



# Love Canal Follow-up Health Study Background Community Report

This report provides background information about why the Love Canal Follow-up Health Study was done, how it was done, who was included and its strengths and weaknesses. The study is being done by the New York State Department of Health.

## About Love Canal

Love Canal is a chemical waste landfill that was used for the disposal of some 21,800 tons of chemical waste located in a residential neighborhood in Niagara Falls, New York. In 1953 the landfill was covered with soil and an elementary school and private homes were built adjacent to the Canal. By the late 1970s, there was major chemical seepage, irritating smells and other signs of contamination from the landfill. Between 1978 and 1980, several hundred residents within one block of the Canal and 3,000 additional residents in about a six-block area were evacuated. In 1986, an expert panel of scientists studied whether the area was suitable to live in again. In its report, the panel recommended that the New York State Department of Health conduct a study to determine if Love Canal residents experienced higher rates of certain health problems than was seen in other similar communities, or if there were more incidents of death, cancer or birth problems among Love Canal residents.

## About the Follow-up Study

In December 1995, the U.S. Department of Justice filed a settlement agreement of its Love Canal lawsuit against Occidental Chemical Company on behalf of the U.S. Environmental Protection Agency (EPA). The agreement included a \$3 million fund for follow-up health studies of Love Canal residents. The U.S. Agency for Toxic Substances and Disease Registry (ATSDR) was charged with administering the fund. ATSDR conducts health studies at hazardous waste sites across the country and after requesting proposals for the project, selected the New York State Department of Health (NYSDOH) to do the study.

In 1996, we (the NYSDOH) began gathering information for a comprehensive 20-year follow-up health study of Love Canal residents. The study (called the Love Canal Follow-up Study) is really four smaller studies. One focuses on birth outcomes, one on death rates and causes, and one on cancer incidences of a group of residents. The fourth measures and evaluates the amount of some Canal chemicals in those residents' blood whose samples had been stored. The four studies are intended to stand alone

and are based on information about the same group of Love Canal residents (called the Study Group). The four studies share common elements including the tracing (or search method) used to determine who was living or who had died among the Study Group, evaluating their likelihood of exposure to Canal chemicals, and computerizing information obtained from their earlier health status interviews.

Since the beginning of the Love Canal follow-up study in 1996, many changes in study design and focus have occurred. The changes largely resulted from active participation with an Expert Advisory Committee, community consultants, former Love Canal residents, and NYSDOH researchers.

## About the Study Group (Cohort)

Love Canal residents included in the 1996 follow-up study were the same group of residents that were interviewed (or their children) between 1978 and 1982 by the NYSDOH (6,181 people total). At that time, the NYSDOH interviewed adults over the age of 18 who had lived in the Love Canal area. The interviews recorded their health status and names and birth dates of their children. Their children (now adults) were included in the study if either parent had mentioned them during their past interview. About one fourth of the study group includes individuals who were children at the time of the Love Canal event (1978 to 1980). The study group includes an equal number of residents who were still living in the Love Canal area at the time of the interviews and residents who had moved away.

For the follow-up study, the first step for researchers was to find out what had happened to those Love Canal residents and their children who were interviewed almost 20 years ago. Figure 1 on the back of this page shows the process used to trace which residents were still living and which were deceased as of 1996. We used the results of this one tracing effort for each of the four smaller studies that make up the whole follow-up study.

## Study Strengths and Weaknesses

All health studies have strong points as well as weaknesses. One of the strong points of the follow-up study is that we successfully traced so many of the former Love Canal residents (97%) so that they could be included in the study. Another is that because we have their past interviews, we know exactly where people lived in the Love Canal area and for how long.

Most studies like this one can only compare all of the people who lived in an area to a group of people living elsewhere without a chemical exposure. Knowing where people lived and for how long lets us compare people within the Love Canal area to each other. This would tell us if people living closer to the Canal or for a longer time in the Canal area were more at risk for health problems than those living farther away or for a shorter length of time. We also have information from the interviews about people's jobs and their smoking or drinking habits, all of which could affect their health.

There are limits to what we can learn from the follow-up study. Our study group only included those who agreed to be interviewed, so we were not able to include all people who lived in the Love Canal from 1940 until 1978. Also, since we could not interview those who had died before the 1978 interviews, these residents' information could not be used. In addition, we do not know to what chemicals and concentrations people were exposed before 1978. Some exposure data became available around this time. For the follow-up study, we used distance people lived from the Canal, when they lived there, how long they lived there and their behaviors as a way to estimate residents' exposure.

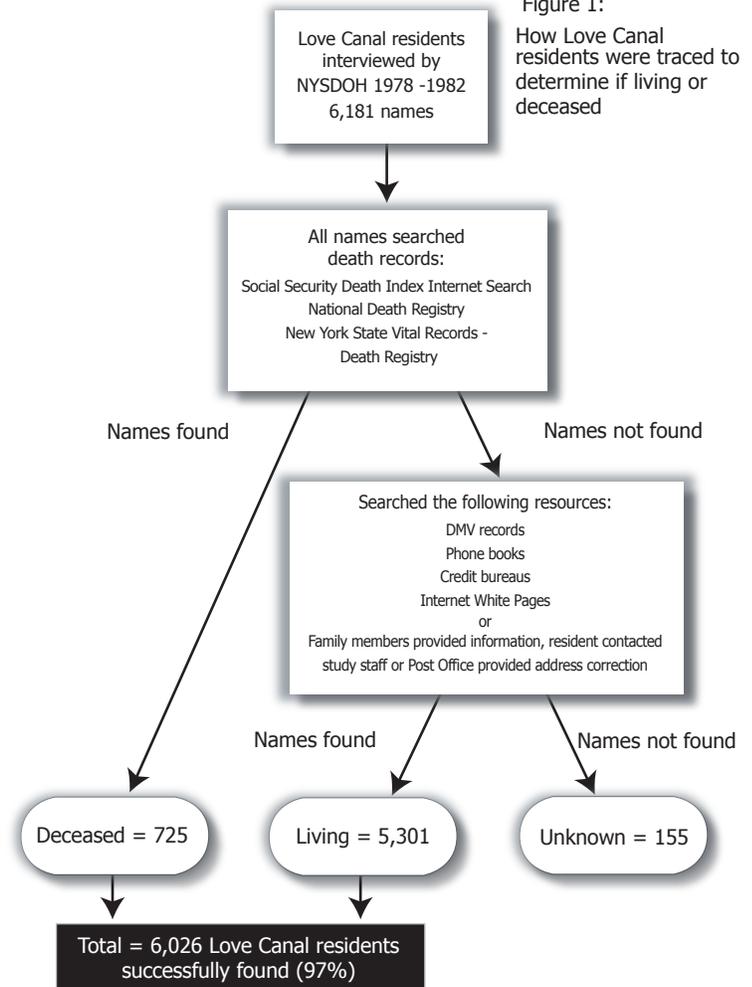
Another drawback in the follow-up study is the small number of individuals with health effects (for example, certain birth defects). This can limit what we can learn because deciding something is a pattern is hard if only one or two people are affected by it. In addition, the residents in this study are still relatively young. The effects of living in the Love Canal area may not be seen until people get older, especially when studying cancers and causes of death.

Lastly, we only looked at health outcomes that are available to researchers from health registries. A registry is a collection of records (deaths, cancer, birth defects) from reports by doctors and hospitals submitted to New York State. An advantage of using registries for health studies is that the information does not depend on how completely people remember their illnesses, particularly details like dates and medical visits. However, many health problems are not reported to registries, and therefore were not included in the follow-up study.

### Why the Follow-up Study Was Done

When scientists and other experts studied whether the Canal area could be lived in again, they recommended that a follow-up health study of residents be done. The NYSDOH undertook this four part study to fulfill this request. What we found can be used by the Love Canal community to track their own health in the future and by others who may wish to conduct further research.

Figure 1:  
How Love Canal residents were traced to determine if living or deceased



This report is one in a series of five intended to provide results of the Love Canal Follow-up Health Study. These reports will be made available to the Love Canal community and others over the coming months. The five reports are:

- Background Information
- Mortality Study
- Cancer Study
- Reproductive Study
- Serum Indicator Chemical Study (LCIC)

### For More Information Contact:

New York State Department of Health  
547 River Street, Room 316  
Troy, NY 12180-2216  
(800) 458-1158 ext. 27530  
[http://www.nyhealth.gov/environmental/investigations/love\\_canal/](http://www.nyhealth.gov/environmental/investigations/love_canal/)  
E-mail: [ceheduc@health.state.ny.us](mailto:ceheduc@health.state.ny.us)