

**AGRONOMY #58**  
**Filter Strip Design Tables**  
**June 2011**

Use the tables below to determine the flow length needed to design a Filter Strip based on the resource concern identified for the planning unit.

<b>TABLE 1</b> <b>Filter Strip Length to Remove Sediment from Runoff</b>				
Land Slope Percent of Contribution Area (%) Above Filter Strip	Length of Flow (Feet)			
	Hydrologic Soil Group of Filter Area			
	A	B	C	D
0 - 1	20	20	22	24
1 - 3	20	25	28	30
3 - 5	24	30	33	36
5 - 8	28	35	40	42
8 - 12	32	40	44	48
12 - 15	40	50	55	60
15 - 20	48	60	66	72
> 20	*	*	*	*

\* For slopes that exceed 20%, consult NRCS technical specialist for design guidance.

<b>TABLE 3</b> <b>Filter Length - Areas Subject To Run-On of Nitrogen and Pesticides</b>				
Land Slope Percent of Contribution Area (%) Above Filter Strip	Length of Flow (Feet)			
	Hydrologic Soil Group of Filter Area			
	A	B	C	D
0 - 1	30	30	33	36
1 - 3	32	40	44	48
3 - 5	40	50	55	60
5 - 8	48	60	66	72
8 - 12	56	70	77	84
12 - 15	72	90	100	108
> 15	*	*	*	*

\* For slopes that exceed 15%, consult NRCS technical specialist.

<b>TABLE 2</b> <b>Filter Strip Length Through Undisturbed Forest Floor Forestland</b>	
Land Slope Percent of Contributing Area (%) Above Filter Strip	Length of Flow (Feet)
0 - 3	25
3 - 5	35
5 - 8	45
8 - 12	55
12 - 18	65
18 - 30	80
30 - 40	85
40 - 50	90
50 - 60	120
60 - 70	150
> 70	*

\* For slopes that exceed 70%, consult NRCS technical specialist for design guidance.

<b>TABLE 4</b> <b>Filter Length - Areas Subject to Run-On of Phosphorus</b>				
Land Slope Percent of Contribution Area (%) Above Filter Strip	Length of Flow (Feet)			
	Hydrologic Soil Group of Filter Area			
	A	B	C	D
0 - 1	30	30	33	36
1 - 3	40	50	55	60
3 - 5	56	70	77	84
5 - 8	72	90	100	108
8 - 12	96	120	132	144
12 - 15	120	150	165	180
> 15	*	*	*	*

\* For slopes that exceed 15%, consult NRCS technical specialist.

**TABLE 5**  
**Filter Length - Areas Subject to Run-On of Pathogens (Bacteria and Virus)**

Land Slope Percent of Contribution Area (%) Above Filter Strip	Length of Flow (Feet)			
	Hydrologic Soil Group of Filter Area			
	A	B	C	D
0 - 1	30	30	30	30
1 - 3	30	30	33	36
3 - 5	32	40	44	48
5 - 8	48	60	66	72
8 - 12	100	125	137	150
12 - 15	144	180	198	216
> 15	*	*	*	*

\* For slopes that exceed 15%, consult NRCS technical specialist.

**TABLE 6**  
**Minimum Filter Strip Length for Sheet Flow Down Gradient From an Unpaved Lot**  
*This is not intended for concentrated flow. If there is concentrated flow, use the NRCS Standard 635 Vegetative Treatment Area.*

Land Slope Percent of Contribution Area (%) Above Filter Strip*	Length of Flow (Feet)			
	Hydrologic Soil Group of Filter Area			
	A	B	C	D
0 - 2	48	60	66	72
2 - 4	72	96	100	108
4 - 6	96	120	132	144
6 - 8	120	150	165	180
>8**				

\* To filter sheet flow runoff the filter area and the cross slope above the filter area must be nearly flat.

\*\* For slopes that exceed 8%, consult NRCS technical specialist.

### DIRECTIONS FOR USE

- Determine the minimum flow length needed to support a 10 year lifespan using Agronomy Tech Note #40.
- Consider the resource concerns of the planning unit and select the appropriate table to address the critical resource concern.
- Using the slope of the planning unit, the hydrologic soil group of the filter area, determine the minimum flow length needed to address the resource concern.

- Use the greater flow length determined from Agronomy Tech Note #40 or Tech Note #58 to design the filter strip.
- Select seeding mixtures from the Michigan NRCS 393 Filter Strip Standard, Table 1.

### Design Considerations

- Consider contaminant source control for all purposes of the filter strip. Reducing the total volume and the concentrations of the contaminant source in the runoff will increase effectiveness of the filter strip.
- Infiltration is important within all filter strip areas unless an immediate ground water concern is evident. Infiltration mechanisms such as settling basins, vegetative barriers, or stone and organic filled trenches can be placed above or within the filter area perpendicular to the flow gradient.
- Local permits and regulations may supersede criteria in the Filter Strip Standard. The Clean Water Act may apply to filter strips adjacent to water bodies. Design and install the filter strip to comply with all local, state, and federal regulations.
- For wildlife considerations, see the Biology Conservation Sheet (645) Wildlife Corridors to increase the minimum width beyond the two procedures in Agronomy Tech Note #40 or Tech Note #58.