Hilldale Pines Shaded Fuelbreak

Forest Restoration and Wildfire Risk Mitigation Grant Program

Project Proposal

Project Area Description and Current Conditions

The Hilldale Pines proposed Wildfire Risk Mitigation project is a shaded fuel break in Section 17, Township 6 North, Range 70 East. The project embraces approximately **20** acres of mixed conifer species strategically connecting the Hilldale Pines community with Denver Mountain Parks' planned fuelbreak along the northern half-mile of the western boundary of Hilldale Pines (**Figure 1**). The Inter-Canyon CWPP identified the Hilldale Pines community in the high wildfire risk category. The flammable environment creates risk to the community, the surrounding watershed and associated water quality and the limited access and egress route for the community.

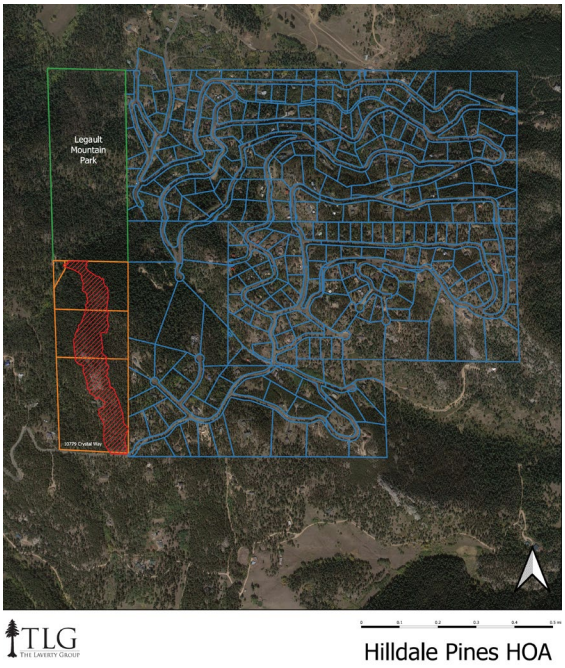

Figure 1

The forest type within the planned fuel break is predominately lodgepole pine. Douglas-fir is mixed in the stand on the north facing slopes. The average stand height is 36 feet, with a quadratic mean stand diameter of approximately 8 inches. The stand density averages approximately **460** trees per acre. **Figure 2** displays the general structure of the existing stand. The stand is well outside the historic range of variability and has continuous vertical and horizontal fuel continuity which directly contributes to high

severity and catastrophic wildfires. The fuel model throughout the stand is generally 8/9 (Anderson). There are portions of the stand, however, with fuel model 10 characteristics.

Hilldale Pines

DBH	TPA	Cuft	Scrib	Cut%	CutTPA	CutCuft	CutScrib	ResidTPA	ResidBA
2	0	0	0	0	0	0	0	0	0
4	76	53	0	0	0	0	0	76	6.63
6	102	288	622	0	0	0	0	102	20.03
8	134	805	2664	0	0	0	0	134	46.78
10	140	1651	6168	0	0	0	0	140	76.36
12	0	0	0	0	0	0	0	0	0
14	5	108	414	0	0	0	0	5	5.35
Total	**457**	**2905**	**9868**					**457**	**155.14**

Average Diameter 7.5 inches
Average Tree Height = 36 feet

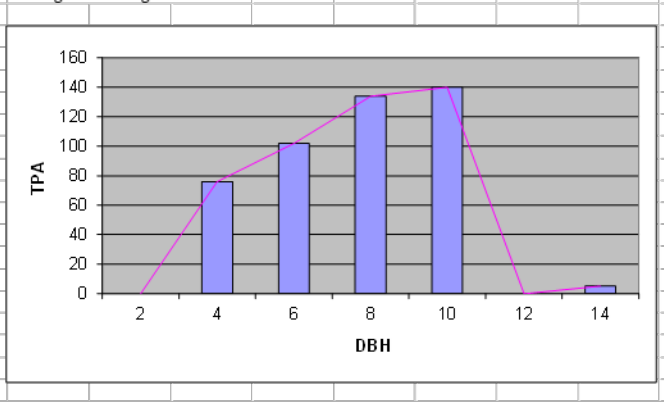

Figure 2

The Hilldale Pines project rests in the headwaters of South Turkey Creek, an integral component of the Denver Water Collection System. The 47.2 square mile Turkey Creek watershed provides water needs for nearly 5,000 households. There are approximately **300** homes located in the Hilldale Pines community near Conifer in dense mixed conifer forest, with vertical relief of 1000 feet on the north and east aspects of the community. Prevailing winds are generally from the southwest, often more than 20 mph and sometimes more than 60 mph. The planned shaded fuel break is consistent with the Inter-Canyon Fire Protection District CWPP mitigation recommendations.

Multiple wildfires in the past two decades have highlighted the vulnerability of communities such as Hilldale Pines to catastrophic large scale high-severity wildfire with negative impacts to critical watersheds through post fire erosion, sedimentation, and debris flows.

Project Goals

The goal of the Hilldale Pines project is to construct and complete a 2700-foot shaded fuelbreak along the ridge from South Crystal Way to the planned Denver Mountain Parks fuel mitigation project on the north. Based on the topography of the project area, the width of the shaded fuel break varies from 300 to 325 feet in width (Figure 3). Specifically, the goals of the Hilldale Pines shaded fuelbreak are to:

Goal 1: Alter or modify surface fuels;

Goal 2: Remove ladder fuels and increase the height to the base of live crowns;

Goal 3: Open the canopy by removing trees;

- Reduce tree density by increasing crown separation to reduce the risk of catastrophic wildfire.

Goal 4: Facilitate fire suppression operations (ground and air)

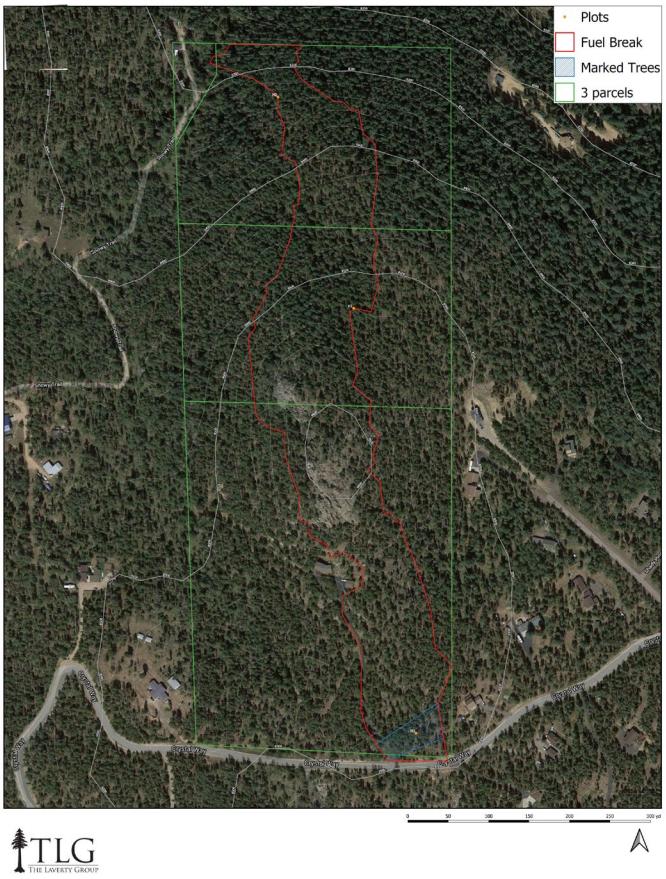

Figure 3

Prescription

The shaded fuel break prescription is based on Colorado State Forest Service guidelines. The fuel break is designed using *Fuelbreak Guidelines for Forested Subdivisions & Communities* (Dennis) and GTR 373. Defensible space for structures will be guided by Colorado State Forest Service Fire 2012-1, *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones*. In order to reduce negative impact to the riparian area, the *Forestry Best Management Practices to Protect Water Quality in Colorado* (2010) will be followed.

The project prescription is to reduce the stand density by creating crown separation of **10 to 15** feet between the edges of tree crowns. To accomplish project goals, all trees less than 10 inches in diameter will be removed to reduce the stand density. Additionally, 40 percent of the 10-inch diameter

trees will be removed to open the canopy and create essential crown separation. Ground fuels will be removed or modified to break up the continuous fuel conditions. Small, isolated groups of trees may be retained for visual diversity. Slash and debris will be removed, masticated, or burned. Diseased and ladder fuels will be removed. The planned mitigation will reduce the stand density by removing approximately 400 trees per acre, with a residual of approximately **40** trees per acre. The post mitigation stand structure is displayed in **Figure 4.**

DBH	TPA	Cuft	Scrib	Cut%	CutTPA	CutCuft	CutScrib	ResidTPA	ResidBA
2	0	0	0	0	0	0	0	0	0
4	76	53	0	100	76	53	0	0	0
6	102	302	681	100	102	302	681	0	0
8	134	791	2605	100	134	791	2605	0	0
10	140	1630	6080	75	105	1222.5	4560	35	19.0897
12	0	0	0	0	0	0	0	0	0
14	5	108	414	0	0	0	0	5	5.345116
Total	**457**	**2884**	**9780**		**417**	**2368.5**	**7846**	**40**	**24.43482**

Figure 4

Strategic Value of Project

Strategically, the Hilldale Pines project reduces potential risk to lives, property, infrastructure, and watershed values from catastrophic wildfire. Specifically, the project protects the watershed values of Turkey Creek, water used by thousands of residents in the watershed and in the Denver metropolitan area and reduces wildfire risk to the Hilldale Pines community which embraces nearly 300 homes. Additionally, thousands of homes and millions of dollars of infrastructure (roads, utilities, and communication towers) are located in the watershed. The 2020 Colorado State Forest Service Action Plan identifies the project area and all of the Hilldale Pines community in a highest priority area.

The planned shaded fuelbreak links with a larger landscape scale project planned by Denver Mountain Parks, including a project directly adjacent to Hilldale Pines, and two within a mile to the west, totaling 120 acres. This project compliments projects in Meyer Ranch Open Space to the west and Lorenz family ranch properties between this project and Meyer Ranch.

The Hilldale Pines project actively addresses goals of both Elk Creek and Inter-Canyon Fire Protection Districts by:

- Reducing continuous tree cover;
- Reducing ground vegetation;
- Improving options for wildfire suppression by reducing the potential for crown fire;
- Reducing wildfire intensity and rate of spread near evacuation routes.

We look forward to working with you on this important project.

Lyle Laverty, Certified Forester, SAF, ACF
Former Assistant Secretary of Interior
US Forest Service Regional Forester (ret)