

throughout their communities.

9. The LSCP will issue lead hazard and abatement grants (at an average amount of \$5000 and up to \$10,000) for up to 20 private (low to moderate income) housing owners for a total of \$100,000 per year and facilitate funding of larger lead abatement projects through low-interest loans from the DTD.
10. Prior to making a treatment change, as defined in the Glossary of Terms, the City Water Division will consult with US EPA, OEPA and other treatment experts to minimize the likelihood that the lead Action Level will be exceeded as a result of the treatment change(s). OEPA will provide final approval before any treatment change is made.
11. After making a treatment change, the Water Division will conduct increased monitoring in accordance with Section IV.G of this Agreement, which will identify any trend in increasing lead levels at consumer's taps more quickly, and allow the Water Division to take immediate steps to reverse the trend, again reducing the likelihood that lead levels will exceed the AL.

#### C. Stakeholder Involvement and Support

The existing Childhood Lead Poisoning Prevention Program (CLPPP) has established relationships with a variety of stakeholders who are in support of the project. They will be directly involved in specifics of the program's design and implementation, and, in many cases, already serve on the Advisory Committee. Those stakeholders include the following:

1. Community groups: St. Stephen's Community House, Neighborhood House, Central Community House;
2. Parent Support Organizations: Help End Lead Poisoning (HELP) and Association of Parents to Prevent Lead Exposure (APPLE); and
3. Institutional and Other Agency Support: Ohio Section of the American Water Works Association, Children's Hospital, Battelle Memorial Institute, Columbus Apartment Association, Columbus

Housing Partnership, Columbus Metropolitan Housing Authority, Ohio Childhood Lead Poisoning Prevention Program (under the Ohio Department of Health), the Alliance to End Childhood Lead Poisoning, the National Association for Lead Safe Housing, and the Columbus Department of Trade and Development.

Eight of the stakeholders provided letters of support for this project.

On May 16, 2000, and June 27, 2000, following an intensive effort that identified more than 50 local and regional stakeholders, public meetings were held in Columbus, Ohio, to solicit input from interested stakeholders on this project and to invite interested parties to participate in the development of this Agreement. In general, attendees were supportive of the project. Meeting summaries and stakeholder comments can be viewed at the following US EPA website:

[www.epa.gov/projectxl/columbus/index.htm](http://www.epa.gov/projectxl/columbus/index.htm). A group of diverse potential project stakeholders at the national level were also notified and informed about the project through FAX and direct mailings and referral to the Project XL website for more information.

In addition to meetings for developing the Final Project Agreement, the City will host annual stakeholder meetings, soliciting stakeholder and public participation in evaluations of the progress being made in achieving the goals of this project.

#### D. Innovative Multi-media Approach

While the CLPPP (and similar programs nationwide) has provided some of the services described in Section IV. B of this Agreement for several years (i.e., they were not initiated solely for this XLC project), the activities initiated as a result of this XLC project will allow the program to continue and could potentially strengthen its efforts in the future. The City of Columbus believes that the LSCP described in the proposal and outlined in this Agreement constitutes an innovative approach to the issue of childhood lead poisoning in its scope and breadth of services. There are four aspects of the program that are key factors in the innovation and effectiveness of the project:

1. All aspects of the childhood lead poisoning issue are addressed. In

addition to traditional screening and risk assessment functions, the project will provide an ambitious and comprehensive education effort which encourages the following: individual responsibility, long-term maintenance, prevention, and corrective measures. This project will target populations most at risk from lead hazards and will provide treatment for lead-poisoned children, develop and encourage community involvement, and address the issue of lead in drinking water with limited flexibility. It will provide up to \$100,000 per year in targeted funding for abatement and will have a "proactive" orientation to identify and eliminate potential hazards before lead poisoning occurs.

2. The comprehensive nature of the education program will provide direct training to those most-at-risk and to those who can have the greatest impact on reducing and/or eliminating lead hazards in a child's environment.
3. This project includes a proactive approach to prevent lead hazards before children are poisoned. The City will seek properties within high-risk areas, offer to perform free lead assessments, and provide up to twenty grants at an average of \$5,000 each (for a total of \$100,000 per year) for lead-hazard abatement. If the project requires further funding, the City will coordinate with the DTD to identify additional funding.
4. The nature of the relationship between the Division of Water and the Columbus Health Department in this project is unique. Public Utility resources will be designated to address aspects of an environmental or health issue outside of traditional drinking water program functions. Columbus notes that funds provided through a small CDC grant and a larger \$1.1 million HUD grant awarded for a three year period in February 1999<sup>3</sup> and the funds transferred through this XLC project will all be used to achieve overall City lead program goals. Cities such as Columbus which seek to address important but costly issues such as

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<sup>3</sup>As of July 19, 2000 the City has received applications for over 140 units for use of the funds provided by the HUD grant awarded in February 1999. If all the applicants complete the process, the City will have completely allocated all lead abatement grant monies from its \$1.1 million, round 6 HUD grant.

lead poisoning are struggling to identify resources with which to do so. This relationship provides an invaluable opportunity to maximize available resources on the local level to apply a logical and appropriate response to a serious environmental and health issue.

Simultaneous with the LSCP activities, the City Water Division will be working in consultation with US EPA, OEPA and treatment experts to continue providing optimal water treatment which is designed to maintain minimal lead levels in drinking water.

#### E. Transferability of the Approach to Other Communities

Similarly situated water systems may be able to adopt a similar multi-media approach to lead reduction. These suppliers must be willing to make extraordinary efforts toward compliance with US EPA and State regulations. They must consult with experts in the field and seek State approval before any treatment changes. In addition, the suppliers must provide significant funding to effective programs that deal with lead paint and dust exposure.

#### F. Feasibility of the Project

The Columbus Division of Water is considered fully competent and capable of reaching all of its commitments under this project, having completed successful sampling and analysis in accordance with the provisions of the LCR and having reduced lead levels quickly in the past following an exceedence of the AL.

The Columbus Department of Health has a proven track record in delivering services to lead-poisoned children, and has a history of inter-agency cooperation on this issue. Early in 1997, the program was invited to attend the national lead conference in Washington, D.C., conducted by HUD and the National Center for Lead Safe Housing, where Columbus presented on the topic of "Interagency Cooperation and Successful Lead Abatement Programs." Columbus stated that it is considered to be a national model for such cooperative efforts, and was recognized as such by receiving a *Best Practices Award* from HUD in 1998 for its educational program. The City's XLC proposal notes that necessary alliances with government agencies, community groups, parent support organizations,

and professional and business groups are in place. The Columbus Department of Health staff have the necessary expertise and are experienced in providing similar services.

#### G. Monitoring, Reporting, Accountability, and Evaluation Methods

The primary objective of the LSCP is to ameliorate the impact of an environmental hazard, i.e., lead, on the health and well-being of that portion of the community most at risk from its effects. Columbus intends to monitor, report and evaluate both the reduction of lead in the environment and the reduction in the incidence of childhood lead poisoning, as a result of the LSCP, both within the community at large and within those neighborhoods which have been most at-risk.

Since all blood lead levels of children younger than six years old are reported to CLPPP, the impact of both the program's general public education and targeted education efforts should be reflected in the incidence rate for elevated blood lead levels in the community as a whole and within target neighborhoods. In addition, Columbus will provide lead hazard identification and medical case management, and track follow-up blood lead levels for all those with EBLLs. The effectiveness of medical case management, education and abatement efforts will be measured. It is expected that there will be a drop in blood leads for those children receiving services. The impact of the additional funds being directed to the LSCP can be measured by the increased drop in blood lead levels compared with past years.

All data regarding lead hazard risk assessments will be stored in a data base. Whenever abatement activity occurs, dust and soil samples will be collected to verify that safe levels have been attained. The City will also conduct six-month follow-up sampling to determine whether lead-safe levels are maintained. This will provide the City with a valid measure of both the abatement methods used and the long-term effectiveness of education.

When formal education classes are provided for property owners, maintenance crews, painters or parents, pre- and post-testing will be conducted to determine the effectiveness of the education module. In addition, free initial blood lead screening and follow-up blood tests will be

offered to the children of participants. The expected results will be that those children that do not have an elevated blood level at the time of the training will not develop one in the future, and that those with elevated blood levels will have lower lead levels at follow-up.

At the time the Division of Water identifies a proposed treatment change (as defined in the Glossary of Terms), the Water Division will consult with treatment experts, US EPA and OEPA to determine which parameters should be measured, the number of samples, monitoring locations, and monitoring frequencies. Based on that consultation, the OEPA will then designate monitoring requirements (if any) in addition to those listed below. The additional monitoring requirements (if any) will be incorporated into this Agreement through an amendment to this Agreement.

Once a treatment change is approved by OEPA, and the City installs the new treatment, any impacts from these changes will be measured through the analysis of tap water lead sampling and measurement of water quality parameters at each treatment plant and throughout the City as specified in this Section. A requirement of this project is that the City monitor at the frequency established in the table that appears on pages 21 and 22 of this Agreement.

The City will be required to submit to US EPA, ODH, and OEPA, for the life of the project, annual reports describing funding and accomplishments for that year, unless the data shows that drinking water lead levels are rising, in which case the City will be required to report the data as soon as the City discovers a trend that shows lead levels at the tap are rising. Data collected and notable trends should be presented and discussed in the reports. Drinking water monitoring results will be reported as specified in Section VI.D of this Agreement.

**General Requirements:**

1. Tracking and reporting will be necessary throughout the life of the project;
2. Performance data will be made available to the public;

3. At a minimum, the project sponsor will prepare an annual report; and
4. The reports will be made available on the internet, via the sponsor's or another organization's internet site, and will feature a "hot link" to the US EPA Project XL website. This will eliminate the submission of "hard copy" project reports to US EPA.

Specific elements to be monitored/tracked and reported for the LSCP (and reported in a manner and on a schedule specified by US EPA):

1. Number of grants issued per year for small lead-abatement projects;
2. Number of children screened;
3. Number of children with elevated blood lead levels;
4. Number of children receiving medical case management per year;
5. Number of lead hazard investigations conducted;
6. Number of lead hazard reductions completed;
7. Number of professional educational presentations to medical providers, nursing schools, etc.; and
8. Number of presentations to community groups and social service agencies.

Specific elements to be monitored/tracked and reported by the Water Division:

Parameter	Location	Frequency
Alkalinity	EP <sup>4</sup> to DS <sup>5</sup>	Biweekly

<sup>4</sup> EP - Entry Point

<sup>5</sup> DS - Distribution System

Parameter	Location	Frequency
Alkalinity	Distribution System	2 Samples from 25 sites, every 6 months
Calcium	EP to DS	Biweekly
Calcium	Distribution System	2 Samples from 25 sites, every 6 months
Copper	Distribution System	100 samples every 6 months
Lead	Distribution System	100 samples every 6 months
Orthophosphate	Distribution System	2 Samples from 25 sites, every 6 months
Orthophosphate	EP to DS	Biweekly
pH	EP to DS	Biweekly
pH	Distribution System	2 Samples from 25 sites, every 6 months

#### H. Avoidance of Shifting the Risk Burden to Other Areas or Media

The project is consistent with Executive Order 12898 on Environmental Justice. It will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations. It is possible that changes to the City's water treatment could cause lead levels to rise temporarily for all City residents. However, this project is designed to ensure that lead levels in drinking water will continue to be minimized. Moreover, even if lead levels were to rise and the LSL sampling and replacement requirements suspended pending treatment modifications, the project incorporates numerous safeguards, as described above, to protect against any disproportionately high lead levels and adverse health effects to any City residents, including minority or low-income populations. In fact, taken as a whole, the terms and requirements of the SDWA variance which will be used to implement this



project, combined with the multimedia impacts of the LCSP, will provide enhanced protection to minority and low-income populations from health risks caused by potential exposures to lead from multiple sources in the City.

#### I. Capacity for Community Participation

On May 16, 2000, and June 27, 2000, public meetings were held in Columbus, Ohio, to solicit input from interested stakeholders on this project and to invite interested parties to participate in the development of this Agreement. In general, attendees were supportive of the project. Meeting summaries can be viewed at the following US EPA website: [www.epa.gov/projectxl/columbus/index.htm](http://www.epa.gov/projectxl/columbus/index.htm)

In addition to meetings for developing the Final Project Agreement, the City will host annual stakeholder meetings, soliciting stakeholder and public participation in evaluations of the progress being made in achieving the goals of this project.

#### J. Economic Opportunity

Based on recent work done in Columbus, if the City were to be required to sample the minimum number of sites, 7% annually, it would cost approximately \$360,000 for the first year based on the number of LSL sites. The cost per year will rise thereafter due to progressively increased difficulty in attaining samples. The aggregate costs of LSL replacement would depend on the number of service lines where sampling indicates lead levels above 15 ug/L or where samples could not be obtained from residential plumbing, and therefore lead levels would be assumed to be above 15 ug/L. Estimates of average per line replacement costs range from \$1200 per line (US EPA estimate based on an average of estimates from water systems around the country) to \$3000 per line (City of Columbus best estimate). There are 28,802 lead service lines in the City of Columbus. In a worst case scenario where the City would have to replace all lead service lines the aggregate costs range from \$34,562,400 (based on a \$1200 per line replacement cost) to \$86,406,000 (based on a \$3000 per line replacement cost).

#### K. Community Planning

The LSCP is part of a network of organizations dedicated to identifying and reducing the risk of lead poisoning in children under the age of six. These organizations will be directly involved in the design and implementation of the LSCP. By working together, the network will develop and implement a community plan which will provide a wide range of services to the residents of Columbus, including free blood testing, medical intervention for lead-poisoned children, lead hazard identification and remediation, loans and grants for lead abatement, and public education.

## **V. Requested Flexibility and Implementation Mechanism**

### **A. Requested Flexibility**

Through this XLC project, the Columbus Division of Water will be given regulatory flexibility from the LCR if a water treatment change is made, and if that change results in an increase in lead levels above the Action Level. Under Federal and State law, should the City exceed the lead AL, it must begin sampling LSLs immediately and replacing those lines that contribute more than 15 • g/L of lead. This project will afford the City a temporary suspension of the LSL sampling and replacement requirements (for up to three years) while the City makes treatment modifications. In exchange for this flexibility, the City Department of Water will contribute \$300,000 a year for 15 years to the LSCP. Additionally, the City will take extraordinary steps in considering water treatment changes and conduct increased monitoring in order to maintain lead levels at the lowest levels possible.

### **B. Legal Implementation Mechanisms**

US EPA has identified a Safe Drinking Water Act (SDWA) variance as the appropriate federal mechanism that will be used to implement this project. The legal provisions found at Section 1415(a)(3) of the SDWA give US EPA the authority to grant a variance from a treatment technique:

“upon a showing by any person that an alternative treatment technique . . . is at least as efficient in lowering the level of the contaminant with respect to which such requirement was prescribed.”

US EPA Region 5 proposed a variance for Columbus based on implementation of an alternative treatment technique that will be at least as efficient in lowering the level of lead as LSL sampling and replacement.<sup>6</sup> US EPA Region 5 intends to issue the variance as soon as practicable, taking into account public comment on the proposal. The variance will become effective only if the City adopts a treatment change, and the treatment change results in an exceedence of the lead Action Level. Columbus will not be considered to be "operating under a variance" unless and until the variance becomes effective. The alternative treatment technique involves closer coordination between Columbus, OEPA and US EPA on water treatment changes as explained below, while allowing Columbus to adjust its existing drinking water treatment, to establish the most effective level of lead treatment in conjunction with its other water treatment processes, so that the entire treatment process will provide the same long-term benefit of protecting the citizens of Columbus as LSL sampling and replacement would. An added benefit is that Columbus has agreed to fund the LSCP at the rate of \$300,000 per year.

To ensure that the alternative treatment technique is as effective as possible, and provides at least an equivalent level of protection as the existing regulations, extra measures will be taken to ensure its effectiveness. The City will consult with experts in the field of lead treatment, as well as the OEPA, and US EPA Region 5. Consultations will involve optimizing the City's current treatment, based upon the best technical judgment of the relevant experts. Columbus will implement treatment changes (as defined in the Glossary of Terms) only with the concurrence of the State.

Finally, Columbus will carefully monitor levels of lead in the system, and take immediate steps to attempt to reverse any trend towards higher lead levels. Columbus will report monitoring results to OEPA and US EPA Region 5 as specified in Section VI.D of this Agreement.

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<sup>6</sup> A Notice of Availability of City of Columbus Project XL for Communities (XLC) Draft Final Project Agreement and Safe Drinking Water Act (SDWA) Draft Variance was published in the Federal Register on July 27, 2000 (65 FR 46166).

This alternative treatment technique will be at least as efficient as the existing rule in lowering the level of lead in drinking water, since it is designed to ensure that levels are truly minimized system-wide as Columbus implements desired treatment changes. Through this alternative, benefits will be provided to all users, including those users whose LSLs would have been monitored and/or replaced under the existing rule. In addition to these benefits, the project will provide the substantial health benefits associated with the LSCP.

In the event that the City of Columbus exceeds the Lead Action Level, the Ohio EPA intends to issue Director's Findings and Orders addressing the Action Level exceedence and incorporating the schedules for compliance by the City set forth in the FPA. The Ohio EPA reserves the right to address any other of the City's violations of the Ohio Revised Code and the rules adopted thereunder through enforcement or other means.

## **VI. Intentions and Commitments for Implementation**

### **A. Columbus' Intentions and Commitments**

1. If the lead AL is exceeded, the Columbus Water Division will take aggressive steps to lower lead levels at consumer's taps.
2. Upon installation of any new water treatment (as defined in the Glossary), the City Water Division will begin increased sampling in accordance with Section IV.G of this Agreement.
3. If the lead AL is exceeded as a result of the installation of new water treatment, and the City is successful in maintaining or lowering lead levels below the AL by the end of the three year period of flexibility, the City will work with OEPA to re-establish optimal corrosion control treatment for lead (to lower lead levels at consumer's taps as much as possible, taking other existing water treatment into account).

4. The Columbus Water Division will provide \$300,000 in annual funding to the LSCP for 15 years, beginning January 1, 2001.
5. The LSCP will target the area described in Appendix B for prioritizing program activities.
6. The LSCP will provide free blood screening at its monthly clinic and conduct probe screens within the community.
7. The LSCP will test all children under six for blood lead content at all sites where the lead level at the tap exceeds the AL.
8. The LSCP will offer to test all children under six (for blood lead levels) who reside in the same building where a child has been tested at the monthly clinic and found to have an EBLL.
9. The LSCP will provide medical case management for all children with EBLLs greater than or equal to 15µg/dL.
10. The LSCP and/or Columbus Water Division will provide lead public education materials to Columbus residents, health care providers, private day-care and elementary schools, and school district offices in Franklin County.
11. The LSCP and/or Columbus Water Division will provide public service announcements to all local media when appropriate.
12. The LSCP will conduct lead hazard risk assessments for all children with EBLLs equal to or greater than 15µg/dL.
13. The Columbus Water Division will sample tap water in all cases of EBLLs.
14. The LSCP will conduct lead hazard risk assessments for all privately-owned, low-income residences built before 1978 which apply for rehabilitation activity funding from the Department of Trade and Development (DTD).

15. The LSCP will provide lead public education/outreach materials in high-risk areas on an ongoing basis, as follows:
  - a. Direct mail: The program will provide Lead Information Packets (LIPS) to the parents of all children tested with a blood lead level of 10 ug/dL or greater by direct mail. The packets will provide educational brochures designed to assist the parents in preventing/reducing the risk and impact of lead hazards.
  - b. Professional outreach: Educational brochures will be provided to medical providers and clinics serving high-risk neighborhoods for distribution to their patients.
  - c. Community groups: The program will work with community groups, fairs and social service agencies serving the target neighborhoods (Head Start Programs, Health Fairs, Columbus Metropolitan Housing Authority, etc.) to distribute materials throughout their communities.
16. The LSCP will issue up to 20 lead hazard identification and abatement grants (totaling up to \$100,000 per year) for low to moderate income housing owners, and will facilitate funding of larger lead abatement projects through low-interest loans from the DTD.
17. The City will host annual stakeholder meetings, soliciting stakeholder and public participation in evaluations of the progress being made in achieving the goals of this project.

#### B. US EPA and OEPA Intentions and Commitments

1. US EPA proposed a variance in accordance with the provisions of Section 1415(a)(3) of the SDWA to provide Columbus with the necessary flexibility from the LCR rule requirements governing LSLR and will take final action on the variance after consideration of public comments. The variance will become effective only if the City implements its voluntary agreements under this FPA, adopts a treatment change, and the treatment change results in an exceedence of the lead Action Level. Columbus will not be considered to be "operating under a variance" unless and until the variance becomes