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## 300.01 Operational Functions

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.

## 300.02 References

### 300.02(1) Design Guidance

- [Design Manual](#), M 22-01, WSDOT
- [Highway Runoff Manual](#), M 31-16, WSDOT
- [Hydraulics Manual](#), M 23-03, WSDOT
- [Roadside Policy Manual](#), M 3110, WSDOT
- [Roadside Design Guide](#), AASHTO
- [Traffic Manual](#), M 51-01, WSDOT
- [Utilities Accommodation Policy](#), M 22-86, WSDOT
- [Utilities Manual](#), M 22-87, WSDOT

### 300.02(2) Supporting Information

- [Landscape Aesthetics: A Handbook for Scenery Management](#), United States Forest Service, Agriculture Handbook Number 701, 1995
- [Manual of Aesthetic Design Practice](#), Province of British Columbia, Ministry of Transportation and Highways, Highway Engineering Branch, 1991

### 300.03 Design Objectives

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. Following are other operational design objectives.

#### 300.03(1) *Delineation*

##### 300.03(1)(a) 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.

#### 300.03(2) *Hydraulics*

##### 300.03(2)(a) 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.

#### 300.03(3) *Snowdrift control*

##### 300.03(3)(a) 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.

#### 300.03(4) *Snow storage*

##### 300.03(4)(a) Primary Considerations

In snowbelt 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 snowbelt areas.

Drainage designs need to consider runoff and snowmelt 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.

### 300.03(5) Utilities

In most cases, utilities will already be along the corridor. However, in recent years utility companies have been upgrading lines by putting them on larger poles. Refer to the [Roadside Policy Manual](#) for WSDOT policy when there are requests to alter vegetation. We are required by law to accommodate utilities within our right of way. See the [Utilities Accommodation Policy](#) for more information. Under current law, wireless companies are not considered utilities. They operate within our right of way through air space leases. Real Estate Services works with those companies.

WSDOT's goal is to retain the native corridor character while accommodating utilities and air space leases. Use low stature trees and large shrubs under powerlines; and larger trees, where feasible, to screen utility lines and wireless structures.

#### 300.03(5)(a) Primary Considerations

Consider the following for new utility structures within the roadside or that can be viewed from the roadway:

- Preserve existing desirable vegetation to the greatest extent feasible. Follow the policies within the [Roadside Policy Manual](#) when vegetation is impacted.
- Integrate utility structures with adjacent vegetation. Use existing and planted trees as backdrops to, and screening for, utility structures.
- Select colors of utility structures to blend into the background. Refer to [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 is compliant with [International Dark Sky Association](#) guidelines. (See the [Design Manual](#) and the [Traffic Manual](#), for lighting information.)

