General

*Roadside* operational functions are those that provide for safe, multi-use roadsides. Operational functions include access control, and providing recovery areas and sight distances with accommodations for signs and utilities. They complement *roadway* operational functions.

The most critical of roadside operational functions are those that affect vehicle occupant safety. These will be covered in the Roadside Safety chapter of this manual. The roadside operational features most seen and used by travelers are informational and instructional signs within the roadside right of way limits. In addition, critical features of roadside design include provisions for bicycle and pedestrian safety, maintenance access, and worker safety.

Although operational functions receive priority consideration in all phases of roadside management, sustainable roadsides require integration of operational features with environmental, visual, and auxiliary functions.

References

*Design Manual* (M 22-01), WSDOT  
*Hydraulics Manual* (M 23-03), WSDOT  
*Roadside Classification Plan* (M 25-31), WSDOT  
*Traffic Manual* (M 51-01), WSDOT  
*Utilities Accommodation Policy* (M 22-86), WSDOT  
*Utilities Manual* (M 22-87), WSDOT  
*Roadside Design Guide*, AASHTO

Design Objectives

Division 7 of the *Design Manual* is the authority for roadside safety. *Chapter 310* of this manual discusses aspects of, and possible enhancements to, roadside safety. *Chapter 320* discusses signs in the roadside corridor. Other operational design objectives are:

*Delineation:*

*Primary Considerations*

Design vegetation and grading to help guide traffic through the
highway corridor. For example, plantings in median strips, and the use of directional berms help guide the driver along the roadway.

Hydraulics:

Primary Considerations
Integrate hydraulic elements such as swales, ditches, redirectional berms, and detention/retention basins into roadside designs. Refer to the Design Manual, the Highway Runoff Manual, and the Hydraulics Manual for hydraulic design objectives.

Snow drift control:

Primary Considerations
Encourage features that act as a reservoir for snow (such as forest growth) where drifting snow is a problem. Gentle slopes can also be used to reduce the accumulation of drifting snow.

Snow storage:

Primary Considerations
In snow belt areas, consider:

- Storage of plowed snow and the direction of snow blown by snow blowing equipment.
- Allowance for snow storage areas in safety rest areas, for example.
- Effect of deicing chemicals on vegetation selected for roadsides in snow belt areas.

Drainage designs need to consider runoff and snow melt while snow is in the storage area. If snow is piled over the top of drainage inlets, the inlets will not function. Rain or melting snow runs down the outside of the snow pile to low areas, forming ponds or flowing across the road. This causes a safety problem on the roadway. Consult the Hydraulics Manual for drainage design.
Utilities:

Maintain and enhance aesthetic quality when accommodating utilities within the right of way. Locate utilities to make them as visually unobtrusive as practical.

Integrate utility structures into the existing landscape by integrating characteristics of region in which they are located. Consult with the landscape architecture office for compliance with the Roadside Classification Plan.

Primary Considerations

- Integrate utility structures with adjacent vegetation. Use existing and planted trees as backdrops to utility structures.
- Select colors of utility structures to blend into the background. See Landscape Aesthetics: A Handbook for Scenery Management, (USFS) for examples.
- Minimize disruption of views from the highway by placing utility structures away from significant views.
- Place utilities underground where practical.
- Scale the utility structure to complement the roadway design speed and the scale of the highway.
- Consider vehicle speeds in utility design. A structure becomes more prominent as design speeds decrease.
- WSDOT lighting requirements are based on light levels. See the Design Manual and the Traffic Manual, for lighting information.

Additional Sources of Information

