WORKSHEET 14.03 - SITUATION THREE

Compile existing site-specific data and determine existing site imperviousness (I_{EXIST}). For the purposes of these calculations, site area (A_{SITE}) is defined as the entire parcel. A_{EXIST} represents the actual amount of existing impervious cover on the site.

A_{SITE} = _____ acres

A_{EXIST} structures = _____ acres
parking lot = _____ acres
roadway = _____ acres
other = _____ acres
Total A_{EXIST} = _____ acres

I_{EXIST} = (Total A_{EXIST} ÷ A_{SITE}) x 100

I_{EXIST} = _____ % (expressed in whole numbers)

Compile post-development site-specific data and determine post-development site imperviousness (I_{POST}). For the purposes of these calculations, site area (A_{SITE}) is defined as the entire parcel. A_{POST} represents the actual amount of impervious cover on the site once the proposed development is complete.

A_{SITE} = _____ acres

A_{POST} structures = _____ acres
parking lot = _____ acres
roadway = _____ acres
other = _____ acres
Total A_{POST} = _____ acres

I_{POST} = (Total A_{POST} ÷ A_{SITE}) x 100

I_{POST} = _____ (expressed in whole numbers)

If I_{EXIST} ≤ 16% and I_{POST} ≤ 16%, STOP. There is no pollutant removal requirement. Otherwise, refer to the **CALCULATION OF POLLUTANT REMOVAL REQUIREMENTS** section at the beginning of this chapter for development situation determination.

Calculate the pre and post-development pollutant loadings for the site using the Simple Method.

$$L = P \times P_J \times [0.05 + (0.09 \times I)] \times C \times A \times 2.72 / 12$$

Where:

P_J	=	unitless rainfall correction factor	
	=	0.9 for all of Tidewater, Virginia	
P	=	annual rainfall depth in inches	
	=	43 for the Richmond Metropolitan Area	
C	=	flow weighted mean concentration of total phosphorus	
	=	0.26 mg/l for the entire County	
$I_{WATERSHED}$	=	average land cover condition of the Bay watershed	
	=	16 percent	

Calculate the pre-development load (L_{PRE}):

L_{PRE} = $[0.05 + 0.009 \times I_{EXIST})] \times 2.28 \times A_{SITE}$

= $[0.05 + (0.009 \times \underline{\quad})] \times 2.28 \times (\underline{\quad})$

L_{PRE} = _____ pounds per year

Calculate the load based on 16% impervious cover (L_{16}):

L_{16} = $[0.05 + 0.009 \times 16)] \times 2.28 \times A_{SITE}$

= $[0.05 + (0.009 \times \underline{\ 16\ })] \times 2.28 \times (\underline{\quad})$

L_{16} = _____ pounds per year

Calculate the post-development load (L_{POST}):

L_{POST} = $[0.05 + 0.009 \times I_{POST})] \times 2.28 \times A_{SITE}$

= $[0.05 + (0.009 \times \underline{\qquad})] \times 2.28 \times (\underline{\qquad})$

L_{POST} = _____ pounds per year

Calculate the pollutant removal requirement (RR). The removal requirement shall be the smaller of the following

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RR = $L_{POST} - (0.9 \times L_{PRE})$

= _____ - (0.9 x _____)

= _____ pounds per year

RR = $L_{POST} - L_{16}$

= _____ - _____ .

= _____ pounds per year

RR = _____ pounds per year