

# Enhancing Urban Growth: The Effect of Proposed Transit-Oriented Development Laws in the Puget Sound Region

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## Abstract

During the 2024 legislative session in Washington State, two bills were introduced in both the House and the Senate aimed at promoting community and transit-oriented housing development. These bills, HB 2160 and SB 6024, propose mandating cities to permit developments of a specific scale within certain distances from high-capacity transit stops. This study evaluates the extent to which the proposed increases in development capacity under these bills exceed current allowances. The findings indicate a substantial enhancement in development potential for the majority of areas within walking distance of transit stops. Specifically, for land that is developable and presently zoned for lower development capacity than what the bills propose, the average increase in capacity is projected to be +1.35 in terms of floor area ratio (FAR).

## Plain Language Summary

In 2024, the Washington State Legislature considered two new laws aimed at making it easier to build homes near public transit areas, like light rail stations and bus rapid transit stops. These laws would require cities to allow taller, denser buildings in these areas. Our study looked at how much more development could happen under these new laws compared to what's currently allowed. We found that, if these laws pass, there would be a lot more room for building new homes and apartments near transit stops.

## 1 Introduction

Source: [Article Notebook](#)

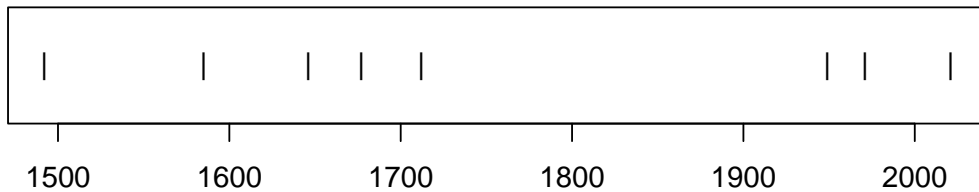


Figure 1: Timeline of recent earthquakes on La Palma

Source: [Article Notebook](#)

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Based on data up to and including 1971, eruptions on La Palma happen every 79.8 years on average.

Studies of the magma systems feeding the volcano, such as Marrero et al. (2019), have proposed that there are two main magma reservoirs feeding the Cumbre Vieja volcano; one in the mantle (30-40km depth) which charges and in turn feeds a shallower crustal reservoir (10-20km depth).

Eight eruptions have been recorded since the late 1400s (Figure 1).

Data and methods are discussed in Section 2.

Let  $x$  denote the number of eruptions in a year. Then,  $x$  can be modeled by a Poisson distribution

$$p(x) = \frac{e^{-\lambda} \lambda^x}{x!} \quad (1)$$

where  $\lambda$  is the rate of eruptions per year. Using Equation 1, the probability of an eruption in the next  $t$  years can be calculated.

Table 1: Recent historic eruptions on La Palma

Name	Year
Current	2021
Teneguía	1971
Nambroque	1949
El Charco	1712
Volcán San Antonio	1677
Volcán San Martín	1646
Tajuya near El Paso	1585
Montaña Quemada	1492

Table 1 summarises the eruptions recorded since the colonization of the islands by Europeans in the late 1400s.

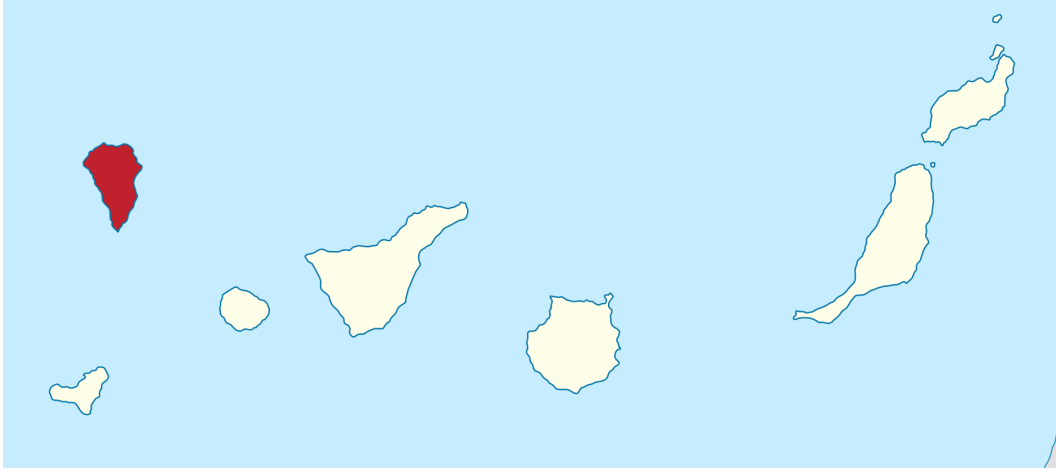


Figure 2: Map of La Palma

La Palma is one of the west most islands in the Volcanic Archipelago of the Canary Islands (Figure 2).

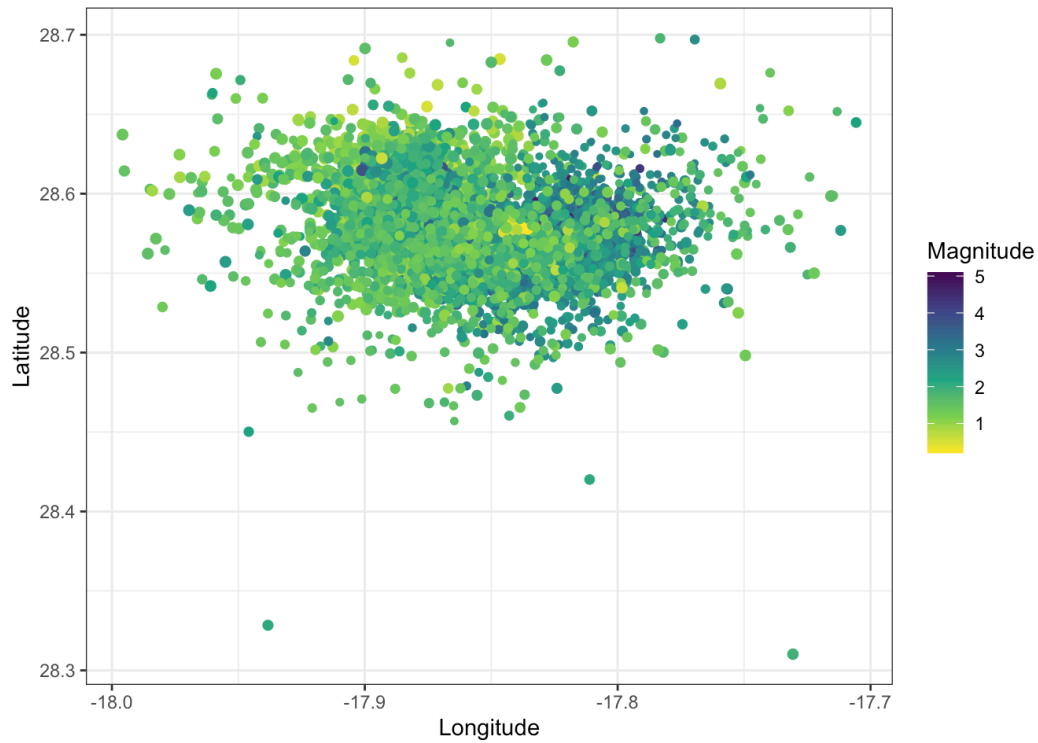


Figure 3: Locations of earthquakes on La Palma since 2017

Source: [Explore Earthquakes](#)

Figure 3 shows the location of recent Earthquakes on La Palma.

## 2 Data & Methods

## 3 Results

## 4 Discussion

## 5 Conclusion

## References

Marrero, J., García, A., Berrocoso, M., Llinares, Á., Rodríguez-Losada, A., & Ortiz, R. (2019). Strategies for the development of volcanic hazard maps in monogenetic volcanic fields: The example of La Palma (Canary Islands). *Journal of Applied Volcanology*, 8. <https://doi.org/10.1186/s13617-019-0085-5>