

Exploring the Geospatial Variations in the Public Health Workforce

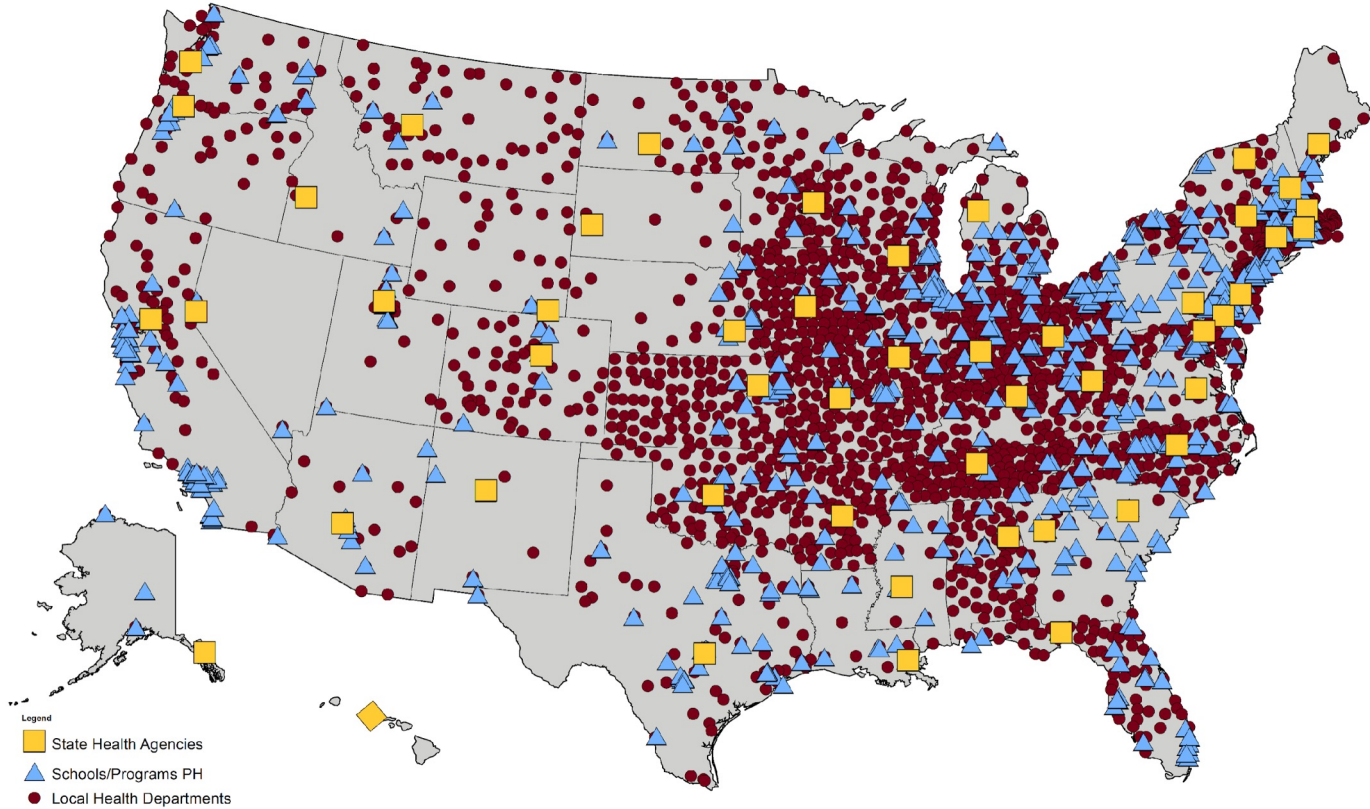
Implications for Diversifying the Supply of Potential Workers in Governmental Settings

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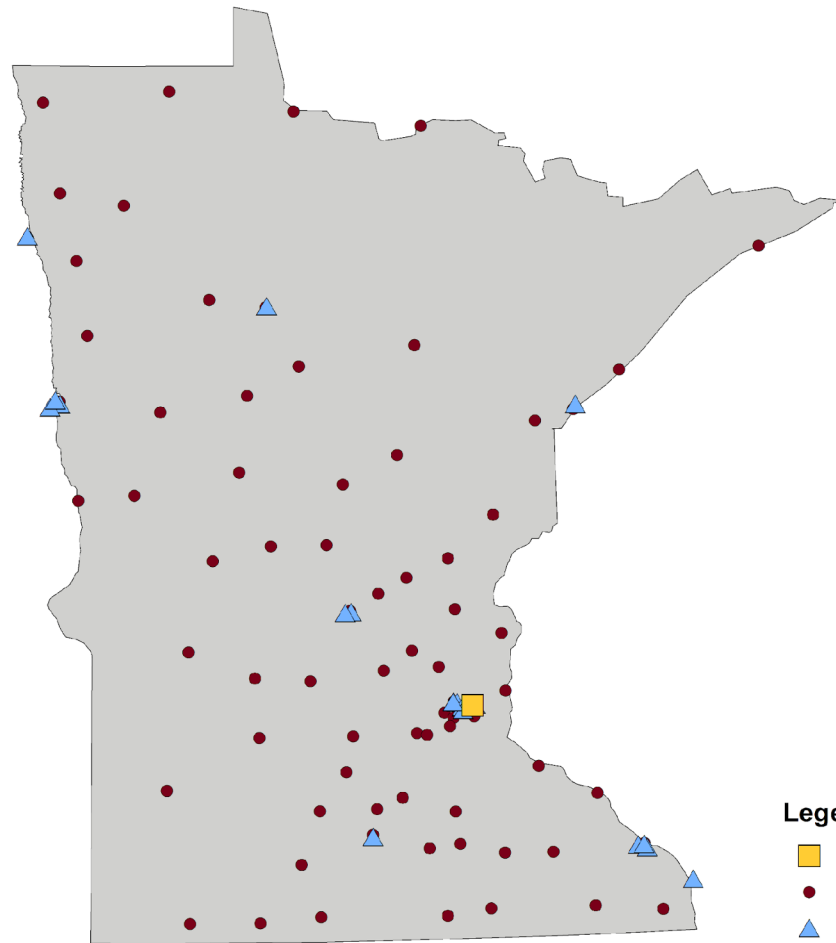
Creating comprehensive estimates of public health workforce 'supply'

Aim: Characterize the 'supply' of potential public health graduates across the US in relation to health department workforce 'demand,' distinguishing deficits or excesses and rates of 'conversion' of public health graduates to employees.

The challenge



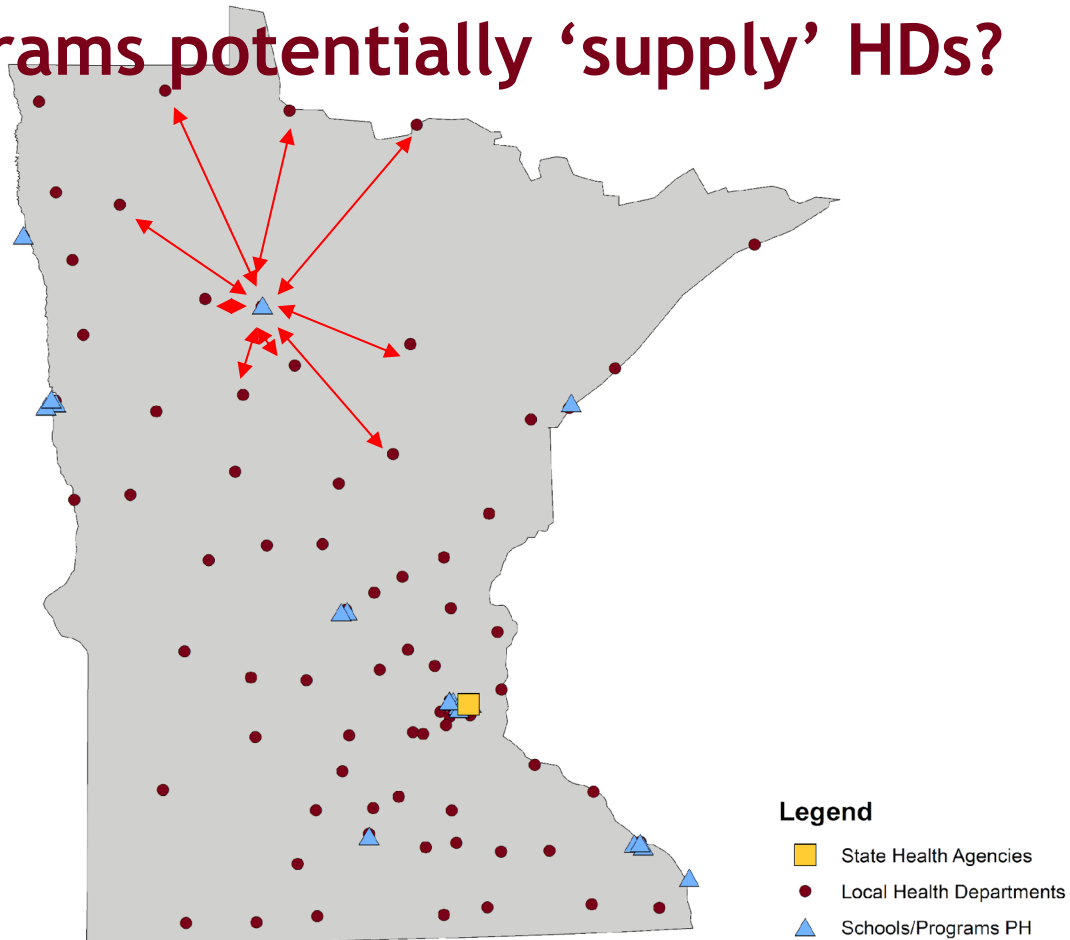
Source: ASTHO Profile, NACCHO Profile, NCES compiled by CWORPH
Not picture are Tribal or territorial health agencies



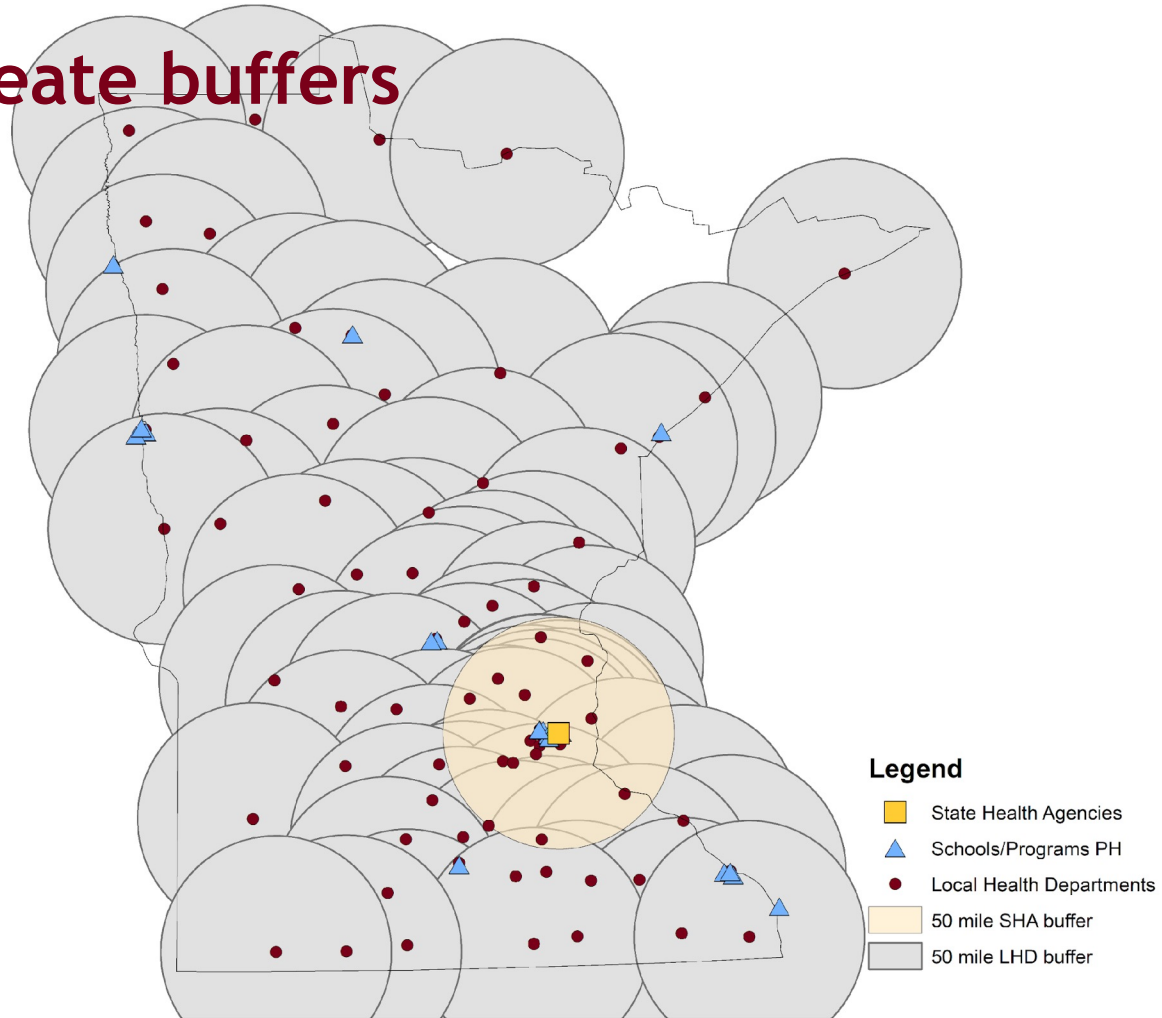
Legend

- State Health Agencies
- Local Health Departments
- Schools/Programs PH

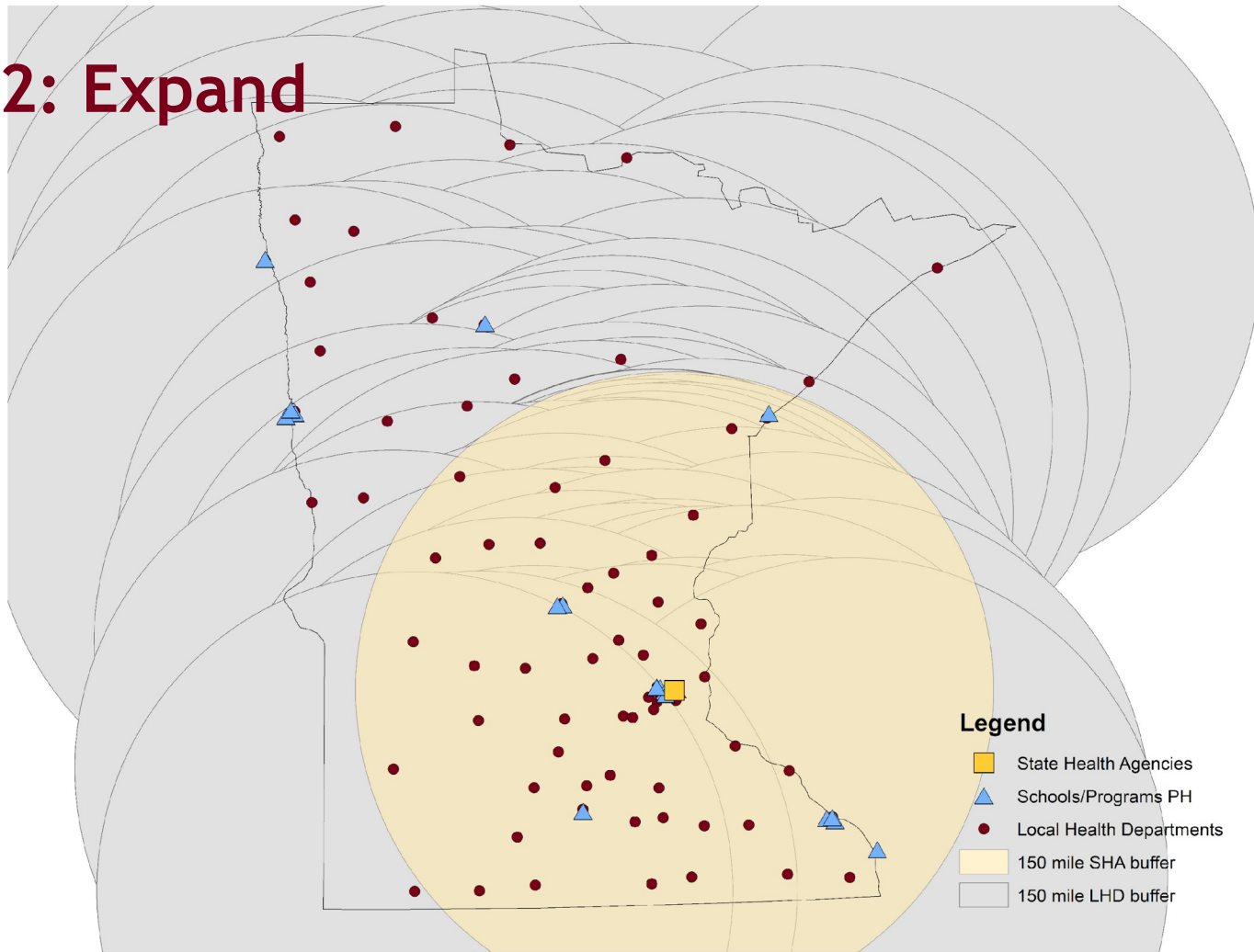
How do programs potentially 'supply' HDs?



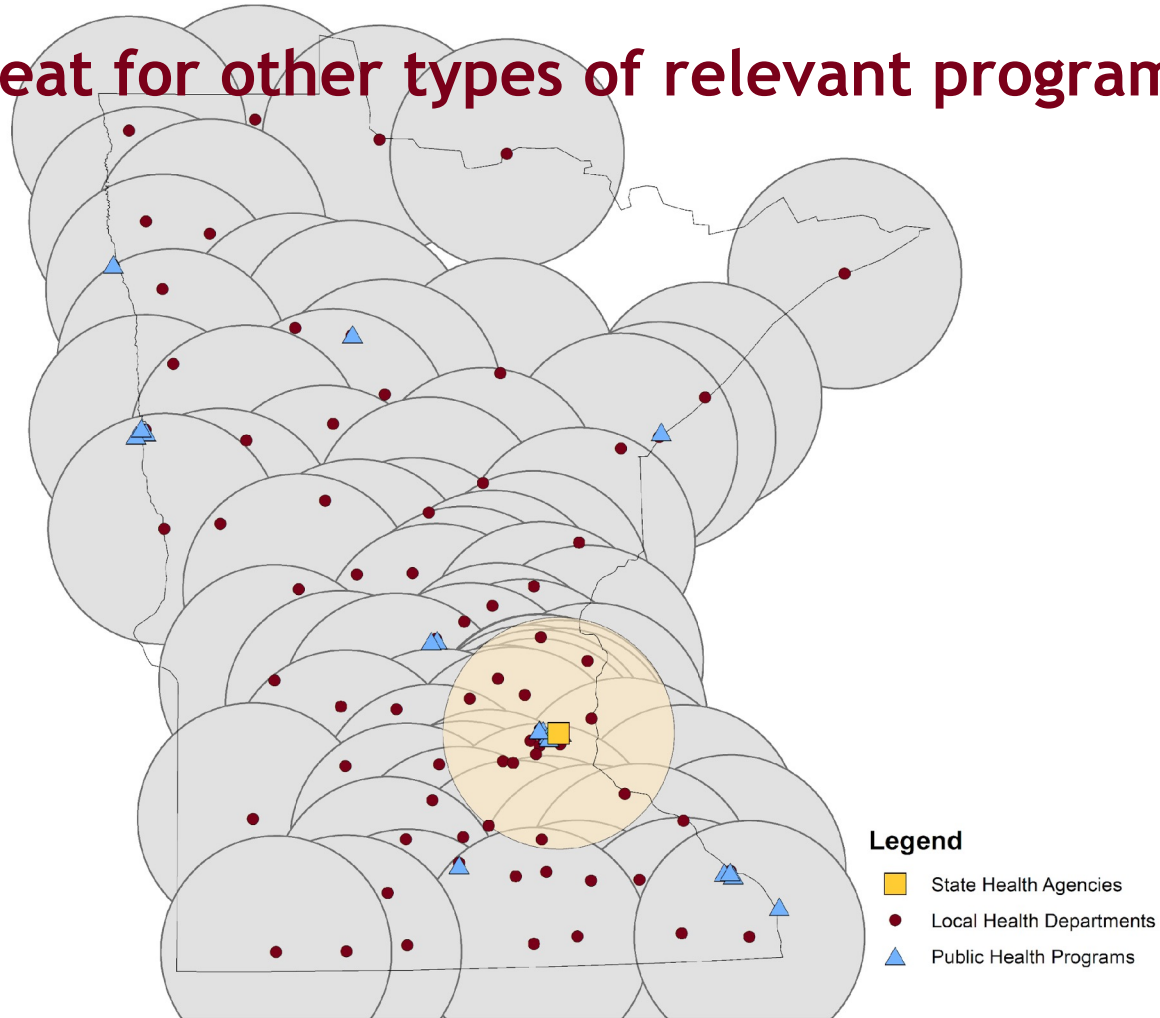
Step 1: Create buffers



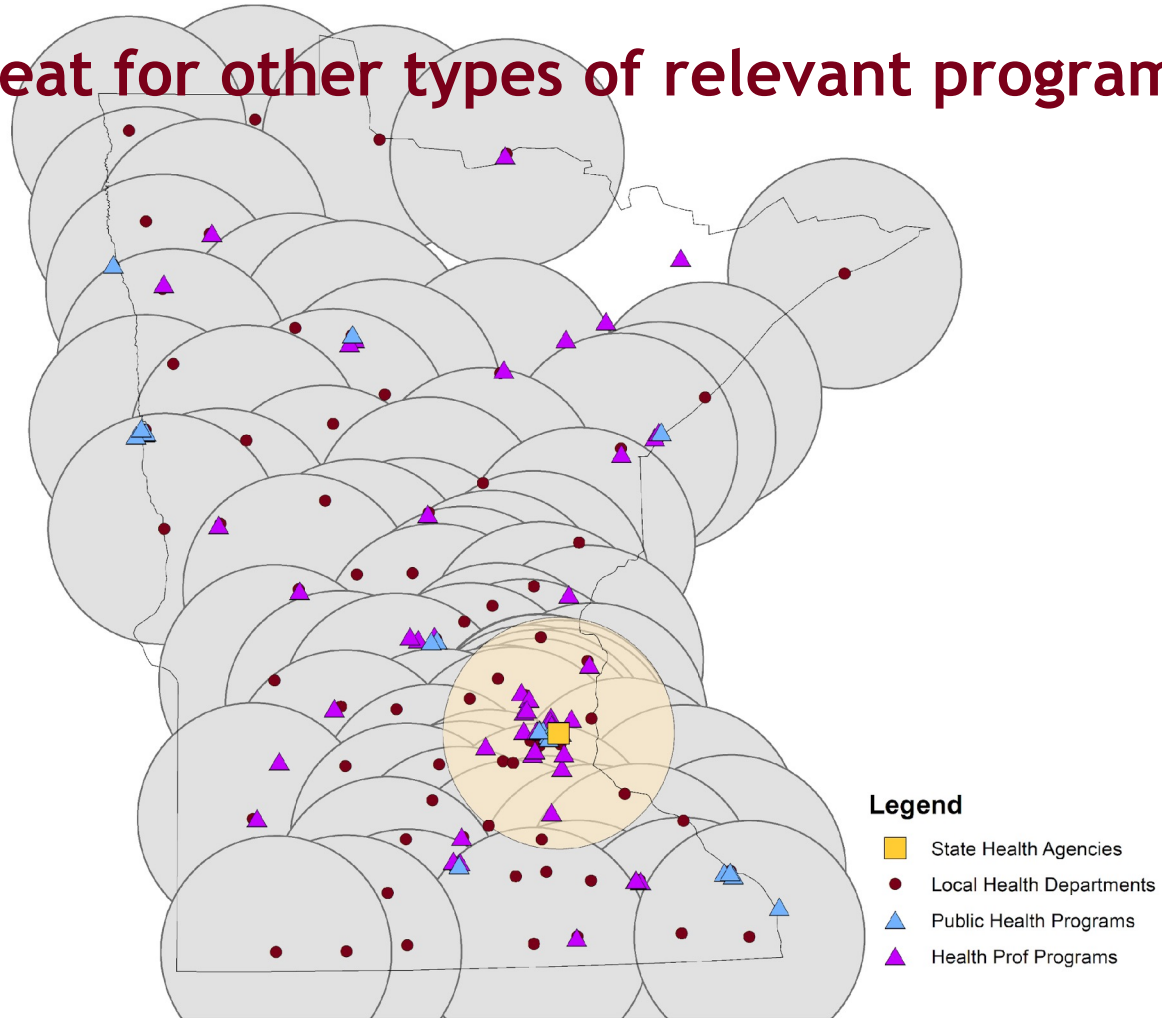
Step 2: Expand



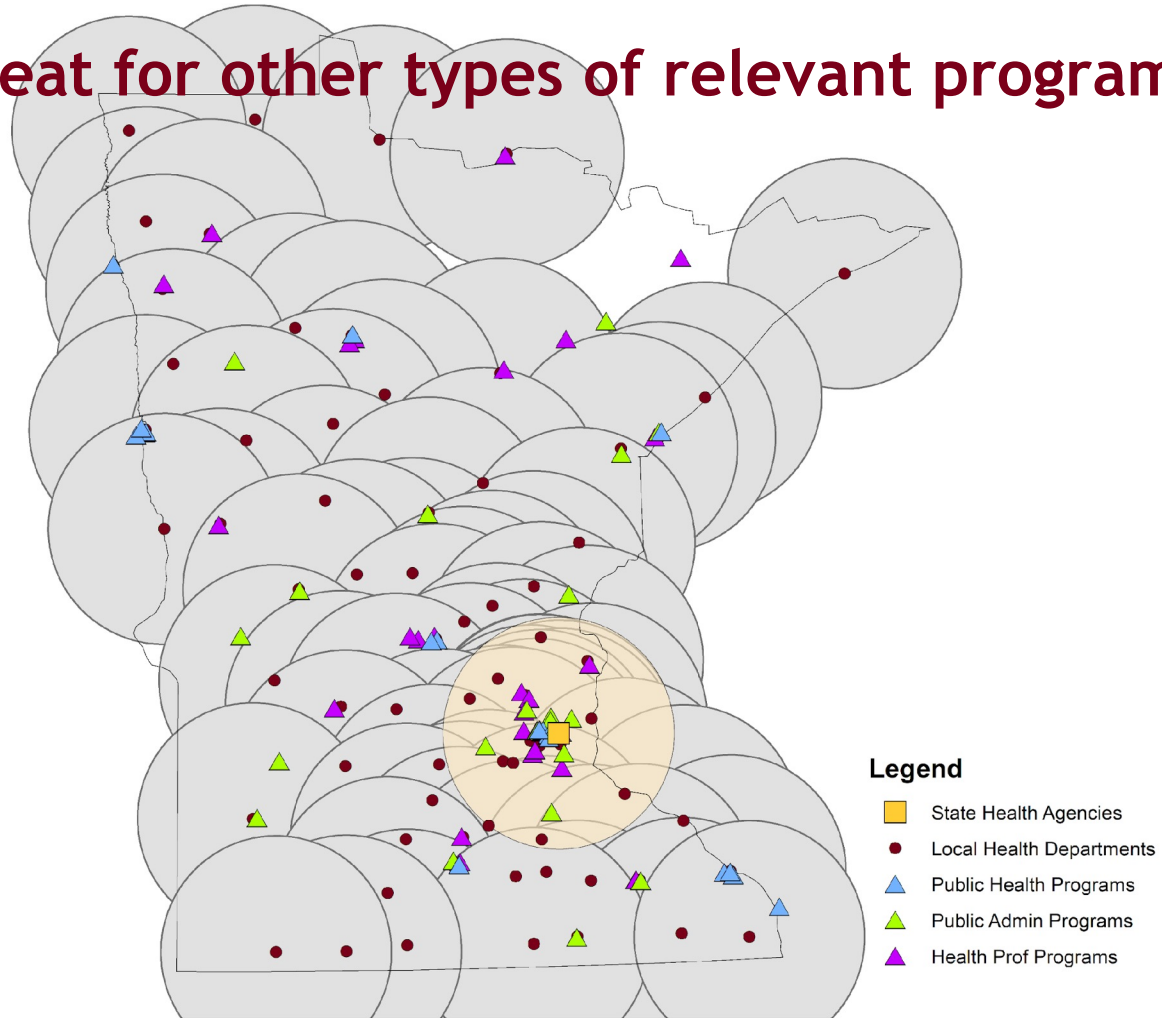
Step 3: Repeat for other types of relevant programs



Step 3: Repeat for other types of relevant programs



Step 3: Repeat for other types of relevant programs



Step 4: Addressing Labor Competition with a Geospatial Weighting System

- Identified multiple health departments within 50-mile radii of universities, creating a competitive landscape for graduate labor.
- Introduced a geospatial weighting system to adjust for this competitive dynamic.
- Assigned weights to universities inversely proportional to the number of nearby health departments: higher for those serving a single department, lower for those serving many.
- Calculated the 'weighted' graduate supply by multiplying each university's graduate count by its assigned weight.

Step 5: Assessing the Potential Labor Supply for Health Departments

- Calculated a geographically adjusted potential labor supply score for each health department by aggregating 'weighted' graduate counts from universities within a 50-mile radius.
- This score accounts for competition among neighboring health departments, offering a more nuanced perspective on the availability of skilled graduates.
- Computed an average geographically adjusted potential labor supply score to provide a comprehensive view of potential workforce supply within the region.

Note: Tribal locations come from Bureau of Indian Affairs, which likely overestimates demand as not all federally-recognized tribes have health departments, and not all tribal health departments perform population, regulatory, and direct services

Potential Labor Supply: Public Health Degree Conferrals

	Average Public Health Degree Conferrals (Bachelor's level)		Average Public Health Degree Conferrals (Master's level)	
	50 Mile	150 Mile	50 Mile	150 Mile
State Health Agency	14.5	8.4	12.8	7.8
LHD – Large	27.0	12.9	26.7	11.6
LHD – Medium	9.4	7.3	9.7	7.2
LHD – Small	4.0	4.0	4.4	4.9
Tribes	8.3	8.0	6.8	5.9
Territory	31.8	15.9	201.8	100.9

List of degrees in 'Expanded'

- Accounting and related service ● Business/ Commerce, General
- Business Administration, Management and operation ● Business Operations Support and Assistant Services
- Communication and Media Studies ● Communication, Journalism, and Related programs, others
- Marketing ● Education, General ● Engineering, General ● English Language and literature
- Environmental science ● Exercise Science and Kinesiology ● History
- Health and Medical Administrative Service ● Human Resources Management and Service
- Health Services/ Allied health/ Health sciences ● International/ Global Studies
- Information Science/ Studies ● Mathematics and Statistics, other
- Practical nursing, Vocational nursing and Nursing assistant ● Food, nutrition and related services
- Registered Nursing, Nursing Administration, Nursing research and Clinical nursing
- Microbiological science and immunology ● Social sciences, other
- Dietetics and Clinical Nutrition services ● Psychology
- Biological and Biomedical science, other (Other Biological science) ● Sociology
- Public Administration ● Public Health

Potential Labor Supply: Expanded Degrees Conferrals

	Average Expanded Degrees Conferrals (Bachelor's level)		Average Expanded Degrees Conferrals (Master's level)	
	50 Mile	150 Mile	50 Mile	150 Mile
State Health Agency	589.8	368.2	251.9	152.2
LHD – Large	1106.7	569.3	488.8	232.2
LHD – Medium	424.0	361.8	178.5	148.2
LHD – Small	189.6	231.9	75.1	99.3
Tribes	322.6	323.4	130.9	128.9
Territory	2255.9	2612.8	675.7	701.6

Discussion

- **Regional Disparities Exists**

- A lot of competition exists for public health degree recipients (and other types of graduates) at SHAs / LHDs / tribes and territories.
- Very different kinds of competition depending on geography

- **Proximity Isn't a Promise**

- Many regions have few programs, some are awash – but this does not mean alumni *want to enter the workforce*
- Need to consider if there is potential supply, how do we convert graduates to employees?
- If there is not supply, how do we increase it?

Discussion

- **Moving beyond relationship-based pathway programs**
 - Too often, structures fail when champions leave, or priorities shift and interest is lost. To sustain, investments must be made, MOUs signed, and structures put in place for students to have clear pathways, systematically, from schools into health departments
- **Beyond the Count**
 - This investigation shows the baseline of number of graduates, but these are the potential upper bounds in a given year.
 - Interest, fit, depth of expertise, and ability to recruit all decrease the effect supply of graduates

Implications and future work

- Exploring Deeper Dimension
 - **Sociopolitical Dynamics:** Future research will delve into the sociopolitical drivers shaping the supply landscape, providing a holistic understanding of factors beyond mere geographical proximity and graduate counts.
- Currently working with ASTHO, NACCHO, and ASPPH to use data derived in this process to make better dashboard to connect their members (e.g., for internships, pathways programs)
 - Can use same process for any similar approach / need, e.g., how many nurses, laboratorians, IT professionals are graduating within X miles of a given county
- Relevant for similar kinds of programs (not just degrees) - fellowships, traineeships, etc

Questions?

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Potential Labor Supply in Public Health: A Regional Analysis

50 Mile	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
Average Public Health Degree Conferrals (Bachelor's level)	2.6	10.0	12.4	10.6	5.0	7.9	1.6	13.7	24.1	14.9
Average Public Health Degree Conferrals (Master's level)	5.5	11.0	17.9	9.2	6.2	5.4	3.3	8.3	18.4	5.6
150 Mile	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10
Average Public Health Degree Conferrals (Bachelor's level)	3.6	8.4	11.4	8.3	4.1	5.2	1.2	5.8	13.7	6.5
Average Public Health Degree Conferrals (Master's level)	6.6	9.2	14.3	7.5	5.2	3.5	2.2	2.8	10.4	2.9