

calculation and tables describing slope, velocity, shear, Froude No., etc.) Between stations 6+50 and 10+00, the north side of the natural channel floodplain is proposed to be widened to help mitigate the existing velocity and shear in this area. Then both sides of the channel through this stretch will be provided with rip-rap stabilization. The existing channel slope throughout this reach ranges from 0.7% to 2.5%. Per the HEC-RAS model, the proposed channel velocities, after improvements range from 2.6 ft./sec. to 5.6 ft./sec. All stations are within the allowable velocity of 7.0 ft./sec. and check structure improvements are proposed at the specific stations where velocity is over 5.0 ft./sec. and shear stress is above 5.0 based on the SCS Retardance Index above. The proposed model calculations also shows a few stations with Froude Nos. over the 0.8 criteria. However, at this specific areas, the proposed check structures are planned.

The DBPS does not depict any structures along this stretch of channel. However, three additional structures are being planned to further limit degradation and help control the elevation of the channel invert as well as aide in the adjacent wetland mitigation self-irrigation plan. The check structures are designed to be sheet piling with a concrete cap per Urban Drainage Vol. 2 Figures 9-27 thru 9-28. The intent of this structure is to hold grade so if the stream wants to flatten its equilibrium slope, the incision is limited. Thus, the plan is for this structure to eventually become drop structures as dictated by future channel characteristics.

A public trail/ access road along the west side of Sand Creek is planned and will allow for maintenance access to associated channel improvements. (See channel plans for exact ramp locations and details)

Maintenance access along east side of channel is also per channel plans.

DRAINAGE CRITERIA

Hydrologic calculations were performed using the City of Colorado Springs/El Paso County Drainage Criteria Manual, as revised in November 1991 and October 1994 with County adopted Chapter 6 and Section 3.2.1 of Chapter 13 of the City of Colorado Springs/El Paso County Drainage Criteria Manual as revised in May 2014. Individual on-site developed basin design used for detention/SWQ basin sizing, inlet sizing and storm system routing was calculated using the

