

Vegetated Buffer Strip Factsheet

1.0 GENERAL DESCRIPTION



Figure 1. Vegetated Buffer Strip (Caltrans)

Potential Treatment Mechanisms								
I	ET	FA	B	RH	S	F	P	T
✓	✓	✓	✓		✓		✓	
Legend: I = Infiltration					S = Sedimentation			
ET = Evapotranspiration					F = Floatation			
FA = Filtration and/or Adsorption					P = Plant Uptake			
B = Biochemical Transformation					T = Trash Capture			
RH = Rainfall and Runoff Harvest								

Vegetated buffer strips are gently sloped, relatively flat vegetated surfaces over which runoff is treated as sheet flow. In conventional vegetated buffer strips, the plants slow the flow, which enhances sedimentation, filtration, and infiltration. In some cases, the soil underlying the strip is amended with compost or replaced with a permeable soil/compost mix. This allows more runoff to infiltrate into the ground, thus reducing runoff volumes. A schematic of a basic vegetated buffer strip is shown in Figure 2.

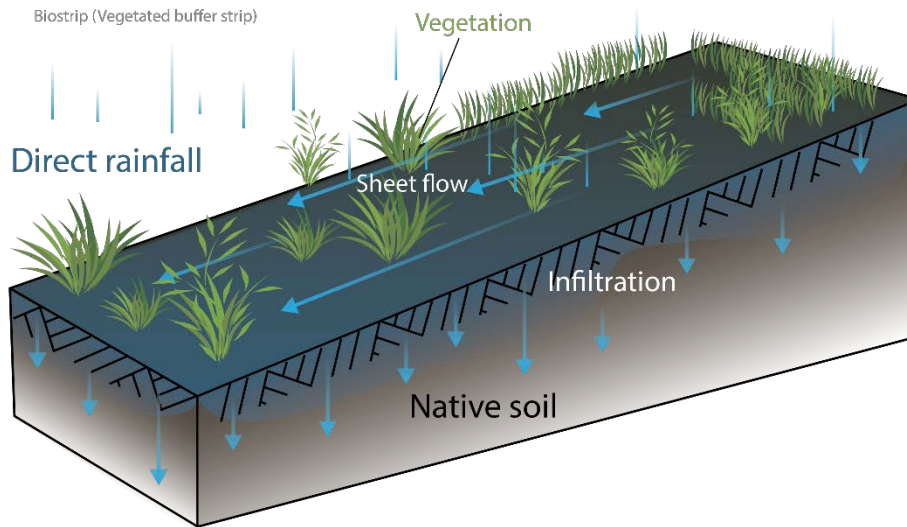


Figure 2. Schematic of a basic vegetated buffer strip

1.1 Variations and Alternative Names

- Strips
- Buffers
- Buffer strips
- Biostrips

2.0 ADVANTAGES & LIMITATIONS

2.1 Advantages

- ✓ Usually vegetated with grasses or other low maintenance plants, these strips often require little maintenance.
- ✓ When done well, strips can be both inexpensive and add aesthetic appeal.
- ✓ If sized correctly, strips provide adequate drainage and removal of particulate pollutants.

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2.2 Limitations

- ✘ Prone to erosion and channelization if vegetative cover is not properly established.
- ✘ One strip is not suitable for large treatment areas or areas with concentrated runoff.

3.0 SITING

According to the California Stormwater Quality Association and the Sacramento Stormwater Quality Partnership, one strip is limited to treating only a few acres of contributing drainage area (CASQA 2003, SSQP 2018).

4.0 DESIGN CONSIDERATIONS

When designing a vegetated buffer strip, the following parameters should be considered:

- Contributing drainage area
- Hydraulic residence time
- Slope in flow direction (longitudinal slope)
- Flat perpendicular to flow direction (no lateral slope)
- Flow depth (less than plant height)
- Length and width of strip (for estimating infiltration)
- Vegetation type and height (cool season grasses can reduce dry season watering needs)

5.0 CONSTRUCTION CONSIDERATIONS

- Install during a time of year when it is likely that the vegetation will receive sufficient watering from rainfall to become established without irrigation
 - Irrigation should only be applied if incidental rainfall is insufficient for plant establishment
- Divert runoff until plants are established

6.0 MAINTENANCE

- Plant management
 - mowing grass
 - pruning non-grasses
 - removing woody vegetation
 - removing weeds (if desired for aesthetics)
- Inspections for erosion with additional inspections after major rainfall events
- Litter removal (for areas prone to litter)
- Inspections for standing water to prevent mosquitos and other vector breeding

7.0 REFERENCES

California Stormwater Quality Association (CASQA 2003). *Stormwater Best Management Practice Handbook: New Development and Redevelopment*. January 2003.

California Stormwater Quality Association (CASQA 2017). *Draft Stormwater Best Management Practice Handbook: New Development and Redevelopment*. April 2017.

County of Placer, City of Roseville, City of Auburn, City of Lincoln, and Town of Loomis (County of Placer et al. 2016). *West Placer Storm Water Quality Design Manual*. April 2016.

Sacramento Stormwater Quality Partnership (SSQP 2018). *Stormwater Quality Design Manual*. July 2018.