

The Palo Parado Bridge – Update and Considerations

By Ben Lomeli, Hydrologist.

As presented during the public hearing held at the Rio Rico High School cafeteria on the evening of Thursday May 29, 2008, three alternative locations are being considered for a new bridge crossing to connect the Palo Parado interchange on Interstate 19 (I-19) with Pendelton Drive in northeast Rio Rico. Per the recently completed Design Concept Report (DCR), the three locations are a few hundred yards from each other and include the present low-flow unpaved ford at the existing railroad crossing used by many of the residents in the newly developed area of northeast Rio Rico.

During moderate and high flows the current ford is unusable and residents must make a long loop all the way to the Rio Rico Bridge. Not only is this a time and fuel consuming effort, but the current situation also poses high-risk conditions due to the long emergency response times required to access and to transport and/or evacuate from this residential area.

There remains no argument that a bridge is needed at Palo Parado. The need for a bridge has been identified for many years, as the subject area has continued to develop. The design will take one and half to two years to complete, and two to four years before the new bridge and road are to be open to traffic. Among the remaining questions are: How to fund a new bridge and connecting road project? Why have our elected officials allowed the situation to develop to this point? Why haven't these efforts started sooner? Which exact bridge crossing location is best?

In order to minimize impacts to the river and the riparian ecosystem, the location with the least environmental disturbance is preferable. This means, channelization and structural bank protection must be avoided or kept to a minimum. It also means that the bridge design should have ample flow conveyance capacity so that it does not create backwater (increase upstream water surface elevations), which consequently increases downstream velocities and erosion potential.

The ideal bridge would fully span the 100-year floodplain, but other considerations such as costs, required land acquisitions and rights-of-way, and funding sources often dictate more conventional designs. The more restrictive the design, the less desirable it is from a riverine geomorphology and stream flow dynamics point of view. In order to minimize construction costs, bridge designs often “pinch” flood flows, forcing them through a narrower top width without considering long-term consequences to the riverine ecosystem and the costs associated with its degradation.

In the event of a hazardous material spill, fully draining the bridge deck to one or both ends and collecting the runoff into collection/sediment basin(s) is preferable to providing weep holes that drain directly to the river.

FOSCR members should contact the Santa Cruz County Supervisors and the Director of Public Works to promote a final design that considers complete span of CWA 404

jurisdictional limits, endangered aquatic species, and minimizes impacts to the riparian ecosystem by minimizing the degree of abutment encroachment, channelization, increases of downstream velocities, removal of cottonwood/willow forest, and insuring that the design discharge (return period/flood frequency) is per the recent FEMA re-mapping.