Utah Environmental Public Health Tracking Program

Rapid Inquiry Facility (RIF)

Environmental Epidemiology Program
Utah Department of Health

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www.health.utah.gov/els/epidemiology/envepi/Default.htm

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Utah Department of Health

Promote Prevent Protect

A Study of the Association Between Cancer Rates and TCE Ground Water Contamination in Communities Surrounding Hill Air Force Base, Utah from 1973 - 2001

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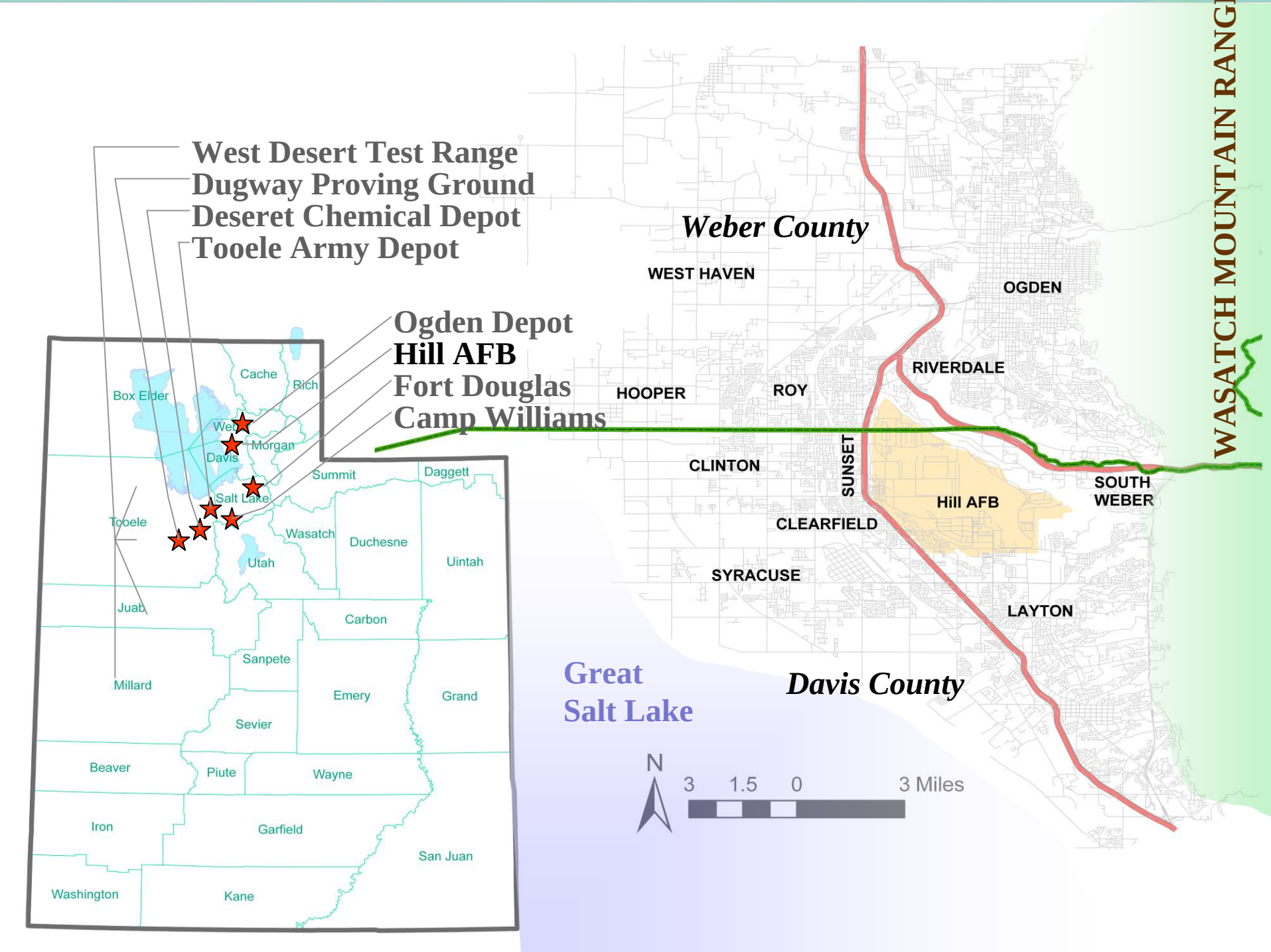
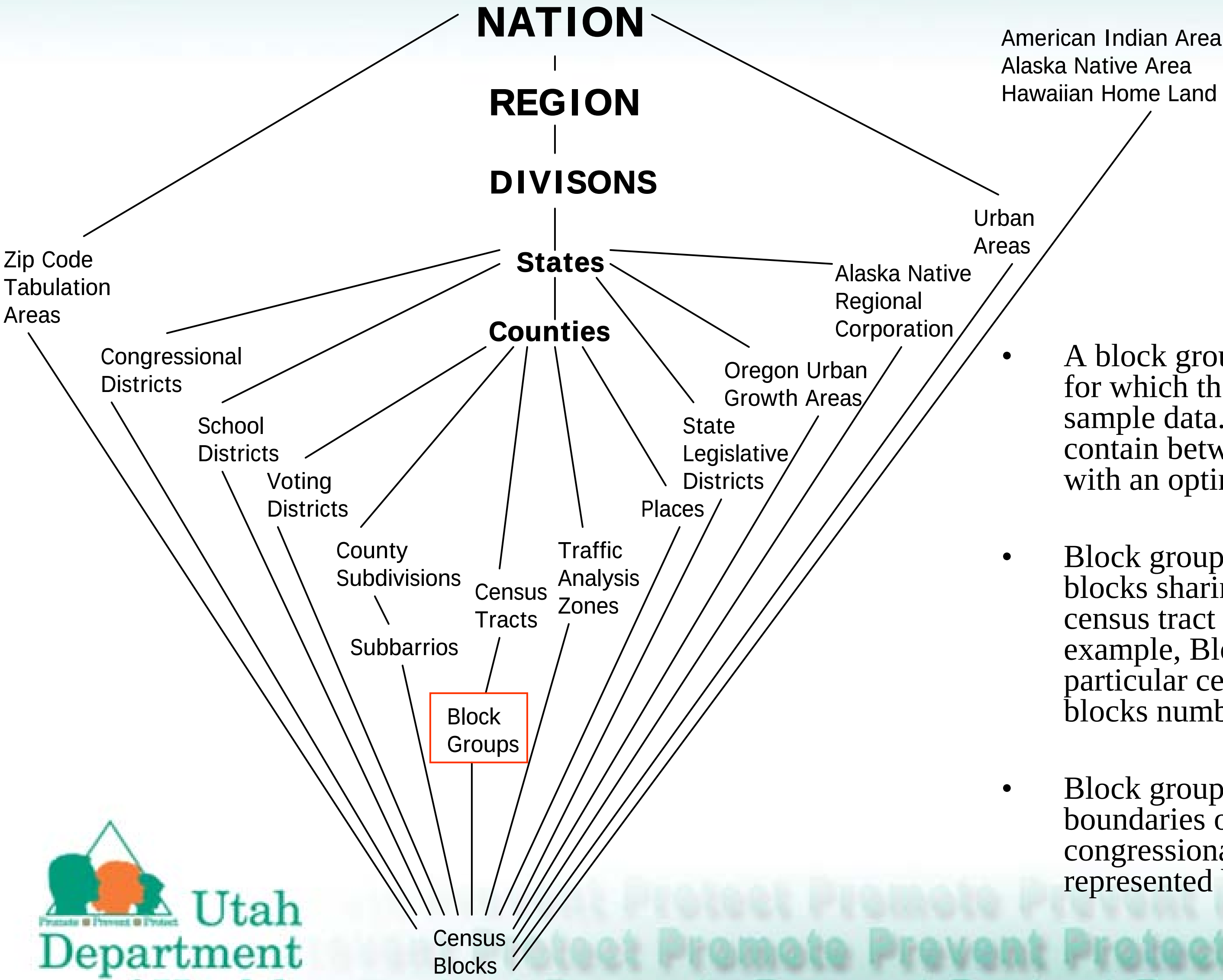

West Desert Test Range
Dugway Proving Ground
Deseret Chemical Depot
Tooele Army Depot
Ogden Depot
Hill AFB
Fort Douglas
Camp Williams
Box Elder
Cache
Rich
Weber
Morgan
Davis
Salt Lake
Tooele
Summit
Daggett
Wasatch
Duchesne
Uintah
Utah
Juab
Carbon
Sanpete
Millard
Emery
Grand
Sevier
Beaver
Piute
Wayne
Iron
Garfield
San Juan
Washington
Kane
Weber County
WEST HAVEN
OGDEN
RIVERDALE
HOOPER
ROY
CLINTON
SUNSET
SOUTH WEBER
Hill AFB
CLEARFIELD
SYRACUSE
LAYTON
WASATCH MOUNTAIN RANGE
Great Salt Lake
Davis County
N
3 1.5 0 3 Miles

Geospatial Reference Data



- A block group is smallest geographic unit for which the Census Bureau tabulates sample data. Block groups generally contain between 300 and 3,000 people, with an optimum size of 1,500 people.
- Block groups are defined as that set of blocks sharing the same first digit within a census tract or non-tracted area. For example, Block Group '3' within a particular census tract would include any blocks numbered between 300 and 399.
- Block groups may cross and be split by the boundaries of MCD's, places, and congressional districts. They are represented by a one digit numeric code.

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Geospatial Reference Data

- U.S. 2000 TIGRE Census Block Group shape file for the State of Utah
  - Feature Type: Polygons
  - Projection: NAD 1983 UTM Zone 12N
  - Reference Key: Standard Federal Idenfier
    - State FIPS code (ss)
    - County FIPS code (ccc)
    - Census tract enumeration code (tttt.tt)
    - Census block group enumeration code (b)

Population Data

- Data from commercial source
- Census Years: 1970, 1980, 1990, 2000
- Structured into Sex x 5-year age groups

  (M 0-4, F 0-4, M 5-9, F 5-9 ... M 85-older, F 85-older)
- Reapportioned to 2000 Census Block Groups
- Indexed by the STFID code
- Intercensal estimates

Socio-Economic Status Indicator

- Data from same commercial source
- Data only available for 1990 and 2000 census block groups
- Indexed by the STFID code
- Indicator Used: Median Household Income
- Alternatives Considered
  - House Value / Type / Age
  - Household Size / House Room Count
  - Education

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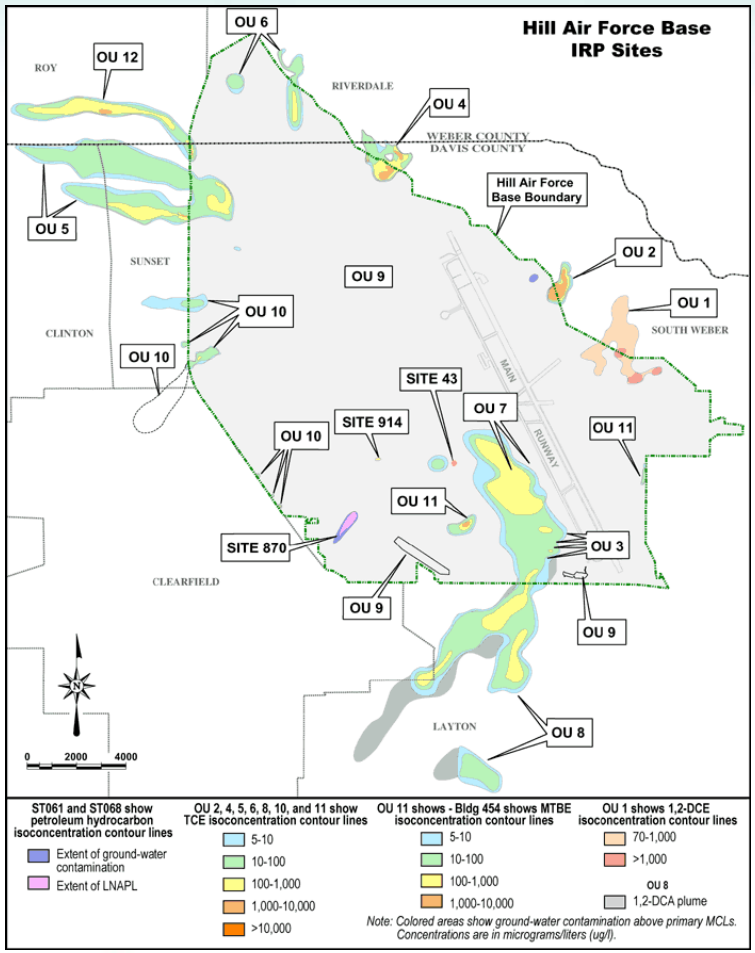
Exposure Data



- Graphic plume boundaries
  - 5-10 ug/l TCE
  - 2001-2002 sampling period
- Limited pathway data
  - Indoor air intrusion
  - Plant sampling

Hill Air Force Base Environmental

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Health Effects Data

- Utah Cancer Registry
  - Case-centric registry
  - Electronic Data: 1973-2001
- Geocoded
- Assigned to a 2000 Census Block Group area
- Count by Type, Year, Sex and Age Group for each 2000 Census Block Group

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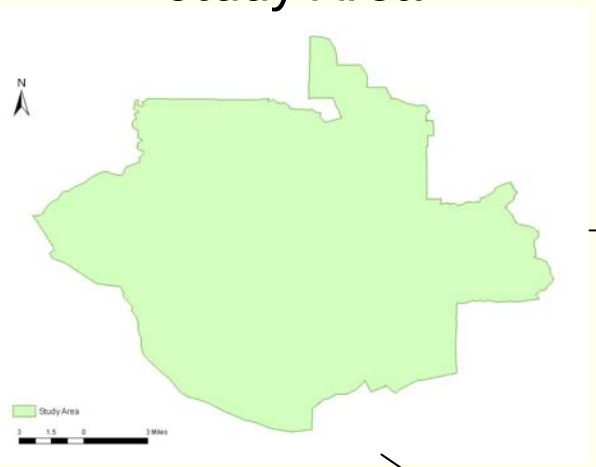
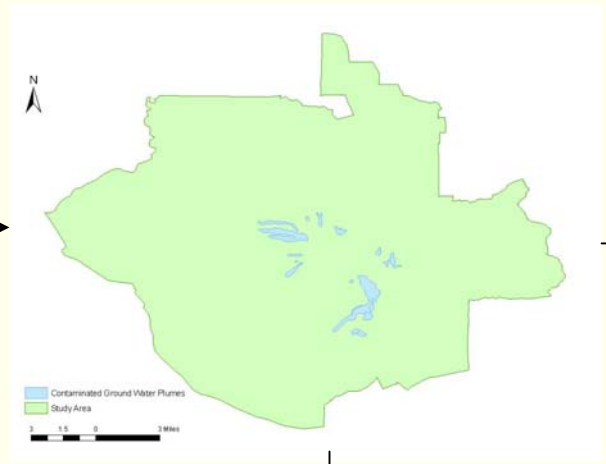
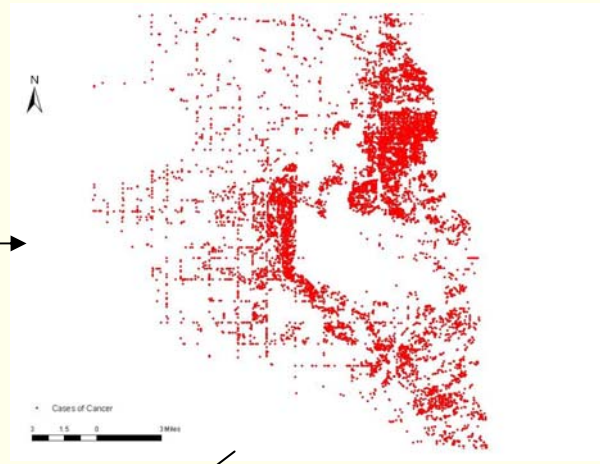
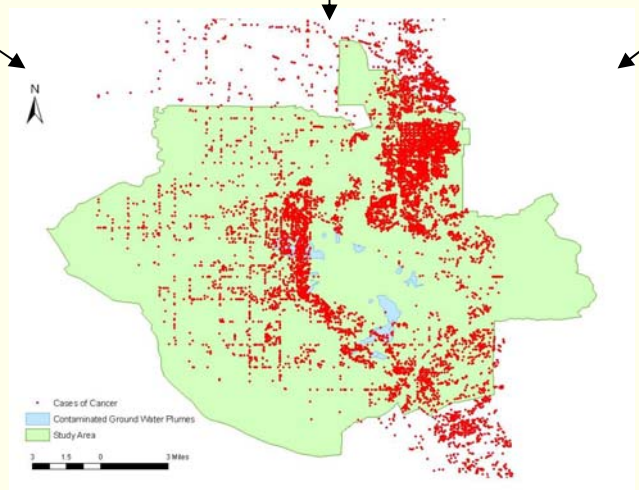
Hazard **Exposure** **Health Effect**

Study Area Contaminated Area Disease









Linking databases can be a first step in identifying environmental hazards that may be related to human health effects