

**EVALUASI AKSESIBILITAS PERMUKIMAN RAWAN BENCANA
TERHADAP JALUR EVAKUASI DAN FASILITAS KEBENCANAAN
AKIBAT LETUSAN GUNUNG SEMERU DI DESA SUMBERWULUH
KECAMATAN CANDIPURO KABUPATEN LUMAJANG**

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ABSTRAK

Desa Sumberwuluh, Kecamatan Candipuro, Kabupaten Lumajang merupakan salah satu kawasan yang terdampak erupsi Gunung Semeru sehingga memerlukan jalur evakuasi yang memadai untuk mendukung proses mitigasi bencana. Penelitian ini bertujuan mengidentifikasi kondisi eksisting jalur evakuasi, mengevaluasi kondisi teknis jalur evakuasi berdasarkan aspek geometrik jalan, kondisi perkerasan, hambatan samping, dan konektivitas, menyusun rekomendasi perencanaan teknis jalur evakuasi, serta merencanakan struktur perkerasan pada ruas prioritas. Penelitian menggunakan metode deskriptif kuantitatif dengan pendekatan Sistem Informasi Geografis (SIG) melalui analisis *overlay*, *buffer*, dan *network analysis* yang didukung survei lapangan. Hasil penelitian menunjukkan bahwa jalur evakuasi terdiri atas tujuh ruas jalan, dimana Ruas Jalan 1–3 telah memenuhi persyaratan, sedangkan Ruas Jalan 4 memerlukan perbaikan perkerasan, Ruas Jalan 5 memerlukan pelebaran jalan menjadi 3,5 m, Ruas Jalan 6 memerlukan pelebaran jalan menjadi 3,5 m disertai perbaikan perkerasan, dan Ruas Jalan 7 memerlukan pelebaran jalan menjadi 3,5 m serta peningkatan kualitas perkerasan. Selain itu, direkomendasikan penambahan tiga rambu evakuasi pada persimpangan yang belum memiliki rambu dan pemasangan rambu pada tiga titik kumpul yang direncanakan. Perencanaan struktur perkerasan pada Ruas Jalan 7 menghasilkan tebal pelat beton semen 20 cm di atas lapis pondasi bawah bahan berbutir setebal 15 cm. Hasil analisis fatik dan erosi menunjukkan seluruh kelompok sumbu memiliki nilai repetisi izin TT (Tidak Terbatas) dengan persentase kerusakan fatik dan erosi sebesar 0%, sehingga struktur perkerasan yang direncanakan dinyatakan memenuhi persyaratan untuk melayani beban lalu lintas rencana selama umur pelayanan.

Kata Kunci : jalur evakuasi, aksesibilitas, mitigasi bencana, Sistem Informasi Geografis (SIG), perkerasan kaku, Gunung Semeru.

**EVALUATION OF THE ACCESSIBILITY OF SETTLEMENTS IN
DISASTER-PRONE AREAS TO EVACUATION ROUTES AND DISASTER
FACILITIES DUE TO THE ERUPTION OF MOUNT SEMERU IN
SUMBERWULUH VILLAGE, CANDIPURO DISTRICT, LUMAJANG
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ABSTRACT

Sumberwuluh Village, Candipuro District, Lumajang Regency, is one of the areas affected by the eruption of Mount Semeru and therefore requires adequate evacuation routes to support disaster mitigation efforts. This study aims to identify the existing condition of evacuation routes, evaluate their technical condition based on road geometry, pavement condition, roadside obstacles, and network connectivity, formulate technical recommendations for evacuation route improvement, and design the pavement structure for the priority road segment. This study employed a descriptive quantitative method using a Geographic Information System (GIS) approach through overlay, buffer, and network analyses supported by field surveys. The results indicate that the evacuation network consists of seven road segments. Road Segments 1–3 meet the required standards, while Road Segment 4 requires pavement rehabilitation, Road Segment 5 requires road widening to 3.5 m, Road Segment 6 requires road widening to 3.5 m accompanied by pavement rehabilitation, and Road Segment 7 requires both road widening to 3.5 m and pavement improvement. In addition, the study recommends installing three evacuation signs at intersections lacking directional signs and placing signs at the three designated assembly points. The pavement design for Road Segment 7 consists of a 20 cm concrete slab over a 15 cm granular subbase. Fatigue and erosion analyses indicate that all axle load groups have Unlimited (TT) allowable repetitions with 0% fatigue and erosion damage, demonstrating that the proposed pavement structure satisfies the design requirements and is capable of carrying the projected traffic load throughout its design service life.

Keywords: *evacuation route, accessibility, disaster mitigation, Geographic Information System (GIS), rigid pavement, Mount Semeru.*