

6.2.3 Highway-related Construction, Operation, and Maintenance Activities

Accidents involving the transportation of hazardous materials on I-70 could impact Clear Creek and Georgetown Reservoir. Because I-70 is a designated hazardous materials transportation route, the potential exists for such incidences to occur.

Highway runoff containing traction sand and chemical deicers used for winter maintenance on I-70 may be affecting the water quality of Clear Creek. The runoff may affect the total suspended and dissolved solids and metals concentrations throughout SS 4.

Georgetown Lake and Georgetown Lagoon are likely affected by sedimentation originating from various nonpoint sources. Georgetown Lake and Lagoon serve as traps for sediment originating upstream and adjacent to the reservoir. The south-facing hillsides within this SS have historically been unstable creating landslide conditions. During intense precipitation, drainages of these hillsides convey considerable quantities of debris and sediment through culverts beneath I-70.

Based on a review of current aerial photographs and wetland maps, construction of I-70 has eliminated or encroached upon approximately 13 acres of wetland opposite Clear Creek near MP 228.

6.2.4 Sedimentation

The gradient in this SS is considerably greater in upper SS4 than that of other SS, and most sediment originating in SS 4 and from segments upstream is transported to Georgetown Lake where the stream gradient drops to zero (Figure 4-2).

Most of SS 4 is high gradient with few opportunities for suspended solids to settle out of the water column (sedimentation) upstream from Georgetown. However, the extreme upper portion of this section (proximal to Silver Plume) has a lower gradient, and sediment from mining activities in the Silver Plume area—along with sand and gravel applied to the highway—can settle and create impacts to aquatic habitat in Silver Plume.

Georgetown Lake and Lagoon may be affected by sedimentation originating from natural erosion, parking lots, roadways associated with the town, erosion of cut and fill slopes associated with I-70 at Georgetown Hill, and the application and erosion of sand and gravel on I-70 and U.S. 6 (Figure 6-2). Georgetown Lake serves as a trap for sediment originating upstream and adjacent to the reservoir. The south-facing hillsides within this SS 4 have historically been unstable creating landslide conditions. During intense precipitation, drainages of these hillsides convey considerable quantities of debris and sediment into Georgetown Lake.

Sedimentation from upstream inputs may be reducing the pool depth of Georgetown Lake and Lagoon, which in turn reduces cover and over-wintering habitat for aquatic life. A

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hydrologic assessment of potential sediment impacts to the reservoir and lagoon has been initiated. This assessment will provide information regarding inputs of the sources, identification of the sources, and recommendations.

Georgetown Lake has been receiving sediment associated with the I-70 cut slopes. Georgetown Lake serves as an effective trap for these sediments and sediments originating upstream.

Sediment negatively affects fisheries by reducing habitat and food sources. Sedimentation from upstream inputs may be reducing the pool depth of Georgetown Lake which in turn reduces cover and over-wintering habitat for aquatic organisms.

6.2.5 Channelization/Downcutting

Clear Creek has been channelized or encroached on by mining activities in Silver Plume, US 6 and I-70 construction, and the towns of Silver Plume and Georgetown (Figure 6-2). Approximately 1.1 miles (23 percent) of the 4.8 miles of Clear Creek within this SS have been channelized or encroached on by urban development; 0.2-mile (4 percent) by mining; and 1.1 miles (22 percent) by highway. The natural morphology of upper Clear Creek is described as a B2/B3 high gradient narrow mountain stream with coarse substrate and sinuosity typically greater than 1.2 (Rosgen, 1996). The historic sinuosity for this SS is estimated to be 1.29. The current sinuosity estimated for SS 4 is 1.25 (excluding Georgetown Lake), indicating a slight reduction in sinuosity compared to its natural or historic sinuosity.

6.2.6 Habitat Reduction and Fragmentation

Review of infrared photographs indicates the construction of I-70 within this SS has removed or encroached on 13 acres of wetlands near Silver Plume.

6.2.7 Water-based Recreation

The sport fishery of Georgetown Lake may be affected from ongoing sedimentation reducing pool depth and suitable habitat, thus possibly reducing the populations of trout in the reservoir. Sedimentation may also be creating elevated concentrations of dissolved cadmium, lead and zinc. Additionally, the continual addition of sediment to the substrate limits the establishment of submerged aquatic vegetation and habitat (cover) for fish-food organisms.

7.0 CLEAR CREEK STREAM SEGMENT 5: GEORGETOWN LAKE TO THE U.S. 40/I-70 INTERCHANGE (EMPIRE JUNCTION)

SS 5 begins at the Georgetown Lake Dam (MP 229.3) and extends northeast to Empire Junction (the I-70/US 40 Interchange and the West Fork of Clear Creek, immediately upstream from the West Fork confluence; MP 231.7; Figure 7-1). The following issues and potential receptors have been identified for SS 5:

Water Quality

- Historical Mining (Mineral) Influences
- Adjacent Land Use
- Highway-related Construction, Operation, and Maintenance Activities
- Sedimentation

Hydrology/Hydraulics/Stream Morphology/Floodplains

- Channelization

Wetland and Riparian Ecosystems

- Highway-related Construction, Operation, and Maintenance Activities
- Habitat Reduction and Fragmentation

Aquatic-dependent Communities

- Sedimentation
- Channelization/Downcutting
- Water-based Recreation