4.19 WILDFIRE

This section evaluates the wildfire impacts of the proposed Plan.

4.19.1 Existing Conditions

Wildfire, as defined in California Public Resources Code (PRC) Sections 4103 and 4104, is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources. Existing wildfire conditions in the San Diego region, including current land uses, understanding of wildfire behavior and controlling factors, wildfire conditions and history, fire hazard designations, and the anticipated effects of climate change as it relates to wildfire, are described below.

REGIONAL LAND USE CHARACTERISTICS

Historical Land Use and Regional Growth Patterns

The San Diego region is located in the southwestern corner of the United States and is bordered by Mexico to the south, the Pacific Ocean to the west, Orange and Riverside counties to the north, and Imperial County to the east. The San Diego region encompasses over 4,260 square miles and includes 18 incorporated cities, 17 tribal governments, and unincorporated San Diego County.

Existing Land Use

There are 2,725,648 acres in the San Diego region. Approximately 799,266 acres (30%) are developed with various land uses including residential, commercial/office, and industrial or generally support human activities, such as agriculture, military use, recreation, and infrastructure (transportation, communication, utilities) (SANDAG 2021a). Open space and parks account for the largest land area, with 1,374,188 acres, or about 50% of the region. Vacant land (524,010 acres) accounts for another 19%, and the remaining approximately 1% of the area is covered by water (28,184). See Section 4.11, "Land Use and Planning," of this EIR for additional information regarding the existing land uses in the region.

WILDFIRE BEHAVIOR AND CONTROLLING FACTORS

Natural Factors Affecting Wildfire Behavior

Wildfire behavior is a product of several variables—primarily weather, vegetation, topography, and human influences—that intermix to produce local and regional fire regimes that affect how, when, and where fires burn (NPS 2017). The continuity of fuels, expressed in both horizontal and vertical components, is also a determinant of wildfire potential and behavior. Topography is important because it affects the movement of air, which in turn affects the movement of fire, over the ground surface. The slope and shape of terrain can change the speed at which the fire travels, and the ability of firefighters to reach and extinguish the fire. Weather affects the probability of wildfire and is a strong determinant of fire behavior. Temperature, humidity, and wind (both short and long term) affect the severity and duration of wildfires (County of San Diego 2023a). The fire regime in any area is defined by several factors, including fire frequency, intensity, severity, and area burned (USFS 2023). Each of these is important for understanding how the variables that affect fire behavior produce fire risks. Fire frequency refers to the number of fires that occur in a particular area over a given period of time, fire intensity refers to the speed at which fire travels and the heat that it produces, fire severity involves the extent to which ecosystems and existing conditions are affected or changed by a fire, and area burned is the size of the area burned by wildfire. Development patterns contribute to wildfire risk in California as well.

Human Influence on Wildfire

Human influence on wildfire is broad and can be substantial. It includes direct influences, such as the ignition and suppression of fires, and indirect influences through climate change and alterations in land use patterns (refer to "Anticipated Effects of Climate Change" below for further discussion of the indirect effect of climate change on wildfire).

Anthropogenic influence more directly corresponds to fire frequency (i.e., number of ignitions) than size of a burn because humans are responsible for most wildfire ignitions. Once started, fire spread and behavior become a function of fuel characteristics, terrain, and weather conditions (Syphard et al. 2008). Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions, and (2) changing the seasonality of burning activity (Balch et al. 2017). A study of wildfires across the United States for the 20-year period between 1992 and 2012 showed that 82% of wildfires during that period were started by human causes (Balch et al. 2017), whereas in California specifically, humans accounted for starting approximately 95% of wildfires (Syphard et al. 2007; Syphard and Keeley 2015). In 2022, more than half of all fires in California were caused by humans, and when miscellaneous and undetermined causes are included, that figure increases to 97% (CAL FIRE 2022).

Human ignitions include a multitude of sources, including escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development, especially in the wildland urban interface (WUI) or in areas near campgrounds and roads, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017). Circumstances in California have made the environment particularly vulnerable to human-caused fires with expansion of the WUI, which are areas where development is located close to open space or to lands with native vegetation and habitat prone to brush fires, and introduction of more people in areas susceptible to wildfire at all times of the year. A 2018 study indicates that the number of houses in the WUI increased nationwide by 41% between 1990 and 2010 (Radeloff et al. 2018).

Human Health Effects of Wildfire

In addition to vegetation and structural loss, wildfires also affect public health. Fire-related injuries and deaths are likely to increase as wildfires occur more frequently. Wildfires can also be a significant contributor to air pollution. When communities are located in areas that burn frequently, wildfire smoke, which can travel for miles, has a negative effect on human health (Black et al. 2017). Wildfire smoke contains numerous toxic and hazardous pollutants that are dangerous to breathe and can worsen lung disease and other respiratory conditions (County of San Diego 2023a). Exposure to particulate matter generated by wildfire events can result in significant health problems, including aggravated asthma, increased susceptibility to respiratory infections, and heart attacks and arrhythmias in people with heart disease (Sacramento Metropolitan Air Quality Management District 2018).

WILDFIRE HISTORY AND CONDITIONS IN THE SAN DIEGO REGION

In the last two decades, wildfires in California have increased in number of fires ignited, number of acres burned, and number of structures destroyed. Since 2020, the average annual cost of fire suppression in California in areas under state jurisdiction has averaged more than $818 million per year (CAL FIRE 2024a). In January 2025, the Los Angeles area experienced several wildfires that, based on preliminary estimates, have resulted in somewhere between $95 billion and $164 billion in total property and capital losses, making them the most expensive wildfires in State history (UCLA 2025). Of the nine wildfires in Los Angeles, the three largest (Palisades, Eaton, and Hughes Fires) burned more than 48,000 acres and damaged and destroyed more than 18,200 structures (CAL FIRE 2025a).

Of the top 20 largest California wildfires, 2 have been in San Diego County (CAL FIRE 2024b). According to the San Diego County Multi-Jurisdictional Hazard Mitigation Plan, San Diego County's worst wildfire occurred in October 2007 (County of San Diego 2023a). The fire started on October 21, 2007, near the United States–Mexico border and burned throughout the county until the last fire was fully contained on November 9, 2007. At the height of the fire event, there were 7 fires burning in San Diego County. The fires destroyed 369,000 acres (13% of the county), 2,670 structures, 239 vehicles, and 2 commercial properties. There were 10 civilian deaths, 23 civilian

injuries, and 10 firefighter injuries. The cost of fire damage exceeded $1.5 billion. In October 2003, the second-worst wildfire in the history of San Diego County destroyed 332,766 acres of land and 3,239 structures, caused 17 deaths, and resulted in approximately $450 million in damage. San Diego County's third-worst wildfire in history, known as the Laguna Fire, resulted in the loss or destruction of 383 homes and 1,200 other structures in 1970 (County of San Diego 2023a). In 2023 (the most recent year reported), more than $4 million of wildfire-related damage occurred in San Diego County alone (CAL FIRE 2023).

In 2018, the West Fire burned 505 acres in the county, and in 2020, the Valley Fire burned 76,067 acres in the county and damaged or destroyed 75 structures. The Valley Fire was intensified by dry vegetation, rugged terrain, and high temperatures and winds. According to the California Department of Forestry and Fire Protection (CAL FIRE) Redbook, there have been 1,113 wildfires recorded in San Diego County between 2015 and 2021, which translates to an average of 159 wildfires per year in the county during this timeframe (County of San Diego 2023a). More recently, there were 239 recorded wildfires in 2022 and 220 recorded wildfires in 2023 in San Diego County, of which three were greater than 300 acres in size and are considered large wildfires by CAL FIRE (CAL FIRE 2022, 2023).

Several factors, including climate, native vegetation, topography, and development patterns, make the San Diego region susceptible to wildfires. The San Diego region's topography consists of a semiarid coastal plain and rolling highlands, which, when fueled by shrub overgrowth, occasional Santa Ana winds, and high temperatures, creates an ever-present threat of wildfire. In addition, extended droughts, characteristic of the region's Mediterranean climate and exacerbated by climate change, result in large areas of dry vegetation that provide fuel for wildland fires. Extreme weather conditions, such as high temperatures, low humidity, or winds of extraordinary force, may cause an ordinary fire to expand into one of massive proportions (County of San Diego 2023a). Wildfire risk tends to be high in locations with dense vegetation, dry conditions, and steep slopes. As such, there is a high wildfire risk in the hills and mountains in the eastern San Diego region where sparse development intermingles with fire-prone native vegetation. However, urban areas can also be at risk where the unique mesa-canyon topography of coastal San Diego puts development in proximity to steep slopes and dense vegetation. Typically, vegetation absorbs rainfall and reduces runoff. However, after wildfire burns the vegetation that anchors soil to the hillside, chances increase that a flash flood, mudflow, or landslide could occur in the event of heavy rains because the ground is no longer able to absorb water (FEMA 2020).

Common causes of fires in San Diego County include equipment use, vehicle fires spreading into wildlands, accidental starts from warming or debris fires, and arson. The predominant cause of wildfire changes from year to year in the State Responsibility Area (SRA) within both San Diego County and the State. When considered over the period of 2019 through 2023 and excluding miscellaneous and undetermined causes, most fires in the State SRA were caused by debris burning, followed by vehicles and equipment use, whereas the majority of fires within San Diego County SRA (approximately 59%) were caused by vehicles followed by equipment use and arson (Table 4.19-1).

Table 4.19-1 Causes of Fire in San Diego County and the State within the SRA (2019–2023)

Year	Area	Total	Arson	Camp fire	Debris Burning	Electrical Power[1]	Equipment Use	Light-ning	Misc.	Playing with Fire	Rail-road	Smok-ing	Undeter mined	Vehicle
2023	San Diego	220	26	1	16	14	24	4	63	3	0	1	43	25
2023	Statewide	3,236	359	47	591	176	348	197	819	32	2	27	321	310
2022	San Diego	239	22	11	12	6	25	6	73	7	0	1	51	25
2022	Statewide	3,333	358	86	488	228	370	89	824	55	6	44	435	350
2021	San Diego	208	22	9	13	16	20	16	26	3	0	3	49	31
2021	Statewide	3,054	386	104	476	284	329	152	269	54	6	60	515	419
2020	San Diego	179	11	2	19	8	28	1	20	7	0	0	56	27
2020	Statewide	3,501	320	110	579	335	381	264	326	80	6	47	604	449
2019	San Diego	128	2	2	17	5	14	9	14	2	0	2	48	13
2019	Statewide	3,086	284	122	468	304	354	195	280	52	3	41	607	376

Notes: [1] Identified as Power Generation/Transmission/Distribution in the 2023 Redbook.

Sources: CAL FIRE 2019a, 2020, 2021, 2022, 2023.

FIRE HAZARD DESIGNATIONS

Wildfire prevention is a shared responsibility among federal, state, and local agencies, including local city and county fire departments, as well as landowners and residents. Federal lands are classified as Federal Responsibility Areas. Most of the unincorporated areas of the San Diego region are classified as SRAs, which are areas where fire prevention is the responsibility of CAL FIRE. Incorporated areas, and some unincorporated lands, are classified as Local Responsibility Areas (LRAs). Fire prevention and response in these areas are typically addressed by city and county fire departments, occasionally with assistance from CAL FIRE. CAL FIRE identifies Fire Hazard Severity Zones (FHSZs) at the local, state, and federal level that cover all fire-prone areas in the state, regardless of land ownership or responsibility.

CAL FIRE defines and maps FHSZs to identify the potential fire hazard severity expected in different areas within the State, as required by PRC Sections 4201–4205. FHSZs are determined based on an area's vegetation, topography (slope), weather (including winds), crown fire potential, and ember production and movement potential. FHSZs include the classifications Very High, High, and Moderate in areas where the State is responsible for fire protection (i.e., SRAs) (CAL FIRE 2025b). CAL FIRE released updated maps of FHSZs within SRAs for public comment in 2022. These maps show an overall reduction in lands within High FHSZs and an increase in lands within the Very High FHSZ designation in the San Diego region. These designations have been adopted and became effective on April 1, 2024.

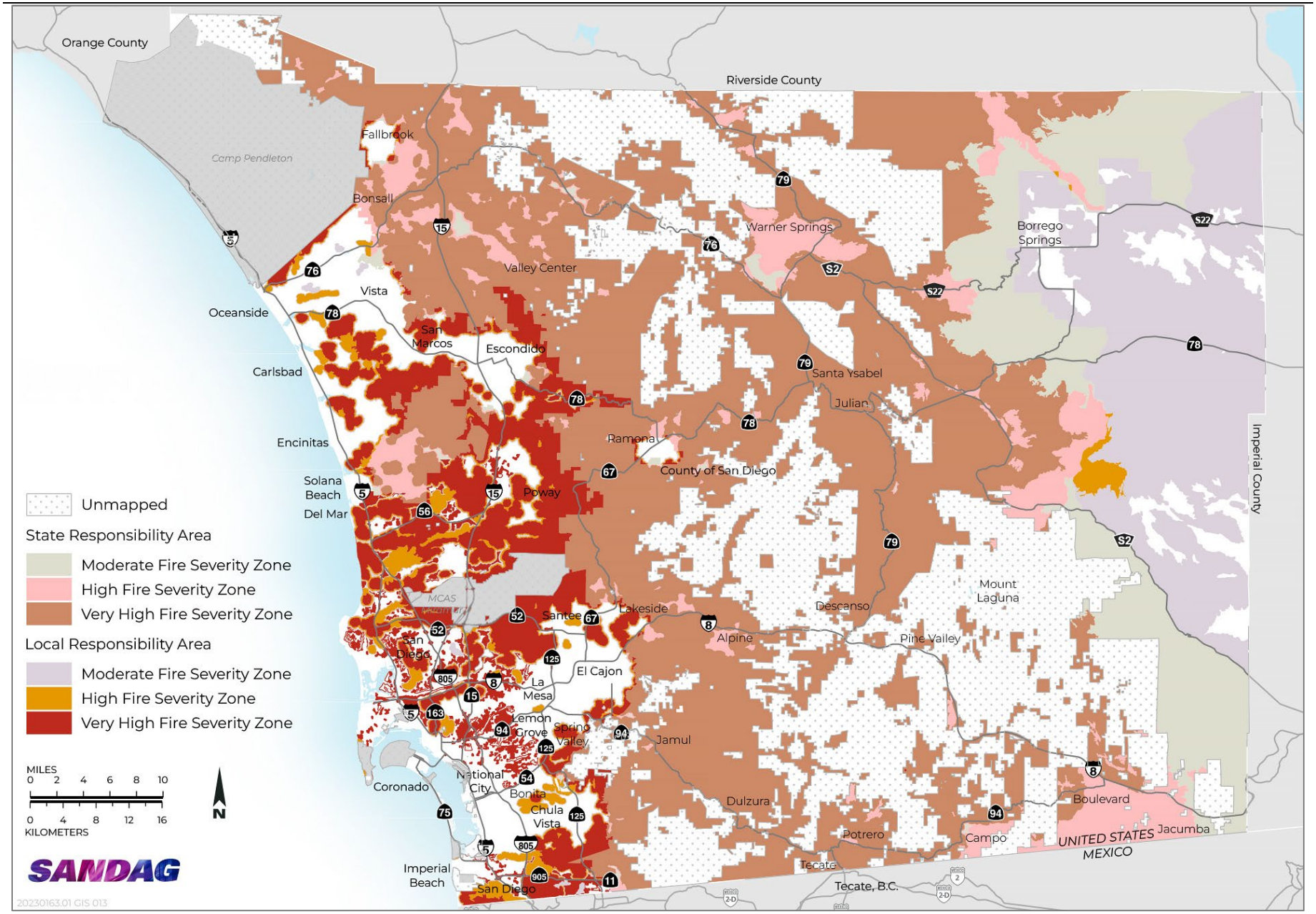
The majority of the San Diego region is within an SRA for fire prevention and suppression (Figure 4.19-1). FHSZ maps also identify Moderate, High, and Very High FHSZs in areas where local agencies are responsible for fire protection (i.e., LRAs) (CAL FIRE 2025c). In the San Diego region, local fire protection is provided by fire protection districts and county service areas in unincorporated parts of the county, and by city fire departments and joint powers agreements within city boundaries. Local fire protection is discussed in more detail in Section 4.15, "Public Services and Utilities," while existing emergency response and evacuation in the region is discussed in Section 4.9, "Hazards and Hazardous Materials," of this EIR. Approximately 45% of the San Diego region consists of areas that are designated as a Very High or High FHSZ (Table 4.19-2).

Table 4.19-2 Wildfire Risk in the San Diego Region

FHSZ Designation	Acres	Percent of San Diego Region
Very High	1,084,766	40
High	128,991	5
Moderate	184,568	7
Unmapped	1,328,813	49
Total	2,727,138	100

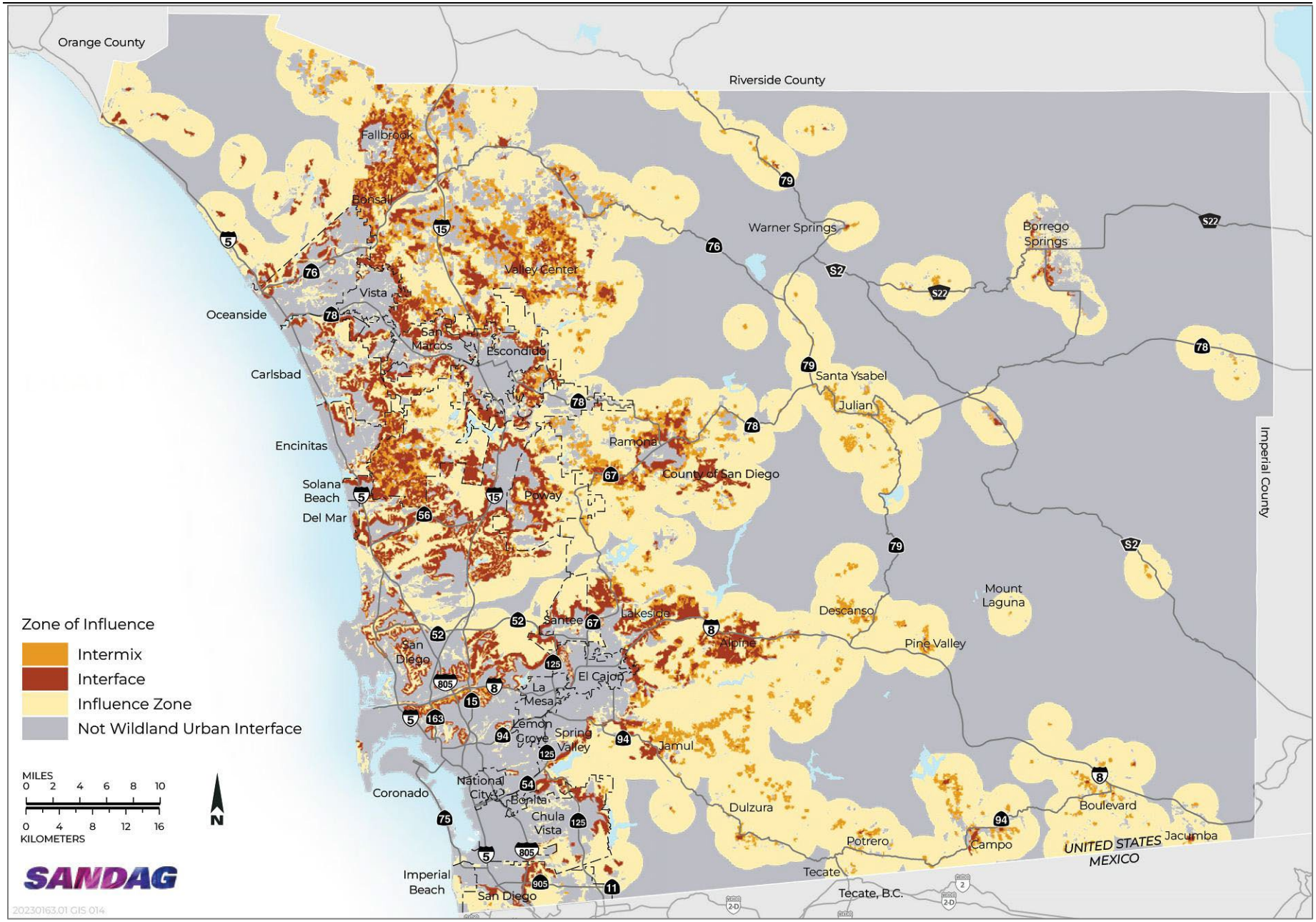
Source: CAL FIRE 2025b and 2025c, and SANGIS 2025

The San Diego region also includes several areas within the WUI. The WUI is defined as an area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (CAL FIRE 2018). These conditions create an environment in which fire can move readily between structural and vegetation fuels. The WUI consists of areas designated as either Wildland Urban Interface, Wildland Urban Intermix, or Wildfire Influence Zones (CAL FIRE 2018). Interface zones are areas where housing with a density greater than 0.05 dwelling units per acre is adjacent to vegetation that can burn in a wildfire. Intermix zones are areas of more sparsely populated development than Interface areas but are interspersed in areas dominated by wildland vegetation subject to wildfire. Both Interface and Intermix zones are in areas designated as Moderate, High, or Very High FHSZs. In addition, the Wildfire Influence Zone includes all areas with wildfire susceptible vegetation up to 1.5 miles from Interface or Intermix zones (CAL FIRE 2019b). Approximately 1,137,410 acres, or 42%, of the San Diego region is within the WUI (see Figure 4.19-2).



Source: Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025.

Figure 4.19-1 Fire Hazard Severity Zones within State and Local Responsibility Areas



Source: Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025.

Figure 4.19-2 Wildland Urban Interface, Wildland Urban Intermix, or Wildfire Influence Zones

Furthermore, the California Public Utilities Commission (CPUC) maintains a high fire threat district (HFTD) map. The CPUC HFTD Map includes three fire-threat areas (CPUC 2018):

- Tier 3 consists of areas on the CPUC Fire-Threat Map where there is an extreme risk from wildfires associated with overhead utility power lines or overhead utility power-line facilities also supporting communication facilities.
- Tier 2 consists of areas on the CPUC Fire-Threat Map where there is an elevated risk from wildfires associated with overhead utility power lines or overhead utility power-line facilities also supporting communication facilities.
- Zone 1 consists of Tier 1 High-Hazard Zones (HHZs) from the US Forest Service (USFS) and CAL FIRE joint map of tree mortality HHZs. Tier 1 HHZs are in direct proximity to communities, roads, and utility lines, and are a direct threat to public safety.

ANTICIPATED EFFECTS OF CLIMATE CHANGE

Wildfire risk is determined by several factors: wind speeds, drought conditions, available wildfire fuel (i.e., dry vegetation), past wildfire suppression activity, and expanding wildland-urban interface (Westerling 2018). In California, wildfires are a significant threat, particularly in recent years as the landscape responds to climate change and decades of fire suppression. It is estimated that since 1985, more than 50% of the increase in the area burned by wildfire in the western United States is attributable to anthropogenic climate change (Abatzoglou and Williams 2016). Climate change is expected to result in a longer and less predictable fire season and drive factors that may worsen wildfires, such as increased temperatures more frequent and intense dry Santa Ana winds, drier autumns, and increased development and presence of dead fuels (Kalansky et al. 2018). All wildfires (those initiated by both natural and human-made sources) tend to be larger under drier atmospheric conditions and when fed by drier fuel sources (Balch et al. 2017).

In addition, climate change has led to exacerbation of wildfire conditions during a longer period of the year as the spring season has warmed—driving an earlier spring snowmelt—and as winter precipitation has decreased. Furthermore, wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have led to an increase in wildfire activity (Schoennagel et al. 2017). A significant change in the global character of wildland fire in recent decades is the increase in high-intensity wildfires described as 'megafires.' The rise of megafires – categorized as more than 100,000 acres (> 40,000 hectares) – on public lands in the western US and other regions have signaled widespread conflagrations caused by changes in climate, land use, and human fire habits (Christiansen et al. 2024). In particular, the western United States, including California, has seen increases in wildfire activity in terms of area burned, number of large fires, and fire season length (Abatzoglou and Williams 2016). These conditions have resulted in the largest, most destructive, and deadliest wildfires on record in California's history. Nineteen of the 20 largest wildfires in California have happened since 2000 - 10 of which took place in 2020 or later (CAL FIRE 2024b). Eight of the 20 most destructive California wildfires have taken place in 2020 or later, resulting in more than 25,000 structures burned (CAL FIRE 2025d), and 13 of the top 20 deadliest wildfires have occurred since 2000 (CAL FIRE 2025e). These megafires, exacerbated by climate change, have the potential to inflict major, long-lasting effects on highway transportation infrastructure systems. The 2020 Labor Day wildfires that occurred in Washington, Oregon, and California burned nearly 3.5 million acres (1.4 million hectares) over a period of 15 days, 117 days, and 112 days respectively, resulting in huge expenses for reopening vital roadway infrastructure and losses from reduced commerce and tourism. Total anticipated costs incurred from the 2020 Labor Day megafires for both temporary and permanent repairs included over $24 million for hazard trees, $17.5 million for slope-rock scaling, $43 million for structural damage, and over $3 million for traffic control (Christiansen et al. 2024).

Due to its semiarid climate, shrubland, and the nearby presence of the Santa Ana winds, the San Diego region is susceptible to and experiences wildfire. The high temperatures and droughts caused by climate change could increase wildfire intensity and frequency. With hotter temperatures and possibly fewer rainy days in the coming decades, vegetation could become drier. As a result, it is likely that the San Diego region will see an increase in the

frequency and intensity of fires and acreage burned, making the region more vulnerable to devastating fires, like the ones seen in 2003 and 2007. The fire season could also become longer and less predictable, with larger and more catastrophic fires that could make firefighting efforts more costly (County of San Diego 2023a).

Wildfires also result in secondary impacts. A major consequence of wildfires is post-fire flooding (which is also expected to increase in the San Diego region because of the increase in extreme precipitation events), mudslides, and debris flows. Flooding may result in mudslides and debris flows from vegetation loss and excess runoff that washes away soils destabilized from wildfire (Bedsworth et al. 2018). These flows could also pose a hazard to people and structures in high fire-risk areas, can occur with little warning, and can exert extreme force on objects in their path. Post-wildfire debris flows also represent a significant hazard for transportation infrastructure. The location and intensity of post-fire debris movements are difficult to predict, and threats can persist for several years until the watershed is restored to pre-fire conditions. This situation would likely worsen as climate change forecasts predict increasing numbers of wildfire burned areas and extreme precipitation intensity (Li and Chester 2023).

4.19.2 Regulatory Setting

FEDERAL LAWS, REGULATIONS, PLANS, AND POLICIES

International Fire Code

Published by the International Code Council, the International Fire Code (IFC) is a model upon which the current California Fire Code (24 CCR Section 9) is based (ICC 2023). The IFC is the nationally recognized code that sets standards and requirements to safeguard against the threat that fires may pose to public health, safety, and the environment. The IFC, when adopted by a jurisdiction, regulates the planning, construction, and maintenance of development in all areas.

National Fire Plan

The Department of the Interior's National Fire Plan is intended to guarantee an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future (USDOI 2000). The plan's Rural Fire Assistance program called for enhancing the fire protection capabilities of rural fire districts and safe and effective fire suppression in the "wildland-urban interface," which led to the further definition and identification of WUIs in the *Federal Register* (USDA 2001) and the use of the term in other federal and state plans. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, purchasing equipment, and providing prevention activities on a cost-shared basis. CAL FIRE incorporates concepts from this plan into local fire planning efforts.

The Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 (DMA 2000) (Public Law 106-390) provides the legal basis for FEMA mitigation planning requirements for state, local, and tribal governments as a condition of receiving national post-disaster Hazard Mitigation Grant Program (HMGP) funding. DMA 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act by repealing the previous mitigation planning provisions and replacing them with a new set of requirements that emphasize the need for state, local, and tribal entities to closely coordinate mitigation planning and implementation efforts. Section 322 of DMA addresses mitigation planning at the state and local levels. It identifies requirements that allow HMGP funds to be used for planning activities and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. States and communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds.

US Geological Survey Landslide Hazard Program

The US Geological Survey created the Landslide Hazard Program (LHP) under the requirements of Public Law 106-113. The primary objective of the LHP is to reduce long-term losses from landslide hazards by improving the understanding of the causes of ground failure and suggesting mitigation strategies. The federal government takes

the lead role in funding and conducting this research, whereas the reduction of losses due to geologic hazards is primarily a state and local responsibility.

Executive Order 13855

On December 2018, Executive Order (EO) 13855 was issued, directing the US Department of Agriculture (USDA) and US Department of the Interior (DOI) to implement policies to improve forest management practices by reducing hazardous fuel loads, mitigating fire and postfire risks, and ensuring the safety of local communities. The departments were directed to collaborate with state, local, and tribal entities in creating a comprehensive wildfire strategy prioritizing the highest-risk lands. The EO contained acreage targets for fuel reduction and directives regarding the quantities of lumber to be thereby produced. Acreage targets were also provided for postfire treatments to maintain water quality and prevent erosion. The order also prioritizes proper maintenance of public roads vital to conducting management activities.

Infrastructure Investment and Jobs Act and Five-Year Wildfire Monitoring, Maintenance, and Treatment Plan

The Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law (BIL), was signed into law in November 2021 and authorized $1.2 trillion for repairing and modernizing the nation's transportation and infrastructure. Included in the BIL is more than $5 billion for DOI and USDA to reduce the risk of catastrophic wildfires. Specifically, Section 40803(j)(1) of the BIL directed DOI and USDA to establish a Five-Year Wildfire Monitoring, Maintenance, and Treatment Plan (Five-Year Plan) that:

- Reduces severe fire risk on 10 million acres of Federal land, Tribal forest lands, and rangeland that pose a high wildfire hazard.
- Develops a process for prioritizing treatments in areas and communities at the highest risk of catastrophic wildfire in direct partnership with state and local entities and affected stakeholders.
- Leverages public-private partnerships; prioritizes projects that have been evaluated under the National Environmental Policy Act (NEPA) and are ready for implementation; streamlines subsequent projects based on existing statutory or regulatory authorities; and develops interagency teams to increase coordination and efficiency under NEPA.

As required under the BIL, the DOI and USDA published the first iteration of the Five-Year Plan in April 2022. The Five-Year Plan complements USDA's 10-Year Strategy in emphasizing fire-prone DOI and Tribal lands comprising up to 30 million additional acres. These include rangelands and other vegetative ecosystems that pose serious fire risks. Together, USDA's 10-Year Strategy and DOI's Five-Year Plan will inform the development of a joint USDA and DOI long-term, outcome-based monitoring, maintenance, and treatment strategy that is required by Section 40803(j)(2) of the BIL by 2026 (DOI and USDA 2022).

STATE LAWS, REGULATIONS, PLANS, AND POLICIES

CAL FIRE Strategic Plan

CAL FIRE's Strategic Plan is intended to provide CAL FIRE with appropriate guidance for adequate statewide fire protection of SRAs, in accordance with PRC Section 4130 (CAL FIRE 2024c). The plan addresses both wildfire prevention and suppression activities, and management of the State's forests to help meet California's climate change goals. The goals of the plan include improving CAL FIRE's core capabilities, enhancing internal operations, ensuring employee health and safety, and building an engaged, motivated, innovative workforce.

California Public Resources Code Sections 4125–4137 (Responsibility for Fire Protection)

This statute requires the State Board of Forestry and Fire Protection to classify all state lands in which the financial responsibility of preventing and suppressing fires is primarily the responsibility of the State, or SRAs, and therefore under the jurisdiction of CAL FIRE. All state lands that are not classified as an SRA are considered to be the

responsibility of local or federal agencies. SRAs include lands capable of producing forest products; lands covered by timber, brush, undergrowth, or grass that protect the soil from erosion; and lands used for range or forage purposes.

SRA Minimum Fire Safe Regulations

CCR Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas where CAL FIRE is responsible for wildfire protection. Title 14 establishes the minimum standards required for fire protection for emergency access, fuel modification (including a defensible space of 100 feet around structures), setback to property line, signage, and water supply. To comply with the standards, proposed development must include road and street networks that provide safe access for emergency wildland fire equipment and civilian evacuation concurrently. Newly constructed buildings and roads must post clearly visible signs, including names and contact numbers visible from the roadway. Emergency water for wildfire protection must be available and accessible in specified quantities. Finally, to reduce the intensity of a wildfire, strategic siting of fuel modification and greenbelts must meet specific requirements.

California Fire Code

The California Fire Code is Part 9 of the California Building Code (CBC), which is set forth in CCR Title 24. The California Fire Code is created by the California Building Standards Commission, is based on the IFC created by the International Code Council, and is revised and republished every 3 years. Chapter 49 of the California Fire Code defines requirements for building construction and vegetation and fuel management within WUI areas. In the WUI, all new buildings must comply with California Fire Code standards, which define building construction requirements intended to reduce wildfire exposure. In addition, buildings within the WUI must comply with California laws and regulations that require maintenance of a "defensible space" of 100 feet from structures (PRC Section 4291, CCR Section 1299.03).

California Public Resources Code Sections 4201–4204 (Fire Hazard Severity Zones)

This statute directs CAL FIRE to map and periodically review FHSZs within SRAs based on determining factors, such as fuel loading, slope, and fire weather and winds. These FHSZs are the basis for identifying requirements for fire protection found in other regulations, such as the California Fire Code.

California Public Resources Code Section 4427 (Fire Hazard Area Equipment Restrictions)

PRC Section 4427 includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas.

California Public Utilities Commission General Order 95: Rules for Overhead Transmission Line Construction

California Public Utilities Commission General Order 95 was initially adopted in 1941 and was most recently updated in 2009 for Southern California. General Order 95 governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 generally states that design, construction, and maintenance of overhead electrical lines should be done in accordance with accepted good practices for the given location conditions known at the time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment. Rule 35 of General Order 95 (Tree Trimming) requires the following:

- four feet radial clearance for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts
- six feet radial clearance for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts
- 10 feet radial clearance for any conductors of a line operating at 110,000 volts or more, but less than 300,000 volts
- 15 feet radial clearances for any conductor of a line operating at 300,000 volts or more

Senate Bill 1241 (Kehoe) of 2012

Senate Bill (SB) 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and Very High FHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings available regarding fire protection and suppression services before approving a tentative subdivision map or parcel map designated as a Very High FHSZ or that are in an SRA. The bill also resulted in amendments to Appendix G of the CEQA Guidelines to include questions related to fire hazard impacts for projects located in or near lands classified as SRAs and Very High FHSZs.

Senate Bill 901 (Dodd) of 2018

Senate Bill 901 (Chapter 626, Statutes of 2018) mandates all electric utilities to prepare and submit wildfire mitigation plans that describe the utilities' plan to prevent, combat, and respond to wildfires affecting their service territories. CPUC reviews and refines the plans before implementing and enforcing them. SB 901 was enacted in response to the devastating 2017 wildfire season, in which wildfires caused by faulty Pacific Gas & Electric utility lines burned over 4,000 square miles of land across the state.

Senate Bill 190 (Dodd) of 2019

SB 190 (Chapter 404, Statutes of 2019) includes a specific requirement for the state fire marshal to develop best models for defensible space and additional standards for home hardening and construction materials to increase the resilience of communities. The bill also requires the state fire marshal to develop training programs for WUI fire safety building standards compliance for local building officials, builders, and fire service personnel.

Senate Bill 456 (Laird) of 2021

SB 456 (Chapter 387, Statutes of 2021) codified a statewide wildfire preparedness and response plan that includes prescribed burning, forest stewardship, and restoration in burned areas. Specifically, the bill renamed the Forest Management Task Force to the Wildfire and Forest Resilience Task Force and required the task force, including the agency and the department, on January 1, 2022, to develop a comprehensive implementation strategy to track and ensure the achievement of the goals and key actions identified in the action plan. The bill also requires the implementation strategy to address specified actions, including increasing the pace and scale of wildfire and forest resilience activities. Finally, the bill requires the task force, on or before January 1, 2026, and every 5 years thereafter, to update the action plan.

Assembly Bill (Wood) 2551 of 2018

Assembly Bill (AB) 2551 (Chapter 638, Statutes of 2018) authorizes CAL FIRE to collaborate with private landowners on controlled burns to reduce wildfire fuel. Specifically, the bill would authorize CAL FIRE to enter into an agreement with the owner or any other person who has legal control of any property, any public agency with regulatory or natural resource management authority over any property that is included within any wildland, or any nonprofit organization to conduct joint prescribed burning operations that serve the public interest and are beneficial to the state.

Assembly Bill 38 (Wood) of 2019

AB 38 (Chapter 391, Statutes of 2019) requires the Office of Emergency Services and CAL FIRE to develop best practices for community-wide resilience against wildfires through home hardening, defensible space, and other measures. In addition, sellers of real property located in a High or Very High FHSZ will be required to provide specified documentation to the buyer that the property is in compliance with the wildfire protection measures.

Assembly Bill 836 (Wicks) of 2019

AB 836 (Chapter 393, Statutes of 2019) establishes the Wildfire Smoke Clean Air Centers for Vulnerable Populations Incentive Pilot Program, which provides retrofits of air ventilation systems to create community clean air centers in order to mitigate the adverse public health impacts of wildfires and other smoke events. The program will prioritize areas with a high cumulative smoke exposure burden.

Assembly Bill 3074 (Friedman) of 2020

AB 3074 (Chapter 259, Statutes of 2020) imposes additional fuel reduction requirements on a person who owns, leases, controls, operates, maintains, or builds an occupied dwelling or structure in, upon, or adjoining wild lands within a Very High FHSZ. This bill requires additional fuel clearance between 5 and 30 feet around the structure, and an ember-resistant zone within 5 feet of the structure based on regulations promulgated by the State Board of Forestry and Fire Protection. Application of these regulations would be the responsibility of the local agency that has jurisdiction over the property and CAL FIRE.

Assembly Bill 642 (Friedman) of 2021

AB 642 (Chapter 375, Statues of 2021) requires the Director of CAL FIRE to identify areas in the State as moderate and High FHSZs, in addition to Very High FHSZs. This bill also further expands the use of prescribed burning, particularly by growing and incorporating cultural burning by tribal communities. The bill streamlines the permitting system for burning permits and creates a prescribed burning training center to increase the number of skilled practitioners. It would require the CAL FIRE to work more closely with Native American tribes, tribal organizations, and cultural practitioners, in part by creating a Cultural Burning Liaison within the department.

General Plan Safety Element Wildfire Requirements

California Government Code Section 65302(g) requires general plans to include a safety element that addresses risks from natural hazards, including wildland and urban fires. As of January 1, 2014, safety elements are required to be reviewed and updated as necessary to address the risk of fire for land classified as state responsibility areas, as defined in PRC Section 4102, and land classified as very high fire hazard severity zones, as defined in PRC Section 51177 (Government Code Section 65302[g][3]). Government Code Section 65302(g)(3) specifies several requirements for inclusion in the review and update of the safety element, including the consideration of the LCI's most recent publication of "Fire Hazard Planning, General Plan Technical Advice Series". At least 90 days prior to the adoption or amendment of their safety element, counties that contain SRAs and cities or counties that contain Very High FHSZs must submit their safety element to the board of Forestry and Fire Protection (Government Code Section 65302.5[b]). The board reviews the safety element and responds to the city or county with its findings and recommended changes regarding the uses of land and policies in SRAs or Very High FHSZs that will protect life, property, and natural resources from unreasonable risks associated with wildfires, and the methods and strategies for wildfire risk reduction and prevention within SRAs or Very High FHSZs (Government Code Section 65302.5[b][3]). The county board of supervisors or city council must consider the Board of Forestry and Fire Protection's recommendations and respond to the board in writing if any of the recommendations are not accepted.

Office of Land Use and Climate Innovation Fire Hazard Planning Technical Advisory

The Governor's Office of Planning and Research (OPR) (now the Office of Land Use and Climate Innovation [LCI]) first published the *Fire Hazard Planning Technical Advisory* in 2015 to provide a robust planning framework for addressing fire hazards, reducing risk, and increasing resilience across California's diverse communities and landscapes. The *Fire Hazard Planning Technical Advisory* provides guidance on wildfire-related policies and programs that local agencies should include in their general plans and is also intended to assist city and county planners in discussions with professionals from fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery agencies as they work together to develop effective fire hazard policies for the general plan. Consistent with the requirements of SB 901 (Dodd 2018) and AB 2911 (Friedman 2018), as codified in Government Code Section 65040.21, LCI updated the technical advisory in 2022 to include specific land use strategies to reduce fire risk to buildings, infrastructure, and communities. LCI prepared the 2022 update in consultation with CAL FIRE, the State Board of Forestry and Fire Protection, and other fire and safety experts.

Office of Land Use and Climate Innovation Wildland-Urban Interface Planning Guide

In August 2022, OPR (now LCI) published the Wildland-Urban Interface Planning Guide (WUI Planning Guide) (OPR 2022). The WUI Planning Guide is intended to provide guidance to planners, wildfire mitigation practitioners, and other professionals and decision-makers regarding the variety of options available to support WUI planning in California. WUI planning tools are those that can be adopted and implemented as standalone tools or as integral

components of plans, local ordinances, agreements, programs, or other activities. The tools included in the guide are intended to provide short- and long-term options for addressing the WUI and associated wildfire hazard or risk at the home, parcel, neighborhood, and community (or district) level.

California's Wildfire and Forest Resilience Action Plan

The Governor's Forest Management Task Force (Task Force) was established in 2018 to introduce a holistic, integrated approach towards forest management. The Task Force's purpose is to develop a framework for establishing healthy and resilient forests that can withstand and adapt to wildfire, drought, and climate change. In January 2021, the Task Force published *California's Wildfire and Forest Resilience Action Plan* (Action Plan), which was the result of over two dozen interagency and stakeholder-led workgroups. The Action Plan includes recommendations addressing various aspects of the state's forest health and wildfire crisis and serves as a roadmap for implementing the Agreement for Shared Stewardship of California's Forest and Rangelands (Shared Stewardship Agreement) with USFS under USDA, and for aligning the state's efforts with other federal, local, tribal, regional and private organizations (California Forest Management Task Force 2021).

California Adaptation Planning Guide

In June 2020, the California Governor's Office of Emergency Services published the latest update to its Adaptation Planning Guide (OES 2020). The guide is intended to assist local governments, regional entities, and climate organizations with incorporating best practices and current science and research into their adaptation plans to address climate change, including wildfire.

LOCAL LAWS, REGULATIONS, PLANS, AND POLICIES

County of San Diego Code of Regulatory Ordinances Sections 96.1.004 and 96.1.4907

The San Diego County Fire Authority and Fire Districts, in partnership with CAL FIRE, the US Bureau of Land Management (BLM), and USFS, is responsible for the enforcement of defensible space inspections. Inspectors from CAL FIRE are responsible for the inspection of properties to ensure an adequate defensible space has been created around structures. If violations of the program requirements are noted, inspectors provide a list of required corrective measures and provide a reasonable timeframe to complete the task. If the violations still exist upon reinspection, the local fire inspector will forward a complaint to the County for further enforcement action. This is part of the County Consolidated Fire Code, which was last updated in 2023 (described in greater detail below).

County of San Diego Consolidated Fire Code

The County of San Diego Consolidated Fire Code (County of San Diego 2023b) adopts, by reference, the California Fire Code (24 CCR Title 9) every 3 years when it is revised and republished. The Consolidated Fire Code consists of local fire protection district ordinances that have modified the fire code portion of the State Building Standards Code and any County of San Diego modification to the fire districts' amendments. The purpose of the Consolidated Fire Code is to protect public health and safety, which includes permit and inspection requirements for the installation, alteration, and repair of new and existing fire protection systems, and penalties for violations of the Consolidated Fire Code. The Consolidated Fire Code provides the minimum requirements for access, water supply and distribution, construction type, fire protection systems, and vegetation management. The County Fire Code applies to all new construction and to any alterations, repairs, or reconstruction, except as otherwise provided for in Title 9, Division 6, Chapter 1 of the County Code. The current version of the Consolidated Fire Code became effective on April 13, 2023.

San Diego County Multi-Jurisdictional Hazard Mitigation Plan

The federal Disaster Mitigation Act of 2000 (Public Law 106-390) requires all local governments to create disaster plans in order to qualify for hazard mitigation funding. The Multi-Jurisdictional Hazard Mitigation Plan is a countywide plan that identifies risks and ways to minimize damage by natural and human-made disasters. The plan is a comprehensive resource document that serves many purposes, such as enhancing public awareness, creating a decision tool for management, promoting compliance with state and federal program requirements, enhancing local policies for hazard mitigation capability, and providing interjurisdictional coordination. The plan

evaluates risks associated with coastal storms, erosion, tsunamis, dam failures, earthquakes, floods, rain-induced landslides, liquefaction, structure/wildland fires, and human-caused hazards. It also provides goals, objectives, and actions to reduce impacts from these hazards (County of San Diego 2023a).

The San Diego County Multi-Jurisdictional Hazard Mitigation Plan contains annexes that provide specific details and actions related to hazard mitigation for the following local jurisdictions within San Diego County: San Diego County, City of Carlsbad, City of Chula Vista, City of Coronado, City of Del Mar, City of El Cajon, City of Encinitas, City of Escondido, City of Imperial Beach, City of La Mesa, City of Lemon Grove, City of National City, City of Oceanside, City of Poway, City of San Diego, City of San Marcos, City of Santee, City of Solana Beach, City of Vista, Alpine Fire Protection District, Otay Water District, Padre Dam Municipal Water District, Rainbow Municipal Water District, San Diego County Water Authority, San Diego Unified Port District, Sweetwater Authority, and Vista Irrigation District (County of San Diego 2023a).

Municipal Fire Codes

Each of the 18 cities in the San Diego region has a fire code included in its municipal code. Like the County of San Diego Consolidated Fire Code, these codes all adopt by reference the California Fire Code with amendments that specify details such as local authority and contact information. Although all municipalities require compliance with California Fire Code vegetation management requirements for creating defensible space around structures, some municipalities include additional specifications for vegetation management, such as a preference for using native vegetation and special requirements for sensitive habitat or water conservation.

San Diego County Fire Authority Strategic Plan 2020–2025

In 2013, CFA transitioned from a largely volunteer force to the professional staffing of 35 stations that have responsibility for 1.5 million acres in the unincorporated area of the county. In 2019, CFA finalized its first 5-year plan (County of San Diego Fire Authority 2019). The plan has four goals related to (1) employee health and professional development, (2) exceptional emergency services, (3) resilient communities, and (4) organizational excellence and fiscal responsibility. Each goal has multiple objectives. Most relevant are those in the resilient communities category:

- develop and implement a more cohesive pre-fire strategy to achieve resilient communities,
- reduce potential for loss in existing structures,
- strengthen fire safety measures in new construction,
- enhance prefire vegetation management, and
- improve prefire emergency planning.

CAL FIRE San Diego Unit 2024 Strategic Fire Plan

The San Diego Unit 2024 Strategic Fire Plan serves as the San Diego region's localized wildfire preparedness and response framework, developed in alignment with the broader California Strategic Fire Plan. Authorized under Public Resources Code Sections 4114–4130, the state-level plan was crafted through collaboration between CAL FIRE and the California Board of Forestry and Fire Protection. It establishes a statewide vision of fostering a fire-adapted natural landscape and more fire-resistant built environments by coordinating efforts among local, state, federal, and private entities. This vision is supported by seven overarching goals and 57 actionable objectives. Each CAL FIRE Administrative Unit and Contract County, including the San Diego Unit, is tasked with creating and executing its own implementation strategy (CAL FIRE 2024d). In this context, the San Diego Unit's Fire Plan outlines how it will operationalize the state plan's goals and objectives through targeted actions detailed in its Battalion-level Work Plans.

San Diego Gas & Electric Company's Wildfire Mitigation Plan

San Diego Gas & Electric Company (SDG&E), in accordance with California SB 901, developed a Wildfire Mitigation Plan to describe the preventive strategies and programs SDG&E plans to adopt to minimize the risk of its electrical lines and equipment causing catastrophic wildfires (SDG&E 2024). The plan includes a risk analysis; a description

of wildfire prevention strategies and programs undertaken by SDG&E; and details related to inspections, system hardening, and emergency preparedness.

Community Wildfire Protection Plans

The Healthy Forests Restoration Act was enacted in 2003 and included statutory incentives for USFS and BLM to consider prioritized fuel reduction projects identified by local communities. This legislation led to the development of community wildfire protection plans (CWPPs). A CWPP is developed at the community level in areas at-risk of wildfire and is created in collaboration with community members, fire agencies operating in the area, local government, and other interested parties. The Healthy Forests Restoration Act and CWPPs emphasize the need for federal, state, and local agencies to work collaboratively with communities in developing hazardous fuel reduction projects and place priority on treatment areas identified by the communities themselves in a CWPP.

A CWPP serves two primary purposes. First, CWPPs identify and prioritize fuel reduction treatment projects needed in the local area and outline methods for addressing them. Second, CWPPs identify recommended measures to reduce structural ignitability (e.g., fire hardening). The process of developing a CWPP can help a community identify and clarify priorities for the protection of life, property, and critical infrastructure in the WUI. These plans are intended to be living documents and are updated as the needs in a community change and evolve. Thirty-nine cities and communities around San Diego County have an approved CWPP in place.

City and County General Plans

Local planning policies related to wildfire are established in each jurisdiction's general plan. Safety elements are required to address fire hazards, evacuation routes, and emergency response. As of January 1, 2013, SB 1241 of 2012 required that jurisdictions review and update their safety elements as necessary within 2 years of implementation of the next regional transportation plan, upon the next revision of their housing element, to address the risk of fire in SRAs and Very High FHSZs. These revisions must consider the provisions outlined in the OPR (now LCI) Fire Hazard Planning Technical Advisory and must include a number of specified content areas, such as fire hazard mapping; historical data on wildfires; identification of agencies with responsibility for fire protection; and goals, policies, and objectives for the protection of the community from the unreasonable risk of wildfire. As of June 2025, nine of the jurisdictions in the San Diego region have updated their General Plans in accordance with SB 1241. Local General Plan policies related to wildfire are summarized in Table B-2 of Appendix B.

County Resilience Review Report 1-19: Wildland Fires

The Resilience Review Process, the core assessment tool of the County's Resilience Program, was developed to identify gaps in how the County addresses community risks from both sudden disasters and long-term stressors. In March 2019, the Chief Administrative Officer directed a Resilience Review Working Group to explore ways to enhance wildfire resilience in unincorporated areas (County of San Diego 2019). Through collaboration with stakeholders, experts, and regional leaders, the group conducted a comprehensive evaluation of the County's existing wildfire preparedness, response, recovery plans, programs, and outreach efforts. The review concluded that the County already has strong systems in place and has made significant strides in wildfire preparedness, with many of the report's recommendations either underway or under consideration. The Resilience Review Working Group recommends 16 principal objectives divided among three focus areas: pre-fire, response, and recovery. The objectives are broken down into 50 specific tasks.

County Operational Area Wildland Urban Interface Policy # 8-A

Policy # 8-A sets consistent procedures for safe and effective wildland firefighting operations in San Diego County. As development expands into wildland areas, fire agencies face increased challenges and risks, especially in the WUI. WUI fires often exceed local response capacity, requiring mutual and automatic aid from multiple agencies, making clear communication and shared terminology essential. To ensure coordinated response, Policy # 8-A requires all San Diego County fire agencies to adopt, train on, and use the Firescope WUI Structure Protection Guidelines (County of San Diego OES 2013).

4.19.3 Significance Criteria

Appendix G of the CEQA Guidelines provides criteria for determining the significance of a project's environmental impacts, in the form of initial study checklist threshold questions. Unless otherwise noted, the significance criteria specifically developed for this EIR are based on the checklist questions that address the environmental issue areas in Appendix G of the CEQA Guidelines. In some cases, SANDAG has combined checklist questions, edited their wording, or changed their location in the document in an effort to develop significance criteria that reflect the programmatic level of analysis in this EIR and the unique characteristics of the proposed Plan. Notably, Appendix G Section XX, question (a), regarding whether the proposed Plan would substantially impair an adopted emergency response plan or emergency evacuation plan is addressed in criterion HAZ-4 in Section 4.9, "Hazards and Hazardous Materials." Conversely, Appendix G Section IX, question (g), regarding whether the proposed Plan would expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires is addressed in this section in criterion WF-1.

Implementation of the proposed Plan, where located in or near SRAs or lands classified as High or Very High FHSZs or, where specified, in other areas of the San Diego region, would have a significant wildfire impact if it would:

WF-1 Increase risk of wildland fire ignition and directly or indirectly expose people or structures to significant risk of loss, injury, or death involving wildland fires.

WF-2 Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

WF-3 Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

WF-4 Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.19.4 Environmental Impacts and Mitigation Measures

WF-1 INCREASE RISK OF WILDLAND FIRE IGNITION AND DIRECTLY OR INDIRECTLY EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDLAND FIRES.

Analysis Methodology

This section analyzes the types of conditions under which the forecasted regional growth and land use change and the planned transportation network improvements of the proposed Plan would increase the risk of wildland fire ignition and directly or indirectly expose people or structures to significant risk of loss, injury, or death involving wildland fires. Geographic Information System analysis is used to forecast regional growth and land use changes and planned transportation network improvements in High and Very High FHSZs within SRAs and LRAs. CAL FIRE FHSZ mapping takes into consideration vegetation, topography, weather, crown fire potential, and ember production and movement (CAL FIRE 2025b); therefore, these data were used to identify areas where forecast regional growth and land use changes and planned transportation network improvements could increase the risk of wildland fire ignition. Impacts were calculated by overlaying the forecast regional growth and land use footprint, and the transportation network improvements footprint onto mapped CAL FIRE data for High and Very High FHSZs in the San Diego region (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025). The acreage of each footprint that would expand into the High and Very High FHSZs is quantified and identified as areas where wildfire ignition risk could be increased with implementation of the proposed Plan. In addition, while not quantified, the analysis also considers areas of the region that are currently unmapped (e.g., within an FRA or LRA), as shown on Figure 4.19-1, but are considered wildfire prone based on vegetation,

topography, and other factors that influence wildfire. Finally, the analysis qualitatively considers the potential for increased wildfire ignition risk from regional growth and transportation network improvements within the WUI.

A significant impact would occur if forecast regional growth and land use development or planned transportation network improvements would increase the risk of wildland fire ignition and directly or indirectly expose people or structures to significant risk of loss, injury, or death involving wildland fires.

Impact Analysis

2035

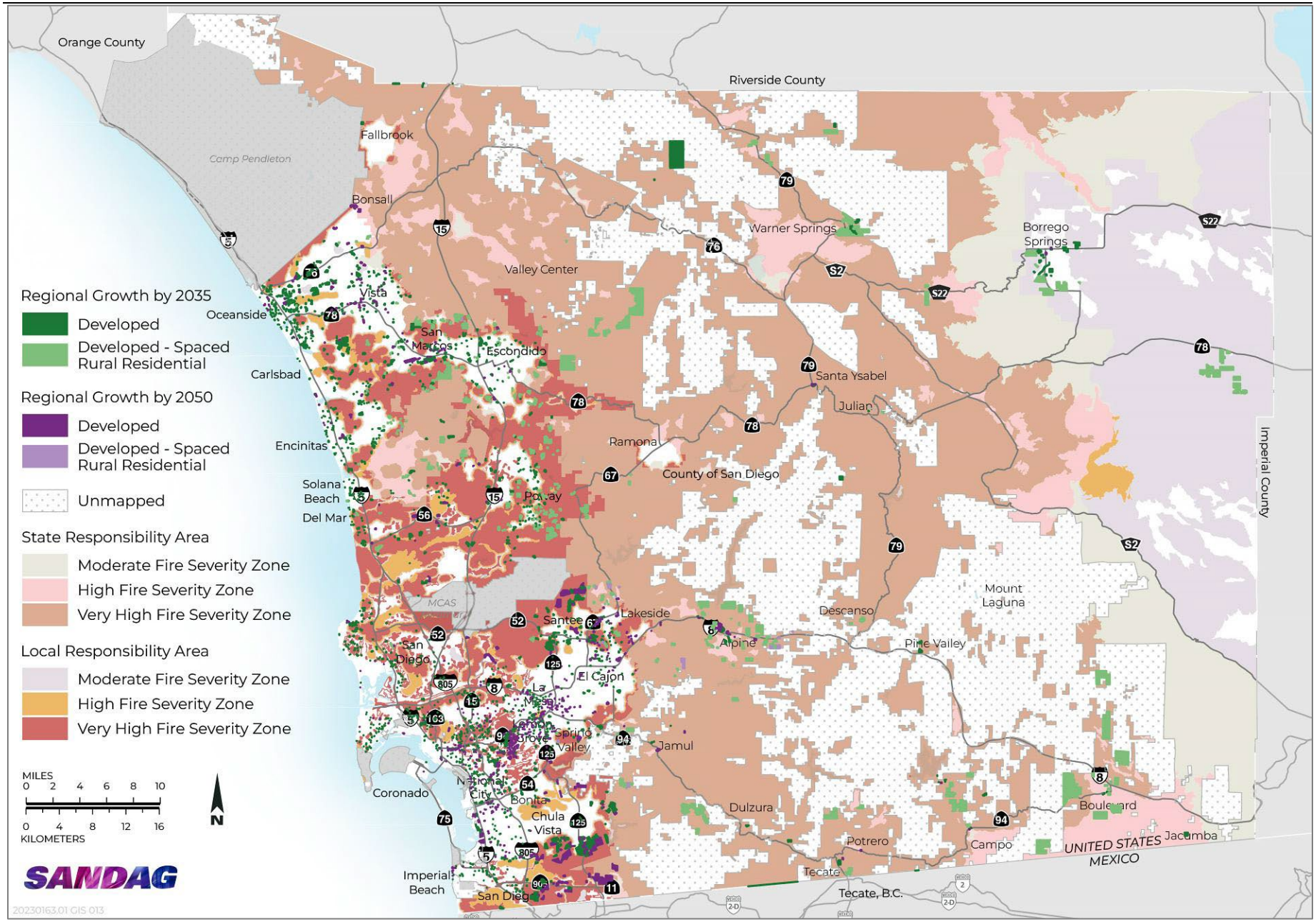
Regional Growth and Land Use Change

As shown in Table 2-1, in Section 2.0, "Project Description," of this Draft EIR, from 2022 to 2035, the region is forecasted have an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035.

Wildfire prevention is a shared responsibility among federal, state, and local agencies, including local city and county fire departments, as well as landowners and residents. Federal lands are classified as Federal Responsibility Areas. The National Fire Plan provides the necessary coordination between agencies in areas of federal lands. As shown on Figure 4.19-1, most of the unincorporated areas of the San Diego region are classified as SRAs, which designate areas where fire prevention is the responsibility of CAL FIRE. Incorporated areas, and some unincorporated lands, are classified as LRAs. Fire prevention and response in these areas are typically addressed by city and county fire departments, occasionally with assistance from CAL FIRE. CAL FIRE identifies FHSZs at the local, state, and federal level that cover all fire-prone areas in the state, regardless of land ownership or responsibility.

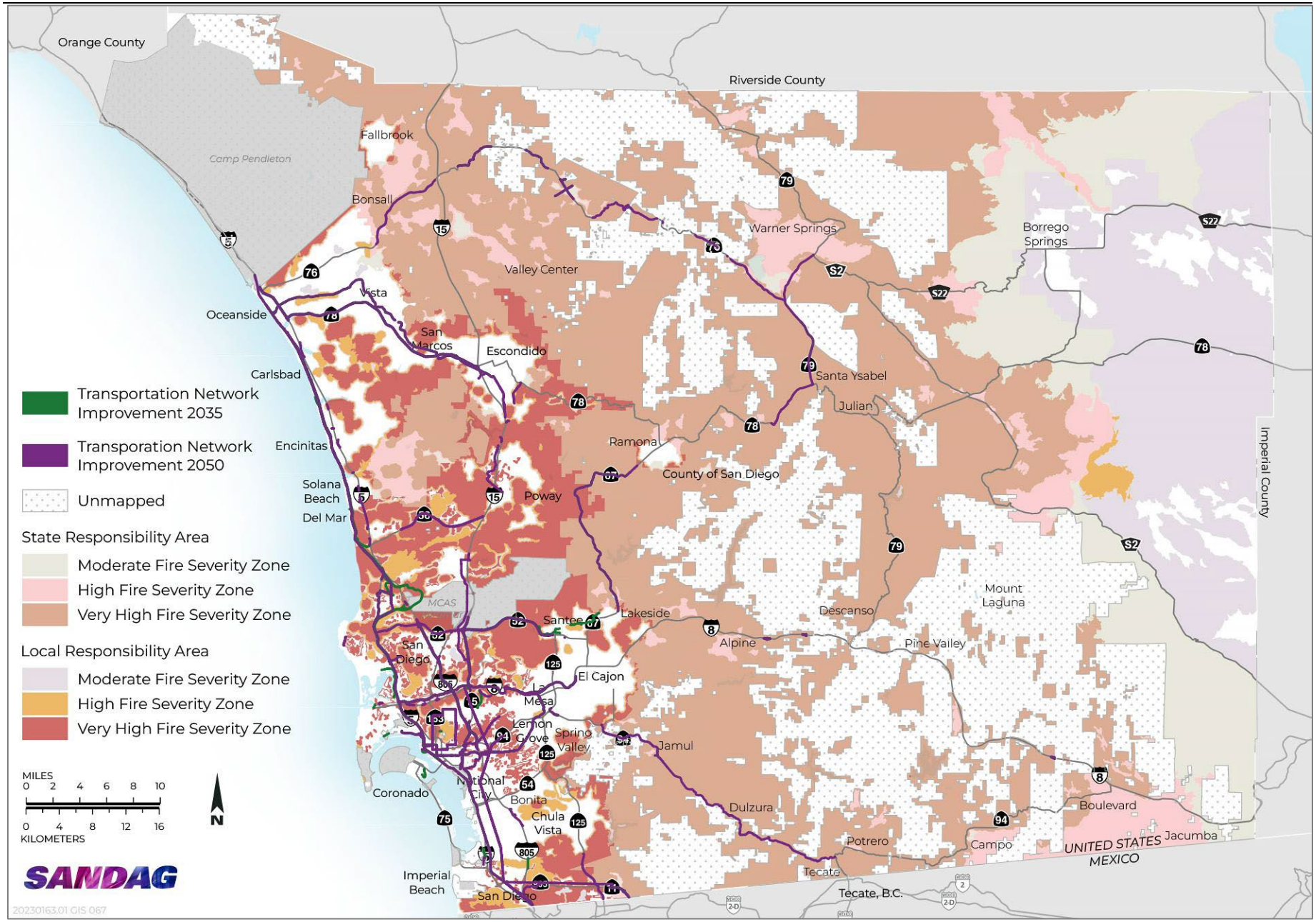
To accommodate regional growth and land uses by 2035, new development, including residential, mixed-use, commercial areas, and industrial centers, and civic facilities would be constructed. As shown on Figures 4.19-1 and 4.19-2, much of the San Diego region is subject to wildland fire hazards. While most regional growth and land use development would consist of infill, development on the edges of urban areas and in outlying could increase the threat of wildland fires on human populations and property, as development may be located closer to and within the WUIs and High and Very High FHSZs. In addition, increased development on the edges of urban areas and in outlying areas would expand the WUI by incrementally encroaching into less developed areas that may be prone to wildfire. Using the methodology described above in "Analysis Methodology," an estimated 20,635 acres of new development would occur within FHSZs by 2035. Of this total, approximately 16,400 acres would occur on land classified as a Very High FHSZ, while approximately 2,090 acres would occur in areas classified as a High FHSZ (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

The potential expansion of the WUI by new development would occur throughout the region; however, as noted above, the vast majority (i.e., approximately 93.3%) of the forecasted increase in regional growth and associated development between 2022 and 2035 would occur in the cities of San Diego, Chula Vista, and San Marcos (Figure 4.19-3). Based on a review of aerial imagery (i.e., Google Earth) and as indicated on Figure 4.19-3, portions of Chula Vista, particularly the eastern portion of the city, and San Marcos may have a higher degree of fire danger than other areas of the region, owing to expansive areas of native vegetation and steeper slopes that could fuel and accelerate a fire. Aside from the less developed areas in the eastern portion of the region, the western portion of the region is also at high risk for fire hazards as it contains hundreds of miles of WUI due to the multitude of canyons throughout the area. This high fire risk is also reflected in the High and Very High FHSZ designations for the area, as depicted in Figure 4.19-1. Development along the canyon rims places structures in proximity to natural vegetation. While the City of San Diego is the most urbanized of the three cities that would experience the majority of regional growth, there are several areas throughout the city that contain wildfire prone conditions, particularly in the city's various canyons and other suburban areas that abut natural vegetation.



Source: Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025.

Figure 4.19-3 Fire Responsibility Area and Wildfire Hazard Severity Zones



Source: Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025.

Figure 4.19-4 Transportation Network Improvement Fire Risk

Because of these existing land characteristics, around which many communities are formed, new growth and development in areas classified as High and Very High FHSZs and in the WUI may increase the risk of wildfire ignition, as humans are responsible for most wildfire ignitions. In 2022, more than half of all fires in California were caused by humans, and when miscellaneous and undetermined causes are included, that figure increases to 97 percent (CAL FIRE 2022). Human ignitions include a multitude of sources, including accidental escape from debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson. Thus, areas near human development, especially in the WUI or in areas near campgrounds and roads, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017). Common causes of wildfire in the region include equipment use, vehicle fires spreading into wildlands, accidental starts from warming or debris fires, and arson. As shown in Table 4.19-1, the predominant cause of wildfire changes from year to year in the SRA within San Diego County. When considered over the period of 2019 through 2023 and excluding miscellaneous and undetermined causes, the majority of the fires within the region (approximately 59 percent) were caused by vehicles, followed by equipment use and arson. As such, the primary causes of wildfire in the region can be attributed to increased development and human access to wildfire-prone areas of the county. Consequently, regional growth and associated development of land uses between 2022 and 2035 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. In addition, growth experienced between 2022 and 2035 may result in an increased demand for fire protection services and increased demand on the region's existing water supply. In the event of a major wildland fire, the lack of available fire response staff or adequate response times, or infrastructure constraints such as insufficient water supply, may also contribute to an increased risk of wildland fire ignition.

Wildland fires may result in immediate damage to infrastructure such as buildings and facilities, and long-term damage from loss of forests or vegetation that may lead to erosion and unstable surfaces. The provision of defensible space would create a separation zone between wildlands and structures. Any development or redevelopment constructed within areas classified as High and Very High FHSZs and adjacent to wildlands in the WUI would be subject to the federal, state, and local statutory and regulatory requirements discussed in Section 4.19.2, *Regulatory Setting*. Specifically, new construction would be subject to the CBC (Title 24 of the CCR), which includes safety measures to minimize the threat of fire. The provisions of the CFC (Title 24, Part 9 of the CCR) would apply to all construction, alteration, replacement, removal, and demolition. The CBC and CFC establish requirements that would be applicable during construction and demolition, including proper storage procedures for combustible materials and proper refueling protocol. In addition, the risk of accidental ignition of a wildland fire during construction in high risk areas (i.e., High and Very High FHSZs and WUI) would also be addressed through compliance with PRC Section 4427, which includes fire safety provisions that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on-site for various types of work in fire-prone areas. Moreover, Title 14 of the CCR sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards within SRAs. Requirements include ignition-resistant construction with exterior walls of noncombustible or ignition-resistant material from the surface of the ground to the roof system. Other fire-resistant measures would be applied to eaves, vents, windows, and doors to avoid any gaps that would allow intrusion by flame or embers.

Local jurisdictions' general plan policies and building codes enforce and expand on these requirements at the local level. In addition, local general plans contain policies and programs aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach. To effectively mitigate wildland fire hazards in the San Diego region, a multi-jurisdictional approach that involves federal, State, and local governments and fire agencies is necessary. Collectively, the local jurisdictions and fire agencies work together to prevent the loss of life in wildland fires, the ignition of structures by wildland fires, the encroachment of wildland fire into communities, and a wildfire-caused structural conflagration; as well as limit the size of wildland fires. Also, at the jurisdictional level, the continued monitoring and updating of existing

development regulations and plans reinforce the value of defensible space to further reduce the impact of wildfires on people and structures. Finally, public education and firefighter training, support, and emergency operations efforts help reduce the risks of impacts involving wildfires.

The existing laws, regulations, plans, and policies identified in Section 4.19.2, which are aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach, when coupled with the strategies above, would help reduce the risks posed to people and structures associated with wildland fires. However, due to the relatively large area within the San Diego region that is considered at high risk for wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, regional growth and land use development associated with the proposed Plan would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. This impact would be significant.

Transportation Network Improvements

Major transportation network improvements by 2035 include new Managed Lanes and Managed Lane connectors on SR 15, SR 52, SR 78, SR 125, I-5, I-15, and I-805. The proposed Plan also includes ~~Reversible Managed Lane improvements on SR 75,~~ improvements to rural corridors on SR 67, SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as tolling equipment and Regional Border Management System investments on SR 11. Upgrades at certain locations on the Los Angeles–San Diego–San Luis Obispo (LOSSAN) Rail Corridor would be implemented during this period. Other major network improvements include grade separations at certain locations on the SPRINTER, Green line, Blue Line, and Orange Line. Double-tracking is also proposed on the SPRINTER. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

The transportation network improvements that would be implemented between 2022 and 2035 generally would be focused in the highly urbanized western portion of the region (Figure 4.19-4), and portions of this area remain susceptible to wildland fires due to climate, topography, and native vegetation. Using the methodology described above, an estimated 986 acres of new transportation network improvements would be developed within FHSZs by 2035. Of the 986 acres, new transportation network improvements would occupy approximately 217 and 702 acres of land classified as High and Very High FHSZs, respectively, between 2022 and 2035 (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

Construction-related fire hazards associated with transportation network improvements include welding and heavy equipment operation. However, the construction of transportation network improvements in High or Very High FHSZ or the WUI would be subject to the federal, State, and local statutory and regulatory requirements discussed in Section 4.19.2. This includes Title 24 of the CCR, which includes safety measures to minimize the threat of fire. In addition, PRC Section 4427 includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas. The provisions of the fire code would apply to all construction, alteration, replacement, removal, and demolition. The risk of accidental ignition of a wildland fire during construction in high risk areas (i.e., High and Very High FHSZs and WUI) would be addressed through standard construction practices, which address the potential for sparks generated by construction equipment, the potential for spills of ignitable materials, and emergency procedures to immediately respond to these conditions. Compliance with these regulations would reduce the likelihood that construction-related impacts associated with transportation network improvements occur.

In general, transportation projects and facilities are not typically susceptible to substantial damage from wildfires (i.e., because they are constructed of concrete and other non-flammable materials) and would not contribute added fuel to wildfires. In the case of megafires, however, which are exceptionally large, intense, and driven by extreme weather, the level of destruction can be such that transportation infrastructure is affected by closure, structural damage to road surfaces, mudslides and debris flows from adjacent slopes, and damage to utilities that

support transportation infrastructure (e.g., power lines, communication systems) (see Section 4.19.1, "Anticipated Effects of Climate Change," for additional discussion). More typically, the most noticeable effect of wildland fires on transportation systems are temporary interruption of service with little expectation of damage to property or injury to people. In addition, improving the capacity of the existing transportation network would result in increased use of the existing corridors beyond the terminus of current conditions, indirectly enhancing potential evacuation routes and/or providing additional firebreaks. All future transportation network improvements would be subject to project-specific environmental review, at which time mitigation measures would be identified, as applicable, to address potential impacts associated with increased risk of wildland fire ignition.

Although the majority of transportation improvements between 2022 and 2035 would be focused in the highly urbanized western portion of the region, the proposed Plan also includes improvements to rural intersections and interchanges on SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. These improvements would be located in areas prone to wildfire. Areas near human development, especially in the WUI or in areas near campgrounds and roads, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017). Common causes of wildfire in the region include equipment use, vehicle fires spreading into wildlands, accidental starts from warming or debris fires, and arson. As shown in Table 4.19-1, when considered over the period of 2019 through 2023 and excluding miscellaneous and undetermined causes, the majority of the fires within the region (approximately 59 percent) were caused by vehicles. Thus, implementation and operation of the transportation network improvements associated with the proposed Plan would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. Impacts would be significant.

2035 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. These wildfire ignition risks would be exacerbated in areas classified as High and Very High FHSZs and in the WUI, as humans are responsible for most wildfire ignitions. Therefore, this impact (WF-1) would be significant.

2050

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the region is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units would be developed in the City of San Diego (51.6%), City of Chula Vista (17.1%), and unincorporated jurisdictions. Similarly, these same three jurisdictions would accommodate approximately 70.3% of new jobs between 2036 and 2050.

Similar to the 2035 analysis, new development, including residential, mixed-use, commercial areas, and industrial centers, and civic facilities would be constructed to accommodate regional growth between 2036 and 2050. Using the methodology described above, an estimated 2,608 acres of new development would occur within FHSZs by 2050. Of this total, approximately 2,305 acres would occur on land classified as a Very High FHSZ, while approximately 200 acres would occur in areas classified as a High FHSZ (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025). Although the regional population is forecasted to slightly decrease by 2050, new housing would continue to be developed in the City of San Diego, City of Chula Vista, and the unincorporated jurisdictions. In some instances, this new housing development, particularly in the unincorporated parts of the county, may not be contiguous to existing developed areas and would represent an expansion of the WUI. Thus, new development in areas classified as High and Very High FHSZs and in the WUI could increase the risk of wildfires as humans are responsible for most wildfire ignitions. Consequently, development of land uses

between 2036 and 2050 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. In addition, growth experienced between 2036 and 2050 may result in an increased demand for fire protection services and increased demand on the region's existing water supply. In the event of a major wildland fire, the potential lack of available fire response staff or adequate response times, or infrastructure constraints such as insufficient water supply, would also contribute to an increased risk of loss, injury and death from wildland fire ignition.

Local jurisdictions' general plan policies and building codes enforce and expand on these requirements at the local level. In addition, local general plans contain policies and programs aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach. To effectively mitigate wildland fire hazards in the San Diego region, a multi-jurisdictional approach that involves federal, State, and local governments and fire agencies is necessary. Collectively, the local jurisdictions and fire agencies work together to prevent the loss of life in wildland fires, the ignition of structures by wildland fires, the encroachment of wildland fire into communities, and a wildfire-caused structural conflagration; as well as limit the size of wildland fires. Also, at the jurisdictional level, the continued monitoring and updating of existing development regulations and plans reinforce the value of defensible space to further reduce the impact of wildfires on people and structures. Finally, public education and firefighter training, support, and emergency operations efforts help reduce the risks of impacts involving wildfires.

The existing laws, regulations, plans, and policies identified in Section 4.19.2, which are aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach, when coupled with the strategies above, would help reduce the risks posed to people and structures associated with wildland fires. However, due to the relatively large area within the San Diego region that is considered at high risk for wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, regional growth and land use development associated with the proposed Plan would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. This impact would be significant.

Transportation Network Improvements

Major transportation network improvements by 2050 include new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, ~~SR 75,~~ SR 94, SR 125, SR 163, I-15, and I-805, several of which will be a continuation of improvements from 2035. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as expansion of and improvements to existing port of entry facilities, which will continue during this period. Upgrades at certain locations on the LOSSAN Rail Corridor would continue during this period. Grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, as well as double-tracking on the SPRINTER would also continue during this period. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

Similar to the 2035 analysis, the majority of transportation network improvements that would be implemented between 2036 and 2050 would occur in the highly urbanized western portion of the region; however, portions of this area remain susceptible to wildland fires due to climate, topography, and native vegetation. Using the methodology described above, an estimated 1,287 acres of new transportation network improvements would be developed within FHSZs by 2050. Of the 1,287 acres, new transportation network improvements would occupy approximately 215 and 988 acres of land classified as High and Very High FHSZs, respectively, between 2036 and 2050 (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

Construction-related fire hazards associated with transportation network improvements include welding and heavy equipment operation. However, the construction of transportation network improvements in High or Very High FHSZ or the WUI would be subject to the federal, State, and local statutory and regulatory requirements discussed in Section 4.19.2. Compliance with these regulations would reduce the likelihood that construction-related impacts associated with transportation network improvements occur.

Although the majority of transportation improvements between 2036 and 2050 would be focused in the highly urbanized western portion of the region, the proposed Plan also includes new Managed Lanes and Managed Lane

Connectors on SR 52, SR 56, SR 94, SR 125, SR 163, I-15, and I-805, as well as upgrades at certain locations on the LOSSAN Rail Corridor, grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, and double-tracking on the SPRINTER. These improvements would be located in areas prone to wildfire. Areas near human development, especially in the WUI or in areas near campgrounds and roads, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017). Common causes of wildfire in the region include equipment use, vehicle fires spreading into wildlands, accidental starts from warming or debris fires, and arson. As shown in Table 4.19-1, when considered over the period of 2019 through 2023 and excluding miscellaneous and undetermined causes, the majority of the fires within the region (approximately 59 percent) were caused by vehicles. Thus, implementation and operation of the transportation network improvements associated with the proposed Plan would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. Impacts would be significant.

2050 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. Wildfire ignition risks associated with land use development and transportation network improvements would be exacerbated in areas classified as High and Very High FHSZs and in the WUI, as humans are responsible for most wildfire ignitions. Therefore, the impact (WF-1) would be significant.

Impacts of the Proposed Plan with Future Climate Change

With continued climate change, growth and land use change and transportation network improvements in the region would result in increased risk of wildland fire ignition that would expose additional people and structures to significant risk of loss, injury, or death involving wildland fires. Climate change is expected to result in a longer and less predictable fire season and drive factors that may worsen wildfires, such as more frequent and intense dry Santa Ana winds, drier autumns, and increased development and presence of dead fuels (Kalansky et al. 2018). The proposed Plan would increase development and transportation network improvements in High and Very High FSHZs and the WUI, heightening the risk of ignitions from human sources that would threaten existing development, as well as exposing more people and structures to wildfires.

MITIGATION MEASURES

WF-1 INCREASE RISK OF WILDLAND FIRE IGNITION AND DIRECTLY OR INDIRECTLY EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDLAND FIRES.

2035, 2050

WF-1 Reduce Wildfire Risk for Development and Transportation Projects.

During planning, design, and project-level CEQA review of future development and transportation projects located in State Responsibility Areas (SRAs) or Local Responsibility Areas (LRAs) classified by CAL FIRE as High and Very High Fire Hazard Severity Zones (FHSZs), as well as the Wildland-Urban Interface (WUI), SANDAG shall, to the degree allowed by its authority, and other agencies (the County of San Diego, cities, and other local jurisdictions such as fire protection agencies) can and should ensure that project applicants implement measures to reduce wildfire impacts. Such measures include, but are not limited to, the following:

- Reducing the area and density of allowable development, through general plan updates and other processes, within areas mapped by CAL FIRE as High and Very High FHSZs.
- Establishing site-specific safety measures for new development and transportation projects to protect local resources from wildfire. Such measures may include fire hazard identification (e.g., flammable and combustible materials, ignition sources), hazard controls and safeguards (e.g., setbacks, containment),

equipment maintenance, fire protection technology and equipment (e.g., fire alarm, suppression, and shut-off systems), employee/worker training, agency coordination and mutual aid, and other elements.

- Preparing project-specific fire protection plans for new development and transportation projects. Fire protection plans should be developed by the project applicant during project-level CEQA review and identify measures that reduce the risk of structural and human loss from wildfire, such as the use of ignition resistant materials, incorporation of fuel modification techniques and brush clearance, and providing for adequate fire-flow water supply in compliance with applicable fire safety regulations. Fire protection plans should be based on appropriate wildfire modeling that accounts for site-specific conditions related to wildfire.
- Educating residents and businesses regarding local emergency communications and notification systems (e.g., Firewise USA, Community Risk Reduction).
- Adhering to the most current building code requirements for new development and transportation projects, including ignition-resistant construction and inclusion of design features that prevent the intrusion of flames and embers. Fire-resistant features could include ember-resistant vents, fire-resistant roofs, and maintenance of defensible spaces around structures.
- Ensuring sufficient emergency water supply and pressure (local water providers) in accordance with the Emergency Water Standards of the SRA Minimum Fire Safe Regulations (CCR Title 14, Division 1.5, Section 1270 et seq) and most current version of the California Fire Code (CCR Title 24, Part 9) for new projects by working with water management agencies.
- Enforcing state and local defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash, and other flammable material away from structures.
- Providing public education about wildfire risk and fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place.
- Planning for and promoting rapid revegetation of burned areas to help prevent erosion and protect bare soils.
- Developing a regulatory mechanism for permitting an aggressive hazardous fuels management program.
- Establishing standards for fuel breaks that can slow or stop a wildfire advancing into a community or into the wildlands. Fuel breaks shall be strategically located to protect a community, structures, or routes of access and egress. Strategic locations may include ridgelines, greenbelts, or other locations to manage embers or support community-level fire suppression tactics.
- SANDAG shall facilitate minimizing future impacts to fire protection services through information sharing regarding fire-wise land management (vegetation data, fire-resistant building materials, locations where development is vulnerable to wildfire, and best practices for safe land management) with county and city planning departments.
- SANDAG, in partnership with technical experts and stakeholders, shall launch or continue existing initiatives to help local cities and counties to protect communities and economies in the San Diego region from disruption as a result of wildfire occurrences. Initiatives could include, but would not be limited to, seminars that review the risk of wildfire and approaches for preparation, including strengthening of infrastructure, emergency services, emergency evacuation plans and reviewing building safety codes.

SIGNIFICANCE AFTER MITIGATION

2035, 2050

Mitigation measure WF-1 would reduce this impact by requiring measures to preclude or substantially reduce the risk of wildland fire ignition in High and Very High FHSZs and the WUI. For example, reducing the area and density of allowable development in areas mapped by CAL FIRE as High and Very High FHSZs would reduce the number of people and structures in these fire-prone zones, potentially reduce areas of WUI, and reduce potential sources

of ignition. These measures, in conjunction with the other measures described in mitigation measure WF-1, would reduce the potential for the proposed Plan to exacerbate wildland fire risks. In addition, wildfire ignition risk would be reduced by requiring specific design features for new development per mitigation measure WF-1. However, due to the relatively large area within the San Diego region that is considered at high risk for wildland fires, and because regional growth, land use development, and transportation network improvements could still occur in areas where wildlands are adjacent to urbanized areas and where residences are intermixed with wildlands, the proposed Plan would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, this impact (WF-1) would remain significant and unavoidable.

WF-2 DUE TO SLOPE, PREVAILING WINDS, AND OTHER FACTORS, EXACERBATE WILDFIRE RISKS, AND THEREBY EXPOSE PROJECT OCCUPANTS TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE.

Analysis Methodology

This section analyzes the types of conditions under which the forecasted regional growth and land use change and the planned transportation network improvements of the proposed Plan would exacerbate wildfire risks (i.e., worsen an existing wildfire hazard) due to slope, prevailing winds, and other factors, and thereby expose people to pollution concentrations from a wildfire. Geographic Information System analysis is used to quantify the acreage of projected regional growth and land use change and planned transportation network improvements in High and Very High FHSZs within SRAs and LRAs. CAL FIRE FHSZ mapping considers vegetation, topography (slope), weather (including winds), crown fire potential, and ember production and movement (CAL FIRE 2025b); therefore, these data were used to identify areas likely to have slope, winds, and other factors that could exacerbate fire risks if developed. Acreages were calculated by overlaying the forecast regional growth and land use footprint and the transportation network improvements footprint onto mapped CAL FIRE data for High and Very High FHSZs in the San Diego region. Acres of each footprint that would expand into the High and Very High FHSZs are quantified and identified as areas where wildfire risk could be exacerbated due to slope, prevailing winds, and other factors. In addition, while not quantified, the analysis also considers areas of the region that are currently unclassified (e.g., within an FRA) but are considered wildfire prone based on vegetation, topography, and other factors that influence wildfire.

High and Very High FHSZs are areas in which slopes, prevailing winds, and other factors are conducive to wildfire risk. Where the analysis identifies exacerbated wildfire risks (i.e., instances where existing wildfire hazards are worsened), it then examines whether such exacerbated wildfire risks would expose project occupants to (1) pollutant concentrations from a wildfire or (2) the uncontrolled spread of a wildfire. A significant impact would occur if forecasted regional growth and land use development or planned transportation network improvements would exacerbate wildfire risk and either result in exposure of project occupants to pollutant concentrations from a wildfire or the uncontrolled spread thereof.

Impact Analysis

2035

Regional Growth and Land Use Change

As shown in Table 2-1, in Section 2.0, "Project Description," of this Draft EIR, from 2022 to 2035, the region is forecasted have an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035.

Wildfire behavior is a product of several variables—primarily weather, vegetation, topography, and human influences—that intermix to produce local and regional fire regimes that affect how, when, and where fires burn (NPS 2017). The continuity of fuels, expressed in both horizontal and vertical components, is also a determinant of wildfire potential and behavior. Topography is important because it affects the movement of air, which in turn affects the movement of fire, over the ground surface. The slope and shape of terrain can change the speed at which the fire travels, and the ability of firefighters to reach and extinguish the fire. Weather affects the probability of wildfire and has a significant effect on its behavior. Temperature, humidity, and wind (both short- and long-term) affect the severity and duration of wildfires (County of San Diego 2023a).

The San Diego region's topography consists of a semiarid coastal plain and rolling highlands, which, when fueled by shrub overgrowth, occasional Santa Ana winds, and high temperatures, creates an ever-present threat of wildfire. In addition, extended droughts, characteristic of the region's Mediterranean climate and exacerbated by climate change, result in large areas of dry vegetation that provide fuel for wildland fires. Extreme weather conditions, such as high temperatures, low humidity, and winds of extraordinary force, may cause an ordinary fire to expand into one of massive proportions. Wildfire risk tends to be high in locations with dense vegetation, dry conditions, and steep slopes. As such, there is a high wildfire risk in the hills and mountains in the eastern San Diego region where sparse development intermingles with fire-prone native vegetation. However, urban areas can also be at risk where the unique mesa-canyon topography of coastal San Diego puts development in proximity to steep slopes and dense vegetation.

As discussed under WF-1, regional growth and land use development between 2022 and 2035 in wildfire-prone areas of the unincorporated county (i.e., High and Very High FHSZs and WUI) would exacerbate existing wildfire hazards by increasing the risk of wildfire ignition. While most regional growth and land use development would consist of infill, development on the edges of urban areas and in outlying areas could increase the threat of wildland fires on human populations and property, as development may be located closer to and within the WUI and High and Very High FHSZs. In addition, increased development on the edges of urban areas and in outlying areas would expand the WUI by incrementally encroaching into less developed, more highly vegetated areas that may be prone to wildfire. These wildfire hazards would be increased where new development is constructed in areas of the San Diego region with steep topography (e.g., parts of Chula Vista and San Marcos, and canyons in western parts of the County) and strong winds because those conditions contribute to the uncontrolled spread of wildfires and make wildfires more difficult to contain.

In addition to vegetation and structural loss, wildfires also affect public health. Fire-related injuries and deaths are likely to increase as wildfires occur more frequently. Wildfires can also be a significant contributor to air pollution. When communities are located in areas that burn frequently, wildfire smoke, which can travel for miles, has a negative effect on human health (Black et al. 2017). Wildfire smoke contains numerous toxic and hazardous pollutants that are dangerous to breathe and can worsen lung disease and other respiratory conditions (County of San Diego 2023a). Exposure to particulate matter generated by wildfire events can result in significant health problems, including aggravated asthma, increased susceptibility to respiratory infections, and heart attacks and arrhythmias in people with heart disease (Sacramento Metropolitan Air Quality Management District 2018). Thus, the increased risk of wildfire as a result of the proposed Plan would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire. Section 4.3, "Air Quality," evaluates human health air quality effects of exposure to particulate matter; the proposed Plan's particulate and related health impacts disclosed in that section would be increased by exposure to wildfire smoke.

The existing laws, regulations, plans, and policies identified in Section 4.19.2, which are aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach, when coupled with the strategies above, would help reduce the risks posed to people and structures associated with wildland fires. However, due to the relatively large area within the San Diego region that is considered at high risk for wildland fires, including areas of the region with steep topography or strong winds, regional growth and land use development associated with the proposed Plan would exacerbate wildfire risk, thereby exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. This impact would be significant.

Transportation Network Improvements

Major transportation network improvements by 2035 include new Managed Lanes and Managed Lane connectors on SR 15, SR 52, SR 78, SR 125, I-5, I-15, and I-805. The proposed Plan also includes ~~Reversible Managed Lane improvements on SR 75,~~ improvements to rural corridors on SR 67, SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as tolling equipment and Regional Border Management System investments on SR 11. Upgrades at certain locations on the LOSSAN Rail Corridor would be implemented during this period. Other major network improvements include grade separations at certain locations on the SPRINTER, Green line, Blue Line, and Orange Line. Double-tracking is also proposed on the SPRINTER. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

As discussed under WF-1, although the majority of transportation improvements between 2022 and 2035 would be focused in the highly urbanized western portion of the region, the proposed Plan also includes improvements to rural intersections and interchanges on SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. These improvements would be located in areas prone to wildfire. Areas near human development, especially in the WUI or in areas near campgrounds and roads, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017). Common causes of wildfire in the region include equipment use, vehicle fires spreading into wildlands, accidental starts from warming or debris fires, and arson. These wildfire hazards would be increased if transportation network improvements implemented under the proposed Plan would be located in areas of the San Diego region with steep slopes and subject to high wind speeds because those conditions contribute to the uncontrolled spread of wildfires and make wildfires more difficult to contain. This would include many of the roadways that extend through the more rural parts of the region, which traverse through areas classified as High and Very High FHSZs and the WUI. In addition, as discussed above, wildfires also affect public health through fire-related injuries and deaths as well as increased air pollution from wildfire smoke. Thus, because implementation and operation of the transportation network improvements associated with the proposed Plan would exacerbate wildfire risk, including in areas where natural conditions make wildfires more difficult to contain, they can expose people to pollutant concentrations from a wildfire and to the uncontrolled spread of wildfire. This impact would be significant.

2035 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would exacerbate wildfire risk due to development in areas with steep slopes, areas subject to strong winds, and other factors. The increased risk of wildfire as a result of the proposed Plan would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire and the uncontrolled spread of wildfire. Therefore, impacts related to the exposure of project occupants to pollutant concentrations from wildfire and the uncontrolled spread of wildfire (WF-2) would be significant.

2050

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the region is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units would be developed in the City of San Diego (51.6%), City of Chula Vista (17.1%), and unincorporated jurisdictions. Similarly, these same three jurisdictions would accommodate approximately 70.3% of new jobs between 2036 and 2050.

As described in the 2035 analysis, new development under the proposed Plan would occur in areas classified as High and Very High FHSZs and the WUI, which would increase the risk of wildfires as humans are responsible for most wildfire ignitions. These wildfire hazards would be increased if new development would be located in areas of the San Diego region with steep topography or subject to strong winds because those conditions contribute to the uncontrolled spread of wildfires and make wildfires more difficult to contain. Consequently, development of land

uses between 2036 and 2050 would exacerbate wildfire risk due to slope, strong winds, and other factors. This exacerbated wildfire risk would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire and to the uncontrolled spread of wildfire.

The existing laws, regulations, plans, and policies identified in Section 4.19.2, which are aimed at reducing the risk of wildland fires through land use compatibility, training, sustainable development, brush management, and public outreach would help reduce the risks posed to people and structures associated with wildland fires. However, due to the relatively large area within the San Diego region that is considered at high risk for wildland fires, including areas of the region with steep topography or strong winds, regional growth and land use development associated with the proposed Plan would exacerbate wildfire risk, thereby exposing project occupants to pollutant concentrations from wildfire and the uncontrolled spread of wildfire. This impact would be significant.

Transportation Network Improvements

Major transportation network improvements by 2050 include new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, ~~SR 75,~~ SR 94, SR 125, SR 163, I-15, and I-805, several of which will be a continuation of improvements from 2035. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as expansion of and improvements to existing port of entry facilities, which will continue during this period. Upgrades at certain locations on the LOSSAN Rail Corridor would continue during this period. Grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, as well as double-tracking on the SPRINTER would also continue during this period. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

Similar to the 2035 analysis, the majority of transportation network improvements that would be implemented between 2036 and 2050 would occur in the highly urbanized western portion of the region; however, portions of this area remain susceptible to wildland fires due to climate, topography, and native vegetation. Although the majority of transportation improvements between 2036 and 2050 would be focused in the highly urbanized western portion of the region, the proposed Plan also includes new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, SR 94, SR 125, SR 163, I-15, and I-805, as well as upgrades at certain locations on the LOSSAN Rail Corridor, grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, and double-tracking on the SPRINTER. These improvements would be located in areas prone to wildfire. These wildfire hazards would be increased if transportation network improvements implemented under the proposed Plan would be located in areas of the San Diego region with steep slopes and subject to high wind speeds because those conditions contribute to the uncontrolled spread of wildfires and make wildfires more difficult to contain. This would include many of the roadways that extend through the more rural parts of the region, which traverse through areas classified as High and Very High FHSZs and the WUI. In addition, as discussed above, wildfires also affect public health through fire-related injuries and deaths as well as increased air pollution from wildfire smoke.

Thus, because implementation and operation of the transportation network improvements associated with the proposed Plan would exacerbate wildfire risk, including in areas where natural conditions make wildfires more difficult to contain, they can expose people to pollutant concentrations from a wildfire and to the uncontrolled spread of wildfire. This impact would be significant.

2050 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would exacerbate wildfire risk due to slope, strong winds, and other factors. The increased risk of wildfire as a result of regional growth, land use development, and transportation network improvements would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire and to the uncontrolled spread of wildfire. High pollutant concentrations can exacerbate other health issues and can contribute to premature deaths. Therefore, impacts related to the exposure of people to pollutant concentrations from wildfire (WF-2) would be significant.

Impacts of the Proposed Plan with Future Climate Change

With future climate change, growth and land use change and transportation network improvements in the region would result in increased exposure of people to significant risks of pollutant concentrations as a result of wildfire. Wildfire smoke contains gaseous pollutants (e.g., carbon monoxide), hazardous air pollutants (HAPs) (e.g., polycyclic aromatic hydrocarbons [PAHs]), water vapor, and particle pollution (US EPA 2025). Exposure to these pollutants and fine particulate matter ($PM_{2.5}$) can cause mortality and cardiovascular disease and is associated with onset and worsening of respiratory conditions (Law et al. 2025). As climate change exacerbates wildfire risk, $PM_{2.5}$ emissions from wildfires have increased, worsening air quality. The proposed Plan would expand and increase development in the High and Very High FHSZs and WUI, exposing more people to wildfires and resultant increased pollutant concentrations, adversely affecting air quality and public health.

MITIGATION MEASURES

WF-2 DUE TO SLOPE, PREVAILING WINDS, AND OTHER FACTORS, EXACERBATE WILDFIRE RISKS, AND THEREBY EXPOSE PROJECT OCCUPANTS TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE.

2035, 2050

Implement Mitigation Measure WF-1: Reduce Wildfire Risk for Development and Transportation Projects, as described above.

SIGNIFICANCE AFTER MITIGATION

2035, 2050

Mitigation measure WF-1 would reduce this impact by requiring measures to preclude or substantially reduce the risk of wildland fire ignition in High and Very High FHSZs and the WUI. For example, reducing the area and density of allowable development in areas mapped by CAL FIRE as High and Very High FHSZs would reduce the number of people and structures in these fire-prone zones, potentially reduce areas of WUI, and reduce potential sources of ignition. These measures, in conjunction with the other measures described in mitigation measure WF-1, would reduce the potential for the proposed Plan to exacerbate wildland fire risks. In addition, wildfire ignition risk would be reduced by requiring specific design features for new development per mitigation measure WF-1. To the extent that these measures reduce impacts associated with exacerbating wildfire risk, they would also reduce the exposure of County residents to uncontrolled wildfire spread and to harmful pollutant concentrations in the form of wildfire smoke. However, given the relatively large area within the San Diego region considered at high risk for wildland fires and the level of uncertainty regarding the location, frequency, and severity of future wildfires, impacts of exacerbated wildfire risks and the risks associated with wildfire smoke pollution may not be reduced to less than significant. When wildfires occur, weather conditions (e.g., strong winds) usually are such that major portions of the regional population are exposed to dangerous pollution concentrations from wildfire smoke. For these reasons, this impact (WF-2) would remain significant and unavoidable.

WF-3 REQUIRE THE INSTALLATION OR MAINTENANCE OF ASSOCIATED INFRASTRUCTURE (SUCH AS ROADS, FUEL BREAKS, EMERGENCY WATER SOURCES, POWER LINES OR OTHER UTILITIES) THAT MAY EXACERBATE FIRE RISK OR THAT MAY RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT.

Analysis Methodology

This section incorporates the analysis methodology used for WF-1 to evaluate exacerbation of wildfire risks (i.e., worsening an existing wildfire hazard) but focuses on components of future projects under the proposed Plan that include development of public infrastructure and services, such as water sources, power lines, and access roads, required to support regional growth and transportation network projects. The potential to exacerbate wildfire risk or result in temporary impacts on the environment is qualitatively analyzed based on the expected need for

infrastructure, primarily in areas where new development would include expansion of these services. The need for expanded public services and utility infrastructure identified in PS-1 and U-1 in Section 4.15, "Public Services, Recreation, and Utilities" has been considered in the analysis below for WF-3.

Impact Analysis

2035

Regional Growth and Land Use Change

As shown in Table 2-1, in Section 2.0, "Project Description," of this Draft EIR, from 2022 to 2035, regional growth is forecast to result in an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035. In these cities, higher demand for new utility infrastructure, upgraded systems, and/or expansions would occur, while demand for utilities would also increase throughout the region in response to forecasted growth. In general, regional growth and land use development in urban areas, largely within the LRA as it relates to wildfire risk, would have less demands on utilities than more rural areas that are less comprehensively served by existing utility infrastructure.

The San Diego County Water Authority (SDCWA) has indicated that it has sufficient supply, storage capacity, and delivery capability to satisfy water demands through 2035 (SDCWA 2021). The SDCWA has completed a number of major capital projects in recent years, such as the additional storage capacity at San Vicente Reservoir completed in 2014. In addition, SDCWA's 2024 Master Plan identifies several additional water facility projects to be considered for implementation within the next 10 years through 2035 (see Section 4.18, "Water Supply," for more details). Connections for new water service within the LRA, and often within the SRA, would typically be accomplished via trenching within public rights-of-way (ROW) and installing new water pipelines. There is nothing inherent in the construction or maintenance of water infrastructure that would result in increased risk of wildfire. It is reasonable to assume that fire risks associated with construction activities for water service infrastructure would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to existing regulations and best management practices (BMPs) for fire prevention described in Section 4.19.2, above. Specifically, construction activities associated with the installation of new water service infrastructure would be subject to PRC Section 4427, which includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas.

Regional population growth would result in an increase in the amount of wastewater generated, especially in the cities of San Diego, San Marcos, and Chula Vista. As discussed in Section 4.15, forecasted growth in 2035 in accordance with the proposed Plan would trigger the need for the provision of new or expanded wastewater treatment facilities and collection systems. Smaller treatment plants throughout the region may reach capacity and may also need to be expanded. Development in existing communities would require expansion or upsizing of existing collection and treatment systems, while development in new areas would require installation of new collection and treatment systems. Development in rural residential areas would also require onsite wastewater treatment facilities, such as septic tanks. The pipelines associated with these new and expanded facilities would be installed underground, typically in the public ROW. As with water infrastructure, there is nothing inherent in the construction or maintenance of wastewater infrastructure that would result in increased risk of wildfire. It is reasonable to assume that fire risks associated with construction activities for wastewater infrastructure would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific

environmental review, as applicable, as well as adherence to the existing regulations and BMPs for fire prevention described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427, as described above for water infrastructure.

As discussed in Section 4.6, "Energy," the region's energy demands will increase along with the region's population. Projected growth would trigger the need for new or expanded energy facilities, including power plants, distributed generation, electrical transmission and distribution infrastructure, and natural gas facilities (e.g., storage, pipelines). The impacts of construction energy-generating facilities could have a range of impacts depending on the facility type, size, and location. The provision of new or expanded energy-generation facilities would result in construction-related impacts. Additional demand for natural gas may also require the construction of new supply, conveyance, storage, and distribution infrastructure. It is reasonable to assume that fire risks associated with construction activities for energy infrastructure would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to existing fire prevention regulations and BMPs described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427, as described above for water infrastructure.

Relatedly, additional transmission lines would be needed to meet growing demand for electricity resulting from regional population, housing, and employment growth. Additional facilities would also be needed depending on the location and timing of regional growth and the location of new energy generation facilities. Forecast regional growth and land use development would primarily occur in or adjacent to areas that are already developed and have electricity and natural gas infrastructure in place. This would be particularly the case in the LRA, and to a lesser extent, in the SRA in areas where new development is contiguous to existing development. Although this would reduce the need for construction of new facilities in other areas, the increases in demand for electricity, and development in non-contiguous or topographically constrained areas within the SRA, would potentially create a need for new transmission lines routed across undeveloped land.

The construction and operation of new overhead transmission lines across natural habitat within High or Very High FHSZs or the WUI would exacerbate wildfire risk. Wildfires are often caused along transmission lines from downed lines, direct contact with vegetation, and line faults and equipment failures. Most common are downed lines or arcing between conductors that generates heat and sparks and ignite vegetation (WFCA 2024). Many hundreds of thousands of acres in California alone have been burned as a result of wildfires caused by power line failures in recent years. In the summer of 2018 alone, 17 large wildfires were caused in the state as a result of downed power lines, with the State's deadliest fire, the Camp Fire, occurring in November of that year. The Camp Fire claimed more than 80 lives and destroyed over 18,000 structures (Atkinson 2018, New York Times 2025). In 2019, downed power lines ignited Sonoma County's Kincade Fire, which burned approximately 77,700 acres and destroyed 374 structures (CAL FIRE 2025f). In 2021, the Dixie Fire, also caused by electrical equipment, became the second largest wildfire in California history, burning 963,000 acres north of Chico. The 2021 Dixie Fire, which claimed one life and destroyed 1,311 structures, was the last catastrophic wildfire in California confirmed to be caused by utility equipment (Cal Matters 2024). While still under investigation, radio communications and eyewitness accounts from firefighters responding to the 2025 Eaton Fire suggest that power lines may have sparked new fires after the Eaton Fire initially began (NPR 2025).

Because of the higher potential for fire risk from electrical infrastructure (e.g., power lines in contact with vegetation or hazard trees, sparks from equipment malfunction or failure), electrical utility companies place a high priority on safety during construction and operation (SDG&E 2025a). Common solutions to mitigate fire risk include rigorous vegetation management, use of fire-resistant utility poles, undergrounding distribution lines for resilience, deploying advanced technology for predictive maintenance, implementing strategic planned power outages, and other measures. In addition, new overhead transmission lines in high fire risk areas would be subject to CPUC General Order 95, which governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 of General Order 95 generally states that design, construction, and maintenance of overhead electrical lines should be done in accordance with accepted good practices for the given location conditions known at the

time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment (see Section 4.19.2 for the specific requirements of General Order 95).

As part of its ongoing strategy to reduce wildfire risk and the impact of Public Safety Power Shutoffs during adverse weather conditions, SDG&E is currently implementing its Strategic Undergrounding Program. The program was established in 2019 and involves removing existing overhead power lines and placing them underground in areas of the region that are at the greatest risk for wildfires. Specifically, the Strategic Undergrounding Program focuses on HFTD Tier 3 and Tier 2 areas, which consist of areas on the CPUC Fire-Threat Map where there is an extreme and elevated risk, respectively, from wildfires associated with overhead power lines or facilities (see Section 4.19.1 for additional details) (SDG&E 2023). Work associated with the program is anticipated to continue through 2032, with a goal of undergrounding approximately 1,500 miles of powerlines (SDG&E 2025b). As shown in Table 4.19-1, although electrical equipment failure is not one of the primary causes of wildfire in the San Diego region, absent a commitment to underground all future lines serving new development in High and Very High FHSZs and the WUI, new electrical transmission infrastructure would exacerbate the risk of wildfire ignition in the region. Accordingly, impacts related to exacerbating wildfire risks from the installation of infrastructure to serve regional growth and land use change by 2035 would be significant.

Current fire planning in San Diego County does not call for additional fire roads or fuel breaks (County of San Diego Fire Authority 2019); therefore, no impacts from the creation of fire breaks or fire roads are anticipated.

Transportation Network Improvements

Major transportation network improvements by 2035 include new Managed Lanes and Managed Lane Connectors on SR 15, SR 52, SR 78, SR 125, I-5, I-15, and I-805. The proposed Plan also includes ~~Reversible Managed Lane improvements on SR-75,~~ improvements to rural corridors on SR 67, SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as tolling equipment and Regional Border Management System investments on SR 11. Upgrades at certain locations on the Los Angeles–San Diego–San Luis Obispo (LOSSAN) Rail Corridor would be implemented during this period. Other major network improvements include grade separations at certain locations on the SPRINTER, Green line, Blue Line, and Orange Line. Double-tracking is also proposed on the SPRINTER. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

Utilities serving regional transportation network improvements developed between 2022 and 2035 would consist primarily of electrical lines for signage, signals, and LRT propulsion along with reclaimed water lines for landscape irrigation. These utility lines would be constructed within the transportation facility ROW. Electrical transmission would occur primarily via underground conduit, while water lines for irrigation would similarly be installed underground. Because underground lines would not be exposed to dry vegetation or hazardous trees, and because sparks from failure or malfunction would be contained within underground conduit and vaults, such lines would pose minimal fire risk. In those instances where aboveground electrical facilities are required, such as substations, the facilities would be in urban areas with buffers from any vegetation. Impacts associated with exacerbation of wildfire risk from the installation of these utilities would be less than significant.

2035 Conclusion

Regional growth and land use development between 2022 and 2035 would expand into High and Very High FHSZs, potentially expanding the WUI as a result. This development would require extension and expansion of existing utilities. In instances where utilities are expanding contiguous to existing development, or when utilities are installed underground, which is typically the case in urban areas or for transportation network improvements, there is minimal fire risk as construction activities would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to existing fire prevention regulations and BMPs described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427. However, land use development requiring the construction or extension of aboveground electrical transmission lines in High and Very High FHSZs

and the WUI by 2035 would exacerbate the risk of wildfire ignition in the region. Therefore, this impact (WF-3) would be significant.

2050

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the regional population is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units are in the City of San Diego (51.6%), City of Chula Vista (17.1%), and the unincorporated jurisdictions. Similarly, these same three jurisdictions contribute to approximately 70.3% of new jobs between 2036 and 2050. In these cities, higher demand for new utility infrastructure, upgraded systems, and/or expansions would occur, while demand for utilities would also increase throughout the region in response to forecasted growth. Regional growth and land use development in urban areas would have less demands on utilities than more rural areas that are less comprehensively served by existing utility infrastructure.

The horizon for SDCWA's 2024 Master Plan, which plans for the region's water supply, storage, and conveyance infrastructure, is 2045; however, no infrastructure improvement projects are identified for implementation in the 2024 Water Master Plan beyond 2035 (SDCWA 2025). Thus, the need for investment in major water infrastructure beyond this timeframe is unknown. If large-scale water projects are undertaken, it is reasonable to assume that fire risks associated with construction activities would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by SDCWA during project-specific environmental review, as applicable, as well as adherence to existing regulations and BMPs for fire prevention described in Section 4.19.2, above. Specifically, construction activities associated with the installation of new water service infrastructure would be subject to PRC Section 4427, which includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas.

In addition, connections for new water service within the LRA, and often within the SRA, would typically be accomplished via trenching within public ROW and installing new water pipelines. Connections to any new development would likely be via underground pipes and would pose minimal fire risk because they would not be exposed to dry vegetation or hazardous trees. There is nothing inherent in the construction or maintenance of water infrastructure that would result in increased risk of wildfire. Similar to large-scale water projects, construction activities associated with new water service connections would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review and would be subject to the fire safety requirements in PRC Section 4427, described above.

As discussed in Section 4.15, forecasted growth in 2050 in accordance with the proposed Plan would trigger the need for new or expanded wastewater treatment facilities and collection systems. Smaller treatment plants throughout the region may reach capacity and need to be expanded. Minimal development in rural areas is forecast, but development in existing communities would require expansion or upsizing of existing collection and treatment systems. The pipelines associated with these new and expanded facilities would be installed underground, typically in the public ROW. As with water infrastructure, there is nothing inherent in the construction or maintenance of wastewater infrastructure that would result in increased risk of wildfire. It is reasonable to assume that fire risks associated with construction activities for wastewater infrastructure would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to the existing regulations and BMPs for fire prevention

described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427, as described above for water infrastructure.

As discussed in Section 4.6, the region's energy demands will increase along with the region's population, which would trigger the need for new or expanded energy facilities. The impacts of construction of these facilities could have a range of impacts depending on the facility type, size, and location. The provision of new or expanded energy-generation facilities would result in construction-related impacts. Additional demand for natural gas may also require the construction of new supply, conveyance, storage, and distribution infrastructure. It is reasonable to assume that fire risks associated with construction activities for energy infrastructure would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to existing fire prevention regulations and BMPs described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427, as described above for water infrastructure.

Land use development between 2036 and 2050 would occur primarily in cities and areas contiguous to existing development that are already developed and have electricity and natural gas infrastructure in place. This would be particularly the case in the LRA, and to a lesser extent, in the SRA in areas where new development is contiguous to existing development. Although this would reduce the need for construction of new facilities in other areas, the increases in demand for electricity, and development in non-contiguous or topographically constrained areas within the SRA, would potentially create a need for new transmission lines routed across undeveloped land.

Similar to the 2035 analysis, the construction and operation of new overhead transmission lines across natural habitat within High or Very High FHSZs or the WUI would exacerbate wildfire risk. Wildfires are often caused along transmission lines from downed lines, direct contact with vegetation, and line faults and equipment failures. Most common are downed lines or arcing between conductors that generates heat and sparks and ignite vegetation (WFCA 2024). Because of the higher potential for fire risk from electrical infrastructure (e.g., power lines in contact with vegetation or hazard trees, sparks from equipment malfunction or failure), electrical utility companies place a high priority on safety during construction and operation (SDG&E 2025a). Common solutions to mitigate fire risk include rigorous vegetation management, use of fire-resistant utility poles, undergrounding distribution lines for resilience, deploying advanced technology for predictive maintenance, implementing strategic planned power outages, and other measures. In addition, new overhead transmission lines in high fire risk areas would be subject to CPUC General Order 95, which governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 of General Order 95 generally states that design, construction, and maintenance of overhead electrical lines should be done in accordance with accepted good practices for the given location conditions known at the time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment (see Section 4.19.2 for the specific requirements of General Order 95).

As shown in Table 4.19-1, although electrical equipment failure is not one of the primary causes of wildfire in the San Diego region, absent a commitment to underground all future lines serving new development in High and Very High FHSZs and the WUI, new electrical transmission infrastructure would exacerbate the risk of wildfire ignition in the region. Accordingly, impacts related to exacerbating wildfire risks from the installation of infrastructure to serve regional growth and development by 2050 would be significant.

Transportation Network Improvements

Major transportation network improvements by 2050 include new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, ~~SR 75,~~ SR 94, SR 125, SR 163, I-15, and I-805, several of which will be a continuation of improvements from 2035. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as expansion of and improvements to existing port of entry facilities, which will continue during this period. Upgrades at certain locations on the LOSSAN Rail Corridor would continue during this period. Grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, as well as double-tracking on the SPRINTER would also continue during this period. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

Utilities serving regional transportation network improvements developed between 2036 and 2050 would primarily involve electrical lines for signage, signals, and LRT propulsion, as well as reclaimed water lines for landscape irrigation. These utility lines would be constructed within the transportation facility ROW. Electrical transmission would occur primarily via underground conduit, while water lines for irrigation would similarly be installed underground. Because underground lines would not be exposed to dry vegetation or hazardous trees, and because sparks from failure or malfunction would be contained within underground conduit and vaults, such lines would pose minimal fire risk. In those instances where aboveground electrical facilities are required, such as substations, the facilities would be located in urban areas with buffers from any vegetation. Impacts associated with exacerbation of wildfire risk from the installation of these utilities would be less than significant.

2050 Conclusion

Regional growth and land use development between 2036 and 2050 would expand into High and Very High FHSZs and the WUI. This development would require extension and expansion of existing utilities. In instances where utilities are expanding contiguous to existing development, or when utilities are installed underground as is the typically the case in urban areas or in association with transportation network improvements, there is minimal fire risk as construction activities would be controlled, avoided, or substantially lessened by mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) adopted by the implementing agency during project-specific environmental review, as applicable, as well as adherence to existing fire prevention regulations and BMPs described in Section 4.19.2, above. This includes the construction-related fire safety requirements provided in PRC Section 4427. However, new land development requiring the construction or extension of aboveground electrical transmission lines in High and Very High FHSZs by 2050 would exacerbate the risk of wildfire ignition in the region. Therefore, this impact (WF-3) would be significant.

Impacts of the Proposed Plan with Future Climate Change

With future climate change, growth and land use change in the region would result in increased fire risk due to installation of new infrastructure. Installation of aboveground electrical distribution infrastructure to support development in the High and Very High FHSZs and WUI, as the proposed Plan identifies, increases the risk of wildfire ignition, such as from downed lines, direct contact with vegetation, and line faults and equipment failures (WFCA 2024), especially in rural and high fire-risk areas. Combined with climate change effects that would increase wildfire risk, this could result in more wildfires in the future.

MITIGATION MEASURES

WF-3 REQUIRE THE INSTALLATION OR MAINTENANCE OF ASSOCIATED INFRASTRUCTURE (SUCH AS ROADS, FUEL BREAKS, EMERGENCY WATER SOURCES, POWER LINES OR OTHER UTILITIES) THAT MAY EXACERBATE FIRE RISK OR THAT MAY RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT.

2035, 2050

Implement Mitigation Measure WF-1: Reduce Wildfire Risk for Development and Transportation Projects, as described above.

WF-3 Reduce Wildfire Risk Related to New or Expanded Infrastructure Required to Support Regional Growth and Land Use Development.

During planning, design, and project-level CEQA review of future development projects located in State Responsibility Areas (SRAs) or Local Responsibility Areas (LRAs) classified by CAL FIRE as High and Very High Fire Hazard Severity Zones (FHSZs), as well as the Wildland-Urban Interface (WUI), (the County of San Diego, cities, other local jurisdictions, and public service and utility providers in the region) can and should ensure that project applicants implement measures to reduce wildfire impacts from new or expanded infrastructure. Such measures include, but are not limited to, the following:

- Establishing site-specific safety measures for new infrastructure and facilities required to provide public services and utilities for new development in order to protect local resources from wildfire. Such measures may include fire hazard identification (e.g., flammable and combustible materials, ignition sources), hazard controls and safeguards (e.g., setbacks, containment), equipment maintenance, fire protection technology and equipment (e.g., fire alarm, suppression, and shut-off systems), employee/worker training, agency coordination and mutual aid, and other elements.
- Preparing project-specific fire protection plans for new infrastructure. Fire protection plans should be developed by the project applicant during project-level CEQA review and identify measures that reduce the risk of structural and human loss from wildfire, such as the use of ignition resistant materials, incorporation of fuel modification techniques and brush clearance, and providing for adequate fire-flow water supply in compliance with applicable fire safety regulations. Fire protection plans should be based on appropriate wildfire modeling that accounts for site-specific conditions related to wildfire.
- Adhering to wildfire safety and mitigation plans established by local utilities companies, including design and construction standards, inspection schedules, and emergency preparedness.
- Adhering to the most current building code requirements for structures related to public services and infrastructure, including ignition-resistant construction and inclusion of design features that prevent the intrusion of flames and embers. Fire-resistant features could include ember-resistant vents, fire-resistant roofs, and maintenance of defensible spaces around structures.
- Ensuring sufficient emergency water supply and pressure (local water providers) in accordance with the Emergency Water Standards of the SRA Minimum Fire Safe Regulations (CCR Title 14, Division 1.5, Section 1270 et seq) and most current version of the California Fire Code (CCR Title 24, Part 9) for new projects.

SIGNIFICANCE AFTER MITIGATION

2035, 2050

Mitigation measure WF-1 would reduce this impact by requiring measures to preclude or substantially reduce wildfire risk in High and Very High FHSZs and the WUI. For example, reducing the area and density of allowable development in areas mapped by CAL FIRE as High and Very High FHSZs would reduce the number of people and structures in these fire-prone zones, potentially reduce areas of WUI, and reduce potential sources of ignition, including those from utility infrastructure to serve new development in fire prone areas. These measures, in conjunction with the other measures described in mitigation measure WF-1, would reduce the potential for the proposed Plan to exacerbate wildland fire risks from the installation of utility infrastructure.

It is reasonable to conclude that mitigation measure WF-3, combined with other mitigation measures (e.g., fire hazard assessment, fire-resistant materials and design, vegetation management) identified during project-level CEQA review conducted by the implementing agency, as well as adherence to existing fire prevention regulations and BMPs identified in Section 4.19.2 (e.g., PRC 4427), above, would be sufficient to reduce impacts related to utility infrastructure construction to a less-than-significant level. However, land development within areas classified as High and Very High FHSZs as well as the WUI would likely require the construction of aboveground electrical transmission lines. Mitigation measure WF-3 would serve to reduce impacts associated with wildfire ignition risks from new electrical infrastructure, but not necessarily to a less-than-significant level given the significant wildfire risk posed by these transmission lines; therefore, this impact (WF-3) would remain significant and unavoidable.

WF-4 EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPE OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES.

Analysis Methodology

A significant impact would occur if regional growth and land use changes or transportation network improvements and programs were located in or near SRAs or LRA lands classified as High and Very High FHSZs and would exacerbate wildfire conditions (i.e., worsen an existing wildfire hazard) that would expose people or structures to significant risks related to postfire changes in vegetation and topography. Impacts related to downslope or downstream flooding, landslides, or drainage changes are discussed for areas where regional growth and land use development and transportation network improvements would be located in SRAs or LRAs classified as High and Very High FHSZs, which tend to coincide with areas on steeper slopes and are susceptible to these postfire risks.

Impact Analysis

2035

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2022 to 2035, regional growth is forecast to result in an increase of 117,056 people (4%), 137,242 housing units (11%), and 67,297 jobs (4%). The 2035 regional SCS land use pattern is shown in Figure 2-4. Approximately 93.3% of the forecasted regional population increases between 2022 and 2035 are in the cities of San Diego (51.3%), Chula Vista (26.1%), and San Marcos (15.8%). Those same three jurisdictions would accommodate approximately 71.4% of new housing units in the region between 2022 and 2035, while the cities of San Diego, San Marcos, and Oceanside would accommodate more than 69.5% of new jobs in the region between 2022 and 2035.

Rainfall runoff is enhanced subsequent to wildfire due to changes in soil properties, loss of vegetation cover, and destruction of organic debris on the ground surface. Runoff is accelerated down burned hillslopes compared to unburned hillslopes for two reasons. Surficial soil characteristics are altered when subjected to high temperatures and become water repellant (USGS 2021). Vegetation, which would normally provide resistance to runoff flow and dissipate its energy, is absent. During intense rainfall, post-fire conditions can cause flooding to occur much faster than under normal conditions (hence, "flash" flooding). In the years immediately following a wildfire, accelerated runoff can cause flooding, debris flows, and landslides. In the immediate aftermath of wildfires there is a heightened risk of flash floods due to higher than normal runoff rates. This increases flood waters above what would normally occur with a given rate of precipitation. The more intense rain events predicted as a result of climate change increase the risk of these post-wildfire flash floods. Areas already in or close to flood zones would be at greater risk. Debris flows are common events in Southern California in the aftermath of wildfires. Debris flows are sediment-laden slurries resulting from surface runoff accumulating on hillslopes and channel material such as soil, logs, and boulders as it moves downslope. San Diego County and Southern California, in general, have a history of damaging post-fire debris flows due to the combination of high wildfire frequency, steep terrain covered by high fuel loads, periodic high intensity rainstorms and high population densities. Over the last century, major debris flow events causing widespread damage (destruction of 40 or more structures) and loss of life have occurred on average every 13 years (Kean and Staley 2021). Events causing more localized but still substantial damage occur with more frequency. This has led to the construction of sediment and debris retention basins at the most exposed locations, such as along the southern base of the San Gabriel Mountains.

Study of debris flow events has shown that they are often triggered by high-intensity rainfall events of relatively short duration, and that unlike more typical landslides, they are not dependent on underlying soil saturation (Kean and Staley 2021). The greatest likelihood of a debris flow occurs in the rainy season immediately following the wildfire. A US Geological Survey study covering the larger southwestern study area found that debris flows were triggered by a median 2-year storm event, meaning a storm event that was likely on average to happen every other year (USGS 2021). It has been predicted that, in the event of a severe wildfire followed by an average or

greater storm event, there is a 5 to 12 percent probability of an ensuing debris flow. The USGS has developed an analytical methodology for assessing the risk of damaging floods and resulting debris flows (USGS 2021). This methodology uses watershed terrain and configuration, wildfire burn severity, soil properties, and rainfall characteristics to estimate the probability and volume of debris flows that may occur in response to a 2-year storm. Many such assessments have been conducted in the aftermath of wildfires across the western United States. A problem arises in that these assessments are performed after a wildfire has occurred. In late fire-season wildfires there is often a very short interval between the fire and the onset of winter rains, and the first rain season after the wildfire is the period of highest risk (Kean and Staley 2021; Rengers et al. 2020). This short window combined with the widespread fires occurring in the American West means that most burn areas are not assessed.

Kean and Staley (2021) applied the USGS assessment methodology regionally across all of Southern California. It was found that the areas of most severe risk were at the base of the transverse ranges (i.e., the San Bernardino and San Gabriel Mountains). Virtually all other slopes in Southern California, however, were rated as a moderate to high risk for debris flows, assuming a median intensity wildfire and typical high-intensity rainstorm. They conclude that, with the increasing warming, extended fire season, and higher intensity rainstorms expected as a result of the changing climate, the frequency of debris flows will increase. Virtually all slopes within the High and Very High FHSZs in San Diego County are classified at a moderate to high risk of debris flows (Kean and Staley 2021; Figures 3–5).

Landslides also occur subsequent to wildfires. Unlike debris flows, which most often occur in the rainy season immediately after a wildfire, a study of rainfall-induced landslides in burn areas across Southern California, including several in San Diego County, shows that they are more likely to occur 3 years after the wildfire (Rengers et al. 2020). Rainfall-induced landslides increase in frequency after some vegetation recovery has occurred and the water repellant soil properties present immediately after wildfires have subsided. The above study also monitored a 70-square-kilometer area in the San Gabriel Mountains containing several wildfire burn areas of varying age. This focused area of study confirmed that rainfall-induced landslides are most likely during peak rainfall intensity periods in the midst of protracted storms in the third-year wet season following the wildfire. Landslides are far more likely to occur on south, southwest, and southeast-facing slopes. This is thought to be a result of the sparser vegetation cover present on these slopes compared to north-facing slopes receiving less direct sunlight.

Mapping of known or suspected landslides within San Diego County illustrates that they have occurred across large portions of the County, including within areas designated as High and Very High FHSZs (USGS 2019). Although mapped landslides are widespread throughout the region, areas with mapped known or suspected landslides within High and Very High FHSZs are primarily concentrated in the Otay Ranch area of Chula Vista, El Cajon, Santee, and Poway (see Figure 4.19-3). Using the methodology described above in "Analysis Methodology," an estimated 20,635 acres of new development would occur within FHSZs by 2035. Of this total, approximately 16,400 acres would occur on land classified as a Very High FHSZ, while approximately 2,090 acres would occur in areas classified as a High FHSZ (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025). Portions of this land are on or below slopes that could generate floodwaters, debris flows, or landslides following a wildfire. Increasing levels of severe wildfire occurrence are expected in these areas as a result of the changing climate. At the same time, some individual rain events are expected to be more severe. Development within these areas would face an elevated level of flood risk due to accelerated runoff from previously burned areas. As a result, there would be a high likelihood of damaging debris flows from burned slopes, particularly from slopes that burned during the immediately prior fire season. In the subsequent rainy seasons, a higher likelihood of landslides would be expected in burned areas that are characterized by landslide risk.

As discussed under WF-1, regional growth and land use development between 2022 and 2035 would significantly increase the risk of wildfire ignition. Accordingly, because regional growth and land use development under the proposed Plan would exacerbate wildfire risk, the resultant increased exposure of people and structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff would be a significant impact.

Transportation Network Improvements

Major transportation network improvements by 2035 include new Managed Lanes and Managed Lane Connectors on SR 15, SR 52, SR 78, SR 125, I-5, I-15, and I-805. The proposed Plan also includes ~~Reversible Managed Lane improvements on SR 75,~~ improvements to rural corridors on SR 67, SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as tolling equipment and Regional Border Management System investments on SR 11. Upgrades at certain locations on the Los Angeles–San Diego–San Luis Obispo (LOSSAN) Rail Corridor would be implemented during this period. Other major network improvements include grade separations at certain locations on the SPRINTER, Green line, Blue Line, and Orange Line. Double-tracking is also proposed on the SPRINTER. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

The transportation network improvements that would be implemented between 2022 and 2035 generally would be focused in the highly urbanized western portion of the region, although portions of this area remain susceptible to wildland fires due to climate, topography, and native vegetation as previously discussed. However, the proposed Plan also includes improvements to rural intersections and interchanges on SR 76, SR 79, SR 94, and I-8, as well as interchange and arterial operational improvements on SR 94 and SR 125. These improvements would be located in areas prone to wildfire. Using the methodology described above, an estimated 986 acres of new transportation network improvements would be developed within FHSZs by 2035. Of the 986 acres, new transportation network improvements would occupy approximately 217 and 702 acres of land classified as High and Very High FHSZs, respectively, between 2022 and 2035 (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

Post-wildfire debris flows represent a significant hazard for transportation infrastructure. The location and intensity of post-fire debris movements are difficult to predict, and threats can persist for several years until the watershed is restored to pre-fire conditions. The majority of transportation network improvements that would be implemented between 2036 and 2050 would occur in the highly urbanized western portion of the region. In general, transportation projects and facilities are designed and implemented in a manner that does not result in changes in vegetation and topography that, after a wildfire, would increase risks related to downslope or downstream flooding, landslides, or drainage changes. By conducting hydraulic studies before transportation facility design, which would occur during project-specific environmental review, and adhering to requirements for stormwater detention and floodplain regulation, transportation facilities projects typically do not substantially alter pre-project drainage conditions. However, as discussed in WF-1, transportation network improvements would exacerbate wildfire hazards. Accordingly, because transportation network improvements under the proposed Plan would exacerbate wildfire risk, the resultant increased exposure of people and structures to risk of flooding, debris flows, and landslides as a result of post-fire runoff would be a significant impact.

2035 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would exacerbate wildfire risk that would result in increased exposure of people and structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff. Therefore, this impact (WF-4) would be significant.

2050

Regional Growth and Land Use Change

As shown in Table 2-1 in Section 2.0 "Project Description," of this Draft EIR, from 2036 to 2050, the regional population is forecasted to decrease by 4,112 people (-0.1%), increase by 65,577 housing units (4.8%), and increase by 103,460 jobs (6.2%). The 2050 regional SCS land use pattern is shown in Figure 2-5. The majority of the forecasted regional population decrease between 2036 and 2050 is attributed to the unincorporated jurisdictions, the City of Carlsbad, and the City of El Cajon. Approximately 78.8% of new housing units would be developed in the City of San Diego (51.6%), City of Chula Vista (17.1%), and unincorporated jurisdictions. Similarly, these same three jurisdictions would accommodate approximately 70.3% of new jobs between 2036 and 2050.

As described in the 2035 analysis, mapping of known or suspected landslides within San Diego County illustrates that they have occurred across large portions of the County, including within areas designated as High and Very High FHSZs (USGS 2019). Although mapped landslides are widespread throughout the region, mapped known or suspected landslides within High and Very High FHSZs are primarily concentrated in the Otay Ranch area of Chula Vista, El Cajon, Santee, and Poway (see Figure 4.19-3). Using the methodology described above, an estimated 2,608 acres of new development would occur within FHSZs by 2050. Of this total, approximately 2,305 acres would occur on land classified as a Very High FHSZ, while approximately 200 acres would occur in areas classified as a High FHSZ (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025). Although the regional population is forecasted to slightly decrease by 2050, new housing would continue to be developed in the City of San Diego, City of Chula Vista, and the unincorporated jurisdictions.

As discussed under WF-1, regional growth and land use development between 2036 and 2050 would significantly increase the risk of wildfire ignition. Accordingly, because regional growth and land use development under the proposed Plan would exacerbate wildfire risk, the resultant increased exposure of people and structures to risk of flooding, debris flows, and landslides as a result of post-fire runoff would be a significant impact.

Transportation Network Improvements

Major transportation network improvements by 2050 include new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, ~~SR 75,~~ SR 94, SR 125, SR 163, I-15, and I-805, several of which will be a continuation of improvements from 2035. In addition, the proposed Plan includes increased roadway and transit connections to the United States–Mexico border, as well as expansion of and improvements to existing port of entry facilities, which will continue during this period. Upgrades at certain locations on the LOSSAN Rail Corridor would continue during this period. Grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, as well as double-tracking on the SPRINTER would also continue during this period. See Tables 2-7 through 2-10 for a full list of proposed projects by subregion.

Similar to the 2035 analysis, the majority of transportation network improvements that would be implemented between 2036 and 2050 would occur in the highly urbanized western portion of the region; however, portions of this area remain susceptible to wildland fires due to climate, topography, and native vegetation. Using the methodology described above, an estimated 1,287 acres of new transportation network improvements would be developed within FHSZs by 2035. Of the 1,287 acres, new transportation network improvements would occupy approximately 215 and 988 acres of land classified as High and Very High FHSZs, respectively, between 2036 and 2050 (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

Although the majority of transportation improvements between 2036 and 2050 would be focused in the highly urbanized western portion of the region, the proposed Plan also includes new Managed Lanes and Managed Lane Connectors on SR 52, SR 56, SR 94, SR 125, SR 163, I-15, and I-805, as well as upgrades at certain locations on the LOSSAN Rail Corridor, grade separations on the SPRINTER, Blue Line, Green Line, and Orange Line, and double-tracking on the SPRINTER. These improvements would be located in areas prone to wildfire.

In general, transportation projects and facilities are designed and implemented in a manner that does not result in changes in vegetation and topography that, after a wildfire, would increase risks related to downslope or downstream flooding, landslides, or drainage changes. By conducting hydraulic studies before transportation facility design, which would occur during project-specific environmental review, and adhering to requirements for stormwater detention and floodplain regulation, transportation facilities projects typically do not substantially alter pre-project drainage conditions. However, as discussed in WF-1, transportation network improvements would exacerbate wildfire hazards. Accordingly, because transportation network improvements under the proposed Plan would exacerbate wildfire risk, the resultant increased exposure of people and structures to risk of flooding, debris flows, and landslides as a result of post-fire runoff would be a significant impact.

2050 Conclusion

Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would exacerbate wildfire risk that would result in increased exposure of people and

structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff. Therefore, this impact (WF-4) from regional growth and land use development would be significant.

Impacts of the Proposed Plan with Future Climate Change

With future climate change, growth and land use change and transportation network improvements in the region would result in the exposure of people or structures to significant risks resulting from runoff, post-fire slope instability, or drainage changes. Climate change is also expected to increase the risk of flooding and landslides in the future due to increased frequency and intensity of extreme precipitation events (Kalansky et al. 2018). Furthermore, climate change would increase the potential for heavy rainfall to occur after wildfire, resulting in potential landslides as flooding washes away soil destabilized from wildfire (Bedsworth et al. 2018). Thus, the proposed Plan could expose more people and structures to increased flooding and landslide risks, risks that are heightened by climate change.

MITIGATION MEASURES

WF-4 EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPE OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES.

2035, 2050

WF-4 Reduce Post-Fire Risks Related to Flooding, Landslides, Slope Instability, or Drainage Changes for Development and Transportation Projects.

During planning, design, and project-level CEQA review of future development projects and transportation network improvement projects located in State Responsibility Areas (SRAs) or Local Responsibility Areas (LRAs) classified by CAL FIRE as High and Very High Fire Hazard Severity Zones (FHSZs), as well as the Wildland-Urban Interface (WUI), SANDAG shall, to the degree allowed by its authority, and other agencies (the County of San Diego, cities, and other local jurisdictions) can and should ensure that project applicants implement measures to reduce post-fire impacts. Such measures include, but are not limited to, the following:

- Treating wildfire burned areas using best practices to control stormwater runoff prior to winter rains.
- Restoring wildfire areas by planting native vegetation cover or encouraging the regrowth of native species using best practices as soon as possible to aid in control of stormwater runoff.
- Reducing potential for future flood hazard by removal of dead, woody vegetation along watercourses following a catastrophic fire to reduce the risk of future catastrophic fires.
- Including fire hazard reduction measures (e.g., prescribed burning, vegetation management) that maintain forest health and reduce flood risks when implementing fuel-reducing activities

SIGNIFICANCE AFTER MITIGATION

2035, 2050

Between 2022 and 2050 it is forecast that thousands of acres of land classified as High and Very High FHSZs would be converted from vacant land by land use development and/or transportation network improvements. Climate change is also expected to increase the risk of flooding and landslides in the future due to increased frequency and intensity of extreme precipitation events. Furthermore, climate change may increase the potential for heavy rainfall to occur after wildfire, resulting in potential landslides as flooding washes away soil destabilized from wildfire (Bedsworth et al. 2018). These factors together would greatly increase the risks of flash floods, debris flows, and landslides in the years following wildfires and would likely occur on a scale and in a timeframe that would preclude prevention by implementing mitigation measure WF-4. Because there are no feasible mitigation measures to reduce the increased elevated risk of flash floods, debris flows, and landslides as a result of runoff,

post-fire slope instability, or drainage changes to less than significant, this impact would remain significant and unavoidable.

4.19.5 Cumulative Impacts Analysis

C-WF-1 MAKE A CUMULATIVELY CONSIDERABLE CONTRIBUTION TO ADVERSE EFFECTS RELATED TO WILDFIRE

The area of geographic consideration for cumulative wildfire impacts is the Southern California and northern Baja regions. Large-scale land use changes and improvements to the transportation system influence the regional development pattern, thereby altering the level of exposure of buildings, transportation facilities, and people to the risks posed by wildfire. The most immediate indication of potential wildfire risk is the projected location of new development, either structures or transportation facilities, in areas classified as High and Very High FHSZs. Post-fire slope instability poses a risk in the form of debris flows and landslides. In addition, wildfires pose a significant public health risk due to their air quality impacts from smoke and risk of death or injury.

A projection approach is used for the cumulative analysis of wildfire risk as growth, land use development, and transportation network improvements across the region that can result in the placement of structures and people in High and Very High FHSZs, WUI, and in areas adjacent to slopes posing post-wildfire risks and hazards. The cumulative impact is the combination of the impacts of the proposed Plan and similar impacts identified in adopted plans. Cumulatively considerable impacts related to wildfire would occur if the proposed Plan, when combined with other planning documents, would result in the development of a substantial number of new structures and residents in areas with a high risk of wildfire, such that wildfire risk would increase and/or be exacerbated.

This cumulative impact assessment considers and relies on the impact analysis within this EIR for the proposed Plan and the Southern California Association of Governments (SCAG) 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Final EIR (SCAG 2024) for the Southern California region, including Los Angeles, Orange County, Riverside, and San Bernardino County. The SCAG 2024-2050 RTP/SCS planning horizon is 2050. Other plans considered in the analysis below include the California-Baja California Border Master Plan, which provides a general land use description of the United States–Mexico border region (Caltrans 2021).

Impacts of the Proposed Plan

The analysis in this EIR concludes that regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires (WF-1). In addition, implementation of the proposed Plan would exacerbate wildfire risk due to slope, prevailing winds, and other factors that would expose people to pollutant concentrations from a wildfire and to the uncontrolled spread of a wildfire (WF-2).

New land use development requiring the construction or extension of aboveground electrical transmission lines in High and Very High FHSZs and the WUI would exacerbate the risk of wildfire ignition in the region (WF-3). Finally, regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would exacerbate wildfire risk that would result in increased exposure of people and structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff (WF-4).

Impacts of Projections in Adopted Plans

Potential development resulting from implementation of regional plans could occur in wildfire prone areas and could result in additional impacts related to wildfire. SCAG's 2024–2050 RTP/SCS covers all of the other counties in Southern California, i.e., Los Angeles, Orange, Imperial, Riverside, San Bernardino and Ventura. The SCAG 2024-2050 RTP/SCS Final EIR (SCAG 2024) identified significant impacts related to wildfire risk, concluding that development resulting from the plan would be responsible for "exposing occupants to wildfire risks and pollutant

concentrations from wildfire, and exposing people or structures to post-fire slope instability. Wildfires pose a significant public health risk due to their air quality impacts." At the regional scale, the 2024-2050 RTP/SCS Final EIR identified cumulatively significant impacts related to wildfire (SCAG 2024).

Cumulative Impacts and Impact Conclusions

2035

Increase the Risk of Wildland Fire Ignition

A significant cumulative impact in the year 2035 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related to increasing the risk of wildfire ignition. This impact determination was based on projected land development of approximately 20,635 acres of land within FHSZs. Of this total, a vast majority of new development (approximately 16,400 acres) would occur on land classified as a Very High FHSZ, while approximately 2,090 acres would occur in areas classified as a High FHSZ. In addition, a total of 986 acres of new transportation network improvements would be developed within FHSZs. Of the total 986 acres, new transportation network improvements would occupy approximately 217 and 702 acres of land classified as High and Very High FHSZs, respectively, between 2022 and 2035. The regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. These wildfire ignition risks would be exacerbated in areas classified as High and Very High FHSZs and in the WUI, as humans are responsible for most wildfire ignitions (Syphard et al. 2007; Syphard and Keeley 2015).

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the County, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk that could affect the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2035 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to increased wildfire ignition risk. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2035 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

Exacerbate Wildfire Risk and Expose Project Occupants to Pollutant Concentrations

A significant cumulative impact in the year 2035 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related exacerbating wildfire risk. The regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would exacerbate wildfire risk due to slope, strong winds, and other factors. The increased risk of wildfire as a result of the proposed Plan would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire and to the uncontrolled spread of a wildfire.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the County, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk and expose people to

pollutant concentrations in the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2035 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to exacerbation of wildfire risk and exposure of people to pollutant concentrations. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2035 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

Exacerbate Wildfire Risk from the Installation or Maintenance of Infrastructure

A significant cumulative impact in the year 2035 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. The potential need to extend electrical transmission infrastructure into wildfire prone areas was identified as a significant impact from regional growth and land use development. Regional growth and land development between 2022 and 2035 would expand into High and Very High FHSZs, potentially expanding the WUI as a result. This development would require extension and expansion of existing utilities. Regional growth and land use development requiring the construction or extension of aboveground electrical transmission lines in High and Very High FHSZs and the WUI would exacerbate the risk of wildfire ignition in the region.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the County, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk from the installation of infrastructure that would affect the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2035 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to the exacerbation of wildfire risk from the installation or maintenance of infrastructure. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2035 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

Expose People or Structures to Post-Fire Risks

A significant cumulative impact in the year 2035 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related to post-fire risks posed by potential debris flows, landslides, and drainage changes on nearby slopes. Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2022 and 2035 would exacerbate wildfire risk that would result in increased exposure of people and structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the County, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk and expose people or structures to post-fire hazards in the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2035 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to the exposure of people and structures to post-fire risks. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2035 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

2050

Increase the Risk of Wildland Fire Ignition

A significant cumulative impact in the year 2050 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related to increasing the risk of wildfire ignition. This impact determination was based on projected land development of a total of approximately 2,608 acres within FHSZs. Of this total, approximately 2,305 acres would occur on land classified as a Very High FHSZ, while approximately 200 acres would occur in areas classified as a High FHSZ. In addition, an estimated 1,287 acres of new transportation network improvements would be developed within FHSZs by 2050. Of the 1,287 acres, new transportation network improvements would occupy approximately 215 and 988 acres of land classified as High and Very High FHSZs, respectively, between 2036 and 2050 (Data downloaded from CAL FIRE and SanGIS in 2025; adapted by Ascent in 2025).

The regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would increase the risk of wildland fire ignition that would directly or indirectly expose people and structures to a significant risk of loss, injury, or death involving wildland fires. Wildfire ignition risks would be exacerbated in areas classified as High and Very High FHSZs and in the WUI, as humans are responsible for most wildfire ignitions (Syphard et al. 2007; Syphard and Keeley 2015).

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the county, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk that could affect the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2050 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to increased wildfire ignition risk. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2050 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

Exacerbate Wildfire Risk and Expose Project Occupants to Pollutant Concentrations

A significant cumulative impact in the year 2050 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related exacerbating wildfire risk. The regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would exacerbate wildfire risk due to slope, strong winds, and other factors. The increased risk of wildfire as a result of the proposed Plan would also expose the region's population to harmful pollutant concentrations in the form of smoke from wildfire and to the uncontrolled spread of a wildfire.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the county, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk and expose people to

pollutant concentrations in the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2050 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to exacerbation of wildfire risk and exposure of people to pollutant concentrations. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2050 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-1).

Exacerbate Wildfire Risk from the Installation or Maintenance of Infrastructure

A significant cumulative impact in the year 2050 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. The potential need to extend electrical transmission infrastructure into wildfire prone areas was identified as a significant impact for regional growth and land use development. Regional growth and land development between 2036 and 2050 would expand into High and Very High FHSZs, potentially expanding the WUI as a result. This development would require the extension and expansion of existing utilities. Regional growth and land use development requiring the construction or extension of aboveground electrical transmission lines in High and Very High FHSZs and the WUI would exacerbate the risk of wildfire ignition in the region.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the county, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk from the installation of infrastructure that would affect the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2050 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to the exacerbation of wildfire risk from the installation or maintenance of infrastructure. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows the same conclusion.

cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2050 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-2).

Expose People or Structures to Post-Fire Risks

A significant cumulative impact in the year 2050 would result if the combined impacts of the proposed Plan and impact projections from the other adopted plan were significant when considered together, even if not independently significant. It was concluded that the proposed Plan would result in significant impacts related to post-fire risks posed by potential debris flows, landslides, and drainage changes on nearby slopes. Regional growth, land use development, and transportation network improvements associated with the proposed Plan between 2036 and 2050 would exacerbate wildfire risk that would result in increased exposure of people and structures to risk of flooding, debris flows, and landslides, as a result of post-fire runoff.

The EIR for the SCAG 2024-2050 RTP/SCS (2024) identified similar project-level and cumulative impacts for six additional counties to the north and east of San Diego County, three of which directly abut the county, including Orange County, Riverside, and Imperial. Because these three counties all contain large areas prone to wildfire, cumulative development in or adjacent to these areas would exacerbate wildfire risk and expose people or structures to post-fire hazards in the Southern California and Northern Baja region. Therefore, the direct and cumulative wildfire impacts from SCAG's adopted 2024-2050 RTP/SCS, when combined with the 2035 wildfire impacts of the proposed Plan, would result in significant cumulative wildfire impacts related to the exposure of people and structures to post-fire risks. While comparable analysis for Baja California is not available, the combination of similar landscape and rapid demographic growth allows a similar conclusion.

Because cumulative wildfire impacts throughout Southern California, and likely the northern Baja region, by 2050 would be significant, and because the proposed Plan's incremental wildfire impacts are significant, the proposed Plan's incremental contribution to cumulative wildfire impacts are cumulatively considerable and therefore significant (Impact C-WF-3).

MITIGATION MEASURES

C-WF-1 DUE TO SLOPE, PREVAILING WINDS, AND OTHER FACTORS, EXACERBATE WILDFIRE RISKS, AND THEREBY EXPOSE PROJECT OCCUPANTS TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE; OR EXPOSE PEOPLE OR STRUCTURES, EITHER DIRECTLY OR INDIRECTLY, TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES.

2035, 2050

Mitigation measure WF-1 is intended to reduce wildfire risk for development and transportation projects during planning, design, and project-level CEQA review of projects in areas classified as High and Very High FHSZs and the WUI. SANDAG would be required to, and other transportation project sponsors, the County of San Diego, cities, and other local jurisdictions such as fire protection agencies can and should, implement measures to reduce impacts from wildfires. Mitigation measure WF-3 would require that during planning, design, and project-level CEQA review of development projects located in SRAs or in LRAs classified as High and Very High FHSZs and the WUI, that the County of San Diego, cities, other local jurisdictions such as fire protection agencies, and public service and utility providers can and should ensure that project sponsors implement measures to reduce impacts from utility infrastructure. Mitigation measure WF-4 would reduce post-fire risks related to flooding, landslides, slope instability, or drainage changes resulting from development and transportation projects. It would apply to planning, design, and project-level CEQA review of development projects or transportation network improvement projects in areas classified as High and Very High FHSZs and the WUI. Local agencies would ensure that project applicants work with local communities to implement measures to reduce post-fire impacts.

Implementation of mitigation measures WF-1, WF-3, and WF-4 may not reduce all proposed Plan impacts associated with wildfire to a less-than-significant level given the relatively large area within the San Diego region considered at high risk for wildland fires and the level of uncertainty regarding the location, frequency, and severity of future wildfires. In addition, although mitigation measures WF-1, WF-3, and WF-4 identify measures that can and should be implemented by the County of San Diego, cities, other local jurisdictions to reduce significant wildfire impacts, SANDAG lacks the authority to ensure their implementation by these other agencies. Therefore, the proposed Plan's incremental contributions to the cumulative wildfire impacts in years 2035 and 2050 would remain cumulatively considerable post-mitigation.