# Public Health Assessment
## Mercer Rubber Company Site

**New Jersey Department of Health and Senior Services**

**in cooperation with the**
**U.S. Agency for Toxic Substances and Disease Registry**

Community Meeting, Hamilton Township
September 13, 2006

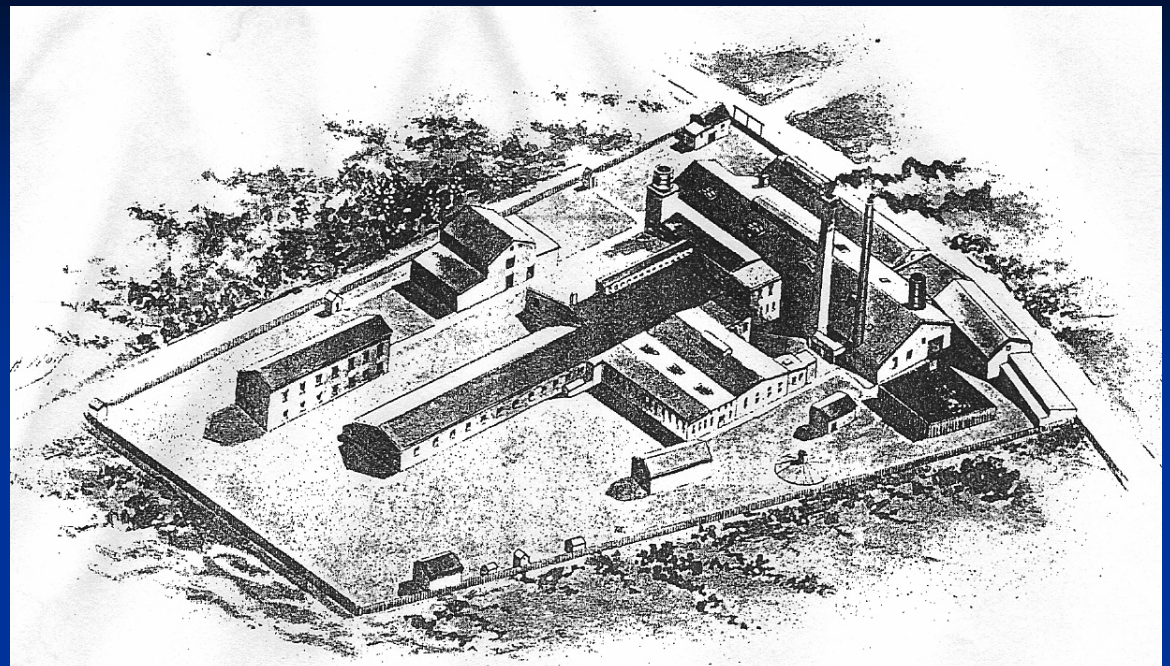
# Public Health Assessment Goals

- Respond to petition to ATSDR

- Characterize environmental contamination
- Identify and assess human exposure pathways
- Examine public health implications of contaminant exposures
- Recommend appropriate public health actions

# Site Background

- Located at 136 Mercer St., Hamilton Township
- Rubber product manufacturing, 1866 to 1993
- Site remediation overseen by NJDEP beginning 1993
- Site re-developed beginning in 2000
- Township developed 30 acres across from the site (known as Sayen House and Gardens)



# MERCER RUBBER COMPANY.

INCORPORATED 1870.

P. O. Address, Trenton, N. J. Works at Hamilton Square, N. J.

MANUFACTURERS OF RUBBER GOODS FOR MECHANICAL PURPOSES.

Makers of the highest grades of Pure Para Belting, Pure Para Steam, Fire, Suction, Water and Air Brake Hose. Our duck is woven expressly for these goods, and time guarantees given with branded dates. We also make a specialty of Valves, Fruit Jar Rings, Pure Gum, Cord, Perforated Mats and Matting. Our Garnet Sheet Packing is unsurpassed by anything on the market—soft and tenacious—compound not affected by heat. Tubing, Wringer Rolls, C. I. Gaskets and Rings of all kinds. Kindly write for catalogue.

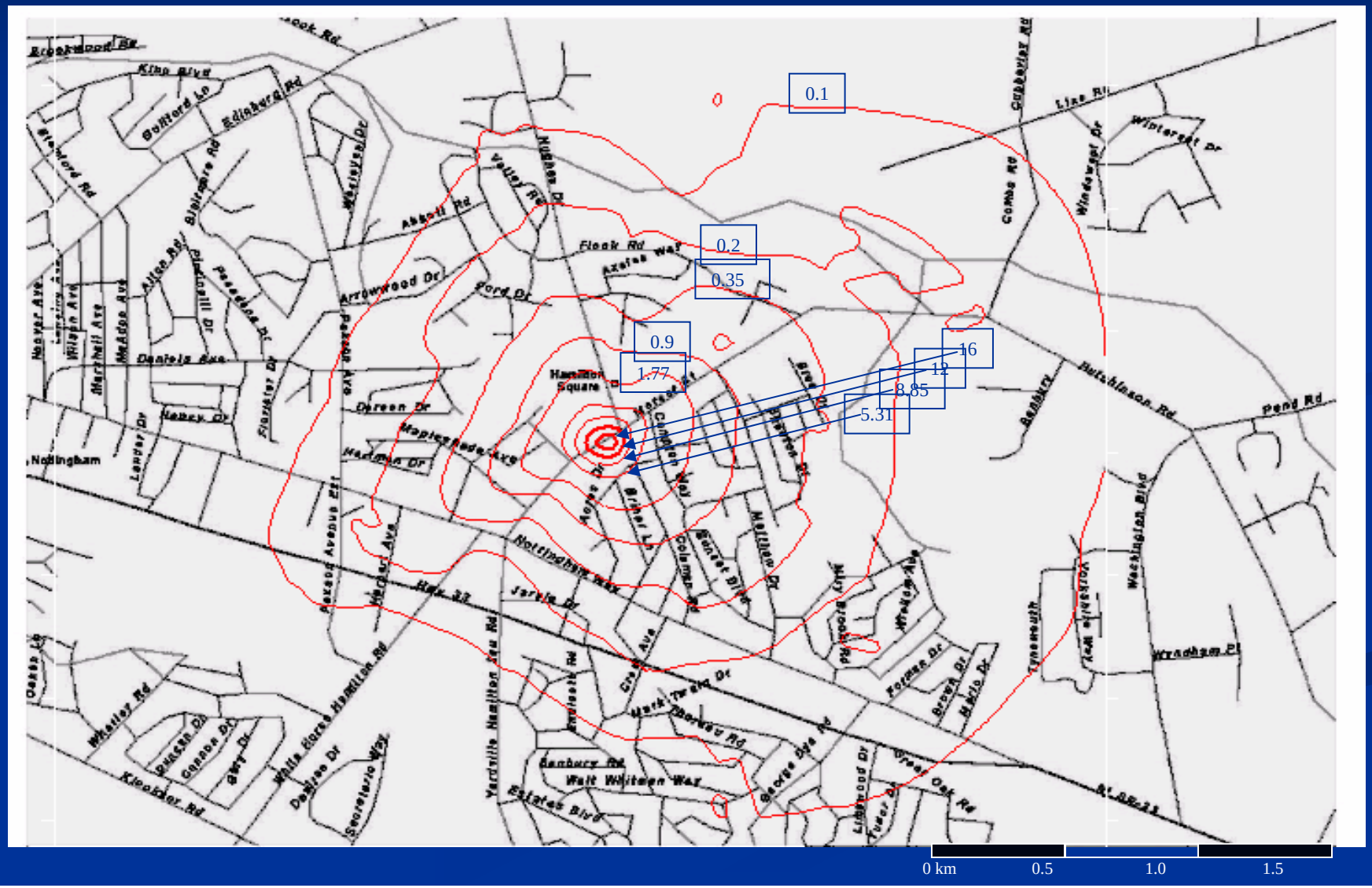
**Residences built at former Mercer Rubber Company site**

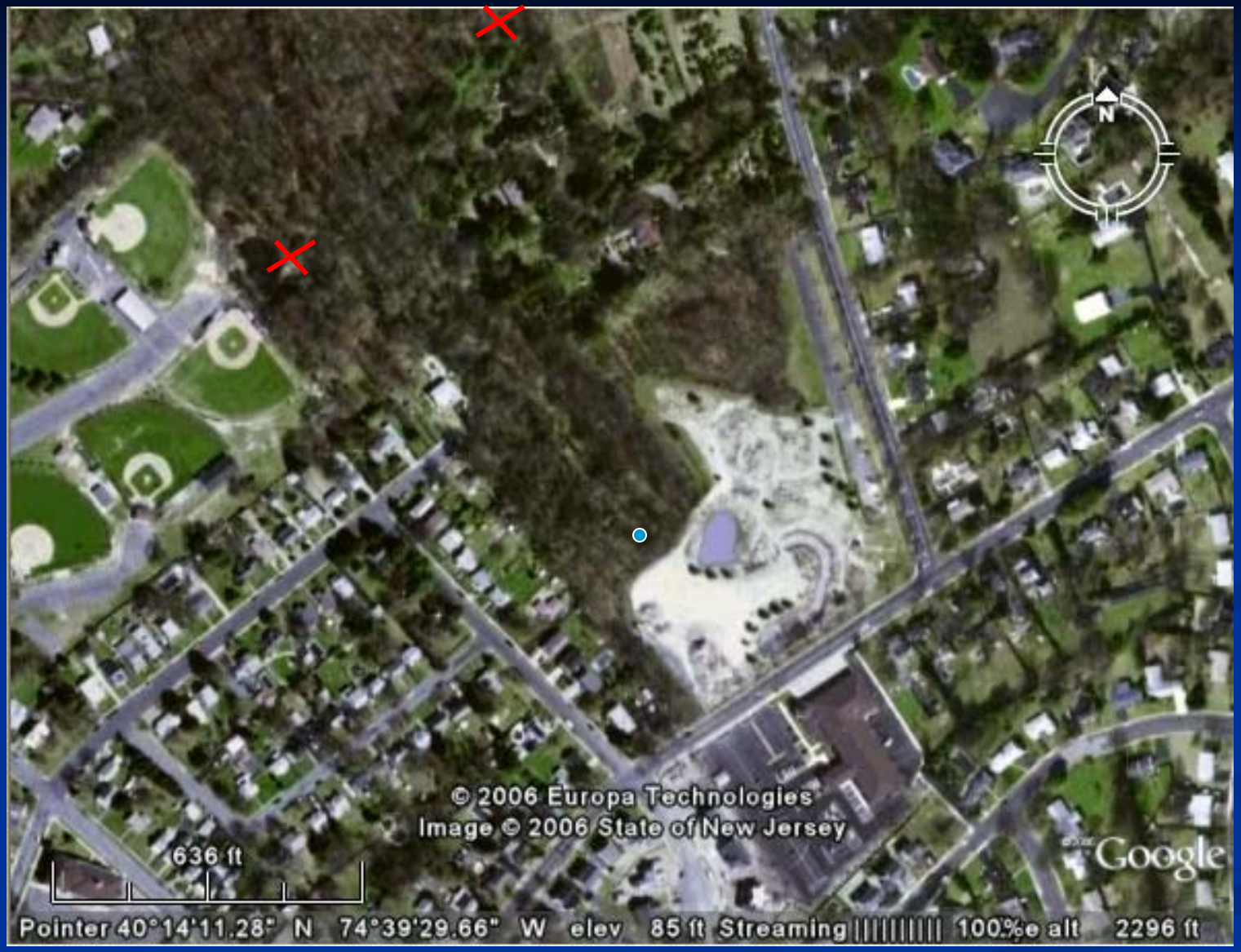
Sayen Gardens (across Mercer Street)

# Environmental Contamination

- On-site Areas
  - 14 on-site areas of concern (1993)
  - Soils contaminants in 8 areas
    - Petroleum hydrocarbons, solvents, metals, PCBs
  - Remediation overseen by NJDEP
- Off-site Areas
  - Limited local groundwater sampling shows no contamination
  - Public water supply wells not contaminated
  - Allegations of off-site dumping and migration of contaminants via discharge to creek
  - Dispersion of air contaminants during operations

# Reconstruction of historic annual average ambient toluene concentrations (in μg/m³)






Approximate locations of alleged waste disposal

**Pond located adjacent to the Township Athletic Baseball Fields**

Disposal  area located to the north of the Sayen House

Outfall pipes draining into the unnamed creek

# Exposure Pathways

- Completed Exposure Pathway
  - Inhalation of ambient air (past)
  - Eliminated since closure of plant
- Potential Pathways
  - Incidental ingestion of off-site soils and surface water in areas of alleged waste disposal
  - Inhalation of contaminants in indoor air via vapor intrusion
  - Ingestion of groundwater from private domestic wells

# Conclusions

- ***No Apparent Public Health Hazard*** to the current residents of on-site homes

- Historic exposures from ambient air pathway could not be fully characterized due to lack of production records and air permit information

- Since off-site environmental sampling has not been conducted, off-site exposures related to allegations of past waste disposal could not be evaluated

# Recommendations

- Assess potential contamination of off-site soils where Mercer Rubber Company wastes were allegedly dumped.

- Assess potential for vapor intrusion by sampling area shallow groundwater.

- Investigate the location and use of private domestic wells in the area.

# Health Consultation

Analysis of Cancer Incidence near the Former Mercer Rubber Company Site

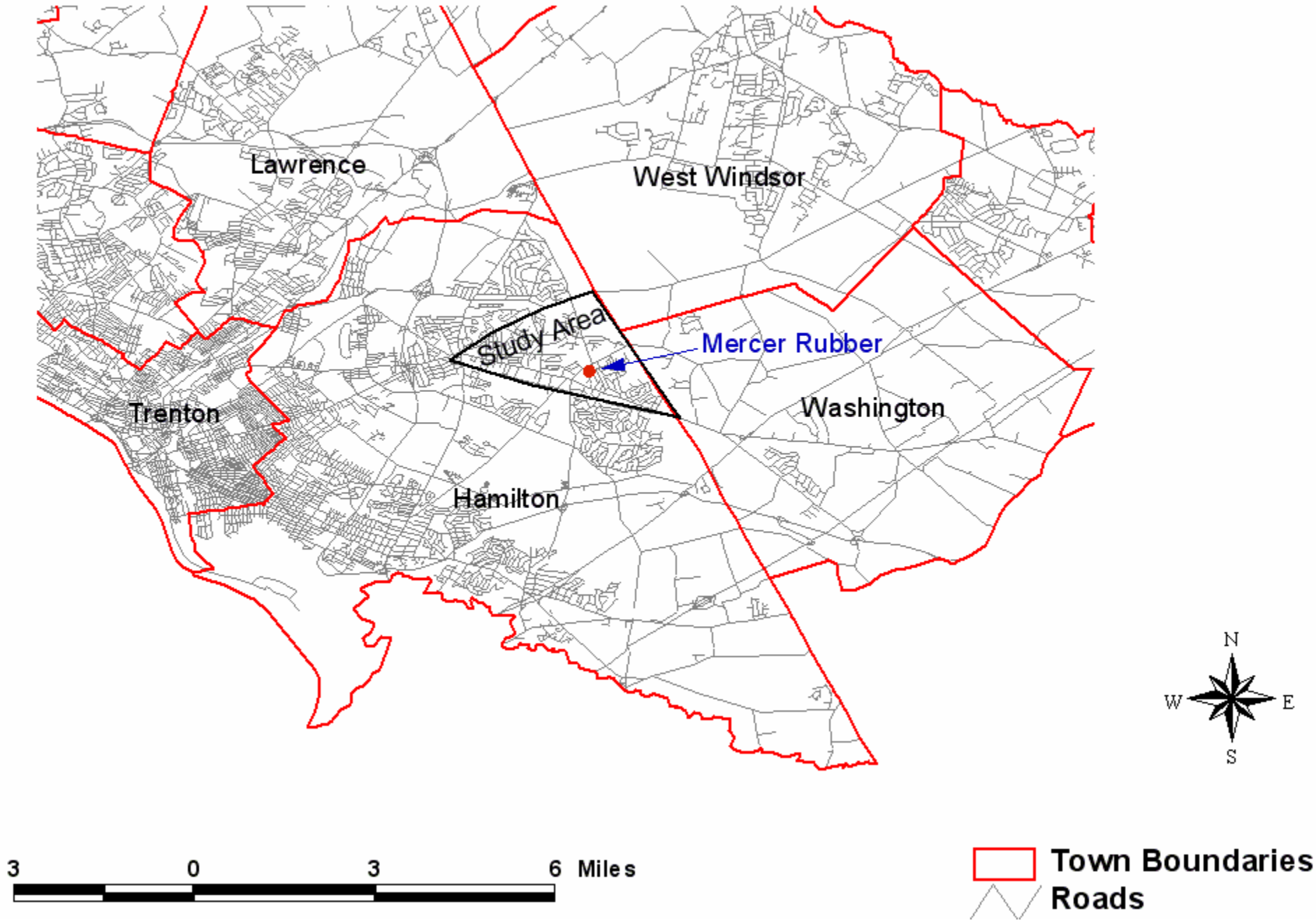
# Cancer Incidence Data

- New Jersey State Cancer Registry (Oct 1978)
- All incident cancer cases among New Jersey residents are required by law to be reported
- Geographic assignment of cases based on residence at diagnosis

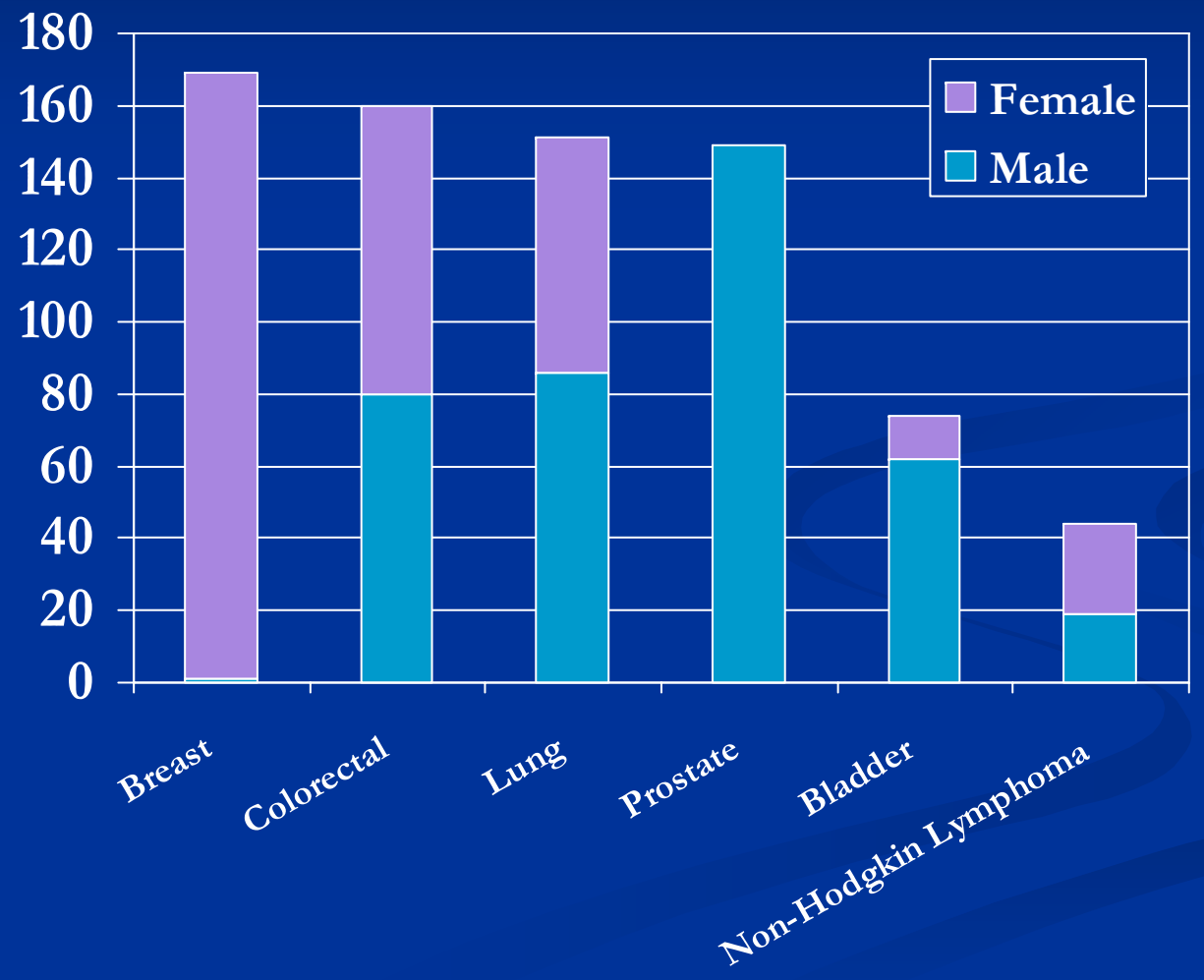
# Steps in Cancer Incidence Analysis

- Define study population and time period
- Determine number of "observed" cancer cases
- Estimate number of "expected" cancer cases
- Compare "observed" to "expected"
  - Standardized incidence ratio (SIR)
  - Statistical test to determine if difference is likely due to chance alone

# Figure 1. Mercer Rubber Study Area



# Most Common Cancers, 1979-2001
## *Mercer Rubber Study Area*



# Standardized Incidence Ratios, Selected Cancer Types, 1979-2001
## *Mercer Rubber Study Area*

| Cancer Type | Male | | Female | |
|---|---|---|---|---|
| | Obs / Exp | SIR | Obs / Exp | SIR |
| All cancers combined | 566 / 582.9 | 0.97 | 575 / 559.8 | 1.03 |
| Breast | - | - | 168 / 169.9 | 0.99 |
| Colorectal | 80 / 83.2 | 0.96 | 80 / 79.4 | 1.01 |
| Lung | 86 / 102.8 | 0.84 | 65 / 62.2 | 1.05 |
| Bladder | 62 / 43.7 | 1.42* | 12 / 15.7 | 0.77 |
| Brain/CNS | 11 / 8.5 | 1.29 | 13 / 6.9 | 1.87* |
| Leukemia | 17 / 14.9 | 1.14 | 15 / 11.4 | 1.32 |
| Non-Hodgkin Lymphoma | 19 / 21.4 | 0.89 | 25 / 19.0 | 1.31 |

* Difference between observed and expected is statistically significant

# Conclusions

- Overall cancer incidence not elevated
- Brain/CNS cancer significantly elevated in females
- Bladder cancer significantly elevated in males

- Current evaluation provides little evidence that cancer rates in the neighborhood were affected by the site