APPENDIX N

Wildfire Memo

MEMORANDUM

Date: March 12, 2024

To: City of Calabasas

From: Envicom Corporation, Environmental Consultants

Subj: Evaluation of Wildfire Risks to the Kia Dealership Project

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This document provides a discussion and analysis of wildfire risk for the Kia Dealership project proposed for an approximately 10.9-acre property located at 24460 Calabasas Road in the City of Calabasas. The project is within a Fire Hazard Severity Zone (FHSZ) and is therefore being analyzed to determine the potential wildfire exposure and risk. This document discusses the variables that contribute to wildfire exposure, risk, and safety, analyzes the project and site in consideration of those variables, and assesses the potential risks to the project.

Part A explains fire safety regulatory requirements and the effect they will have on the project. Part B discusses wildfire influencing factors and the character of the project site in relation to these factors. Part C briefly discusses evacuation in general and more specifically for the project. Part D brings the information from previous sections together to assess the project's future relationship to wildfire. Part E provides information and data that is supportive of the project at the proposed location.

A. Fire Safety Regulatory Requirements

The majority of fire safety features incorporated into development projects are a matter of regulatory compliance. The state sets minimum requirements for structural fire safety and site design features that all municipalities must incorporate, with the option to apply stricter controls in certain instances. State requirements are comprehensive and thorough, so rules are very similar across jurisdictions. The California Code of Regulations Title 24, also known as the Building Standards Code, contains Part 2, the California Building Code (CBC), and Part 9, the California Fire Code (CFC). The CBC contains three chapters that deal with fire safety and provides the basis for all local building codes, and the CFC is the basis for all local fire codes. Both the CBC and the CFC are based upon model national codes created by the International Code Council, and the same model codes are adopted by most jurisdictions in the U.S.

CBC Chapters 7, 7A, and 9 deal with structure fire safety. Chapter 7, Fire and Smoke Protection Features, regulates materials, systems and assemblies used for structural fire resistance and is applied to all permitted structures. The purpose of Chapter 7 requirements is to make buildings resistant to the spread of fire, either between buildings or between units within the same building, by requiring materials and structural design that can contain fire at its point of origin for a period

of time. Fire resistance provides sufficient time to discover and control a fire before it burns out of control, or to evacuate a building if necessary.

Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure, regulates exterior cladding and roofing systems in structures located within a Fire Hazard Severity Zone, and wherever local regulation may require. The purpose of Chapter 7A is to make buildings resistant to ignition from burning embers or outside flames produced by wildfire. Buildings that conform to Chapter 7A have a fire-hardened exterior shell. Cladding must be noncombustible or ignition-resistant, roofs must be Class A rated, meaning fire cannot penetrate through the roofing from the outside, and vents must be designed to block embers from entering the building.

Chapter 9, Fire Protection Systems, specifies when fire protection systems are required, and specifies the design, installation, and operation of those systems. Fire protection systems would include alarms, detectors, and smoke control or fire control devices. This chapter addresses requirements for buildings, facilities, storage, and processes, and addresses the safe storage and use of hazardous materials, as well. Fire sprinkler requirements, fire flow standards, and emergency access road standards are components of this chapter. Fire flow standards ensure that there will be adequate water and water pressure available at a site for firefighting operations. Fire access road standards ensure that there is adequate width for fire apparatus to conduct firefighting operations from the road, adequate proximity to structures for firefighting purposes, and adequate available options to turn equipment around and move through the site as necessary during an emergency.

The CFC contains chapters that parallel Chapters 7 and 9 of the CBC, delineating the purview and authority of fire officials and fire departments in the realm of fire protection systems, as they relate to the CBC. Chapter 7A of the CBC is paralleled by Chapter 49 of the CFC, titled Requirements for Wildland-Urban Interface Fire Areas. This chapter compiles references to all of the State requirements regarding the WUI to delineate fire officials' roles in that regard. The combination of the CBC and CFC creates requirements for building officials and fire officials to review and approve in tandem, within their respective roles, the fire safety features of buildings and building sites. The CFC also establishes requirements for emergency planning and preparedness, including (but not limited to):

- Chapter 4
    - Specific evacuation procedures for different types of occupancy;
    - Required elements for evacuation plans;
    - Regulation and requirements for evacuation drills; and
    - Hazardous material notification and communication.

- Chapter 5
    - Fire access road requirements;
    - Building fire access requirements;
    - Fire protection water supply requirements, and;
    - Requirements for on-site fire protection equipment.

Fuel modification requirements are also established at the state level within Chapter 49 of the CFC, the Public Resources Code, and the Government Code, and particular emergency operation system requirements are regulated by the state as well.

The project will be subject to all of the mentioned requirements, including Chapter 7A of the CBC. The whole interior of the building will be protected by fire sprinklers, and any spaces too small for sprinklers will either be fire-blocked or filled with noncombustible material. Sprinklers would be connected to an on-site alarm system which is linked to the fire department providing instant notification. The building is based on a Type II-B construction and the floor of the showroom/ceiling of the service area will be concrete. Partition walls between the showroom and parking garage are required to be one-hour fire rated. The exterior cladding of the building is required to be noncombustible or ignition-resistant (as defined by the CBC), the roof will contain parking but would be required to have a Class A rating, which will normally prevent any burning debris that might land on the roof from igniting the structure, and any exterior vents will be designed to trap and extinguish burning embers. The drive aisle is 26 feet wide with no parking allowed along its length, which will allow adequate space for a fire truck to pass while another apparatus operates from the lane, and there is a turnaround area located between the showroom and carwash. An additional drive aisle leading to the vehicle storage lot will also provide firefighting access if needed. All building facades are accessible directly from the fire lane or are within reach of a fire hose (150 feet), and fire hydrants will be placed on or adjacent to the site per Los Angeles County Fire Department requirements.

B. The Project Site and Wildfire Influencing Factors

The frequency of wildfire in any location will be dependent on several factors such as topography, vegetation type and composition, fire return interval, wind and temperature. The project site is located at the northern edge of the City of Calabasas just south of the 101 Freeway, situated between three existing car dealerships approximately 0.5 mile west of Parkway Calabasas. Topographically speaking the site is located on the south side of the narrow east-west valley that runs between the foothills of the Simi Hills to the north and the Santa Monica Mountains foothills to the south, located just outside the San Fernando Valley to the east. The hill abutting the project site runs predominately east-west. The ridge and sections of the south side of the hill are developed with single-family homes. Below this subdivision further to the south is a golf course and a handful of more subdivisions located within a small valley and a nearby plateau. The north side of the hill, facing the project site, is undeveloped and bisected by drainages creating an undulating pattern along the north face. On the north side of the freeway there are two small hills adjacent to each other which rise up from the freeway and descend to the north into a moderately hilly area that is at the western edge of the San Fernando Valley. Development here continues at the western edge of the Simi Hills, defining the western edge of the valley.

At a broader scale, the Santa Monica Mountains proper rise up south of the project site and there is little development throughout. To the north, the Simi Hills divide the San Fernando, Simi, and Conejo Valleys. The roughly four-mile stretch of the freeway between the San Fernando Valley and Conejo Valley is sporadically developed, but for the most part is bordered by undeveloped hillsides. Prevailing winds in southern California come from offshore from the west, northwest, or southwest depending on location, and may reverse course in the evening during winter months.

Wildfire Influencing Factors

The direction a slope is facing, its aspect, determines in large part what kind of vegetation will be present on the slope, and the character of vegetation present influences the site's resiliency to wildfire, or lack thereof. The Santa Monica Mountains are a transverse range, meaning they generally run east-west. This orientation results in distinctly different conditions between the north and south slopes. North (and east) aspect slopes receive far less solar radiation than south (and west) aspect slopes, and therefore will tend to have lower temperatures throughout the year, retain more moisture, and have denser vegetation. This makes them generally less susceptible to uncontrolled wildfire relative to south aspect slopes. Increased density of vegetation does mean there is more potential fuel present on a north aspect slope, however, dense shading helps reduce soil temperature, which helps plants to retain moisture for longer into the year. South aspect slopes will generally be more sparsely vegetated and host a different mix of plant species. Besides the density and moisture content of vegetation, the type of vegetation present on a slope is a significant determining factor of a site's resiliency or susceptibility to wildfire. Non-native invasive plant species are present throughout southern California, and wherever they dominate a landscape susceptibility to wildfire will generally increase. Non-native invasive annual species are especially fire prone as they usually germinate, flower, and die more quickly than native species, and thereby result in tinder-dry landscapes earlier in the year. When these species come to dominate a landscape their quick lifecycles also outcompete native species and widespread regeneration of native plants is often not possible without human intervention. The most fire prone landscapes in southern California therefore tend to be areas that are dominated by non-native annual grasses and forbs. These areas are usually low in biological diversity, often dominated by a handful of invasive species, and as such fires can ignite readily and spread rapidly as all of the fuel is quickly and easily consumed.

A fire return interval is the number of years between fires at a location and/or for a particular plant community. Different plant communities have different average fire return intervals from each other, a result of prehistoric ecological development. For example, yellow pine forests common in northern California have a historic fire return interval range of between five to 40 years, while chaparral, common in coastal southern California, has a historic fire return interval range between 30 and 90 years, and coastal sage scrub, another dominant plant community in the area, has a historic fire return interval range between 20 and 120 years.[1] Fire return interval is important for a given location when it is wildly divergent from a normal range for the plant communities present. For the yellow pine forests of northern California a fire return interval exceptionally longer than 40 years will result in overly dense, structurally homogenous forests with too few large, fire-tolerant trees. When these places burn the fire is more severe than it would be otherwise, which can impact the forest's ability to regenerate, resulting in type conversion to shrub or grassland, or dominance of non-native species. Within chapparal and scrub communities of southern California a too frequent fire return interval can have a similar effect; the dominant native plant communities can fail to regenerate quickly enough and the land may become dominated by non-native grass and ruderal species. Such places are more vulnerable to wildfire as the landscape retains less water, the plants reproduce, grow, and dry out more quickly than natives, and thus a great deal of highly

[1] California Department of Forestry and Fire Protection Fire and Resource Assessment Program (FRAP), California's Forests and Rangelands 2017 Assessment, Table 4.1, August 2018

flammable, quick-burning fuel is produced on an annual basis. This is common on denuded hills in southern California where vegetation was removed historically for grazing cattle.

Santa Ana winds play a large role in wildfires throughout southern California. Fire season in a typical year in southern California runs from June to September, though in years of drought and Santa Ana winds wildfires will occur between October and April.[2] Santa Ana winds originate from the Great Basin and upper Mojave Desert, contrary to prevailing winds which come in off of the ocean. The winds move west across these dry land masses and then turn southwest as they drop from the higher elevations of the Transverse Ranges into coastal California. The winds increase in speed as they funnel through mountain passes, and gain in temperature as well. The result is strong, warm, very dry winds that sweep through the most heavily populated areas between the high desert and the ocean. In the vicinity of the project site the winds travel south and southwest and therefore during Santa Ana years north aspect slopes will be subject to more drying than usual. The largest fires in southern California tend to occur during Santa Ana years. The 2018 Woolsey Fire, which burned large areas to the northwest and southwest of the project site, occurred during a period of wind gusts up to 50 mph, after years of intense drought.[3] And the 1982 Dayton Canyon Fire, which had a similar but smaller footprint to the Woolsey Fire, occurred during a time of wind gusts up to 60 mph.[4] Since Santa Ana winds blow south/southwest wildfires during these events travel that same direction from their origin point. For instance, the Woolsey Fire began near Chatsworth in the Santa Susana Mountain range and traveled south and west until reaching the ocean.

The Project Site

The north-facing hillside behind the project site is dominated by native plant communities, with a few pockets of non-native grassland. The dominance of scrub oak and native shrubland communities on the slope is beneficial to the project site in regard to its protection and resiliency from uncontrolled wildfire. Even in extreme wildfire conditions the hillside will be less susceptible to uncontrolled wildfire in comparison to a north aspect slope dominated by non-native vegetation, or a south-aspect slope experiencing the same conditions. The lower portion of the site contains oak trees, but the understory is dominated by non-native ruderal species where previous earth-moving activities have taken place, such as where there is terracing or older hardscape. These areas will be more susceptible to wildfire, however, fuel modification activities and new landscaping behind the proposed facility will reduce the vulnerable area significantly. Post-construction the lowest portion of the hillside will still contain non-native understory, but it will be confined between the new structures, hardscape, and irrigated landscaping to the north, and the largely intact hillside to the south. The hillside behind the site is somewhat disconnected from areas of intact open space with the presence of the freeway and surrounding development, which is a positive benefit in terms of potential exposure to wildfire.

[2] Jin, et al., Environmental Research Letters, Identification of Two Distinct Fire Regimes in Southern California: Implications for Economic Impact and Future Change, September 8, 2015.

[3] County of Los Angeles After Action Review of the Woolsey Fire Incident, November 2019.

[4] Abcarian, Los Angeles Times, Some Flames are Best Seen from an Armchair, October 23, 1996.

The site has not experienced much wildfire according to state fire records, which begin in 1878. Only two wildfires have reached the property, an unnamed wildfire in 1958, and the 1970 Golf Course Fire. The 1958 wildfire reached the southwest corner of the project parcel, primarily burning areas southwest of the site. The 1970 Golf Course Fire burned the area now occupied by the subdivision south of the site and the golf course located below it, and the hillside behind the project site from the site to Parkway Calabasas. Other wildfires have come within one mile of the project site, a total of 14, though most have been small and isolated, with eight under 200 acres and two more under 500 acres. Two of the larger wildfires were between 3,000 and 4,300 acres, and the largest two wildfires the Dayton and Woolsey Fires at 43,097 and 89,551 acres. The majority of small wildfires have been to the north and northwest of the project site in the more denuded hillsides on the north side of the freeway. Half of the fires within a one-mile radius occurred prior to 1980.

The lack of wildfire activity at the project site is not surprising given the location and character of the site and the influencing factors described above. The site will of course be subject to wildfire threat in the future as any location within the wildland urban interface (WUI) would be. However, the site is less threatened than it would be if it were adjacent to a denuded hillside dominated by non-native annual plants, or located adjacent to an exposed, south-facing slope. Protection of the site during a wildfire event should also be straight-forward under most circumstances. A wildfire occurring during a Santa Ana wind event will generally spread to the southwest as the winds blow that direction. The only potential threat of wildfire directly north or northeast of the project site are the two small hills on the opposite side of the freeway as the San Fernando valley lies to the north and northeast. Those two hills are small, relatively isolated, and contain primarily fast-burning non-native annuals. A wildfire originating there would threaten the project site in that embers may travel across the freeway, but the buildings will be fire-hardened, the landscaping irrigated, and the amount of highly flammable non-native annual cover minimal. Therefore, a wildfire originating in those two small hills would be highly unlikely to result in an uncontrolled wildfire on the opposite side of the freeway.

A large Santa Ana driven wildfire originating further north or northwest of the project site where there is substantially more fuel would present a risk to the project site, however, it is well positioned to avoid or survive such a fire. This has been demonstrated recently with the 2018 Woolsey Fire. The fire occurred during Santa Ana winds after several years of drought and was one of the largest fires in the region consuming nearly 97,000 acres, but it did not reach the project site despite beginning six miles north of it at the former Santa Susana Field Laboratory. It burned into the surrounding open space and then traveled south, crossing the freeway at points one and three miles west of the project site. At this time it was moving so quickly it reached the ocean within the same day it crossed the freeway, yet it was stopped from spreading east to the project site roughly one-half mile west of the site. This was possible because the winds were driving the fire away from the project site. These same basic conditions will be present whenever there is a Santa Ana wind event. The San Fernando valley is flat and winds travel in a straight line without interruption, making Santa Ana winds highly predictable. In November of 2023 when this report was being researched a Santa Ana event occurred and winds flowed in a southwest direction through the valley with very

little variation within a 72 hour period, as would be expected.[5] This pattern protects the project site from the most destructive and dangerous wildfires since there is no substantive open space to the north or northeast of the site, and makes protection of the site relatively predictable and reproducible during Santa Ana drive wildfires.

Since most fires are caused by human activity it is of course possible that a wildfire could occur near the project site during more usual conditions when the wind isn't actively moving a fire away from the site, but the project would continue to be highly protectable. Fire naturally moves more rapidly uphill than across a flat area, as radiant heat from a fire at the base of a slope preheats the vegetation above it, which allows a fire to consume fuel more quickly and spread uphill. Protecting development at the base of a north-aspect hillside is therefore a relatively simple proposition. Wildland vegetation in the immediate vicinity of the project site is all located on a slope. The slopes closest to the proposed facility are not steep but sans wind blowing north a wildfire would more naturally spread south away from the facility. This would be true if a fire occurred during normal conditions or during conditions that were otherwise conducive for wildfire outside of a Santa Ana event (low humidity, high heat, drought). The fuel modification zone will extend 200 feet out from the facility structures, and irrigated landscaping will extend approximately 90 feet out from the main structure. Both areas will be highly resistant to conflagration and the parking areas and access driveways behind the facility will provide ample space for firefighting activities if necessary. Outside of times of extreme weather conditions or drought the native vegetation on the slopes should not burn catastrophically and a localized wildfire should be containable. If conditions were perfect for wildfire the hillside could be engulfed, however, fire would still be most likely to travel up the slope and away from project facilities, and the buildings would still be defensible as there is room to do so and structures will be designed to withstand burning embers.

C. Evacuation

Evacuations are a unique phenomenon because streets are not designed to accommodate all vehicles within an area all at once. Emergency agencies do their best to direct evacuations to avoid mishap, but in extreme circumstances there can be a rush of people from all directions. In a case where essentially every vehicle within an area is on the roadway at once, such a scenario is an extraordinary, temporary, and rare emergency circumstance. It isn't practical to design roadways or road networks to accommodate such an event, and emergency evacuations by their nature will always be an alarming, though extremely rare, situation. Reducing the potential occurrence of people being subjected to a dangerous emergency evacuation scenario is therefore a matter land use. Simply put, there are certain physical conditions that will make a location more or less safe when it comes to possible emergency evacuation proceedings.

A project embedded deep within wildlands that is far from an urban area will experience difficult and potentially dangerous evacuations during an emergency situation regardless of circumstances. A project located close to an urban area or major roads or freeways, far less so. Therefore, amongst

[5] NOAA National Weather Service, Graphical Forecasts, Southern California, wind speed & direction between November 21, 2023 7AM EST to November 23, 2023 4PM EST. Accessed on November 21, 2023 at: https://graphical.weather.gov/sectors/southcalifornia.php

properties within FHSZ areas, these physical conditions will be most likely to reduce evacuation complications and allow for successful evacuation:

- Adequate fire access to the site;
- Non-wildland areas a short distance away on a major evacuation route, and;
- Not surrounded by wildland vegetation.

With these physical conditions in place, a new use should experience relatively easy evacuation proceedings should they occur, and that ease should keep the use from interfering with broader evacuation efforts. The project site is not enclosed by wildland vegetation and is located less than one-quarter mile from a freeway offramp and in close proximity to the San Fernando Valley including areas that are not designated as a FHSZ or WUI.

According to the project traffic study peak traffic entering the site would amount to 65 vehicles between the peak morning hours of 7 a.m. and 9 a.m., and peak traffic leaving the site would be 70 vehicles between the peak evening hours of 4 p.m. and 6 p.m. Although the trip estimates do not directly translate to the number of people being present at once on an average basis, it is reasonable for discussion purposes to suppose that the number of employee and visitor vehicles on site may number up to 70 during the peak of a busy day. As all of these vehicles would have quick and direct access to the freeway and a very short drive out of any potential danger zone the presence of the facility would not be expected to overwhelm evacuation proceedings should they occur during a busy workday.

D. Site Assessment Summary

The context of the site combined with the regulatory fire/wildfire safety measures results in a project that would not unduly contribute to wildfire risk or the negative secondary effects of wildfire. The project would also be relatively well positioned to avoid serious damage if there was a wildfire in the hillside behind it.

Wildfire History

- The wildfire history of the area suggests that direct threat of wildfire at the site would be infrequent, and the most severe wildfires unlikely to seriously threaten the project site despite the increase in fire severity. If a wildfire occurred during extreme wildfire conditions with Santa Ana winds fire spread and intensity would likely be in a southwesterly direction which favors protection of the site. The location and character of the project site as well as its surroundings would provide favorable conditions for protection of the site during wildfires outside of extreme conditions.

Open Space

- Vegetated areas behind the project site are mostly covered with native scrub oak and shrubland. This, plus the north orientation of the slope means the bulk of the hillside is comparatively less susceptible to wildfire than open space that has been denuded of native vegetation, such as the hills to the northwest of the project site. The lower slopes of the adjacent hill have some thinly vegetated areas dominated by nonnative annuals and nonnative understory beneath oaks, however, those areas are either encircled by native

vegetation or sandwiched between the development and native vegetation. All of these factors are favorable for wildfire safe development on the site.

Site and Structure Design

- The proposed development would place structures close to the road and buffered from the hillside to the south by a fire access lane and irrigated landscaping. Structures are of concrete construction and fire-hardened according to the requirements of CBC Chapter 7A and will be protected from embers, ash, or other burning debris blowing onto the property, and the main building is fully sprinklered. Fire lanes provide adequate access for firefighting operations, and hydrants will be provided per Los Angeles County Fire Department requirements to ensure sufficient water and water pressure during emergencies. The project is located very close to the freeway and will allow quick dispersal during an emergency and quick access for firefighting operations. In addition, Los Angeles County Fire Department Station 68 is less than one-half mile away at 24130 Calabasas Road. Fuel modification activities will extend 200 feet from the structures and require approval from the fire department.

E. Evidentiary Support

- All the buildings will be fire-sprinklered, which significantly reduces fire risk. Information from the U.S. Fire Administration's National Fire Incident Reporting System and the National Fire Protection Association indicate that in structural fires where sprinkler systems were present (within the 2010 to 2014 study period), death rates were 87 percent lower than those without, the firefighter injury rate was 67 percent lower, and sprinklers were effective at controlling the fire in 96 percent of the fires in which they operated.[6]

- Although the project is within the WUI it is a commercial operation that will not introduce a significant population of users even during peak visitation that may overwhelm roadways during an emergency. The project will develop the lower portions of the site which have already been disturbed, replacing areas of non-native annual vegetation with fire-hardened structures, hardscape, and irrigated landscaping, effectively decreasing fire risk for the property itself and the adjacent properties. Despite its presence in the WUI, the project is nonetheless an infill development as the stretch of land between Parkway Calabasas and Mureau Road has been partially developed in the flat portions at the base of the hillside. Since development is already present, filling in the gap that is the subject property is an appropriate measure to reduce wildfire risk for this strip of developable land at the base of the hillside.

[6] Ahrens, National Fire Protection Association, U.S. Experience with Sprinklers, July 2017.