local governments faced with abating nuisance structures will realize cost savings. The reduced cost of demolition of abandoned substandard structures will enable local governments to tackle the problem of urban blight more successfully.

F. Feasibility.

- Technical: the Department of Environmental Management is staffed by persons schooled in asbestos management. Additionally, the City will utilize the services of its asbestos consultant when necessary.

- Administrative: this project will be administered by the City of Fort Worth Department of Environmental Management. The City Manager and the City Council are committed to the success of this project.

- Financial: the City of Fort Worth has already committed to the demolition of substandard structures, and the necessary funds will be available for this project,

either through the general fund, the fund established by the Environmental Protection Fee, or a combination thereof.

G. Evaluation, Monitoring, and Accountability.

- Reduce cost of asbestos abatement in substandard structures by 30-50 percent.
- Meet those levels protective of human health and the environment currently achieved and mandated under the asbestos NESHAP.
- Maintain worker safety per OSHA requirements.
- Dispose of construction debris in compliance with TRNCC rules.
- Measure progress quarterly.
- Make information on project's progress available on Department of Environmental Management's web page.

H. Shifting of Risk Burden.

XL projects must be consistent with Executive Order 12898 on Environmental Justice, the intent of which is to prevent minority and low-income communities from being subject to disproportionately high and adverse environmental effects. The Fort Worth method will not subject anyone to unjust or disproportionate environmental degradation. Implementation of project proposals will not significantly transfer pollution to, or add to environmental degradation of, a jurisdiction outside of the City of Fort Worth. Additionally, the Fort Worth Method will enable the City of Fort Worth to more expeditiously address areas of urban blight, positively impacting minority neighborhoods.

This Project will ensure that all environmental justice concerns are addressed. The overall goal of the Environmental Justice Plan is to ensure that no group bears a disproportionate risk from abandoned and substandard facilities in their communities, and is not under served by the programs because of race, ethnicity, income, or other differences. The City of Fort Worth's Plan for Environmental Justice among the racial, economic, and cultural divisions of the community involves:

- Consideration of all proposed demolition sites.
- Unbiased communication between Department of Environmental Management personnel and the community, and encouragement of public participation in the Project XL process.
- Development and implementation of a redevelopment program dedicated to the growth and enhancement of the community as a whole.
- Enforcement of all health and environmental statutes equally within the City.

- Creation of a response system for identified economic and social issues surrounding a City policy as well as any implications of the revisions.

Additionally, worker safety will not be compromised, because it is the intention of Fort Worth to require its demolition contractors to follow all applicable OSHA asbestos regulations.

IV. Requested Flexibility

The City of Fort Worth seeks relief from the requirements of the Asbestos NESHAP, 40 CFR Chapter 61, Subpart M, and the Texas Asbestos Health Protection Rules, 25 TAC Chapter 295, to the extent that these regulations require the removal of regulated asbestos containing material from substandard structures prior to their demolition. Fort Worth seeks the flexibility to demolish declared substandard structures that are not in danger of imminent collapse in a manner akin to those substandard structures which are in imminent danger of collapse. FORT WORTH IS NOT SEEKING REGULATORY FLEXIBILITY FROM APPLICABLE OSHA REGULATIONS.

V. Enforcement and Compliance Profile

❖ **Violations of environmental regulations or permits by Fort Worth within the last five years:**

- Administrative Order Docket No. VI-96-1221; NPDES Permit No. TX0047295 (see **Appendix E**).

❖ **On-going enforcement action or outstanding compliance issues against Fort Worth for environmental violations:**

- The Dallas/Fort Worth Metroplex is listed by the Environmental Protection Agency as a serious nonattainment area for ozone.

- The City of Fort Worth Department of Environmental Management has notified EPA Region VI that some of the constituents in the DMRs (discharge monitoring reports) required for City of Fort Worth NPDES Permit No. TXS000901 are missing from the most recent report, due to laboratory error by the United States Geological Survey (USGS) laboratory in Denver, Colorado. No enforcement action has been taken yet.

❖ **Obligations of Fort Worth under an administrative order or judicial decree for environmental violations:**

- See Administrative Order Docket No. VI-96-1221.

❖ **Litigation against the EPA or the State of Texas to which Fort Worth is a party:**

- None.

❖ **Relevant lawsuits pending against the City of Fort Worth:**

- None.

VI. Schedule Information

❖ **What is the duration of the project?**

After a final project agreement has been executed, we believe that 18 months will be sufficient time for demolition of the agreed number and type of structures, analysis of data, and the writing of any final reports.

❖ **What is the initial implementation time?**

This is dependent to a large extent upon the ability of the Texas Department of Health to agree to the necessary regulatory flexibility. If the TDH cannot grant the flexibility with a rule change, the project would be delayed until legislation could be passed by the Texas Legislature. (The Texas Legislature will next meet in the year 2001).

❖ **What are some of the relevant milestones for implementation of this project?**

- Stakeholder consensus.
- Acquiescence of the Texas Department of Health - regulatory flexibility.
- Execution of Final Project Agreement.

❖ **Are there any relevant permit renewal dates/compliance deadlines?**

There are none associated with this project proposal.

❖ **Does the business cycle of the City affect implementation of the project?**

The City's Fiscal year runs from October 1 through September 30, with the budget for the next fiscal year presented to the City Council in August and adopted in September. Because the City's efforts to demolish substandard structures is an ongoing program, it is not anticipated that the City's business cycle will affect the implementation of this project.

❖ **Does the schedule of the state legislature affect the City's proposal?**

The asbestos NESHAP program was delegated by the EPA to the State of Texas, and is administered by the Texas Department of Health. The asbestos NESHAP has

been adopted into its regulations (Texas Administrative Code Chapter 25). Although the Texas Natural Resource Conservation Commission has rules relating to regulatory flexibility[2], the Texas Department of Health does not. If the Texas Department of Health determines that it cannot give the City of Fort Worth the regulatory flexibility needed to implement this project by rule change, then a statutory change will be needed.

The Legislature of the State of Texas, operating under the biennial system, convenes its regular sessions at noon on the second Tuesday in January of odd-numbered years. The maximum duration of a regular session is 140 days. House members and senators can introduce bills on any subject during the first 60 calendar days of a regular session. After 60 days, the introduction of any bill other than a local bill or a bill related to an emergency declared by the governor requires the consent of at least four-fifths of the members present and voting in the house or four-fifths of the membership in the senate.

The governor is given authority under the state constitution to convene the legislature at other times during the biennium for "called" or "special" sessions.

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[2] Rules were enacted pursuant to
Texas Water Code
Sec. 5.123. Regulatory Flexibility.
Text of section as added by Acts 1997, 75th Leg., ch. 1203,
Sec.1

(a) The commission by order may exempt an applicant from a requirement of a statute or commission rule regarding the control or abatement of pollution if the applicant proposes to control or abate pollution by an alternative method or by applying an alternative standard that is:

(1) at least as protective of the environment and the public health as the method or standard prescribed by the statute or commission rule that would otherwise apply; and

(2) not inconsistent with federal law.

(b) The commission by rule shall specify the procedure for obtaining an exemption under this section. The rules must provide for public notice and for public participation in a proceeding involving an application for an exemption under this section.

(c) The commission's order must provide a specific description of the alternative method or standard and condition the exemption on compliance with the method or standard as the order prescribes.

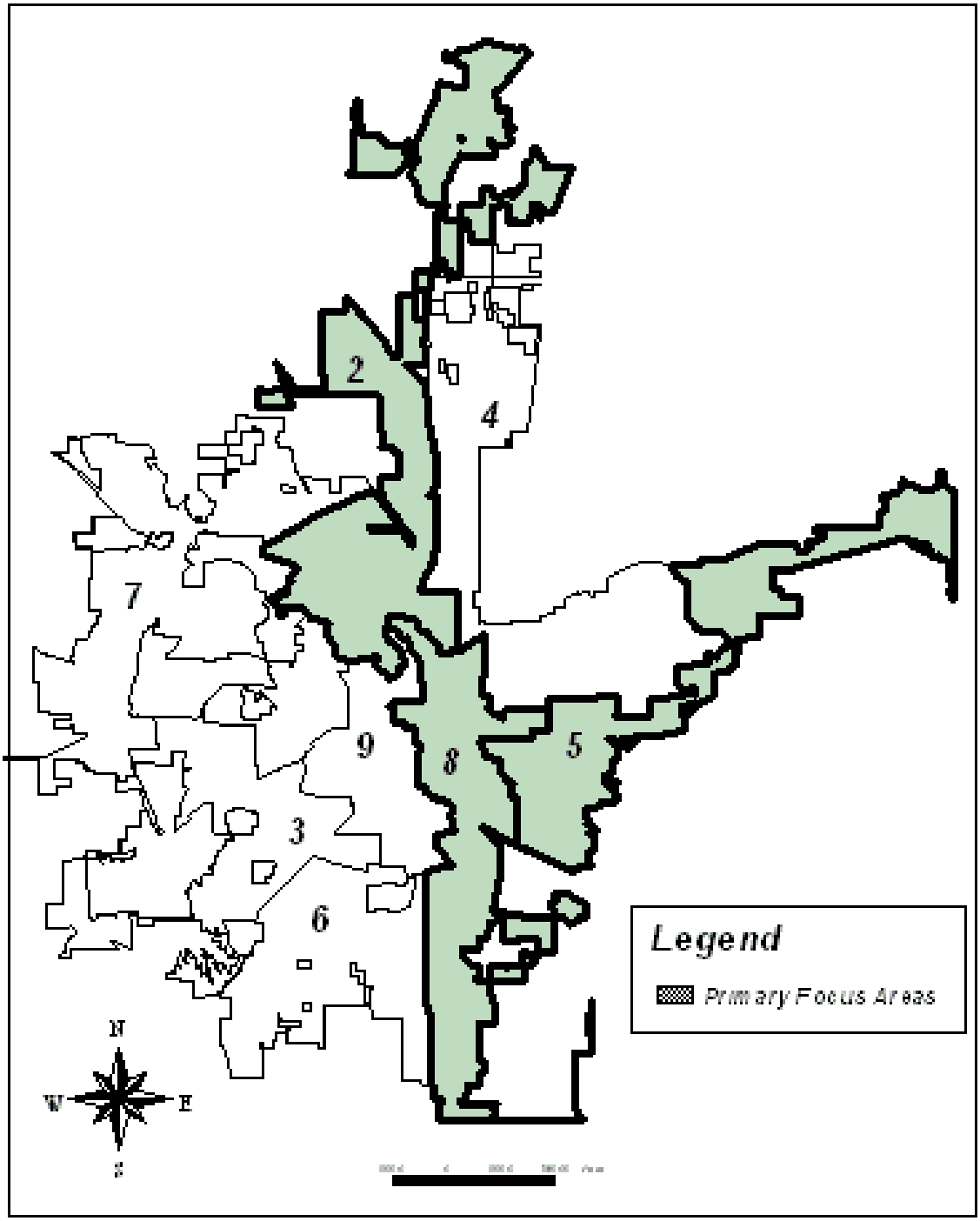
(d) The commission by rule may establish a reasonable fee for applying for an exemption under this section.

(e) A violation of an order issued under this section is punishable as if it were a violation of the statute or rule from which the order grants an exemption.

(f) A permit may satisfy a requirement to demonstrate need by showing need on a regional basis considering economic impacts.

(g) This section does not authorize exemptions to statutes or regulations for storing, handling, processing, or disposing of low-level radioactive materials.

These are reserved for legislation that the governor deems critically important in the conduct of state affairs. Called sessions are limited to a period of 30 days, during which the legislature is permitted to pass laws only on subjects submitted by the governor in calling for the session.



City of Fort Worth
Council Districts

Table - 1 Comparison of the Asbestos NESHAP and the Fort Worth Method for Demolition of Substandard Structures

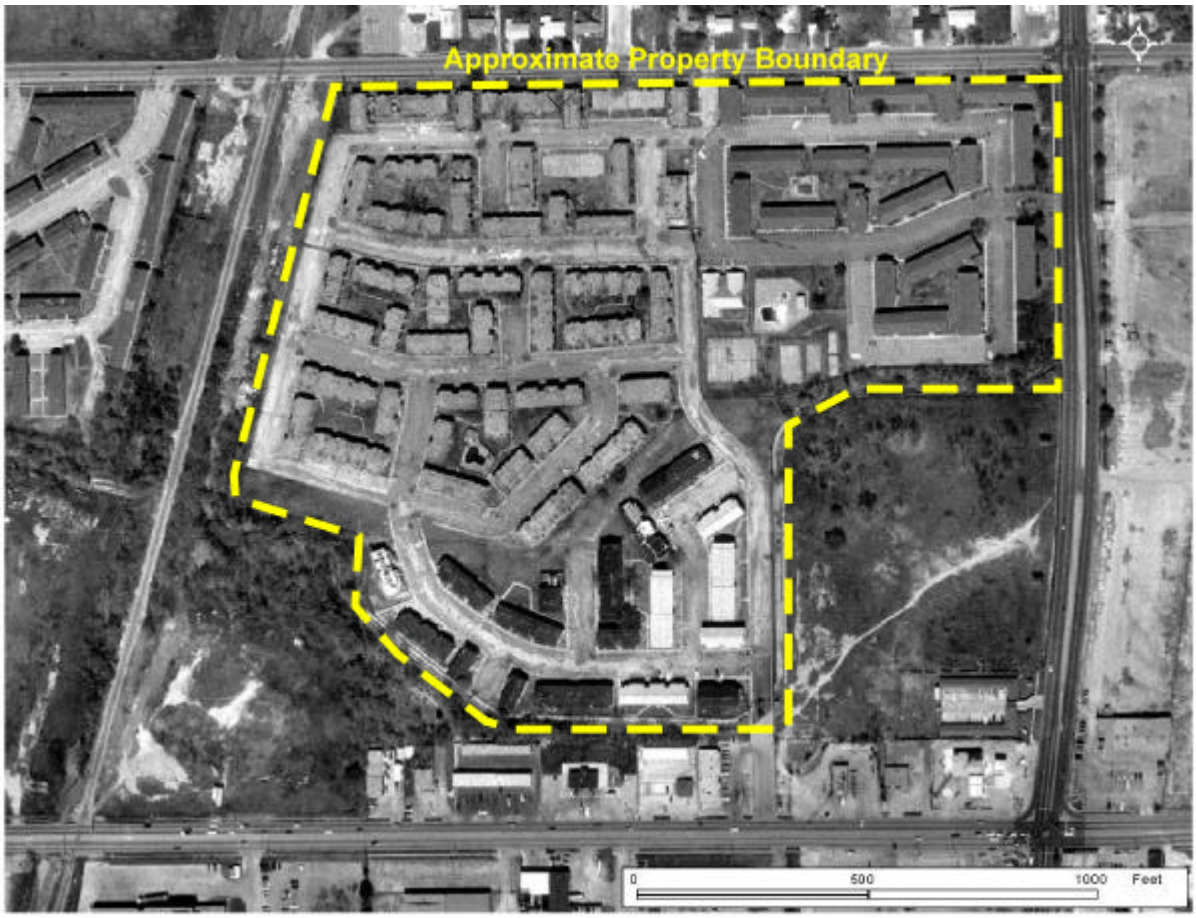
PROJECT COMPONENT	NESHAP (In Danger of Imminent Collapse)	NESHAP (Not in Imminent Danger of Collapse)	FORT WORTH METHOD (Not in Danger of Imminent Collapse)
	EPA United States Environmental Protection Agency	EPA United States Environmental Protection Agency	FORT WORTH
ASBESTOS ASSESSMENT	Not required.	Full AHERA Level Asbestos Assessment.	Full AHERA Level Asbestos Assessment.
DEMOLITION NOTIFICATION	Written notification as early as possible before, but not later than the following working day.	Written notification at least ten working days before work begins.	Written notification at least **TWO** working days before work begins.
REMOVAL OF RACM PRIOR TO DEMOLITION	RACM not removed prior to demolition.	Remove RACM under full containment if there is: 1. At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components; or 2. At least 1 cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously. Adequately wet asbestos-containing waste material. After wetting, seal in leak-tight containers while wet. If materials will not fit into containers without additional breakage, put materials in leak-tight wrapping. Label containers or wrapped materials using OSHA compliant warning labels.	RACM not removed prior to demolition. ***Note***: **SPRAY-ON FIREPROOFING AND LARGE QUANTITIES OF THERMAL SYSTEM INSULATION WILL BE ADDRESSED UNDER FULL CONTAINMENT CONDITIONS.**
EMISSIONS CONTROLS DURING DEMOLITION	Discharge no Visible Emissions from RACM or asbestos-containing waste material.	Discharge no Visible Emissions from RACM or asbestos-containing waste material.	Discharge no Visible Emissions from RACM or asbestos-containing waste material.
HANDLING PROCEDURES FOR DEMOLITION ASBESTOS-CONTAINING WASTE MATERIAL	Adequately wet the portion of the facility that contains RACM **during** the wrecking operation. Adequately wet asbestos-containing waste material at all times **after** demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials do not have to be sealed in leak-tight containers or wrapping, but may be transported and disposed of in bulk.	Adequately wet asbestos-containing waste material at all times **after** demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials demolished in place do not have to be sealed in leak-tight containers or wrapping, but may be transported and disposed of in bulk. ***Note***: Does not apply to Category I Non-Friable ACM waste and Category II Non-Friable ACM waste that did not become crumbled, pulverized, or reduced to powder.	Adequately wet **THE FACILITY during** the wrecking operation. Adequately wet **DEMOLITION DEBRIS** at all times **after** demolition and keep wet during handling and loading for transport to a disposal site. **WASTE MATERIALS TO BE DISPOSED IN BULK WITHIN TRAILERS COVERED WITH TARPS.**
TRANSPORTATION OF DEMOLITION ASBESTOS-CONTAINING WASTE MATERIAL	Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that signs are visible. Manifest RACM shipments.	Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that signs are visible. Manifest RACM shipments.	Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that signs are visible. Manifest RACM shipments.
DISPOSAL OF DEMOLITION ASBESTOS-CONTAINING WASTE MATERIAL	Deposit all asbestos-containing waste material as soon as practical at a waste disposal site approved for asbestos disposal, unless it is Category I Non-Friable ACM that is not RACM.	Deposit all asbestos-containing waste material as soon as practical at a waste disposal site approved for asbestos disposal, unless it is Category I Non-Friable ACM that is not RACM.	Deposit all asbestos-containing waste material as soon as practical at a waste disposal site approved for asbestos disposal, unless it is Category I Non-Friable ACM that is not RACM.
SITE SUPERVISION DURING DEMOLITION	At least one representative trained in the NESHAP shall be present on-site.	At least one representative trained in the NESHAP shall be present on-site.	At least one representative trained in the NESHAP shall be present on-site.
RECORDS MAINTENANCE	Maintain waste disposal records for at least two years.	Maintain waste disposal records for at least two years.	Maintain waste disposal records for at least two years.
STORMWATER MANAGEMENT	Not specified.	Not specified.	**Comply with Chapter 12.5, Article III, "Storm Water Protection," Code of the City of Fort Worth. Use best management practices to control runoff as necessary.**
OUTDOOR AIR MONITORING	OSHA monitoring of workers.	OSHA monitoring of workers.	**AREA SAMPLING TO BE PERFORMED AT ALL FOUR CORNERS OF THE JOB SITE.** OSHA monitoring of workers.
WETTING PROCEDURES	Adequately wet.	Adequately wet.	**Utilize fire hose equipped with variable rate nozzle to allow for "misting".**

APPENDIX I

Phase I – Initial Demolition

Fort Worth will identify two structures that are approximately the same size and relative age and that contain approximately the same Asbestos-Containing Building Materials (ACBM) and Regulated Asbestos-Containing Material (RACM). The structures will be demolished under two separate methods: one will be demolished in accordance with the asbestos NESHAP, **WITH** removal of RACM, and one will be demolished under the Fort Worth Method (similar to the asbestos NESHAP regulations for the demolition of a structure in danger of imminent collapse) **WITHOUT** removal of RACM. All steps outlined within this Proposal will be followed for the Fort Worth Method demolition.

Fort Worth has identified a potential candidate for the Phase I demolition: an apartment complex consisting of 68 separate buildings, approximately 480 units, and approximately 404,000 square feet of building foot print. Based on the preliminary site assessment, the buildings are constructed of very similar building materials. Two centrally located buildings will be chosen for the Phase I demolition. This will allow an approximate 500-foot buffer zone between the project and adjacent land uses (see photograph below).



Other examples of potential candidates for the Phase I demolition are various hotel/apartment structures located throughout the city. These structures can be found to have been built at similar times, have similar sizes, and have similar ACBM and RACM. An example of such a structure is depicted below.

In summary, the City plans to select two similar structures for demolition under two separate methods: Current NESHAP and Fort Worth Method.

Phase II – Initial Data Analysis

Upon completion of the two initial demolitions, the City will prepare written reports detailing the work along with photographs and videotape of the projects. Written reports will be distributed to key stakeholders for review and comment. Following review by the key stakeholders all comments will be compiled and addressed by the City. If the Fort Worth Method proves to be at least as protective as the existing NESHAP Method during this Initial Demolition then the City will move forward with the overall project with the EPA's consent. Otherwise, if areas of improvement are identified that are attainable the City will make such improvements and set forth on a similar demolition (e.g., two similar buildings or Phase I again) and follow the same process until such time that the Fort Worth Method is shown effective or is shown to ineffective.

Phase III – Fort Worth Method Applied Uniformly

Based on the Fort Worth Method's success in Phases I and II, the City will proceed with the Project as detailed in Section II, B. Specific Project Elements and throughout this Proposal.