# Flow Calculations for Sand River

**Date:** 3/3/2017

**Stream Width:** 12 feet

**Staff Gauge Level:** n/a

**Field Crew:** CA

| Segment Center | Segment Width | Segment Depth | Segment Area | Depth - 20% | Depth - 60% | Depth - 80% | Velocity at (Depth - 20%) | Velocity at (Depth - 60%) | Velocity at (Depth - 80%) | Average Velocity | Segment Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| (feet) | (feet) | (feet) | (sqft) | (feet) | (feet) | (feet) | (fps) | (fps) | (fps) | (fps) | (cfs) |
| 0.5 | 1.0 | 3.50 | 3.50 | 2.80 | 1.40 | 0.70 | 0.02 | | 0.35 | 0.19 | 0.648 |
| 2 | 2.0 | 3.60 | 7.20 | 2.88 | 1.44 | 0.72 | 0.03 | | 0.61 | 0.32 | 2.304 |
| 4 | 2.0 | 3.60 | 7.20 | 2.88 | 1.44 | 0.72 | 0.16 | | 0.83 | 0.50 | 3.564 |
| 6 | 2.0 | 3.60 | 7.20 | 2.88 | 1.44 | 0.72 | 0.40 | | 0.99 | 0.70 | 5.004 |
| 8 | 2.0 | 3.65 | 7.30 | 2.92 | 1.46 | 0.73 | 0.84 | | 0.54 | 0.69 | 5.037 |
| 10 | 2.0 | 3.70 | 7.40 | 2.96 | 1.48 | 0.74 | 1.25 | | 0.41 | 0.83 | 6.142 |
| 11.5 | 1.0 | 3.70 | 3.70 | 2.96 | 1.48 | 0.74 | 0.44 | | 0.68 | 0.56 | 2.072 |

**Σ (sqft) = 43.5**

**Total Flow (cfs): 24.77**

**Total Flow (gpm): 11146.73**

**Comments: 16.0513 MGD**
**Large amount of rotation affecting flow on left side of culvert.**