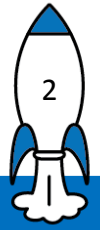
KL&A
KUNZ, LEIGH AND ASSOCIATES

Michigan Environmental Health Tracking

Department of Health and Human Services

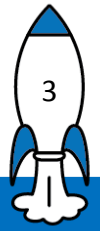
Storyline

- America's Environmental Health Gap
- Closing the Health Gap
- Building a National Program and Network
- Creating Michigan's Environmental Health Tracking Program
- MiTracking - Building the Web Portal



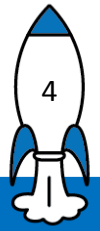
America's Environmental Health Gap

- In 2001, the Pew Environmental Health Commission issued the "America's Environmental Health Gap: Why the Country Needs a Nationwide Health Tracking Network" report.
- Findings:
  - Lack of basic information that could document possible links between environmental hazards and chronic disease and conditions (i.e. birth defects, asthma and cancer).
  - Gap Hinders efforts to reduce or eliminate diseases that might be prevented by better managing environmental factors.
  - National cost of chronic disease is staggering:
    - 4 of every 5 deaths annually;
    - 100 million people suffering each year; and
    - $325 billion in annual healthcare and lost productivity.



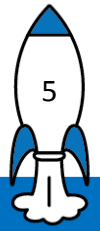
Closing the Health Gap

- Proposed Nationwide Health Tracking Network, which would advance our ability to:
  - Identify populations at risk and respond to outbreaks, clusters and emerging threats;
  - Establish the relationship between environmental hazards and disease;
  - Guide intervention and prevention strategies, including lifestyle improvements;
  - Identify, reduce and prevent harmful environmental risks;
  - Improve the public health basis for policymaking;
  - Enable the public's right to know about health and the environment; and
  - Track progress towards achieving a healthier nation and environment.



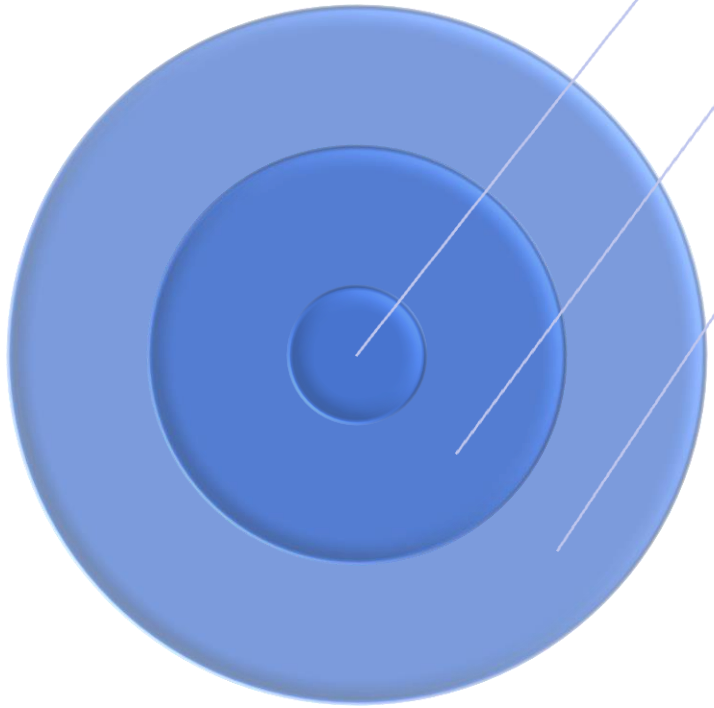
Closing the Health Gap Cont.

- Five key components of the proposed network:
  - National baseline tracking network for diseases and exposures;
  - Nationwide early warning system for critical environmental health threats;
  - State pilot tracking programs to test diseases, exposures and approaches for national tracking;
  - Federal investigative response capability; and
  - Tracking links to communities and research.
- Annual funding was estimated at $275 million.



Building a National Program and Network

Building a National Program and Network



2002 – 2005 Development

2006 – 2010: Implementation

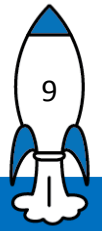
2011 – 2017: Growth & Enhancement

Building a National Program and Network

- 2002 – 2005: Development
  - In 2002, Congress appropriated funds to CDC to establish the Environmental Public Health Tracking Program
  - In fiscal year 2002, Congress provided CDC with initial funding to:
    - Begin developing a Nationwide Environmental Public Health Tracking Network; and
    - Develop capacity in environmental health within state and local health departments.

Building a National Program and Network

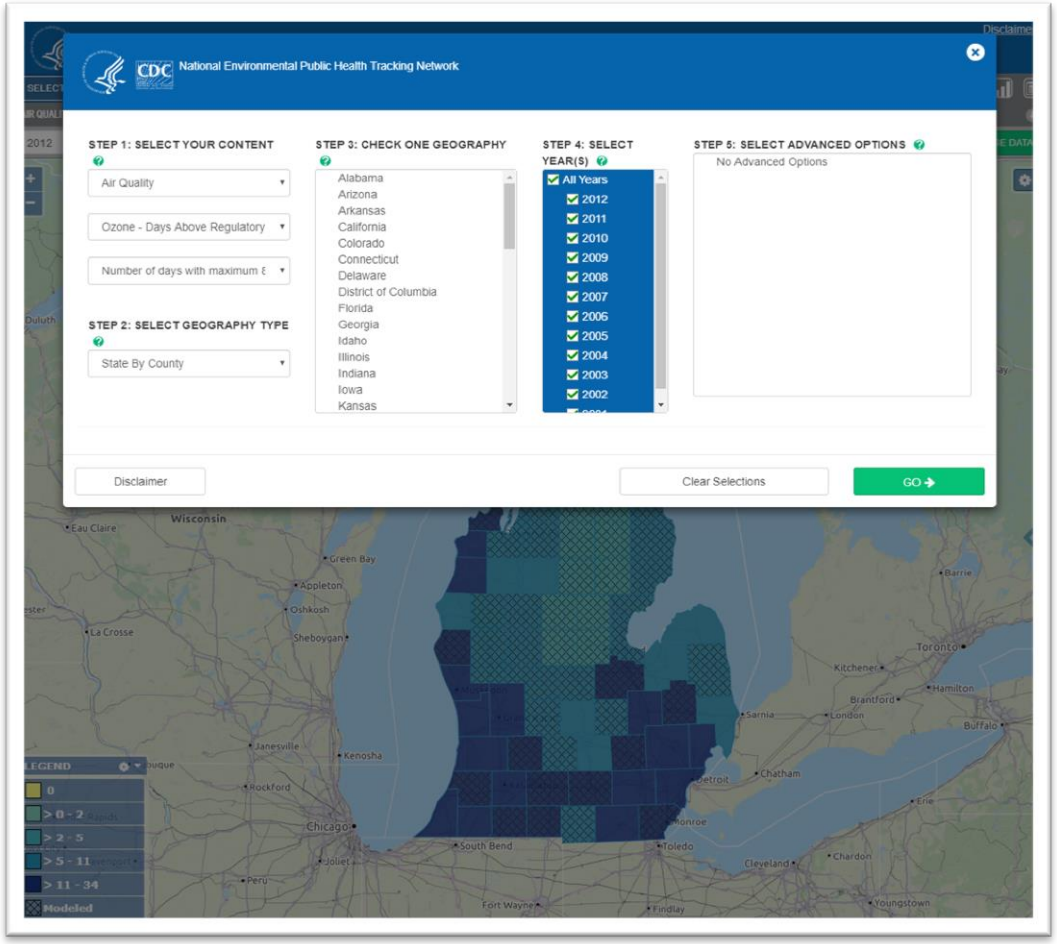
- 2002 – 2005: Development – Cont.
  - CDC's goal was to develop a tracking system that integrates data about environmental hazards and exposures with data about diseases that are possibly linked to the environment.
  - This system allows the public and federal, state, and local agencies to:
    - Monitor and distribute information about environmental hazards and disease trends;
    - Advance research on possible linkages between environmental hazards and disease; and
    - Develop, implement, and evaluate regulatory and public health actions to prevent or control environment-related diseases.



Building a National Program and Network

- 2002 – 2005: Development – Cont.
  - Planning for the network was a priority for the CDC.
    - Provided opportunity to address some of the most challenging problems facing local, state, and national public health leaders.
    - From the outset, this activity has involved substantial collaboration between the CDC and public health and environmental partners.

Building a National Program and Network



- 2006 – 2010: Implementation
  - Focused on launching national and state networks through building national infrastructure, workforce, and collaborations on data linkage.
  - In 2009, the online Environmental Public Health Tracking Network was launched.

Environmental Public Health Tracking

Hazard

Exposure

Health Effect

Data

Ongoing Evaluation

Tracking Network

COLLECTION → INTEGRATION → ANALYSIS → INTERPRETATION

Dissemination

Stakeholders*

Assessment • Research • Intervention • Policy

Prevention

Improved Public Health

*Stakeholders Include	
Federal Agencies	Business and Industry
State and Local Agencies	Policy Makers
Academia	Media
Health Care System	Public
Non-Governmental Organizations	

Ongoing Evaluation

Department of Health and Human Services
Centers for Disease Control and Prevention
Safer • Healthier • People

CDC

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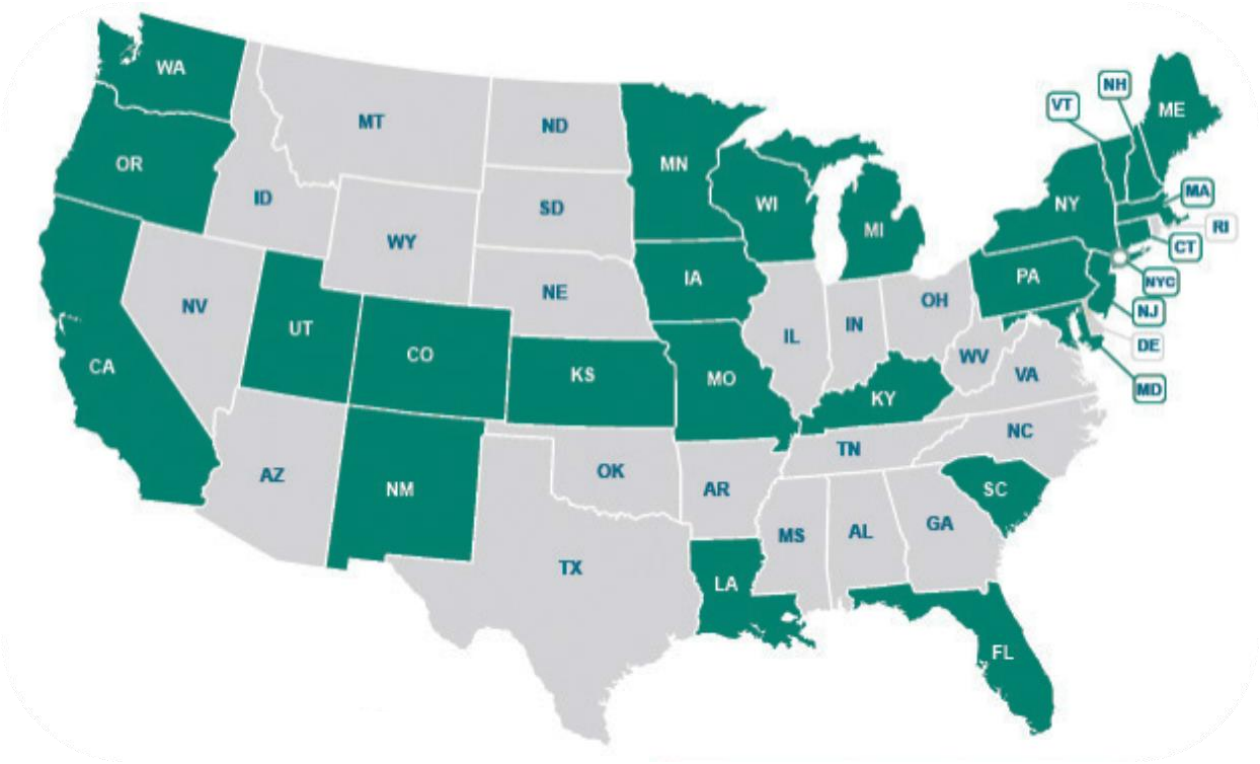
Building a National Program and Network

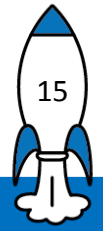
- 2011 – 2017: Growth & Enhancement
  - Focused on:
    - New data
    - New functionality
    - New states
      - Michigan was one of the new states
    - New data-use activities
    - Incorporating changes as a result of evaluation
  - 10th anniversary celebrated



Creating Michigan's Environmental Health Tracking Program

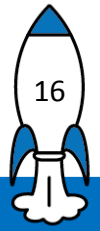
Who's Responsible?

- Department of Health and Human Services (DHHS) > Division of Environmental Health (DEH) > Environmental Health Surveillance Section
  - Addresses health concerns related to environmental and workplace hazards in Michigan.
  - Uses the tools of public health surveillance, epidemiology, and intervention.
- 2014, became one of the two newest states to receive funding and join the National Environmental Public Health Tracking Network.



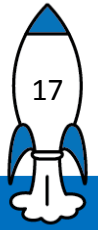
CDC's Requirements

- Use the existing CDC Tracking Network as a model.
- Develop an interactive public web portal that provides access to Michigan health and environmental data.
- Provide information and searchable data to users in support of three goals:
  - Informing public health practice, policy, decisions, and interventions at the state and local level.
  - Educating the public regarding the relationships between the environment and health.
  - Promoting research into possible connections between environmental hazards and adverse health outcomes.



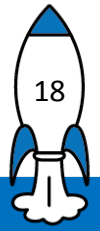
Why Michigan?

- Michigan has a long history of industrialization resulting in environmental health hazards and a greater burden of chronic disease than that of the United States overall.
- The distribution of environmental contaminants and their potential health impacts are an ongoing concern to Michigan's citizens.
- Until now, Michigan has lacked an integrated system to track both environmental health hazards and human health outcomes.



Michigan's Approach

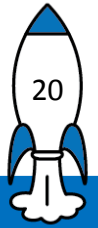
- DEH worked to compile data for the Nationally Consistent Data and Measures (NCDMs).
  - NCDMs are the core, standardized environmental and public health measures available on all tracking portals.
- DEH needed to find a partner to help develop the required interactive public web portal.



MiTracking - Building the Web Portal

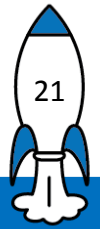
Request for Proposals

- Functional Requirements:
  - Interface and interact with the Michigan Tracking web pages;
  - Enable state administrative users to upload data;
  - Enable public users to query data;
  - Produce and display downloadable query results in maps, charts and tables;
  - Interface with the Michigan Department of Technology, Management, and Budget (DTMB) Center for Shared Solutions (CSS) ArcGIS; and
  - Operate in the DTMB environment, on DTMB servers with DTMB supported applications.



Choosing a Technology Partner

- Contractor Qualifications:
  - Five (5) years demonstrated experience in developing and implementing public web pages.
  - Three (3) years demonstrated experience managing and presenting data.
  - Three (3) years demonstrated experience working with GIS technology.
  - Three (3) past or current projects with state, county, or local government agencies as clients.



Proposed Solution

- Two distinct applications:
  - Public User Portal
    - Provides the functionality to perform measure searches, view and print datasets, and render interactive maps.
  - Administrative User Portal
    - Provides the functionality to upload and manage measure datasets as well as other administrative tasks.
- Project Timeline
  - 5 months
- Project Cost
  - $183,000

Age of Housing

Air Quality

Asthma

Cancer

Carbon Monoxide Poisoning

Demographics

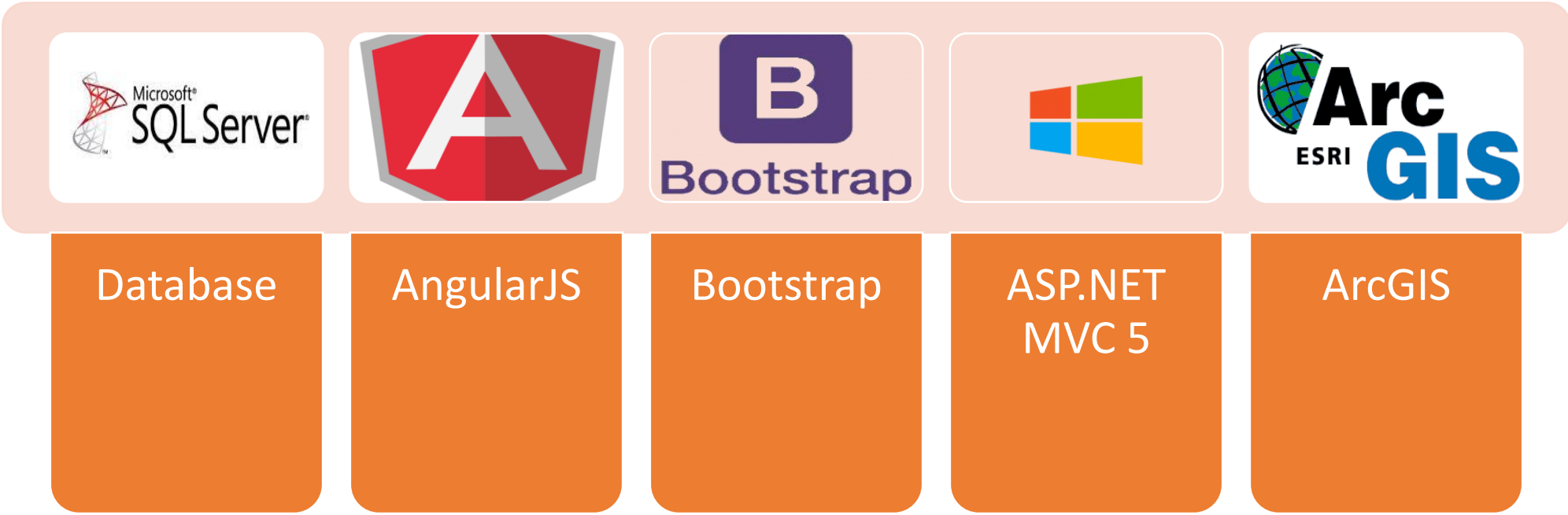
Drinking Water

Heart Attacks

Heat Illness

Technical Overview

- Hosted on DTMB Infrastructure
- Technology Stack



Project Team

DHHS

- Project Manager
- Subject Matter Experts

DTMB

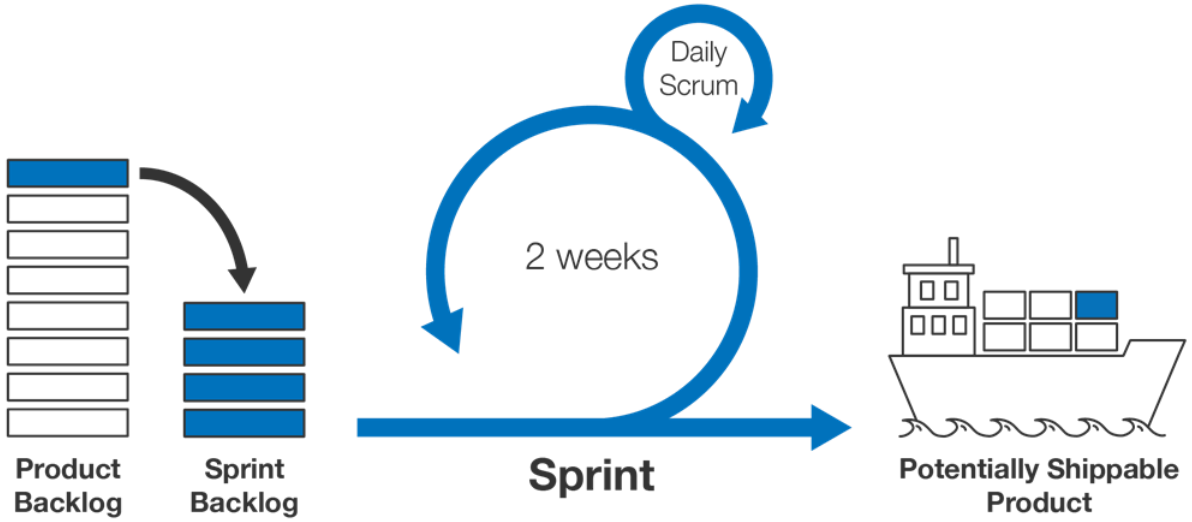
- Project Manager
- Business Analyst

KL&A

- Project Manager
- Business Analyst
- 2 Developers

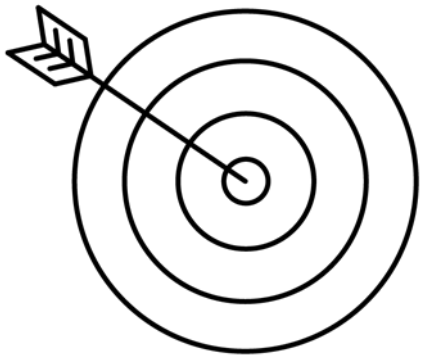
Project Approach

- Agile (Scrum)
  - 2 week Sprints
  - Daily Scrum
  - Planning, Review and Retros
- SUITE
- Jira and Jama



Success Factors

- Team members fully committed to the Scrum process
- Clearly defined vision and goals based on detailed wireframes
- e-Michigan involvement early and throughout the project
- Working with CSS to integrate ArcGIS



Demonstration

Questions and Comments

Contact Us

For more information, please contact any of the following:

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