

MEMORANDUM

To: Thomas G. Kennedy, Esq.
Law Offices of Thomas Kennedy

From: Alexander Nees, Senior Ecologist
SGM, Inc.

Date: February 9, 2023

Re: **Consideration of Riparian Habitat Impacts Associated with the Proposed Society Turn Development**

This memorandum was prepared to provide additional discussion of the potential for impact to riparian habitats as a result of the proposed development on the Society Turn parcel. This memorandum has been prepared at the request of the San Miguel County Planning Commission, and is an addendum to the more generalized and extensive Wildlife Impact Report prepared as a component of the Preliminary Submittal package to San Miguel County (SGM, A. Nees, 2022).

Summary of Existing Conditions

As stated in the Wildlife Impact Report, the only portions of the project area that contain riparian habitat are those small areas immediately adjacent to the San Miguel River on the east end of the parcel and Remine Creek on the west end of the parcel. Both features are perennial waterways that support a narrow riparian vegetation fringe along the banks.

- The San Miguel is typified by sparse blue spruce (*Picea pungens*) and narrowleaf cottonwood (*Populus angustifolia*) and several species of willows (including *Salix monticola* and *Salix exigua*). The density of woody vegetation is extremely low, consisting of two mature cottonwoods and less than a dozen small spruce along approximately 500 linear feet of river corridor. This density of vegetation is not sufficient to provide many of the habitat characteristics and benefits typically associated with riparian zones. There is minimal shading of the water surface, only very narrow areas of soil saturation, few inputs of nutrients, coarse woody debris, or insect food source from overhanging vegetation, minimal nesting or foraging habitat for insect-gleaning birds, and no continuous cover that would attract ungulates to loaf or bed along the river.

The density of riparian woody vegetation appears to be low as a result of historic mining activity. The site is included in the Iadarado Mine Superfund site, and CDPHE maps two separate un-remediated tailings piles on the south bank, which generally correspond to the visible areas of bare ground in that region. It is likely that the riparian zone was denuded during historic mining periods, and that vegetation has not re-established due to poor soils.

The riparian corridor is heavily utilized by recreationalists, including hikers, bikers, and walkers who use the Remine Creek trail and the existing pedestrian bridge across the river. Human activity is highly visible from all portions of the stream corridor, due to the previously-mentioned lack of screening vegetation, and is sufficient to deter use of the area by all but the most tolerant/habituated wildlife.

- Remine Creek occupies an extremely steep, narrow channel approximately 320 feet long as it crosses the property. The channel is deeply incised into the terrace bank that borders the San Miguel River. Riparian and wetland conditions are confined to the base of this channel, which is incised 20

feet or more below the surrounding ground surface. The riparian corridor is entirely dominated by dense willows. Remine Creek reaches its confluence with the San Miguel River immediately south and downgradient from the property boundary.

The habitat in Remine Creek does not currently host significant recreational use, and it is visually-screened from surrounding areas by topography and vegetation. However, the corridor is so narrow (less than 10-feet wide in most places) and the vegetation is so dense that it is only an attractive movement corridor for small wildlife. Ungulates would not be expected to travel through the riparian corridor or linger within it.

Potential for Riparian Habitat Impacts

The riparian habitat within the Parcel is entirely encompassed by the proposed Open Space zones within the preliminary development plan. This design acknowledges the value of the riparian corridor zones for scenic values, general wildlife habitat, and recreation. It also reflects the availability of preferable siting for the proposed development on the flat terrace banks and pasture areas above the riparian zones.

Direct Impacts

The riparian corridor along the San Miguel River already includes the Galloping Goose Connector trail, which introduces significant physical disturbance and anthropogenic activity into this area. Further, the lack of screening vegetation increases the visibility and impact of this anthropogenic presence. The area is also surrounded by permanent human occupancy, including the wastewater treatment plant to the north, the state highway to the east, and the Lawson Hill development to the south. The proposed development would have minimal impact on the effective condition of riparian habitat in this section, since no buildings are proposed, and no other activities that would fundamentally change the existing character of the site. The anthropogenic impact would be expected to increase as a result of building lighting, noise, and increased human usage. However, these influences are already pervasive throughout the site.

The riparian corridor along Remine Creek would experience a very small direct impact at the northern boundary of the property, because the existing culvert under the CO-145 needs to be extended to accommodate the turning lane that is required by CDOT for safe access to the site. This work would be confined exclusively to the portion of the channel that is immediately adjacent to highway, and where the creek channel is composed of imported boulder material associated with construction of the roadway. A small amount (approximately 175 square feet) of riparian/wetland habitat would be permanently filled as a result of the turning lane construction. This portion of the riparian habitat has minimal value due to its proximity to the road, its imported, non-soil substrate, and a preponderance of weedy/ruderal herbaceous species.

The general location and character of the Remine Creek corridor would persist. Despite the proximity to proposed development, including the medical center, the incised channel would retain visual screening via topography and vegetation. As previously discussed, Remine Creek is not an effective movement corridor for ungulates under current conditions, and it would retain its value as a movement corridor for small wildlife after the proposed development is complete.

Indirect Impacts

The primary potential for indirect impacts to the riparian habitat is through alterations in stormwater infiltration and discharge as a result of impermeable surface construction, as well as consumptive water use for landscaping purposes which would be supplied by a well drilled on the property near Remine Creek. Potable water used by the development would be supplied by Town of Telluride's water system and would not be derived from onsite resources.

The riparian zones of Remine Creek and the San Miguel are impacted by the rates and amounts of local precipitation infiltration to shallow groundwater and subsequent discharge to downstream surface waters, which the proposed development has the potential to affect.

With regards to stormwater, a stormwater management plan has been created for the development, which will collect precipitation from impermeable surfaces and discharge it to the San Miguel River. The total volume of stormwater inputs to the River from the Society Turn parcel would not change from current conditions, but the timing may change and the rate of discharge is likely to increase as a result of the stormwater management system versus the current natural surface. The current design incorporates drainage basins to modulate flow rates, settle sediment loads, and three separate drainage outlets to the San Miguel River. No collected and managed stormwater would be discharged to Remine Creek, and the volumes and discharge rates to the San Miguel are likely to be inconsequential as a percentage of total flow in and water quality of the waterbody. The drainage plan has been designed by Buckhorn Engineering to meet State standards for stormwater management and is designed to limit sediment loads to the San Miguel River.

The well that would supply irrigation water to elements of the project does have the potential for minor depletions of groundwater supplies in the project area, and thereby may reduce surface water expressions, particularly during prolonged dry periods. Groundwater withdrawals are only planned to occur during the irrigation season, which limits the timing and amount of minor depletions to the San Miguel River.

In recognition of this potential impact, a Drought Management Plan may be implemented as needed. In addition, if replacement water is needed in the San Miguel because downstream senior water users have placed a call, augmentation of the San Miguel's flow would be provided by one or more of three existing sources (SGM, Water Supply and Wastewater Plan, 2022). These include leased augmentation water from Trout Lake, releases from an on-site augmentation pond and senior ditch rights owned by the project applicant on Mill Creek and Deep Creek. In summary, the applicant owns sufficient alternate water rights to augment flows in the San Miguel River, if necessary. This augmentation would occur as needed to serve senior downstream water rights, but also has the effective outcome of ensuring a certain base flow level in the San Miguel River, regardless of withdrawals by the onsite well.

It should also be emphasized that, at the point where it passes through Society Turn, the San Miguel River's catchment is approximately 133 square kilometers. There is minimal impoundment or flow control on the headwaters reach of the San Miguel River, therefore the yearly hydrograph is typical of a natural snowmelt-dominated feature, with a pronounced peak flow occurring in early summer, with a rapid decrease throughout the summer to base-level flow conditions which persist into winter and spring. This base-level flow responds rapidly and notably to significant local precipitation events.

In summary, the riparian system of the San Miguel River at this site is adapted to both seasonal trends and rapid variation in flow levels. The riparian habitat is dominated by species and vegetation communities that are tolerant of disturbance, both flooding and temporary desiccation, and would be expected to persist in the riparian corridor regardless of minor temporary depletions or discharges from the property related to groundwater pumping or stormwater discharge, respectively.