

Tumalo Creek Instream Flow Study

Attachment C: Channel Flow-Response Charts

A dynamic plot of the cross sectional profile of each transect was developed from the survey measurements and hydraulic model results. The dynamic plot enables the user to input a discharge of choice and the water surface and velocity pattern, wetted perimeter, average velocity, and average depth for that discharge are displayed in comparison to the same parameters for a chosen baseline flow. Dominant substrate types across the transect are also displayed.

In the static examples below, the “Base” discharge was set for all 31 transects at the median annual flow under the No-build scenario or, approximately 58 cfs. The “Current” discharge was set at 55 cfs or 3 cfs less than 58 cfs. This is essentially the difference in withdrawal expected during Alternative Build scenario as compared to the No-Build scenario.

Colors along the stream bottom profile represent dominant substrate types or size classes observed in the field. The solid blue represents the water in the channel under the Current discharge scenario. The yellow horizontal line represents the water surface under the Base discharge condition. The red jagged line represents the velocity pattern across the stream under the Current discharge. Hydraulic statistics such as percent change in wetted perimeter, average depth, and average velocity from the Base discharge are shown across the top of the chart.



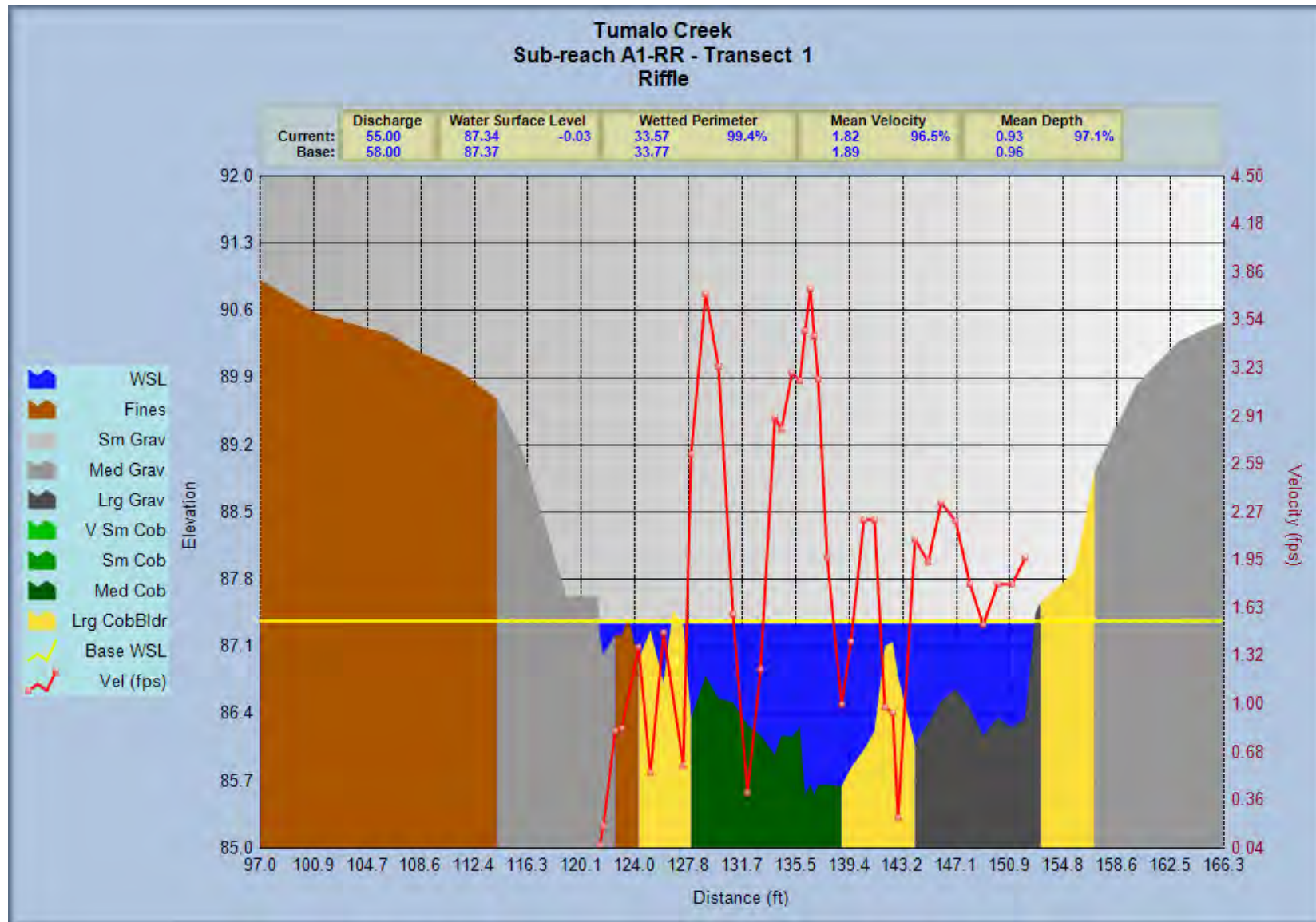


Figure1. Reach A Sub-Reach A1-RR transect 1 cross sectional profile – Riffle



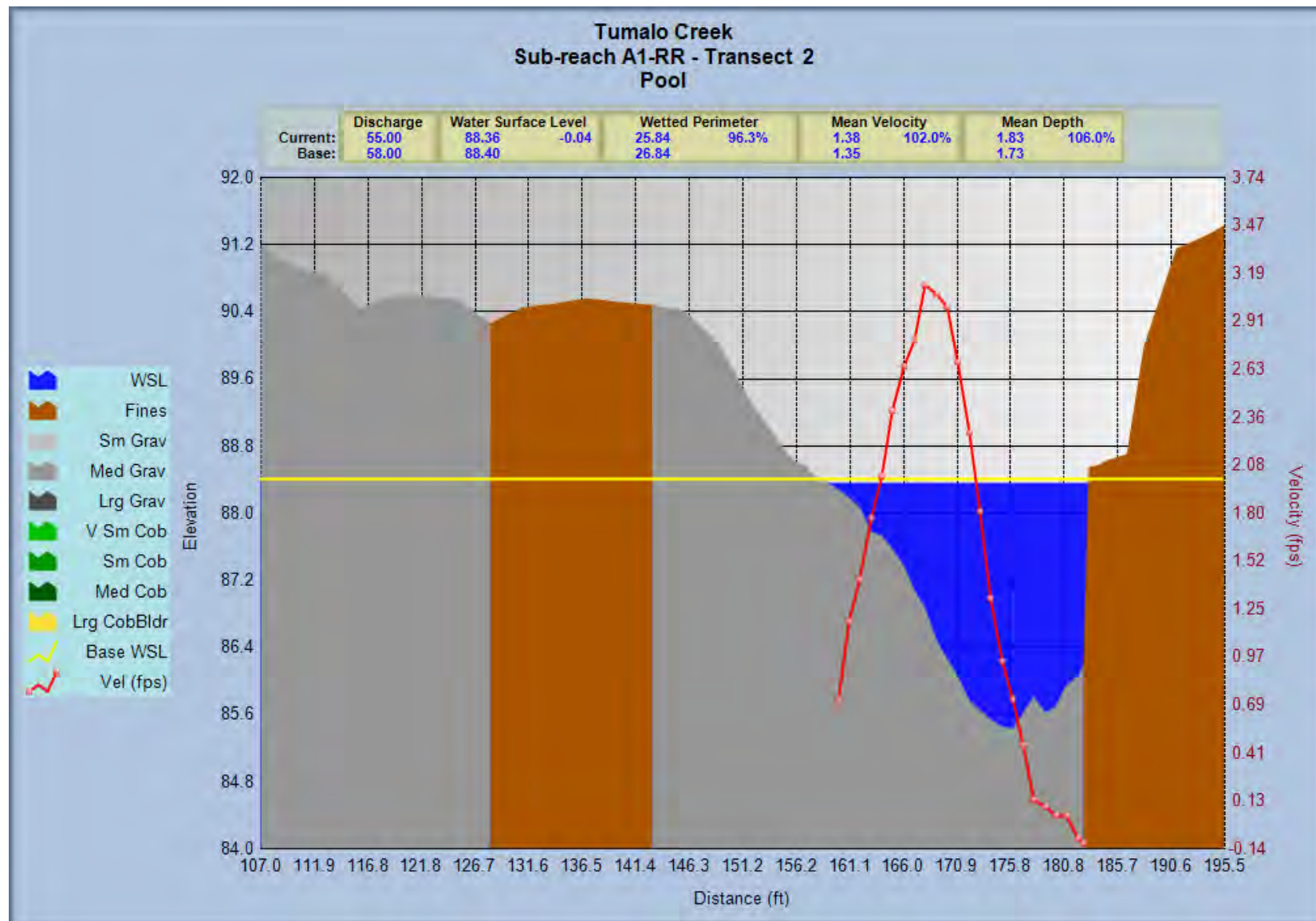


Figure2. Reach A Sub-Reach A1-RR transect 2 cross sectional profile - Pool



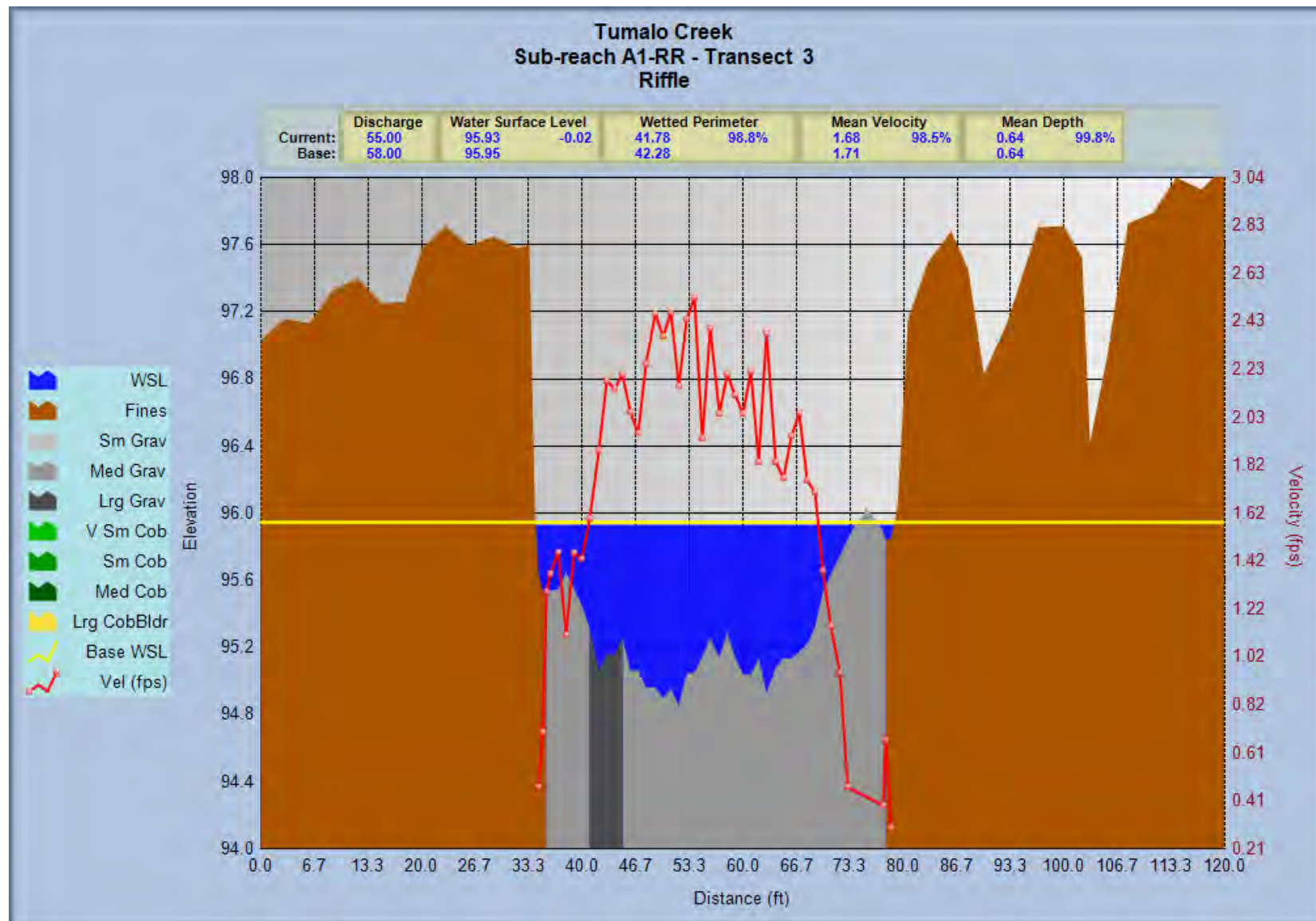


Figure3. Reach A Sub-Reach A1-RR transect 3 cross sectional profile - Riffle



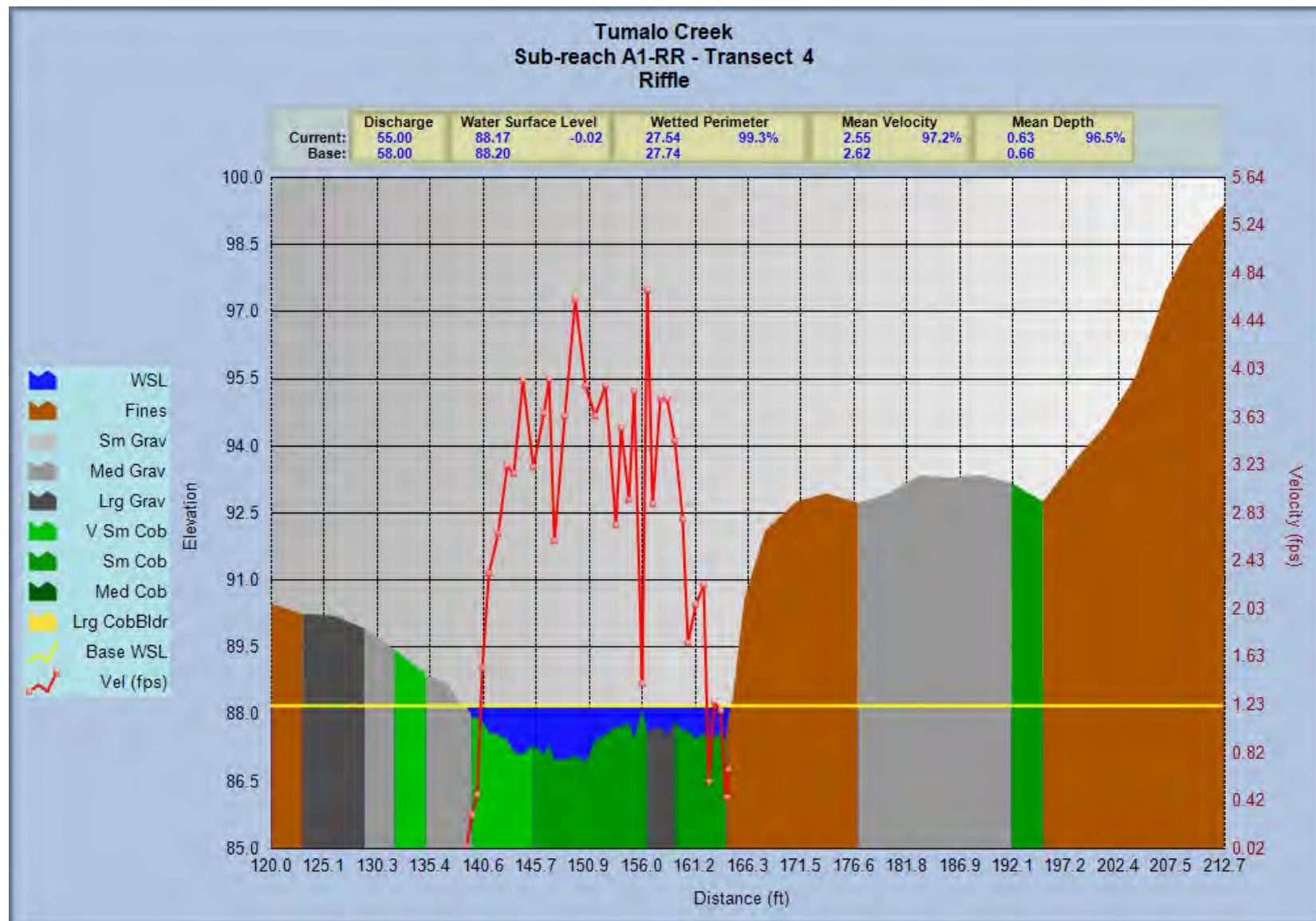


Figure4. Reach A Sub-Reach A1-RR transect 4 cross sectional profile - Riffle



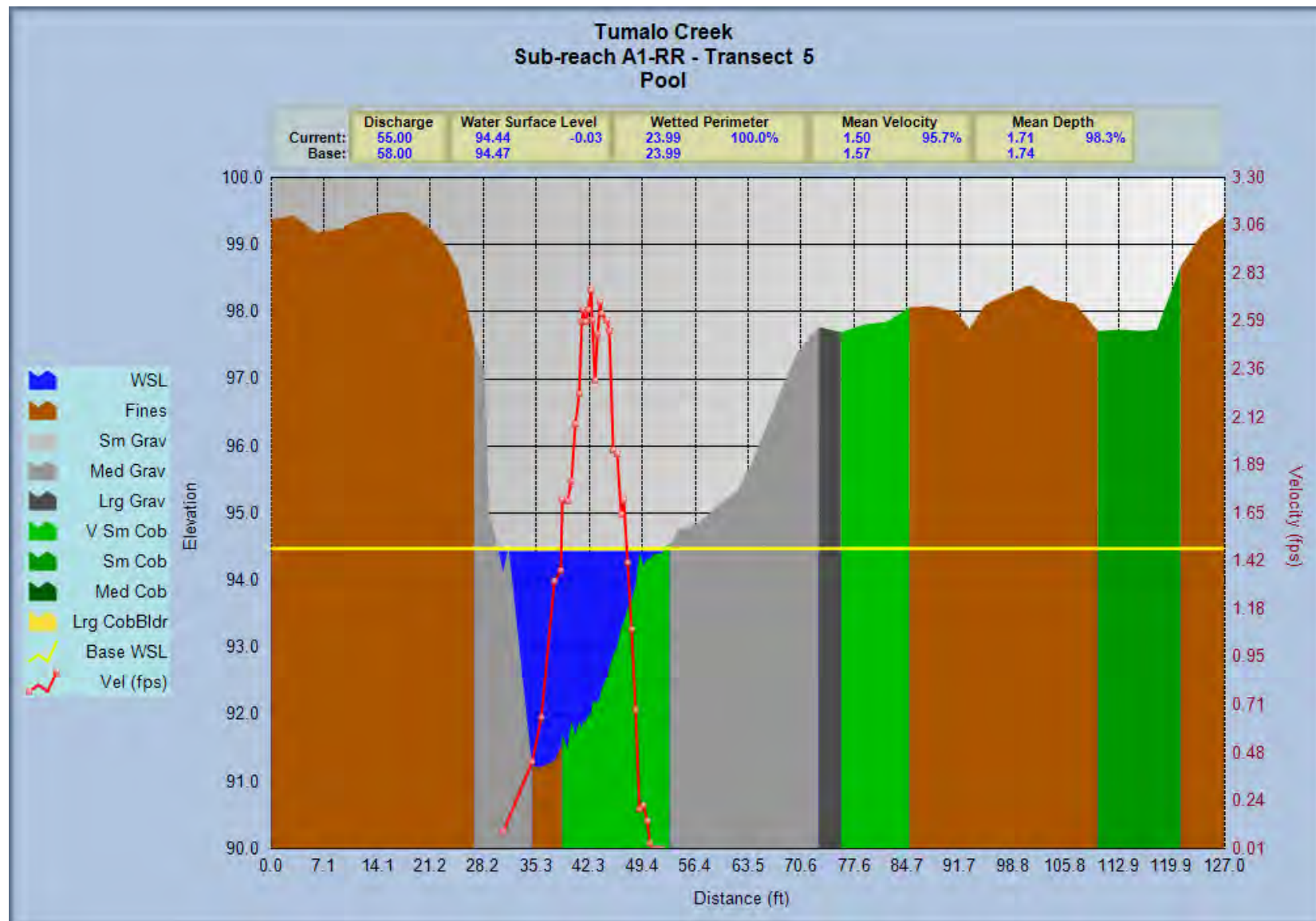


Figure5. Reach A Sub-Reach A1-RR transect 5 cross sectional profile - Pool



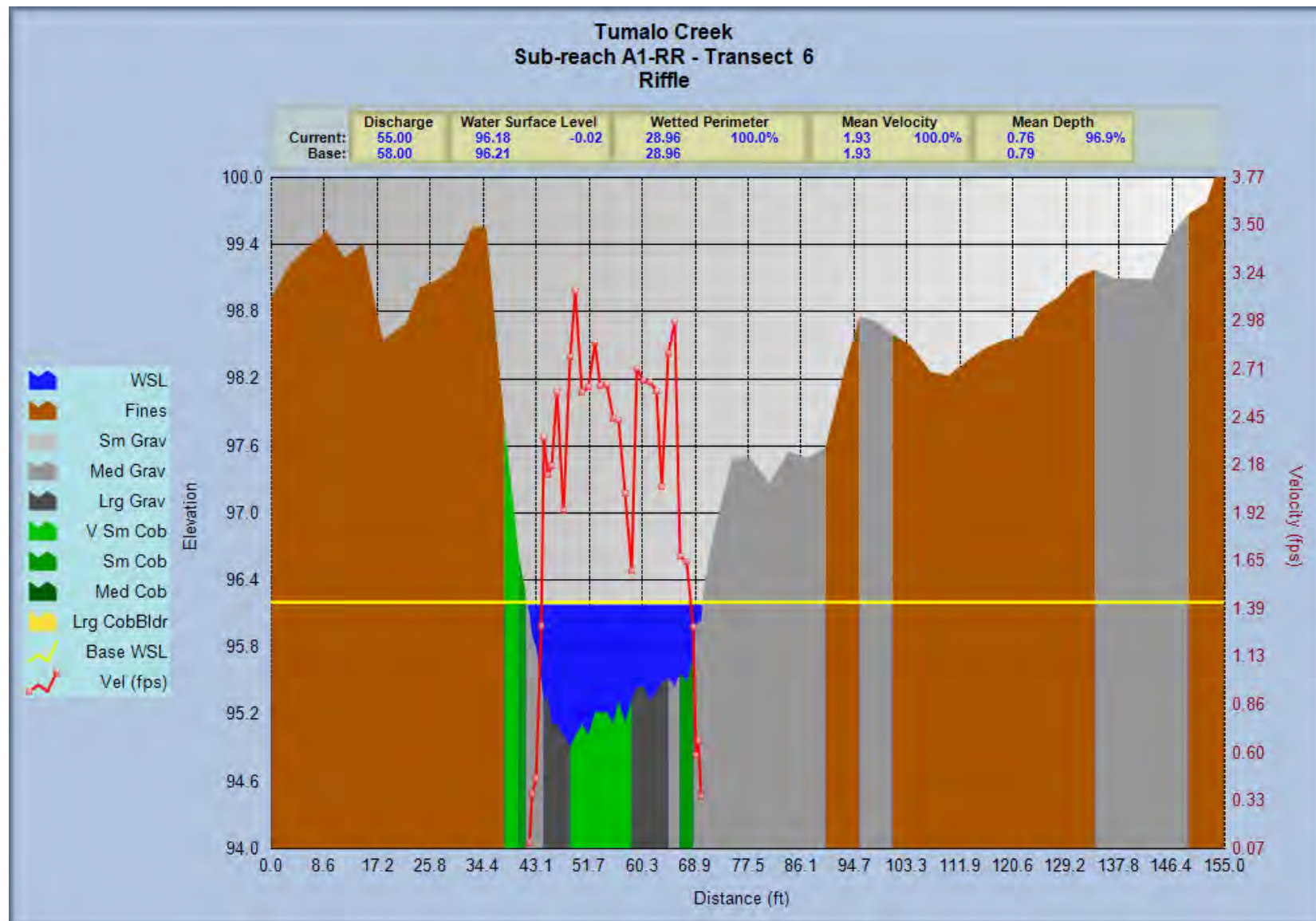


Figure6. Reach A Sub-Reach A1-RR transect 6 cross sectional profile - Riffle



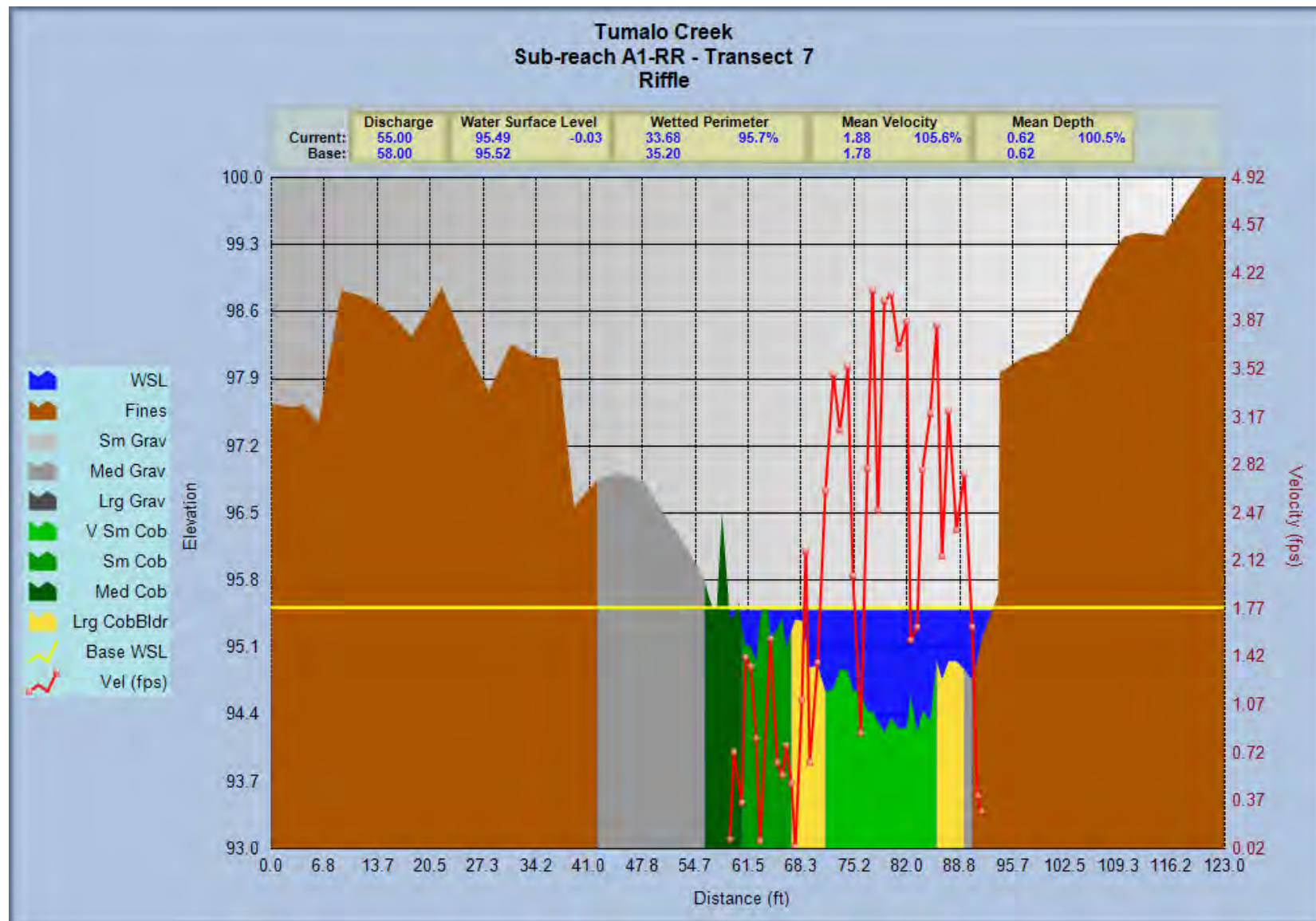


Figure7. Reach A Sub-Reach A1-RR transect 7 cross sectional profile - Riffle



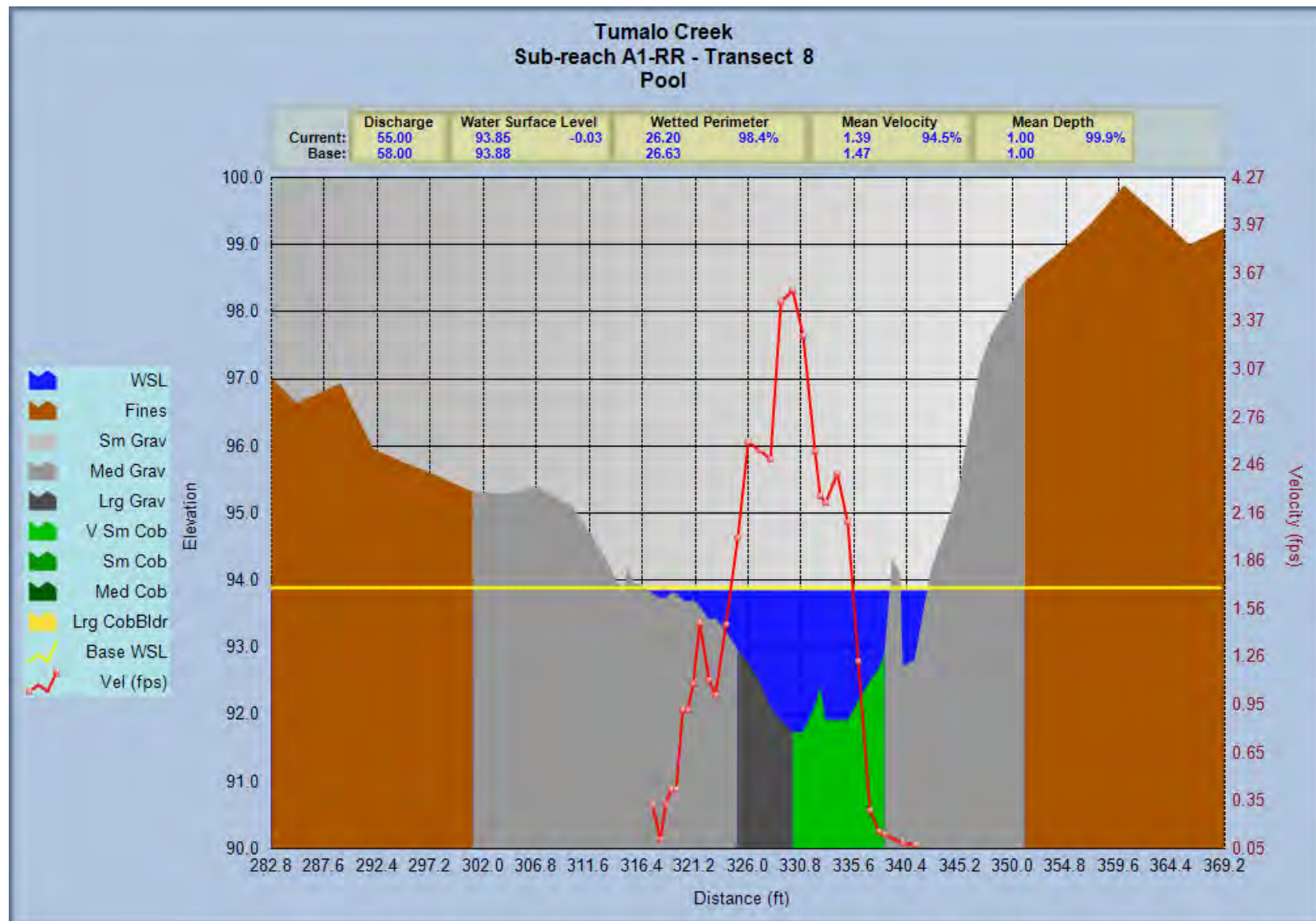


Figure8. Reach A Sub-Reach A1-RR transect 8 cross sectional profile - Pool



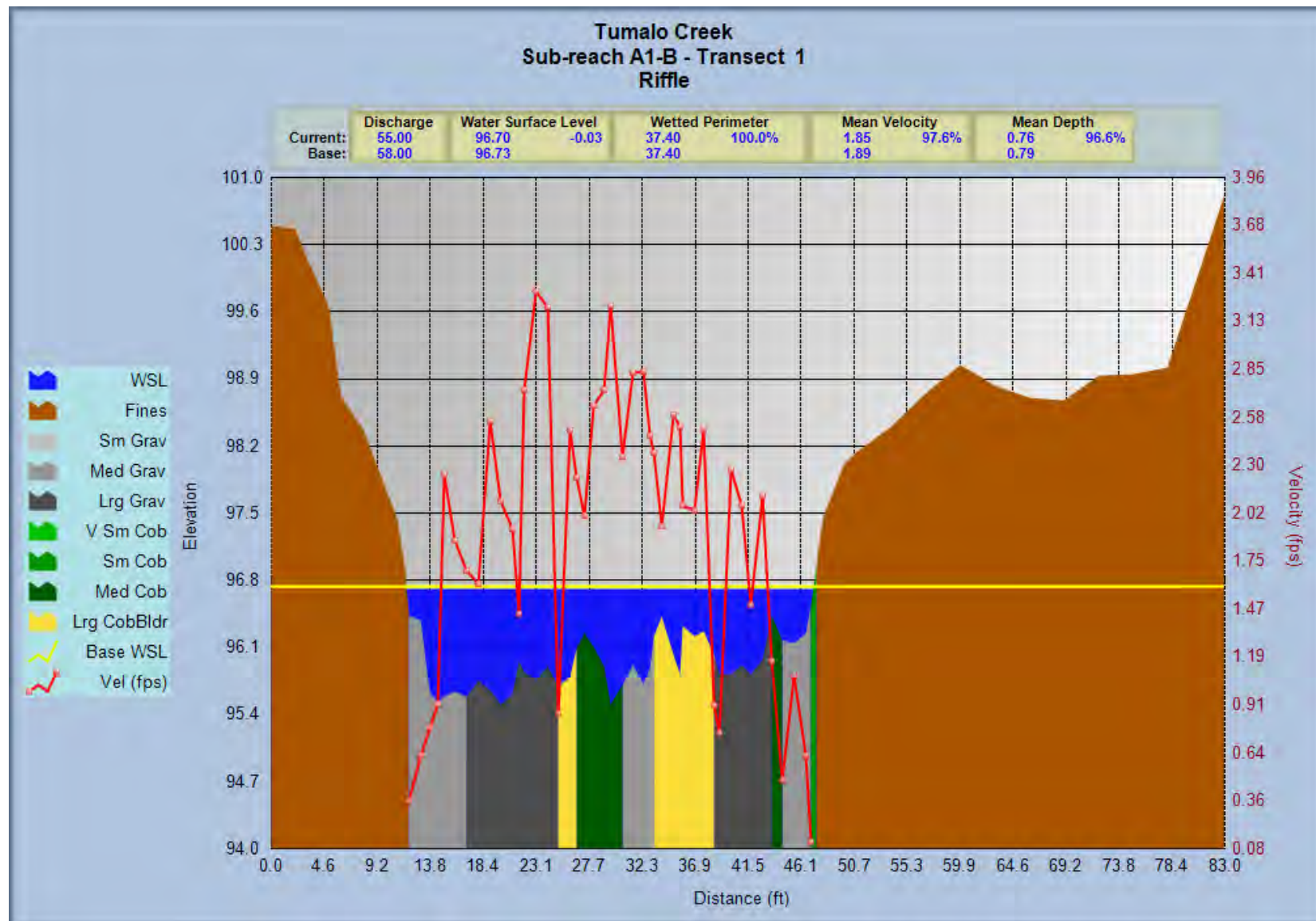


Figure9. Reach A Sub-Reach A1-B transect 1 cross sectional profile - Riffle



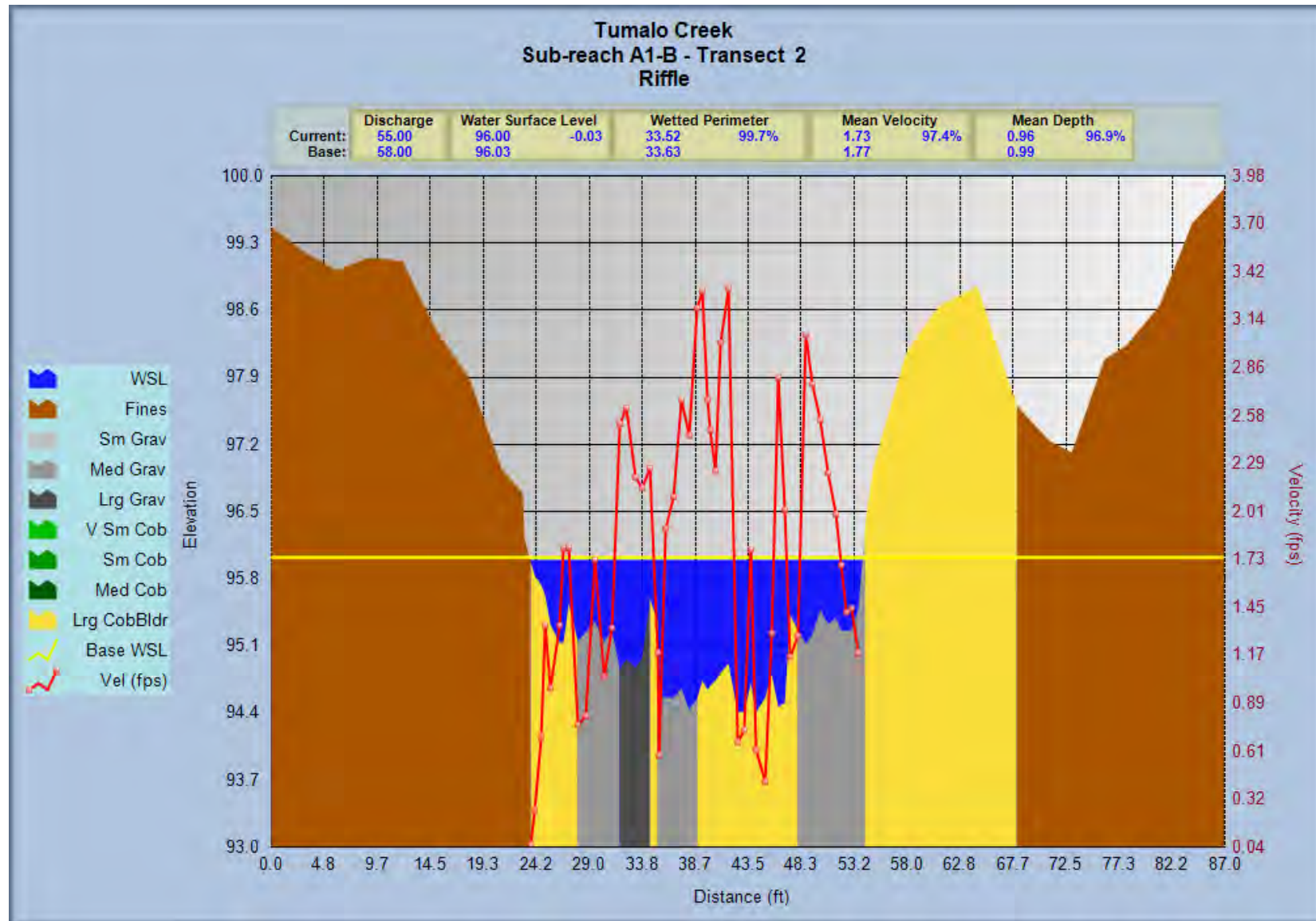


Figure10. Reach A Sub-Reach A1-B transect 2 cross sectional profile - Riffle



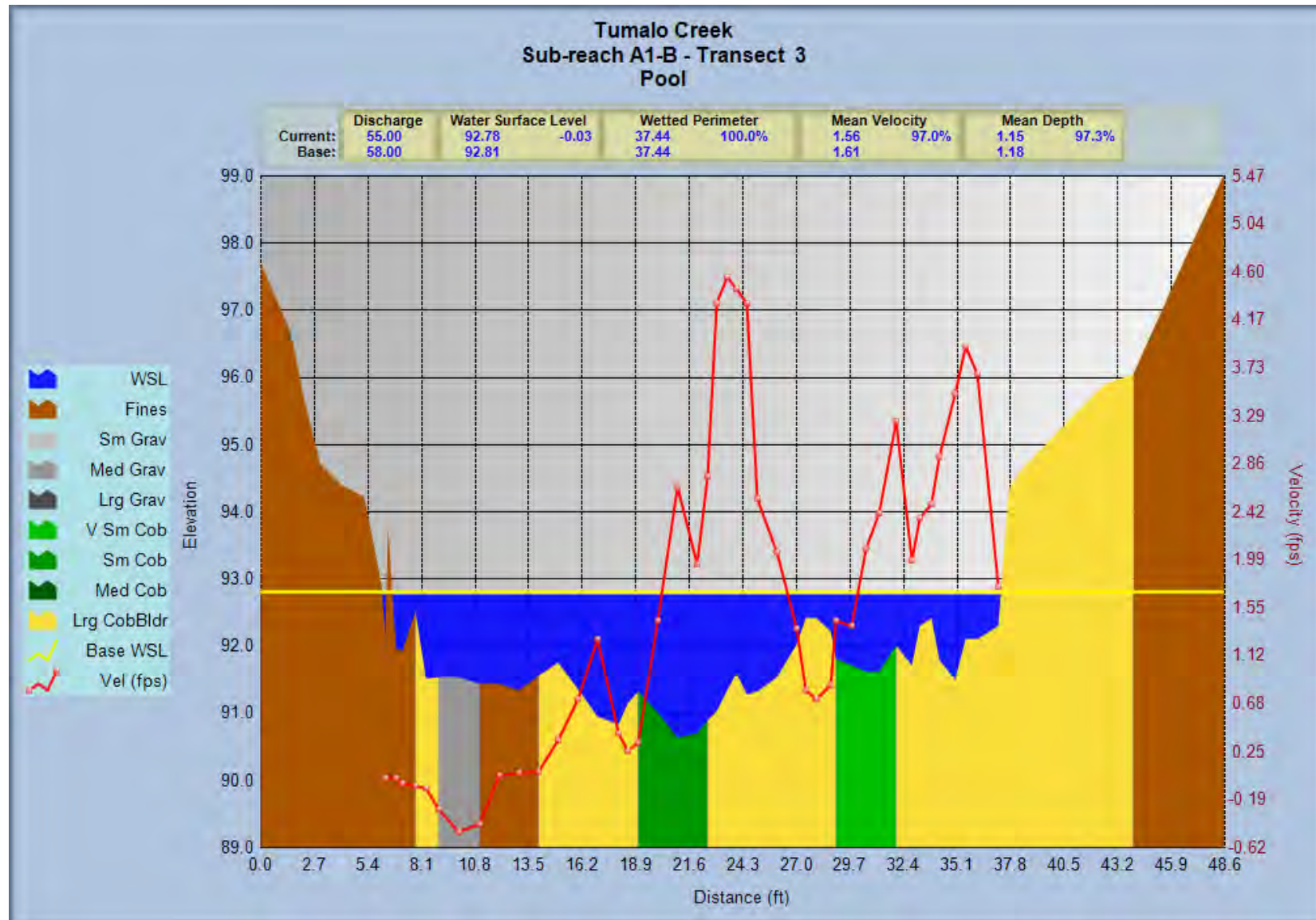


Figure11. Reach A Sub-Reach A1-B transect 3 cross sectional profile - Pool



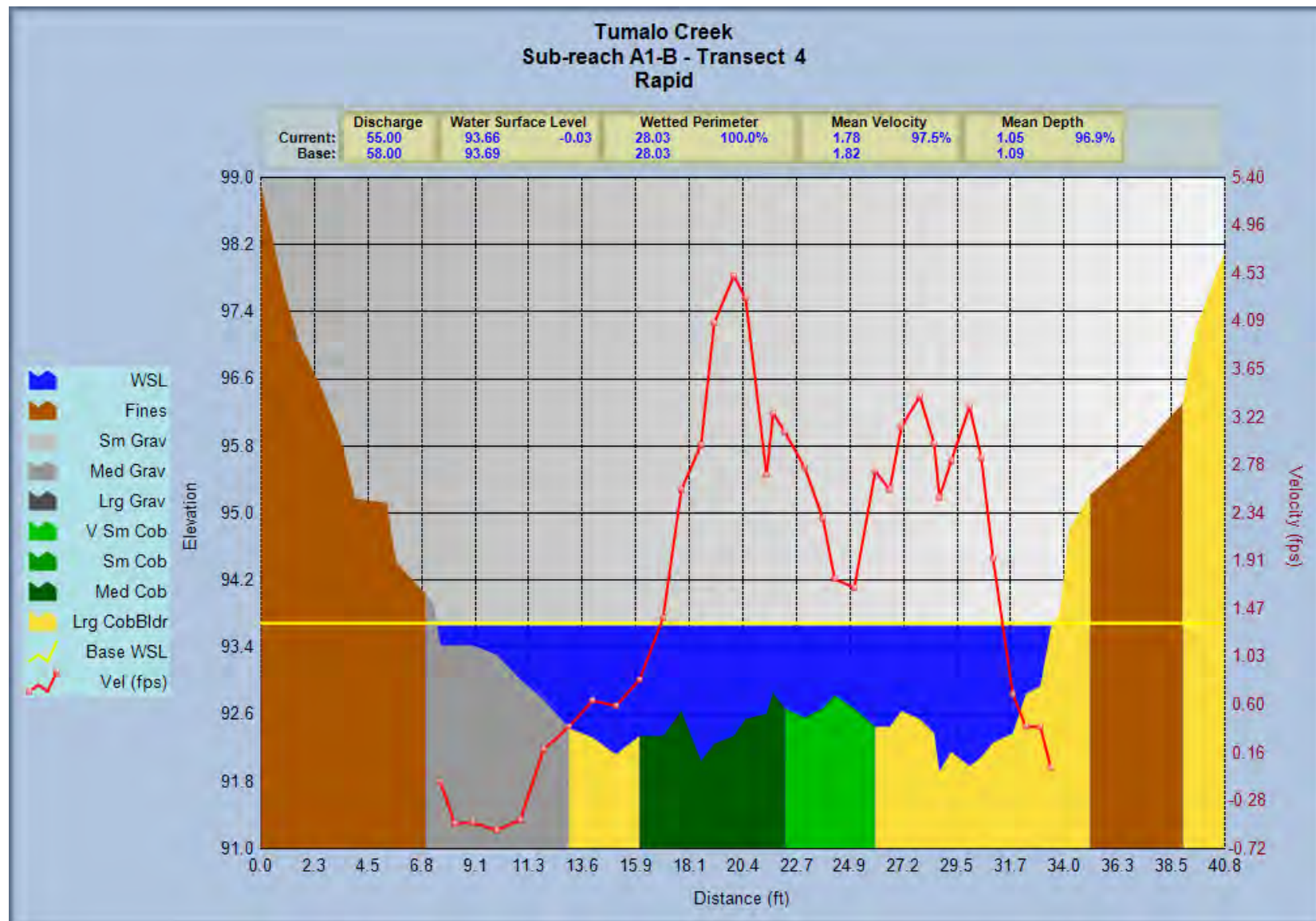


Figure12. Reach A Sub-Reach A1-B transect 4 cross sectional profile - Rapid



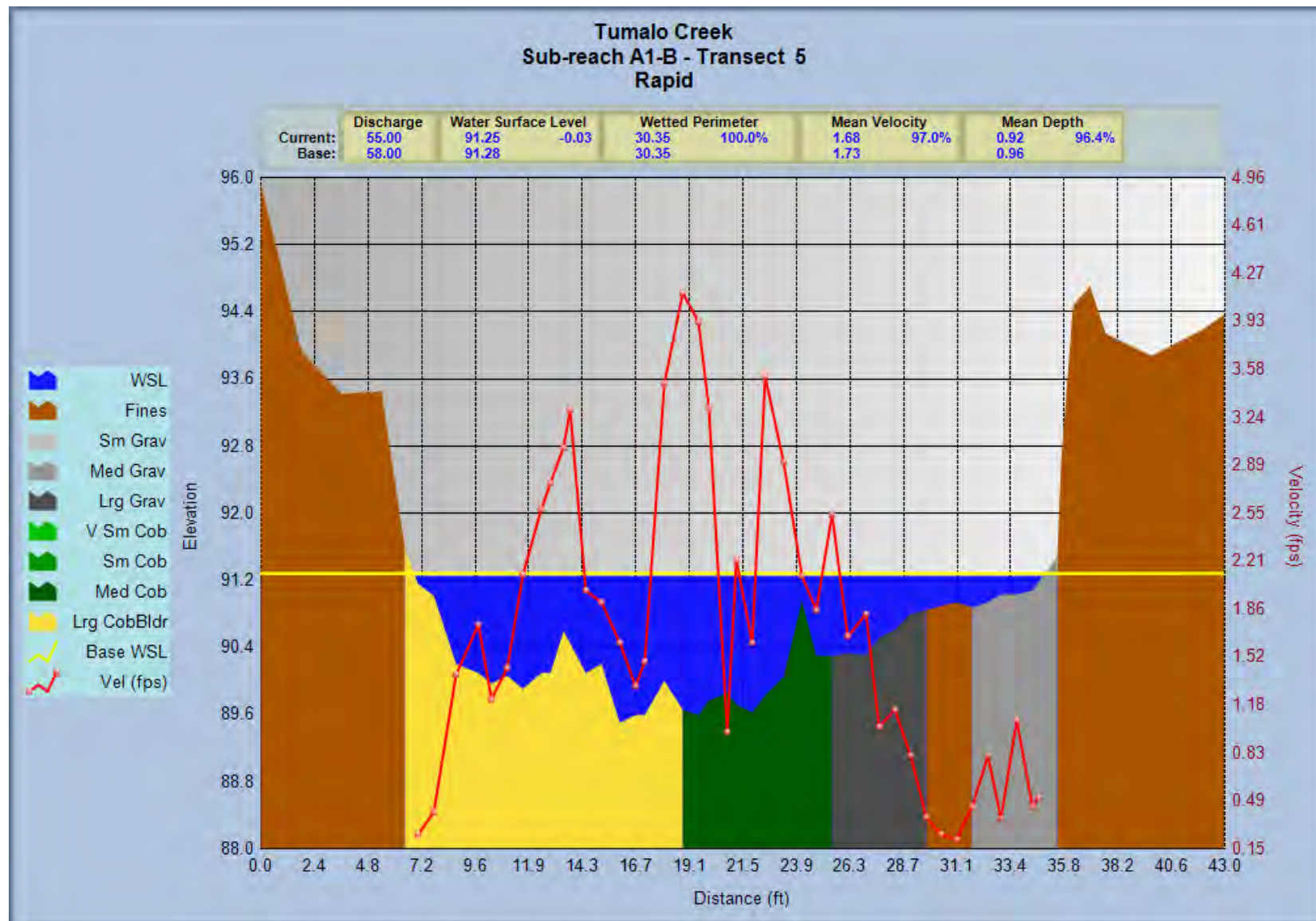


Figure13. Reach A Sub-Reach A1-B transect 5 cross sectional profile - Rapid



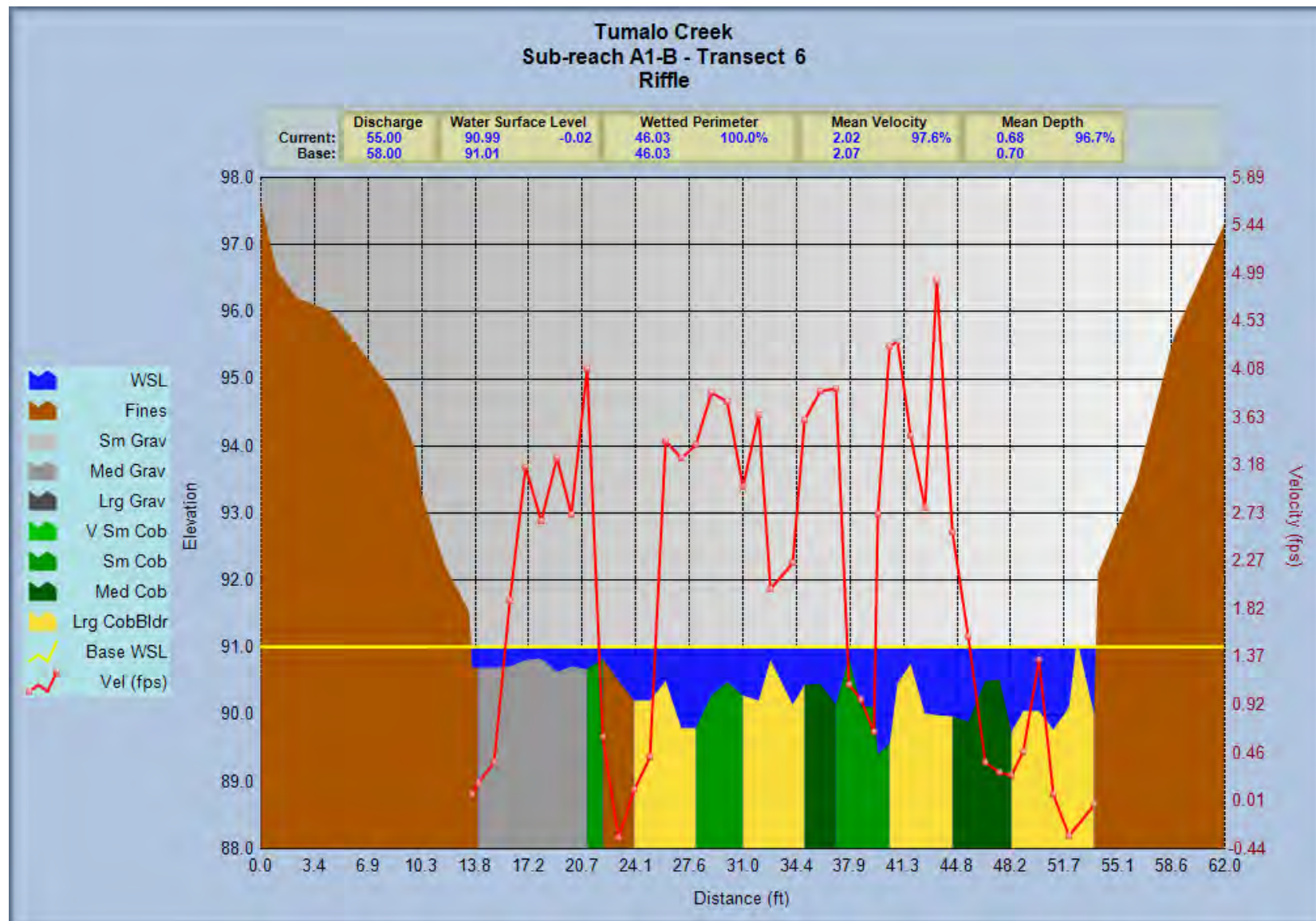


Figure14. Reach A Sub-Reach A1-B transect 6 cross sectional profile - Riffle



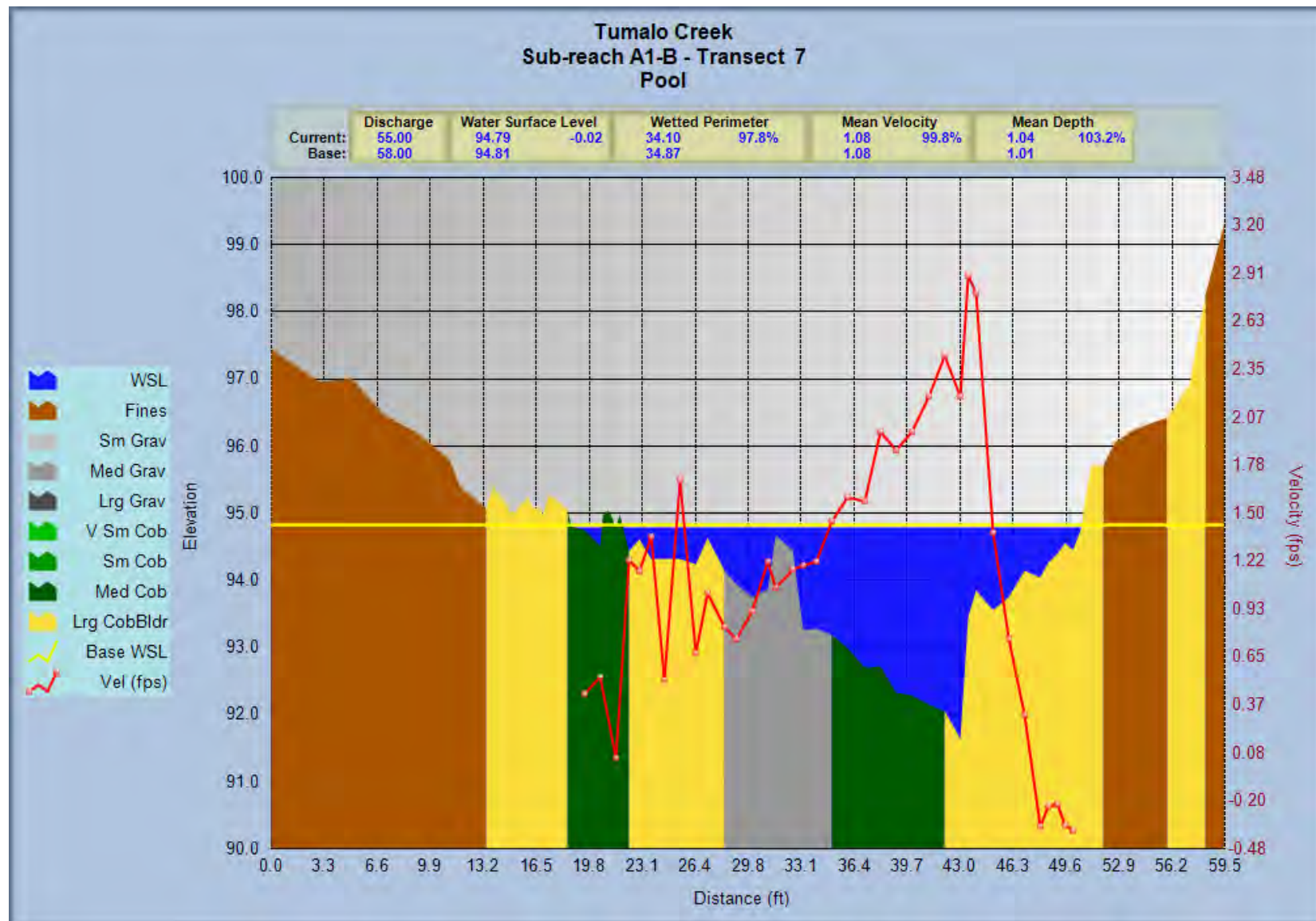


Figure15. Reach A Sub-Reach A1-B transect 7 cross sectional profile - Pool



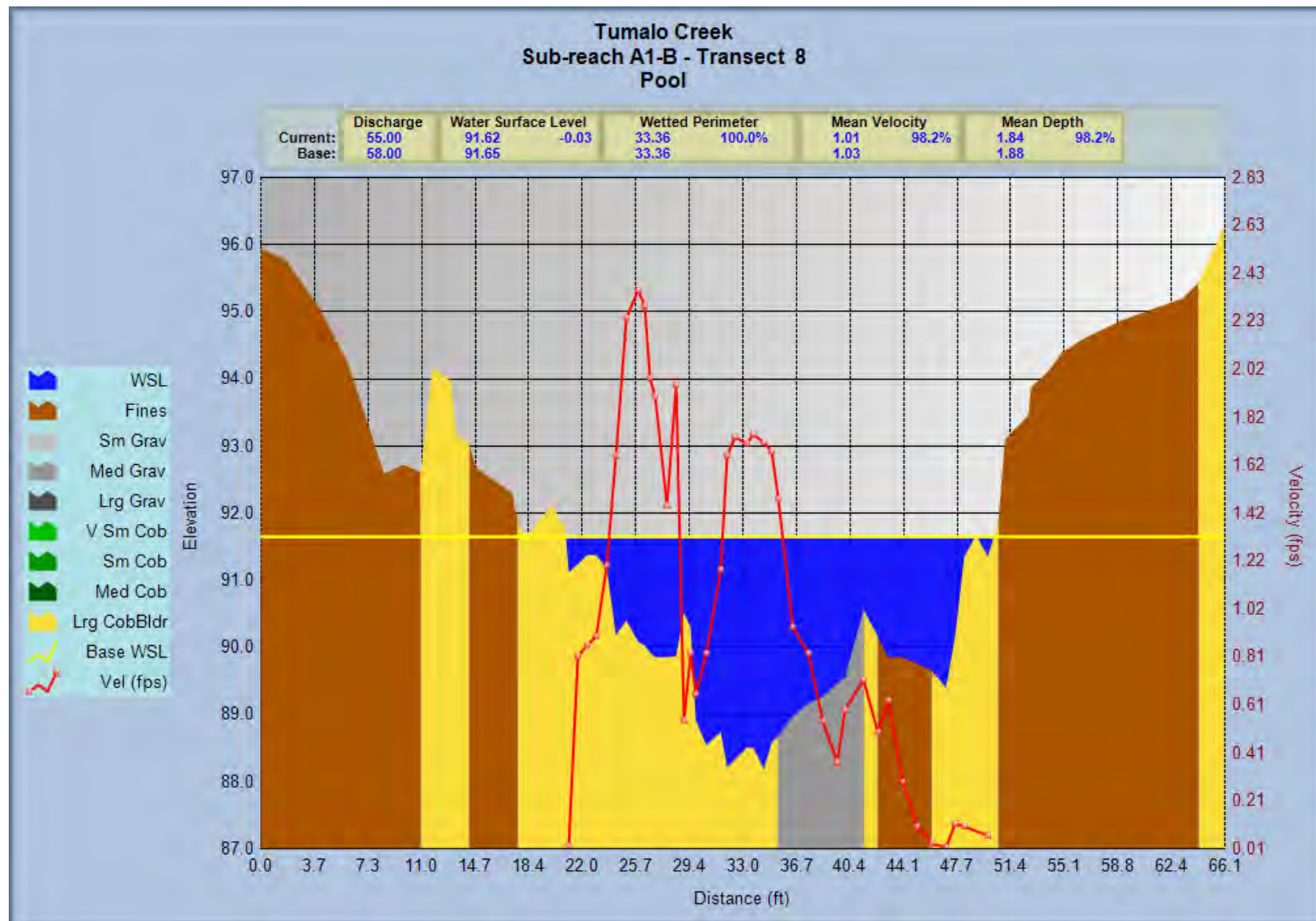


Figure16. Reach A Sub-Reach A1-B transect 8 cross sectional profile - Pool



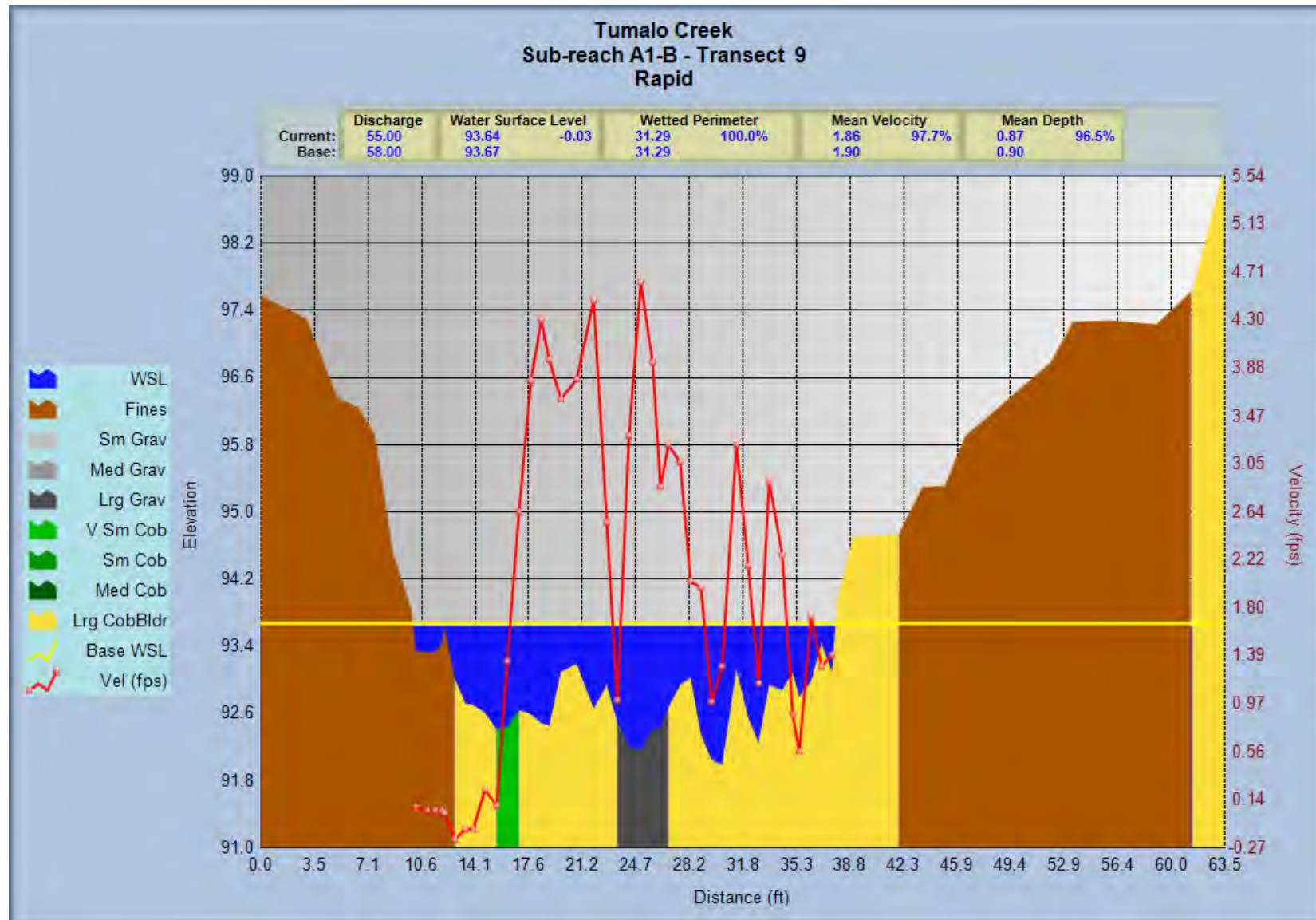


Figure17. Reach A Sub-Reach A1-B transect 9 cross sectional profile - Rapid



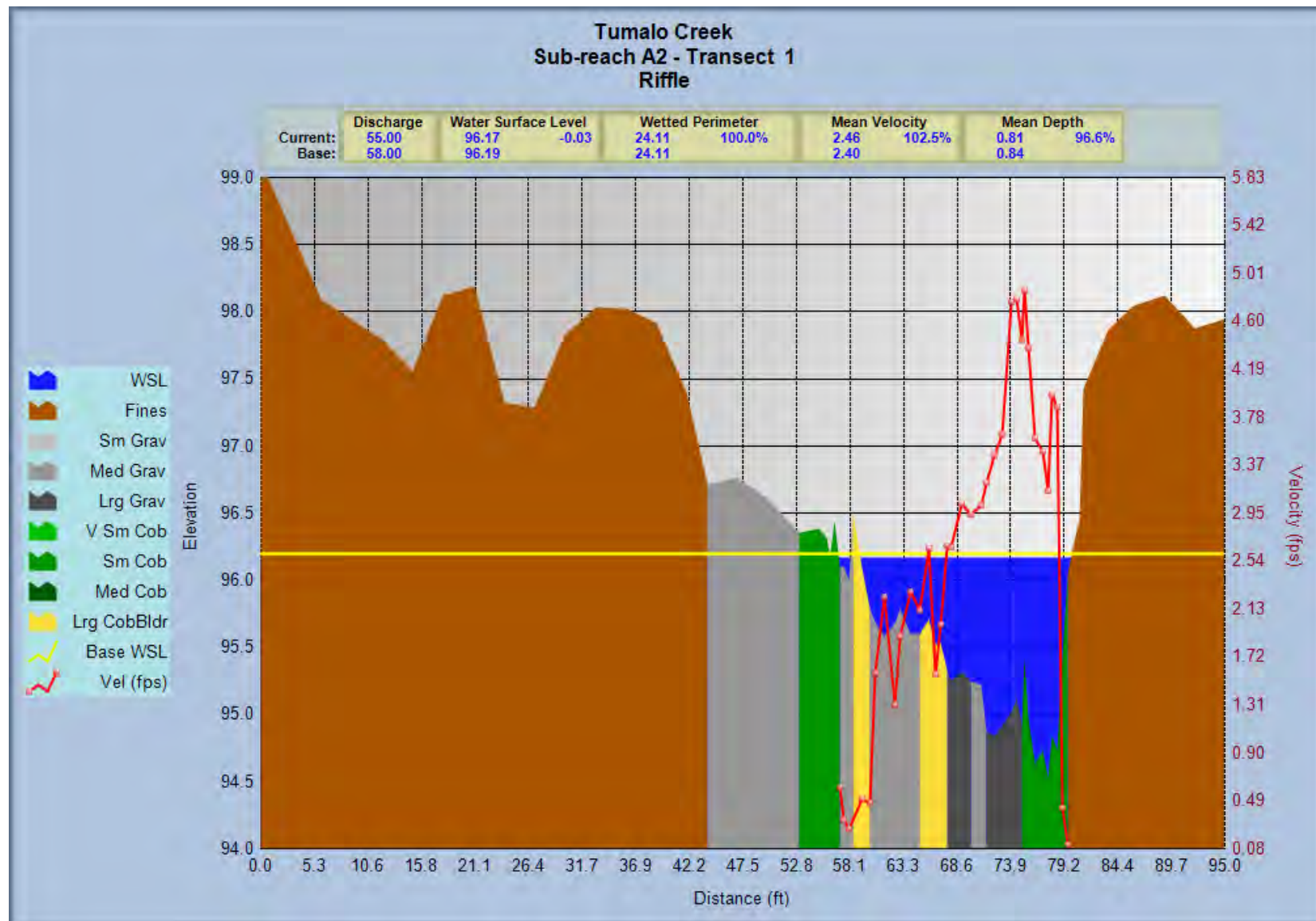


Figure18. Reach A Sub-Reach A2 transect 1 cross sectional profile - Riffle



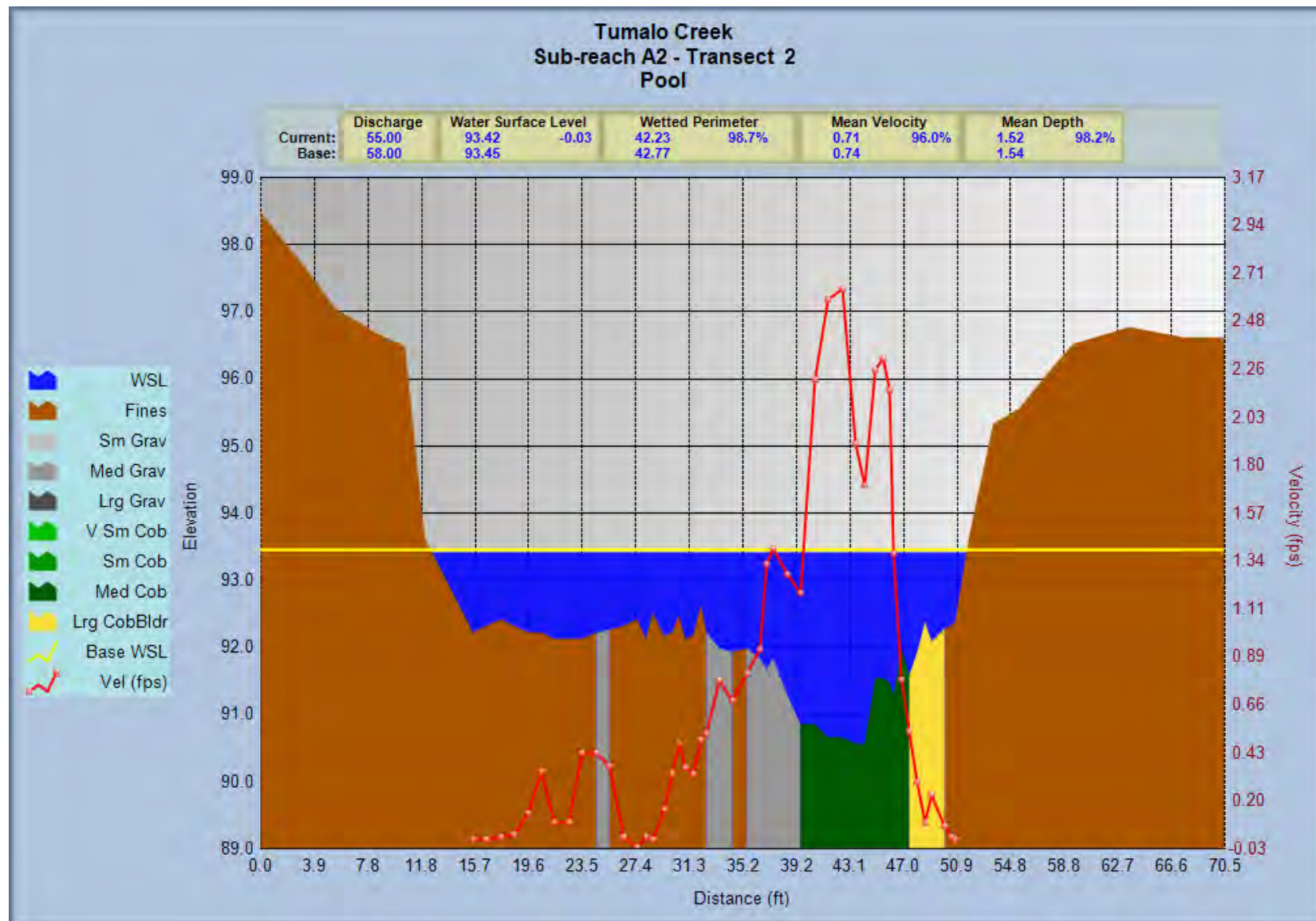


Figure19. Reach A Sub-Reach A2 transect 2 cross sectional profile - Pool



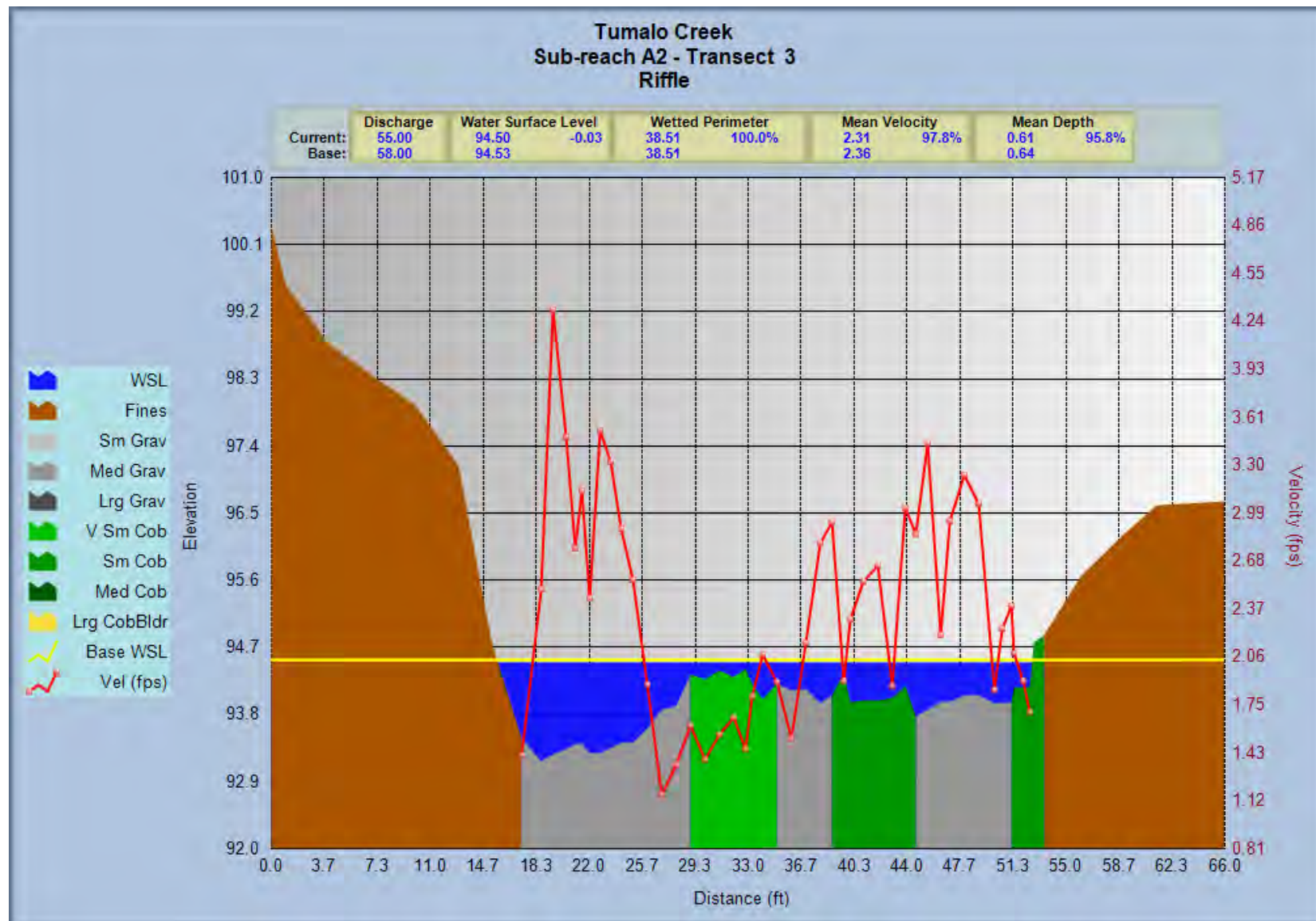


Figure20. Reach A Sub-Reach A2 transect 3 cross sectional profile - Riffle



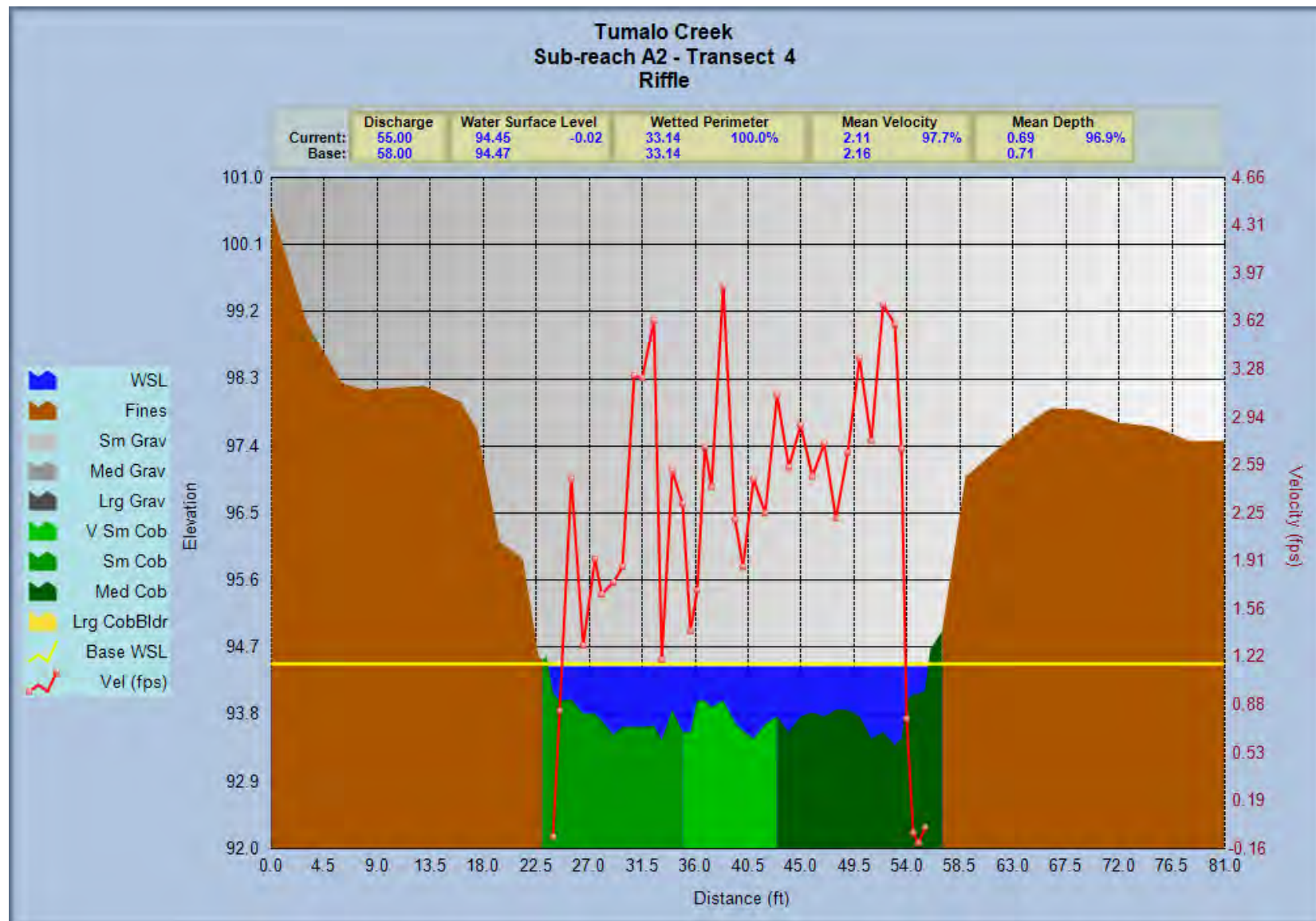


Figure21. Reach A Sub-Reach AB transect 4 cross sectional profile - Riffle



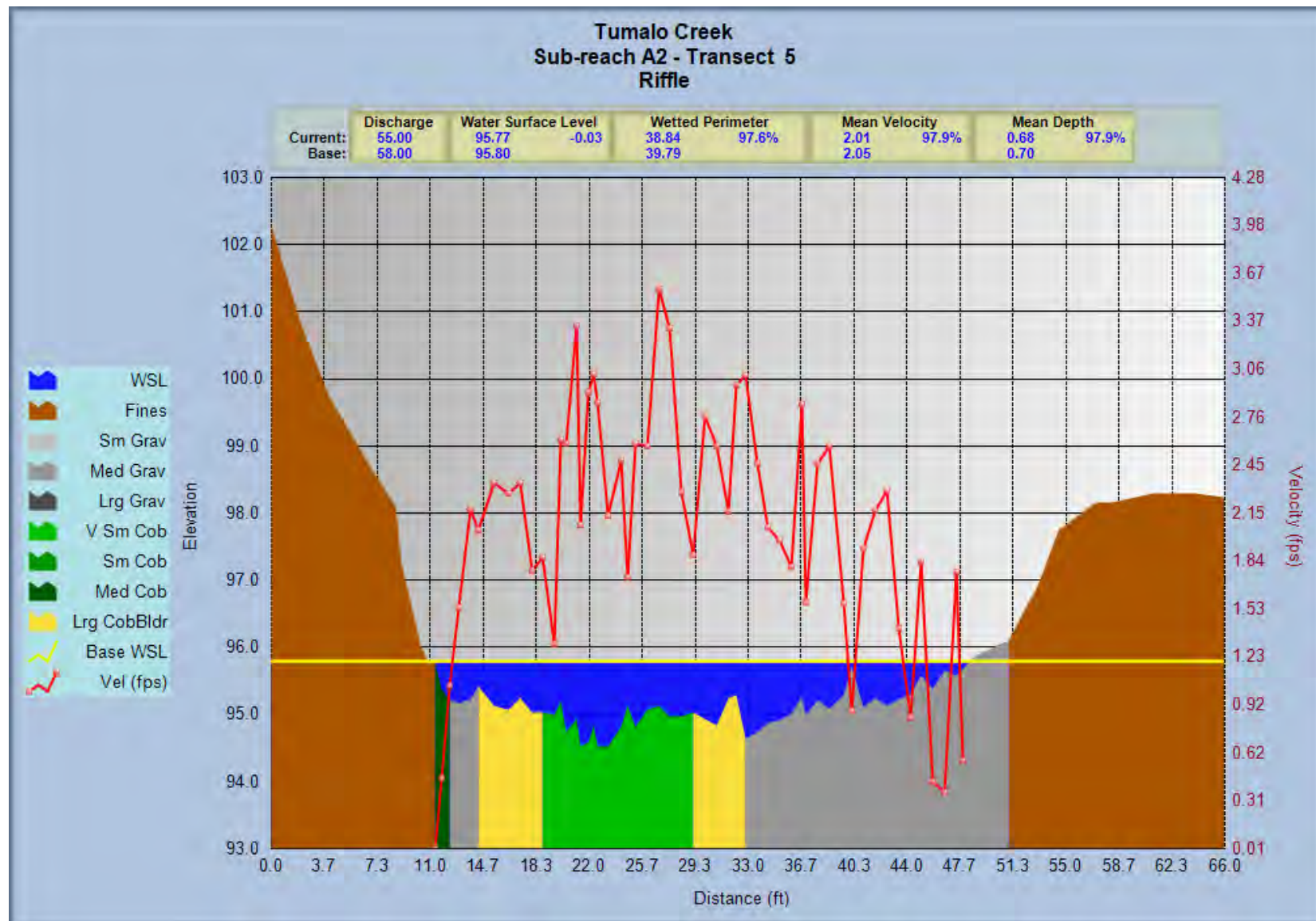


Figure22. Reach A Sub-Reach A2 transect 5 cross sectional profile - Riffle



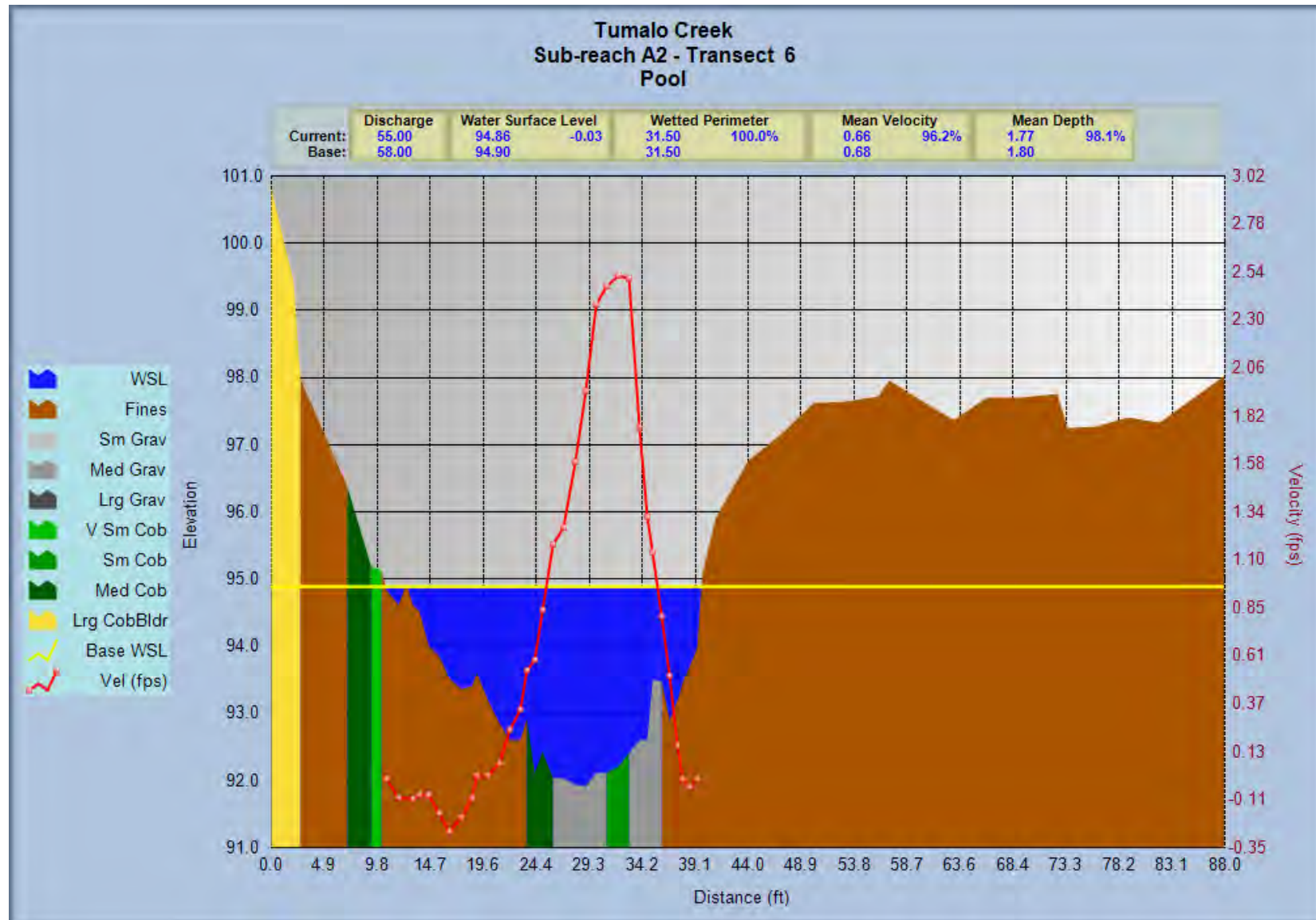


Figure23. Reach A Sub-Reach A2 transect 6 cross sectional profile - Pool



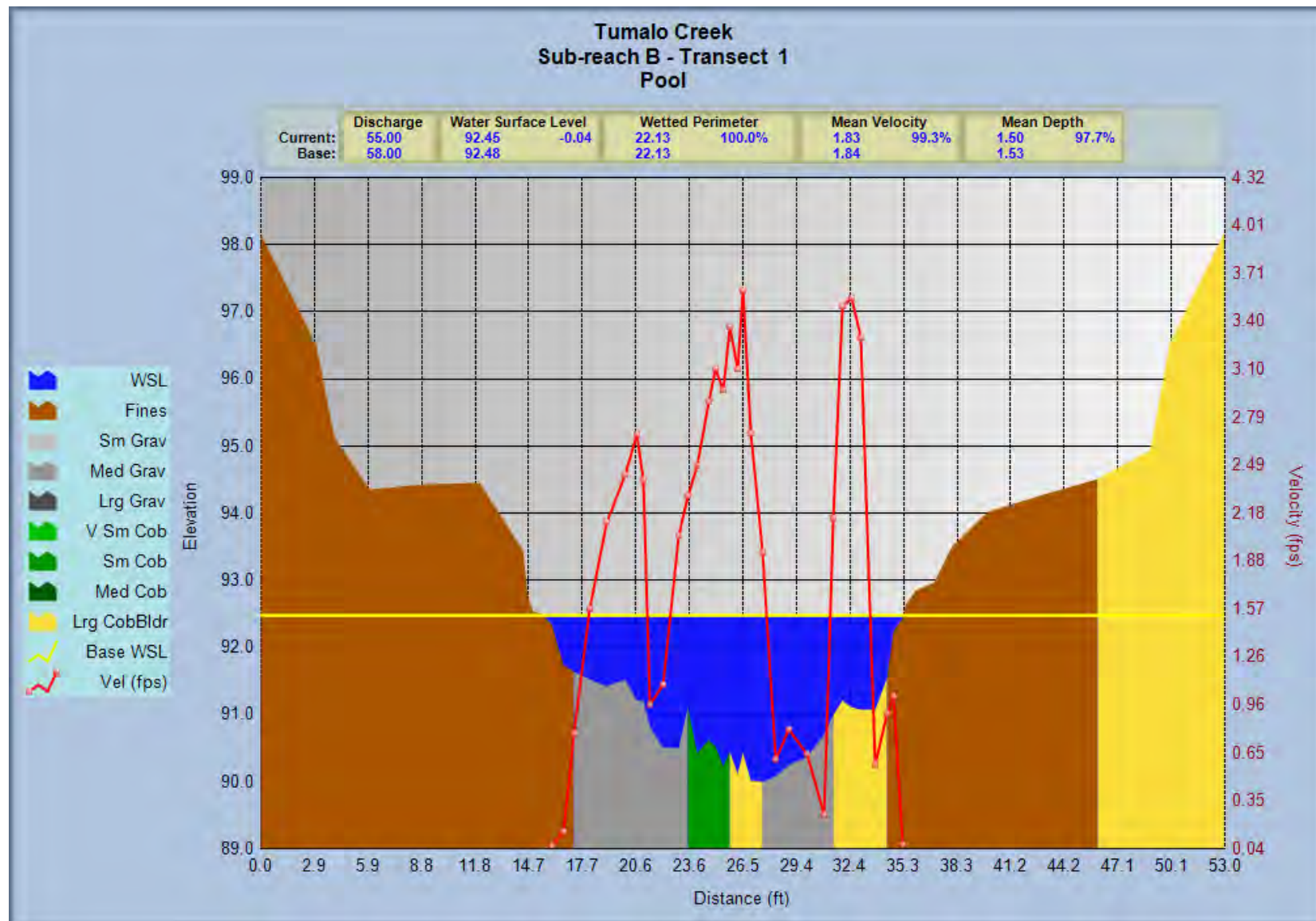


Figure24. Reach B transect 1 cross sectional profile - Pool



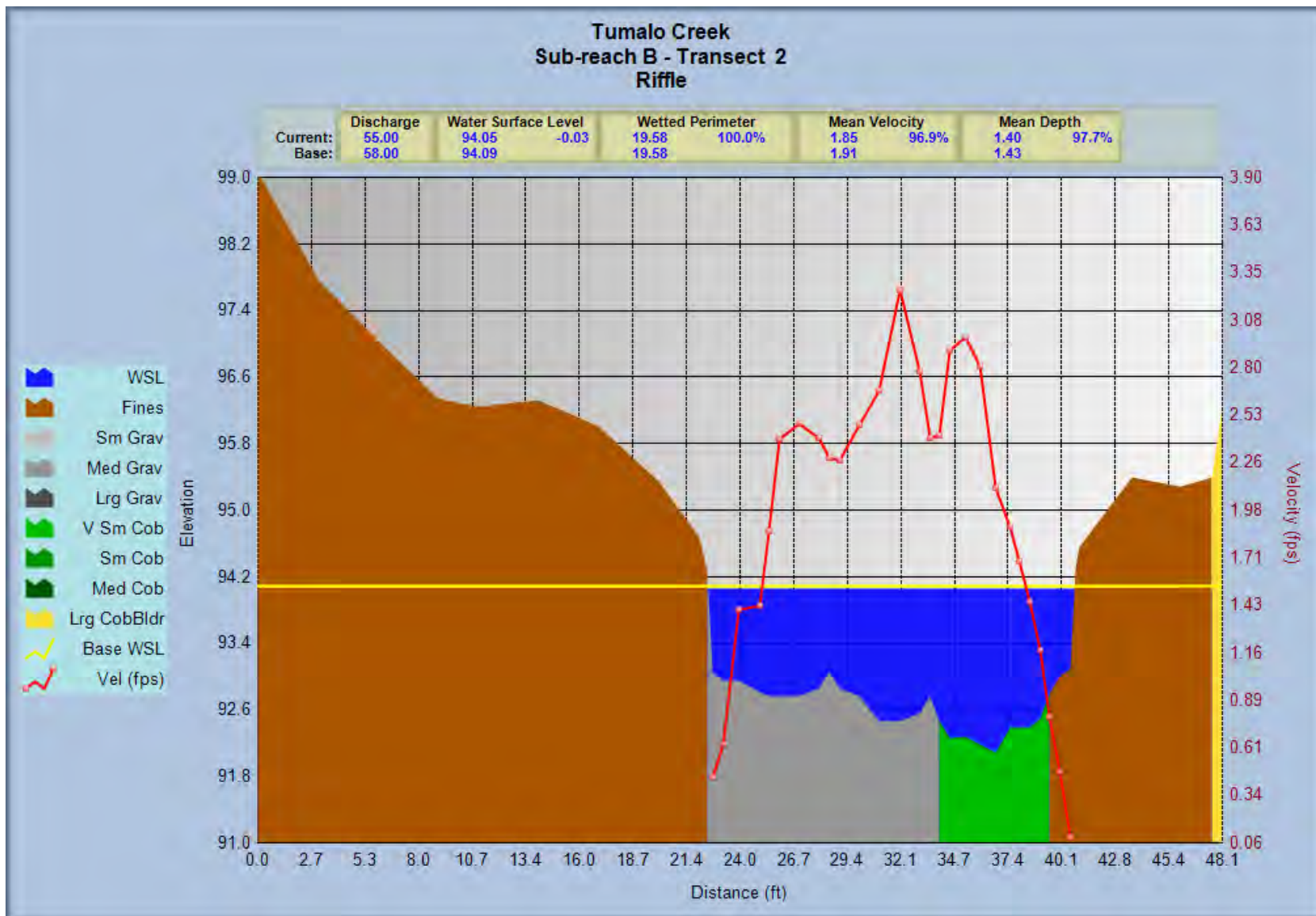


Figure 25. Reach B transect 2 cross sectional profile - Riffle



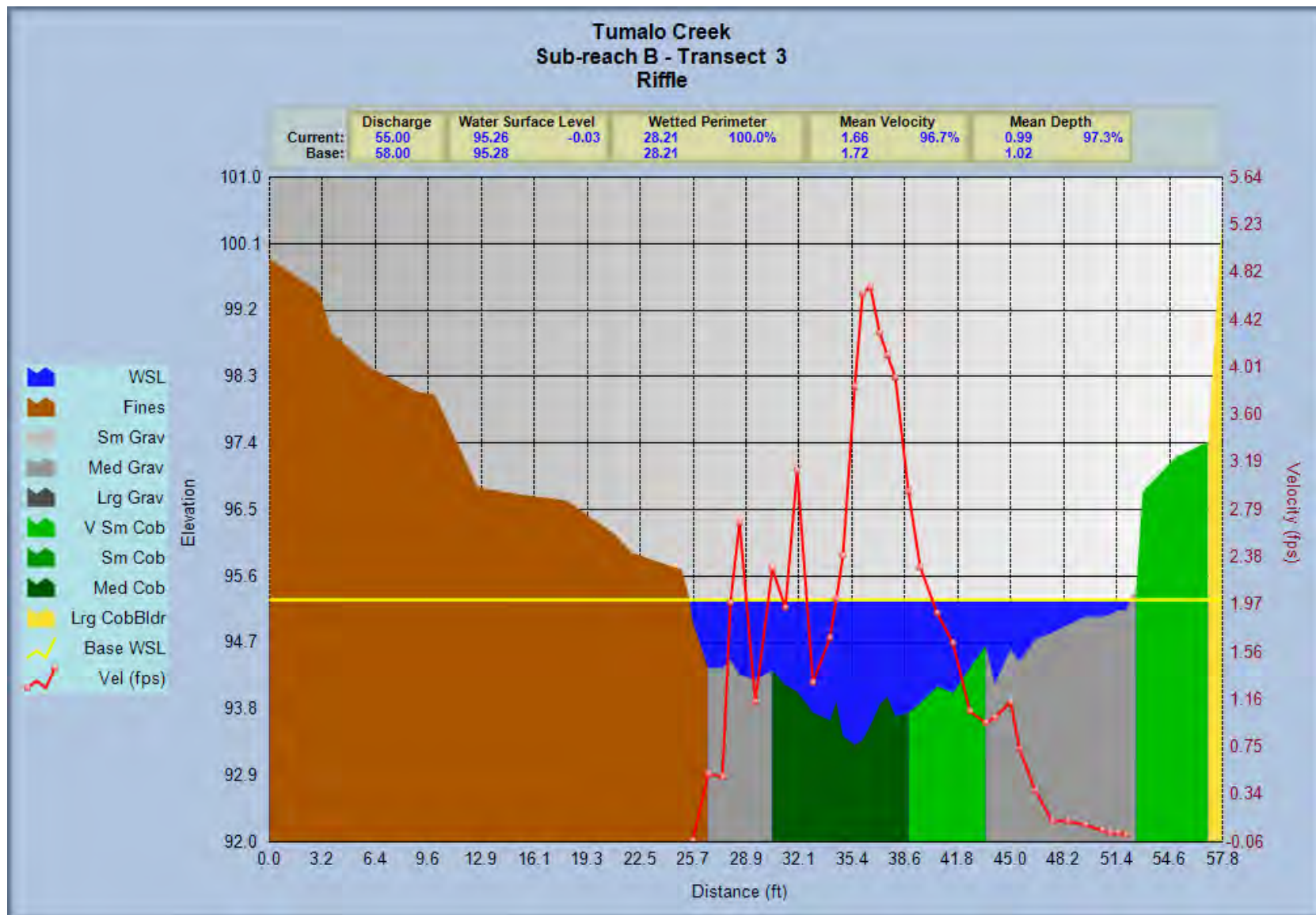


Figure 26. Reach B transect 3 cross sectional profile - Riffle



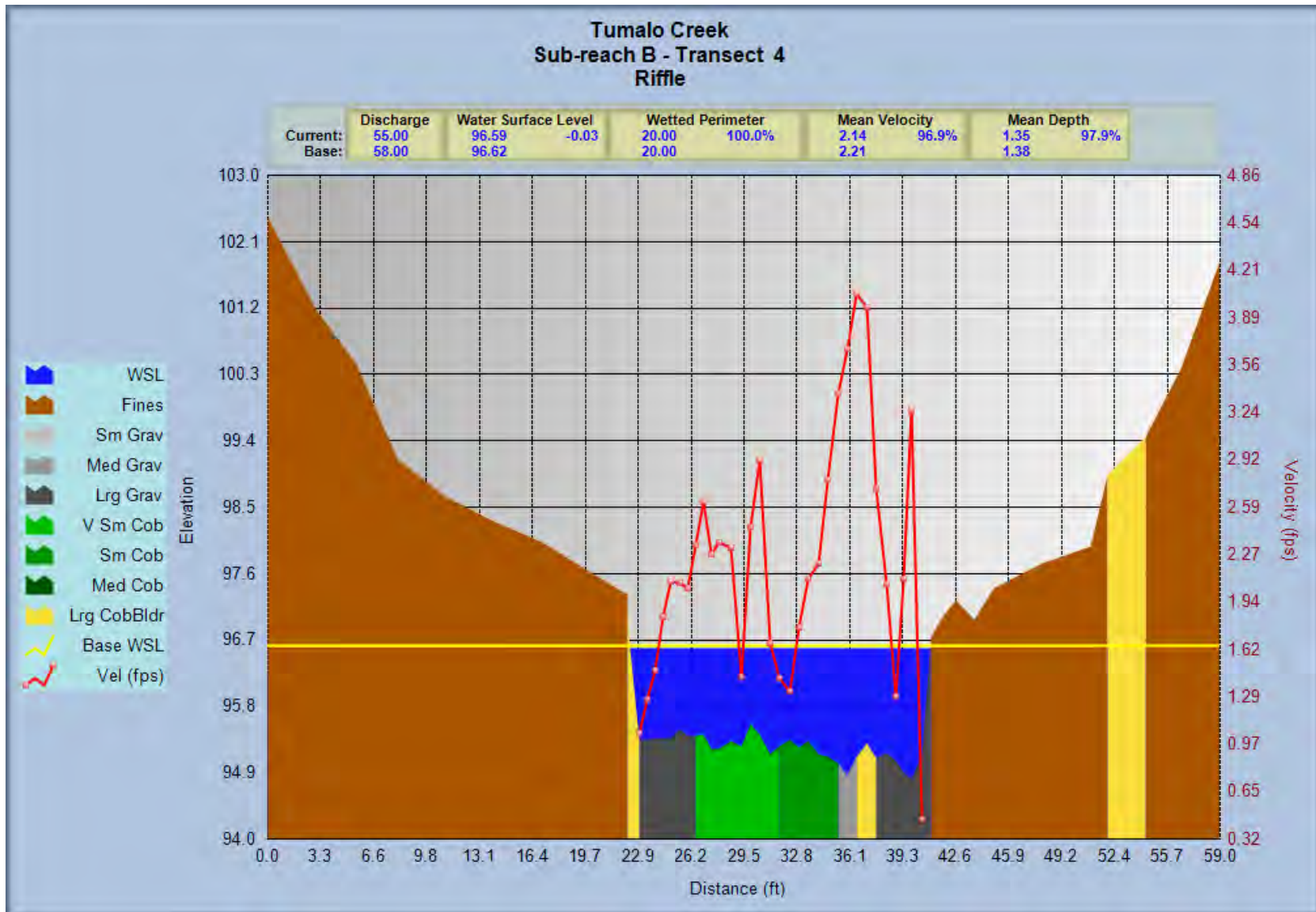


Figure 27. Reach B transect 4 cross sectional profile - Riffle



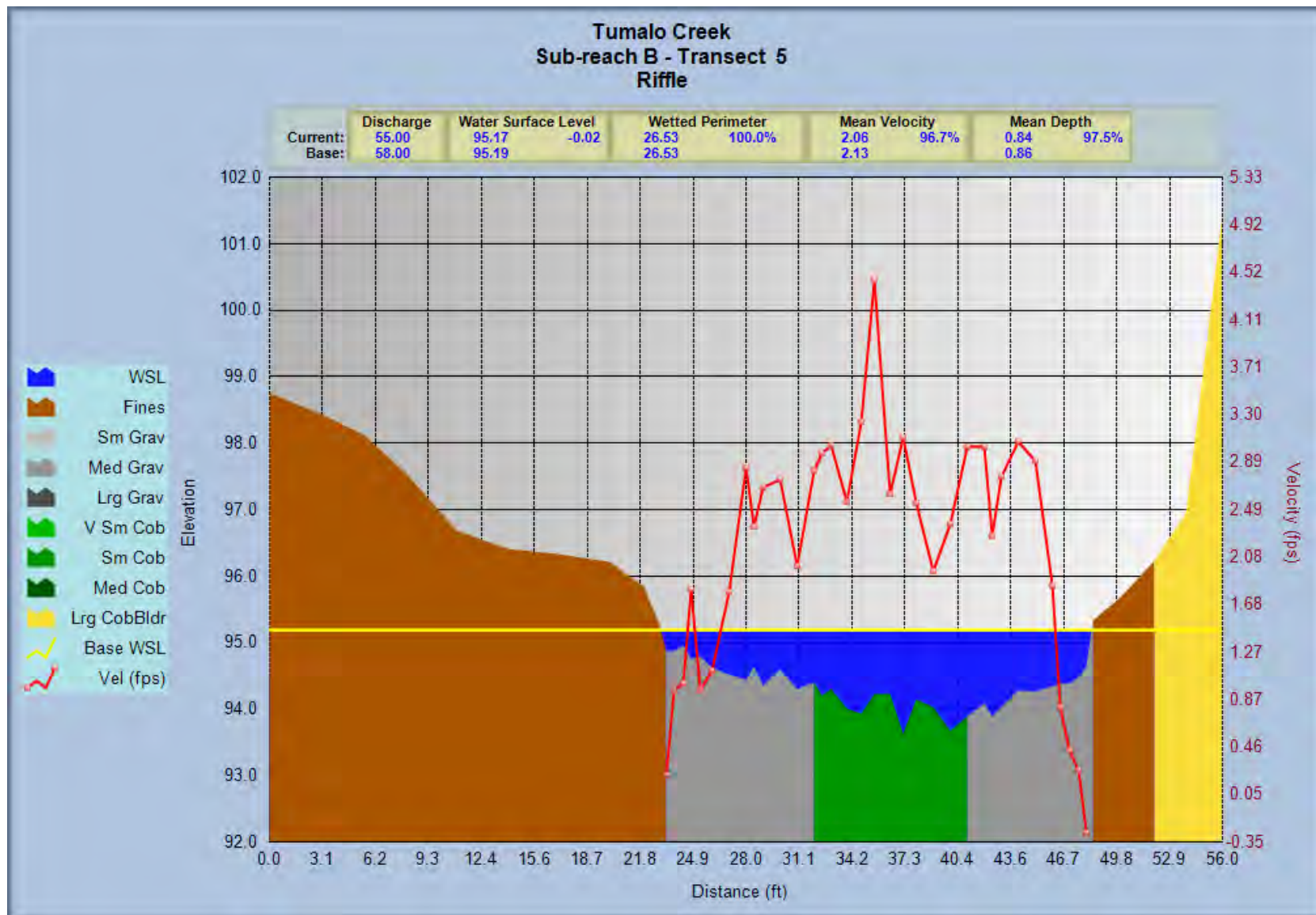


Figure 28. Reach B transect 5 cross sectional profile - Riffle



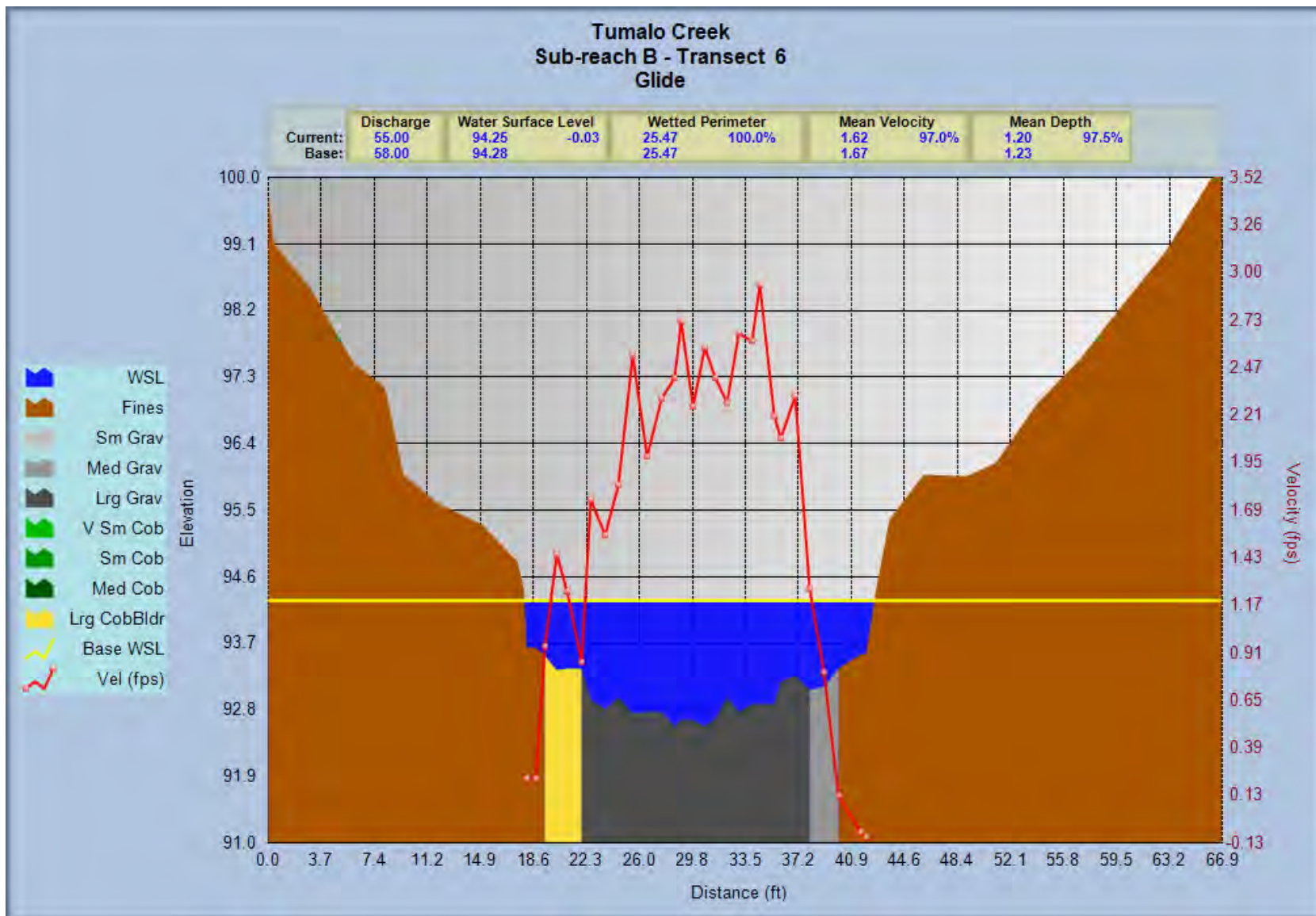


Figure 29. Reach B transect 6 cross sectional profile - Glide



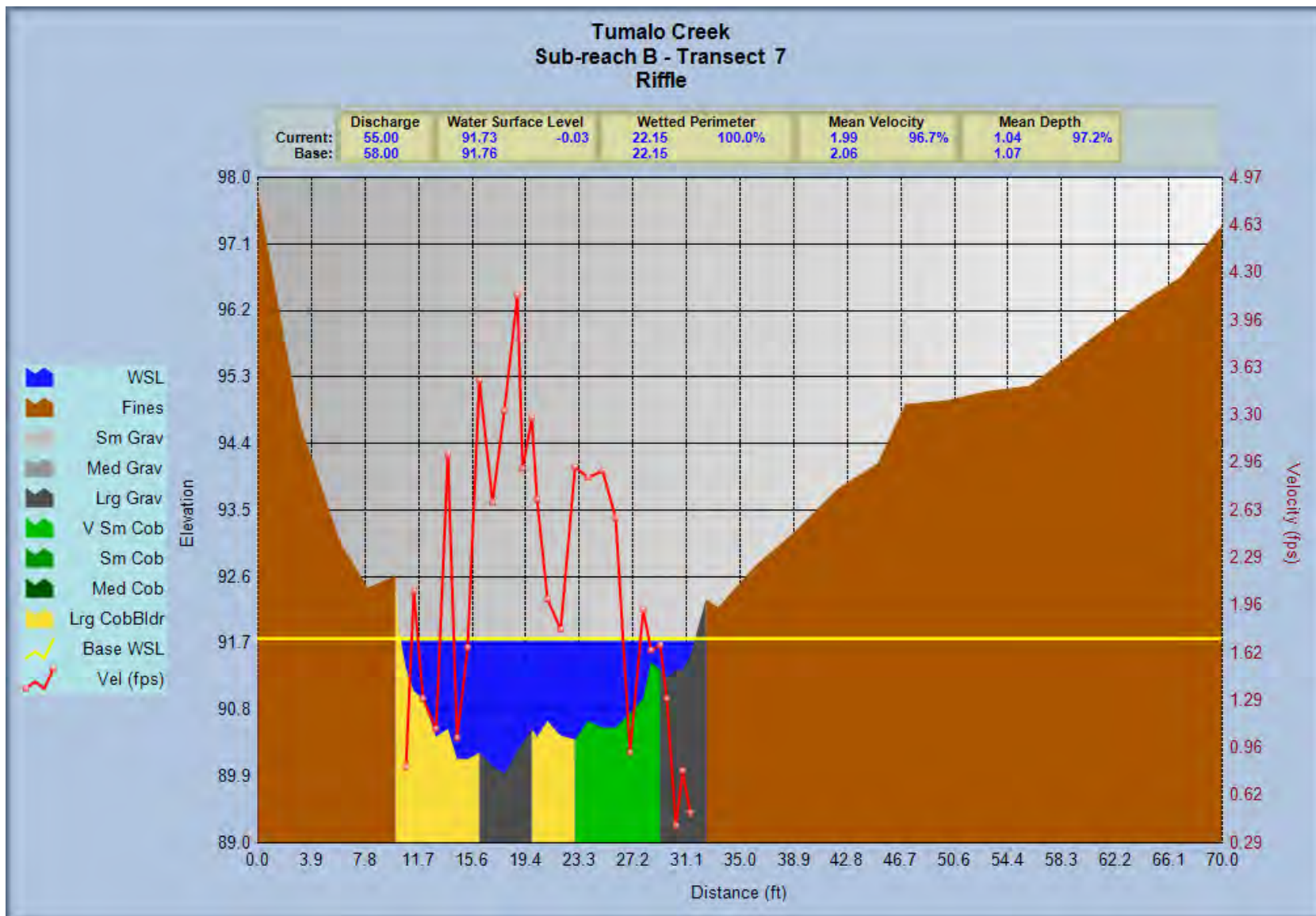


Figure 30. Reach B transect 7 cross sectional profile - Riffle



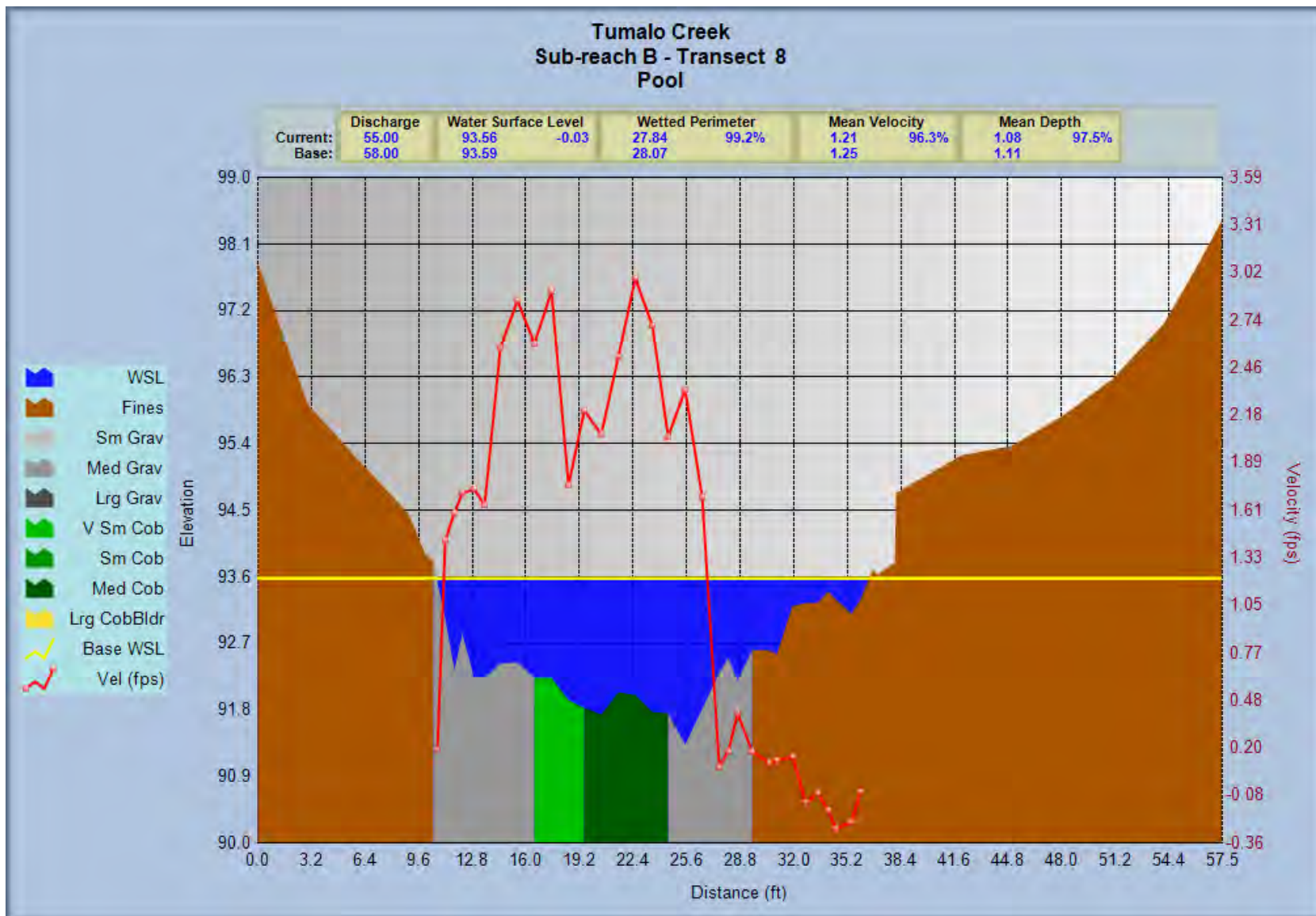


Figure 31. Reach B transect 8 cross sectional profile - Pool

