

New Mexico

**Environmental Public Health
Tracking Part A**



NM DOH Environmental Health Epidemiology Unit

Asthma Surveillance & Plan

Biomonitoring Planning Grant

Environmental Health **Capacity Building**

Environmental Public Health **Tracking**

Environmental and Health Effect **Tracking**

Lead Surveillance – Child & Adult

Occupational Health Surveillance

Waterborne Disease Surveillance

Environmental Health **Incident Response**

Other governmental agencies

- State, local, tribal

BerCo & ABQ

NM Environment Department

- NEIEN
- Data providers

Universities

- NM Environmental Health Sciences Center
- Carlsbad Environmental Monitoring & Research Center
- Southern Area Health Education Center

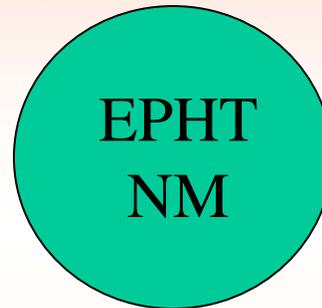
NM Environmental Law Center

Community
concerns

Legislative data
needs

EPHT data
providers

NMEHA



Office of the Governor

- Agency intercollaboration
- Consolidation of Resources

EH Council

DOH

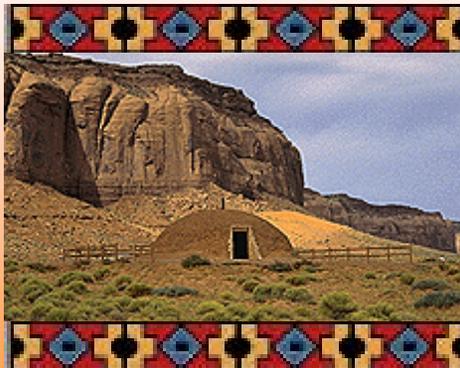
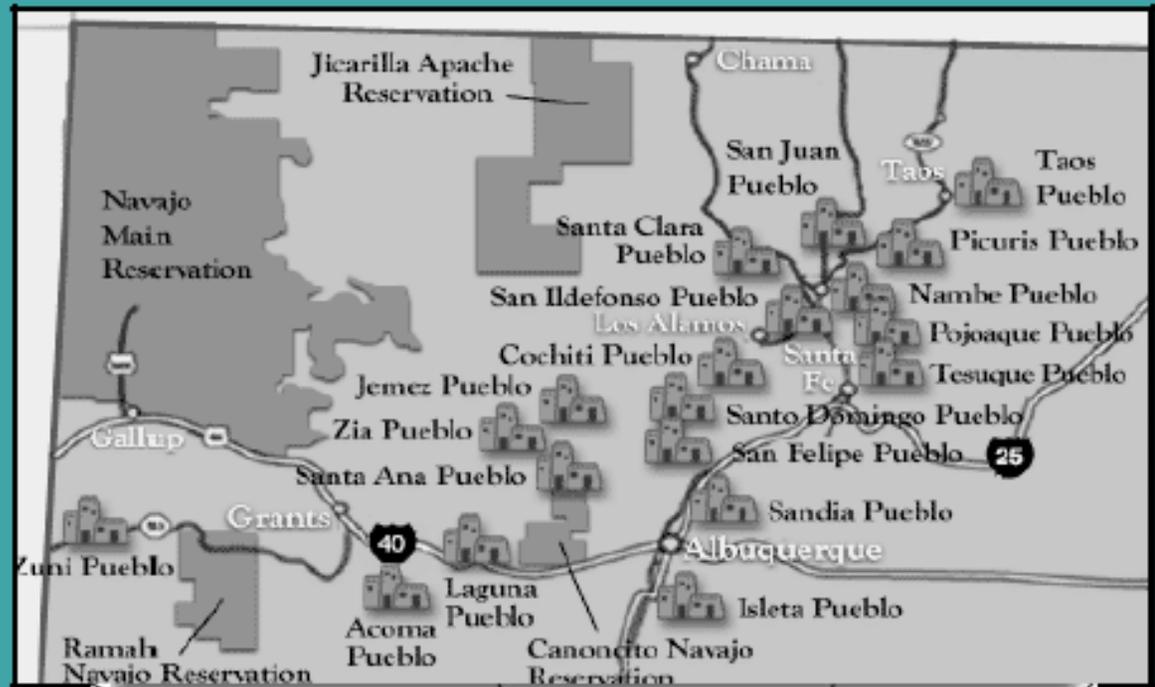
- PHIN/NEDSS/E-Learning
- Border Health Office
- District Health Offices
- Data providers
- PHD data needs

IHS

LANL

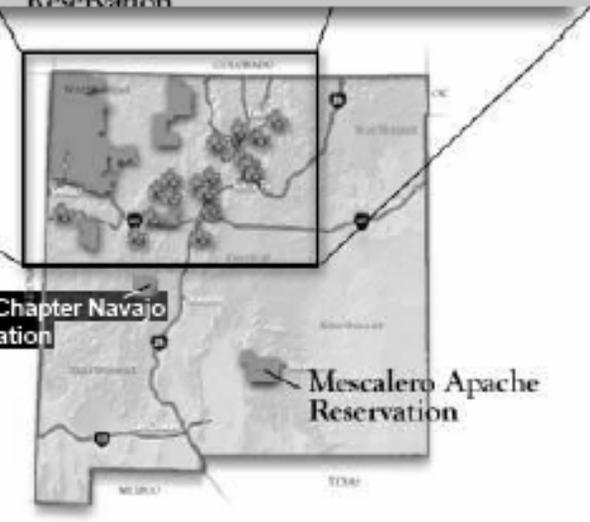
Health Policy
Commission

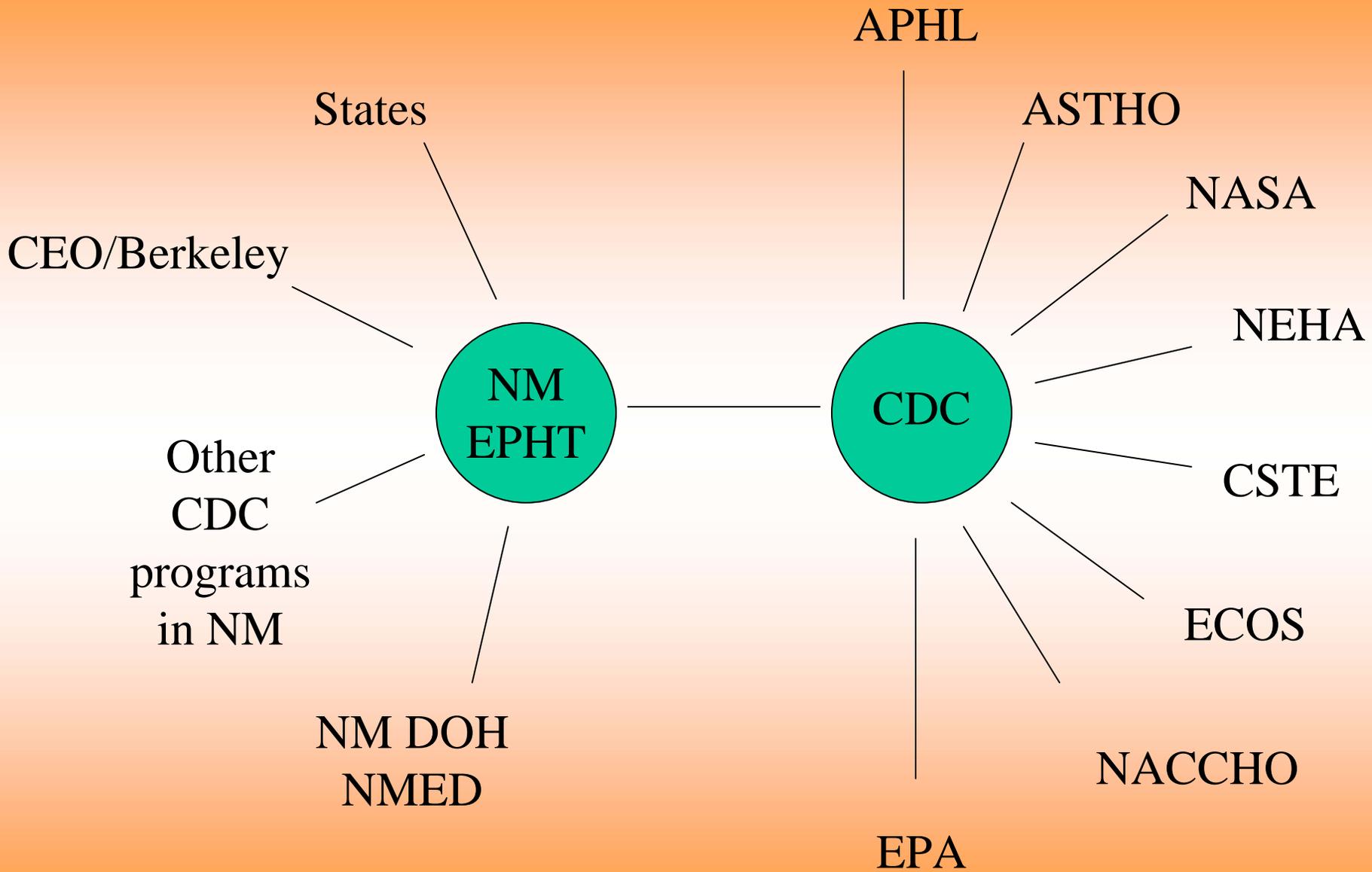
New Mexico Pueblos and Reservations



Alamo Chapter Navajo Reservation

Mescalero Apache Reservation





**Spring 2003
Planning
Workshop**

**Fall 2003
Draft
Plan**

Schedule for 3-year
project

9/02

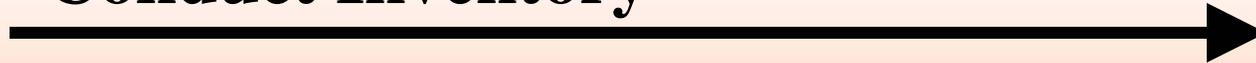
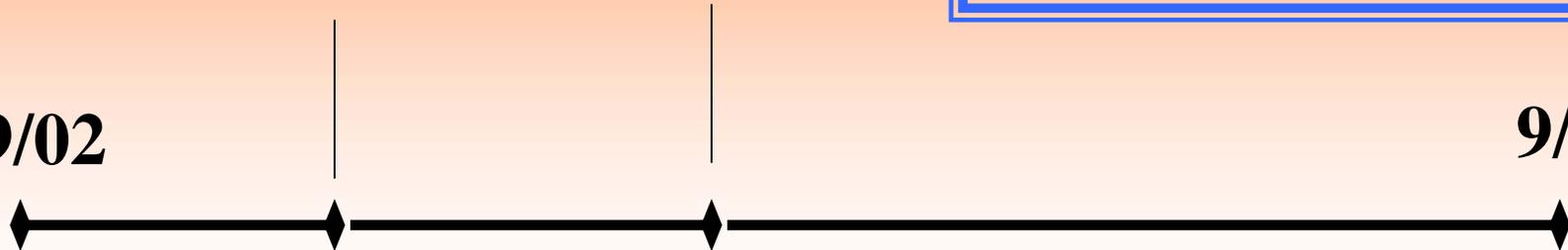
9/05

Establish Priorities

Conduct Inventory

Pilot Projects

Plan Revision/Update



NM EPHT Consortium Development



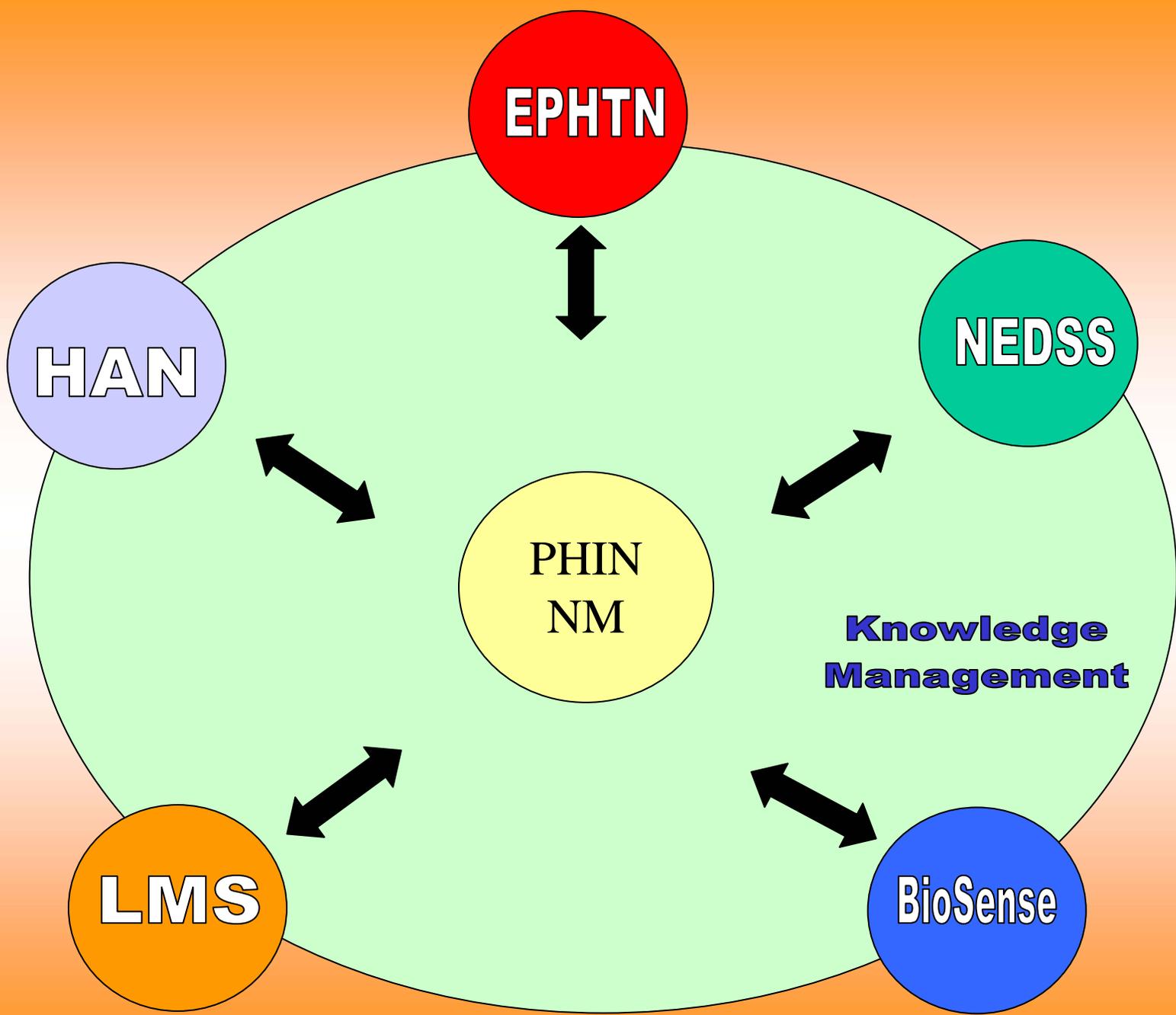
NM EPHT Consortium

- Help identify EH **data** providers and potential EPHT **users**
- Help identify **issues, costs** and **barriers**
- Suggest ways to improve state-wide **input** into planning
- Help identify **benefits** and **limitations** of EPHT
- **Discussion** of environmental health issues
- Serve to **measure interest** in the EPHT project
- **Oversee** EPHT project planning and prototype
- Aid in **prioritizing** EH indicators

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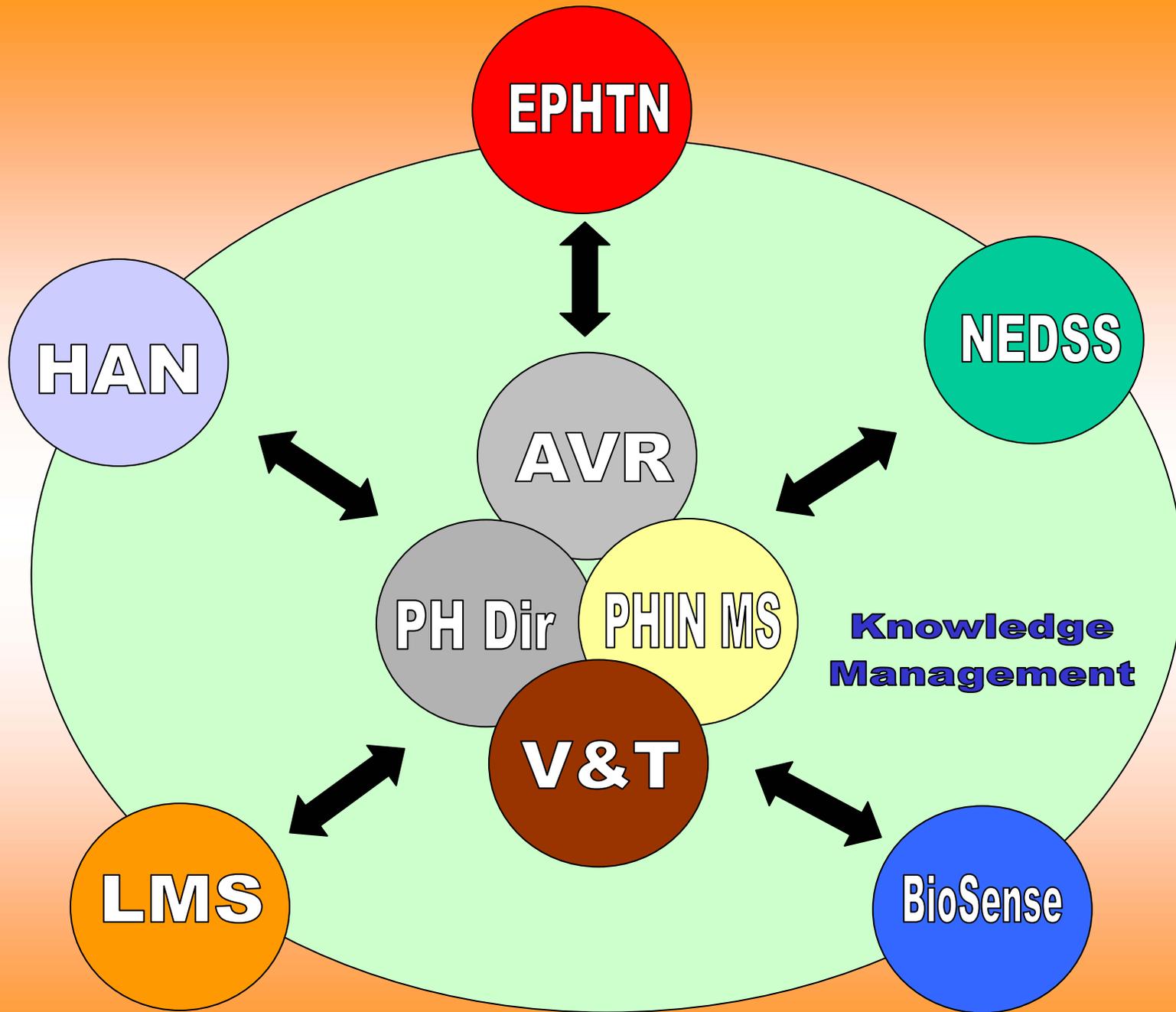
Partnerships with other components of PHIN





How EPHTN Can Use PHIN Components

- **Public Health Directory (PHDir)** - authentication and authorization services for submitters and data consumers
- **Messaging System (PHIN MS)** - bi-directional transfer of data between participants
- **Analysis, Visualization & Reporting (AVR) Services** - Includes GIS, Ad-hoc and Preformatted Reports
- **Data Brokerage and Transformation Services** - provide for translation of data between standards and formats as well as ensuring that data is routed appropriately
- **Vocabulary and Thesaurus (V&T)**- provide standardized terminology and condition mapping
- **Knowledge Management (KM)** - Provide cross-domain analysis and coordination of data

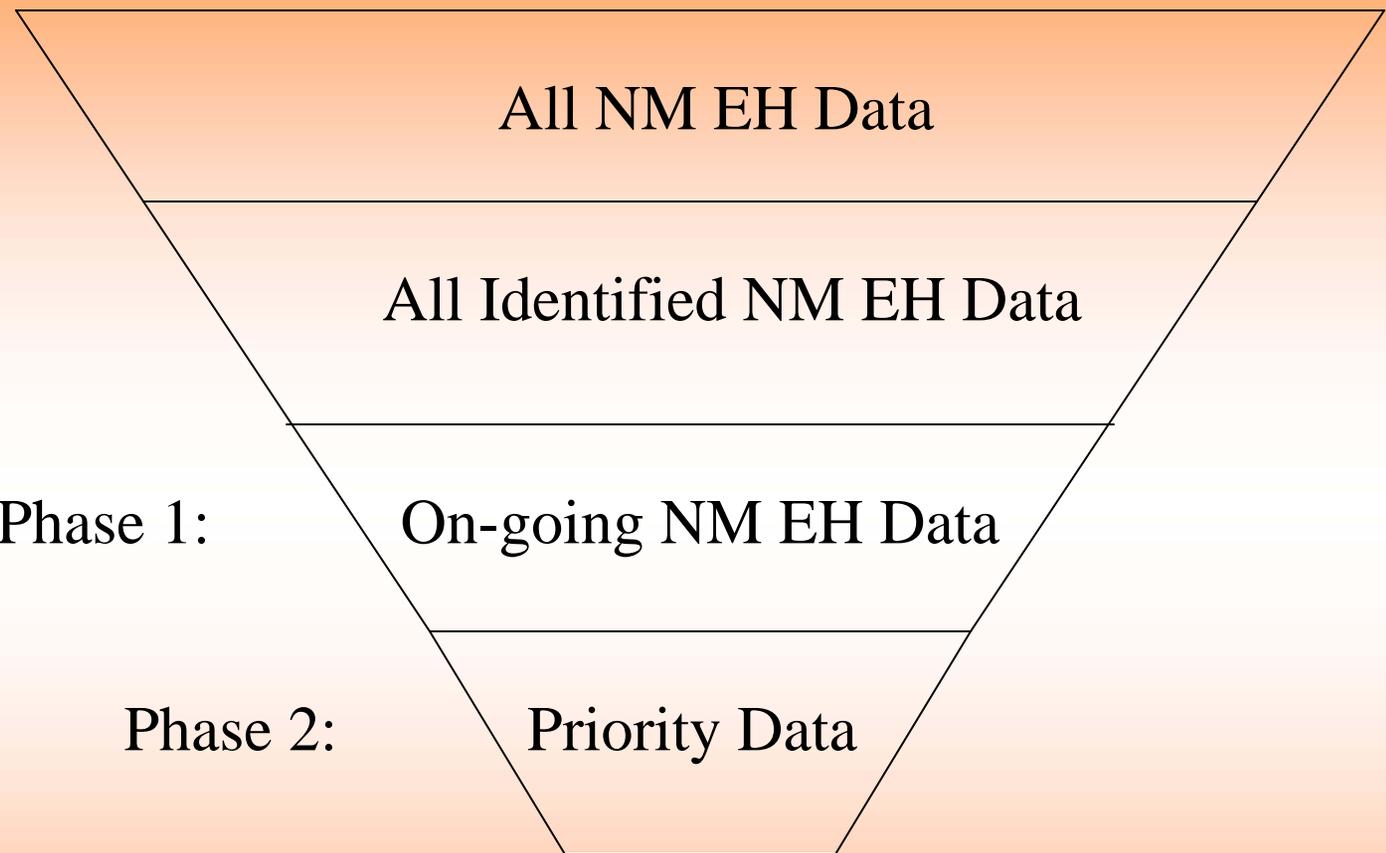


PHIN to EPHTN

- Issues to be Resolved:
 - How to layer data from other PHIN systems, i.e. NEDSS, with EPHTN data
 - Are there data standards or formats that would facilitate sharing of EPHTN data across the PHIN architecture

**Inventory and
assessment of current
environmental hazard,
exposure, and
health outcome datasets**





Phase 1: contact information, content, legislation, sampling frame, coverage, variables, reports,...

Phase 2:

Consistent geocoding	Sampling locations	Sensitive information
Sharing of record level data	Sharing of aggregate level data	Legal constraints on data sharing
Policy constraints on data sharing	Checks to ensure data quality	Data clean-up procedure
Time from collection to availability electronically	Restrictions on the use of data after acquisition	Controlled vocabulary
In compliance with standardized test procedures	Non-detected measurements reported	Protected from unauthorized access or revision
Detection limits reported	Specific written QA/QC protocol followed	Percentage of the database is in electronic format
Metadata	Data extraction procedures	Ad hoc querying
Data extraction into XML format	Data transfer	Non-duplicated data
Training needs	Assistance needed for participation in EPHT	Sample report
Plans for change	Stability of funding	Changes in encoding or standards

Data Source Selection Criteria and Next Steps



1. Existence (i.e., ongoing and systematic collection of data)
2. Utility
3. Linkage ability
4. Availability

Phase Two Priority Datasets

- Air Quality Monitoring (City of Albuquerque)
- Ambient Air Monitoring Database (NMED)
- ChildLead
- Children's Chronic Conditions Registry (DOH)
- Drinking Water Database (NMED)
- Groundwater Module (NMED)
- Hospital Inpatient Discharge Data (HPC)
- Indian Health Service Patient Care Component (IHS)
- Live Birth Database (DOH) & Mortality Database (DOH)
- New Mexico Tumor Registry (UNM)
- Omnicaid (HSD)
- Pollen and Air Quality Index (City of Albuquerque)
- Radiological Air-Sampling Network (LANL)
- School-based Health Center (DOH)
- Water Quality Database (USGS)
- WIPP Environmental Monitoring Project (WERC)

preliminary
activities

- enlist members of work group
- create communication plan
- enhance database assessment

data readiness
activities

- geocoding
- prepare for data extraction into standard format
- metadata

Preparation for
sharing

- assign responsibilities
- choose desired variables
- determine frequency of data transfer
- agree on level of data
- define users

NM Needs Assessment



Environmental Health Indicators

General Domains of EPH Indicators

Environmental hazard,

Human exposure,

Health effects potentially linked* to environmental exposure

Public Health Interventions

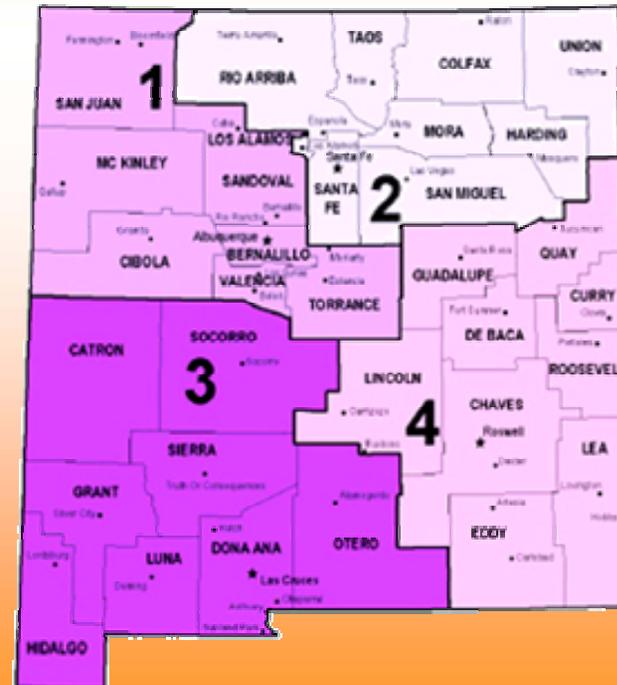
**“linkage” is the ability to connect hazard and health effect information in time and place; linkage is NOT a causation; linkage facilitates hypothesis generation*

Health Effects of Particular Interest to the Environmental Public Health Tracking Project:

birth defects, developmental disabilities, cancer, asthma, other respiratory diseases, autoimmune diseases, neurological/immunologic diseases, heavy metal poisoning, and pesticide poisoning, methemoglobinemia, carbon monoxide poisoning

Environmental Public Health Priorities

- Statewide evaluation of priorities
- EPHT Planning Consortium
- Comprehensive assessment using EPHIs
- Public concerns



EPHT Plan



High
Priority
& Ready

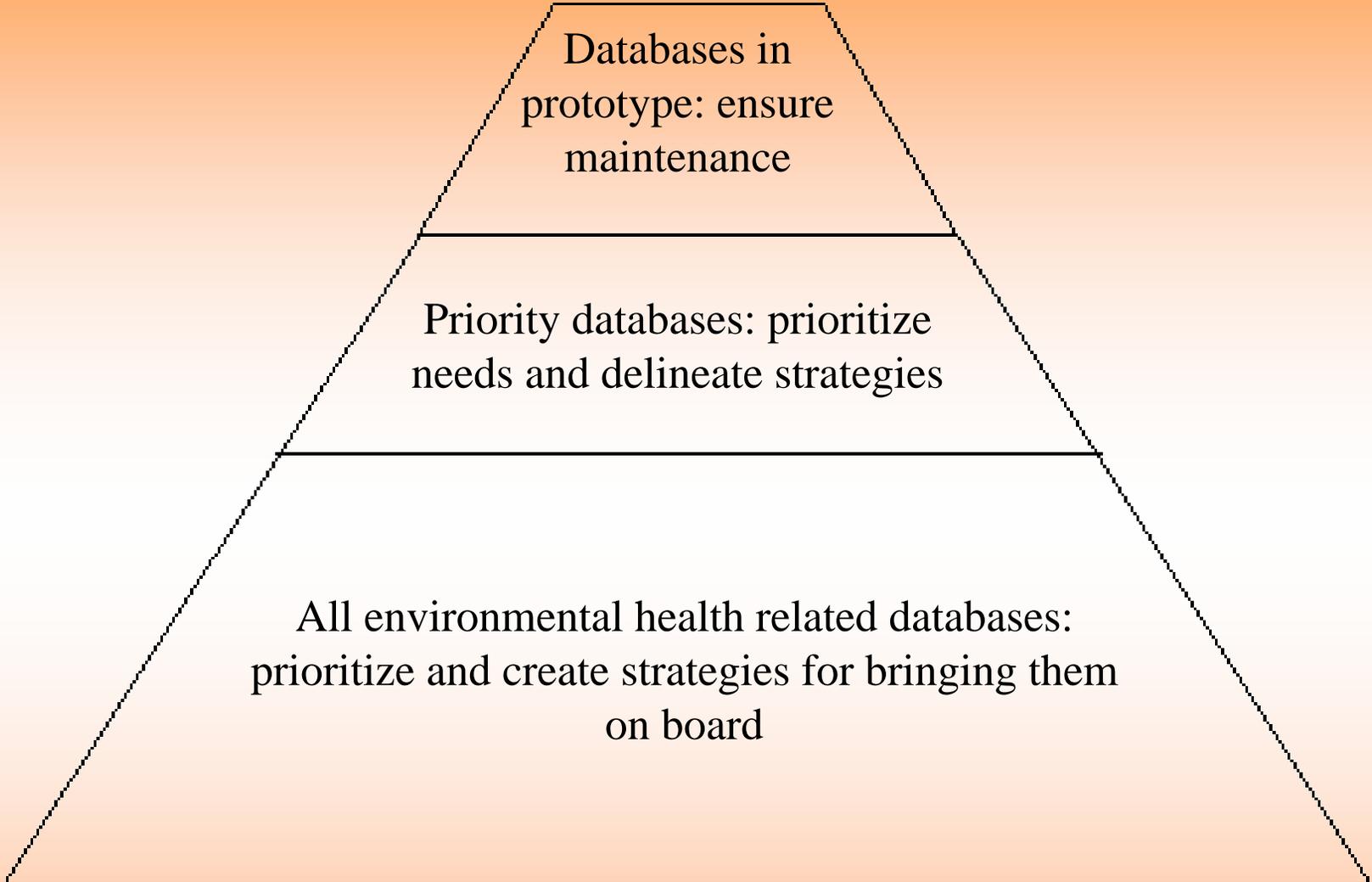
High Priority
& Needs
Assistance

Lower
Priority
& Ready

Lower
Priority &
Needs
Assistance

Additional
Databases

EPHT Plan



Databases in
prototype: ensure
maintenance

Priority databases: prioritize
needs and delineate strategies

All environmental health related databases:
prioritize and create strategies for bringing them
on board



General
Plan

&

Implementation
Plan

EPHT Prototype



Functions of prototype:

- Reception of data
- Processing data
- Linkage of data
- Interactive website with GIS
- Tiered access to data
- Modeling and analysis

To be determined:

- XML schema or other data transfer standard
- User roles and permissions
- NEDSS and NEIEN compatibility
- Trading Partner Agreement template
- Metadata template
- Directory
- Storage
- User interface
- Techniques of linkage
- Training

Steps to take:

1. Identify databases to be used
2. Characterize databases and users
3. Identify high priority variables
4. Define security/legal issues
5. Prepare data request
6. Document metadata
7. Identify lower priority variables
7. Identify lower priority variables
8. Prepare data: geocode, etc.
9. Assign responsibilities: data cleaning, data transfer frequency, etc
10. Prepare trading partner agreement
11. Transfer data
12. Link data
13. Facilitate visualization of data

Analysis of
resulting
linkage

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graph TD; A[Analysis of resulting linkage] --> B[Dissemination of results]; A --> C[Evaluation of EPHT process]; B --> D[Analysis of policies and intervention strategies]; C --> E[Plan for improvement and filling gaps];
```

Dissemination
of results

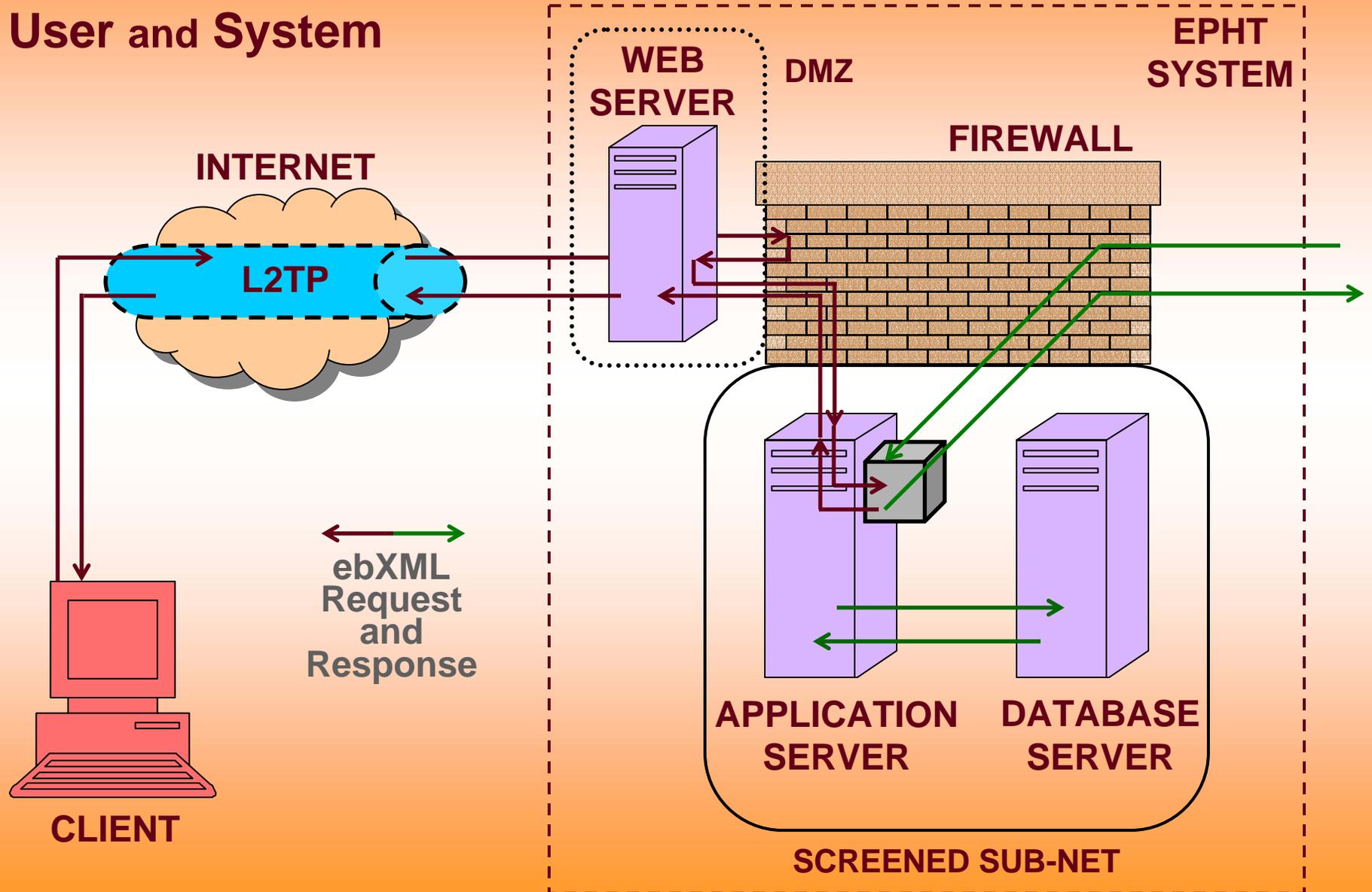
Evaluation of
EPHT process

Analysis of policies
and intervention
strategies

Plan for
improvement and
filling gaps

EPHT SYSTEM INFRASTRUCTURE

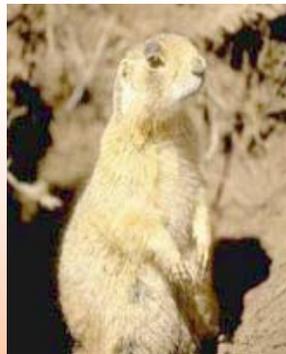
User and System



SYSTEM TOOLKITS

- **Data Query and Exchange**
- **Data Analysis**
 - **Database**
 - **Statistical**
 - **Epi Model**
 - **Geospatial / GIS**
- **Visualization and Mapping**
- **Results, Reporting & Dissemination**

Project Evaluation



Challenges?

PHEW!

System maintenance

data quality

Partnering

- sovereign nations
- Border regions

Low population

Meaningful linkage

Original purpose of data collection

Incomplete data

Partners' loss of funding

Scope of EPHT

Duplication of case data

Data currentness vs data quality

Census track changes

Definitions / diagnosis

Population denominators

Migration of population

Lack of exposure data

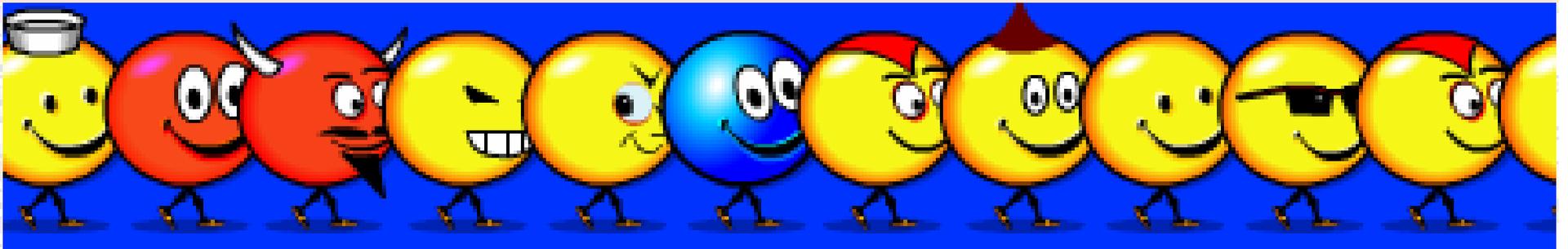
Changing zip code boundaries

Complexity of interaction of factors involved

Confidentiality in localized environmental hazard exposures/health outcomes

E
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Opportunities Abound!



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