3.0 EXISTING CONDITIONS

3.1 Hydrography

The Dry Creek Watershed is composed of eight named streams as follows: Dry Creek, Clover Valley Creek, Antelope Creek, Secret Ravine, Miners Ravine, Cirby Creek, Linda Creek and Strap Ravine (Figure 3-1). Dry Creek is formed by the confluence of Secret Ravine and Antelope Creek near Sunrise Boulevard and Interstate 80. Clover Valley and Antelope Creeks drain the northwest portion of the watershed. Secret Ravine drains the central portion. Miners Ravine drains the south Central and Eastern portion, and Linda and Cirby Creeks comprise the southeastern subbasins. Strap Ravine is a small tributary to Linda Creek.

Miners Ravine, Secret Ravine, Antelope Creek and Dry Creek are perennial streams, flowing year-round. Clover Valley Creek, Linda Creek, Cirby Creek, and Strap Ravine were noted as intermittent in 1997[3], although a recent report listed these tributaries as perennial[4]. Maximum mean discharge in Dry Creek measured at the Vernon Street gauging station was 375 cfs and occurred in February. Yearly minimums were less than 25 cfs and occurred between the months of April and September. The existing 100-year peak flow is 14,800 cfs[5]. Most of the flow arises from precipitation, with summertime flow augmented by irrigation and treated discharges from the City of Placer County Sewer Maintenance District No. 3's Wastewater Treatment Facility (WWTF) on Miners Ravine, the City of Roseville's Regional Wastewater Treatment Facility on Dry Creek, and Roseville's Water Treatment Facility (WTF) on Linda Creek. Snowmelt has a less than significant contribution to the total runoff in these streams, with snow events at the higher elevations in the watershed being infrequent and melting rapid.

The Dry Creek watershed is approximately 65,000 acres, with the portion of the watershed that falls within the study area of Placer County approximately 52,500 acres. It is comprised of six major sub-basins corresponding to the major creeks as shown in Figure 3-2. Table 3-1 lists the approximate sizes of the sub-basins.

Table 3-1 Dry Creek Watershed Sub-basins

Clover Valley Creek	2,300 acres
Antelope Creek (includes Clover Valley Creek)	11,200 acres
Secret Ravine	12,600 acres
Miners Ravine	12,500 acres
Cirby Creek (includes Linda Creek)	12,600 acres

[3] Bishop, 1997.

[4] Foothill Associates, 2003.

[5] Ibid.

Linda Creek (includes Strap Ravine)	7,400 acres

The profiles for the major streams are shown in Figure 3-3. This map includes the major streams and some of the ephemeral and intermittent drainages[6]. The coarseness of the data used to create these profiles limits the detail of the observations that can be made from them; however, general characteristics of these creeks can be deduced.

The profile of Secret Ravine, which has the steepest headwaters, shows the average slope to be up to three percent in the headwater section. This generally corresponds, in a minimally disturbed system, to a stream composed primarily of riffle and pool habitat with a boulder, cobble and gravel streambed. In the lower reaches, Secret Ravine adopts a gentler profile of less than one percent. In this region, stream morphology is dominated by a meandering channel with a gravel and silt streambed. The headwaters of Secret Ravine are the highest of the Dry Creek tributaries, and the other streams in the watershed exhibit behavior that more closely follows that of the lower reaches of Secret Ravine.

Downstream of the confluence of Secret Ravine and Miners Ravine, the valley is considerably flatter. The average gradient for Dry Creek is approximately 0.2 percent. In general, as a stream moves from steeper headwaters to a flatter valley floor, stream discharge, channel width and channel depth increase and bed material grain size, mean flow velocity and slope decrease[7]. The Dry Creek watershed exhibits these characteristics, with Dry Creek and the lower reaches of Secret Ravine, Miners Ravine and Antelope Creek having finer sediments, wider and deeper channels and lower flow velocities than the headwaters.

3.2 Transportation

The dominant form of transportation in the watershed is the automobile. Interstate 80 bisects the watershed following Secret Ravine for much of that creek's length (Figure 3-4). This highway has bridges over Cirby Creek, Dry Creek, and the headwaters of Secret Ravine. The other major highway in the watershed is Highway 65 which provides access to newly developed commercial areas in north Roseville and southwest Rocklin. This four lane highway crosses Antelope Creek near the Roseville/Rocklin City limits.

Highways, arterials, major roads and railroads that cross Dry Creek and its tributaries are listed in Table 3-2[8].

[6] The charts represent the stream profiles, graphing vertical feet above mean sea level (msl) vs. horizontal feet from the headwaters. The streams were generated using the USGS Basins hydrologic analysis software from the digital elevation model (DEM) for the region. The Basins software locates streams at the bottom of the drainages as dictated by the DEM, rather than relying on a separate streams datalayer that may or may not align with the elevation model.

[7] Stream Corridor Restoration. 1998.

[8] Minor road crossings are omitted from this table, but are numerous as is shown in Figure 3-16. These crossings also form barriers to fish migration as well as have the potential for impacting water quality and riparian habitat.

Table 3-2 Dry Creek Greenway Major Road Crossings

Dry Creek	Walerga Road, Cook Riolo Road, Southern Pacific Railroad, Douglas Blvd, Vernon Street, Atkinson Street.
Cirby Creek	I-80, Sunrise Boulevard, Rocky Ridge, Douglas Boulevard, Lead Hill Road, Eureka Boulevard.
Linda Creek	Sunrise Boulevard, Rocky Ridge, Old Auburn Road, Sierra College Boulevard, Roseville Parkway, Barton Road.
Strap Ravine	Eureka Boulevard, Roseville Parkway, Sierra College Boulevard,
Antelope Creek	Southern Pacific Railroad, Atlantic Street, Roseville Parkway, Highway 65, Sunset Boulevard, Midas Avenue, Delmar Avenue, Sierra College Boulevard, King Road, English Colony Way.
Clover Valley Creek	Midas Avenue, Sierra College Boulevard, Southern Pacific Railroad.
Miners Ravine	Roseville Parkway, Sierra College Boulevard, Barton Road, Auburn Folsom Road, Cavitt and Stallman Road, Horseshoe Bar Road, King Road, Rock Springs Road, Newcastle Road.

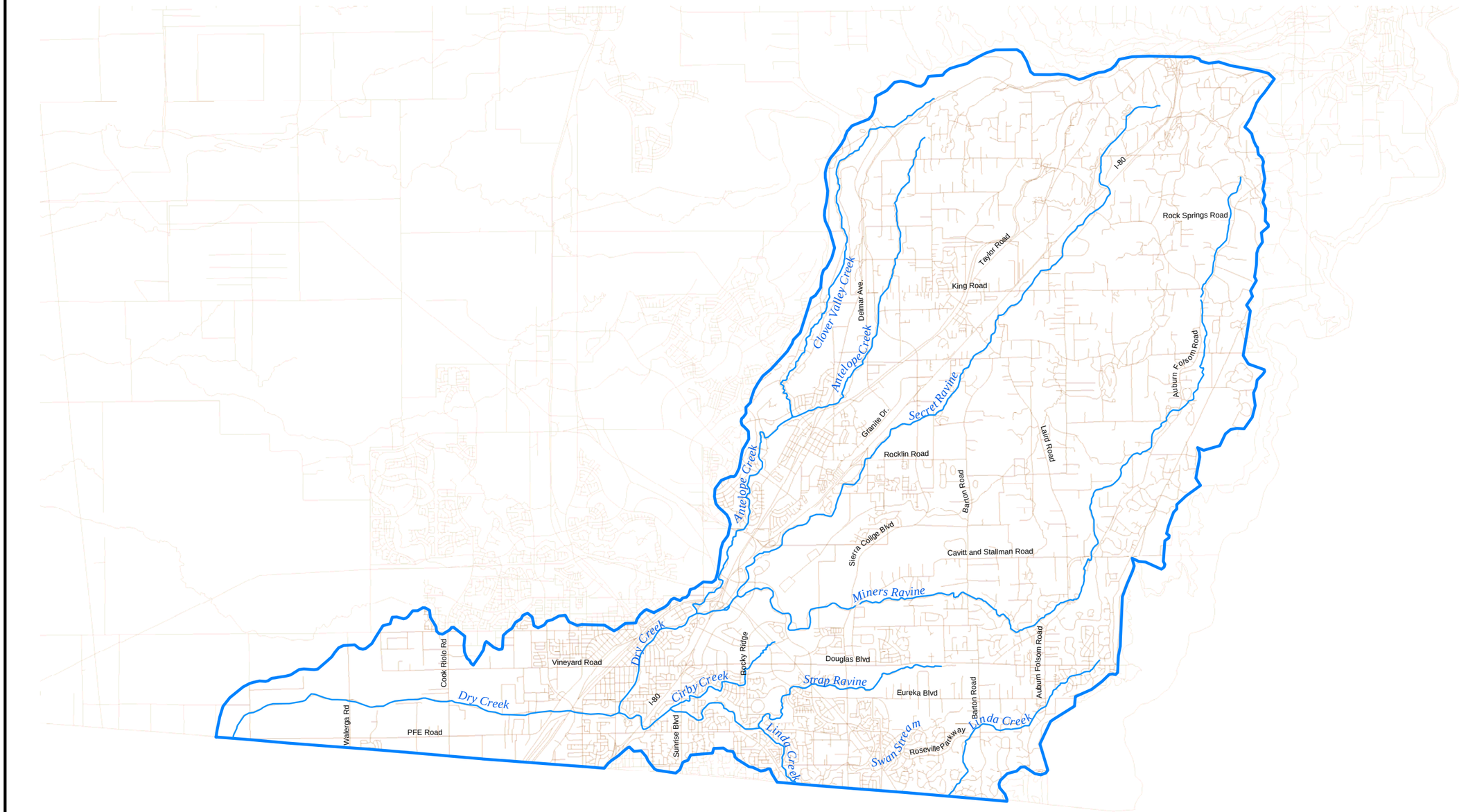
Secret Ravine	Roseville Parkway, Rocklin Road, Sierra College Boulevard, Brace Road, Horseshoe Bar Road, King Road, Penryn Road, Rock Springs Road, I-80 (tributary to headwaters).

These crossings must be considered in comprehensive planning for the Greenway because of their impacts on wildlife and aquatic habitat, conveyance of floodwater, and water quality. Table 3-3 lists some of the potential impacts of bridges on stream systems.

Table 3-3 Potential Impacts of Bridges on Stream Systems

Habitat	Danger to wildlife crossing roads from vehicular traffic, Degraded fish habitat due to impacts to water quality of road runoff, Disruption of migratory corridor, Potential fishing access point where fish are more easily caught (due to decreased visibility of the angler), Potential barrier to fish migration due to in-channel structures to limit erosion below bridges, Sediment accumulation, Prevention of natural meandering.
Water quality	Degraded water quality due to road runoff, Potential access point for trash dumping into stream system, Increased chance of homeless camps which often results in increased contamination due to feces and cleaning supplies.
Flood conveyance	Potential barrier to floodwaters causing greater chance of upstream flooding.

Major road crossings present an opportunity for recreation, in that they provide access points to the trail system along the creek and the potential for locating public parks, staging areas and other amenities in a location where people can enjoy the natural open space.



Source: US EPA reach file 3, Basins 3.0 dataset,

HYDROGRAPHY

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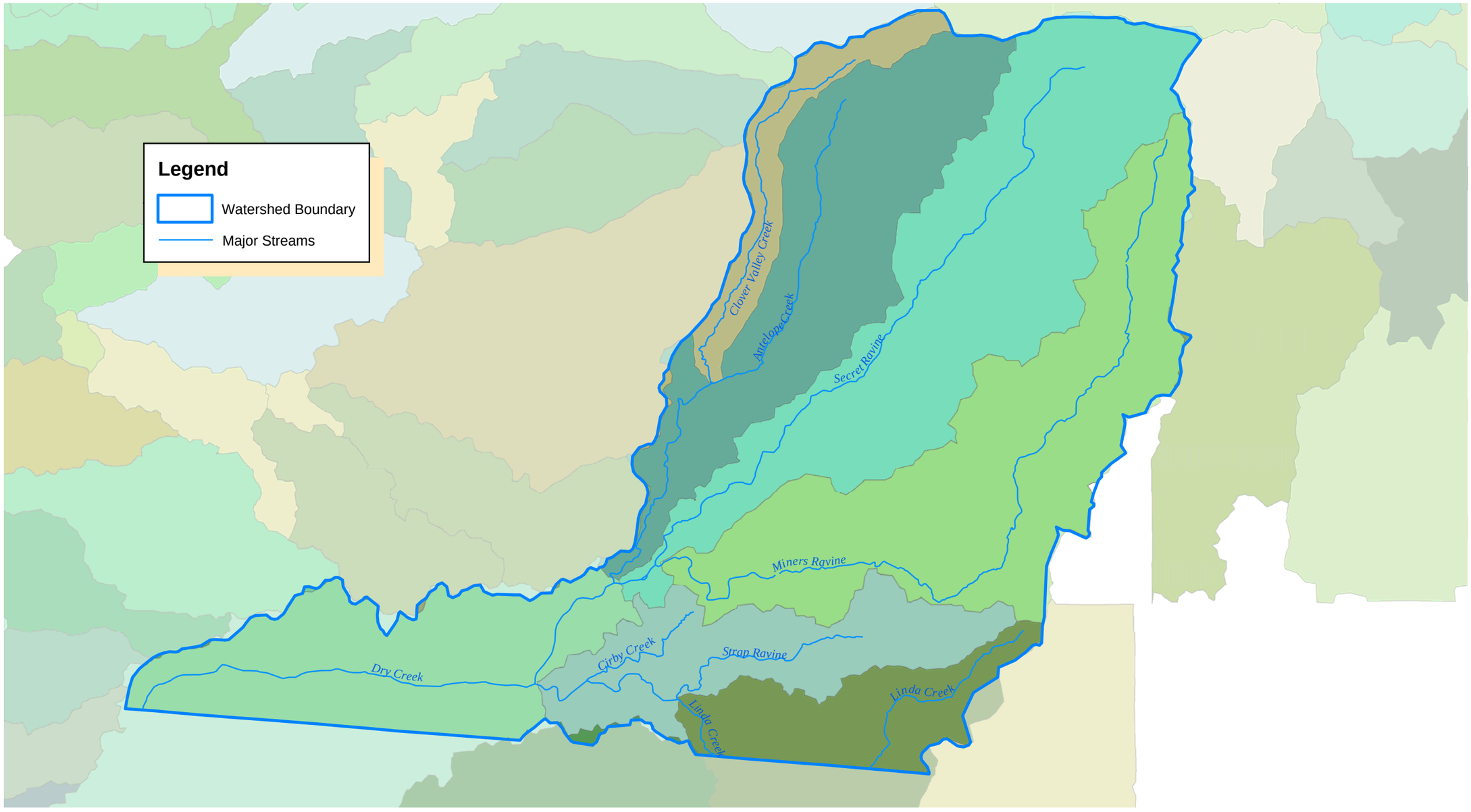
SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-1

2-1 streams.mxd



Source: US EPA reach file 3, Basins 3.0 dataset

SUB-BASINS

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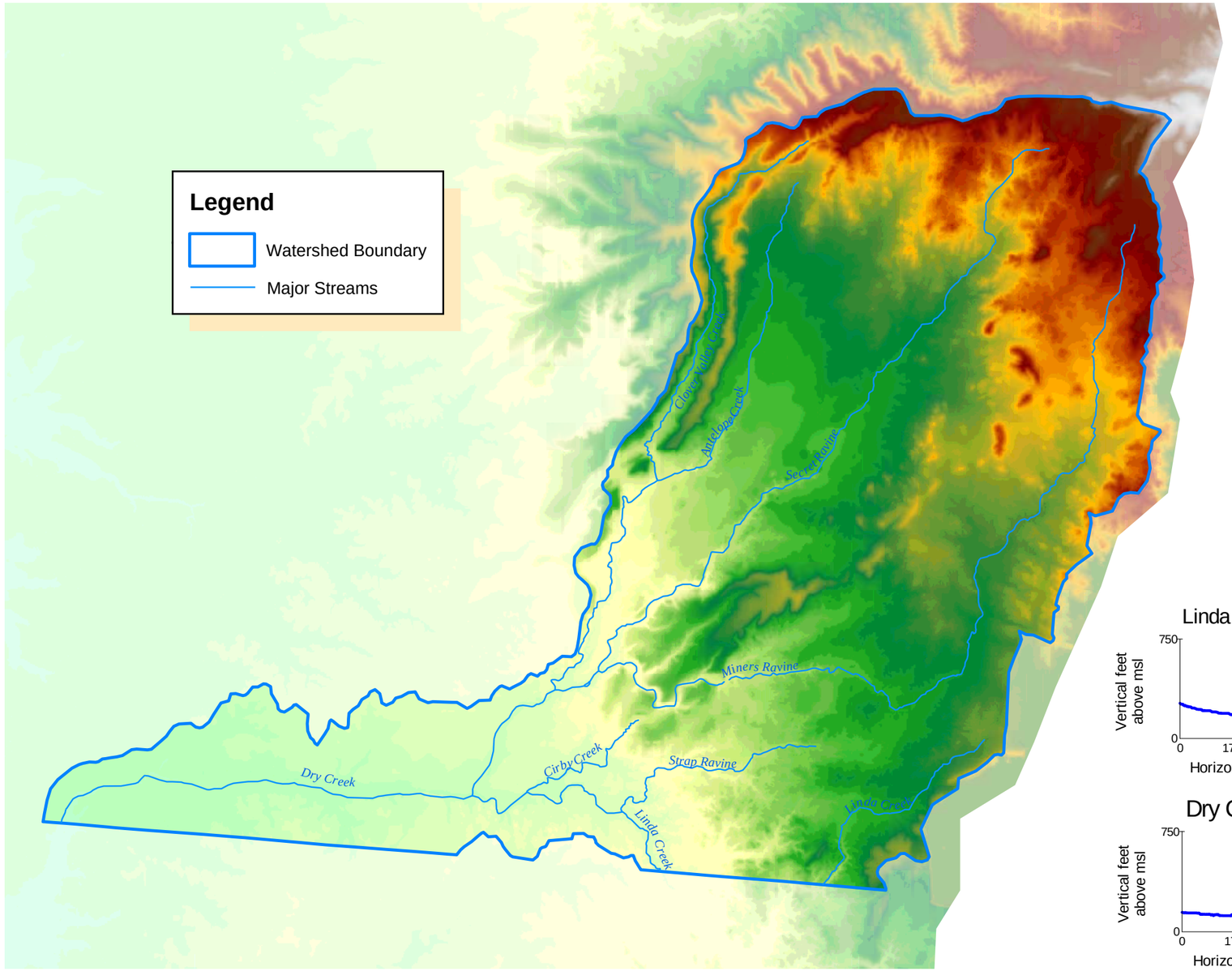
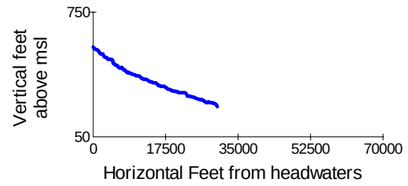
FIGURE 3-2

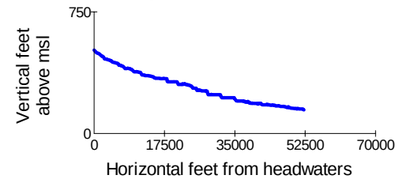
2-2 subbasins.mxd



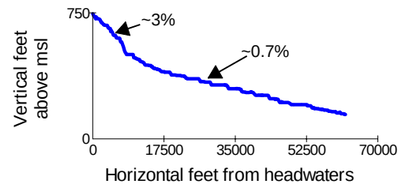
Clover Valley Creek Profile



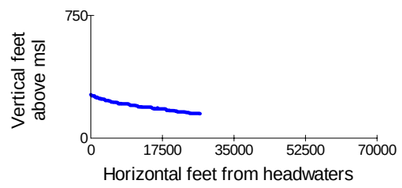
Antelope Creek Profile



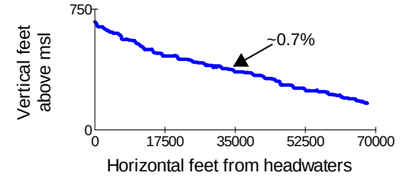
Secret Ravine Profile



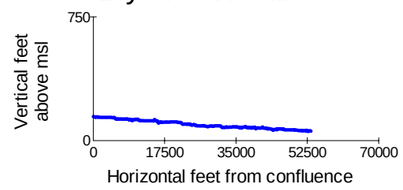
Linda Creek Profile



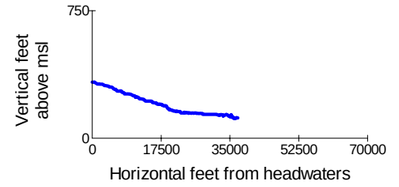
Miners Ravine Profile



Dry Creek Profile



Cirby Creek Profile



Source: US EPA reach file 3, Basins 3.0 dataset, USGS 1:24K Digital Elevation data

STREAM PROFILES

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SCALE 1 0.5 0 1 2 Miles

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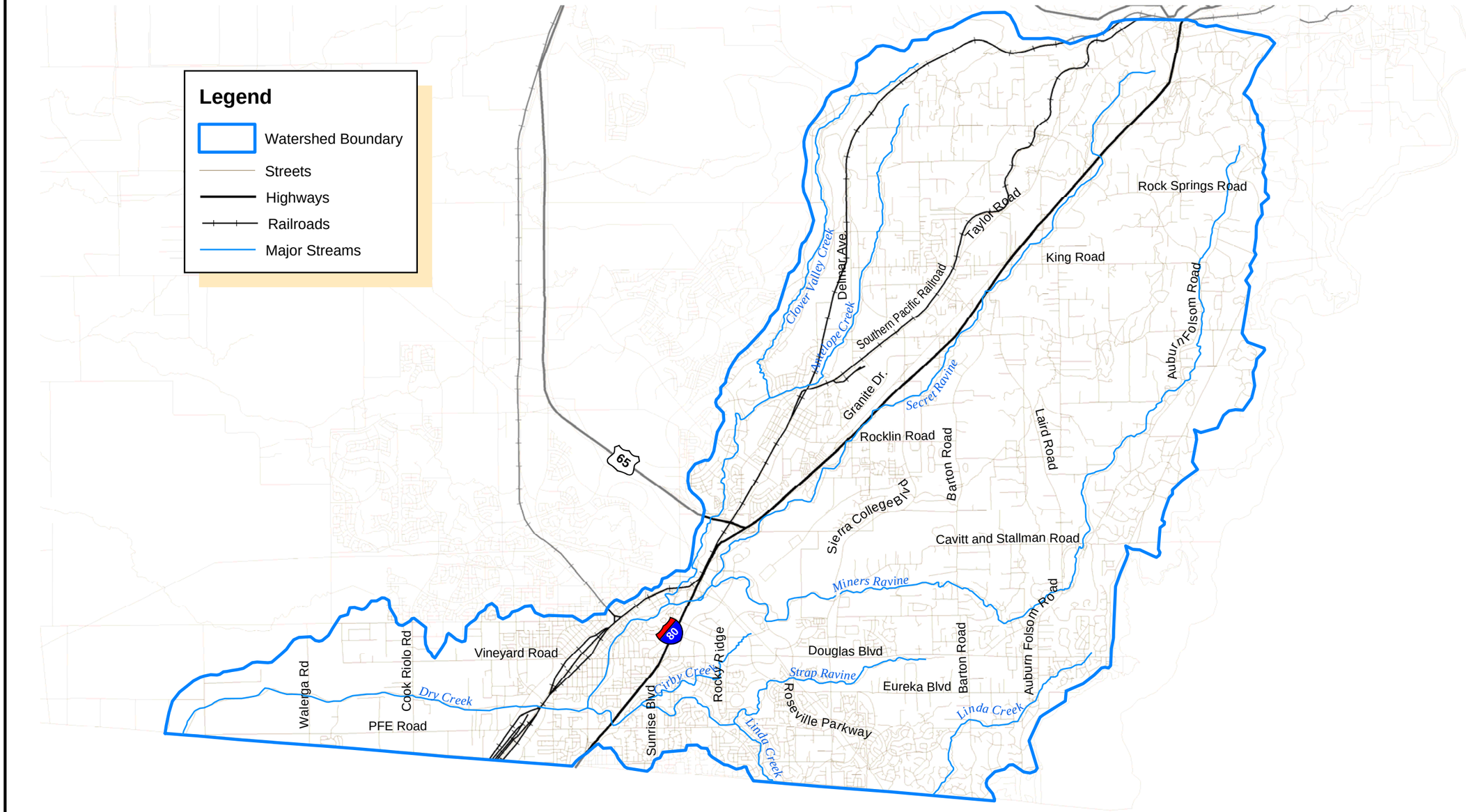
FIGURE 3-3

2-3 profiles.mxd



Source: 1995 & 2001 Census data tiger line files

TRANSPORTATION

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SCALE 1 0.5 0 1 2 Miles

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FIGURE 3-4

2-4 transportation.mxd

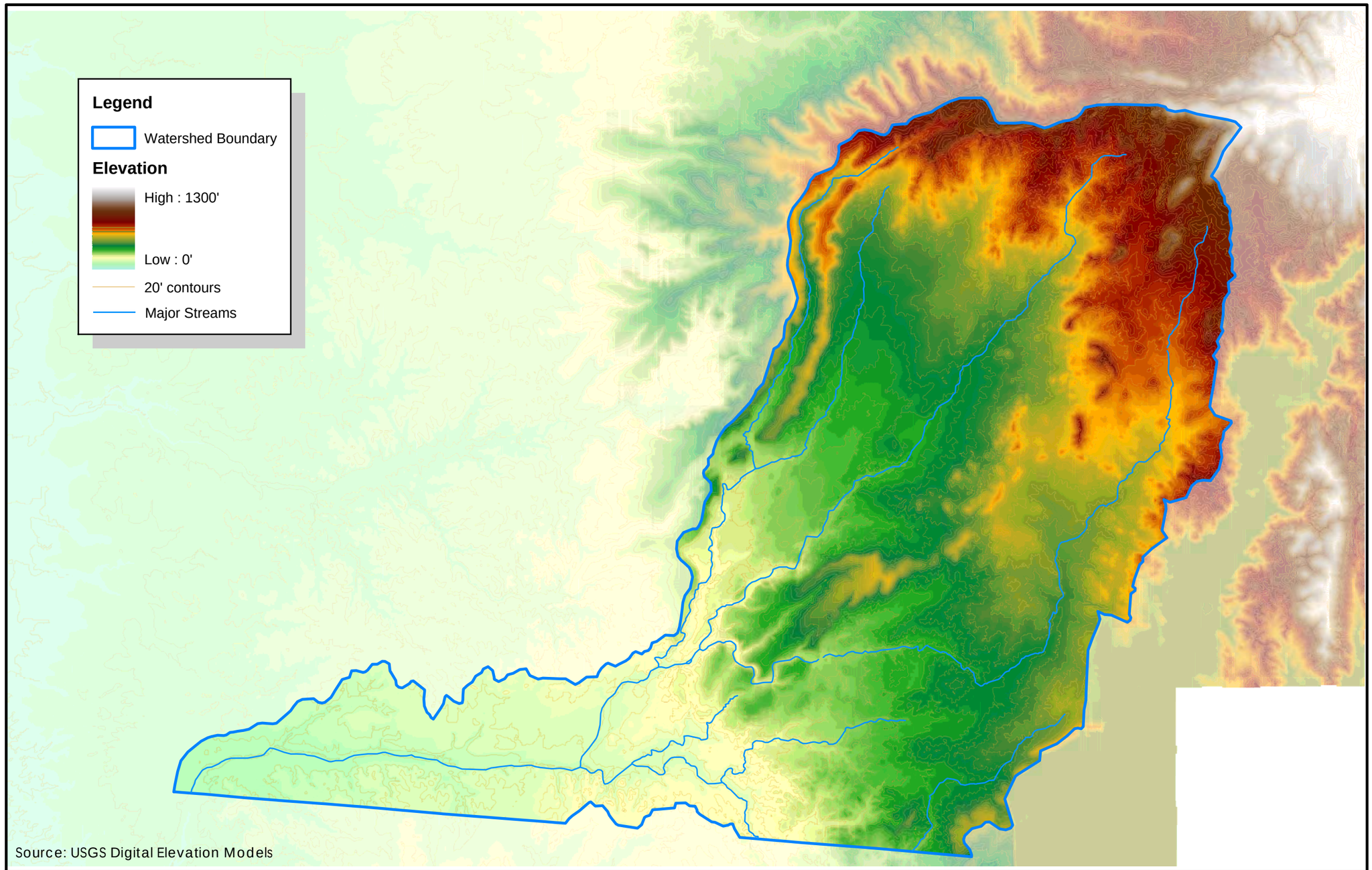
The Union Pacific Railroad has several active lines that transect the watershed from southwest to northeast. A major yard is located along Dry Creek near downtown Roseville on both sides of the creek where the railroad crosses the stream. This yard is a significant obstacle to the Greenway corridor and will require special consideration in routing of bikeways. Water quality issues should also be considered in planning for habitat restoration in this area.

3.3 Topography

The Dry Creek drainage basin runs primarily east to west. The headwaters lie in the foothills of the Sierra Nevada mountain range in Placer County, California, and Dry creek empties into Steelhead Creek, formerly the Natomas East Main Drainage Canal (NEMDC). The watershed is defined by a north-south ridge separating Miners Ravine and Linda Creek from Folsom Lake Reservoir to the east and a northeast-southwest tending ridge separating Antelope and Clover Valley Creeks from the Pleasant Grove and Curry Creek watersheds to the west (Figure 3-5). A ridge within the watershed splits the basin down the middle into two distinct geographic subbasins: the northern most containing Clover Valley Creek, Antelope Creek and Secret Ravine, and the southern containing Miner's Ravine, Cirby Creek, Linda Creek and Strap Ravine. Miner's ravine actually splits the ridge on its lower slopes, joining Secret Ravine rather than Cirby and Linda Creeks, thus the subbasins are not hydrologic units, but are geographically separated.

Clover Valley Creek, Antelope Creek, Secret Ravine and Miners Ravine traverse similar topography, with headwaters in the upper elevations of the watershed and mouths in the broader and flatter valley. These streams have generally steeper average profiles than Dry Creek, Linda Creek, Cirby Creek and Strap Ravine, which lie mostly within the valley floor.

Elevation is maximum near the headwaters of Secret Ravine, at approximately 1,230 feet, and lowest at the mouth of Dry Creek. At the downstream study area boundary, where Dry Creek crosses the Placer-Sacramento County lines, elevation is approximately 70 feet.



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SCALE 1 0.5 0 1 2 Miles

DRY CREEK GREENWAY REGIONAL VISION

FIGURE 3-5

2-5 topography.mxd