# Peer Review

Instructions: The project author receiving the review is responsible for managing this document and making sure all peer reviewers are received and of high quality. All sections should be filled out. The project author is also responsible for filling out how they will respond to the review in each section.

Once complete, upload PDF to canvas final project submission.

**Detailed Steps:**

1. Prepare project
2. Request reviews
3. Receive written reviews
4. Meet to discuss review and document specific edits to project
5. Make project edits

**Project Author:** **Kyle Smith**
**Project Title:** **Growth Patterns in Southern California's Wildfire Zones**
**Link to Document for Review:** **Kyle Smith - Final Project - Draft 1.docx**

My response to Peer Reviews is below - **KYLE**

## Continue below for Peer Reviews

# Peer Review 1

Name: Andrew Arlt
Email: arltx014@umn.edu

Directions: Fill out rubric and answer prompts.  Project author fill out last section.

| Category | Description | Points Possible | Score |
|---|---|---|---|
| **Structural Elements** | All elements of a lab report are included **(2 points each)**: Title, Notice: Dr. Bryan Runck, Author, Project Repository, Date, Abstract, Problem Statement, Input Data w/ tables, Methods w/ Data, Flow Diagrams, Results, Results Verification, Discussion and Conclusion, References in common format, Self-score | 28 | 28 |
| **Clarity of Content** | Each element above is executed at a professional level so that someone can understand the goal, data, methods, results, and their validity and implications in a 5 minute reading at a cursory-level, and in a 30 minute meeting at a deep level **(12 points)**. There is a clear connection from data to results to discussion and conclusion **(12 points)**. | 24 | 18 |
| **Reproducibility** | Results are completely reproducible by someone with basic GIS training. There is no ambiguity in data flow or rationale for data operations. Every step is documented and justified. | 28 | 28 |
| **Verification** | Results are correct in that they have been verified in comparison to some standard. The standard is clearly stated **(10 points)**, the method of comparison is clearly stated **(5 points)**, and the result of verification is clearly stated **(5 points)**. | 20 | 0 TBD |
| | | 100 | 74 |

**Describe 3-5 things that are done well in the project.**

The DFD is really easy to follow and makes sense in terms of the general workflow. The data sources that you've selected are clearly connected to the project, and make sense in terms of the final output. The scope of the project makes sense and seems very reasonable for initial conclusions and associations of the effects of fire risk on house prices.

**Describe 3-5 areas you could see room for improvement. Be specific and provide suggestions for how these areas could be improved.**

Can you elaborate on the methods section more? There seems to be some ambiguity in the final analysis section, where you describe the buffer analysis, hot spot analysis, and local indicators of spatial association. Is this just an area that you are still working on and determine which analysis methods your study is going to use? Or is there more specific information about how buffers are going to be used to create a specific layer used in the weighted overlay analysis? I am also curious to see which types of features are used for spatial association.

**PROJECT AUTHOR ONLY:**
**What specific actions will you take to respond to this review?**

Thanks, and I do agree the methods section was not as clear as it could be when I submitted Draft 1. Here is more info on what I plan to analyze ….

**Buffer / Overlay / Temporal Analysis:**

I plan to create a 1-mile buffer around all fire zones in LA County, covering zones of any severity (moderate, high, and very high). This buffer will be overlaid with residential land use data for 2012, 2016, and 2019, allowing an analysis of residential density near fire-prone areas over time. Within the buffer, residential land use density will be weighted (1, 2, or 3) to reflect different levels of residential intensity. With regard to the residential areas outside of a fire zone but within the 1-mile buffer, I expect this to be a significant density. I want to analyze this area by isolating the buffer area outside the fire zones. The residential changes in this this "outer buffer" area over the 12 years can be shown, and it might make sense for this area to be weighted 0.5 (or 0?). The idea is that this buffered overlay will serve as an "inverse" to the existing fire zones, effectively mapping areas where residential density patterns may be influenced by proximity to fire zones. By examining how this "inverse" overlay has changed over the three time points, I aim to draw conclusions about the intensification or reduction of residential density in and near fire zones over 12 years.

**Hot spot analysis:**
A hot spot analysis will be conducted to identify statistically significant clusters of residential land use within fire zones. By mapping "hot spots" and "cold spots" within these zones, I can track changes over time, and providing discussion as to shifting residential land use patterns in fire-prone areas. This analysis will also hopefully be a valuable visual representation.

**Additional Analysis:**
In addition to the buffer and hot spot analyses, I am planning on using additional tools such as ***Local Indicators of Spatial Association*** to further identify clusters and outliers; and what specific areas are showing an intensification of residential uses.

***Multi-Criteria Decision Analysis*** **(MCDA),** normalizing and weighting factors such as residential density, fire zone severity, and proximity to historical fire perimeters to show a comprehensive risk map should be an effective step.

And Finally, I do plan on doing a ***sensitivity analysis*** to provide some conclusions as to the effectiveness of the data.

Other possible analyses which I considered and could be used, although I need to consider time and the scope of this assignment:

-*time series analysis* will measure the rate of residential growth within fire zones

-*proximity analysis* could show how close developments are to current and historic fire perimeters,
-perhaps a *density analysis* to compare residential density changes inside and outside the fire zones.

# Peer Review 2

Name: Emily Bender
Email: bende287@umn.edu
Directions: Fill out rubric and answer prompts.  Project author fill out last section.

| Category | Description | Points Possible | Score |
|---|---|---|---|
| **Structural Elements** | All elements of a lab report are included **(2 points each)**: Title, Notice: Dr. Bryan Runck, Author, Project Repository, Date, Abstract, Problem Statement, Input Data w/ tables, Methods w/ Data, Flow Diagrams, Results, Results Verification, Discussion and Conclusion, References in common format, Self-score | 28 | |
| **Clarity of Content** | Each element above is executed at a professional level so that someone can understand the goal, data, methods, results, and their validity and implications in a 5 minute reading at a cursory-level, and in a 30 minute meeting at a deep level **(12 points)**. There is a clear connection from data to results to discussion and conclusion **(12 points)**. | 24 | |
| **Reproducibility** | Results are completely reproducible by someone with basic GIS training. There is no ambiguity in data flow or rationale for data operations. Every step is documented and justified. | 28 | |
| **Verification** | Results are correct in that they have been verified in comparison to some standard. The standard is clearly stated **(10 points)**, the method of comparison is clearly stated **(5 points)**, and the result of verification is clearly stated **(5 points)**. | 20 | |
| | | 100 | |

**Describe 3-5 things that are done well in the project.**

I appreciate how thorough you were with your project requirements and input data tables. Your data flow diagram is easy to follow, and seems to cover things that we have and haven't covered in the scope of the class. The project is very topical and the problem statement is certainly addressed in your methodology. I think that people considering a move to California, Californians and insurance companies alike would find this kind of study very informative.

**Describe 3-5 areas you could see room for improvement. Be specific and provide suggestions for how these areas could be improved.**

It is hard to say without any tangible results yet. I do wonder if using more recent data is important to this kind of study, where housing development and fire risk seem to be on a rapid incline. I think I also would have benefitted from more discussion surrounding the local indicators of spatial analysis and hot spot analysis. How do they differ from one another and what value do each of them add to this study? I would also be interested to know how you chose your buffer for the buffer analysis. Was this informed by similar studies of fire risk?

**PROJECT AUTHOR ONLY:**
**What specific actions will you take to respond to this review?**

All good points and feedback.

With regard to the methods section, see what I outlined above in response to Peet Review # 1.

I do not have results as of this writing, but I expect this project will show a growing trend of residential development into fire zones. This certainly correlates to the housing crisis in the region and makes an argument for policy changes.

2019 was the most recent widely available comprehensive land use survey conducted by SCAG for all of Southern California. More recent data may be out there, but that would take time to piecemeal and I need to draw the line somewhere. But point well taken.

# Peer Review 3

Name: Taryn Reitsma
Email: reits041@umn.edu
Directions: Fill out rubric and answer prompts.  Project author fill out last section.

| Category | Description | Points Possible | Score |
|---|---|---|---|
| **Structural Elements** | All elements of a lab report are included **(2 points each)**: Title, Notice: Dr. Bryan Runck, Author, Project Repository, Date, Abstract, Problem Statement, Input Data w/ tables, Methods w/ Data, Flow Diagrams, Results, Results Verification, Discussion and Conclusion, References in common format, Self-score | 28 | **20** |
| **Clarity of Content** | Each element above is executed at a professional level so that someone can understand the goal, data, methods, results, and their validity and implications in a 5 minute reading at a cursory-level, and in a 30 minute meeting at a deep level **(12 points)**. There is a clear connection from data to results to discussion and conclusion **(12 points)**. | 24 | **20** |
| **Reproducibility** | Results are completely reproducible by someone with basic GIS training. There is no ambiguity in data flow or rationale for data operations. Every step is documented and justified. | 28 | **28** |
| **Verification** | Results are correct in that they have been verified in comparison to some standard. The standard is clearly stated **(10 points)**, the method of comparison is clearly stated **(5 points)**, and the result of verification is clearly stated **(5 points)**. | 20 | **NA** |
| | | 100 | **68** |

**Describe 3-5 things that are done well in the project.**

I really liked the use of your maps for background information, as well as the clarity of your data flow diagrams. The way that your data flow diagrams are structured are visually appealing, but also very easy to follow. I also appreciated the detail you provided about your datasets. I feel like the scope of this project is very appropriate.

**Describe 3-5 areas you could see room for improvement. Be specific and provide suggestions for how these areas could be improved.**

I'm wondering if you could use more recent data for your project. I am not super knowledgeable about rates of development in CA, but with the large wildfires in the past couple years, I feel like this could potentially provide a more accurate trend. I think as you build out your project, your methods section could use some supplemental information on your workflow. Especially once you get to your analyses, talking about how the buffer and hotspot analysis interact and what the results of that will contribute to your knowledge. I would also recommend exploring other basemaps for your maps in the Problem Statement section. The topological map resulted in low clarity for other features.

**PROJECT AUTHOR ONLY:**
**What specific actions will you take to respond to this review?**

Thanks

Points well taken regarding the methods and the age of the datasets - see both discussed in the sections above.

Also, thanks for the feedback regarding basemaps, I will certainly play around with different visual options for the final presentation!