Description of the Risk Factors

The following are the risk factors that can be mapped within the Sacramento Metro Fire District. The description of each risk factor includes examples of how it can influence the possible damage from wildfire. The descriptions offer background so that a stakeholder can weigh the relative importance of each factor.

Year of Construction - The year of construction can influence the design and construction type of structures. Structures built prior to the passage of the new building code in 2007 generally have more features that make them easier to ignite: overhanging wood decks, single-paned windows, wood roofs, wood siding, unprotected eaves and open vents, for example.

Roof Material – This is usually considered one of the most important risk factors. Wood roofs are associated with ignition and structure loss, while structures with non-flammable roofs usually have higher survival rates during a wildfire.

Defensible Space - Having defensible space is usually associated with high structure survival rates during a wildfire. Firefighters have more opportunities to fight fire around the structure and the heat from burning materials is reduced when defensible space is present.

Position of Structure on Slope – Because fires on the lower portions of a slope pre-heat fuels above it, structures on the top of slopes often ignite more easily than those at the bottom of a slope. Fire fighter access is also influenced by a structure's position on the slope since structures at the top of a slope may be harder or take longer to reach.

Sensitivity to Special/Valued Habitat – Fuel management may be restricted in areas requiring extra precautions that increase management costs. Or regulations may prohibit all work. Unmanaged fuels may be areas of increased fuel accumulation and hazard.

Slope/Aspect – Steeper slopes pose challenges for containment because fire fighter access is difficult, and more preheating occurs with steeper slopes. The orientation of the slope to the sun also affects the fuel moisture and heat; western and southern aspects are generally hotter and drier.

Proximity to Wildland Vegetation – Areas farther away from wildland are much less likely to incur damage, unless embers are part of the fire behavior causing new spot fires to ignite.

Fire Behavior – Fire intensity is closely linked to damage because higher temperatures and length of time burning are more apt to ignite structures or become lethal to living things. Fast fire spread rates challenge fire containment. When fires "torch," embers are produced which can start new fires far ahead of the main fire, also challenging fire containment.

Vegetation Types – The types of vegetation influences fire behavior, since some burn more quickly, and some burn hotter. Different vegetation types also are easy or hard to manage. Un managed vegetation is often more hazardous.

Cultural Resource Areas - Fuel management may be restricted in areas requiring extra precautions that increase management costs. Or regulations may prohibit all work. Unmanaged fuels may be areas of increased fuel accumulation and hazard.

Homeowner Participation in Education/Mitigation – Informed and involved homeowners typically are willing to manage their own properties to lower their risk due to their increased knowledge and heightened sense of responsibility.

Water Sources/Hydrants – The use of water greatly aids the extinguishments of a fire, thereby containing it and limiting damage. The total abundance, accessibility and proximity to the fire are important factors.

Road Width – Road widths generally aid fire response by allowing faster travel of firefighters, and by providing a wider physical firebreak (area of no fuel).

Response Time – Shorter response times are associated with reduced damage because containment and suppression can start earlier when the fire is smaller.

Fire Breaks – The presence of firebreaks (areas of no fuel) typically aids fire response by offering a safer location to position resources, and is a place where fire behavior is calmed.

Wildland Pre-Plan – Fire response may be more efficient in locations that have a pre-plan for wildfire due to increased knowledge regarding expected fire behavior, firebreaks, water sources, access, and communications.