

## **STAFF REPORT**

Meeting Type:	Watershed Committee/Board of Directors		
Title:	Watershed Wildfire Modeling		
From:	Shaun Horne, Director of Watershed Resources	11	
Through:	Ben Horenstein, General Manager	011	-A 11
Meeting Date:	June 12, 2025		N#

TYPE OF ITEM: Approve X Review and Comment

**RECOMMENDATION:** Review and comment on staff's presentation on Mt. Tamalpais Wildfire Pathway Analysis

**SUMMARY:** In October of 2019, the District adopted the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP), which describes the actions the District will implement to reduce wildfire hazards and to maintain and enhance ecosystem function. To better understand the potential risks to critical facilities, neighboring communities and the efficacy of existing and proposed fuel reduction efforts, the District continues to evaluate various wildfire modeling technologies to help inform the District's work. The Watershed Committee will receive a presentation on the Wildfire Pathway modeling approach that has been carried out to help inform BFFIP actions on the Mt. Tamalpais Watershed.

**DISCUSSION:** California is facing unprecedented wildfire crisis as a result of decades of fire exclusion and increasing impacts associated with climate change. In many California ecosystems, biodiversity, carbon stability and overall ecological resilience are dependent on the regular occurrence of fire. In addition, the wildfire seasons over the past few years have brought record impacts to communities, critical infrastructure and ecosystems. In 2019, Marin Water adopted the BFFIP to guide land management decisions and address wildfire risk while protecting biodiversity on District watershed lands. Additionally, One Tam partner agencies completed the Marin Regional Forest Health Strategy in 2023, which furnishes a science-based framework for identifying how and where agencies can work both independently and together across jurisdictional boundaries to protect forest resiliency while helping to address wildfire hazards. The District has been increasing the pace and scale of forest resiliency work on the Mt. Tamalpais Watershed and has completed a fire pathway analysis to evaluate the efficacy of BFFIP treatments.

The District worked with Willow Labs, Marin Wildfire Prevention Authority, and the Golden Gate National Parks Conservancy on the Mt. Tamalpais Watershed Pathways Analysis. Assessing community wildfire risk using fire pathways is an emerging technique that analyzes fuel continuity under specified

fire weather planning scenarios and identifies the corridors of fuel, topography, and wind capable of bringing fast-moving fire into a community. The resulting "pathways" are produced using Finney's Minimum Travel Time algorithm to represent paths of least resistance for fire spread across a landscape: contiguous routes along which wind, terrain, and fuel are likely to align to produce runs toward community values at risk. To model post BFFIP implementation fire behavior, this study uses a Marin Water-specific fuels crosswalk logic developed by Carol Rice and Esther Mandeno in 2022. This crosswalk logic supplies rules for converting pre-treatment fuels and canopy characteristics into their potential post-treatment counterparts. This crosswalk logic incorporates vegetation type, existing fuel model, canopy cover, and species composition within each treatment unit to select the post-treatment state.

In addition to being useful for analyzing community exposure to fast-moving fires, this analysis is also appropriate for evaluating threats to critical infrastructure, such as water distribution systems. Water systems, particularly those that provide potable water to communities, are essential to support the recurring needs of the community, firefighting response, and enable all other aspects of society to function. Because of the BFFIP's multiple objectives of water quality management, ecological stewardship, infrastructure protection and fire risk reduction, planned vegetation management activities are strategically located to maximize benefits across these different objectives. Staff will provide a presentation on the Mt. Tamalpais Wildfire Pathway Analysis that reviews the effectiveness of BFFIP treatments to date and future refinements that can be made based on the modeling outputs.

ENVIRONMENTAL REVIEW: Not Applicable.

FISCAL IMPACT: None.

ATTACHMENT(S): None.