**Section 378.APPENDIX D Manning Equation**

V = 1.49 Rh2/3 S1/2

n

Q = 1.49 ARh2/3 S1/2

n

|  |  |  |
| --- | --- | --- |
| where: | Q | is the discharge in cfs |
|  | V | is the average velocity in fps. |
|  | A | is the cross-sectional area of the stream in square feet. |
|  | Rh | is the hydraulic radius of the stream in feet, as |
|  |  | determined by the cross-sectional area (A) divided by the |
|  |  | wetted perimeter. |
|  | S | is the slope of the stream in decimal form. |
|  | n | is the Manning coefficient. |