[redacted]

Public Comments Not Uploaded Supplemental Support for Appeal of Case Nos. VTT-84453-1A/ENV-2025-5698-SE/CPC-2025-5697-DB-PR-SPPC-MCUP-VHCA; Council File Nos. 26-1081 and 26-1081-S1; Agenda Item #15Plea

1 message

Amy Minteer <acm@cbcearthlaw.com>
Reply-To: clerk.plumcommittee@lacity.org
To: Clerk.plumcommittee@lacity.org

Mon, Oct 12, 2026 at 9:44 AM

Please see the attached comments to the PLUM Committee regarding the above referenced project.

Amy Minteer (she/her)

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SCRA-SLAROS Supp Comments re Riverwalk.pdf
9203K

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October 9, 2026

Via Council File Management System and Email

Los Angeles Planning and Land Use Management
City of Los Angeles
200 N. Spring Street
Los Angeles, CA 90012
Clerk.plumcommittee@lacity.org

RE: Supplemental Support for Appeal of Case Nos. VTT-84453-1A/ENV-2025-5698-SE/CPC-2025-5697-DB-PR-SPPC-MCUP-VHCA; Council File Nos. 26-1081 and 26-1081-S1; Agenda Item #15

Honorable PLUM Committee Members,

On behalf of Studio City Residents Association ("SCRA") and Save LA River Open Space ("SLAROS"), we provide the following supplemental support for our appeal in the above identified City case numbers regarding the proposed development at 12501-12665 West Ventura Boulevard ("Project") in Studio City.

As previously identified in our appeal, the Vesting Tentative Tract Map should not be approved because the required findings under the Subdivision Map Act cannot be made for the Project. The Subdivision Map Act requires the City to deny approval of a tract map when the site is not physically suitable for the proposed density of development or if the design of the subdivision is likely to cause serious public health impacts. (Gov. Code §66474.61, subds. (d) and (f).)

Here, the Project fails to comply with Fire Code requirements and should be denied on that basis. The Project does not comply with the requirement that all portions of the exterior wall of the first floor of the development be located within 150 feet of the fire apparatus access road. (Fire Code, §503.1.1.) The portions of buildings that are outside of this 150-foot requirement are considered hose pull gaps because the standard fire hose cannot reach these locations. As identified by the Project applicant's consultant, Project Building 4 has a 28-foot hose pull gap and Project Building 2 has a 17-foot hose pull gap. No exceptions should be granted for these deviations from these protective Fire Code requirements because the Project site is located in a Very High Fire Hazard Severity Zone.

The Project is also inconsistent with the requirement that fire lane have an all-weather surface such as asphalt or concrete that can adequately support the significant weight of fire apparatus. Instead, the Project includes use of artificial turf and turf block for the Project site fire lanes. There are significant health impacts associated with the use of artificial turf, which can leach harmful PFAS into the groundwater and adjacent LA River. Use of artificial turf should be eliminated from the Project or the VTT should be denied.

Moreover, because the Project is located with a VHFHSZ and does not comply with "building standards or state fire mitigation measures applicable to the development," the Project cannot rely upon an exemption to the California Environmental Quality Act under AB 130. (Gov. Code, § 65913.4, subd. (a)(6)(D).)

Further, the City has failed to consider the capacity of wildfire evacuation routes along Ventura Boulevard in the Studio City area. Do to the lack of consideration of this gravely important issue by the City or by any applicant for massive increases in density along this corridor, SCRA and SLAROS contracted with wildfire and evacuation experts at Jensen Hughes to have the existing wildfire evacuation capacity for the Studio City area analyzed and the impacts of the Project and the adjacent Sportsmen's Lodge project on evacuation capabilities. These experts ran detailed models to assess the wildfire activity predictions for the area, the baseline evacuation route capacity, baseline evacuation times and evacuation times. Their detailed report is attached as **Exhibit 1**.

Jensen Hughes found that evacuation times are already dangerously slow. Under current conditions, it could take the residents living along and adjacent to area of Ventura Boulevard where the Project is located more than 6 hours to evacuate to a freeway in a wildfire. When the evacuation traffic from the Project and the adjacent Sportsmen's Lodge project are added to the evacuation route, the evacuation time increases by nearly 30 minutes. These are significant hazards that could lead to substantial loss of life and injuries during a wildfire that the City has never considered. Given the area's recent experiences with the Eaton and Palisades fires, it is clear these issues can no longer be ignored. The City must fully evaluate evacuation capabilities and speed for communities located in VHFHSZs and must not approve massive increases in residential density until it can assure the safe and timely evacuation of these areas. Until the City does so, it cannot make the required findings under the Subdivision Map Act or the Density Bonus Ordinance that such dense projects would not cause serious public health impacts.

Finally, SCRA and SLAROS also commissioned a bat and avian habitat survey for the area along the Los Angeles River between Coldwater Canyon and Whitsett Avenue. (**Exhibit 2**.) Forde Biological Consultants observed big brown bat, canyon bat, Mexican free-tailed bat and Yuma myotis bat flying in this area, finding bat activity to be high. Bat

habitat was observed, however, the experts found that because dead palm fronds had recently been removed for the trees on and adjacent to the Project site, there were not currently bats located there. With those fronds, the trees provide roost sites for bats and bird species. Bird species including dark-eyed junco, Bewick's wren, California towhee, Anna's hummingbird, Acorn woodpecker and hooded orioles were also observed.

Thank you for your time and consideration in this matter.

Sincerely,

Amy Minteer

Enclosures:

Exhibit 1: Jensen Hughes Report
Exhibit 2: Forde Biological Services Report

EXHIBIT 1

Technical Memo

October 8, 2026

To:	Barry Johnson, Beth Dymond, Stephen Sass, Dale Fernandez, Amy Minteer
From:	Jiwon Baik Ph.D., Darlene Rini P.E., Tim Metzger
Cc:	
Subject:	Riverwalk Development Wildfire Risk Consulting Services

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1.0 Introduction

Jensen Hughes has prepared this technical memorandum for Carstens, Black & Minteer LLP, on behalf of the Studio City Residents Association (SCRA), to present a wildfire hazard and evacuation analysis of the proposed Riverwalk development, located at 12501-12665 West Ventura Boulevard, and the broader implications of ongoing new development in Studio City and surrounding communities. Due to a variety of concerns – location of property in a highly active wildfire region, recent large-scale catastrophic fires in the region, potential for loss of high value assets, potential disruption to local economies and ongoing development in the wildland urban interface – Jensen Hughes was commissioned to undertake an evaluation of Riverwalk's exposure to wildfire hazards, risks and vulnerabilities and potential increase in wildfire evacuation and firefighter access to the broader community.

While the proposed development is located in a designated, local responsibility area (LRA), Very High Fire Hazard Severity Zone (VHFHSZ) [1], the Los Angeles Municipal Code (LAMC) or California Wildland-Urban-Interface Code (CWUIC) does not currently require new developments in high fire prone areas to evaluate the potential impact of the new development on the evacuation capacity of the existing road network during a major wildfire incident. That said, while CEQA Appendix G "Section XX – Wildfire" typically requires new developments in Very High Fire Hazard Severity Zones to evaluate if the project would substantially impair an adopted emergency response plan or emergency evacuation plan, we understand that the City has exempted the Riverwalk development from undertaking this type of assessment pursuant to Public Resources Code Section 21080.66.[2], added by Assembly Bill 130.

As there are currently no regulations or consensus standards defining wildfire evacuation assessments for new developments in high fire prone regions, the analysis in this memo has been developed based on the latest in fire science, well established fire safety engineering principles, industry best practices, guidance documents and latest research in wildfire hazards, risks and vulnerabilities in the built environment [3,4,5]. The primary purpose is to identify any project-related wildfire evacuation safety concerns, as well as inform broader community-scale wildfire resiliency planning and development decisions in high fire prone regions with respect to firefighting access and egress at a community-scale.

Thus, the assessment aims to provide the following:

- Relevant building and fire life-safety codes and standards, and wildfire planning requirements
- Detailed understanding of wildfire history and fire hazards in the region

---

[1] City of Los Angeles Department of City Planning. Recommendation Report, CPC-2025-5697-DB-PR-SPPC-MCUP-VHCA, June 11, 2026, pp. A-1–A-5 and architectural exhibits. https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/CPC_2025_5697.pdf

[2] City of Los Angeles Department of City Planning. Recommendation Report and supporting materials, VTT-84453-1A, June 11, 2026; environmental case ENV-2025-5698-SE. https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/VTT_84453_1A_Staff_Response.pdf

[3] Maranghides, A., and Link, E. D. WUI Fire Evacuation and Sheltering Considerations—Assessment, Planning, and Execution (ESCAPE). NIST Technical Note 2262r1, March 2025. https://doi.org/10.6028/NIST.TN.2262r1

[4] Society of Fire Protection Engineers and SFPE Foundation. WUI Virtual Handbook for Fire Risk Assessment & Mitigation, 2nd Edition, August 2025, Section 3.2.3, Means of Egress and Evacuation Planning. https://www.sfpe.org/wuihandbook/home

[5] California Building Standards Commission / International Code Council. 2025 California Building Code, Title 24, Part 2, Chapters 3 and 10. https://codes.iccsafe.org/content/CABC2025P1

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- Understanding of potential exposure to wildfire threats, including fire frequency, fire severity, fire encroachment toward the Project and surrounding evacuation routes
- Identification of any existing evacuation vulnerabilities, including excessive travel distances to exits, insufficient numbers of exits, and roadway bottlenecks associated with queuing and spillback
- Identification of any new evacuation vulnerabilities as a result of the project

1.1 PROJECT SUMMARY

The proposed Riverwalk project consists of the redevelopment of an existing commercial site of approximately 261,485 square feet, containing four commercial buildings and surface parking. As shown in Figure 1, the site will be redeveloped into three (3) seven-story residential/mixed-use buildings (reaching 84 feet in height), and three (3) two-story restaurant buildings (reaching 36 feet), totaling approximately 744,906 square feet of total floor area. The new buildings will comprise approximately 814 apartment units, nine restaurant spaces and subterranean parking. Refer to Table 1 for a summary of the overall building program.

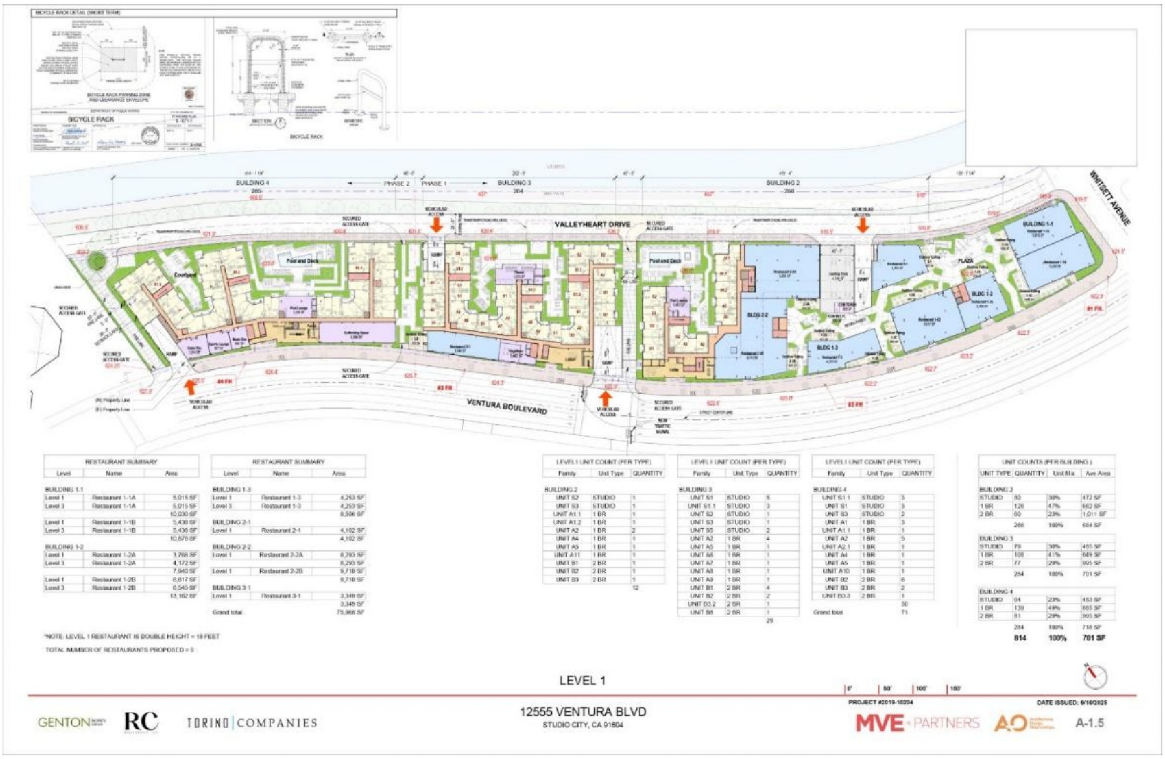


Figure 1. Riverwalk Level 1 site plan, Sheet A-1.5, September 18, 2025

The principal occupancies for the project include R-2 for apartments, A-2 for restaurants, and S-2 for parking, subject to the final permit classification. The buildings will be of Type III construction for the above-grade residential portions, and Type I construction for the subterranean parking structures.6 The plans include provisions for 1,806 below-grade parking spaces – 1,040 residential and 766 commercial – as well as other ancillary uses such as courtyards, pools, recreation rooms and back-of-house spaces.

[6] Dudek. Riverwalk at Studio City Due Diligence Assessment, September 26, 2025, introduction; included as Exhibit C in the City Planning tract-map report. https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/VTT_84453_1A_Staff_Response.pdf

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As shown in Figure 2, the Project occupies an elongated site with Ventura Boulevard along its southern frontage, the Los Angeles River to the north, and Whitsett Avenue at the eastern end. Valleyheart Drive separates the proposed buildings from the river corridor. South of the site beyond Ventura Boulevard, an extensive area of mountainous terrain contains a complex mosaic of wildland vegetation and human settlements, with hillside neighborhoods interspersed among vegetated slopes, ridgelines, and canyons.



Figure 2. Existing site setting: plan aerial (left), reproduced from SGH's May 2026 report and Google Earth; oblique aerial (right), from MVE's Existing Site Context sheet. Images show the source-date setting, not current construction conditions

Table 1. Proposed building program[7]

Building and use	*Stories / maximum height*	*Dwelling units*	*Floor area (ft²)*
1-1 — Restaurant	2 / 36 ft	—	20,906
1-2 — Restaurant	2 / 36 ft	—	21,102
1-3 — Restaurant	2 / 36 ft	—	8,506
2 — Residential and restaurant	7 / 84 ft	266	235,261
3 — Residential and restaurant	7 / 84 ft	264	220,135
4 — Residential	7 / 84 ft	284	235,666
1 — Residential area at parking levels	Below grade	—	3,330
Total	**—**	**814**	**744,906**

[7] MVE + Partners. 12555 Ventura Boulevard, DCP Entitlement Application Submittal, September 18, 2025, Project No. 2019-10204; Project Data and Plot Plan (A-0.3A), Zoning—Floor Area Ratio (A-0.5), Level 1 (A-1.5), and Existing Site Context sheet. Included in the City Planning architectural exhibits. https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/CPC_2025_5697.pdf

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1.2 RELEVANT CODES AND STANDARDS

The following codes and statutory references provide context for the wildfire and evacuation assessment. Project-specific applicability and the controlling permit edition are determined through the City's approval and permitting process.

- **California Building Code (CBC)**, Title 24, Part 2, 2025 Edition, including Chapter 3, Occupancy Classification and Use, and Chapter 10, Means of Egress. (Available: https://codes.iccsafe.org/content/CABC2025P1)
- **California Fire Code (CFC)**, Title 24, Part 9, 2025 Edition. (Available: https://codes.iccsafe.org/content/CAFC2025P1)
- **California Wildland-Urban Interface Code (CWUIC)**, Title 24, Part 7, 2025 Edition, including Chapters 4–6 and Section 602, Fire Protection Plans. (Available: https://codes.iccsafe.org/content/CAWUIC2025P1)
- **Los Angeles Municipal Code, Chapter IX, Article 1, Building Code, including Section 91.7201 and Ordinance No. 188797**; and **Chapter V, Article 7, Fire Code**. (Available: https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-178736; https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-339601)
- **California State Minimum Fire Safe Regulations**, Title 14, Division 1.5, Chapter 7, Subchapter 2, where applicable. (Available: https://govt.westlaw.com/calregs/Document/IC7ED8E00A77511ED8BE6CF64176DEB47)
- **Los Angeles County Code, Title 32, Fire Code**, as a regional jurisdictional reference; County provisions are not assumed to govern this City of Los Angeles site. (Available: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT32FICO)
- **CEQA Guidelines Appendix G, Sections IX(f), XVII(d), and XX**; and **Public Resources Code Section 21080.66 (AB 130)**. (Available: https://califaep.org/docs/2019-Appendix_G_Checklist.pdf; https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PRC&sectionNum=21080.66.)

1.3 OTHER GUIDANCE AND PLANNING DOCUMENTS

The following references inform interpretation of wildfire exposure, neighborhood egress, and evacuation planning:

- **NIST Technical Note 2262r1, WUI Fire Evacuation and Sheltering Considerations—Assessment, Planning, and Execution (ESCAPE)**, March 2025. (Available: https://doi.org/10.6028/NIST.TN.2262r1)
- **SFPE WUI Virtual Handbook for Fire Risk Assessment & Mitigation**, 2nd Edition, August 2025, including neighborhood and community egress guidance. (Available: https://www.sfpe.org/wuihandbook/home)
- **City of Los Angeles General Plan Safety Element**, adopted November 2021. (Available: https://planning.lacity.gov/odocument/bf51ae04-1c7b-4931-9a29-d46209998b89/Safety_Element.pdf)
- **City of Los Angeles Emergency Operations Plan and Evacuation Functional Support Annex**, October 2020; associated Brush Fire Annex and Transportation Appendix. (Available: https://emergency.lacity.gov/emergency-plans-annexes)

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- **LAFD wildfire evacuation guidance and Genasys Protect evacuation-zone information**; and **LAFD Brush Clearance Requirements**. (Available: https://lafd.org/wildfire; https://lafd.org/fire-prevention/brush/brush-clearance-requirements)

1.4 DRAWINGS AND DOCUMENTS

The Project description and site context are based on the following materials:

- **MVE + Partners, 12555 Ventura Boulevard, DCP Entitlement Application Submittal**, September 18, 2025: Project Data and Plot Plan (Sheet A-0.3A), Zoning—Floor Area Ratio (Sheet A-0.5), Level 1 (Sheet A-1.5), and Existing Site Context sheet. (Available: https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/CPC_2025_5697.pdf)
- **City Planning Recommendation Report, CPC-2025-5697-DB-PR-SPPC-MCUP-VHCA**, June 11, 2026, including the Project description and architectural exhibits. (Available: https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/CPC_2025_5697.pdf)
- **City Planning tract-map report and supporting materials, VTT-84453-1A**, June 11, 2026, including: Environmental case ENV-2025-5698-SE;
- **Dudek's Due Diligence Assessment**, September 26, 2025; and
- **SGH's Technical Engineering Review**, revised May 29, 2026, for Project description and existing aerial imagery. (Available: https://planning.lacity.gov/plndoc/Staff_Reports/2026/06-11-2026/VTT_84453_1A_Staff_Response.pdf)

1.5 LIMITATIONS OF THE ASSESSMENT

The assessment applies to the Riverwalk, study boundaries, and scenarios documented in this memorandum. Changes to Project occupancy, roadway network, evacuation demand, fuels, weather, or receiving conditions can change the results. Any alterations to exterior building features and/or landscape designs could potentially compromise the validity of this analysis and thus would need to be evaluated for potential reassessment.

The wildfire model represents vegetation-based fire behavior at landscape resolution. Spotting, ember transport and exposure, structure-to-structure spread, smoke-related road tenability, and explicit suppression actions are not quantified. The aggregate evacuation model uses specified demand, shortest path routes, roadway capacity, and storage assumptions; it does not simulate fire apparatus access or individual driver behavior. Results are conditional estimates rather than guarantees of route availability or evacuation time. Any comparison of fire arrival and evacuation progress depends on their stated timing assumptions.

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2.0 Wildfire Hazard Assessment

Key to understanding the complex nature of the wildfire problem and its impacts on people safety in the wildland-urban-interface (WUI) is to understand how natural and/or man-made environmental settings – ignition sources, vegetative fuels, topography, and weather – interact to create problematic conditions. Each year only a small fraction of wildfires becomes large enough to result in significant negative impacts. These low percentages can be attributed to a combination of mild environmental conditions and available firefighting resources to effectively respond to, control and contain fire incidents. However, this does not imply that large catastrophic fires are not possible.

2.1 WILDFIRE ENVIRONMENTAL SETTING

Wildfires have historically been a major part of Los Angeles County's ecosystem. The Mediterranean-like climate, rugged topography, seasonal windy conditions, and fire-adapted vegetation creates an environment for periodic burns. This fire environment is made more dangerous by the abundant hazards and risks associated with a growing population and sprawling pattern of development.

2.1.1 Fire Hazard Severity Zone

The Riverwalk project site and surrounding geographic area are considered a high to very high fire prone region. Based on the Fire Hazard Severity Zone (FHSZ) produced by CAL FIRE, the Riverwalk development is primarily located in a Very High FHSZ in a Local Responsibility Area. See Figure 3.

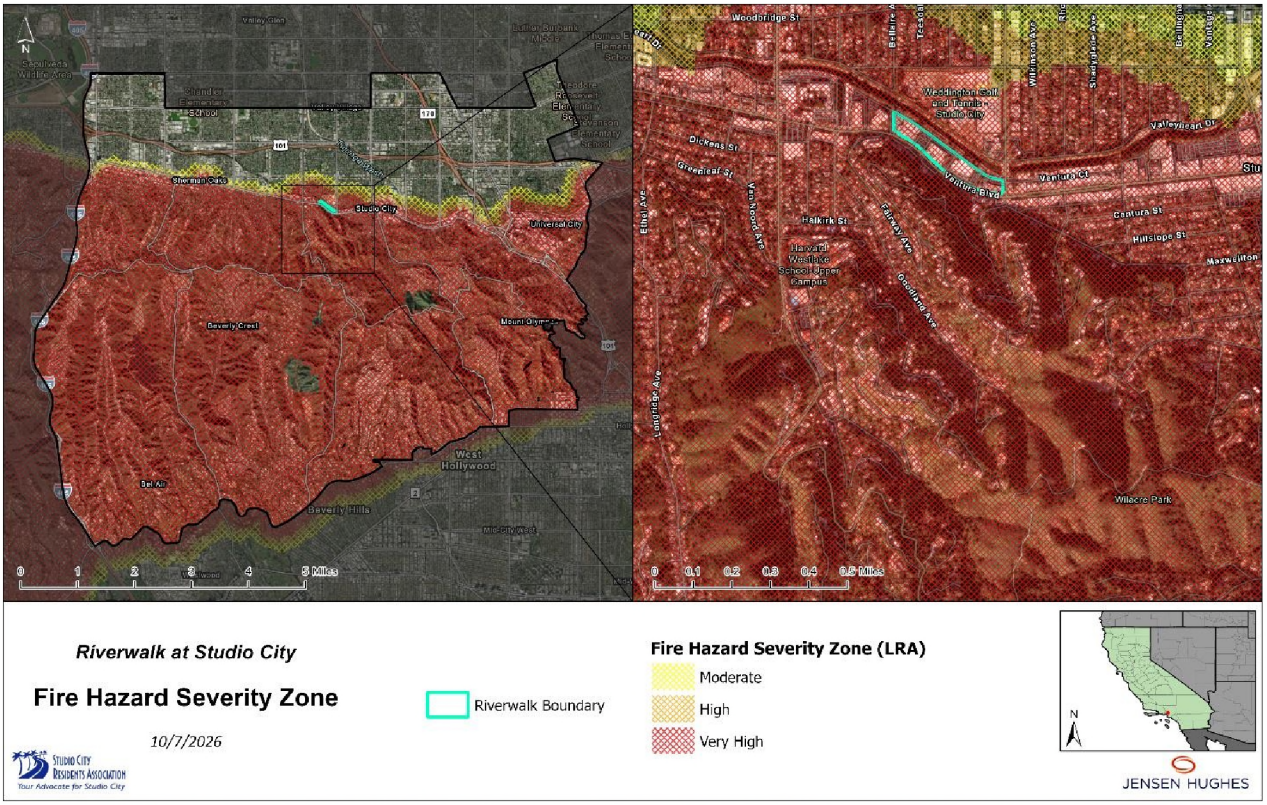


Figure 3. Fire Hazard Severity Zones in the Riverwalk study area and Project vicinity.

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2.1.2 Wildfire History

Near Riverwalk, more than 107 wildfires of 300 acres or more have been recorded in the past 80 years (CAL FIRE), where a combination of hazards – vegetation, topography, structures, and fire weather – are present. The last wildland fires of historic significance in the vicinity are the Palisades Fire that burned 23,448 acres; the Eaton fire that burned 14,021 acres; the Station Fire that burned 160,833 acres; the Creek Fire that burned 15,619 acres; the Sesnon Fire that burned 14,701 acres; the Sayre Fire that burned 11,260 acres. See Table 2.

Table 2. Recent Major Wildfire Incidents nearby Riverwalk

Fire Name	*Date*	*Ignition Source*	*Fire Size (acres)*	*Structures Impacted*	*Fatalities / Injuries*
Palisades	2025.01.07.	Arson	23,448	6,845 destroyed; 975 damaged	12/4
Eaton	2025.01.07.	Electrical	14,021	9,419 destroyed; 1,076 damaged	19/9
Station	2009.08.26.	Arson	160,833	209 destroyed; 12,000 impacted	2/22
Creek	2017.12.05.	Powerline (dispute)	15,619	123 destroyed; 81 damaged	0/3
Sesnon	2008.10.13.	Electrical	14,701	78 destroyed; 11 damaged	1/30
Sayre	2008.11.14.	SCE equipment (dispute)	11,260	More than 600 destroyed	0/4

Figure 4 shows the spatial distribution of historical wildfire perimeters in and around the project area between 1878 and 2025 years. At the regional scale, repeated fire occurrence is prominent in the mountains and foothills terrain surrounding the San Fernando Valley. Extensive areas of repeated burning occur west of the Project site in the Santa Monica Mountains and in the northern and northeastern mountains. The Riverwalk development and proximate surroundings is in a very urbanized environment, with no historical wildfires occurring within the immediate project area boundaries. Nevertheless, wildfires have occurred and can be expected to occur within the surrounding region and thus remain a regional planning factor particularly due to the wind-driven nature of fires in the wildland-urban interface of Los Angeles.

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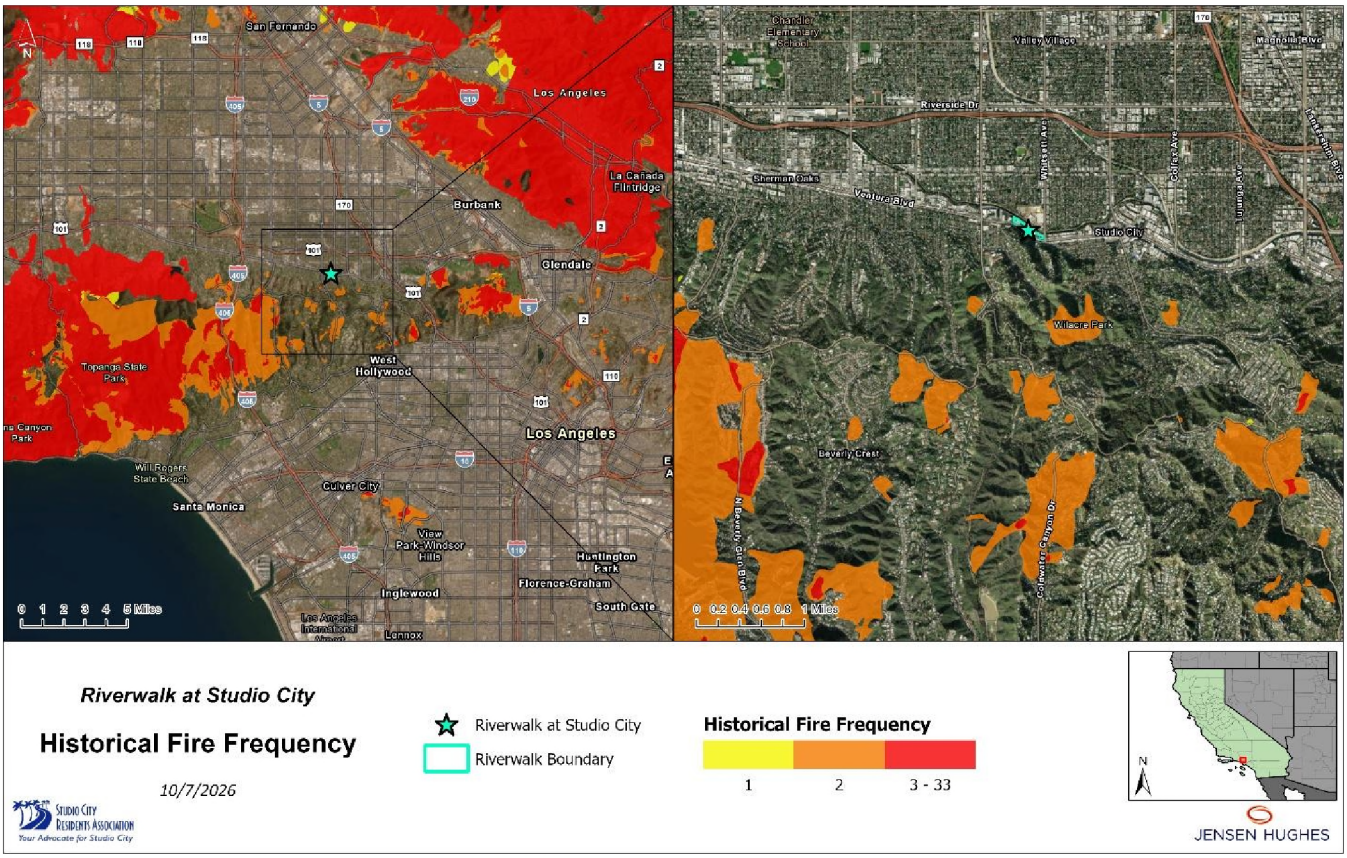


Figure 4. Historical Fire Frequency around Riverwalk [Source: NIFC]

According to Short (2022) [8], more than half of the historical fire records had missing, unspecified, or undetermined causes (50.4%). Among fires with a specified cause, equipment and vehicle use was the most common (14.5%), followed by arson or incendiarism (12.5%), smoking (6.6%), recreation or ceremonial activities (4.4%), and misuse of fire by a minor (4.3%). Debris and open burning accounted for 2.9% of records. See Figure 5.

[8] Short, Karen C. 2022. Spatial wildfire occurrence data for the United States, 1992–2020 [FPA_FOD_20221014]. 6th Edition. Fort Collins, CO: Forest Service Research Data Archive. https://doi.org/10.2737/RDS-2013-0009.6

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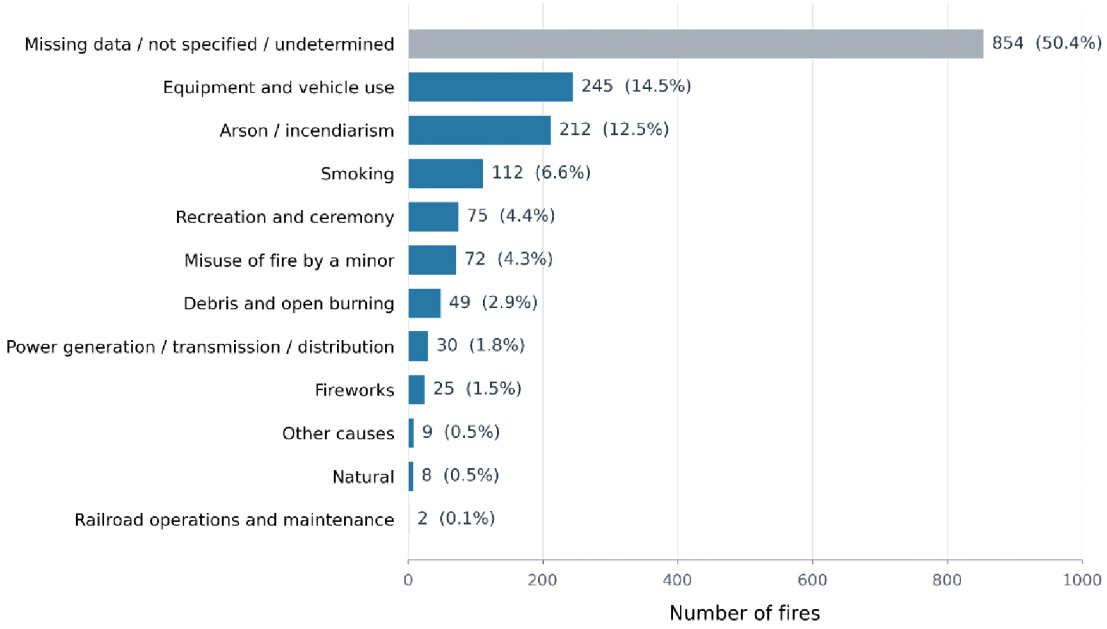


Figure 5. Sources of 1,693 wildfire Ignitions within 15 miles of the Riverwalk Development

Figure 6 shows the spatial distribution of ignitions near the project site. As seen in the figure, most of the ignitions occur near human development and other human-based activities.

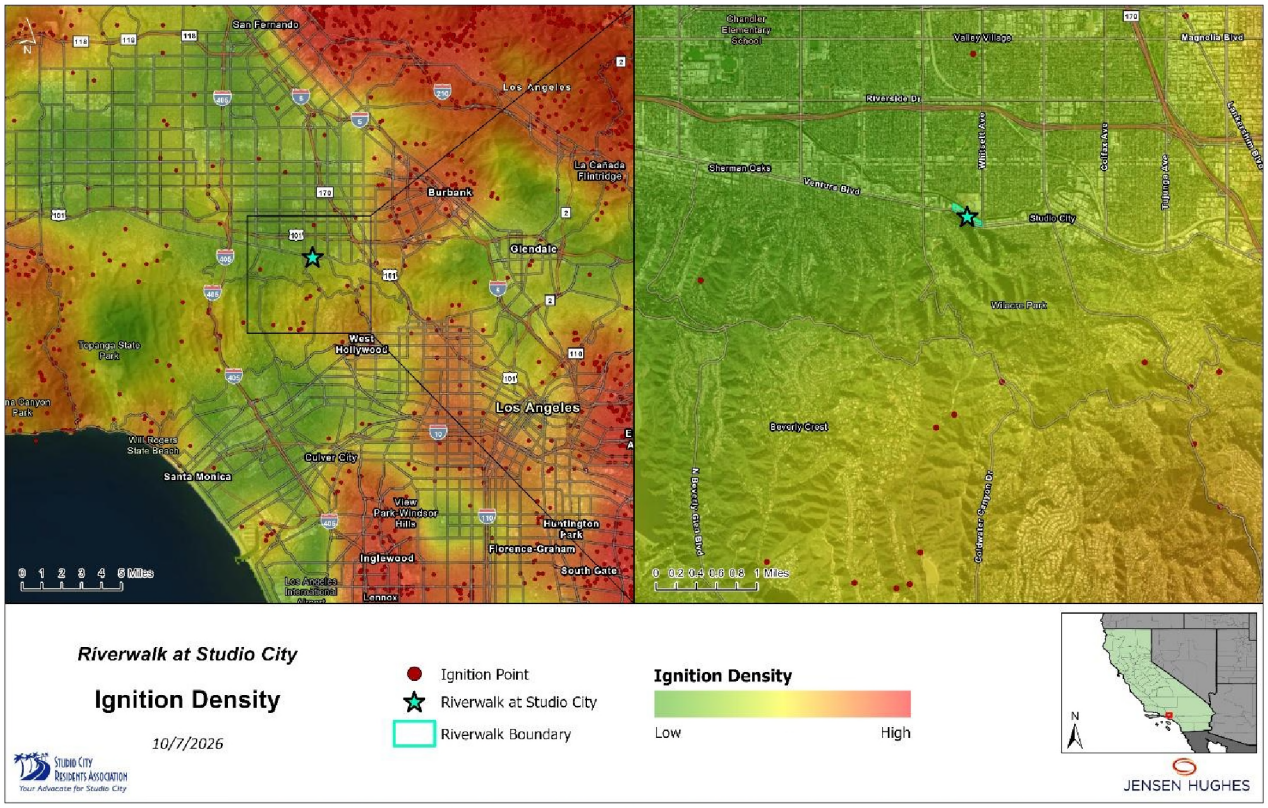


Figure 6. Spatial Distribution of ignitions across Project vicinity

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2.1.3 Topography

Riverwalk is located along the relatively low-lying Ventura Boulevard corridor, north of a prominent east–west ridge system within the Santa Monica Mountains. As shown in the Figure 7, the terrain rises southward from the Project toward this ridge, with smaller ridges and intervening canyons extending into the surrounding neighborhoods. The main ridgeline forms a topographic divide between slopes descending north toward the San Fernando Valley and slopes descending south toward the Los Angeles Basin.

This divide influences potential wildfire spread depending on where the fire originates and the relationship between terrain and prevailing winds. Fire approaching the ridge may encounter different wind exposure and slope alignment as it reaches the crest and crosses onto the opposite side, resulting in changes in spread direction and rate. For example, a fire starting on the north facing slope of the ridge with a north/northeasterly wind will be both wind and topography driven, facilitating rapid fire spread toward the ridge. However, a fire starting on the south-facing slope of the ridge given the same N/NE wind could result in a more lateral rate of spread as the direction of wind will be counter to the natural progression of the fire upslope. Thus, how fire behaves will vary significantly depending on ignition location – northern vs. southern slope – and wind (offshore vs. onshore). Note: The ridge does not constitute a reliable barrier to fire spread, particularly under strong winds.

The relationship between terrain and evacuation planning is also evident in the Genasys evacuation zones shown in Figure 7. Several zone boundaries in the hillside portion of the study area broadly follow the main ridgeline and adjoining elevated terrain, distinguishing neighborhoods on the northern and southern slopes. The local roadway network also reflects the terrain, with winding hillside streets connecting to larger canyon corridors and the valley street network. Cross-mountain routes, including Coldwater Canyon and Laurel Canyon, maintain connections between the two sides of the ridge. Together, the topography, evacuation-zone boundaries, and roadway connections provide the geographic context for the evacuation assessment presented in Section 3.0.

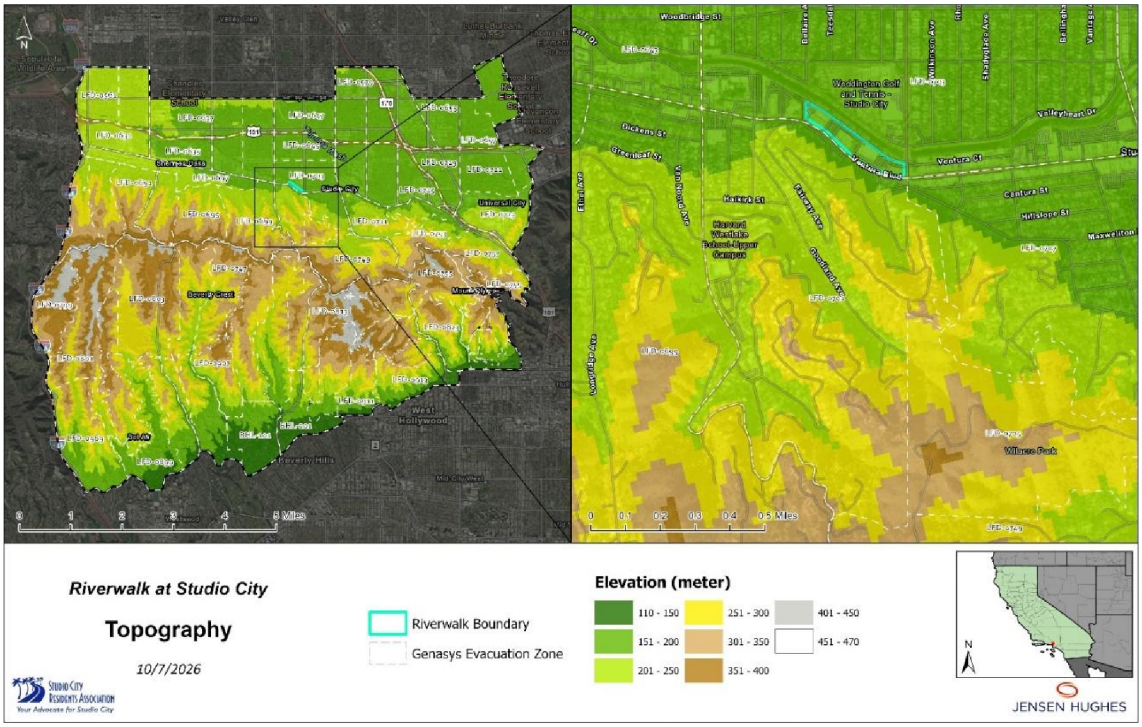


Figure 7. Topography with Genasys Evacuation Zone [Source: LANDFIRE]

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2.2 WILDFIRE BEHAVIOR MODELLING

Fire behavior characteristics such as rate of spread, flame length, fireline intensity, PM emissions and spotting are driven by the natural environment, where topography, weather and fuels are primary forces. Fire behavior modeling – both static and dynamic modeling – is performed to estimate these characteristics and is based on key assumptions related to the primary driving forces – weather, fuels, and topography.

The following sections present the key assumptions and input data for the wildfire behavior modeling, which falls into five categories, as follows:

- Software
- Key Input Data
- Weather Data and Analysis
- Fuel Characteristics and Fuel Models
- Topography

2.2.1 Software

Established wildland fire behavior modeling software was used to understand various characteristics and patterns of wildfire proximate to Riverwalk and surrounding communities. The primary modeling software included FLAMMAP (Version 6.0)[9], FOFEM[10], and FireFamily Plus (Version 5.0)[11]. Other modeling software was also used to better represent the dynamic nature of wildfire hazards including Wildfire Analyst Enterprise[12] and NEXUS 2.0[13]. The above-mentioned models, with the exception of Wildfire Analyst, are the most widely adopted tools for analyzing wildfire behavior and are publicly available from the United States Forest Service (USFS).

2.2.2 Key Input Data

Spatial fire modeling utilizes eight spatial files as required inputs into the fire behavior model(s) and is commonly referred to as a landscape file or LCP file in the fire modeling community. The LCP is made up of layers representing Fuel Models, Canopy Cover, Canopy Height, Crown Bulk Density, Canopy Base Height, Elevation, Aspect, and finally slope. The graphic to the right is a representation of an example LCP. (See Figure 8). The landscape spatial files (LCP) used in the assessment were obtained from the LANDFIRE[14] program.

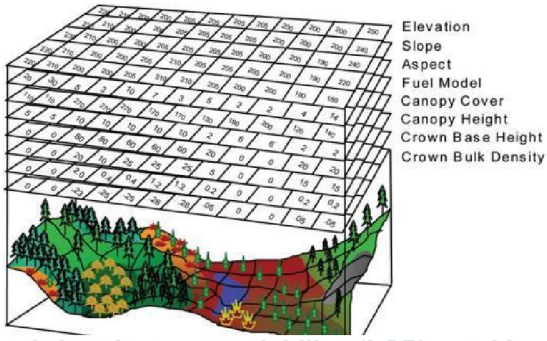


Figure 8. Landscape spatial files (LCP) used in wildfire hazard assessment. Data: LANDFIRE.

[9] U.S. Forest Service, FlamMap. https://research.fs.usda.gov/firelab/products/dataandtools/flammap
[10] U.S. Forest Service, FOFEM / SpatialFOFEM – Fire Effects Model. https://research.fs.usda.gov/firelab/products/dataandtools/fofem/spatialfofem-fire-effects-model
[11] U.S. Forest Service, FireFamilyPlus. https://research.fs.usda.gov/firelab/products/dataandtools/firefamilyplus
[12] Technosylva, Wildfire Analyst. https://technosylva.com/products/overview
[13] Pyrologix, NEXUS 2.0 software / NWCG. https://pyrologix.com/downloads
[14] LANDFIRE (Landscape Fire and Resource Management Planning Tools) is a comprehensive program in the United States that provides data and tools for land management, particularly concerning wildfires, vegetation, and ecosystems. https://landfire.gov/

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2.2.3 Weather Data and Analysis

The Riverwalk study area is located in the southeastern portion of the San Fernando Valley and experiences a Mediterranean climate characterized by warm, dry summers and cooler, wetter winters. The dry season typically extends from May through October, while most annual precipitation occurs between November and April. This seasonal pattern promotes progressive drying of vegetation through summer and autumn. Offshore Santa Ana winds can further increase wildfire potential by bringing strong, dry winds into the region. Air descending through mountain passes and canyons warms through compression, and the combination of low humidity and strong winds can support rapid fire spread.

Weather and fuel moisture conditions were characterized using FireFamilyPlus (FFP) [11] based on 10 years of weather data from the Beverly Hills Remote Automated Weather Station (RAWS) (Station 045442). This included 3,653 analyzed days, with all calendar months included. As seen in the wind rose in Figure 9, dominant winds occur from the south, with additional contributions from the south-southwest and south-southeast. This represents Onshore wind direction. A secondary concentration occurs from the northwest and north-northwest, which depicts Offshore wind direction.

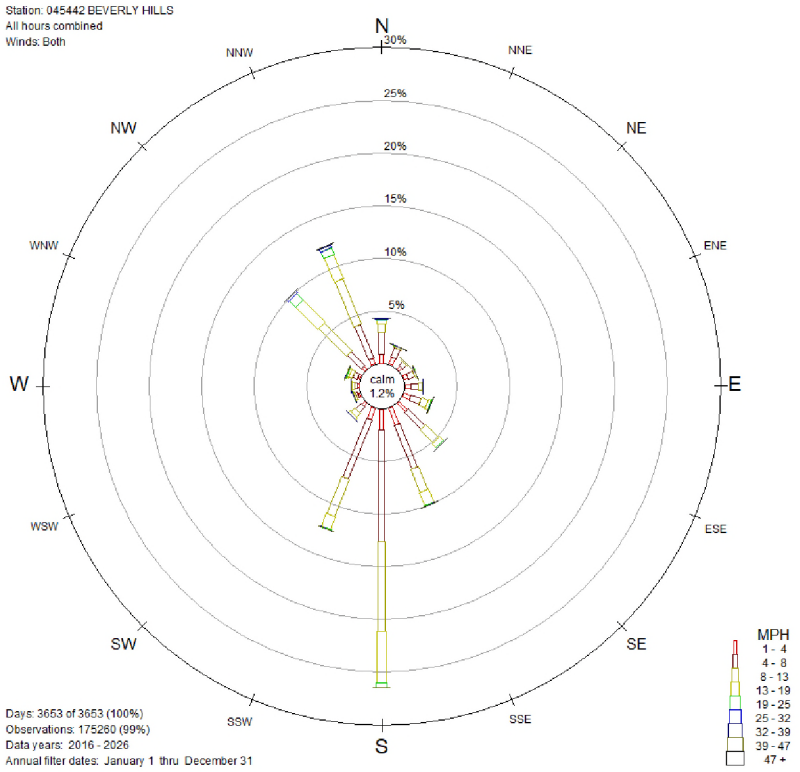


Figure 9. Wind rose showing the distribution of wind direction and speed at the Beverly Hills weather station (045442).

Table 3 summarizes weather and fuel moisture statistics for the 90th- and 97th-percentile scenario levels. Temperature, wind speed, and gusts are represented by the upper percentiles of daily maximum values. Fuel moisture is represented by the corresponding lower percentiles of daily minimum values, reflecting the greater fire potential associated with drier fuels. These statistics provide a reference for characterizing severe weather and fuel conditions and for documenting the selected modeling inputs.

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Table 3. Summary of weather and fuel moisture conditions for the 90th- and 97th-percentile scenario

Variable	90th-percentile scenario	97th-percentile scenario
Temperature	96°F	102°F
Wind speed	15 mph	18 mph
Wind gust	27 mph	37 mph
1-hour dead fuel moisture	4.39%	3.18%
10-hour dead fuel moisture	5.97%	4.81%
100-hour dead fuel moisture	10.12%	8.62%
1,000-hour dead fuel moisture	12.91%	11.50%
Live woody fuel moisture	60%	60%
Live herbaceous fuel moisture	30%	30%

Note: The 90th- and 97th-percentile scenarios use the 90th and 97th percentiles for temperature, wind speed, and gusts, and the 10th and 3rd percentiles for fuel moisture, respectively. Percentiles are calculated separately for each variable and do not represent the probability of all listed conditions occurring simultaneously.

Based on the wind analysis, two weather scenarios were considered for this analysis:

Scenario 1 – Offshore conditions: Airflow from inland toward the coast

- Represented by winds from the north-northwest (NNW)
- At 21 mph.

Scenario 2 – Onshore conditions: Airflow from the coast toward inland

- Represented by winds from the south (S)
- At 18 mph.

2.2.4 Fuel Model

To quantify the potential fire behavior characteristics proximate to Riverwalk, a fuel model is one of the primary inputs for fire behavior modeling. A fuel model is chosen by the primary carrier of the fire (e.g. grass, brush, timber litter, slash) and its fuel characteristics (e.g. fuel loading, surface area to volume ratio, fuel depth, etc.). For this analysis, the 2024 40 Scott and Burgan Fire Behavior Fuel Model from LANDFIRE was used.

The dominant classification within the mapped study area is non-burnable urban/developed land (NB1; fuel model 91), comprising approximately 17,376 acres, or 64.90 percent of the area. This classification

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predominates across the valley floor surrounding Riverwalk and extends into developed hillside neighborhoods. Note: The fire spread model does not propagate surface fire through “non-burnable” fuels. However, the classification does not establish that these areas are free from wildfire exposure. Burning landscape vegetation, ember ignitions, and structure-to-structure fire spread can affect developed areas and are not currently represented by the non-burnable surface fuel classification in LANDFIRE.

Burnable fuels are concentrated in the hills south of the Project, including the open-space areas around Wilacre Park and the broader Santa Monica Mountains landscape. Grass–shrub and shrub models together account for approximately 65.8 percent of the mapped burnable area. The most extensive individual burnable models are moderate-load dry-climate grass–shrub (GS2; fuel model 122), high-load dry-climate shrub (SH5; fuel model 145), and low-load dry-climate grass–shrub (GS1; fuel model 121). The map shows broad patches of these fuels across hillside slopes, interspersed with developed land and other fuel types.

Timber litter models account for a further 8.88 percent of the total study area, principally moderate-load conifer litter (TL3; fuel model 183) and high-load conifer litter (TL5; fuel model 185). These fuels occur throughout the hillside landscape and along portions of the developed–wildland boundary. Grass and timber-understory models occupy smaller areas. Their contribution to local fire behavior depends on their arrangement and connectivity with adjacent fuels, together with the selected wind and fuel moisture conditions.

Figure 10 displays the distribution of mapped fuel models across the study area and near Riverwalk. Table **4** summarizes the acreage and percentage of each classification.

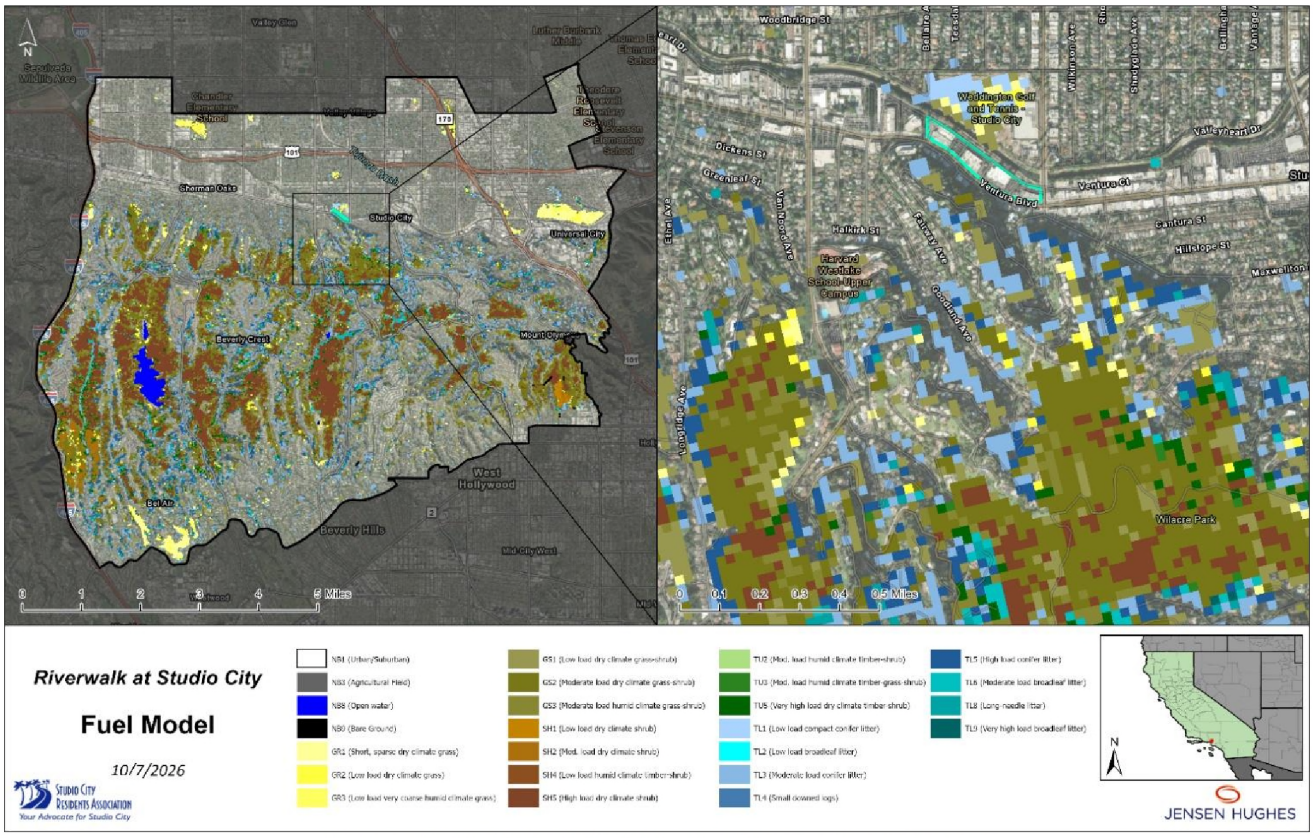


Figure 10. Fuel Model within the Riverwalk study area

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Table 4. Fuel model classifications within the Riverwalk study area.

Code	Model Label	Description	Acres	Percentage
91	NB1	Urban/developed	17,376	64.90%
93	NB3	Agricultural	4	0.01%
98	NB8	Open water	130	0.49%
93	NB3	Agricultural	4	0.01%
99	NB9	Bare ground	3	0.01%
101	GR1	Short, sparse dry-climate grass	325	1.21%
102	GR2	Low-load dry-climate grass	185	0.69%
103	GR3	Low-load, very coarse humid-climate grass	5	0.02%
121	GS1	Low-load dry-climate grass–shrub	1,326	4.95%
122	GS2	Moderate-load dry-climate grass–shrub	2,263	8.45%
123	GS3	Moderate-load humid-climate grass–shrub	496	1.85%
141	SH1	Low-load dry-climate shrub	17	0.06%
142	SH2	Moderate-load dry-climate shrub	111	0.42%
144	SH4	Low-load humid-climate timber–shrub	0.4	<0.01%
145	SH5	High-load dry-climate shrub	1,881	7.03%
162	TU2	Moderate-load humid-climate timber–shrub	8	0.03%
163	TU3	Moderate-load humid-climate timber–grass–shrub	16	0.06%
165	TU5	Very high-load dry-climate timber–shrub	247	0.92%
181	TL1	Low-load compact conifer litter	5	0.02%
182	TL2	Low-load broadleaf litter	0.4	<0.01%
183	TL3	Moderate-load conifer litter	1,281	4.79%
184	TL4	Small downed logs	5	0.02%
185	TL5	High-load conifer litter	776	2.90%
186	TL6	Moderate-load broadleaf litter	128	0.48%
188	TL8	Long-needle litter	176	0.66%
189	TL9	Very high-load broadleaf litter	6	0.02%
Total			**26,772**	**100.00%**

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2.2.5 Simulated Ignition Locations

As discussed in Section 2.1.2, historical ignitions are sparsely distributed in the Santa Monica Mountains | Hollywood Hills immediately south of Riverwalk. Thus, to evaluate potential fire spread in the WUI and across the surrounding landscape, synthetic ignition points were generated at 500-meter intervals within the analytical boundary. See Figure 11 to check the spatial distribution of simulated ignitions. Points falling on non-burnable cells were relocated to a burnable cell within 300 meters of their original location before simulation. The simulations used the prescribed wind and fuel moisture conditions for each scenario.



Figure 11. Simulation Ignitions within Study Area

2.3 RESULTS OF WILDFIRE BEHAVIOR ANALYSIS

2.3.1 Fire Severity

The simulated fire severity analysis for Riverwalk is a combination of six fire behavior outputs. The intent of the site-specific fire behavior modelling is to identify areas of the landscape that could exhibit high severity fire at a finer resolution than what is available from the CAL FIRE FHSZ maps described in Section 2.1.1. The six modeling outputs used to develop the simulated fire severity output are: (1) Flame length, (2) Fireline intensity, (3) Potential spotting distance and (4) Particulate Matter (PM) 2.5 emissions, (5) Fuel Consumption, and (6) Potential crown fire.

Two weather scenarios are evaluated: 97th-percentile onshore conditions and the identified offshore scenario. The results shown in Figure 12 represents the 97th-percentile onshore scenario. The corresponding offshore results showed a very similar spatial pattern and severity distribution as shown in Table 5; therefore, only the onshore map is presented. Because the analysis uses static fire behavior simulations to estimate conditions at

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individual locations, rather than modeling fire growth and spread over time, the two scenarios produced similar mapped patterns.

The Fire Severity is classified into five levels ranging from “Low” to “High” to highlight where the greatest potential for hazardous fire conditions exists (Figure 12).

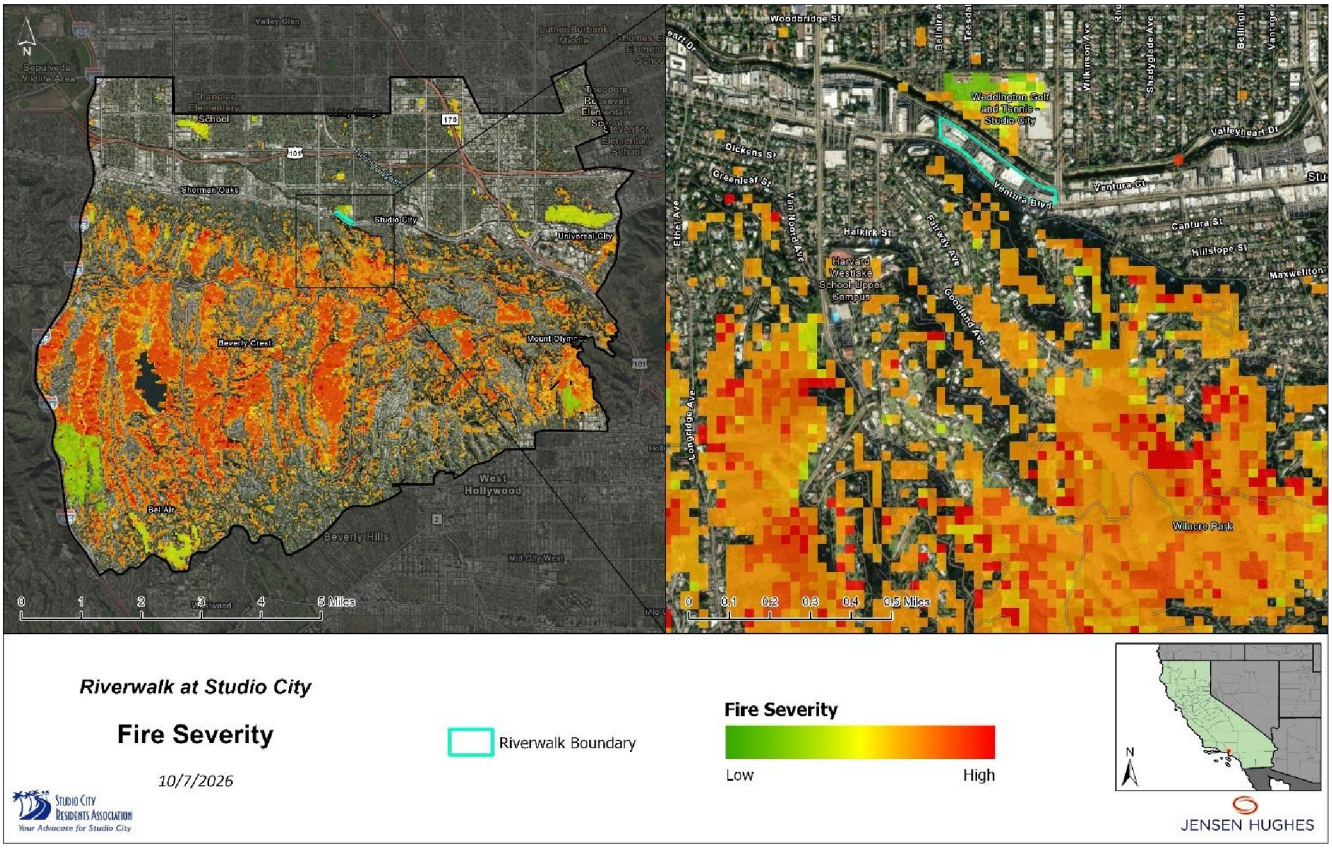


Figure 12. Fire severity within the analytical boundary surrounding Riverwalk

As shown in Figure 12, higher modeled fire severity is concentrated in the vegetated hills south of the Ventura Boulevard corridor. These areas contain a mixture of potential moderate to high fire severity, with localized patches of very high severity. Comparison with the fuel model distribution shows that many of the higher-severity areas coincide with high-load dry-climate shrub fuels (SH5), interspersed with grass–shrub and timber fuels. The hillside landscape contains substantial variation in modeled severity, reflecting differences in fuels and terrain under the selected onshore conditions.

The developed valley floor surrounding Riverwalk generally exhibits very low modeled severity, with scattered areas of higher values associated with vegetated patches. The extensive urban/developed fuel classification contributes to the predominance of very low values across this portion of the study area. These results describe the modeled surface-fuel conditions and do not consider the impact of ember exposure or structure-to-structure fire spread.

Very low severity accounts for approximately 65.55 percent of the mapped study area, while moderate severity accounts for 21.48 percent. High and very high severity together occupy approximately 2,482 acres, or 9.27 percent of the area. Although these higher-severity areas occupy a smaller proportion of the overall study area,

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their concentration within the hillside landscape is relevant to evaluating wildfire exposure near residential neighborhoods and evacuation routes. Table 5 summarizes the distribution of modeled severity for the onshore scenario.

Table 5. Distribution of modeled fire severity classifications

Scenario	*Planning Area*	*Very Low*	*Low*	*Mode rate*	*High*	*Very High*	*Total*
1: Offshore	**Percentage**	66%	4%	21%	8%	1%	100%
	Acreage	17,549	989	5,775	2,226	232	26,771
2: Onshore	**Percentage**	66%	4%	21%	8%	1%	100%
	Acreage	17,548	991	5,750	2,226	256	26,771

2.3.2 Simulated Fire Frequency

Simulated fire frequency is used to understand where in the landscape wildfire has the greatest likelihood of burning. To create the fire frequency map, simulated ignitions are placed across the analysis area and run through a fire spread model. This process creates a series of overlapping fire perimeters. Locations with the greatest number of fire perimeter overlaps identify where a fire is most likely to burn. Fire frequency outputs are based on a relative scale of low to high using the number of fire perimeter overlaps.

Figure 13 and Figure 14 show fire frequency for both wind scenarios.

- **Scenario 1 – Offshore Santa Anas at 21 mph (NNW wind, 97th percentile)** – The most prominent high-frequency area occurs in the western portion of the study area, within the vegetated Bel Air hills surrounding Stone Canyon Reservoir, south of Mulholland Drive and west of Beverly Glen Boulevard. Elevated frequency also extends through portions of the Beverly Crest hillside landscape farther east. Near Riverwalk, the vegetated hills around Wilacre Park show elevated relative frequency, with lower values along portions of the northern vegetation margins approaching the residential areas south of Ventura Boulevard.
- **Scenario 2 – Onshore at 18 mph (S wind, 97th percentile)** – Elevated fire frequency remains evident across the Bel Air and Beverly Crest hills, including the Stone Canyon Reservoir vicinity. A more localized difference is visible in the Studio City hills south of Riverwalk. In the enlarged map, orange-colored areas extend farther north through the vegetation east of Coldwater Canyon Avenue, from Wilacre Park toward the hillside neighborhoods near Hillslope Street. The vegetated slopes west of Coldwater Canyon Avenue, toward Longridge Avenue, also exhibit a more northerly extent of elevated relative frequency. These differences indicate greater recurrence of modeled burning along selected northern vegetation margins under the onshore scenario.

These patterns are consistent with the contrasting wind directions, which favor generally south-southeasterly spread under the offshore scenario and northward spread under the onshore scenario. The mapped differences

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reflect the combined effects of the scenario inputs, fuel distribution, and terrain. These patterns are consistent with the terrain–wind relationships described in Section 2.1.3, with the offshore scenario favoring generally southward spread and the onshore scenario favoring northward spread toward the San Fernando Valley.

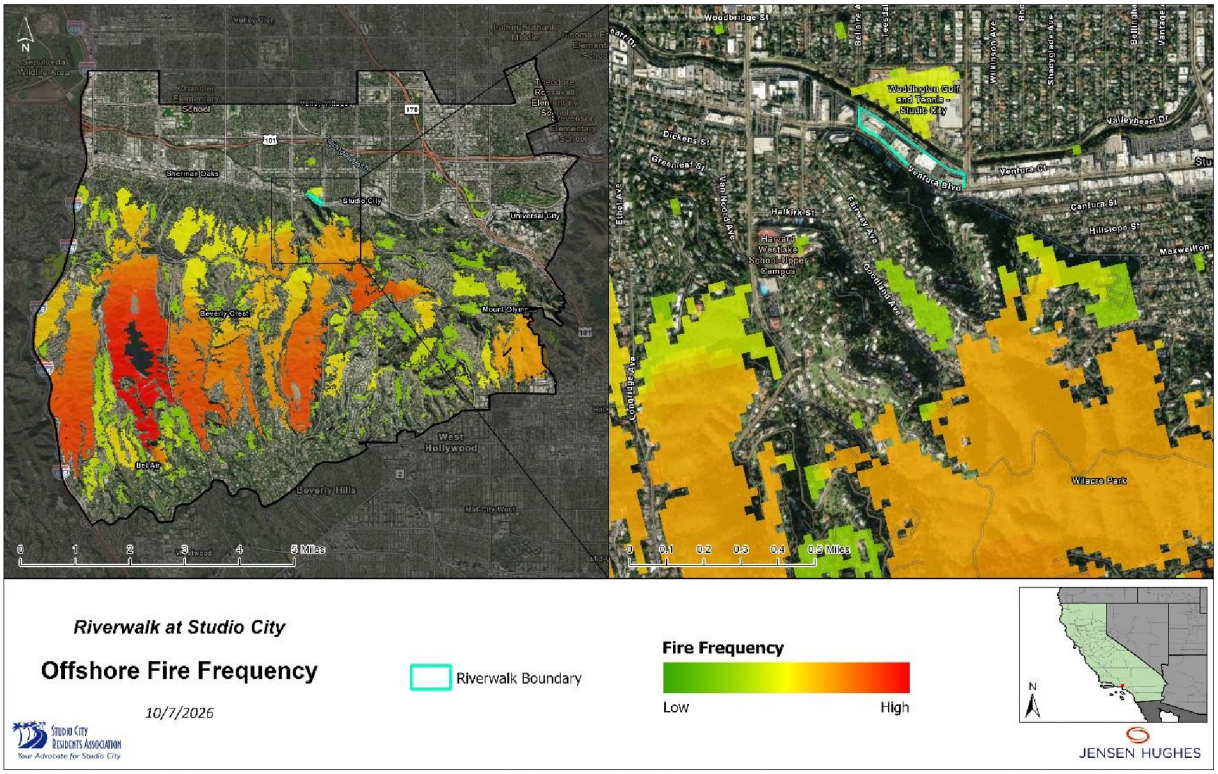


Figure 13. Fire Frequency under Offshore Wind conditions (Santa Ana, NNW, 21mph)

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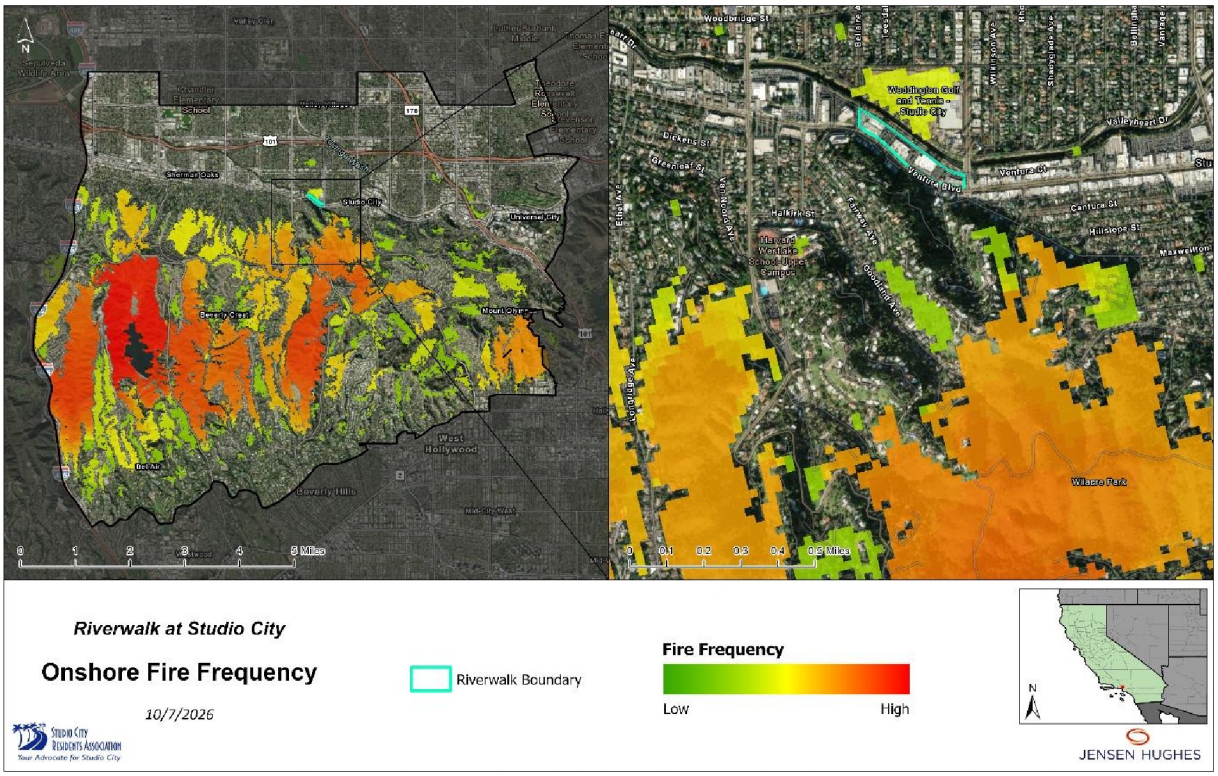


Figure 14. Fire Frequency under 97th percentile Onshore Wind conditions (South, 18 mph)

2.3.3 Combined Fire Hazard

Fire severity characterizes the potential intensity and effects of a fire, while simulated fire frequency indicates how often a location burns across the modeled ignition scenarios. Combining these measures provides a broader characterization of wildfire hazard by considering both the potential severity of burning and its relative recurrence within the simulations.

Given fire severity and fire frequency, the combined fire hazard map (i.e.,0.6 fire severity + 0.4 fire frequency) identifies places in the landscape surrounding Riverwalk that have the potential for high-intensity / high frequency fires.

As seen in the figure, Riverwalk is closely surrounded by low-moderate to moderate-high combined fire hazard conditions. High hazard areas are more concentrated in vegetated open-space areas within the broader analytical boundary, including portions of the hillsides and canyon-adjacent landscapes.

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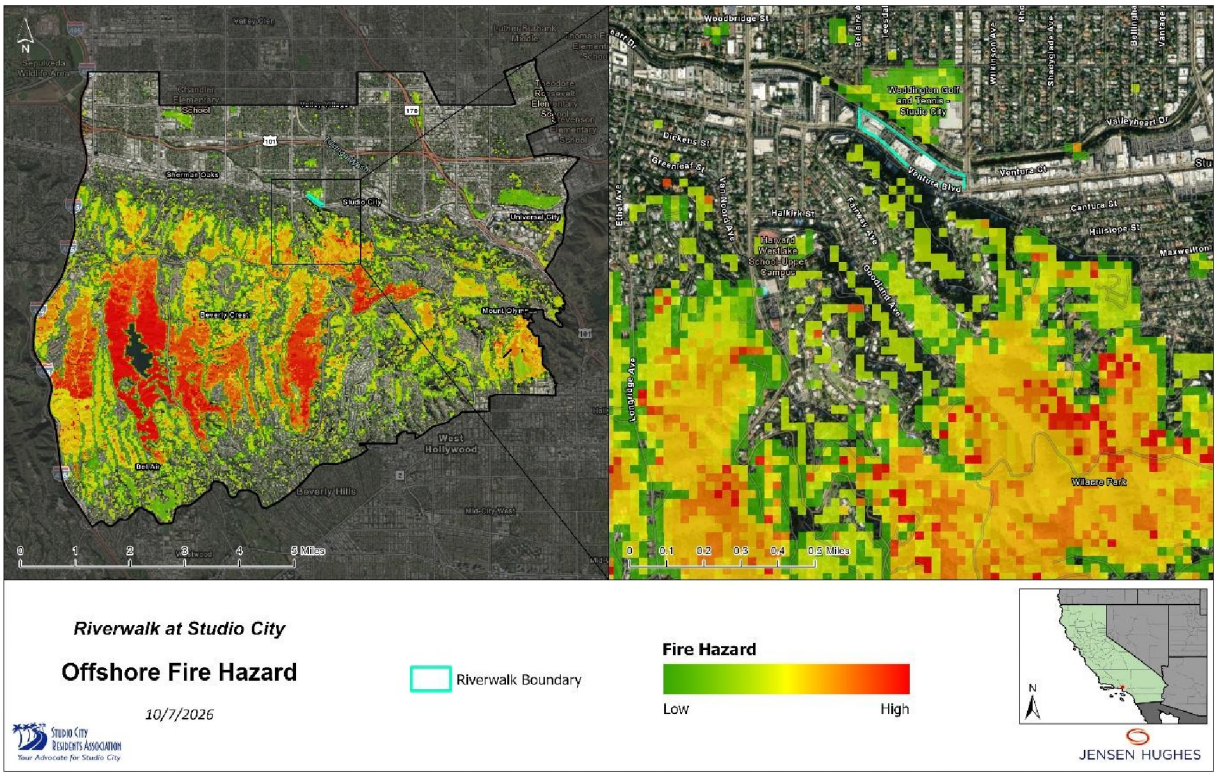


Figure 15. Fire Hazard under Offshore Wind conditions (Santa Ana, NNW, 21mph)

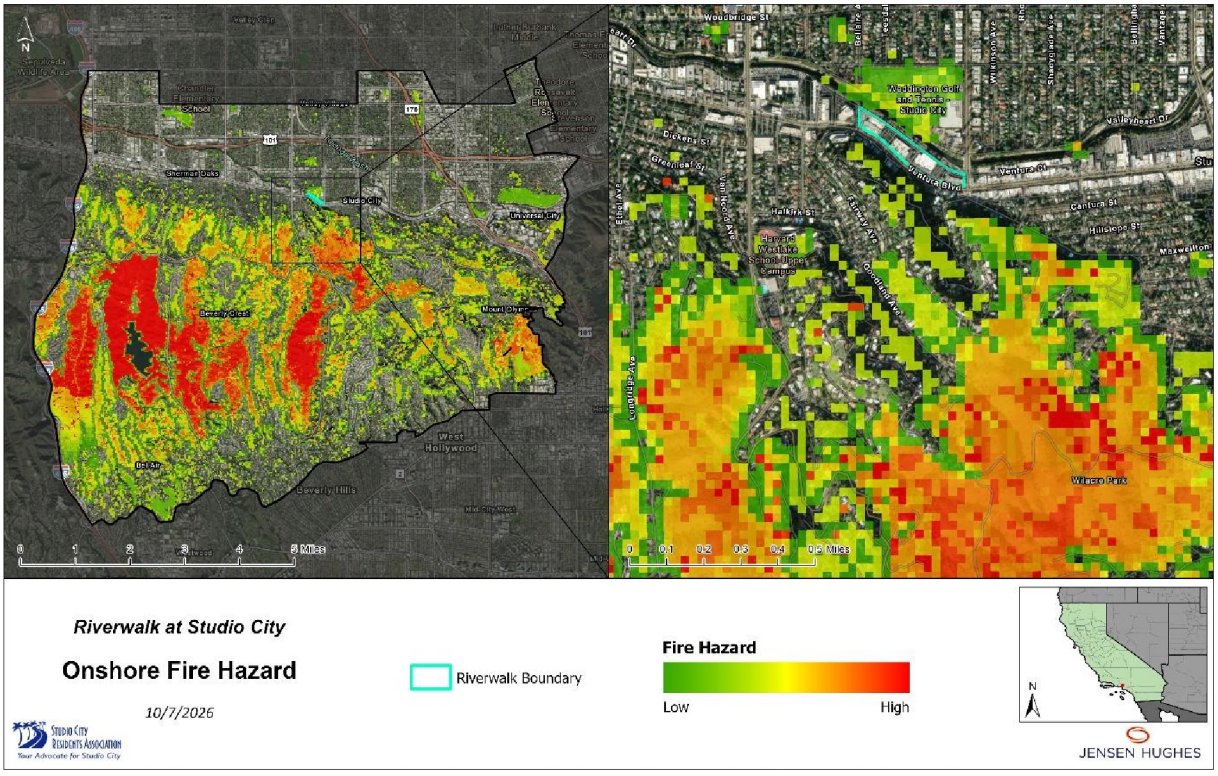


Figure 16. Fire Hazard under 97th percentile Onshore Wind conditions (S, 18mph)

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2.3.4 Encroachment Probability

In addition to the fire severity, fire frequency and combined hazard analysis, an encroachment analysis has been performed to estimate the probability a wildfire started at the location could reach the Riverwalk project within a defined time (i.e., 8-hours). Figure 17 presents an additional onshore sensitivity scenario in which the southerly wind direction was retained and wind speed was increased from 18 mph to 23 mph, corresponding to the 99th-percentile wind speed. This stronger-wind scenario was evaluated to examine whether fires originating farther south could reach the Project within the eight-hour burn period.

- The highest encroachment probabilities, shown in pink and magenta, occur immediately south of Riverwalk, around Fairway Avenue. When a fire happens the right next to the Riverwalk, very high encroachment probability that it reaches Riverwalk within 8 hour burn period.
- In contrast, ignition locations north of the Los Angeles River exhibit lower modeled encroachment probabilities despite their proximity to the Project. Fire is hard to cross the river especially under Southerly wind conditions. But if the fire persists for eight-hour burn period, it may impact Riverwalk.
- A broader area of elevated probability extends 3 miles southward into the vegetated hills of Coldwater Canyon Park. This pattern indicates that, under the extreme southerly winds, fires originating in these more distant hillside areas could spread toward and reach Riverwalk within the eight-hour modeling period.

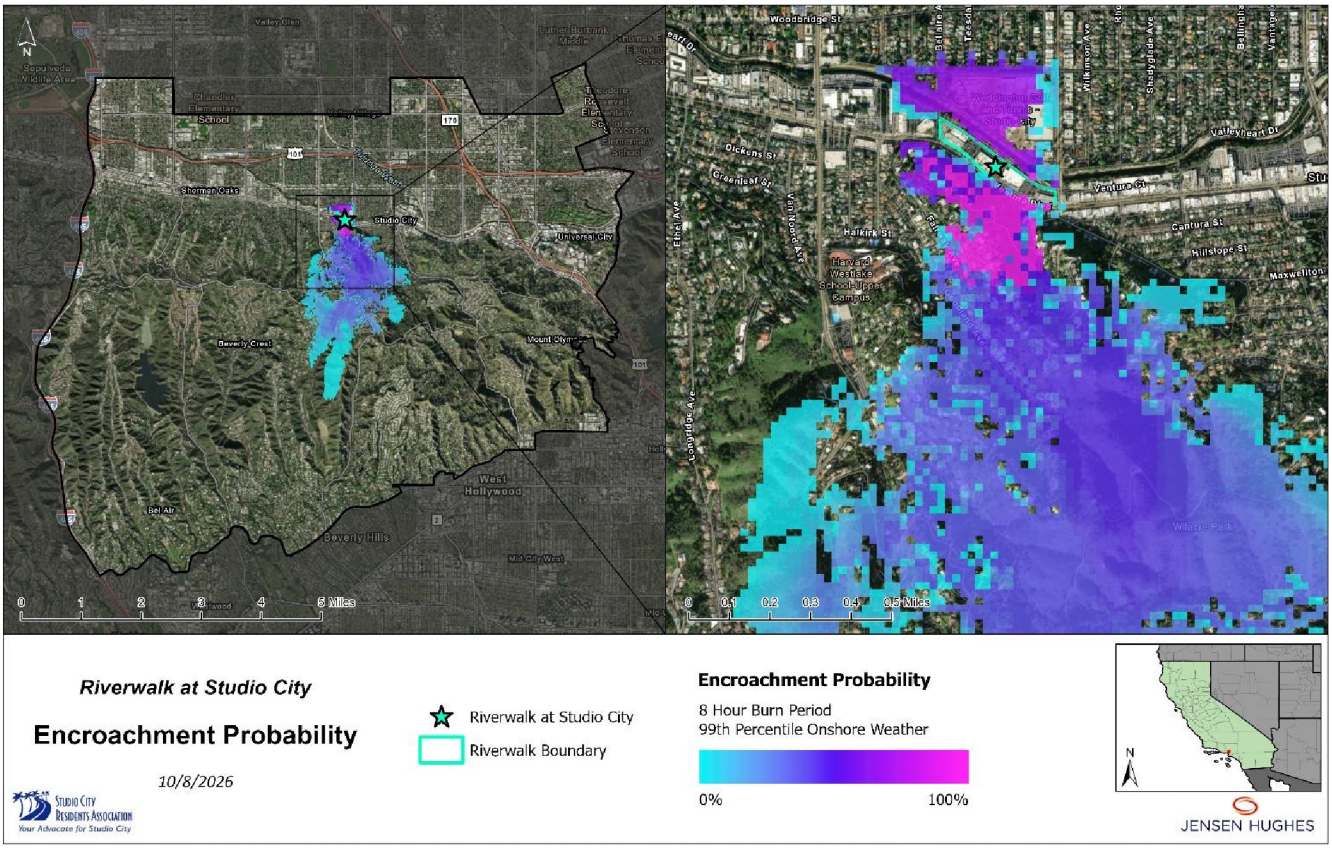


Figure 17. Encroachment Probability under 99th percentile Onshore Wild conditions (S, 23mph)

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2.4 SUMMARY OF WILDFIRE HAZARD AND FIRE BEHAVIOR FINDINGS

The wildfire assessment identifies potential exposure to Riverwalk from the vegetated hills south of Ventura Boulevard, particularly where onshore winds favor fire spread northward toward the Project and surrounding neighborhoods. Although the developed valley floor generally exhibits lower modeled fire severity, nearby hillside fuels support elevated fire severity, repeated modeled burning, and potential fire encroachment toward Riverwalk. Key findings include:

- **Fire Severity:** Higher modeled severity is concentrated in the **vegetated hills south of Ventura Boulevard, including areas containing high-load shrub fuels**. The developed valley floor surrounding Riverwalk generally exhibits very low modeled severity, reflecting the extensive urban/developed fuel classification. This classification limits modeled surface fire spread but does not preclude the likelihood of ember exposure or structure-to-structure fire spread.
- **Fire Frequency:** Both offshore and onshore simulations identify repeated burning within the hillside landscape south of Riverwalk. **Under the onshore scenario**, elevated relative fire frequency extends farther toward the Willacre Park, **bringing repeated modeled burning closer to Riverwalk** and the neighborhoods south of Ventura Boulevard. The offshore scenario retains elevated frequency farther into the hills.
- **Fire Hazard:** Although historical fire patterns and the simulations indicate greater wildfire hazard in the southern hills south of Beverly Crest, the northern hills closer to Riverwalk also present potential wildfire hazard.
- **Fire Encroachment:** The analysis also indicates a rare but nonzero modeled probability that fires originating along the Coldwater Canyon Park ridgeline could reach Riverwalk under extreme conditions. **This potential for fire spread from more distant hillside locations warrants consideration in emergency preparedness and evacuation planning**, even where the modeled probability is low.

These findings support evaluating Riverwalk's evacuation needs together with those of the surrounding hillside neighborhoods. Fire advancing toward Ventura Boulevard could coincide with vehicles moving from these neighborhoods toward the same corridor serving the Project. Section 3 evaluates the roadway constraints and additional Project-related demand relevant to this potential overlap.

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3.0 *Emergency Access and Evacuation Assessment*

Given wildfire conditions and potential for fire to spread into the Project site as described in Section 2.0, an emergency access and evacuation assessment was conducted for Riverwalk and surrounding communities. The assessment consists of neighborhood-scale roadway vulnerability indicators, and a dynamic analysis of cumulative evacuation demand and potential roadway constraints. The assessment identifies locations where limited route options, converging traffic, or constrained roadway capacity may complicate evacuation. The results may be used to help inform planning level decisions for the Riverwalk development, but also regional level wildfire resiliency and preparedness policies and development practices/considerations.

Note: Wildfire modeling informed the assessment context but was not dynamically coupled with the evacuation simulation. Modeled fire spread did not trigger roadway closures or changes in vehicle movement.

3.1 OVERVIEW OF STUDY AREA

The analytical boundary of the evacuation study consists of the Riverwalk development and the nearby Sportsmen's Lodge development, shown in cyan and blue, respectively in Figure 18 along with the broader Studio City community and surrounding neighborhoods in the valley floor and Santa Monica Mountains. This comprises 80 Genasys evacuation zones, encompassing approximately 72,000 buildings across 26,800 acres. Riverwalk is located in evacuation zone LFD-0703. This zone and adjacent zones LFD-0701 and LFD-0707 receive particular attention in the presentation of local results.

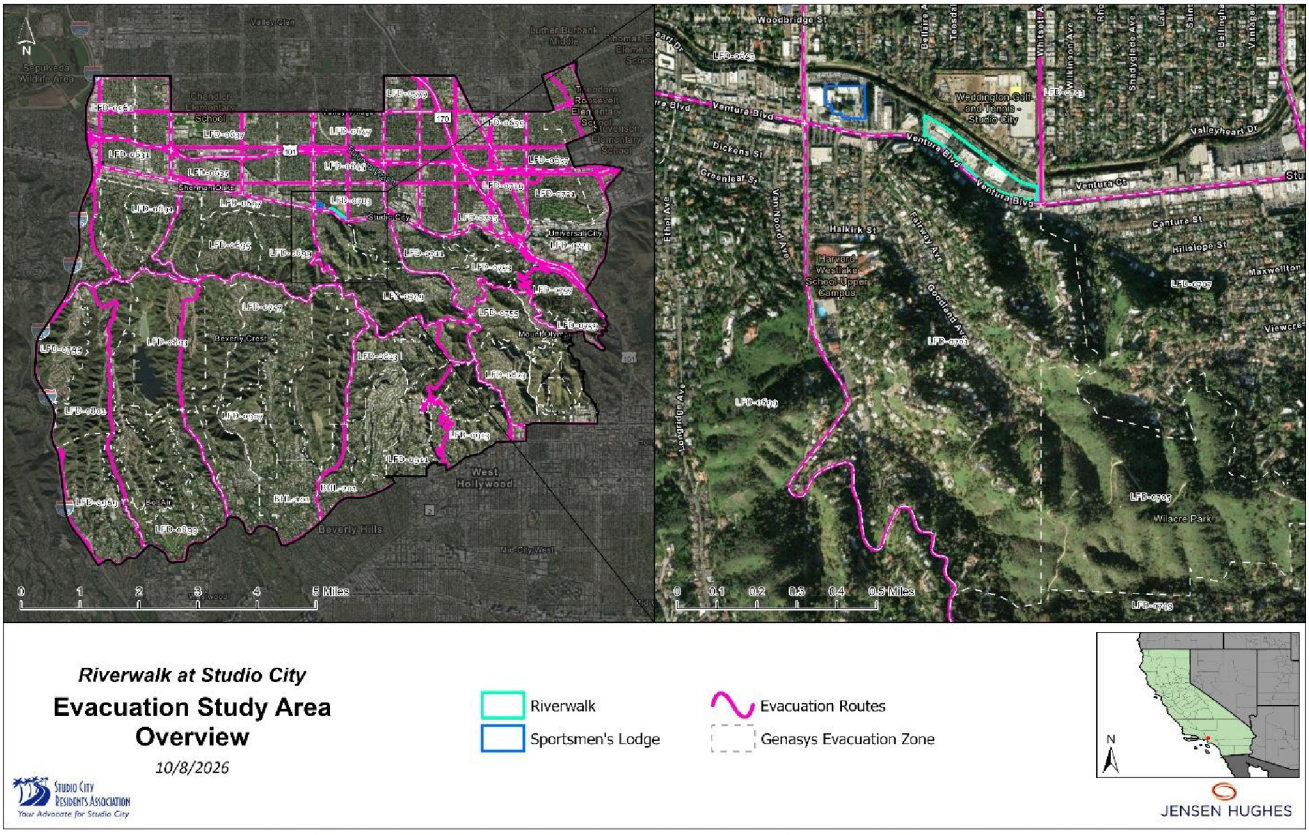


Figure 18. Evacuation study area evaluated in this report

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Studio City and the neighborhoods surrounding the Riverwalk redevelopment site is located in the southeastern portion of the San Fernando Valley – an urbanized valley in Los Angeles County, California – immediately north of the Santa Monica Mountains. The community is generally bounded by the US-101/Ventura Freeway to the north, Lankershim Boulevard and the Cahuenga Pass area to the east, Mulholland Drive and the Santa Monica Mountains to the south, and the Sherman Oaks area to the west. Ventura Boulevard serves as the community's principal east-west commercial and transportation corridor, while the Los Angeles River traverses the northern portion of the community.

According to the American Community Survey (ACS) 2020-2024 estimates, Studio City has an approximate population of 41,500 residents across 6.31-square-miles (16.3 km^2). Surrounding neighborhoods of Sherman Oaks to the west, Valley Village to the north, Toluca Lake and University City to the northeast/east, Cahuenga Pass | Hollywood Hills to the southeast and Hollywood Hills | Beverly Crest to the south, have an aggregated population of approximately 204,000 residents. Note: With respect to the Riverwalk and Sportsmen's Lodge developments, the baseline evacuation scenario considers the residential population-derived demand assigned to existing building records at both sites. It does not represent a complete inventory of existing commercial patrons, employees, or other site occupants.

3.2 METHODOLOGY

The evacuation assessment combines two complementary approaches: a static assessment of egress vulnerabilities and a dynamic assessment of evacuation traffic through the shared roadway network. The static assessment evaluates travel distances, dependence on single-access routes, and the number and separation of neighborhood exits. The dynamic assessment examines how evacuation demand, roadway capacity, and queue spillback affect vehicle movement over time, comparing baseline conditions with a scenario incorporating the proposed Riverwalk and Sportsmen's Lodge residential developments. Together, these approaches identify existing network constraints and evaluate how additional residential demand may affect local and regional evacuation performance under a consistent set of modeling assumptions.

3.2.1 Static Vulnerability Assessment

The static evacuation vulnerability assessment for the Riverwalk development, inclusive of the surrounding populations of Studio City and neighboring communities, was developed using a network-based methodology that evaluates both localized access and egress limitations and the cumulative performance of the roadway system during a community-scale evacuation. The approach builds on ongoing research at University of California, Santa Barbara (UCSB) focused on identifying neighborhood-scale evacuation vulnerabilities that may not be apparent from conventional roadway or fire access standards alone.

The analysis considered the following primary evacuation vulnerability indicators (See Figure 19):

- **(a) Maximum Travel Distance:** Evaluates the distance residents may need to travel through the local roadway network before reaching an evacuation outlet or higher-capacity evacuation corridor. Longer travel distances can increase evacuation time and exposure to changing wildfire conditions.
- **(b) Single Access/Egress Neighborhoods:** Identifies the size of neighborhoods, clusters of homes, or roadway systems that depend on a single connection to the surrounding transportation network. These areas may be particularly vulnerable if the sole access route becomes blocked, congested, or compromised by fire or other hazards.

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+ **Insufficient Exits:**
  A neighborhood is considered to have insufficient exits if it meets either of the following conditions:

  - **(c) Insufficient Number of Exits:** Evaluates whether the number of available evacuation outlets is sufficient relative to the number of residents, households, or vehicles expected to rely on those outlets during an evacuation.
  - **(d) Insufficient Exit Separation:** Evaluates whether multiple exits provide meaningful route independence. Closely spaced exits may be exposed to the same wildfire, roadway obstruction, or downstream bottleneck and therefore may not provide the same level of redundancy as geographically separated evacuation routes.

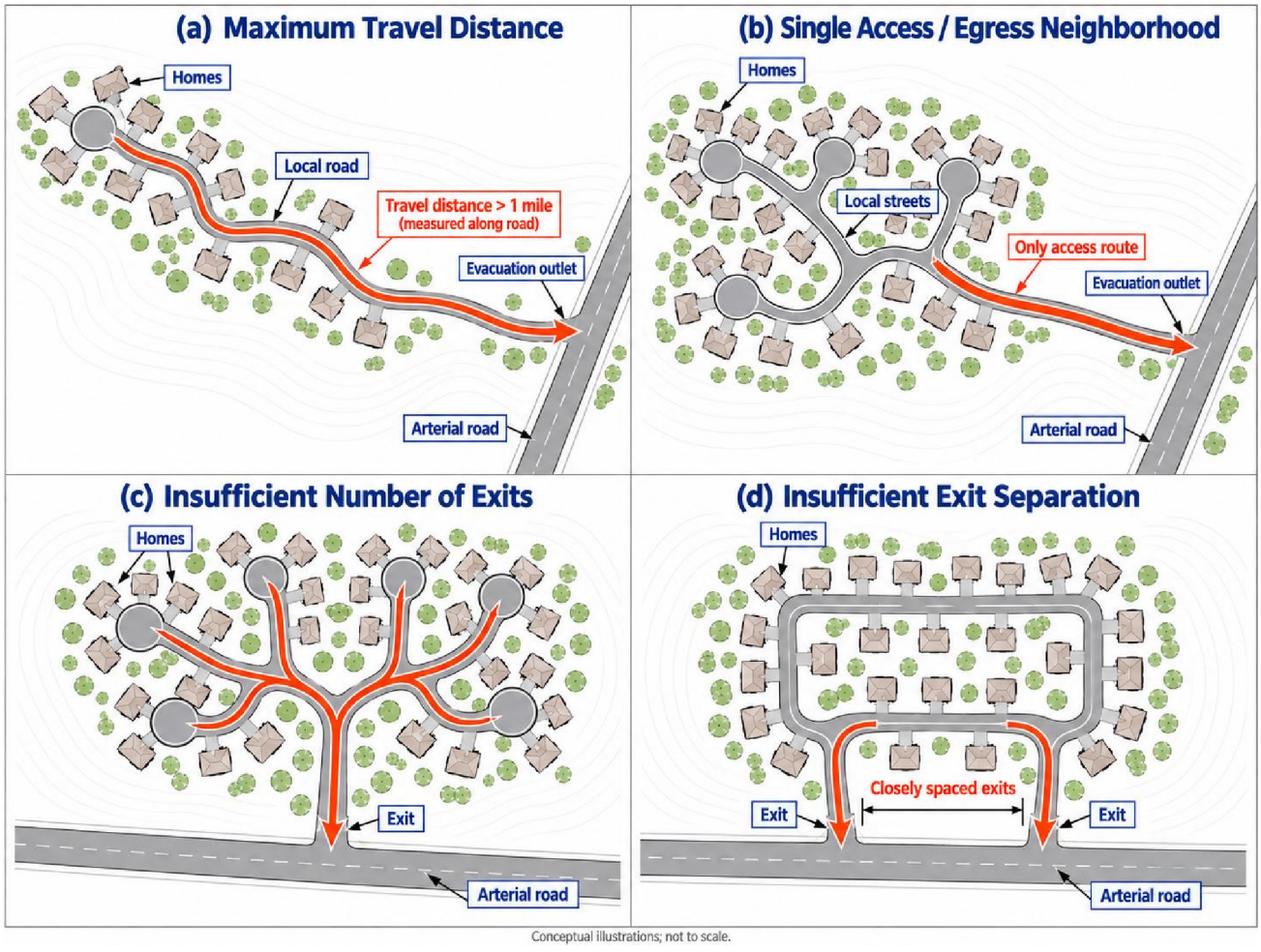


Figure 19. Conceptual illustrations of neighborhood evacuation vulnerability indicators.

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3.2.2 Dynamic Vulnerability Assessment

In addition to the static, localized vulnerability indicators, a time-stepped network model was used to evaluate cumulative roadway demand and capacity during a simultaneous evacuation. As evacuation traffic moves through the network, vehicles accumulate on downstream roadway segments. This cumulative approach captures constraints such as insufficient vehicle flow rates, queuing and other downstream effects of multiple vehicles using the same road network simultaneously, as well as the converse where additional capacity may be available. Specifically, this analysis identifies:

- Roadway segments receiving traffic from multiple upstream neighborhoods;
- Locations where discharge capacity or downstream storage constrains movement;
- Changes in queueing and the time required for vehicles originating in each evacuation zone to reach the model boundary.

For this analysis, two scenarios – (1) Baseline and (2) Post- redevelopment – were evaluated using the same network and operating assumptions to assess the effects of changes in demand associated with Riverwalk and Sportsmen's Lodge.

Results support comparison of network loading, route dependence, and development-related changes under the selected assumptions. They are not calibrated predictions of actual evacuation times or confirmation that modeled destinations remain safe.

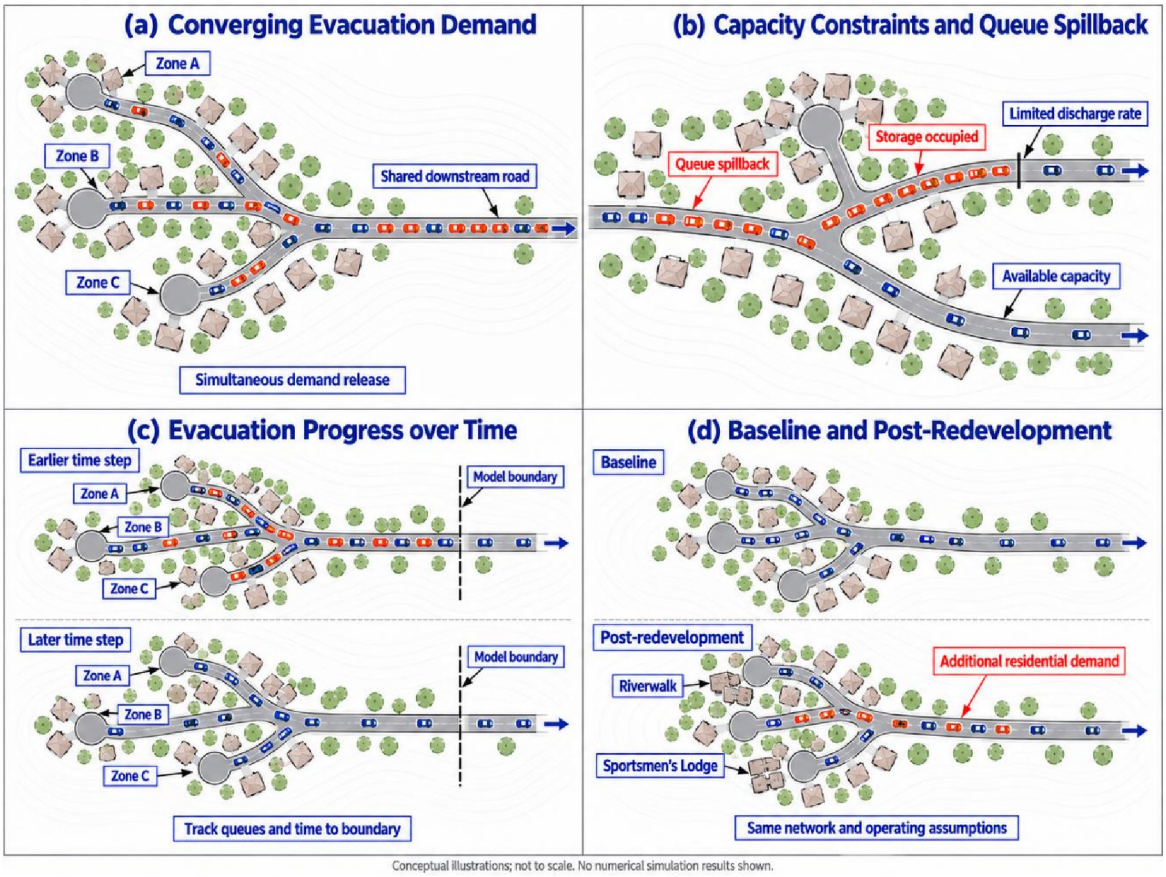


Figure 20. Conceptual illustrations of dynamic Evacuation vulnerability assessment.

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3.3 KEY ASSUMPTIONS

3.3.1 Assumptions for Static Assessment

The static assessment evaluates the spatial relationship among buildings, the local roadway network, and neighborhood evacuation outlets. The following assumptions define the static assessment:

- **Definition of Exit:** An exit is any intersection that connects from any local road and collector to a major arterial or major highway. Once a vehicle has reached an "exit", they are assumed to have reached a place of relatively safety. (See Figure 21)
- **Travel Distance:** Travel distance is measured along the mapped roadway network from the connection associated with each building to a designated exit. The maximum travel distance from the point of origin (i.e., a building) to the nearest "exit" must be no more than 1 mile.
- **Number of Required Exits:** The required number of exits is based on thresholds based on the number of people being served by the shared road network.
  - A single exit is required for a neighborhood of ≤30 homes.
  - Two exits are required where 31-200 buildings are served.
  - Three exits where 201-400 buildings are served.
  - Four or more exits where more than 400 buildings are served.
- **Exit Separation:** Where multiple exits are required from a neighborhood due to the number of people/buildings being served, at least two exits must be separated by ½ the maximum diagonal distance of the area being served.
- **Building-Based Demand:** Each mapped building is treated as one demand unit, with equal weight regardless of its residential unit count, occupancy, floor area, or vehicle availability. Building counts therefore represent the number of mapped structures, assuming 1 vehicle per building.



Figure 21. Exits for Static Assessment

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3.3.2 Assumptions for Dynamic Assessment

3.3.2.1 Evacuation Demand

+ **Baseline Demand**

Baseline residential population was derived from the "population count" layer of the USDA Forest Service's Wildfire Risk to Communities dataset (2nd edition; Jaffe et al., 2024)[15]. This 30-meter raster represents estimated residential population counts per cell, based on 2021 U.S. Census Bureau population estimates. 205,710 people are estimated to live in the study area.

The population data were spatially combined with building footprints to estimate the population associated with each building. These building-level estimates were converted to evacuation vehicle demand, assuming two persons per vehicle, with each building's vehicle count rounded up to the next whole vehicle. There are 72,147 buildings within the analytical boundary, leading to evacuation demand of 139,000 vehicles.
Note: The resulting demand represents a modeled residential population rather than observed building occupancy at the time of an incident.

However, not all buildings are considered for demand. The yellow hatched areas in Figure 22 covering portions of Bel Air, Beverly Crest, and the southern hillside neighborhoods toward Beverly Hills and West Hollywood, were excluded from evacuation demand. Residents in these areas were assumed to use outlets toward the southern urban road network rather than cross the Santa Monica Mountains to reach the freeway corridors serving Studio City. Thus, the residents wouldn't use the highway entrances within the study area.

This assumption reflects topography of the ridgeline and the potential exposure of cross-ridge routes to wildfire. Under southerly winds, fires originating on the southern slopes in the excluded zones may spread uphill toward the ridge, compromising northbound travel. Under the modeled NNW Santa Ana winds, fire may spread toward the southern slopes, making route availability dependent on ignition location and fire progression. Neither wind scenario establishes cross-ridge travel toward Studio City as a dependable evacuation option.

Therefore, 33,800 people from 17,612 bulidings are excluded, ending up 171,910 people from 54,535 bulidings are evacuating. 113,830 vehicles traveled through the dynamic assessment. (See Table 6)

Table 6. Baseline Evacuation demand before and after spatial exclusions

Category	# of Buildings	Estimated Population	Modeled Vehicles
Before Exclusions	72,147	205,710	139,000
Excluded demand	17,612	33,800	25,170
Final Demand	**54,535**	**171,910**	**113,830**

[15] Jaffe, M. R., Scott, J. H., Callahan, M. N., Dillon, G. K., Karau, E. C., and Lazarz, M. T. (2024). Wildfire Risk to Communities: Spatial datasets of wildfire risk for populated areas in the United States. 2nd ed. Fort Collins, CO: Forest Service Research Data Archive. Updated September 10, 2024. https://doi.org/10.2737/RDS-2020-0060-2.

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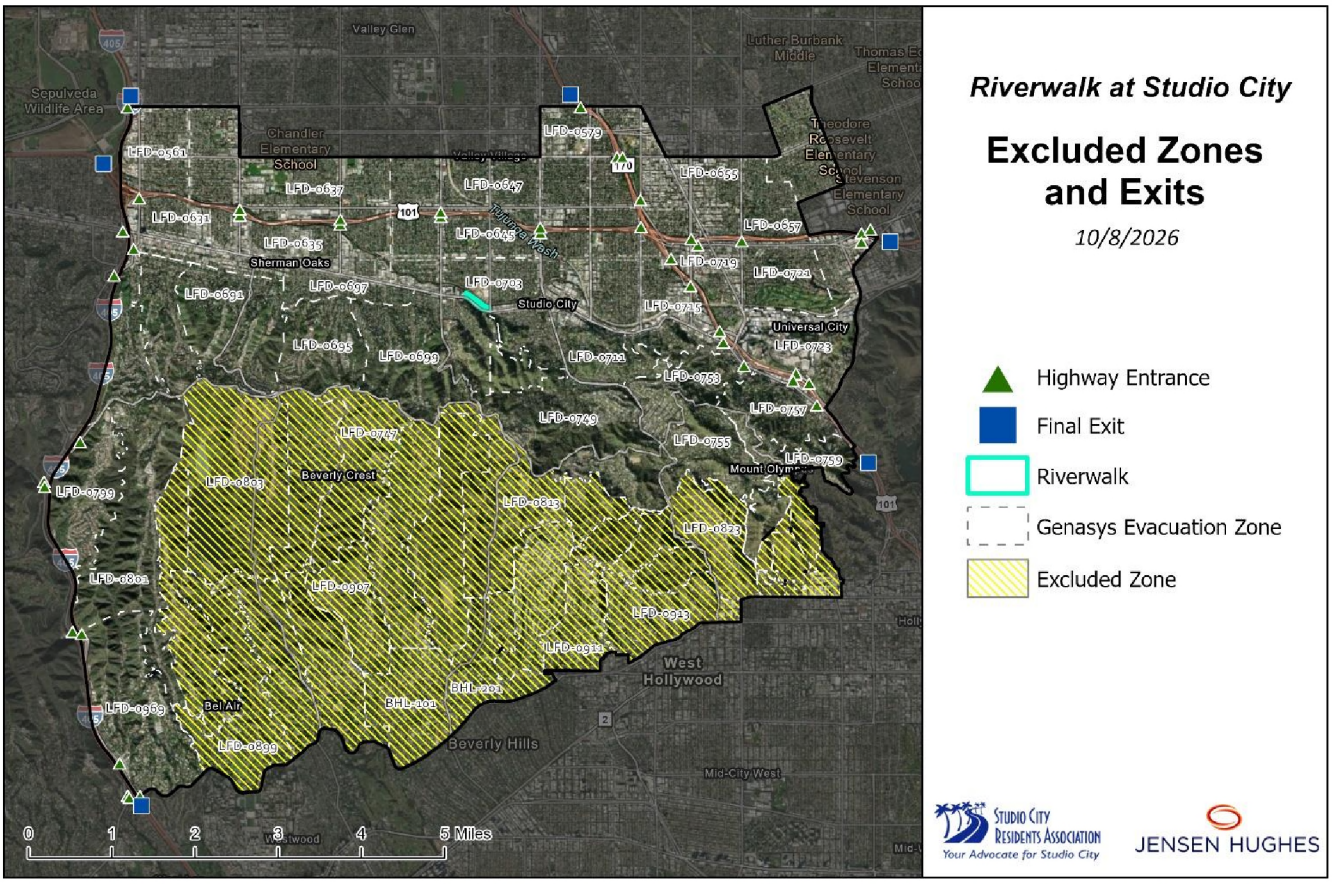


Figure 22. Evacuation zones excluded from demand, and Highway entrances and Final exits identified

+ Proposed Development Demand

The residential schedule for Riverwalk identifies 814 dwelling units in Buildings 2, 3, and 4. Table 7 summarizes the distribution by building. Vehicle demand was assigned directly from the residential unit count rather than estimated through a separate population calculation.

The Sportsmen's Lodge development was also included in the proposed development scenario, with 520 residential units. Consistent with the Riverwalk assumption, one departing vehicle per residential unit was assigned, resulting in 520 modeled evacuation vehicles (Table 8).

Together, Riverwalk and Sportsmen's Lodge contributed 1,334 modeled residential evacuation vehicles. These vehicles replaced the baseline demand assigned to the selected existing-site building records. This total represents residential demand only; additional vehicles associated with commercial patrons, employees, and service activities were not separately included.

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Table 7. Residential development program for Riverwalk

Building	Studios	One-bedroom	Two-bedroom	Total units
Building 2	80	126	60	266
Building 3	79	108	77	264
Building 4	64	139	81	284
Total	**223**	**373**	**218**	**814**

Table 8. Sportsmen's Lodge residential evacuation demand [16]

Building	Studios	One-bedroom	Two-bedroom	Total units
Sportsmen's Lodge	171	140	209	520

3.3.2.2 *Travel Behavior Modelling*

Travel behavior was represented using a time-stepped network model that tracks evacuation vehicles from their building origins to designated exits at the model boundary. The baseline and proposed development scenarios used the same departure, routing, and roadway operating assumptions.

+ Departure Planning

All modeled evacuation demand was made available for departure at the start of the simulation. This represents a simultaneous demand-release scenario across the included evacuation zones. Because the timing and spatial configuration of departures can substantially influence queue formation and network performance, a common departure assumption was used to reduce uncertainty introduced by arbitrary departure schedules and support a consistent comparison between scenarios.

Simultaneous demand release does not mean that all vehicles entered the roadway network immediately. Vehicles remained at their origins until the connecting roadway had sufficient receiving capacity and storage. Reported times to reach the model boundary therefore include waiting at the origin, roadway travel, and queueing after entering the network. They exclude any warning or preparation period preceding the simulation.

+ Routing Evacuation Trips

Evacuation trips followed a two-stage routing structure. Vehicles first traveled through the local street network toward a feasible freeway entrance and then continued along the freeway network toward a downstream final exit at the model boundary. See Figure 22 for highway entrances and final exits.

[16] The Residences at Sportsmen's Lodge, Sheet A0.02, "Project Information and Calculations," May 2023.

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Route selection considered free-flow travel time and modeled queues, with travel costs refreshed every 30 seconds. Vehicles could select an alternative route at a network junction. Available alternatives respected the modeled direction of travel and prevented repeated visits to the same node. This representation allows traffic to redistribute as congestion develops, but does not reproduce individual driver knowledge, navigation-system use, or preferences.

Once vehicles entered the freeway, onward alternatives were restricted to eligible freeway and ramp connections. Boundary exits represent completion of the modeled trip.

+ Vehicle Movement and Queueing

Vehicle movement was calculated at one-second intervals, with standard outputs recorded every 10 seconds. Each directed roadway segment had an assigned travel time, vehicle discharge capacity, and finite storage based on its length and directional lane count.17 Vehicles could proceed to the next segment only when the applicable discharge and receiving constraints allowed the movement.

When downstream storage was occupied, vehicles waited on upstream segments, allowing queues to spill back through the network and delay other approaching traffic. Mapped traffic signals and stop controls18 were represented through simplified service assumptions. A 10% roadway capacity reserve was applied, although background vehicles were not explicitly introduced into the network.

Following rules in Table 9 regulate traffic movement and competition for roadway space. Note: They do not resolve individual lane changes, detailed turning conflicts, or driver interactions. The resulting travel and clearance times are scenario-based measures for comparing network performance, rather than calibrated predictions of actual evacuation behavior.

Table 9. Principal model assumptions

Component	*Representation*
Roadway network	Directed roadway connections derived from HERE data
Lane counts	Permitted-direction Lane attributes, with fallback assumptions where values are missing
Travel time	Segment length and assigned travel speed
Discharge capacity	Assigned per-lane service rates and directional lane counts
Roadway storage	Segment length, directional lanes, and assumed space occupied per vehicle
Intersection controls	Simplified service assumptions for matched OpenStreetMap controls
Background traffic	10% capacity reserve; no explicit background vehicles

[17] HERE Technologies. HERE road network data, directional lane-count attributes (FROM_LANES and TO_LANES), as supplied for this assessment. See also HERE GIS Data Suite User Guide, “Key features.” https://docs.here.com/gis-data-suite/docs/hgds-key-features

[18] OpenStreetMap contributors. OpenStreetMap [geospatial dataset]. Traffic signal and stop-control features used in this assessment. https://www.openstreetmap.org. © OpenStreetMap contributors; data available under the Open Database License (ODbL). https://www.openstreetmap.org/copyright.

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Departure timing	All demand available at simulation start; entry constrained by receiving capacity and storage
Route updates	Routing costs are refreshed every 30 seconds
Internal calculation interval	1 second
Standard output interval	10 seconds

3.4 EVACUATION VULNERABILITY ASSESSMENT RESULTS

During wildfires, roadway systems can quickly become strained as evacuating vehicles leave an area at the same time. This section presents the results of static and dynamic evacuation vulnerability assessments for the Riverwalk project and the surrounding communities in the region. First, the static assessment identifies locations in the study area where various evacuation vulnerabilities related to travel distances, single access/egress neighborhoods, number of exits and separation of exits may increase life safety risk to residents during a wildfire incident. Second, the dynamic assessment identifies potential points of congestion in the road network that may increase evacuation times at the regional level, but also at the Riverwalk project level.

3.4.1 Static Evacuation Vulnerabilities

Based on the key assumptions and modelling approach described in Section 3.2.1 and 3.3.1,several vulnerabilities were identified across the Riverwalk study area based on the four evaluation indicators – (1) Maximum travel distance, (2) Single access/egress neighborhoods, (3) Number of Exits and (4) Exit Separation.

Figure 23 shows that the results of each of the four indicators, as well as the composite score of all indicators combined. Riverwalk's frontage on Ventura Boulevard places the Project close to a major receiving corridor, but this does not establish that the corridor will have spare capacity during an evacuation. Traffic originating farther into the hillside network may reach the same corridor and compete for onward capacity. This relationship between local access and shared downstream demand is addressed by the dynamic results.

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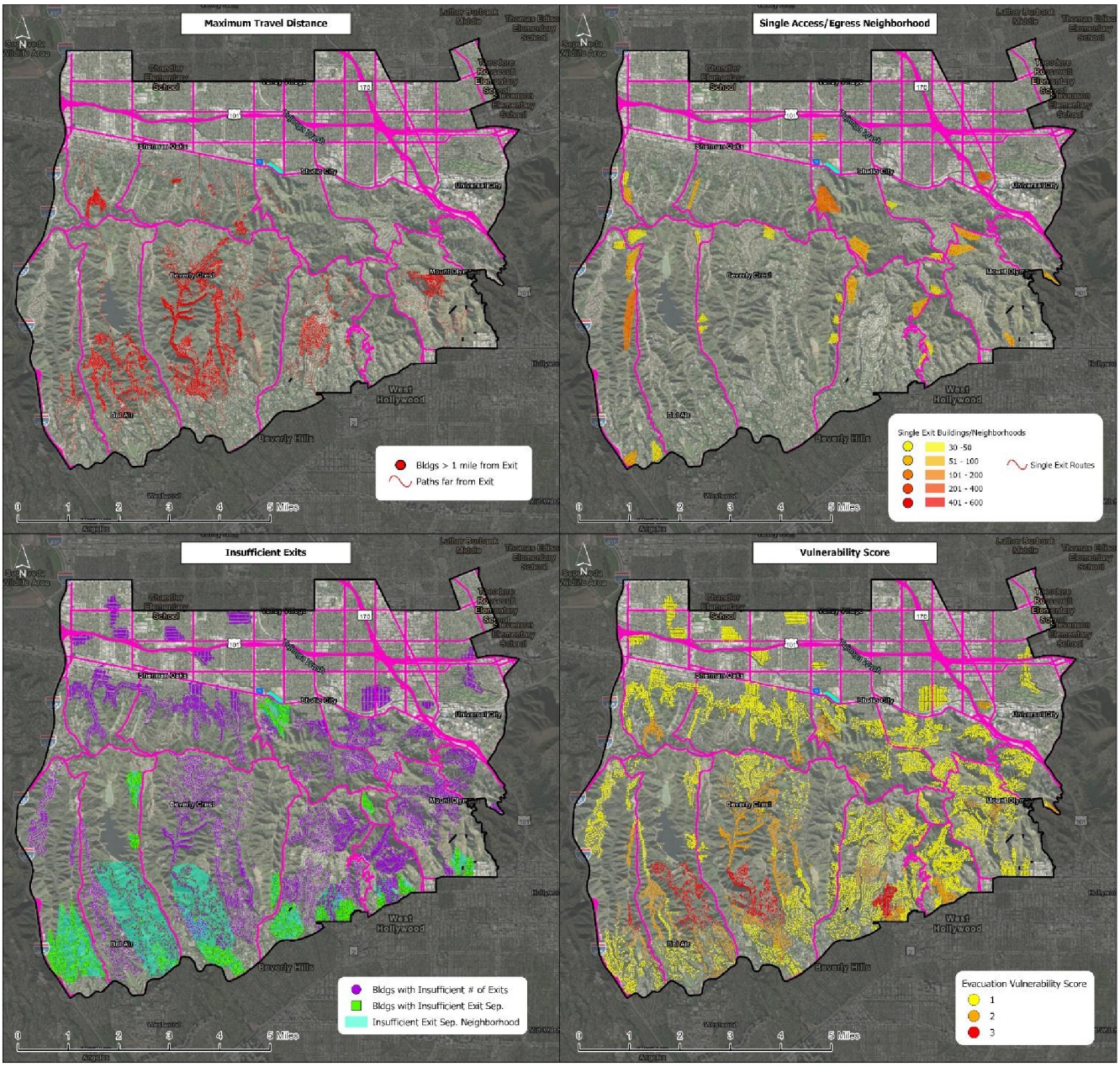


Figure 23. Maximum Travel Distance Exceeded, Single Access / Egress Neighborhoods, Insufficient # of Exits and Insufficient Exit Separation, and composite egress vulnerability

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As seen in the figure, the following observations can be made:

- **Maximum Travel Distances (Top Left)**– There are numerous buildings that are located more than one mile away from an "exit". These homes are concentrated principally in hill communities in the Santa Monica Mountains | Hollywood Hills such as in portions of Bel Air, Beverly Crest, and toward Mount Olympus. Increased travel distances to an exit, increases the likelihood of being exposed to the negative effects of fire/smoke, being trapped or being more remote from assistance from first responders.
- **Single-access neighborhoods (Top Right)** – Several single access-egress neighborhoods of more than 30 homes can be seen throughout the study area, again primarily in the hillside communities. The legend groups these neighborhoods by the number of buildings served. Single access egress neighborhoods impose an increase in life safety risk in the event fire or other hazard (e.g., downed tree, downed power line, disabled vehicle, congestion) blocking or impairing the ability of vehicles to reach an exit.
- **Insufficient Exit (Bottom Left)**
  - **Insufficient Number of "Exits"** – Several neighborhoods across the hill communities and parts of the valley floor have an insufficient number of exits given the number of buildings/people being served. These neighborhoods are signified with purple dots for each building that shares the same limited exit access routes. Where neighborhoods have an insufficient number of exits, there is a risk of increased congestion and/or a larger number of people/vehicles at risk to exposure to wildfire or other hazards.
  - **Insufficient Number of "Exit Separation"** – Buildings and neighborhoods highlighted in green show locations where "required exits" are too closely spaced and therefore do not provide independent alternatives. Where exits have insufficient separation, they are at risk of a single fire event or other obstruction that may disable both simultaneously. Most of these types of neighborhoods are in the hill communities.

Finally, a composite map of all evacuation vulnerabilities is provided in the bottom right of Figure 23. As seen in the figure, there are localized concentrations of higher vulnerability in hillside areas (primarily south of the ridgeline). The evacuation vulnerability score represents the number of assessed vulnerability indicators present at a given location; a higher score indicates that more indicators overlap. These scores are screening indicators under the selected criteria, rather than determinations of code compliance or predictions of evacuation failure.

3.4.2 Dynamic Evacuation Vulnerabilities

The dynamic analysis evaluates where evacuation traffic accumulates, how roadway constraints affect the time required to reach the model boundary, and how these outcomes change with the proposed developments. Results are presented at the regional scale and for the Riverwalk vicinity, with particular attention to vehicles originating in LFD-0703 (Riverwalk and Sportsmen's Lodge), LFD-0701, and LFD-0707.

The baseline contains 113,830 modeled vehicles. The development scenario contains 115,136 vehicles, a net increase of 1,306 vehicles, or approximately 1.15%. The 1,334 vehicles assigned to the proposed residential units replace 28 vehicles associated with the selected existing-site records. Both scenarios use the same roadway network and operating assumptions; the comparison represents the combined residential-demand change at Riverwalk and Sportsmen's Lodge.

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+ Regional and Zone level evacuation progress

Figure 24 and Table 10 show that 90% of regional demand reaches a model boundary exit after 234.7 minutes in the baseline and 241.7 minutes with development, an increase of 7.0 minutes. The last modeled vehicle reaches the boundary at 385.9 and 391.5 minutes, respectively, an increase of 5.6 minutes. All modeled demand reaches the boundary in both runs. These times include origin waiting, travel, and roadway queueing from simultaneous demand release; they exclude preceding warning and household preparation time.

In LFD-0703, which contains Riverwalk, T90 increases by 7.8 minutes and T100 by 27.0 minutes. The zone's modeled demand also increases from 3,176 to 4,482 vehicles, so its two curves compare different demand totals rather than tracking only the same existing residents. LFD-0701 retains the same demand and shows increases of 6.8 minutes in T90 and 4.7 minutes in T100.

LFD-0707 shows a different pattern: T90 increases by 2.5 minutes, while T100 decreases by 58.3 minutes. The completion-time decrease concerns the final portion of the demand and does not indicate faster evacuation for the majority. Changes in queue interactions and route redistribution can produce nonuniform outcomes; the aggregate outputs do not establish a single causal route for this decrease.

Table 10. Time to reach the model boundary (minutes)

Origin area	Baseline T90	With development T90	Change T90	Baseline T100	With development T100	Change T100
Region	234.7	241.7	+7.0	385.9	391.5	+5.6
LFD-0703 (Riverwalk)	**219.7**	**227.5**	**+7.8**	**364.5**	**391.5**	**+27.0**
LFD-0701	248.7	255.5	+6.8	374.5	379.2	+4.7
LFD-0707	194.3	196.8	+2.5	327.8	269.5	−58.3

Note: T90 and T100 are the times for 90% and 100% of each origin area's demand to reach a boundary exit. Change = with development minus baseline. Values are rounded to one decimal place; this precision does not imply equivalent predictive accuracy.

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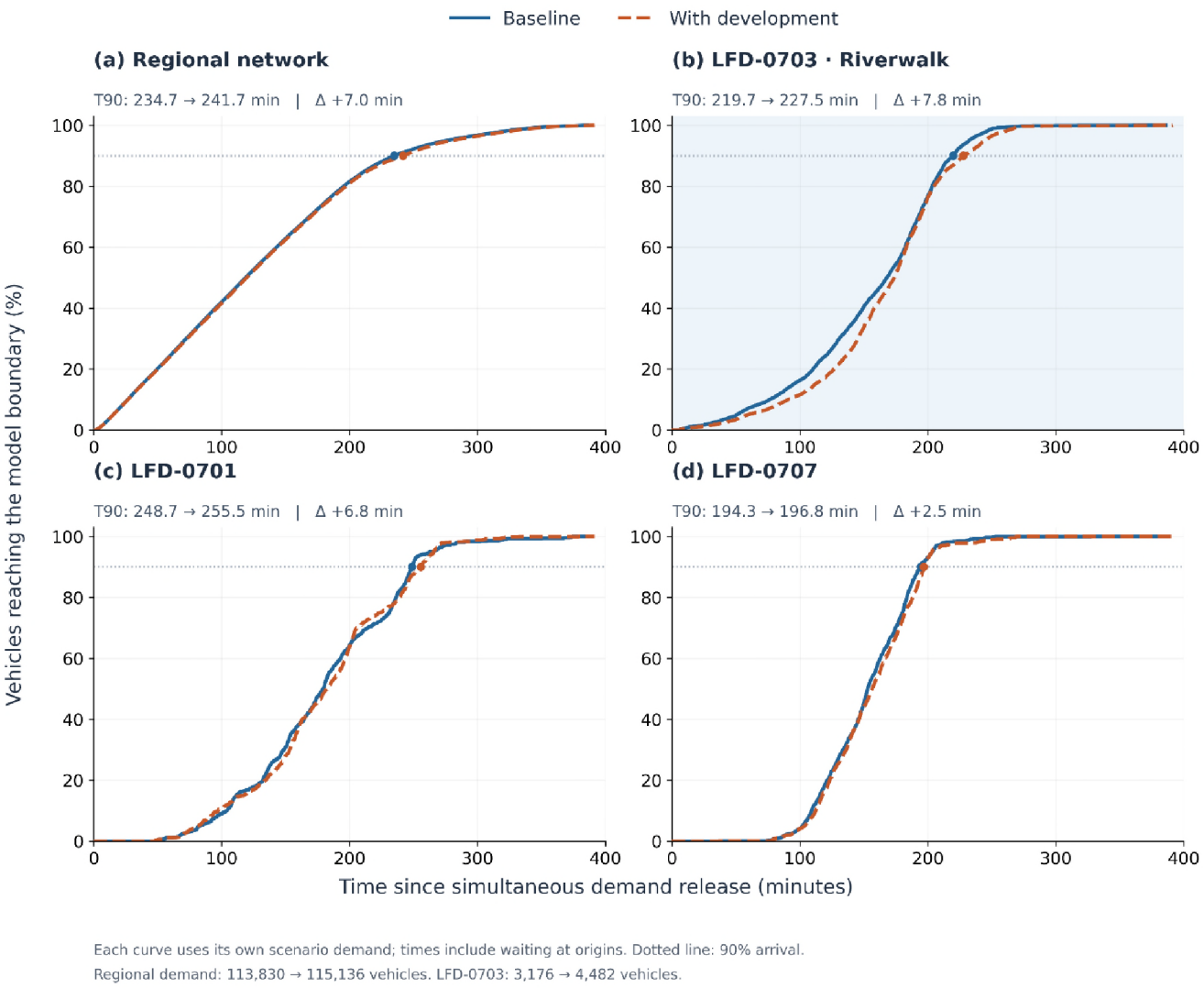


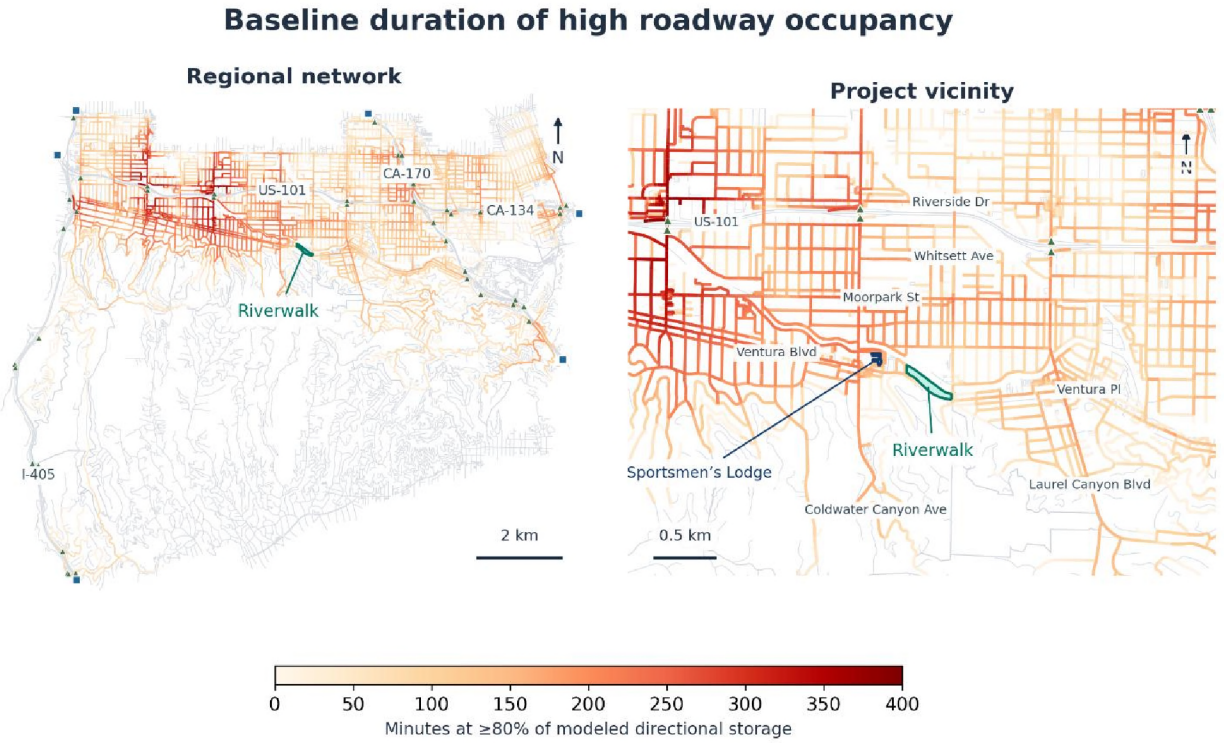
Figure 24. Cumulative percentage of modeled evacuation demand reaching final exit

+ Existing Roadway Constraints

Figure 25 shows the cumulative duration for which roadway occupancy is at least 80% of modeled directional storage in the baseline. Elevated durations occur along portions of the valley street network and its connections to freeway entrances, with substantial variation between neighboring segments. The regional view shows that sustained loading is already present before the proposed residential demand is introduced. The vicinity view highlights constraints on the local and connecting streets serving the Ventura Boulevard corridor.

This duration measure distinguishes a segment that briefly fills from one that remains heavily occupied or repeatedly refills over an extended period. It is not the waiting time experienced by an individual vehicle. Because a high-occupancy segment may still discharge traffic, a large value alone does not establish stationary traffic or identify the exact location of the controlling downstream restriction.

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One line per physical segment: maximum duration across directions, not their sum. Gray roads: zero duration.
Triangles: freeway entrances; squares: boundary exits. High occupancy does not necessarily mean stopped traffic.

Figure 25. Baseline duration of high roadway occupancy across the regional network (left) and the Riverwalk vicinity (right)

+ Changes with Proposed Development

Figure 26 shows where the duration of high occupancy changes when the combined development demand is introduced. Increases are apparent on portions of the Ventura Boulevard corridor and nearby streets around Riverwalk and Sportsmen's Lodge. Changes also extend beyond the immediate Project vicinity into the wider network. Both increases and decreases occur, indicating that the additional demand changes the distribution of traffic as well as the duration of loading on individual roads.

The maps therefore reveal localized effects that are not fully described by the 5.6-minute increase in overall completion time. A road may remain heavily occupied for longer even when the regional completion time changes only modestly. Conversely, a decrease in a particular segment may reflect traffic shifting elsewhere, rather than an increase in physical roadway capacity. Road geometry and capacity assumptions are unchanged between the two scenarios.

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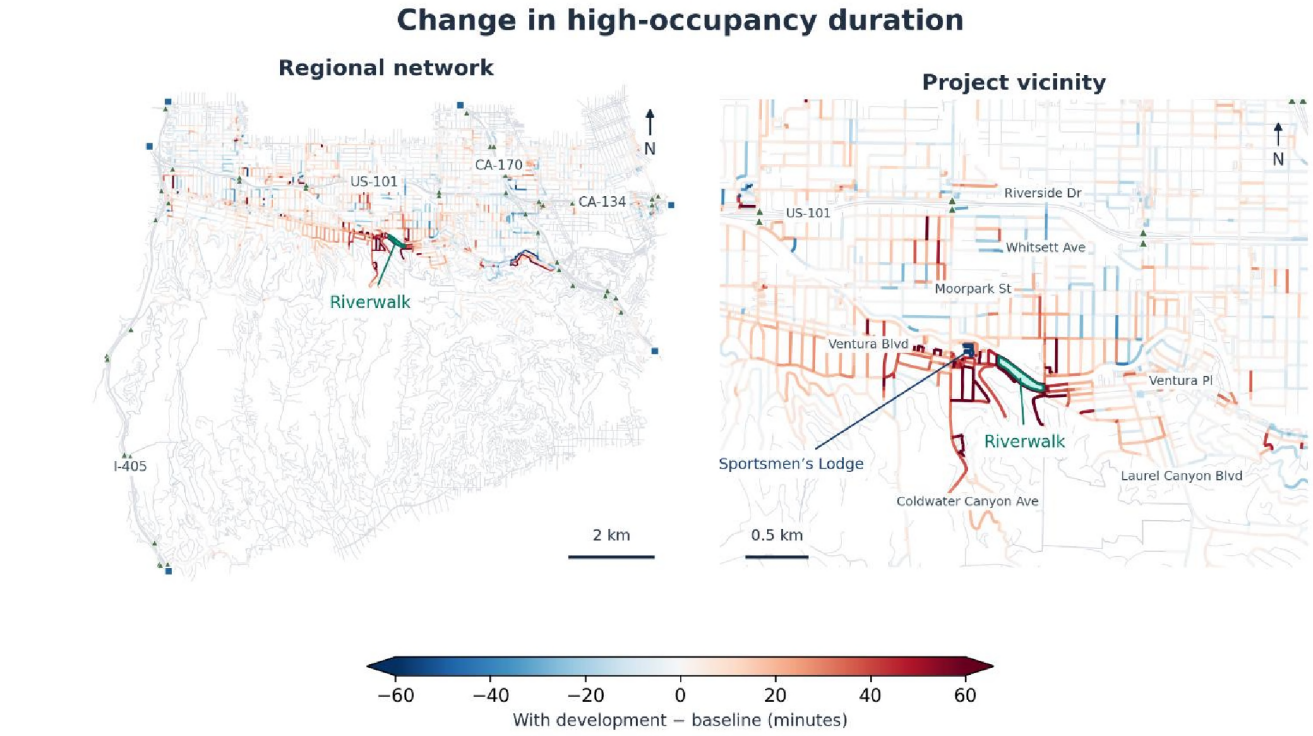


Figure 26. Change in high-occupancy duration with the combined Riverwalk and Sportsmen's Lodge residential development demand

For further information, refer to the simulation video files attached together with this report.

3.5 DISCUSSION

+ Shared corridors connect local and regional vulnerability

The static and dynamic findings describe different parts of the same evacuation problem. Static indicators identify neighborhoods with long local travel distances or limited outlet options. The dynamic model then shows how traffic from multiple origins can compete for receiving capacity farther downstream. Proximity to Ventura Boulevard or a freeway entrance does not, by itself, remove this dependence on the wider network. Riverwalk's evacuation performance is linked to the traffic arriving from surrounding neighborhoods and to the capacity available along onward routes.

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The wildfire assessment places this network dependence in a relevant geographic context. Its onshore scenario identifies potential northward fire spread through hillside fuels south of Ventura Boulevard, toward neighborhoods whose road connections lead to the corridor serving Riverwalk. This supports considering fire exposure and evacuation access together. However, the fire and traffic simulations were not dynamically coupled, and the analysis does not establish when any particular road becomes unusable. The eight-hour fire simulation window cannot be treated as eight hours available for evacuation or directly compared with traffic clearance times as a safety margin.

+ Regional completion time does not describe every local effect

The combined development scenario increases modeled demand by approximately 1.15%, but its effects are spatially uneven. Regional T90 increases by 7.0 minutes, while LFD-0703 T100 increases by 27.0 minutes and some nearby roads experience longer high occupancy. These differences show why development effects should be considered using both origin-based progress and roadway-based loading. Neither metric alone describes the full change in network performance.

T100 is particularly sensitive to the last few vehicles and their available routes. The reduction in LFD-0707 T100, alongside its increase in T90, illustrates that sensitivity. T90 describes progress for most demand, while T100 retains information about the final vehicles who may still face substantial delay. Both are useful, provided a reduction in the final tail is not interpreted as a general improvement for the zone. Likewise, the LFD-0703 comparison includes proposed residents and cannot separately quantify the change experienced by existing residents alone.

+ Scope of the comparison

The comparison evaluates residential demand changes under common network and operating assumptions. It does not represent the full change in commercial occupancy, validate proposed garage and driveway discharge, or isolate Riverwalk from Sportsmen's Lodge. The baseline's population-derived demand at existing-site records is not a complete inventory of commercial patrons and employees. These distinctions matter when interpreting the comparison as a development effect rather than a complete accounting of all potential site users.

Simplified junction service, the background-capacity reserve, and dynamic route selection provide a consistent basis for comparison but do not reproduce every operational condition. Closures, emergency vehicle movements, signal management, staged warnings, and downstream congestion could change both absolute times and the pattern of impacts. The results identify locations and mechanisms warranting planning attention; they do not establish an acceptable delay threshold, demonstrate adequate evacuation capacity under all incidents, or determine legal significance.

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4.0 Conclusions and Planning Considerations

The assessment identifies existing neighborhood egress constraints and sustained roadway loading within the network serving Riverwalk and surrounding communities. The wildfire findings identify the vegetated hillside landscape south of Ventura Boulevard as a relevant source of potential exposure, particularly under the modeled southerly onshore winds. These findings support evaluating the Project within its shared community evacuation network rather than considering site access in isolation.

Under the modeled simultaneous-release scenario, the combined Riverwalk and Sportsmen's Lodge residential demand adds a net 1,306 vehicles. Regional T90 increases from 234.7 to 241.7 minutes and T100 from 385.9 to 391.5 minutes. In LFD-0703, containing Riverwalk, T90 increases by 7.8 minutes and T100 by 27.0 minutes. The roadway maps show localized increases in high-occupancy duration as well as decreases associated with the changed distribution of traffic.

The findings demonstrate additional modeled loading and delay under the selected assumptions, with effects that vary by location and percentile. They do not establish that every neighborhood experiences a delay, that all modeled vehicles can evacuate safely during an actual fire, or that the combined effects are attributable to Riverwalk alone. Completion of all modeled trips demonstrates network clearance under the simulated operating conditions, not verified route tenability during a wildfire.

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Appendix A - *Glossary*

The following provides terms or words found in or relating to this technical memorandum. Additional terms can be found at **http://www.nwcg.gov/glossary**.

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Wildfire and environmental terms

- **Aspect.** Compass direction faced by a slope; it influences solar exposure, fuel drying, and the alignment of terrain with wind.
- **Canopy characteristics.** Properties of the vegetation above surface fuels. Canopy cover describes the ground area covered by crowns; canopy height describes their height; canopy base height represents the height at which sufficient canopy fuel becomes available for vertical fire spread; canopy bulk density describes available canopy fuel mass per unit volume.
- **Combined fire hazard.** The study's relative composite of modeled fire severity and simulated fire frequency, weighted 0.6 and 0.4, respectively. It is not an annual probability of loss.
- **Crown fire.** Fire involving the elevated crowns of trees or shrubs. Passive crowning describes intermittent torching of individual trees or groups; active crowning describes sustained spread through the canopy in conjunction with surface fire.
- **Dead and live fuels.** Dead fuels have no living tissue and respond strongly to atmospheric moisture conditions. Live fuels contain living plant tissue, with moisture also influenced by plant physiology and seasonal conditions.
- **Ember exposure and spotting.** Ember exposure occurs when burning particles reach a location. Spotting occurs when transported embers ignite new fires beyond the main fire front. These processes are not quantified in this assessment's evacuation model or site-exposure conclusions.
- **Fire behavior.** How a fire ignites, spreads, and burns under the combined influence of fuels, weather, and topography.
- **Fire encroachment.** Modeled spread toward or into a specified site within a defined simulation period. The memorandum's encroachment maps are conditional on the tested ignitions and fire-weather assumptions; they do not establish an annual event probability or a safe evacuation window.
- **Fire frequency.** Historical frequency describes recorded burning within an area over a stated period. Simulated frequency in this study describes relative overlap of modeled fire perimeters across tested ignitions; it is not a calibrated annual burn probability.
- **Fire Hazard Severity Zone (FHSZ).** A mapped California classification of long-term wildfire hazard. The state hazard designation is distinct from the study's modeled severity and combined-hazard maps, and does not by itself quantify project-specific risk.
- **Fire severity.** Generally, the effects of fire on vegetation, soils, or other resources. In this memorandum, modeled fire severity is a relative composite of selected fire behavior and effects outputs, rather than observed post-fire damage.
- **Fire weather.** Weather conditions influencing ignition and fire behavior, including wind, temperature, humidity, and conditions affecting fuel moisture.
- **Fireline intensity.** The rate of heat release per unit length of an advancing fire front, commonly expressed in kilowatts per meter (kW/m) or Btu per foot per second (Btu/ft/s). It is not temperature or heat energy per unit length alone.
- **Flame length.** Distance along a flame from its base to its tip. It is related to fireline intensity and differs from vertical flame height when flames are tilted.

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- **Fuel consumption and loading.** Fuel loading is combustible mass per unit area before burning. Fuel consumption is the portion consumed by fire. These are distinct from the rate of energy release.
- **Fuel model.** A numerical representation of fuel properties used in fire behavior calculations. The Scott and Burgan system represents surface fuels; its non-burnable classes are not assertions that structures or all vegetation in a cell cannot burn.
- **Fuel moisture content.** Water mass expressed as a percentage of the fuel's oven-dry mass. Lower dead-fuel moisture generally supports easier ignition and more active burning, with other conditions held constant.
- **Fuel timelag classes.** Approximate response classes for dead-fuel moisture. The 1-hour class commonly represents material under 0.25 inch in diameter; 10-hour, 0.25–1 inch; 100-hour, 1–3 inches; and 1,000-hour, 3–8 inches. Timelag describes moisture response, not burning duration.
- **Landscape file (LCP).** A spatial input file combining elevation, slope, aspect, surface fuel model, and canopy characteristics for fire behavior modeling.
- **Non-burnable fuel classification.** A model category through which surface-fire spread is not propagated. Urban/developed land may receive this classification even though buildings, ornamental vegetation, and other combustible materials are present.
- **Offshore and onshore winds.** Offshore winds blow generally from inland toward the coast; Santa Ana conditions are a regional example. Onshore winds blow generally from the ocean toward land. Model directions identify where wind originates: southerly wind comes from the south, and NNW wind comes from the north-northwest.
- **Percentile weather scenario.** A scenario assembled using specified positions within weather or fuel-moisture distributions. Separately selected percentiles do not establish the joint probability of all inputs occurring together.
- **PM2.5.** Airborne particulate matter with an aerodynamic diameter of 2.5 micrometers or less. A modeled emissions quantity does not directly establish smoke concentration or roadway tenability.
- **Rate of spread.** The speed at which a fire front advances, expressed as distance per unit time.
- **Surface fire and ladder fuels.** Surface fire burns fuels near the ground. Ladder fuels provide vertical continuity that can allow fire to move from surface vegetation into tree or shrub crowns.
- **Synthetic ignition.** An analyst-generated fire-start location used to test potential spread. In this study, points were spaced at 500-meter intervals, with eligible non-burnable locations shifted to nearby burnable cells under the documented rule.
- **Topography.** The shape of the terrain, including elevation, slope, aspect, ridges, and canyons, which influences fire spread and roadway layout.
- **Wildfire hazard, exposure, risk, and vulnerability.** Hazard describes potential fire conditions; exposure describes contact of people or assets with those conditions; vulnerability describes susceptibility to adverse effects; risk considers likelihood and consequences. These terms are related but are not interchangeable.
- **Wildland–urban interface (WUI).** Areas where development meets or is interspersed with wildland vegetation, creating interactions among wildland fuels, structures, and people.

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Evacuation and network terms

- **Background capacity reserve.** The fraction of nominal roadway service capacity withheld from modeled evacuation traffic. This study uses 10%; background vehicles are not explicitly placed on roads or assigned storage.
- **Baseline and development scenarios.** The baseline represents modeled existing residential demand. The development scenario replaces selected existing-site demand with one vehicle per proposed residential unit at Riverwalk and Sportsmen's Lodge, under the same network assumptions.
- **Bottleneck.** A location or downstream restriction that limits traffic movement. High occupancy may indicate its influence, but does not alone establish the precise controlling link or junction.
- **Building-based demand unit.** In the static assessment, one mapped building receives one unit of weight. This is not a count of residents, households, or vehicles; dynamic vehicle demand is calculated separately.
- **Capacity and storage.** Capacity is the rate at which vehicles can be served, usually vehicles per hour. Storage is the number of vehicles that can occupy a link at one time. A segment can have high occupancy while continuing to discharge vehicles.
- **Clearance time.** Elapsed simulation time for a stated share of demand to reach boundary exits. It includes origin waiting, travel, and roadway queueing after demand release, but excludes prior warning and household preparation time.
- **Demand exclusion.** A spatial rule assigning zero evacuation demand to buildings intersecting the exclusion areas, including boundary contact. Roads remain available; excluding an origin does not close its roads.
- **Directed link and node.** A directed link represents travel along a roadway segment in one permitted direction. Nodes connect links at modeled junctions or endpoints; a node need not correspond to a signalized intersection.
- **Directional lane count.** The number of lanes assigned to a permitted travel direction, using supplied HERE attributes and documented fallback assumptions. It is distinct from the total lanes across both directions.
- **Discharge and receiving capacity.** Discharge capacity limits the rate of leaving a link or junction. Receiving constraints limit entry into a downstream link based on its available service and storage.
- **Dynamic route selection.** Reassessment of eligible onward routes at network junctions using modeled travel costs and queues. Costs are refreshed every 30 seconds; alternatives respect direction and prevent repeated visits to the same node.
- **Evacuation demand.** The modeled number of departing vehicles. Baseline building population is divided by two persons per vehicle and rounded upward per building; proposed residential demand is one vehicle per unit.
- **Evacuation vulnerability indicator.** A screening measure of a local egress constraint, such as excessive travel distance, a single access connection, insufficient outlets, or insufficient exit separation.
- **Evacuation vulnerability score.** The number of assessed vulnerability indicators present at a location. A higher score means that more indicators overlap; the score is not a failure probability or a measure of evacuation time.

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- **Evacuation zone.** A geographic unit used to group origins and summarize evacuation progress. Results for a zone track vehicles originating there, including their subsequent travel beyond the zone. Zone boundaries do not constitute phased release instructions in this simulation.
- **Exit separation.** Spatial separation between neighborhood outlets, used to screen whether nominally separate exits offer independent alternatives. Distinct outlets can still converge downstream.
- **Free-flow travel time.** Travel time based on link length and assigned speed before additional queueing or receiving delays.
- **High-occupancy duration.** Cumulative time for which the number of vehicles on a directed segment is at least 80% of its modeled storage. Intervals need not be continuous; this is not an individual vehicle's waiting time.
- **Intersection service assumption.** A simplified rule limiting traffic transferred through a junction. Matched signals and stop controls use assumed service parameters rather than observed signal cycles, coordinated timing, or detailed turning-conflict simulation.
- **Occupancy and occupancy percentage.** Occupancy is the number of vehicles present on a link at an instant, including vehicles moving and waiting. Occupancy percentage divides that count by modeled storage; it is not a flow rate or a volume-to-capacity ratio.
- **Queue and spillback.** A queue forms when vehicles cannot progress as desired. Spillback occurs when occupied downstream storage prevents further entry and causes waiting to extend to upstream links.
- **Single-access neighborhood.** A group of mapped buildings dependent on one connection to the surrounding roadway network.
- **Static and dynamic assessments.** The static assessment screens network geometry and local route dependence. The dynamic assessment tracks vehicle movement, competition for service, and storage over time.
- **T90 and T100.** T90 is elapsed time until at least 90% of an origin area's modeled demand reaches boundary exits; T100 is the corresponding time for all demand. T100 is sensitive to the last vehicles. Both are scenario outputs, not calibrated predictions.
- **Tenability.** Whether conditions at a location or along a route remain tolerable for people. Reaching a model boundary does not establish tenability; fire, smoke, and traffic were not dynamically coupled.
- **Two-stage routing.** Travel first through eligible local streets to a feasible freeway entrance, then through eligible freeway and ramp connections to a boundary exit.

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EXHIBIT 2

Forde
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Amy Minteer
700 North Pacific Coast Highway, Ste 200
Redondo Beach, CA 90277

October 8, 2026

RE - Bat Surveys, Los Angeles River, Coldwater Canyon Avenue to Whitsett Avenue

Dear Amy,

Audrey Frances Forde and Daisy Chiu of Forde Biological Consultants conducted an avian habitat and bat roost assessment and acoustical emergence survey on September 1, 2026, along the Los Angeles River between Coldwater Canyon Avenue and Whitsett Avenue. A public pathway parallels the river on its northside. Beyond the pathway, there is dense residential development and Weddington Golf and Tennis. Palm and other trees are scattered along the length of the pathway and numerous other types of trees are located at Weddington Golf and Tennis. The palm trees have skirts of dead fronds and appear suitable roost site habitat for western yellow bat (*Lasiurus xanthinus*). Other trees appear suitable for western red bat (*Lasiuris franzii*), a foliage roosting species. On the southside, it is commercial.

The biologists used the path to conduct their surveys. The biologists conducted the avian surveys from 7:00 a.m. to 11:00 a.m., the roost assessment from 5:30 p.m. to 6:45 p.m. and the acoustical emergence survey from 6:45 p.m. to 10:00 p.m. They used a u384 USB Ultrasound Microphone and an M500-384 USB Ultrasound Microphone manufactured by Pettersson to record calls of bats. Temperature during the roost assessment and acoustical emergence survey was approximately 70 to 72 degrees Fahrenheit with clear sunny skies fading to dark. Sunset occurred at 7:13 p.m.

During the roost assessment, the biologists checked under the palm trees along the river on its northside for guano and other trees to determine if suitable roosting features were present. The biologists observed guano under one of the palm trees. The palm trees on the southside of the river have no dead fronds; they appeared trimmed. The biologists did not check under the trees on the southside because they lacked dead fronds.

The biologist's focused the acoustical emergence survey on the palm trees where the guano was observed. The biologists observed bats flying from one of the palm trees during the acoustical emergence survey and recorded

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their calls. Using specialized analytical software, the biologists determined that they observed big brown bat (*Eptiscus fuscus*) emerge. The biologists also observed and recorded calls of canyon bat (*Parastrellus hesperus*), Mexican free-tailed bat (*Tadarida brasiliensis mexicanus*), and Yuma myotis (*Myotis yumanensis*) flying in the general area. The biologists did not detect any western yellow bats or any western red bats during the acoustical emergence survey.

Bat activity within the survey area appeared high, which is not surprising given the plethora of hibernacula present, including palm frond skirts, tree foliage, peeling bark, tree cavities, bridge weep holes, bridge expansion joints, and other structures, and a permanent to semi-permanent source of water. It is likely that the bridges are used by bats as day and night roosts, and potentially as maternal roost sites. As stated, Forde did not survey any of the palm trees on the southside of the river for bats as they lacked dead palm fronds. Removal of dead palm fronds removes potential roost sites for bats.

Bird activity such as food foraging was also observed in dark-eyed junco (*Junco hyemalis)*, Bewick's wren (*Thryomanes bewickii)*, California towhee (*Melozone crissalis)*, Anna's hummingbird (*Calypte anna),* and Acorn woodpecker (*Melanerpes formicivorus).* Additionally, hooded orioles (*Icterus cucullatus)* were observed defending their territory amongst the palm trees.

The river corridor is bordered predominantly by nonnative vegetation. Palm trees are sparse and provide limited potential nesting habitat. The bridges provide potential nesting habitat for cliff swallow *(Petrochelidon pyrrhonota)* and black phoebe.

Forde recommends that the removal of dead palm fronds be minimized so that the trees can ultimately provide additional potential roost sites. Forde also recommends retaining mature trees and other vegetation containing potential roosting features, including tree cavities, peeling or loose bark, and dense foliage. Activities that could disturb occupied roosts should be avoided. If fronds or trees must be removed, limiting project activities to daytime hours, scheduling work to occur outside the bat maternity season, and flagging buffer zones around roosts to prevent access by maintenance personnel can mitigate impacts to bats. Unnecessary nighttime lighting within the river corridor and the operation of heavy equipment near roost sites should be avoided. Additional opportunities to increase available roosting habitat include installation of bat bricks beneath bridges and a bat

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condominium. If artificial roost structures are installed, periodic monitoring is recommended to determine whether they are being used by bats and to evaluate their effectiveness.



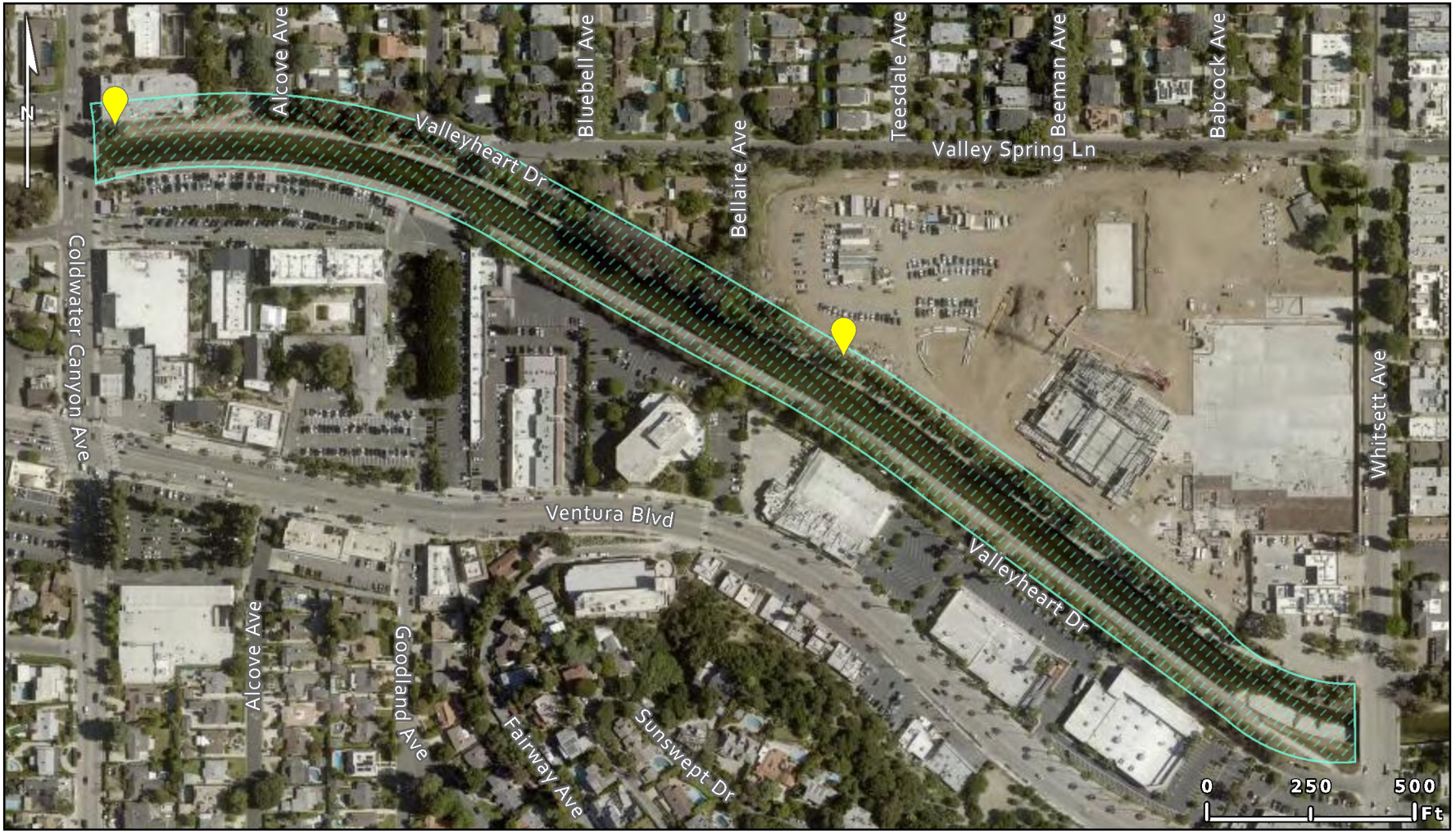
Bat Bricks.



Bat Condominium

Sincerely,

Andrew Forde
Principal Biologist



Survey Area

Bat Roost Site

Exhibit A - Roost/Nest Location Survey