

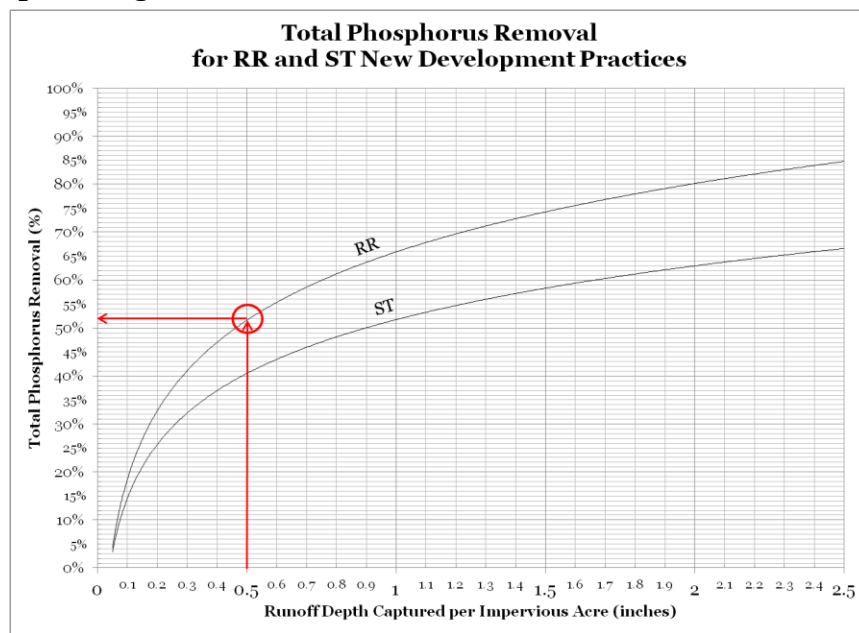
# Section 3

## Protocol for Defining Removal Rates for New Development Projects

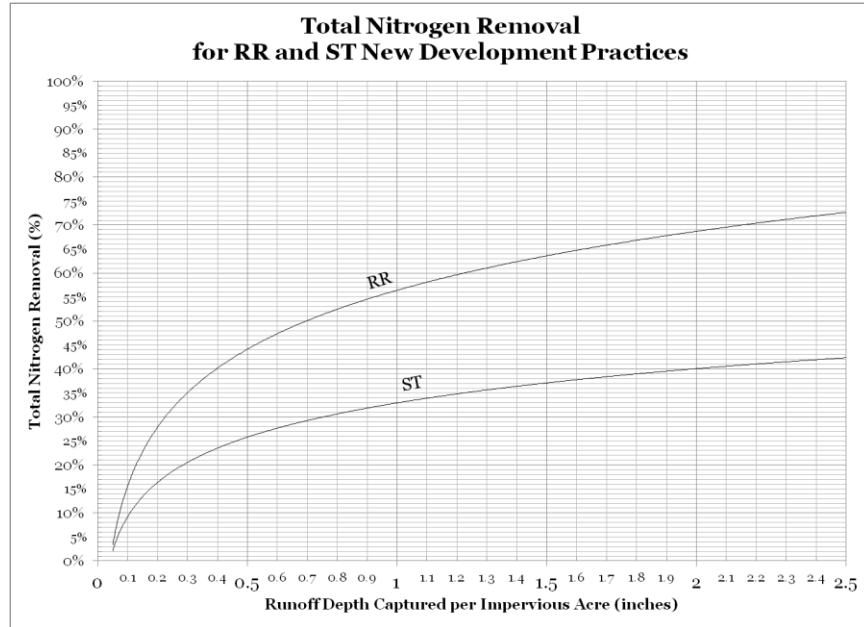
### *Basic Approach*

Given the diversity in state stormwater performance standards, the Panel decided that assigning a single universal removal rate for BMPs designed to the new standards was not practical or scientifically defensible. Instead, the Panel elected to develop a protocol whereby the removal rate for each individual development project is determined based on the amount of runoff it treats and the degree of runoff reduction it provides. The Panel conducted an extensive review of recent BMP performance research to develop this new protocol which is summarized in Appendix B.

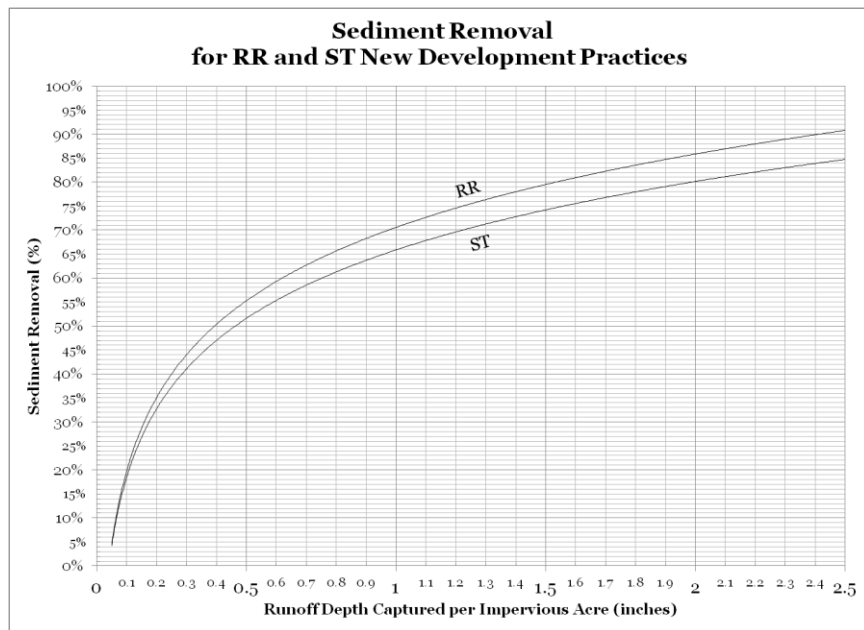
The Panel initially developed a new BMP removal rate adjustor table that provides increasing sediment and nutrient removal rates for new development projects that treat more runoff and/or employ runoff reduction practices. For ease of use, the adjustor table was converted into a series of three curves, which are portrayed in Figures 1 to 3. Readers that wish to see the technical derivation for both the adjustor table and the curves should consult Appendix C. The new BMP removal rate curves make it easy to determine pollutant removal rates for new development. The designer first defines the runoff volume captured by the project (on the x-axis), and then determines whether the project is classified as having runoff reduction (RR) or stormwater treatment (ST) capability (from Table 4). The designer then goes upward to intersect with the appropriate curve, and moves to the left to find the corresponding removal rate on the y-axis (see example in Figure 1).



**Figure 1. New BMP Removal Rate Adjustor Curve for Total Phosphorus**



**Figure 2. New BMP Removal Rate Adjustor Curve for Total Nitrogen**



**Figure 3. New BMP Removal Rate Adjustor Curve for Sediment**

In the rare cases that the runoff volume captured by the practice exceeds 2.5 inches, simply use the pollutant removal values associated with 2.5 inches.