

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
<b>Dry Creek by Reach</b>							
1	The floodplain in this location is broad and flat, supporting a secondary channel located south of the main channel, and extending further south to merge with the floodplain of Rio Linda creek.	Not noted.	Not noted.	Not assessed		None noted.	This description compiled from review of the Initial Study for the Ueda Parkway Negative Declaration (Sacramento, City of 2002), and review of available aerial photography (AirPhoto USA no date).
2	<b>Main Channel:</b> Placid stretches due to the dam. <b>Bed Characteristics:</b> Hardpan. <b>Bank Erosion:</b> Moderate erosion in lower stretch. <b>Debris in Channels:</b> Logs hung up below Elkhorn Road on pipes crossing stream. <b>Secondary Channels:</b> None. <sup>1</sup> <b>Corridor:</b> very narrow, 3' levees on both sides	Not noted.	Not noted.	Not assessed	Rio Linda Blvd. Bridge	None noted.	Hayer dam, which backs up water in summer, tends to flood the trees - may cause problems <sup>6</sup> .
3	<b>Main Channel:</b> Placid, up to 20 yard wide. <b>Bed Characteristics:</b> None noted. <b>Bank Erosion:</b> Little. <b>Debris in Channels:</b> None. <b>Secondary Channels:</b> None. <sup>1</sup>	Not noted.	Not noted.	Not assessed	Elkhorn Blvd. Bridge	None noted.	
4	<b>Main Channel:</b> Up to 20 yards wide. <b>Bed Characteristics:</b> Appears mostly hardpan/clay. <b>Bank Erosion:</b> Moderate where trees are lacking. <b>Debris in Channels:</b> Some downed where trees. <b>Secondary Channels:</b> Many secondary channels. <sup>1</sup> <b>Corridor:</b> Berm and levee on inside bank.	Not noted.	Not noted.	Not assessed	Dry Creek Road bridge	None noted.	
5	<b>Main Channel:</b> Meandering, numerous pools. <b>Bed Characteristics:</b> Clay. <b>Bank Erosion:</b> Slight. <b>Debris in Channels:</b> Slight. <b>Secondary Channels:</b> Very good development, especially in mid and south area. <sup>1</sup> <b>Corridor:</b> Generally good characteristics.	Not noted.	Not noted.	Not assessed	Q Street bridge	None noted.	
6	<b>Main Channel:</b> Meandering, approximately 10-15 yards wide. <b>Bed Characteristics:</b> Sandy to slightly gravely, occasionally clayey. <b>Bank Erosion:</b> Slight. <b>Debris in Channels:</b> Some trees fallen across channel. <b>Secondary Channels:</b> Several low flow channels with good development of vegetation. <sup>1</sup> <b>Corridor:</b> Generally very good along some stretches, but narrowed in some areas along the golf course where fairway crosses, where the golf carts comes too close, and below the soccer complex.	Not noted.	Not noted.	Not assessed	Not noted.	Not noted.	
7	<b>Main Channel:</b> Deeply cut. <b>Bed Characteristics:</b> Mostly sand, some annual growth in lower stretch. <b>Bank Erosion:</b> Moderate in some places, note exposed tree roots. <b>Debris in Channels:</b> None. <b>Secondary Channels:</b> None. <sup>1</sup> <b>Corridor:</b> Very narrow with 40-60% canopy cover.	Not noted.	Not noted.	Not assessed	Rio Linda Blvd. Bridge	None noted.	
8	<b>Main Channel:</b> Dry channel, occasional wet pools near subdivision. <b>Bed Characteristics:</b> Most of the length consists of sand overlaying hardpan. <b>Bank Erosion:</b> Minor. <b>Debris in Channels:</b> Little to none. <b>Secondary Channels:</b> None (though there is a low terrace on north bank of northern section. <sup>1</sup> <b>Corridor:</b> Generally narrow.	Not noted.	Not noted.	Not assessed	Elkhorn Blvd. Bridge	None noted.	
9	<b>Main Channel:</b> Reamed out about 1 1/2 years ago, about 10-12 ft. across. <b>Bed Characteristics:</b> Sandy, uniform throughout due to leveling. <b>Bank Erosion:</b> Moderate. <b>Debris in Channels:</b> None. <b>Secondary Channels:</b> Present on lower 2/3 of channel reach. <sup>1</sup> <b>Corridor:</b> Mostly narrow, especially in upper end, but wider at lower end due to presence of secondary channels with about 50% canopy closure.	Not noted.	Not noted.	Not assessed	Dry Creek Road bridge	None noted.	

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
10	<b>Main Channel:</b> Disturbed main channel, with sand deposits and scoured holes ponding water. Disturbance seems related to non-culverted road crossing, where channel is 35-40 yards wide. In places the channel is deeply incised; the bottom is about 15 ft. below bank height, banks very steep. <b>Bed Characteristics:</b> Sandy channel bottom, hardpan on bank's edge. <b>Bank Erosion:</b> Bank erosion in open areas lacking trees and areas associated with road crossing. Some riprap along bank. In some areas little erosion. <b>Debris in Channels:</b> Bushy willows growing at bottom of channel and logs in channel. <b>Secondary Channels:</b> Small development at south end. <b>Corridor:</b> Broken canopy, with numerous open spaces, generally with grass or single tier of trees growing along bank's edge. The most disturbed site was early successional with many gaps between trees to moderate canopy closure in places and mature Valley oaks interspersed with Willow species and Oregon ash. <sup>1</sup>	Sand deposits <sup>1</sup>	None noted.	Not assessed	Q Street Bridge, non-culvert crossing.	None noted.	Car bodies and other junk noted outside of outer bank. <sup>1</sup>
11	<b>Main Channel:</b> Sandy. <b>Bed Characteristics:</b> Sandy. <b>Bank Erosion:</b> Slight to moderate. <b>Debris in Channels:</b> Willows growing in channel. <b>Secondary Channels:</b> Some development on east bank. <b>Corridor:</b> One of the best protected areas along the dry (North) channel due to secondary channels and low flow terraces. <sup>1</sup>	sandy <sup>1</sup>	None noted.	Not assessed	None noted.	None noted.	
12	<b>Main Channel:</b> Compared to lower stretches, minor grade changes, relatively narrow (10-15 yards), many meander sequences especially where room allows (but constricted by presence of levee on west bank). Steep bank at northern section. <b>Bed Characteristics:</b> Sandy, numerous grade changes with rock spillways (constructed from levee material). <b>Bank Erosion:</b> Moderate, apparently due to grade changes and sandy soil conditions. <b>Debris in Channels:</b> Several logs and trees across channel. <b>Secondary Channels:</b> Many present on both sides. The low flow channel has severe bank erosion on left bank, which is undercutting mature trees <sup>2</sup> . During high flow conditions, water readily leaves channel and flows over entire corridor, becoming two channels upstream of Watt Avenue and continuing for a short way downstream. <b>Corridor:</b> Well developed, fairly intact, though narrowed, on west bank due to presence levee (road), 60-70% canopy closure. <sup>1</sup>	Sand with incising to the hardpan.	Note noted.	Not assessed	Elverta Road bridge. Watt Ave. bridge (open span and cemented underneath). The Watt Ave. bridge was downcutting and creating a drop. <sup>2</sup>	None noted. An excavated hole on east bank, offers opportunity for restoration.	
13	<b>Bed Characteristics:</b> Areas of incision (to hardpan in locations). <b>Bank Erosion:</b> Banks compacted with scour holes (some of which were fairly steep and eroding). <b>Debris in Channels:</b> Fences causing scour. <b>Secondary Channels:</b> Floodplain was mostly intact with backwater channels and low terraces. <sup>2</sup> One partially washed away cement dam (for water diversion) causing downstream erosion. <sup>2</sup>	Sandy and mucky with significant sand bars within floodplain and large woody debris on banks. <sup>2</sup>	None noted.	Not assessed	Walerga Road bridge (open span with rip-rap at the edges).	None noted.	A large garbage dump in creek, from an adjacent home, noted during the Bishop survey. <sup>2</sup>
14	<b>Bank Erosion:</b> Mostly stable with some areas eroding (e.g., next to a house and pump). <sup>2</sup>	Predominately sand <sup>2</sup>	None noted	Not assessed	Cook-Riolo Rd open span bridge	None noted.	Dumping area in creek noted during the Bishop survey (appliances, etc.). <sup>2</sup>
15	<b>Main channel:</b> Flat water and shallow pools. <sup>5</sup> <b>Bank erosion:</b> Banks are high, eroding, sandy, and unnaturally straight. <sup>2</sup> <b>Debris in Channel:</b> Fencing across the flood plain in this reach backs up flow.	Sand and silt with cover; poor to fair	None noted.	Not assessed	None noted.	None noted.	Garbage and debris noted. <sup>2</sup>
16	Extensive sand deposits on bank. <b>Main channel:</b> Flat water with a few pools and riffles. <sup>5</sup> <b>Bank erosion:</b> Mostly eroding. <sup>2</sup>	Sand and silt with some rubble upstream of the WWTP. Cover is poor to fair. <sup>5</sup>	One sewer pipeline, casing causing scour. <sup>5</sup>	Roseville WWTP outfall	Vernon Street bridge	None noted.	
17	<b>Main channel:</b> Mostly flat water with a few pools and riffles. <sup>5</sup> <b>Bank Erosion:</b> Severe. <sup>2</sup> <b>Corridor:</b> Some overhanging vegetation.	Sandy with some small cobbles. <sup>2</sup> Sand and silt with poor cover. <sup>2</sup>	None noted.	Outfalls, if present, were documented - data not yet	Riverside Ave. bridge; UPRR crossing (4 culverts); Foothills Blvd. Underpass.	None noted.	A huge amount of garbage was on left bank of the creek during the Bishop

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Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
18	<b>Main Channel:</b> Flat water with a few pools. <b>Bank Erosion:</b> Erosion on left bank adjacent to encroachment.	Sand and cobbles. <sup>2</sup> Sand and silt with poor stream cover. <sup>5</sup>	Single sewer pipeline at the confluence of Dry Creek and Cirby Creek - migration barrier during low flow.	Outfalls, if present, were documented - data not yet tabulated. <sup>3</sup>	Darling Way bridge.	Pipeline Improvement: part of the Dry Creek Urban Streams Restoration Project (City of Roseville). <sup>6</sup> Improvements include modifications to in stream boulders to improve fish passage over an existing sewer line. The project includes restoration and erosion control work at two erosion sites and a complete study and analysis of this reach of Dry Creek as well as hydraulic improvements in the down stream section that will improve flood protection in the immediate area.	
19	<b>Main Channel:</b> Flat water with several pools and riffles. <sup>5</sup> <b>Bank Erosion:</b> Severe and very step in places. <sup>2</sup>	Dominant substrate is sand. <sup>2</sup> Sand and silt with some rubble and gravel. <sup>5</sup>	None noted.	Outfalls, if present, were documented - data not yet tabulated. <sup>3</sup>	Douglas Blvd. bridge (open span).	Oak and riparian plantings, by the City of Roseville, after closing the Saugstad Park landfill. Dry Creek Urban Streams Restoration Project is also taking place in this reach, see Reach 18 for the description. <sup>6</sup>	
20	<b>Main Channel:</b> Channelized. <sup>5</sup> <b>Bank Erosion:</b> Severe incision and bank erosion. Almost the entire stretch is stabilized with some type of bank protection such rip-rap and chain-link gabions. <sup>2</sup>	Dominant substrate is sand. <sup>2</sup> Sand and silt with some rubble and gravel. <sup>6</sup>	Multiple pipelines <sup>2</sup>	Outfalls, if present, were documented - data not yet tabulated. <sup>3</sup>	Folsom Road bridge and two foot bridges.	The Dry Creek Restoration project was implemented in this reach in 2000 included riparian plantings. Dry Creek Urban Streams Restoration Project, see Reach 18 for the description. <sup>6</sup>	
21	<b>Main Channel:</b> Flat water with numerous pools and riffles. <sup>5</sup> Incised with a grading sandbar formation downstream of Harding Blvd. <sup>2</sup> <b>Bank Erosion:</b> Mostly eroding banks with gabions, rip-rap, and discarded concrete used for bank protection. <sup>2</sup> <b>Corridor:</b> Some over hanging vegetation.	Sand and cobbles with significant deposits of sand and large cobble downstream of Harding Boulevard. <sup>2</sup> Mostly sand and silt, but rubble and gravel common. <sup>5</sup>	None noted.	Severe erosion occurring around a drainage outlet. <sup>2</sup> ECORP mapped outfalls in this reach, if present - data not yet tabulated. <sup>3</sup>	The Harding Blvd bridge (open span).	Dry Creek Urban Streams Restoration Project, see Reach 18 for the description. <sup>5</sup>	
<b>Cirby Creek by Reach</b>							
1	<b>Main Channel:</b> "nice meander". <b>Bank Erosion:</b> Some bank erosion noted. <sup>2</sup>	Sandy with some small cobbles. Banks are 90% sand <sup>1</sup> .	No pipeline identified <sup>2</sup> .	None noted.	None <sup>1</sup> .	None noted.	
2	<b>Main Channel:</b> Severe downcutting in the channel, no natural flood regime. <sup>2</sup> <b>Bank Erosion:</b> Eroding mudbanks, steep and eroding, with areas of complete bank failure. Recently installed floodwalls were being undercut. <sup>2</sup>	Silt <sup>2</sup>	A sewer line near Eastwood Park believed responsible for severe erosion. <sup>2</sup>	Drainage outfalls near Eastwood Park believed responsible for severe erosion. <sup>2</sup>	Footbridge downstream of Eastwood Park <sup>1</sup> . Interstate 80 bridge.	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings may have occurred after the work was conducted.	
3	<b>Main Channel:</b> Modified. Some downcutting in the channel and the lower portion is described as "essentially a drainage ditch". <b>Bank Erosion:</b> Banks in the upstream portion appear stable and are rocked on one side <sup>2</sup> .	Upstream portion is sandy and the downstream portion is mucky <sup>1</sup> .	None noted.	Storm drain outfall contributing to erosion in the upstream portion <sup>2</sup> .	Sunrise Ave. and Coloma Way bridges.	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings may have occurred after the work was conducted.	The downstream portion is, "generally in very poor condition."
4							No specific studies have been conducted after Oak Ridge Drive.

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Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
<b>Linda Creek by Reach</b>							
1	<b>Main Channel:</b> Generally poor in condition, steep banks, incised. <b>Bed Characteristics:</b> Sand deposition from adjacent parking lots. <b>Bank Erosion:</b> Present. <sup>2</sup>	Sandy <sup>2</sup>	None noted.	None noted.	Sunrise Ave. bridge	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings may have occurred after the work was conducted.	Trash dumping noted on the left bank, downstream of Sunrise Boulevard <sup>2</sup> .
2	<b>Main Channel:</b> Severe downcutting where narrow; overflow channels where wider. A chain-link fence and weir/dam structure in the upper portion obstructs flow. <b>Bank Erosion:</b> Severe where riparian corridor is narrow, more stable at wider areas. A sewer line and weir/dam create localized severe erosion. <b>Secondary Channels:</b> Where main channel widens. <b>Corridor:</b> Variable width. <sup>2</sup>	Sandy and silty <sup>2</sup> .	A sewer line crossing exhibiting severe erosion in the upstream portion of this reach. <sup>2</sup>	None noted.	Oak Ridge Dr. bridge; bicycle bridge demarcating the end of Bishop's reach 2.	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings may have occurred after the work was conducted.	The bike trail runs through the riparian corridor. Some large oaks cut, apparently by an adjacent landowner, in the downstream portion. <sup>2</sup>
3	<b>Main Channel:</b> Stagnant flows and downcutting. <b>Bank Erosion:</b> Severe in some locations, downcutting bed. <sup>2</sup>	Ssandy and mucky <sup>2</sup> .	Sewer line adjacent to and crossing the creek causing severe erosion. <sup>2</sup>	None noted.	Rocky Ridge Dr. bridge (3-part box culvert) <sup>2</sup> .	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings occurred after the work was conducted.	Nothing noted.
4	The natural floodplain has been encroached upon with houses and roadways. <b>Main Channel:</b> down cutting despite overflow areas. <b>Bank Erosion:</b> Eroding. <sup>2</sup>	Sandy and silty <sup>2</sup> .	No pipelines were identified. <sup>2</sup>	None noted.	Champion Oaks Dr. bridge (round culverts and fill that impede flow) <sup>2</sup> .	A portion of the City of Roseville's Cirby-Linda-Dry Creek project took place in this reach. Mitigation in the form of native tree plantings occurred after the work was conducted.	Nothing noted.
5	<b>Main Channel:</b> Despite some bank erosion, this reach is considered "semi-stable." <b>Bank Erosion:</b> Some. <sup>1</sup>	Sandy <sup>2</sup> .	No pipelines were identified. <sup>2</sup>	Not assessed	Old Auburn Road.		Attempts at responsible land stewardship by adjacent landowners noted <sup>2</sup> .
6	<b>Main Channel:</b> Low gradient with alternating run and pool habitat and shallow water. <b>Bank Erosion:</b> Exposed banks, severity not assessed. <sup>7</sup>	Not identified.			Sierra College Blvd.		Based on assessment of one site. <sup>7</sup> Suckers observed; all young-of-the-year fish. Green sunfish, bluegill, and bullfrog larvae also observed in the pool between the confluence of the two forks and the bridge. <sup>7</sup>
7	<b>Main channel:</b> branches just above Sierra College Blvd. Most of the flow is in the left branch (looking upstream). <sup>7</sup>						No reach specific discussion available.
8	<b>Main Channel:</b> Moderately deep run and pool, perennial flow due to natural seep and springs, and irrigation and drainage runoff from adjacent development. Channel width ranges from several feet to about 25 feet. A rock dam (mostly breached) and a small beaver dam (downstream of the rock dam) impound some seasonal flow, but do not appear to contribute to flooding outside of the natural floodplain. <b>Bed Characteristics:</b> Bedrock in some locations. <b>Bank Erosion:</b> Not assessed. <b>Debris in Channel:</b> Large trees and shirks in creek bed on immediate edge, no herbaceous vegetation. <sup>3</sup>	Sand and clay, western area. Bedrock, eastern area.					

Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
9							No reach specific discussion available, but the pond and associated dam are likely a barrier to fish passage.
10	<b>Main Channel:</b> Small, dams in the section that runs through the golf course. <sup>7</sup>						
<b>Strap Ravine by Reach</b>							
1	<b>Main Channel:</b> Rock walls adjacent to homes and apparent high flooding potential. <b>Bank Erosion:</b> Banks are unstable. <sup>2</sup>	Sandy and mucky <sup>2</sup> .	None noted.	None noted.	Dirt access road with double culverts and sandbags. <sup>2</sup>	None noted.	Nothing noted.
2	<b>Main Channel:</b> Incised, little floodplain interaction. <b>Bank Erosion:</b> Eroded and fairly unstable and compacted. <sup>2</sup>	Sandy-mucky <sup>2</sup>	No pipelines identified <sup>2</sup> .	None noted.	McLaren Drive (one round culvert reported to impede flow) and Johnson Ranch Drive (cemented banks with multiple drain pipes) bridges <sup>1</sup> .	None noted.	Nothing noted.
3	<b>Main Channel:</b> Significant amount of diverted flow. <b>Bank Erosion:</b> Not assessed. <sup>2</sup>	Very mucky and stagnant <sup>2</sup> .	No pipelines identified.	None noted.	East Roseville parkway (six-part box culvert that obstructs upstream flow and divides low flows) <sup>1</sup> .	None noted.	
4	<b>Main Channel:</b> Due to past dredging activities, the channel has no identifiable bed and bank. Although there is flow into the area, the topography is disturbed such that no channel has reformed and water ponds in isolated locations with no surface hydrological connectivity. Headcutting is gradually forming a rough channel with scour holes. <b>Bank Erosion:</b> Not assessed. <sup>2</sup>	Bedrock, dredging material, cobbles, and sand. <sup>2</sup>	No pipelines identified <sup>2</sup> .	None noted.	Sierra College Boulevard (open box culvert) <sup>1</sup> .	None noted.	
5	<b>Main Channel:</b> Disturbed due to dredging, and there are stretches where there is no defined channel. Other areas have an eroding channel with an undulating bed. There are numerous scour areas. <b>Bank Erosion:</b> Banks vary from no bank development to about three feet high and eroding. <sup>2</sup>	Cobbles to sand, with areas of thick cracking clay, sandstone, black cobbles, and metamorphic rock <sup>2</sup> .	None noted	None noted	A private driveway with a double culvert. Cement is eroding <sup>2</sup> .	None noted	
6	<b>Main Channel:</b> Gravel pit takes buffer flow. <b>Bank Erosion:</b> Eroded, low to steep. <sup>2</sup>	Sandy <sup>2</sup> .	No pipelines identified <sup>2</sup> .	None noted.	None <sup>2</sup> .	None noted.	
7	<b>Bank Erosion:</b> Unstable and eroding <sup>2</sup> .	Mucky <sup>2</sup>	No pipelines identified <sup>2</sup> .	None noted.	Barton Road (two round culverts) <sup>2</sup> .	None noted.	
<b>Antelope Creek by Reach</b>							
1	<b>Main Channel:</b> Very straight, and within the confined area, a floodplain is developing. Mostly flatwater with a few pools <sup>2</sup> . Man-made rock dam may impede flow somewhat. <b>Bank Erosion:</b> Not assessed.	Sandy with small cobbles. <sup>2</sup>	A sewer line adjacent to the creek. <sup>2</sup>	No outfalls found.	Harding Blvd. and Atlantic Street.	Riparian species had been planted along the banks. <sup>2</sup>	

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
2	<b>Main Channel:</b> Steep banks, approximately 30" above the water level. Downcutting is occurring in some areas, but is beginning to stabilize, with areas that are wider with shallower water and stable banks. <b>Bank Erosion:</b> Isolated areas of bank erosion, rock rip-rap, and rill erosion at the base of the landfill <sup>2</sup> . <b>Debris in Channels:</b> Logs, several potential barriers at low flow.	No suitable spawning gravels. <sup>3</sup> Sand dominant with some small cobble. <sup>2</sup>	None were noted.	One outfall causing severe erosion.	Four major road and railroad crossings, as well as the land fill bridge (culverts causing erosion) <sup>2</sup> .	Riparian and oak mitigation in 1996.	A well-established homeless camp and the archery range were having an impact on the riparian vegetation adjacent to the creek during the Bishop survey. <sup>2</sup>
3	<b>Main Channel:</b> Good condition with low banks, meanders, overflow, and backwater areas. <sup>2</sup> <b>Bank Erosion:</b> Not assessed.	Sandy	None were noted.	None noted.	Antelope Creek Drive and Highway 65.	In 1997, 0.39 acre of wetlands, including 0.30 acre of seasonal wetland and 0.09 acre of drainage swale, built as mitigation for the adjacent apartment complex <sup>4</sup> . In 1995, riparian and oak mitigation in the same area. At the end of the five year monitoring period, 101 riparian plantings and 125 oak plantings were successfully established <sup>5</sup> .	
4	<b>Bank Erosion:</b> Steep and eroding with high areas of instability <sup>2</sup> .	Sandy and mucky, with sand deposits on the banks. <sup>2</sup>	At least four pipelines. <sup>2</sup>	Numerous outfalls. <sup>2</sup>	Highway 65, Springview Drive, and Sunset Blvd.		
5		Sandy, rocky, and exposed bedrock. <sup>2</sup>	None were noted.	None noted.	Midas Road bridge.		
6	<b>Main Channel:</b> Areas of significant incision (moving upstream), some backwater and overflow channels. Aitken Reservoir and dam is located in-stream. <b>Bed Characteristics:</b> Exposed bedrock in some places. <b>Bank Erosion:</b> Moderate, stable near Grove Street. Severe erosion at base of Aitken Reservoir Dam. <sup>2</sup>	Exposed bedrock, cobbles and sandbars. <sup>2</sup>	One leaking pipeline. <sup>2</sup>	None noted.	Grove Street (Yankee Hill Road) bridge.		
7	<b>Main Channel:</b> Stable overall. <b>Bank Erosion:</b> Some areas of partially eroding banks, generally stable. <sup>2</sup>	Sandy, small cobbles, and a few boulders. <sup>2</sup>	One small, leaking waterline.	None noted.	Del Mar Ave. bridge.		
8	<b>Bank Erosion:</b> Eroding banks are the only adverse condition <sup>2</sup> .	Sandy, irregular bed with exposed bedrock, and boulder outcrops. <sup>2</sup>	None were noted.	None noted.	Sierra College (double box culvert) crossing at downstream limit.		
9	The floodplain is intact in the upstream end of the reach. <b>Bank Erosion:</b> Stable banks, although some were compacted. <sup>2</sup>	Muddy and sandy substrate. <sup>2</sup>	None were noted.	None noted.	King Road (open span bridge) at downstream limit. Citrus Colony Road (culvert) <sup>2</sup> .		
10							No studies have been conducted past Citrus Colony Road.
<b>Clover Valley Creek by Reach</b>							
1	<b>Main Channel:</b> Highly channelized and sometimes impounded. During flood conditions, bank overtopping can occur and spill into overflow channel. <b>Bank Erosion:</b> not assessed. <sup>2</sup> <b>Secondary Channels:</b> Overflow channel	Not assessed			Argonaut Drive (culvert) - barrier to fish passage. <sup>3</sup>		

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2	<b>Main Channel:</b> Upstream from the golf course, the stream channel bifurcates. At the upper end of the bifurcation, water is impounded instream through the use of control devices on each of the two channels, forming a large, ponded area within an existing residential development. No provision for fish passage. <b>Bank Erosion:</b> Not assessed. <sup>3</sup>	Not assessed					
3							Conditions are likely to be generally similar to those described for Reach 2 (above).
4	The floodplain has been delineated by Ensign and Buckley (1990).						
<b>Miners Ravine by Reach</b>							
1	<b>Main Channel:</b> Riffles and pools present. <sup>3,5</sup> Right bank is low, enabling flood plain contact. <sup>2</sup> <b>Bank Erosion:</b> Left bank is steep and slowly eroding. <sup>2</sup> <b>Debris in Channel:</b> Fallen trees. <sup>3</sup> <b>Corridor:</b> Overhanging vegetative canopy. <sup>3,5</sup>	Boulders gravel, and rubble <sup>3</sup> comprised around 50% of the substrate. <sup>5</sup> Sandy and cobbles. <sup>2</sup>	One sewer line adjacent to the right bank of the creek. <sup>2</sup>	One outfall in this reach causing erosion and slope failure. <sup>2</sup> ECORP mapped outfalls in this reach, if present - data not yet tabulated. <sup>3</sup>	Harding Blvd., Interstate 80, and Eureka Road bridges.		
2	<b>Main Channel:</b> Adjacent to the former wastewater ponds, Miners Ravine is channelized. Downstream from this, the stream is stable, with backwater wetlands and overflow channels. <b>Bank Erosion:</b> hillside and levee erosion adjacent to the former wastewater ponds. <b>Debris in Channel:</b> Debris dams. <b>Secondary Channels:</b> Overflow channels. <b>Corridor:</b> A large component of overhanging vegetation.	Small boulders and rubble. <sup>5</sup> Cobbles and sand. <sup>2</sup>	No pipelines noted.	Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>	North Sunrise Ave., East Roseville Pkwy. bridge, and seven bike trail crossings.	In 1994, mitigation riparian habitat and wetlands were created between the Sunrise Blvd. and Roseville Pkwy. overcrossings. Subsequent floods of 1995 caused some modifications; however, some of the wetland basins and the riparian plantings remain	Nothing noted.
3	<b>Main Channel:</b> Upper portions dominated by narrow channel with waterfall and good bank overflow; some areas further downstream are straightened and dredged before entering a section of meandering. <b>Bed Characteristics:</b> Rock outcrops in some areas. <b>Bank Erosion:</b> Present where adjacent to a residential area, although fairly stable where creek meanders. A fence crossing has contributed to localized erosion.	Sandy with rock outcroppings. <sup>2</sup>	Two low-hanging double pipes under the Cavitt-Stallman bridge. <sup>2</sup>	None noted.	Sierra College (triple box culvert), Cavitt-Stallman, and Ashby Lane (3 normal and 2 high flowculverts - floods easily; the cement apron between culverts may be a fish passage issue; water slows before the culverts upstream and is forced through them resulting in jet flow downstream).	None were noted.	
4	<b>Main Channel:</b> Varies between fast moving narrow section to slow moving pools. Some areas have overflow channels and in others large overflow area were available to the creek. <b>Bed Characteristics:</b> Rock outcroppings with associated waterfalls. <b>Bank Erosion:</b> Fairly stable banks. <b>Secondary Channels:</b> Well established overflow channels in some areas.	Large rock outcroppings with sand and vegetated sandbars. <sup>2</sup>	None noted.	None noted.	Barton Road Bridge (a high erosion and backup potential). <sup>2</sup>	None noted.	

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
5	<b>Main Channel:</b> Signs of flow over large areas. <sup>2</sup> The topography is rolling and there is evidence of past dredging activities. Downcutting. <b>Bank Erosion:</b> Banks are fairly stable with areas of backwater channels and wetlands. However, removal of streamside vegetation by adjacent landowners was suspected contribute to the bank undercutting and stream bed downcutting. One area of rip-rap is becoming unstable from the land side and one area of incision downstream of Tall Pine Lane.	Very sandy in the creek bed with rocks on the bank and areas of significant gravel deposits. <sup>2</sup>	None noted.	None noted.	Tall Pine Lane bridge (3round culverts, approximately half filled with sediment at the time of the survey). <sup>2</sup>	None noted.	Homeowner encroachment resulting in washout area contributes significant sediment in stream. <sup>2</sup>
6	<b>Main Channel:</b> Realigned at approach to Tall Pine Lane. Adequate overflow areas and backwater channels. <b>Bank Erosion:</b> Mostly stable except for problems caused by adjacent landowners including: bank impacts from homeowner erosion control, serious riparian encroachment resulting in a narrowed channel, and a large wash-out area. Additionally, a house with hose outlet on bank was causing erosion. <sup>2</sup>	Very sandy with some large boulders. <sup>2</sup>	None noted.	None noted.	Carolinda Dr. (open span bridge with rip rap and a pedestrian walkway with 4' high wood barriers that may block overflow and cause scour).	None noted.	Homeowner encroachment resulting in washout area contributes to significant sediment load in stream. <sup>2</sup>
7	<b>Main Channel:</b> Slight meandering. <b>Bank Erosion:</b> Significant disturbed, unstable, eroding, worse where adjacent to lawns and where stripped bare.	Cobbles with significant new sand deposits on banks, and bedrock. <sup>2</sup>	One sewer line parallel to and crossing the creek at the bridge. <sup>2</sup>	None noted.	Itchy Acres bridge (rip-rap associated with it).	None noted.	
8	<b>Main Channel:</b> Probably the worst reach in the study area. <b>Bank Erosion:</b> Signs of massive bank failure, slipping, cracking, and severe incision. Bank impacts from homeowner erosion control included: sandbags, concrete rubble, chain link gabion structures, plastic sheeting, and floodwall. Additionally, a sprinkler system was causing erosion and the creek was encroached to edge with fences, lawns, etc.	Cobbles and exposed bedrock. <sup>2</sup>	Some were noted attached to the bridge.	None noted.	Miners Ravine Road bridge (open span).	None noted.	
9	<b>Bank Erosion:</b> Banks were vegetated but being undercut. There were signs of overflow and a bench at base of the banks (compacted). In one area a landowner had re-contoured the bank with a bulldozer. <sup>2</sup>	Cobble and exposed bedrock. <sup>2</sup>	A low pipeline was near Leibinger Lane.	One outfall causing erosion. <sup>2</sup>	Leibinger Lane bridge (culverts with fill).	None noted.	Fences present (wire-square) on both sides of creek.
10	<b>Main Channel:</b> Fows turbulent to stagnant; overflow channels unnaturally terminated due to urban development downstream; incised channel (15 feet deep). <sup>2</sup> <b>Bank Erosion:</b> Severe erosion and encroachment. <b>Corridor:</b> Continuing home construction in the floodplain.	Sandy <sup>2</sup>	A concrete sill protecting an active waterline (in the creek bed) and a sewerline (suspended above the creek) crossing the creek.	One outfall adjacent to the sewerline on the northwest bank. <sup>2</sup>	Auburn-Folsom bridge (box culvert).	Miners Ravine Restoration Project. Non-native invasive vegetation removed from banks and floodplain enlarged along about 300 feet of the south bank at the Miners Ravine Nature Preserve site (along Auburn-Folsom Road). Following floodplain reconfiguration, the site was replanted with hundreds of native trees and groundcover in order to stabilize the area and provide long-term wildlife habitat. There are currently plans to pursue a fish passage project	
11	<b>Main Channel:</b> Significant overflow well out of banks, backwater channels, and wetlands that provided flood storage. The water here was clear and flowing. <sup>2</sup> <b>Bank Erosion:</b> Stable banks, except at the two road crossings where banks are eroding. <sup>2</sup> <small>Secondary Channels: Backwater channels.</small>	Significant sand deposits from recent high flow conditions. <sup>2</sup>	A low hanging pipe near the downstream crossing of Auburn-Folsom Road and a buried sewer line running adjacent to creek. <sup>2</sup>	None were noted.	Downstream Auburn-Folsom Rd (open bridge, erosion problems on the upstream side, degradation of adjacent gunite on banks); small homeowner bridge; footbridge across from a baseball diamond (causing severe scour on banks); upstream Auburn-Folsom Rd. (considered inadequate).	None noted.	
12	<b>Main Channel:</b> Some areas of natural bank overflow; off stream ponds. <b>Bank Erosion:</b> Behind the blackberry; natural terracing on the right bank; homeowner placed riprap.	Primarily silt and sand with significant sand deposits from a recent high flow event.	None noted.	None noted.	None noted.	None noted.	

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
13	<b>Main Channel:</b> Variable; incised areas, wider areas with more gentle gradation, stagnant areas. <b>Bank Erosion:</b> Variable; steep eroding banks, fairly stable vegetated areas.	Sandy to muddy. <sup>2</sup>	None noted.	None noted.	Moss Lane bridge (open but only about 10' high). A private bridge with cemented/barrier substrate resulting in 2' drop. A private open bridge. A footbridge.	None noted.	
14	<b>Bank Erosion:</b> High bank erosion and signs of dredging adjacent to creek. <sup>2</sup>	Sand.	None noted.	None noted.	One homemade footbridge constructed of metal and wood. <sup>2</sup>	None noted.	One house with significant junkyard adjacent to the creek. <sup>2</sup>
15	<b>Bank Erosion:</b> Semi-eroding behind the Himalayan blackberry. <sup>2</sup>	Very sandy with some areas of granite outcroppings. <sup>2</sup>	None noted.	None noted.	Willow Valley Place bridge.	None noted.	
16	<b>Main Channel:</b> Semi-incised; the left bank is a solid rock wall that becomes very incised with 12' vertical banks. <sup>2</sup> <b>Bank Erosion:</b> High potential for continued erosion (encroachment) toward treatment plant and/or mobile homes.	Basalt, sandy bottom, and sandstone banks. <sup>2</sup>	None noted.	None noted.	Dick Cook Road (open span)	None noted.	
17	<b>Main Channel:</b> Overflow areas are present. <b>Bank Erosion:</b> Steep eroding banks adjacent to (what were at the time new) home lots.	Sand and rock. <sup>2</sup>	None noted.	None noted.	Lomida Lane bridge (4 road culverts).	None noted.	
18	<b>Main Channel:</b> Downstream toward Lomida it becomes more stream-like. <b>Debris in Channel:</b> Downstream towards Lomida thickly vegetated and impenetrable and blocked with woody vegetation in areas <sup>1</sup> .	Mucky.	None noted.	None noted.	Whiskeybar Rd crossing (creek is fenced and inadequate for flow).	None noted.	
19	<b>Main Channel:</b> Highly homeowner modified; an in-stream homeowner lake severely impedes flow and appears to decrease water quality. Several homes use the creek as part of landscaping; a cemented waterfall, high flood risk. <sup>2</sup> <b>Bank Erosion:</b> Eroding bank, degraded riparian vegetation, permanent sandbags. <sup>2</sup>	Silt, sand, mud, and muck. <sup>2</sup>	None noted.	None noted.	Whiskeybar Rd bridge (open bridge)	None noted.	
20	<b>Main Channel:</b> Near the headwaters and therefore, the creek has a small capacity and flow. A cement open notch dam upstream of Rock Springs Road was present. <b>Bank Erosion:</b> While currently stable, there had been previous downcutting in locations. <sup>2</sup>	Sand. <sup>2</sup>	None noted.	None noted.	None noted.	None were noted.	
21							No studies have been conducted past Newcastle Road.
<b>False Ravine by Reach</b>							
1				Numerous outfalls were documented. <sup>3</sup>			

2				Outfalls, if present, were documented - data not yet tabulated. <sup>3</sup>		Currently mitigation project ongoing adjacent to False Ravine for impacts associated with bike trail crossings within the open space corridor. Over four hundred oak and other native plants were planted in four areas along False Ravine.	
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**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
3	<b>Main Channel:</b> Original bed.			Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>			
4	<b>Main Channel:</b> Drainage ditch.						This reach is the end of False Ravine. Development here may have modified this area more of a "drainage ditch".
<b>Secret Ravine by Reach</b>							
1	<b>Main Channel:</b> Overflow into a stagnant channel <sup>2</sup> . <b>Bank Erosion:</b> Banks are fairly stable.	Sandy and mucky <sup>2</sup> .	Pipelines present (not quantified). <sup>2</sup>	Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>	East Roseville Parkway bridge (pillars with gabion bank correction), footbridge (double sized over the main and overflow channels), and bike bridge.	The Secret Ravine Water Line Improvement Project (City of Roseville). A partnership with the Fish Passage Improvement Program (FPIP) and in accordance with an MOU between the City and the FPIP. includes removal of an abandoned water line crossing Secret Ravine. The water line and related concrete encasement can impede fish migration during low flows. Funding for preliminary engineering is provided by the FPIP; however, the project is currently on hold pending notification from the FPIP due to budget and staff constraints at the State.	Occupation by transients and a "noisy" and "unpleasant" area reported during the Bishop survey <sup>2</sup> . One large salmon sighted <sup>2</sup> .
2	<b>Main Channel:</b> The stream not in its permanent channel and it appears to be widely variable; beaver dams and highly disturbed channel. <sup>2</sup> <b>Bank Erosion:</b> Banks are considered "overall stable," with isolated areas of bank erosion <sup>2</sup> .	Very sandy <sup>2</sup> .	No pipelines are reported <sup>1</sup> .	Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>	None <sup>1</sup> .	None noted.	
3							
4	<b>Main Channel:</b> Variable; incising channel, meanders and overflows, with fast murky flow. <b>Bed Characteristics:</b> Bedrock/rock in some areas. <b>Bank Erosion:</b> Downstream fairly stable with isolated areas of erosion and some riprap. Upstream is unstable.	Downstream: sandy, with banks mostly comprised of bedrock. Upstream: sandy, rock, with rock outcrops <sup>2</sup> .	Sewer pipeline crossings in both the downstream and upstream portions. The lower crossing is causing severe erosion problems <sup>2</sup> .	Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>	A "new major road crossing" (China Garden Road?) in the upstream portion. <sup>2</sup>	None noted.	Many beaver dams are reported <sup>2</sup> .
5	<b>Main Channel:</b> Frequently overflows-backwater wetland areas; pools and riffles, one of the most hydrologically stable reaches along this creek. <sup>2</sup> Adequate setback of structures – functional floodplain, stream meandering. <b>Bank Erosion:</b> Excellent banks high cut, fairly stable, low erosion. <sup>2</sup> <b>Debris in Channel:</b> Logs, rocks, and living/dead vegetation.	Mixed boulders, rocks, and gravel <sup>2</sup> .	No pipelines identified <sup>2</sup> .	Outfalls, if present, were documented - data not yet tabulated. <sup>4</sup>	A single footbridge.	Described as a high priority preservation area. <sup>2</sup>	

**Table 2.36b. Reach by Reach Tributary Descriptions, Hydrologic Elements, and Man-Made Structures (continued)**

Reach Number	Hydrology and Erosion	Substrate	Pipelines	Outfalls	Bridges	Mitigation/ Restoration	Other
6	<b>Main Channel:</b> Pools and makeshift metal with panels dam. <sup>2</sup> <b>Bed Characteristics:</b> Sand and rock bars with little established vegetation. <b>Bank Erosion:</b> Some steep, slightly eroding banks. On the south side (left bank) they are semi-stabilized. <b>Corridor:</b> Nicely shaded.	Sandy <sup>2</sup> .	No pipelines identified <sup>2</sup> .	None noted.	Sierra College Boulevard (triple box culvert) <sup>2</sup> .	None noted.	
7	<b>Main Channel:</b> Uneven bottom upstream, high sediment load, down cutting, some straight areas downstream. <b>Bank Erosion:</b> 2:1 slopes with some undercutting, straight areas more stable, upstream eroding, down cut banks, step, gabions, encroachment on houses. <b>Debris in Channel:</b> Woody debris.	Downstream portion: large boulders, sand, cobble deposits. Upstream portion: sandy with boulders and no cobbles <sup>2</sup> .	No pipelines identified <sup>2</sup> .	None noted.	Brace Road (double box culvert), 2 private wooden bridges (one about 40' wide, the other associated with a stone debris dam and resulting in-stream lake) <sup>2</sup> and Horseshoe Bar (open span with downcutting at its base) <sup>2</sup> .	None noted.	None noted.
8	<b>Main Channel:</b> Downstream becomes healthy, waterfall and overflow channels, good topography for flood storage, beaver dams. <b>Bank Erosion:</b> Steep eroding within park, stabilized downstream to healthy	Nice gravel, becomes somewhat mucky as it backs-up against beaver dam. <sup>2</sup>	No pipelines identified <sup>2</sup> .	None noted.	King Road bridge (open span) <sup>1</sup> .	None noted.	Bishop (1997) reports some floodplain encroachment by a house with a floodwall and a chain link fence (associated with a Soccer field). Some erosion is reported at trails leading from park to creek
9	<b>Bank Erosion:</b> Straight banks covered with blackberry, eroding underneath. Banks are more stable where the stream meanders. <sup>2</sup>	Sandy, area with polyps <sup>2</sup> .	No pipelines identified <sup>2</sup> .	None noted.	Footbridge at the park <sup>1</sup> .	None noted.	None noted.
10	<b>Main Channel:</b> Clear flowing water, but becomes stagnant and temperature increases downstream. <sup>2</sup> <b>Bank Erosion:</b> Moderately eroding. A culvert with significant runoff and bank erosion is present <sup>2</sup> .	Vegetated sandbars and rock outcrops <sup>1</sup> .	No pipelines identified <sup>2</sup> .	None noted.	Penryn Road (one round culvert that had trapped debris).	None noted.	High sediment load in runoff during the Bishop study. <sup>2</sup>
11	<b>Main Channel:</b> Downstream clear with pools and riffles. Upstream gently meandering and exhibits sloping vegetated banks. <b>Bank Erosion:</b> Downstream steeply eroding to moderate erosion.	Sandy with boulders to cobbly, and mucky where flows back up against Boulder Creek Rd crossing <sup>2</sup> .	No pipelines identified <sup>2</sup> .	None noted.	Boulder Creek Road (2 round culverts appear to impede flow) and Rock Springs Road (open span) <sup>2</sup> .	None noted.	None noted.
12							No studies have taken place past Rock Springs Road.
<b>Sucker Ravine by Reach</b>							
1							No studies have been conducted on Sucker Ravine.

<sup>1</sup> Foothill and Associates, 2003

<sup>2</sup> Bishop, 1997

<sup>3</sup> ECORP, 2003

<sup>4</sup> Holland, 2000

<sup>5</sup> Vanicek, 1993

<sup>6</sup> Dry Creek Urban Streams Restoration Project: This project is being advanced by the City of Roseville in partnership with the Dry Creek Conservancy. The Department of Water Resources Urban Streams Restoration Program provides funding. The project includes restoring a 1.4-mile reach of Dry Creek beginning at the Riverside Avenue Bridge and extending upstream to Adelante High School.

<sup>7</sup> GANDA (Garcia and Associates), 1998