

April 26, 2013

John Thompson  
Thompson Holdings, LLC  
P.O. Box 2015  
Horsham, Pennsylvania 19044

RE: Paraiso Springs Resort Riparian Impact Assessment

Mr. Thompson,

Per your request, WRA is providing an assessment of potential impacts to riparian vegetation associated with the construction and operation of new bridges and creation of an in-stream pond proposed as part of the reconstruction of the Paraiso Springs Resort in Soledad, California (Project Area). This assessment compliments the assessment of impacts provided by WRA in letters dated February 14 and March 14, 2013. On March 29, 2013, I conducted an on-site assessment of the proposed bridge crossings for the proposed development. This letter summarizes my findings.

Based on our review of the project plans (Hill Glazier Architects 2008) and Stream Setback Plan (CH2MHill 2012), and an on-site assessment conducted on March 29, 2013, it appears that three bridges are proposed as part of the proposed project. The project also includes daylighting the creek and construction of an in-stream pond. The bridges include one near the eastern end of the Project Area (most downstream), one near the middle of the Project Area, and one near the western end of the Project Area (most upstream). In addition the project includes the removal of a short culvert where the existing main entrance road crosses the creek, and the removal of a much longer culvert farther upstream where an in-stream pond is proposed.

### **Summary of Project Area Hydrology**

This brief summary of the hydrology of the Project Area will help provide context to the riparian impact analysis that follows later in the document. The Project Area is located in a very arid region where most drainages are typically ephemeral to intermittent. Only larger streams or those with major springs flow perennially in the region. Paraiso Springs Resort, being a hot springs resort, is situated in an area of natural high groundwater table. However, upstream of the main springs and historic resort proper, the creek and surrounding lands are very dry and the creek shows no signs of recent flows of any significance. The creek likely only flows after larger rain events or prolonged storms upstream of the resort, and even then for short durations. Due to the lack of hydrology upstream of the resort proper, no defined riparian habitat exists along the creek. The creek zone is dominated by scatter oak and bay trees and occasional buckeyes, but no willows or other trees typifying a true riparian zone occur. However in the vicinity of the resort proper there are active seeps and evidence of higher ground water. From the resort proper downstream to the property boundary the creek is perennial and supports some areas of riparian habitat. This riparian habitat is patchy and as one moves farther downstream toward the eastern property boundary it becomes more established and ubiquitous along the stream margin itself. Potential impacts to riparian habitat for each component of the project are discussed below:

## **Impact Assessment**

### Lower bridge:

The lower bridge is farthest downstream in the project area and will be the main stream crossing on the new entrance road. As discussed above the downstream portion of the creek is the wettest and supports the most well-defined riparian corridor. In the vicinity of the proposed bridge, the riparian habitat is dominated by an overstory of willows with California blackberry, snowberry, and poison oak dominating the understory. Oak trees are the predominant tree above the top of bank in this area. The riparian corridor is approximately 100 feet wide where the bridge is proposed (with slightly more of the habitat on the southern side of the creek which is situated lower than the northern bank). Assuming a 75 foot wide bridge, the impact to riparian habitat in this area would be 7,500 sq. ft (less than 0.2 acres). The exact number of willow trees that will need to be removed is difficult to say since the exact layout of the bridge has not been determined but I anticipate that less than five in total will be removed, and maybe as few as one or two.

### Middle bridge:

The middle bridge is proposed in a portion of the stream channel which is currently culverted and is proposed for restoration as part of the reconstruction. The existing vegetation in this area would not be considered riparian.

### Upper Bridge:

The upper bridge is proposed in an area where the creek channel is ephemeral with infrequent flow events. Vegetation in this area is dominated by oak trees with poison oak and scrub habitat (dominated by California sage and black sage). These dry-habitat species even occur within the channel banks themselves which is further indication of the arid nature of the upstream habitats. Therefore no impacts to riparian vegetation will occur through the upper bridge installation.

### Short Culvert Removal:

The existing culvert along the main road is downstream of the resort proper thus the creek is perennial in this area. However the proximity of the culvert to the development has resulted in the planting of landscaped specimens in this area. The upstream portion of the culvert is relatively open with 1-2 palm trees present but the downstream portion of the culvert is dominated by a thicket of many non-native palms. Removal of the culvert and revegetating the area with native willows, California blackberry, and oaks above the top of bank will be a benefit to the creek system. Removal of the palms in this reach would also be a benefit if they are replanted by native willows and oaks, but should not be a mandatory requirement in my opinion. Approximately 50 feet of stream can be restored in this reach through the culvert removal.

### In-stream Pond and Long Culvert Removal:

As mentioned above the location of the middle bridge is in the same location where the creek is culverted for over 250 feet. This area represents the dividing line between the dry, upper portion of the creek and the lower, wetted portion. Upstream of the culvert there is minimal vegetation along the banks and no overstory trees to speak of. Downstream of the culvert outfall there is a large area dominated by arundo (an invasive creek species) and many non-native palm trees.

A buckeye and several oaks were also observed in this vicinity however the non-native plants were dominant along the creek downstream of the culvert and no native riparian vegetation was observed. While the bridge and a turnaround will occupy portions of the restored bank in this area, other portions will be available for conducting riparian restoration. The daylighting of the 250+ feet of culvert, creation of the in-stream pond, and providing some riparian restoration in this area will provide enhanced aquatic functions and values to the riparian corridor.

## Summary

Based on the materials we were able to review (Rana Creek Habitat Restoration 2005; Hill Glazier Architects 2008; WRA 2009; CH2MHILL 2012), we estimate no more than 0.2 acre of impacts to riparian vegetation (predominantly willows) will result from the construction of the three bridges, removal of the two culverts and the construction of the in-stream pond. Our assessment of impact acreage is based on the area of contiguous canopy in association with the stream channel as shown on aerial images overlaid with project plans. The assessment provided here is based on a review of publically available material (e.g., Google Earth aerial images), notes taken during a recent Project Area site visit, and project-specific material provided to us for use in this analysis.

Sincerely,



Geoff Smick, MA  
Principal Ecologist

## References:

- CH2MHILL. 2012. Paraiso Springs Resort (PLN 040183) – Stream Setback Plan. Technical Memorandum. Prepared for Thompson Holdings, LLC. April 20.
- Hill Grazier Architects. 2008. Vesting Tentative Map. Paraiso Springs Resort, Soledad, California.
- Rana Creek Habitat Restoration. 2005. Tree Removal Plan, Sheets L4.1 to L4.6. Prepared for Thompson Holdings, LLC. July 15.
- WRA, Inc. 2009. Section 404 Wetland Delineation, Paraiso Springs Resort, Monterey, California. Report prepared for Thompson Holdings, LLC. February.

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