5.0. TECHNICAL ASSESSMENT OF WATERSHED ELEMENTS [1]

5.1. Element 1: Historical Conditions of Jackson Creek.

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5.1.1 Natural Events Affecting the Jackson Creek Watershed.

A range of natural geologic and climatic factors have created the present topography of the Jackson Creek watershed, affecting water supply and groundwater storage, vegetation, erosion, and disturbance patterns. The geological effects on the local ecology occur with soils derived from granodiorite, quartz-diorite or granite, which greatly limit soil fertility and water holding capacity, and natural erosion. This in turn affects plant adaptation, production and composition of the landscape, which is a product of soil depth, texture, nutrient supply, drainage and rock fragment content. These all function together to either restrict or facilitate the potential for vegetative development of the landscape under the prevailing climate.

The topography produces a unique macro-climate, in that mountain ridges of the upper watershed may average nearly twice the precipitation received by the large open valley. Lower Jackson Creek and its mouth sit in the broad interior valley of central Jackson County with average annual precipitation of less than 20 inches in places. The climate is characterized by hot summers, late spring frost, a moderately cold winter and a comparatively long growing season. The foothill transition between valley and mountains (Jacksonville and north) is where Douglas-fir appears and averages about 22-24 inches precipitation. High ridges at the top of the watershed may average nearly 35 inches of precipitation annually. The toe slopes provide higher humidity/moisture availability adjacent to creeks or in narrow valleys, and the modification of available moisture with aspect, i.e., hot, dry, southerly slopes and moist, cool, northerly slopes. These conditions are repeated throughout much of this watershed.

5.1.2. Disturbance Patterns. The Rogue Basin of Southwest Oregon has a history of intense weather patterns with cyclic periods of flooding and drought. Most flood events occurred during the winter or late spring storms, shaping the landscape by altering stream channels over time through the forces of erosion and sediment deposition. One local event was reported this way:

> *On the night of Friday (12/6/1861), a heavy rain set in and continued to pour down heavily almost without intermission, until Sunday morning. This body of water pouring into channels which were yet full from the*

[1] The guidelines and process of assessing watershed technical elements were taken from and conducted in conformity with the Oregon Watershed Assessment Manual, Governors Watershed Enhancement Board, Salem, Oregon, July 1999.

flooding of the preceding week, was too great for a considerable portion of the valley. The lower portion of our own town was submerged from the water of Jackson Creek and the valley was converted into a group of numberless small islands and lakes. Jacksonville and the immediate vicinity, has sustained no material damage but from other portions of the country we learn that the losses have been very serious. (Democratic Times, Ruby Lacy and Lida Childers; SOHS)

Major flood events recorded by the Southern Oregon Historical Society were:

Flood Years

1853	1927 total annual rainfall -18.99 in.
1858	1945 total annual rainfall -25.20 in.
1861	1948 total annual rainfall -23.88 in.
1866/67	1953 total annual rainfall -25.56 in.
1880	1955 total annual rainfall-19.91 in. (Followed by the
1890 (Major flood)	Timber Mountain fire)
	1962 total annual rainfall -23.13 in.
	1964 total annual rainfall -29.08 in. (Major flood, but smaller than 1890)
	1974 total annual rainfall -18.59 in.
	1997 total annual rainfall -17.93 in.

These events have also inspired human responses to flooding such as building flood barriers around Jacksonville in 1867, graveling sidewalks and roads instead of paving, and creating drainage channels to funnel water-flows (pg. 73, Jacksonville, Haines).

Drought also impacted the streams of southern Oregon as resource uses demanded more and more water. Water uses for mining, irrigation, and water storage for urban fire fighting caused people to alter stream channels, build dams, and to build irrigation ditches and canals. Wells were reported to have gone dry in 1870 and again in 1871. Danger from fires, ever present, became a real menace for Jacksonville, which relied exclusively on its private wells for water to fight the flames. The problem was discussed and it seemed apparent that the most sensible solution was to acquire the rights to the water of Jackson Creek and establish a water system (Jacksonville, Haines).

Critical drought years were:

Drought Years		Drought periods lasting more than two years		
1910				
1923/24	Total annual rainfall 11.56	1928-1930	Average rainfall	13.58
1930	Total annual rainfall 11.67	1933-1935	Average rainfall	14.04
1933	Total annual rainfall 11.09	1985-1994	Average rainfall	14.24
1949	Total annual rainfall 11.46		(Low- 10.69 in; high-17.07 in.)	
1954	Total annual rainfall 16.25			
1959	Total annual rainfall 10.42			
1976	Total annual rainfall 12.32			
1980	Total annual rainfall 15.89			

Source: National Oceanic and Atmospheric Administration, Medford, OR.

5.1.3. Historic Flow Pattern of Jackson Creek. The Southern Oregon Historical Society has several maps that indicate some of the modifications to Jackson Creek that occurred between the years of 1856, 1910 and 1932. The channel and riparian areas of Jackson Creek have been extensively modified since settlement, particularly by mining and agricultural interests. The upper reaches of the creek were modified significantly through mining activities that occurred above the City of Jacksonville. With hydraulic mining processing, water from Jackson Creek was used to rinse the tailings to settle gold from the gravel. Since the creek was a limited water resource (particularly during the summer months), stream water was recycled via a pump and ditch system back upstream and fed through the mining operations numerous times. This practice degraded water quality in the stream considerably.

Agriculturalists have used the water from Jackson Creek for irrigation of some of the finest farm land in the Rogue Valley, and portions of the creek have been bypassed, blocked or rerouted for irrigation diversions. Around 1900, a local farmer rerouted Jackson Creek into Horn Creek near the intersection with Taylor Road, with the intention of creating more useable farm area. Jackson Creek has meandered through the years, but has remained largely in the present configuration for the past 50 years, and follows the same general flow pattern that exists today. Most of the agricultural land is within the lower reaches of Jackson Creek, reaching from the northerly boundary of Jacksonville to the confluence of Bear Creek.