

EMS Data Mapping

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Introduction



Reese, Charlotte. "First Responder Bill Passes House in Light of 9/11 Anniversary - WBCB News" WBCB News, 14 Sept. 2017. www.wbcnews.com/blog/first-responder-bill-passes-house-light-911-anniversary/

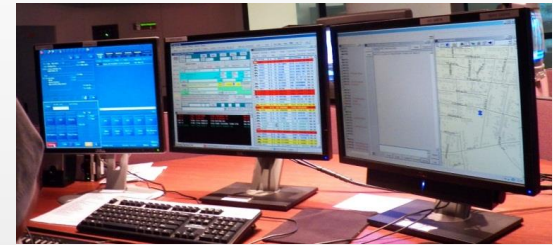
- What is the most common thing to do in the case of an emergency? **Call 911!**
- Expectation vs. reality for a quick response
- What would happen if the lack of volunteers and funding continues to plague EMS (Emergency Medical Services)?
- We took an in depth look into the individual response times in Bradford, Lycoming, Sullivan, Tioga, and Wyoming County
- Compared our results to the 2018 Year End EMS Data Report

Purpose of the Project

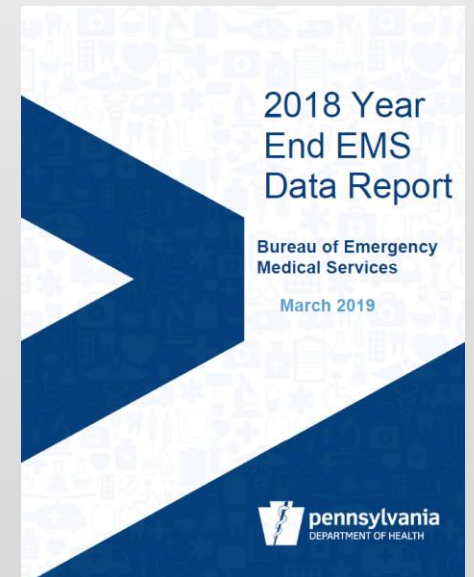
- **County Commissioners Association of Pennsylvania's (CCAP) task force is focusing on EMS service delivery**
 - They would like to have a visual aid when addressing the volunteerism crisis, particularly in rural areas
- **Fire and EMS share many of the same issues, so addressing the problems for EMS will also show similar problems areas for fire.**
- **Volunteerism is on the decline which could result in increased response time and loss of life**
- **Grants exist for equipment but not personnel**
- **Under current legislation, counties cannot aid in funding personnel within EMS companies**
- **Ultimately, preserve as many current volunteers as long as possible**

Information Sources Used

- Each county GIS Coordinator extracted data from their CAD (Computer Aided Dispatch) systems
 - Data requested: Date, time of dispatch, time on scene, latitude/longitude of call, first on scene, type of call
 - Data collected from January 1, 2018 – December 31, 2018
- 2018 Year End EMS Report
 - PA Bureau of Emergency Medical Services



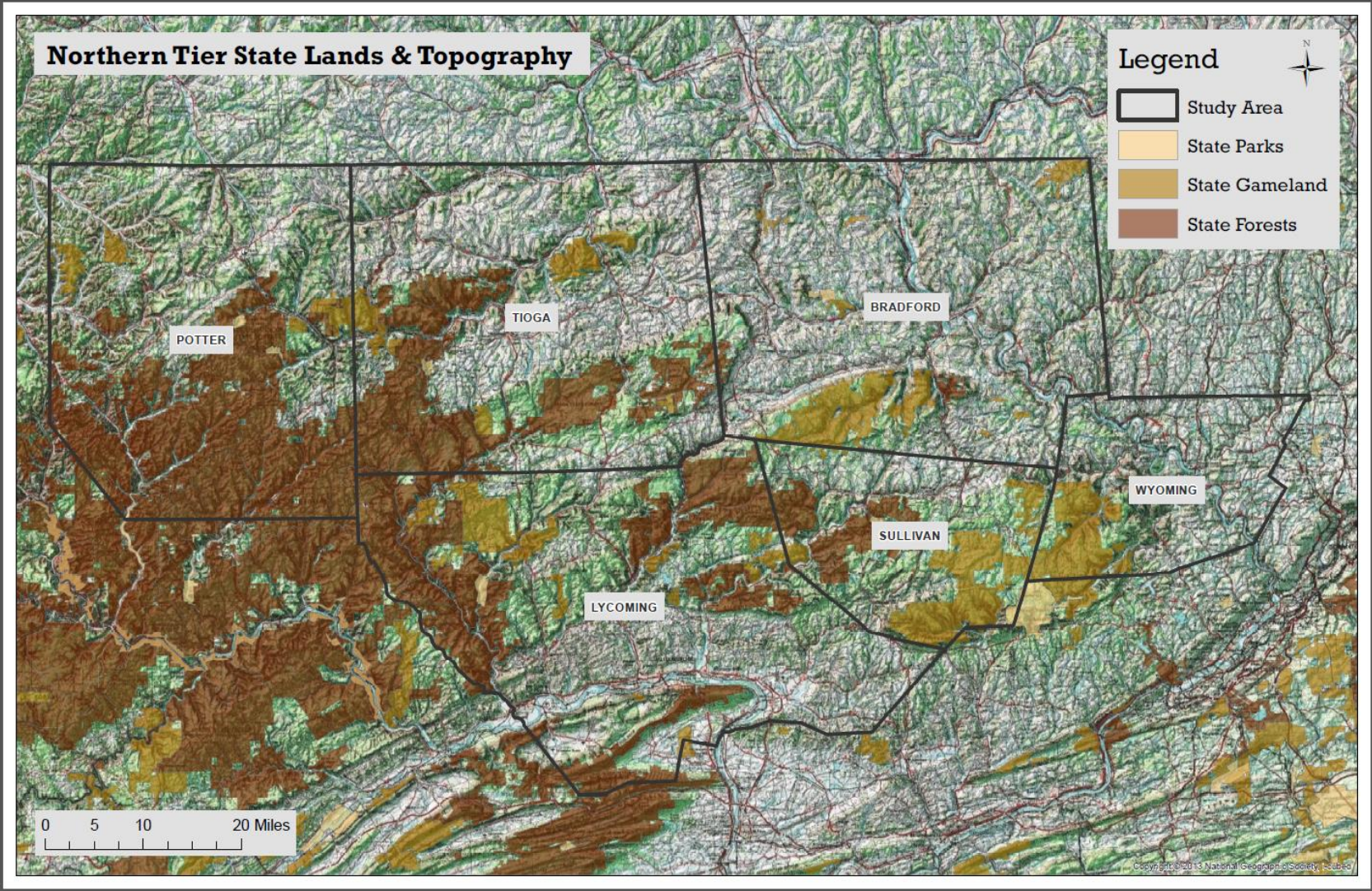
Computer Aided Dispatch (CAD). www.greensboro-nc.gov/departments/gulfordmetro-9-1-1/gm-9-1-1-technologies/computer-aided-dispatch-cad.



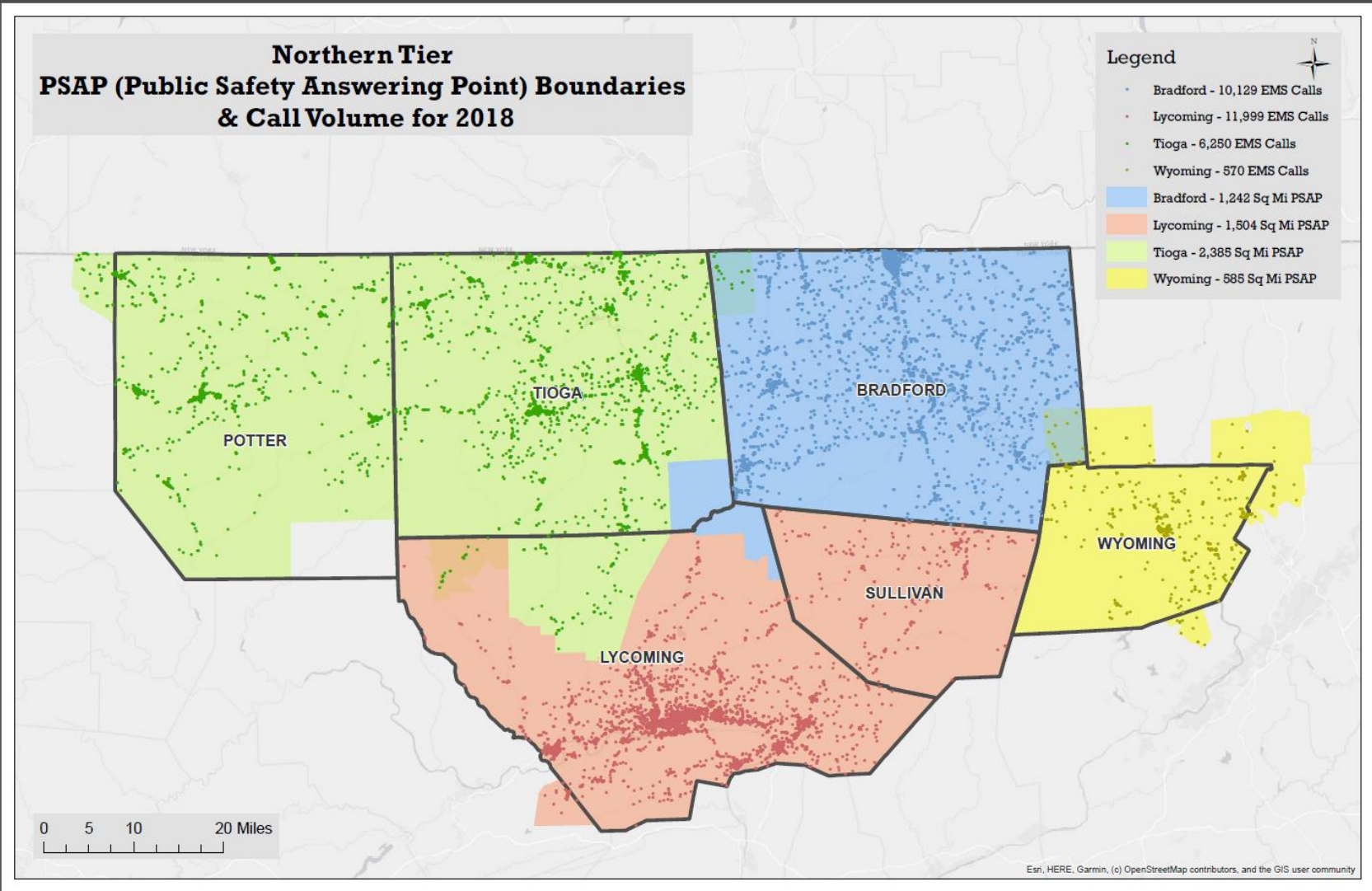
Challenges

- Wyoming and Tioga County CAD data was limited
- Discrepancies between each county's CAD system
 - Categorizing inconsistencies
- Unsure of how 911 calls are tracked at the state level
 - Therefore, there was no universal data set
- Formatting issues when importing data to ArcMap
 - Limited what we could visually show
- Massive volume of calls to sort through

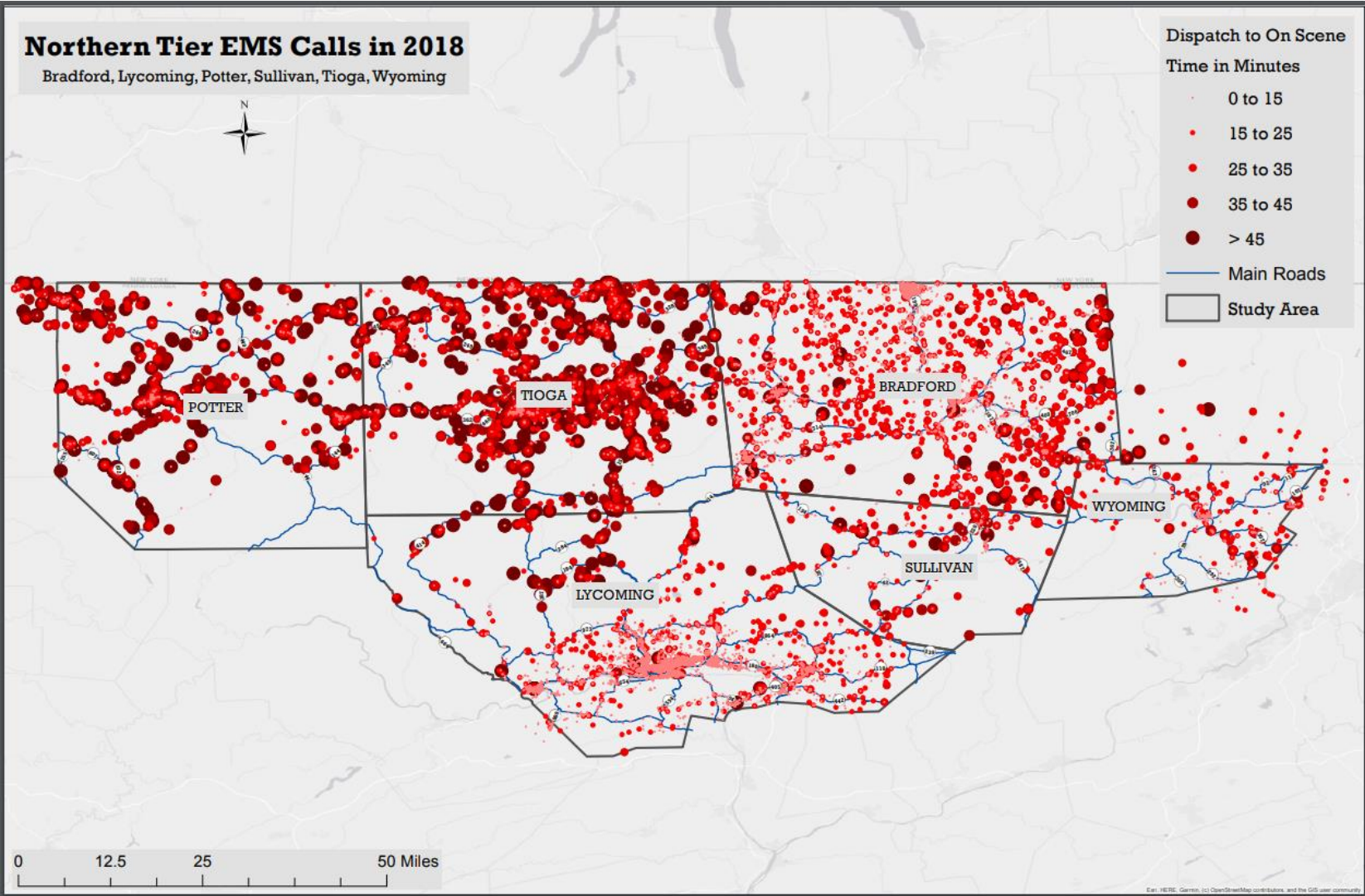
Regional View of Our Findings



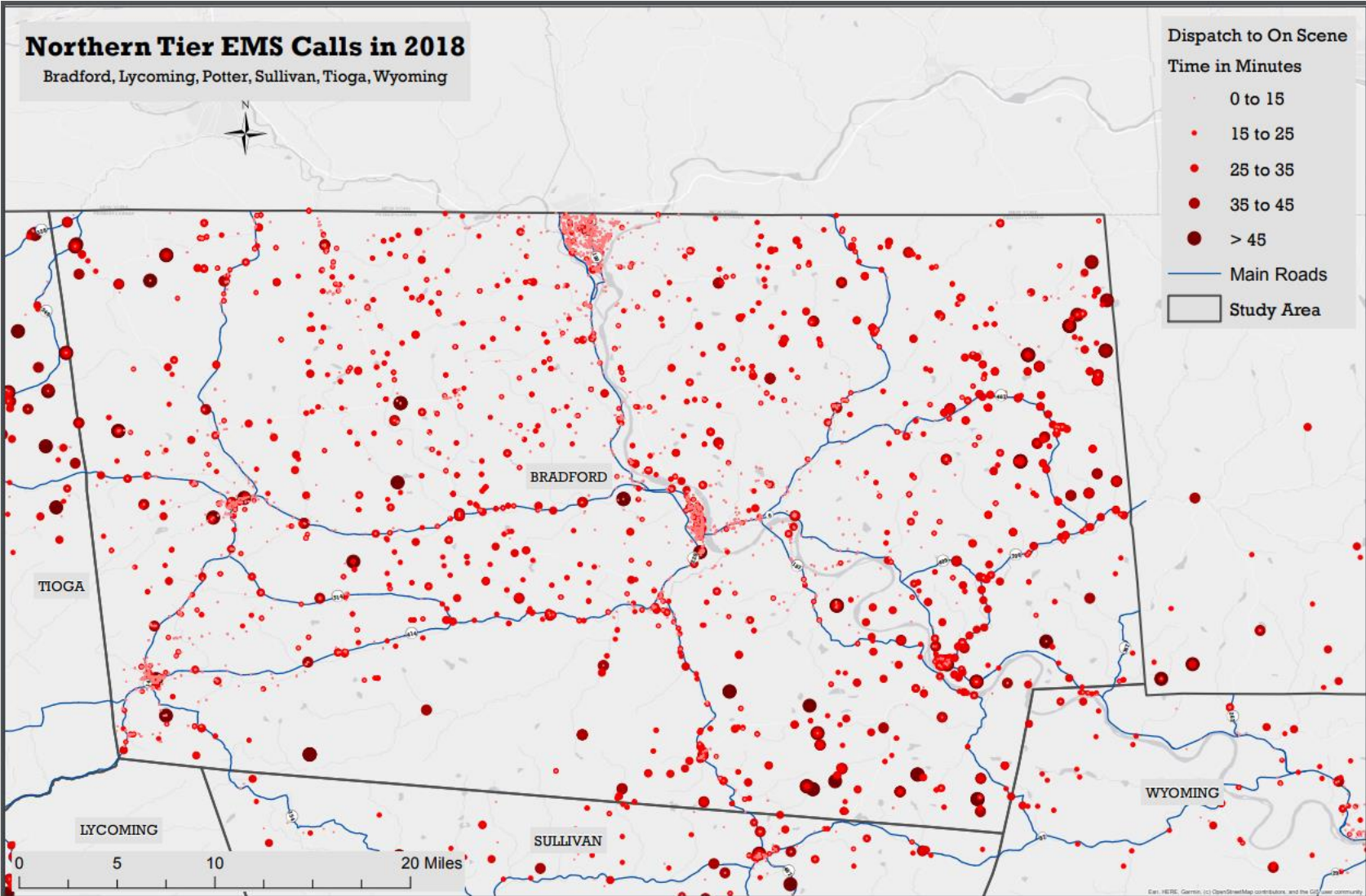
Regional View of Our Findings



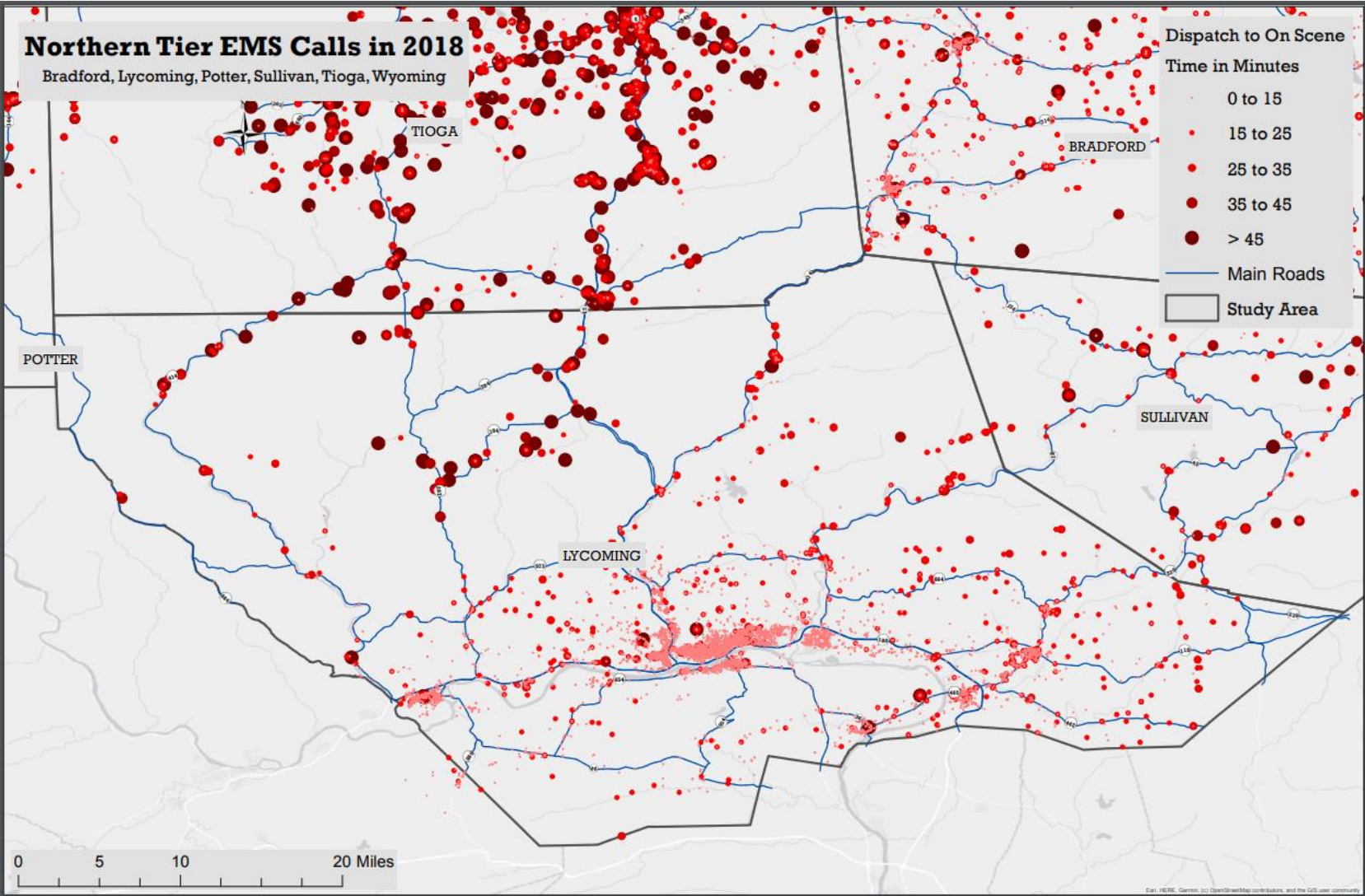
Regional View of Our Findings



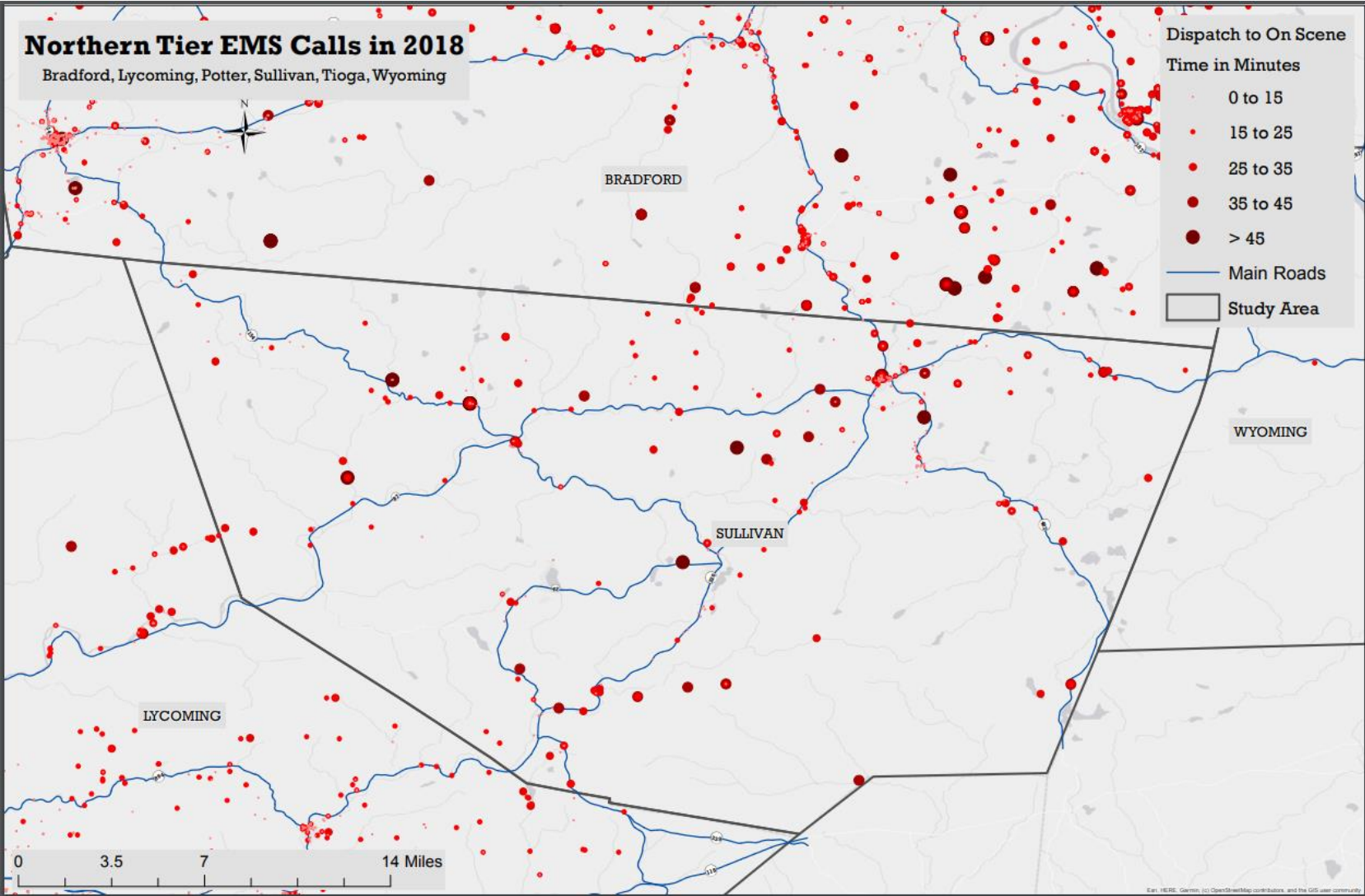
Our Findings – Bradford County



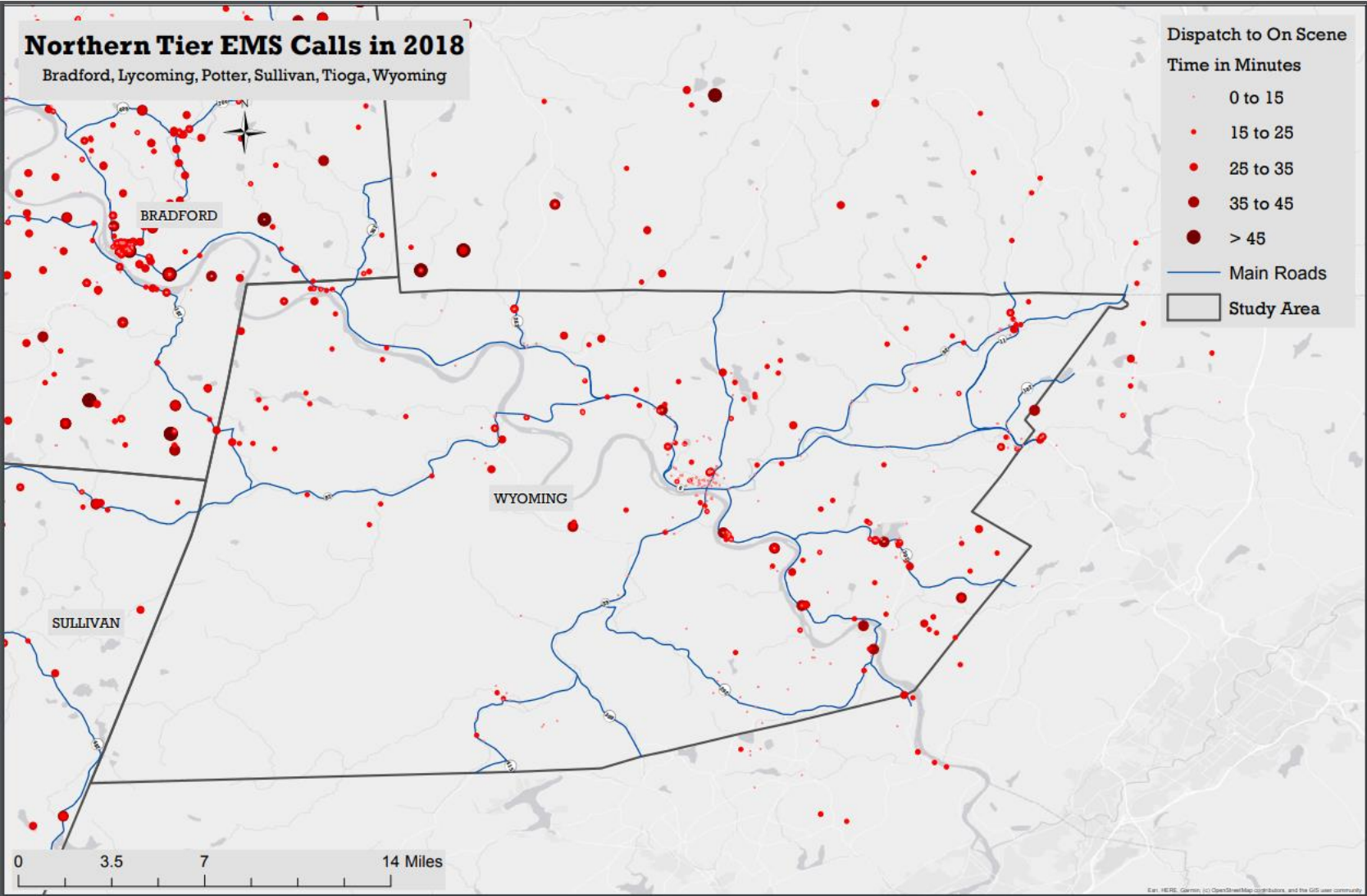
Our Findings – Lycoming County



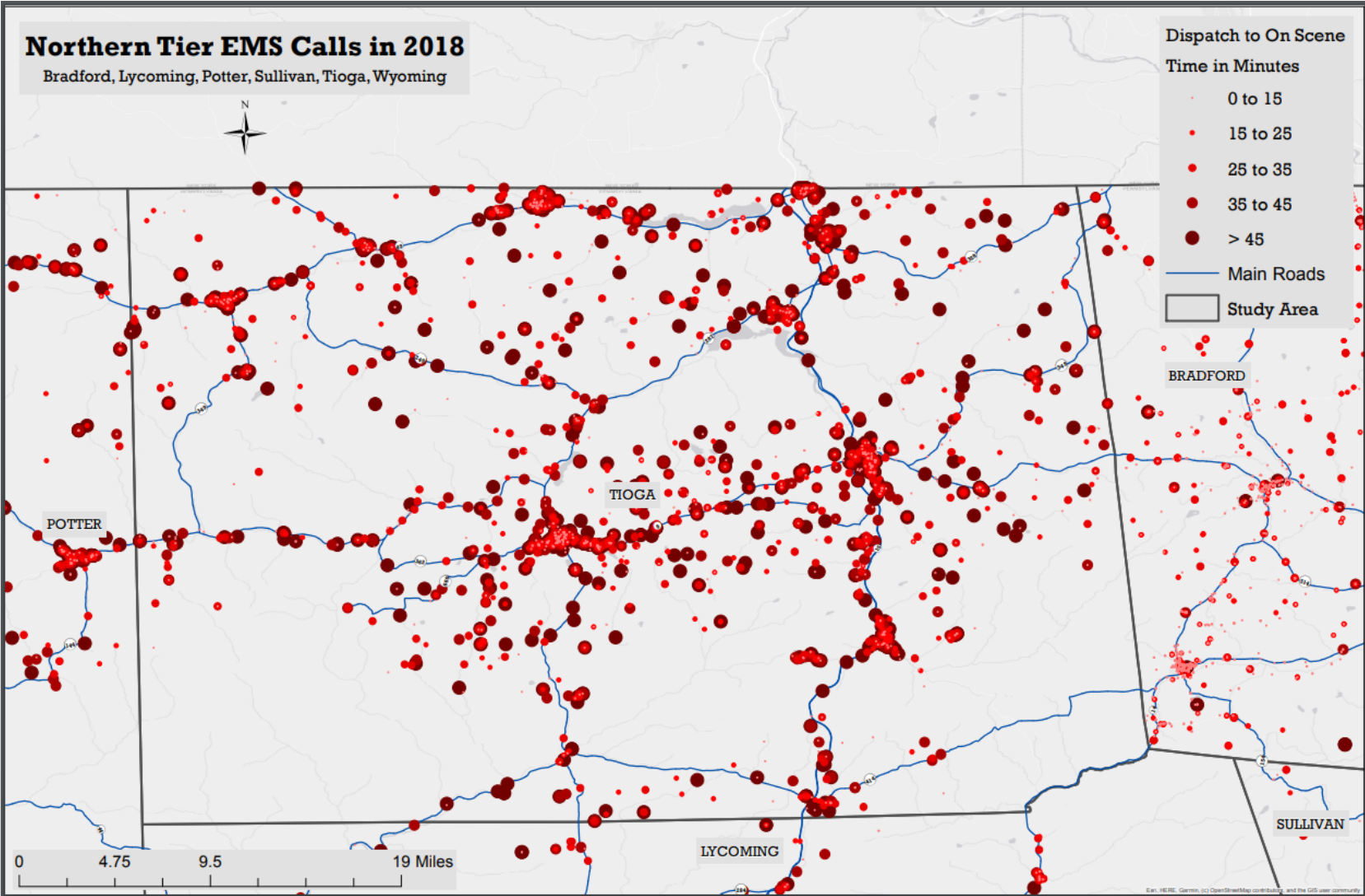
Our Findings – Sullivan County



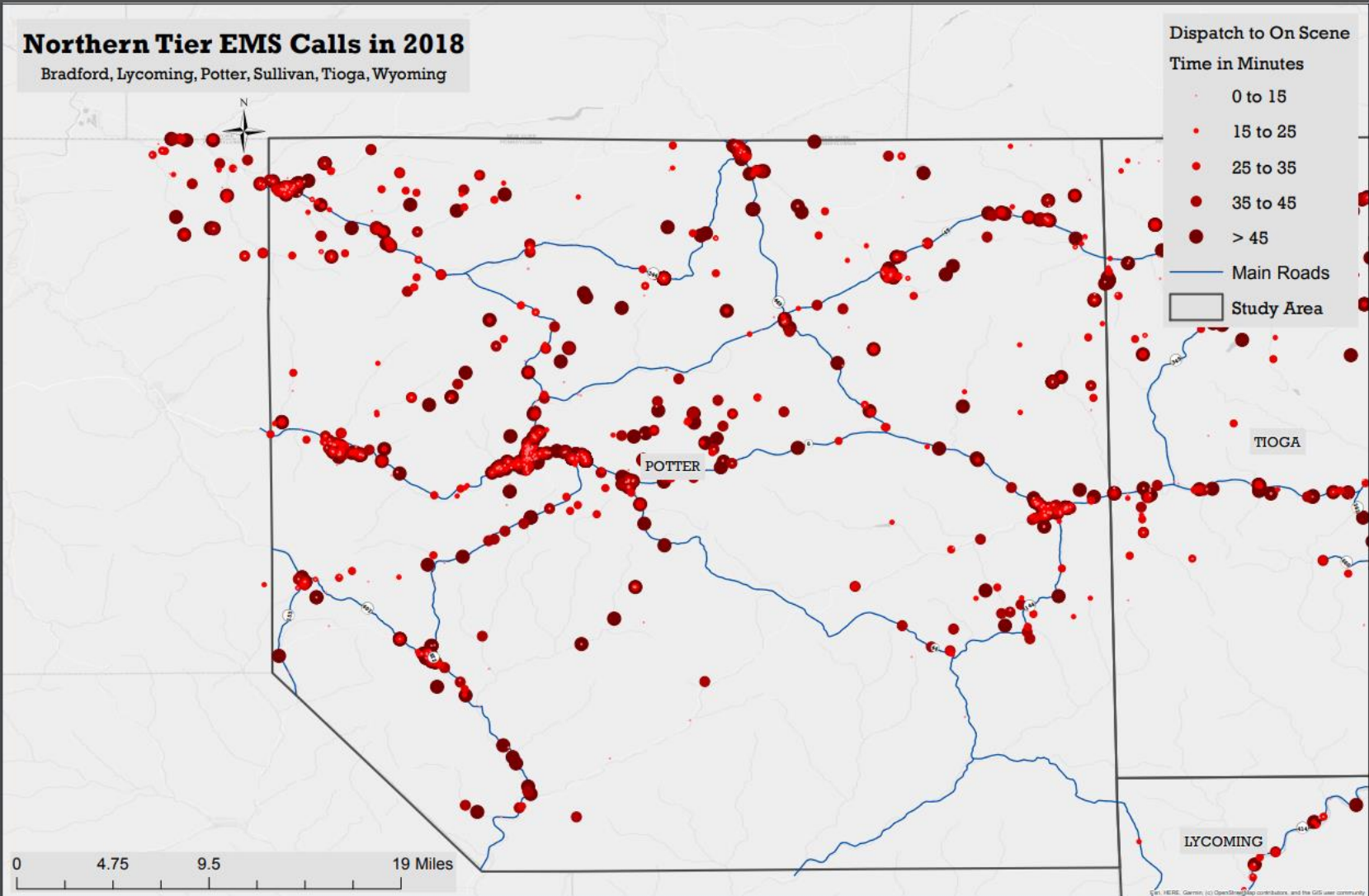
Our Findings – Wyoming County



Our Findings – Tioga County



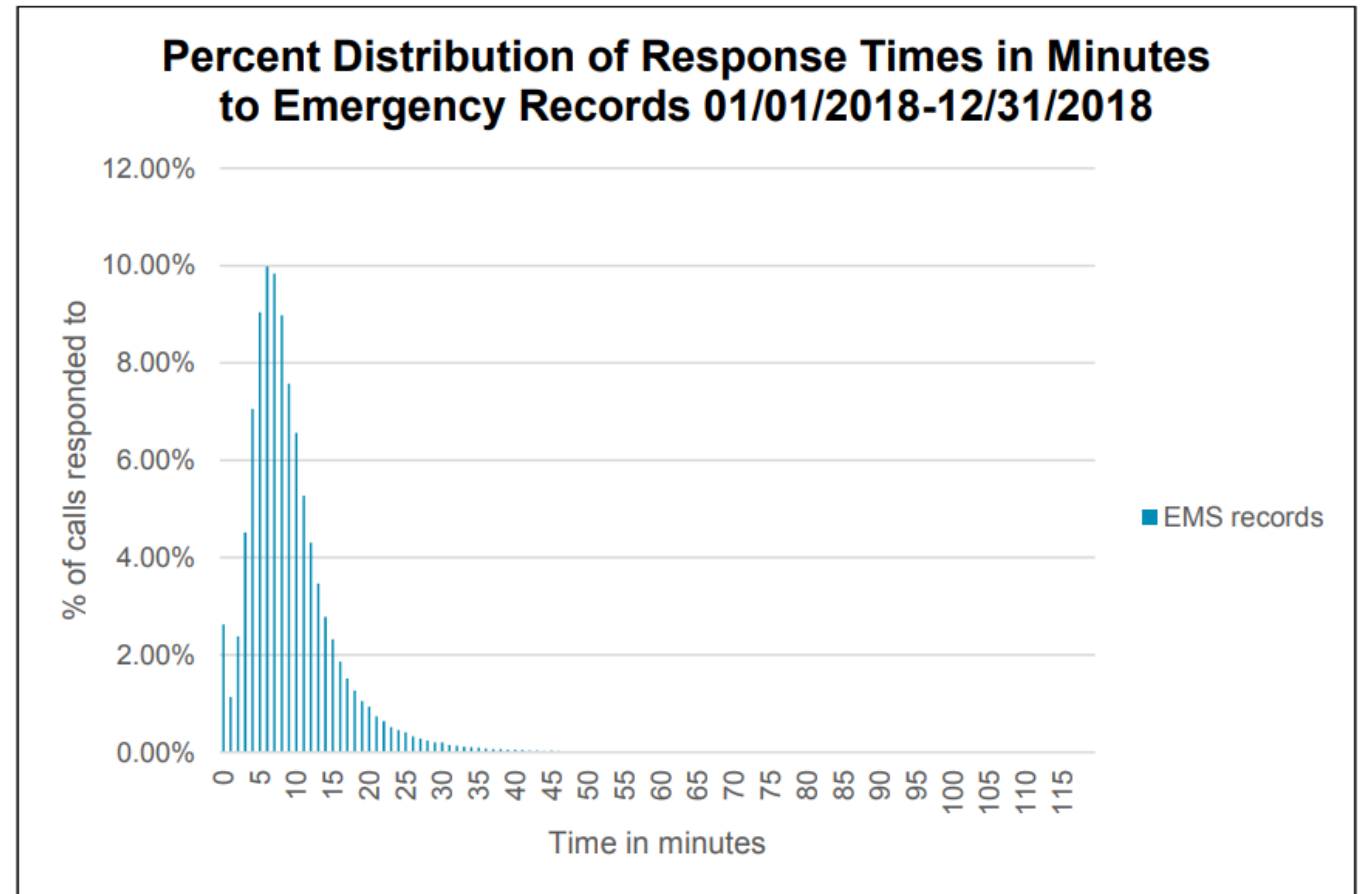
Our Findings – Potter County



Supporting our Findings

- Response time is measured from the time that the unit was notified by dispatch to the time that the unit arrived on scene.
- 70% of calls received a response time of 10 minutes or less.
- Response times for some counties in our region of study were almost double that of the majority of response times in Pennsylvania.

Figure 19. Percent Distribution of Response Times in Minutes, Emergency Records, 01/01/2018 – 12/31/2018



Supporting our Findings

County	Number of Valid Records	90th Percentile Response Time (Minutes)	Average Response Time (Minutes)	Median of Response Time (Minutes)
Bradford	7986	23.00	11.17	8.00
Lycoming	17038	17.00	9.77	8.00
Sullivan	1045	42.00	24.06	24.00
Tioga	6370	30.00	14.30	11.99
Wyoming	4374	23.73	13.56	12.00

- Our region had higher than average response times due to limited volunteers, lack of funding, and a large coverage area.

Other Related Issues EMS is Facing

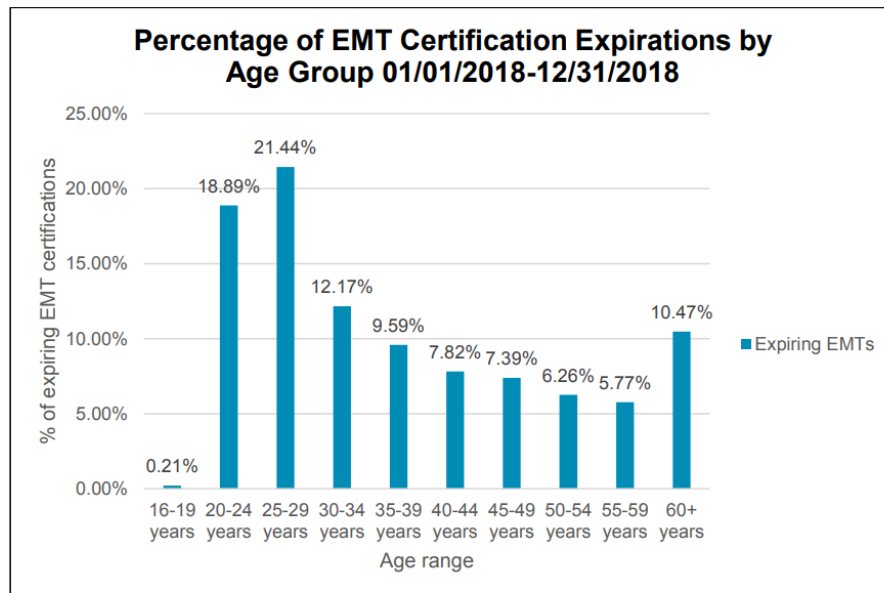
- Age of volunteers
- Retaining younger volunteers
- Attracting prospective members
- Lack of personal time
- Limited incentives to remain
- Increased training and certification requirements
- Cost of trainings and certifications
- Employer flexibility regarding calls
- Geography of region
- Size of coverage areas
- Infrastructure



"2018 Year End EMS Data Report." Pennsylvania Department of Health, Mar. 2019, www.health.pa.gov/topics/Documents/EMS/Bureau/2018%20EMS%202018%20Year%20End%20Data%20Report.pdf.

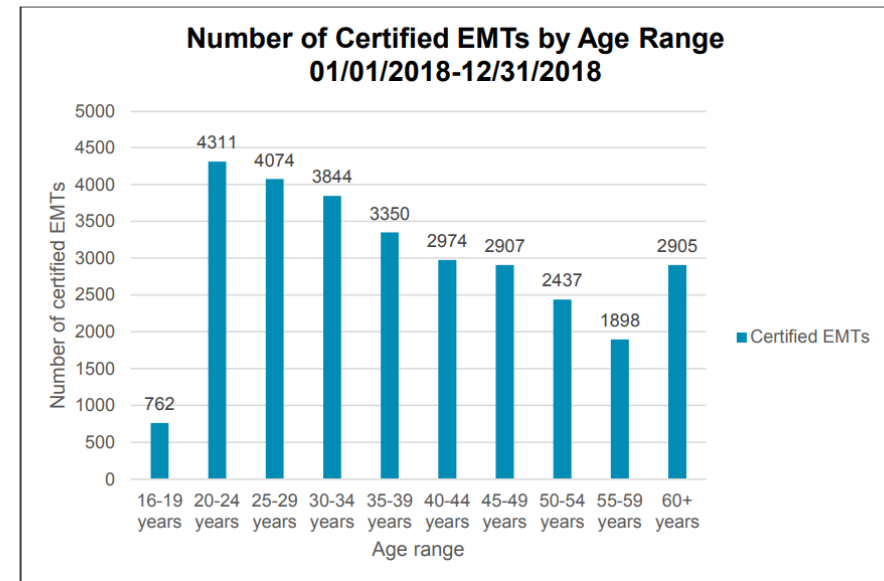
EMS Age and Retention

Figure 20. Percentage of EMT Certification Expirations by Age Group, 01/01/2018 – 12/31/2018



Source: Pennsylvania State EMS Certification Registry, 2019

Figure 22. Number of Certified EMTs by Age Range, 01/01/2018 – 12/31/2018



Source: Pennsylvania State EMS Certification Registry, 2019

Figure 22 displays the age range distribution of certified EMTs within Pennsylvania's EMS system. It is important to note that this is the available workforce, not necessarily the "active" workforce.

- Young EMT's are coming into the field, but the retention rate is low.

Future Scope of Work

Accomplishments

- The basic project needs have been met: location of calls and response times

Future Objectives

- Distance vs time to call
- Time of year vs. number of calls
- Day of week vs response time
- Time of day vs response time
- Total time from call received to back in service
- Fire calls with similar criteria

Conclusion

- **THIS STUDY WAS NOT MEANT TO DISPARAGE THE WORK DONE BY THESE RESPONDERS**
- **LACK OF PERSONNEL, FUNDING, AND EXTENSIVE COVERAGE AREAS RESULTED IN HIGH RESPONSE TIMES IN OUR REGION**
- **HIGH RESPONSE TIMES CAN AFFECT THE ECONOMIC DEVELOPMENT OF OUR REGION**
- **ROOT OF THE ISSUES NEED TO BE ADDRESSED BEFORE THIS PROBLEM ESCALATES**

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