

ACCESS TO, AND USE OF, MAPS IN COMMUNITY PLANNING

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Presentation to the Vermont Mapping Forum

Presenter Scott Hamshaw

- Civil Engineer – Engineered Solutions, Inc. (Winooski, VT)
- University of Vermont
 - ▣ International Development in Honduras
 - ▣ Spatial Analyst
 - Mobile Home Park Vulnerability Assessment
 - ▣ Graduate Research Assistant
 - Sediment & Nutrient Transport in River Systems
 - Computational Modeling
 - Uncertainty & Risk Analysis



Sediment Plume from Otter Creek (Mansfield Heliflight)

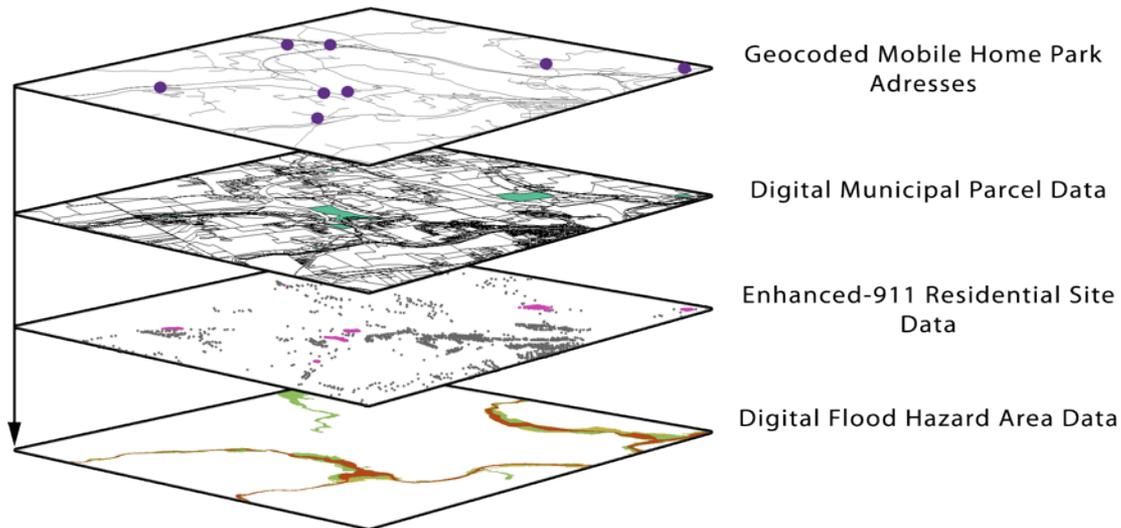
Presenter Dan Baker

- Background
 - Regional Planner
 - Community Planner
 - Starksboro Planning and Zoning Board
 - Addison County RPC
 - Addison County TAC
 - University of Vermont
 - Assoc. Professor of Community & International Development
 - Action Research/Service-Learning
 - Development Program in Honduras
 - Development Program in Vermont
 - Migrant Workers on Dairy Farms
 - Mobile Home Park Planning
 - Emergency Management
 - Community Resilience



Presentation Overview

- Recent Projects involving mapping and community development
 - GIS and maps in planning with vulnerable communities
 - Data development
 - GIS impact and influence
 - Community needs vs GIS Planners interests
 - Current issues and questions for audience



Project Overview



3-year research project funded by a grant from the USDA Disaster Resilience for Rural Communities Program:

Objectives:

- Identify vulnerabilities of parks statewide
- Increase knowledge of park vulnerabilities and planning for a range of stakeholders
 - MHP resident survey
 - Web-based park profiles
 - MHP Emergency Preparedness guides for residents, owners, & municipal planners
 - Regional trainings
 - Increase park resident involvement in planning
- Evaluate statewide emergency awareness and preparedness
 - Series of statewide surveys--Vermont Poll



MHP Vulnerabilities – Physical Conditions & Issues

- Park siting in higher risk areas
 - Flooding, wildfire
- Park layout
 - Fire (dense housing, difficulty of access)
 - Location of infrastructure
- Park Maintenance
 - Hazardous tree trimming
 - Road & water systems
- Age/condition of structures
 - Wind damage
 - Insufficient insulation
 - Inadequate site prep
 - anchoring
- Hazardous Waste & Spills



Photo courtesy of the Tucson Fire Department

“Mobile home fires pose several risks to both owners and firefighters,” Baker said. “Their construction allows fire to spread quickly and they are often times spaced closely together.”

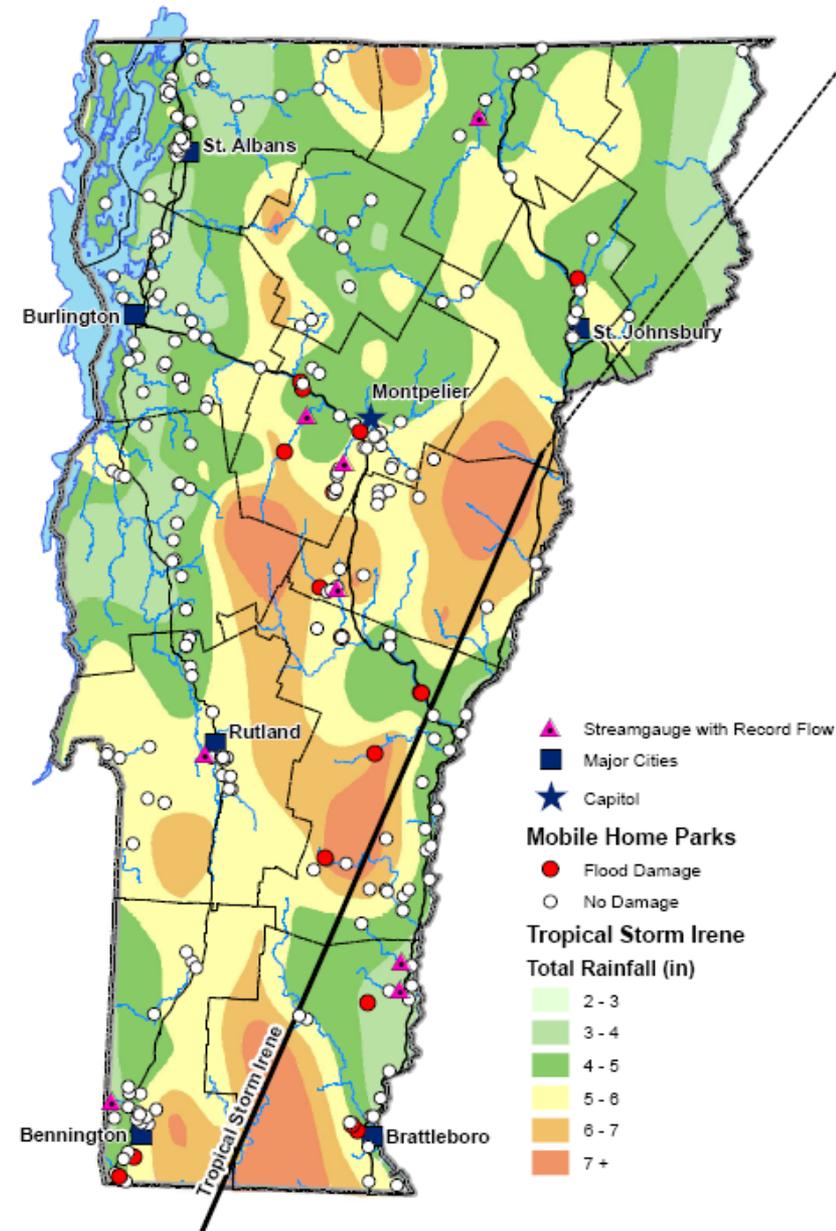


Analisa Romano/aromano@greeleytribune.com |

Residents watch as their homes at the Eastwood Village mobile home park flood in Evans.

Tropical Storm Irene highlighted the vulnerability of parks in Vermont

- Nearly 1/3 (31.5%) of all VT mobile homes are in parks
- 246 registered parks
 - 7,149 lots
 - About 20% are owned by non-profits
 - 5 cooperatives
- Flooded Parks: 17
- Parks with homes destroyed: 14
- Flooded Mobile Homes in Parks (includes destroyed): 226
- Destroyed Mobile Homes in Parks: 133
- Mobile homes are 7% of the state's housing yet sustained 15% of damaged



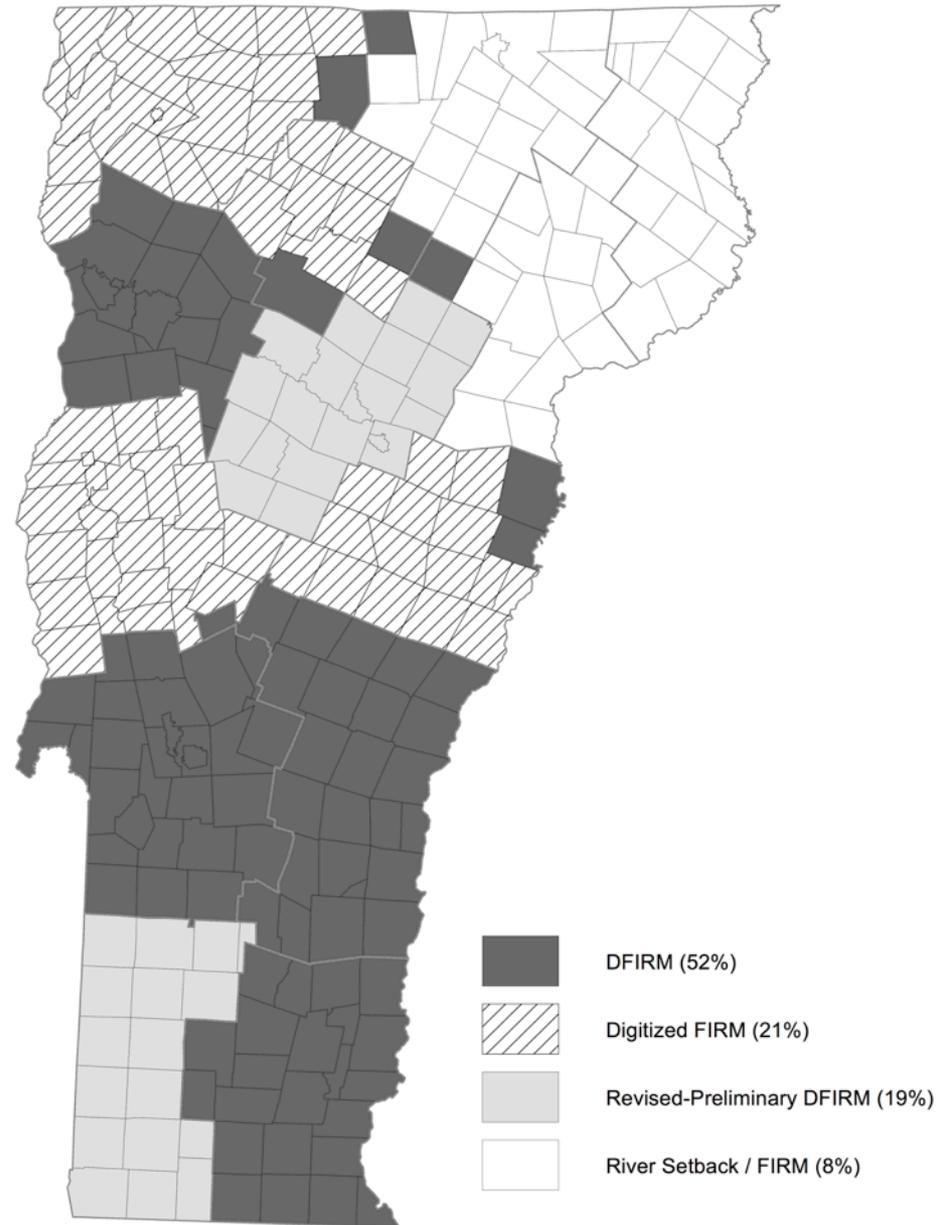
Comprehensive Hazard Assessment Needed for MHPs

- Data we needed:
 - ▣ Location of mobile homes
 - ▣ Parcel boundaries
 - Mobile Home Parks
 - ▣ Hazards
 - Flood hazard areas
 - Other natural hazards
 - Human-made hazards
 - Locally identified hazards



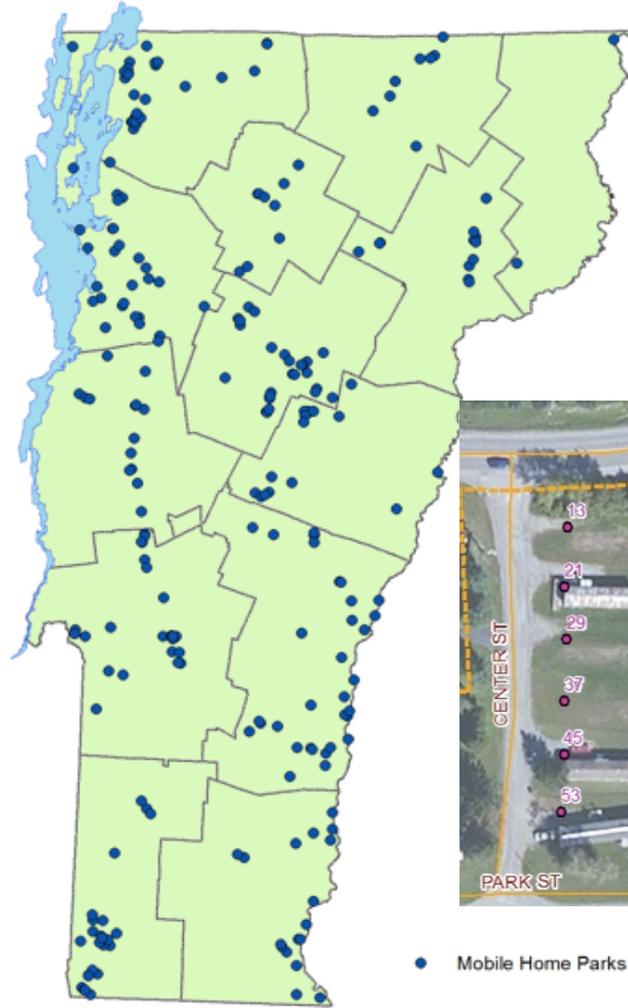
Data Challenges

- Lack of basic data about mobile home parks in VT
- A patchwork of available flood data
- Best data available in most populous areas
- Average age of FIRMs (Flood Insurance Rate Maps) is over 24 years



Creation of base data about MHP

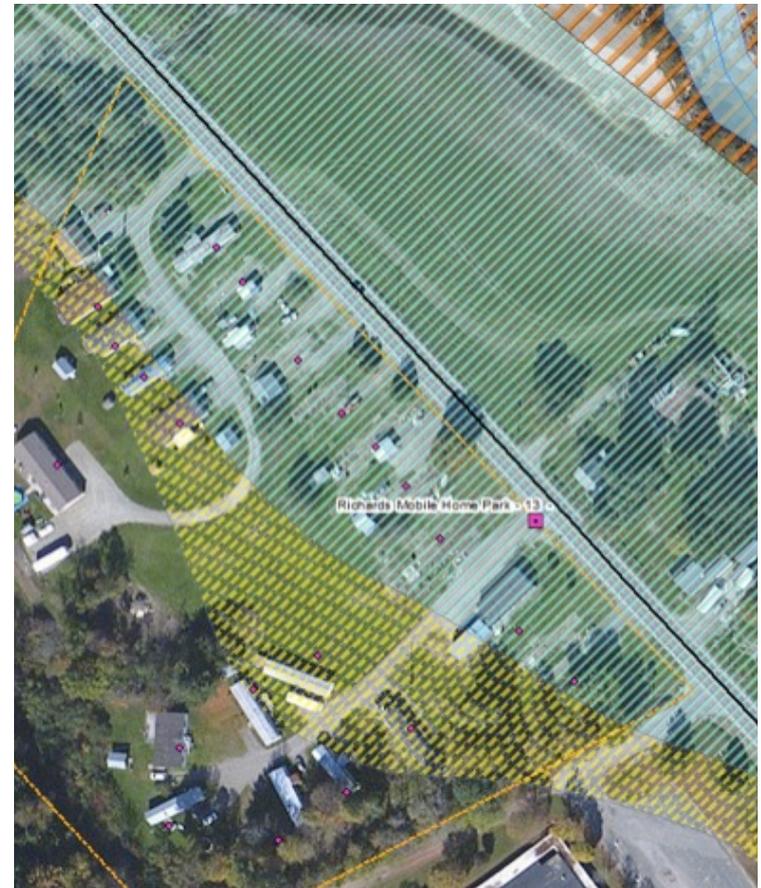
- Geocode registry data and manual digitizing of homes
- Importance of available E-911 data and parcel data
- Only 25% of US States have collected >75% of address points
- Only 7 of 23 states that responded to a 2011 survey reported that they make this data publically available



● Mobile Home Parks

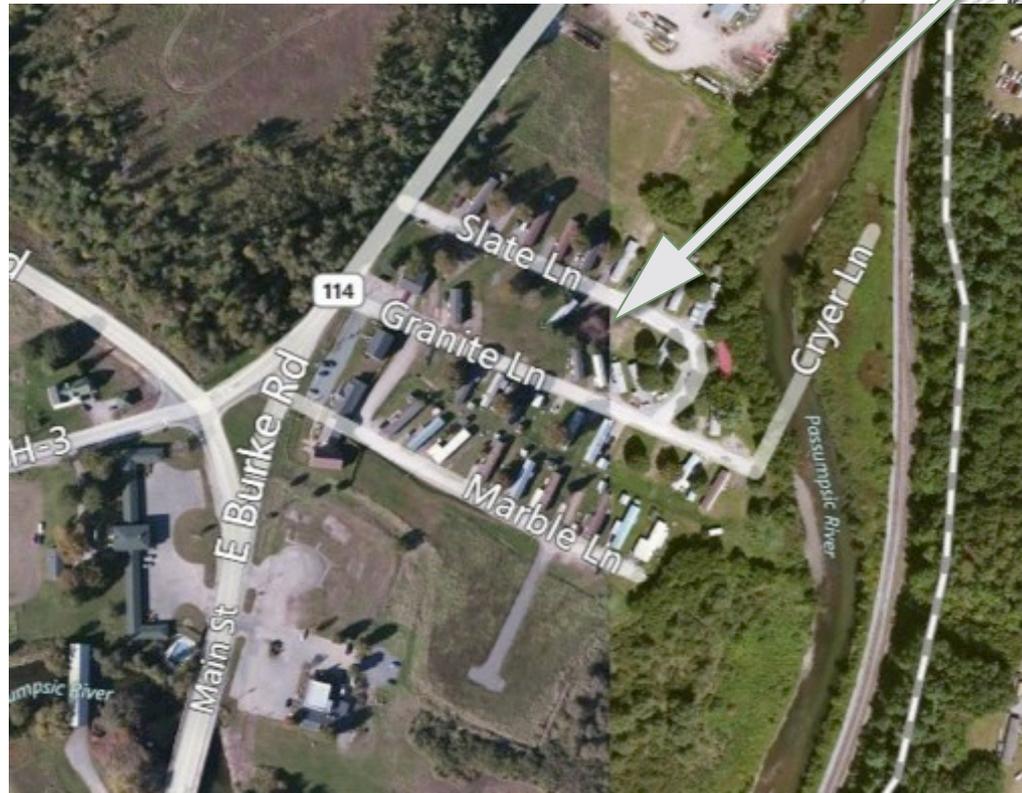
Compilation of Flood data

- Best Available Flood Hazard Data
 - ▣ DFIRMs
 - ▣ Digitized FIRMs
 - ▣ River Setbacks
- Fluvial Erosion Hazard Zones
- River Setbacks



What about the Northeast Kingdom?

Stream bank setback recommendations from River Corridor Guide



Parks identified within stream buffer compared to paper FIRM

Riverview Estates
Lyndon, VT

Flood Hazard Assessment

Mobile Home Parks with Homes in Floodplains

(From Baker, Hamshaw, & Hamshaw, 2013)

Highest Flood Hazard Zone Within Park	Number of Mobile Home Parks	% of Mobile Home Parks
Floodway	15	6.1%
100-Year Floodplain	30	12.2%
500-Year Floodplain	5	1.6%
None	196	79.7%
TOTAL	246	100.0%

Mobile Home Parks by FEH Zone

FEH Zone	# of Mobile Home in Parks
Extreme	55
Very High	47
High	66
Moderate	0
Low	0
Very Low	0
TOTAL	168

Percentage of Housing Type Located in a Flood Hazard Area

Mobile Homes located in
Parks

11.7%

Mobile Homes on Private
Land

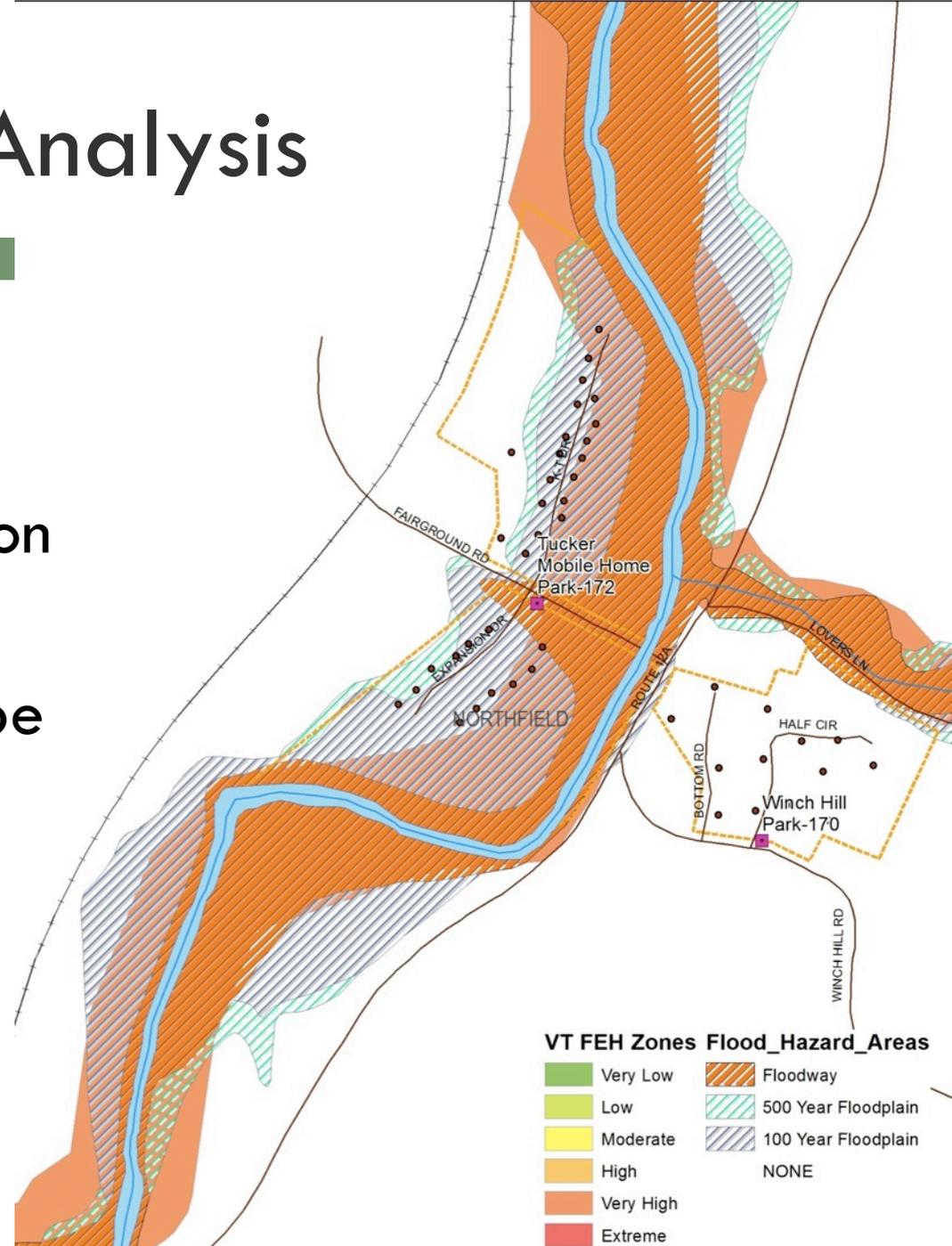
6.3%

Single Family Homes

4%

Flood Hazard Analysis

- Resulting maps can be confusing
- What about presentation to MHP community?
- Use of maps needs to be part of community planning process with technical support



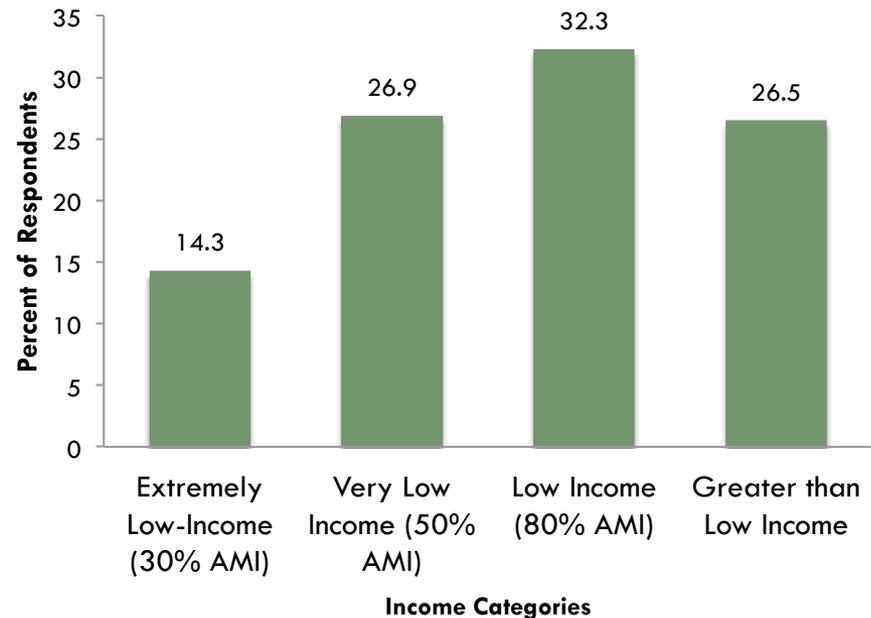
Thinking about who will use your maps: Challenges with Access

- Socio-economic diverse audience in MHPs
- Challenges of presenting mapping data

Vermont's Mobile Home Park Residents

Average Household Size	2.1 persons
Average Age of Respondent	55 Years
Median Highest Household Education Level	High School /GED

2011 MHP Survey Respondent Household Income by HUD Income Levels
n=283



Emergency Planning

- Working with communities on proactive planning



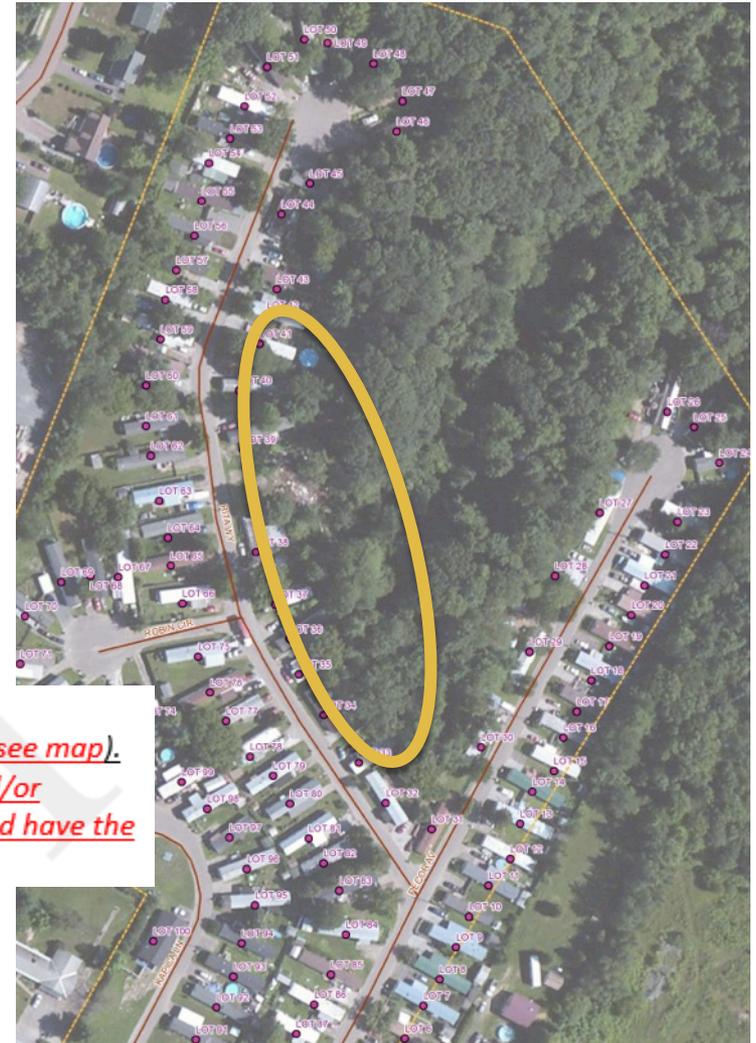
Additional lessons learned from MHP Project

- Many risks do not have available data sets
 - ▣ High winds
 - ▣ Hazardous materials
 - ▣ Landslides
- Locally generated data is available but mapping is difficult for non-professionals
 - ▣ Improving the ability to “mark-up” maps would be useful

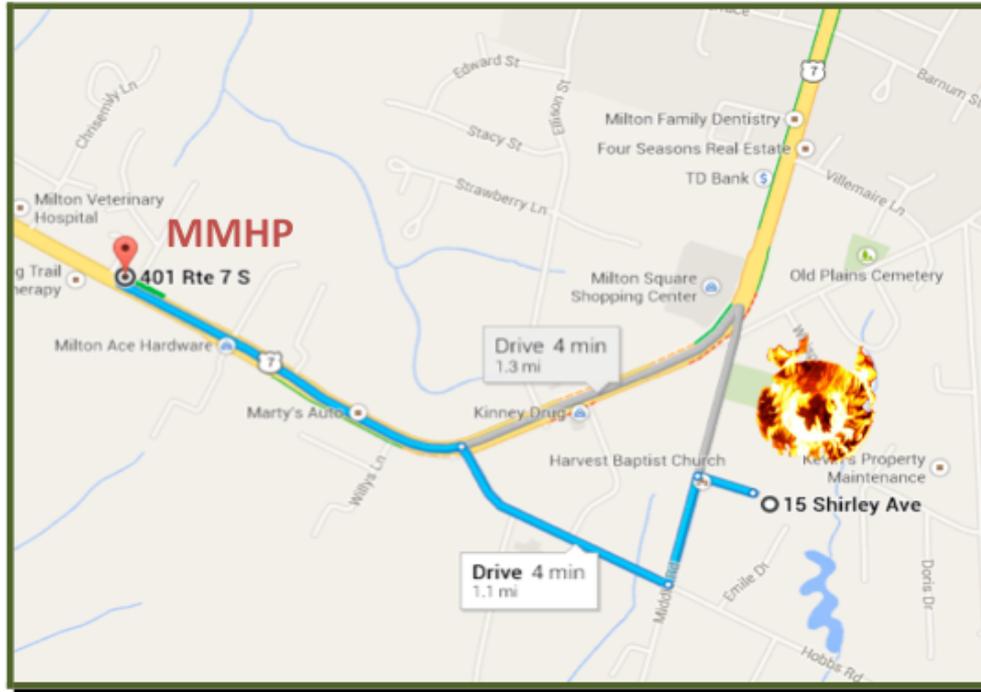
From the Milton Coop Emergency Plan:

▣ Sloping banks/ravines

If yes, please describe: The park has a deep ravine located within its borders (see map). (Lots 26-47 are all exposed to the ravine). In the case of landslide homes and/or kerosene tanks could be vulnerable. Lots 30-47 are particularly vulnerable and have the ravine directly behind the units



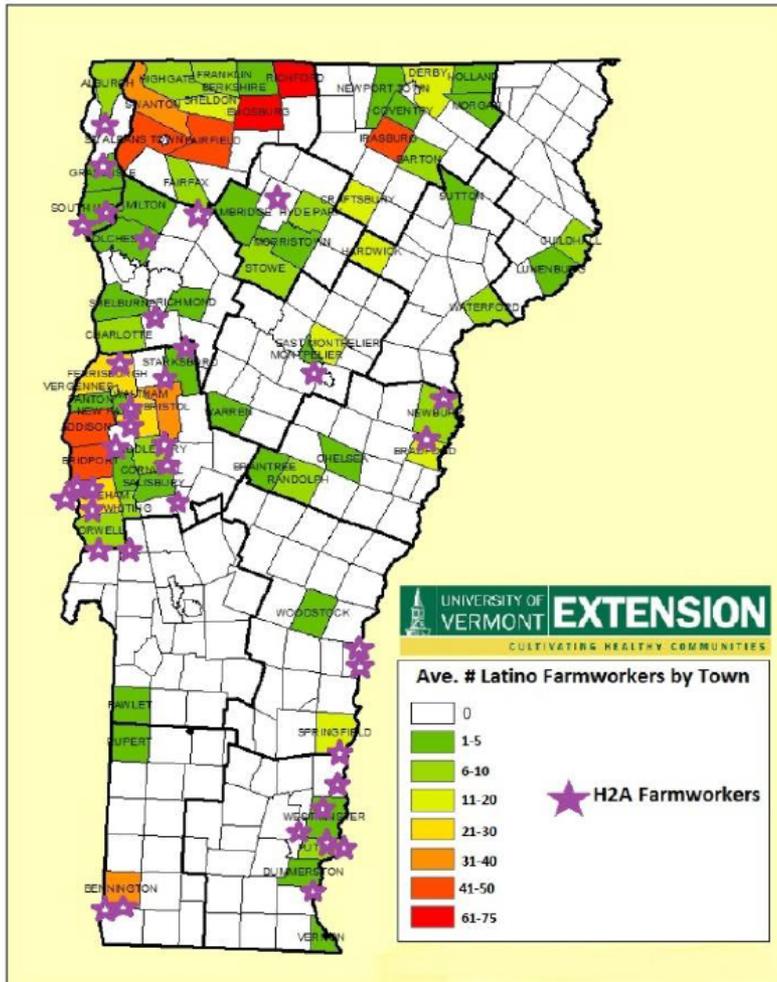
What non-GIS people do for a map



Map generated by consultant for
CAT2 emergency planning exercise

Challenges of Access to Maps: Another recent illustration

Vermont Farmworkers



Vermont Migrant Education Program:

- Hasn't updated map with new data
- Can't correct errors as they're encountered
- Utility of map is limited

- Also,
- Has to consider confidentiality issues

Discussion

- How to communicate data quality?
 - ▣ When and how should important but not official data be presented?
 - ▣ How is data quality explained to lay public?
 - An issue for us as we publish park risk pdf's
- Once the map is made what about updates?
- Can it be made easier to mark up maps?
- What tools and strategies are available to build capacity and enable better access and utilization of mapping products?
- Is there a better way to share existing maps and GIS data?
 - ▣ How to handle confidential data?



Acknowledgements

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