TOBACCO RETAILER LICENSING EDUCATION:

A Community and University Collaboration

Boman-Davis, M., Jackson, K., Moya, K.,
Knutson, G., and Linayao-Putman, I.

Corresponding Author:
Marie Boman-Davis, PhD, MPH, MCHES, Assistant Professor, Department of Community Health
School of Health and Human Services, National University, San Diego, CA, USA
mbomandavis@nu.edu

Funding Acknowledgements:

- This material was made possible by funds from the County of San Diego, Health and Human Services Agency, Public Health Services received from the California Department of Public Health, under contract #CTCP-13-37.
- This material was made possible by funds received from the Department of Community Health, School of Health and Human Services, National University.

Conference Presenters:

- Dr. Boman-Davis, Assistant Professor, National University
- Mr. Murphy, III, Agents of Change at National University, BSPH Student (Guest)

Photo Source:
Healthy Stores for a Healthy Community
www.healthystoreshealthycommunity.com/visuals

Tobacco Retailer Licensing Education

Edit A story map

1 2 3 4 5 6 7 8 9

Hello and Welcome!

My name is Dr. Marie Boman-Davis and I first used GIS as a Public Health graduate student. I am now an Assistant Professor in the Department of Community Health, School of Health and Human Services, Onsite Lead of the Bachelors of Science in Public Health, and Faculty Advisor to a public health surveillance student organization *Agents of Change at National University* which is based in San Diego, California, USA.

We serve a dizzying array of students with different interests and skills but they all recognize that "PLACE MATTERS" as we begin to incorporate GIS into our research and classrooms across the University.

Our community partners have rich spatial data and we have a committed service team ready to put GIS tools to work; therefore, we formed community and University partnerships, specifically to support local and national tobacco control efforts.

Today we will share one of our community collaboration success stories. National University partnered with the Tobacco Control Resource Program, County of San Diego, Health and Human Services Agency, Public Health Services and Vista Community Clinic (VCC) on Tobacco Retailer Licensing (TRL) education.

Vista Community Clinic

Tobacco Retailer Licensing Education

Edit A story map

1 2 3 4 5 6 7 8 9

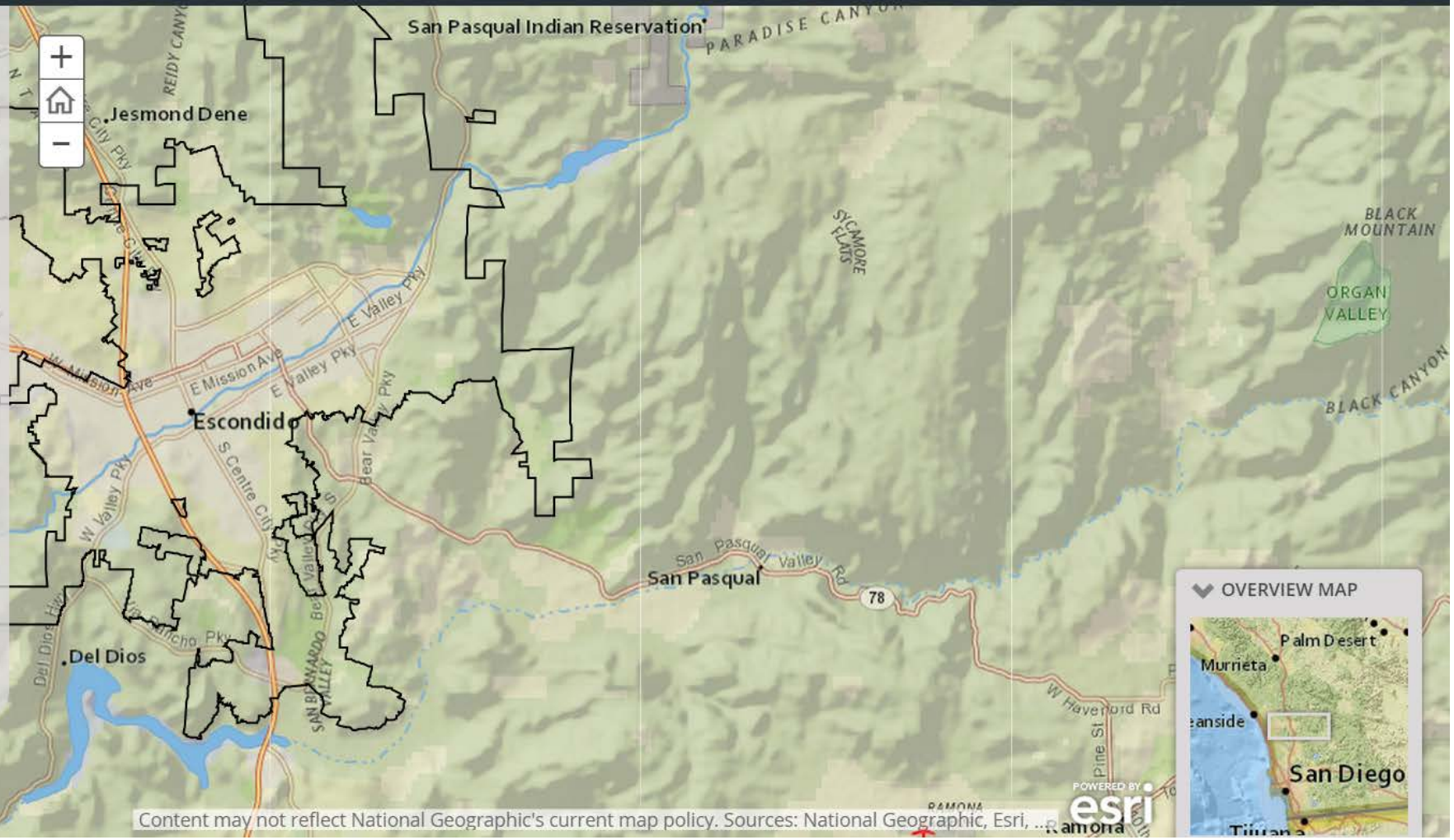
Background

The purpose of this research was to determine the density and proximity of tobacco retailers to schools (K-12) and other areas relevant to youth in support of TRL.

Community mobilization to reduce youth access to tobacco with additional interventions such as stronger restrictions, is a strategy recommended by the Community Preventive Services Task Force of the Centers for Disease Control and Prevention.

Communities and universities can work together to analyze and represent data to support tobacco retailer licensing (TRL); however, no maps of associated spatial program data have been identified to date.

TRL intervention also includes a provision for increased monitoring of compliance with existing sales to minors laws, and funding laws, for increased enforcement. The ArcGIS Online platform can be a tool for this compliance monitoring.



Tobacco Retailer Licensing Education

Community Methods

• Establishments were selected from a list of state licensed tobacco retailers provided by the California Board of Equalization for San Diego County.

• Retailers operating in the City of Escondido were identified and a community agency educated them on the existing laws that restrict the sale of tobacco products to minors. They also provided educational materials (e.g., Stop Tobacco Access to Kids Enforcement (STAKE ACT) stickers) which were required to be posted in stores.

• A random sample of stores that had received an educational visit and materials (retailers) were surveyed by trained youth following a purchase protocol.

• Youth purchase survey data were recorded in an Excel spreadsheet and after receiving IRB approval the de-identified data (e.g., removal of youth identifiers) were shared with a university team.

University Methods

IRB Approval

In accordance with HHS Policy for Protection of Human Research Subjects 45 CFR 46.101, the National University Institutional Review Board determined this research was Exempt from IRB Review.

Data Management and Analyses

• Data were merged, normalized, geocoded and imported into National University's ArcGIS Online organizational account.

• This resulting point layers with attribute information representing survey stores was created as a feature service, symbolized, and added to a web map containing previously identified points of interest (e.g., schools, YMCAs) with a San Diego basemap reference.

• Using GIS provided a first look at these data in relation to points of interest and immediately generated new questions about density and distribution that were not previously possible by reviewing a tabular inventory.

• The store locations were buffered and spatial analyses of nearby points of interest were conducted. Additional information about the survey locations (e.g., American Community Survey demographics) was obtained using ESRI's web based Community Analyst platform, building from the data created in the ArcGIS Online web maps.

• Geospatial analysis were conducted inside ArcGIS Online and data were exported for inferential analyses (e.g., logistic regression) using a free statistical software.

Photo Source:
Healthy Stores for a Healthy Community
www.healthystoreshealthycommunity.com/visuals

Tobacco Retailer Licensing Education

Edit A story map

1 2 3 4 5 6 7 8 9

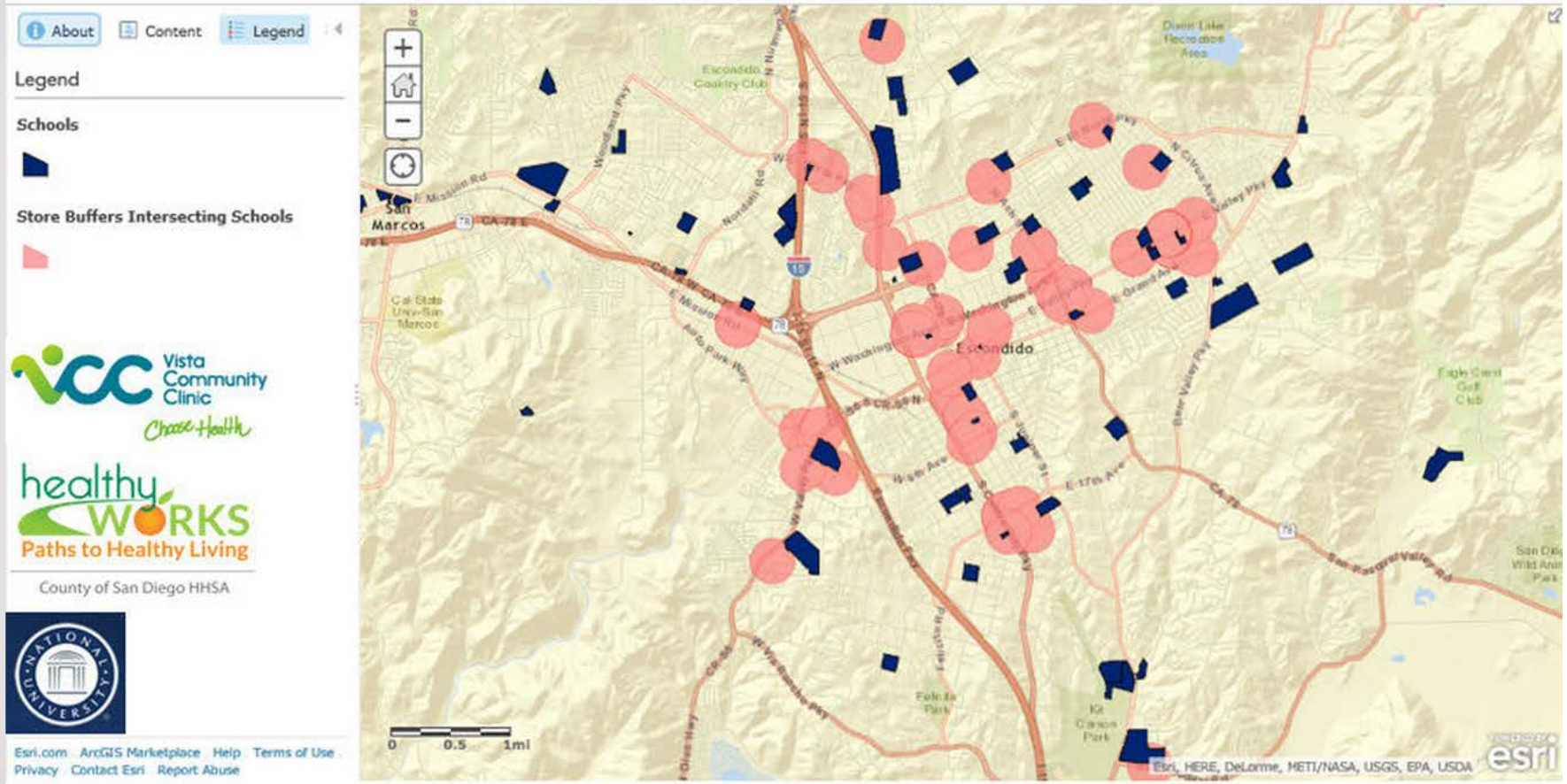
Advantage of GIS Analysis

For the first time, Vista Community Clinic (VCC) was able to study the relationship between tobacco retailer locations and school locations. Other places that young people gather, such as skate parks and libraries were also mapped.

VCC provided spatial information in excel spreadsheets. These data were normalized and then added as content to National University's ArcGIS Online Organizational account.

Street address, postal code, and youth purchase survey data were used in geospatial analysis including density, proximity, and distribution. Point layers representing retailer locations with attribute information about sales, were created as a feature service, symbolized, buffered and added to a web map with a local basemap reference.

Data enrichment provided information on median household income for properties in proximity to the retailers.



Tobacco Retailer Licensing Education

Edit A story map

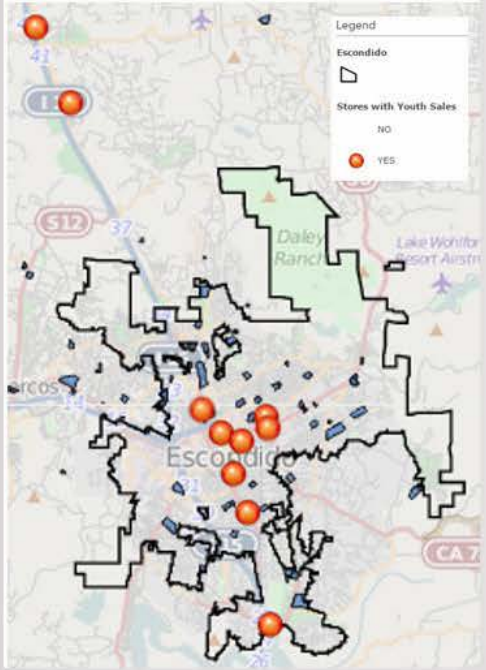
1 2 3 4 5 6 7 8 9

Results

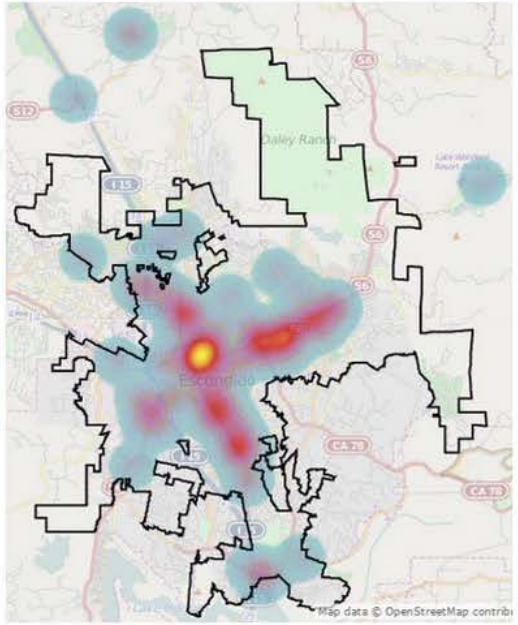
Maps represented the density of educated tobacco retailers, youth purchase survey results, retailer proximity to schools and other youth serving facilities, and results from inferential analyses (e.g., the adjusted odds of sales to minors).

Approved maps were presented to policy makers (e.g., City Council members) and other key stakeholders to educate them about the benefits of TRL.

Additionally, key stakeholders were educated about the problems of illegal sales to minors, concentration of retailers in proximity to schools, and the benefit of TRL, with support from the mapped data.



Mapped locations of retail sales information



Legend

Store Distribution

High

Low

Escondido

Tobacco Retailer Licensing Education

Solutions

Communities and universities can work together to analyze and present data to support tobacco retailer licensing (TRL) to prevent youth access to tobacco.

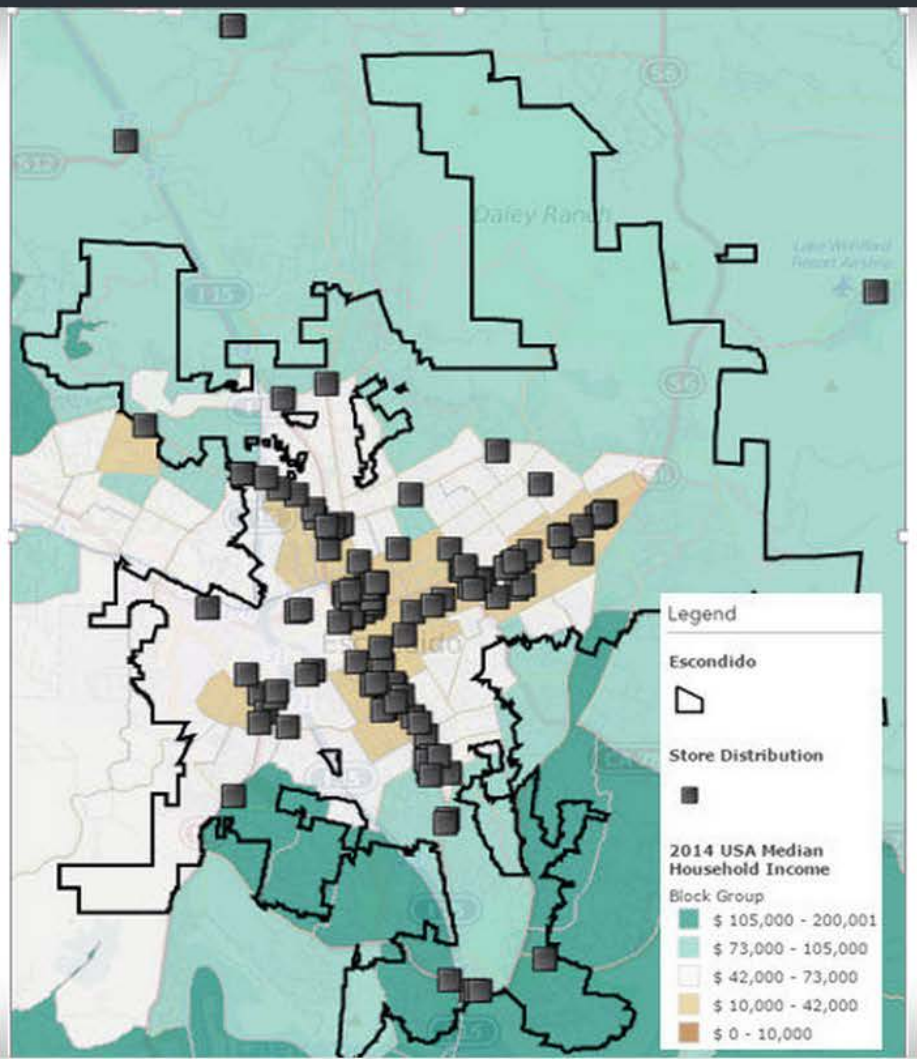
ArcGIS Online and Community Analyst allowed private tobacco retailer data and public data about communities to be combined for an innovative spatial and inferential analysis and mapped documentation.

Conclusions

ArcGIS Online interactive mapping and spatial analysis tools combined with inferential statistics can generate meaningful data and powerful messages to promote health policy.

For example: The correlation between the lowest Median Household Income and tobacco retailers is so high, these interactive maps help identify areas indicative of social health disparities and calls to mind discussions about health equity and social justice issues.

Photo Source:
Healthy Stores for a Healthy Community
www.healthystoreshealthycommunity.com/visuals



Tobacco Retailer Licensing Education

Edit A story map esri

1 2 3 4 5 6 7 8 9

Discussion

This is the first known collaborative map produced that used spatial analyses to support TRL in the City of Escondido.

Data sharing allowed the University's ArcGIS Online Organizational account to become a secure place for collaborative analyses and results generation.

Once the investigation was complete, it became a platform for sharing findings with public stakeholders.

Future Steps

Incorporate stakeholder feedback from the first VCC presentations to refine data inputs and analysis, to better pinpoint areas of concern for TRL. Conduct inferential analyses and incorporate findings in Story Maps and maps for public hearings to publicize the results of the research.

Tobacco Retailer Licensing Education

Edit A story map

1 2 3 4 5 6 7 8 9

Application for Health GIS

Community organizations large and small often have treasure troves of programmatic data that includes a spatial component. GIS layers, excel spreadsheets, or hand written data collection forms can all be meaningful sources of data.

Partnering with a willing participant that has an ArcGIS Online Organizational account and expertise in GIS can provide powerful tools to leverage that programmatic data for positive change.

Understanding analysis within ArcGIS Online and Community Analyst can position agencies to improve their spatial data collection plans and quickly demonstrate how spatial data can be combined with targeted mapped information to create a compelling story about their area of interest.

Join in! Focused partnerships like the one between National University, VCC and County of San Diego Health and Human Services Agency can be a model for other Health Care programs.