

Chapter 500

Access, Approaches, and Exits

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500.01 General

This chapter identifies design elements related to access, approaches and exits for both vehicular and pedestrian traffic at WSF terminal facilities. Encourage design and placement of facilities to provide for safe access to terminals by various modes of transportation such as car, truck, bus, motorcycle, bicycle, and pedestrian travel.

Terminal vehicle access is divided into three areas: the access road, the toll plaza, and the exits. [Exhibit 500-1](#) identifies the terminal access areas at the Clinton Ferry Terminal. This chapter addresses design considerations regarding terminal access roads and terminal exits. Refer to [Chapter 510](#) (Toll Plaza) for design guidance regarding the toll plaza.



Clinton Ferry Terminal Access
Exhibit 500-1

The access road is typically a principal or minor arterial that all traffic must use to access the terminal. Typically, the access road begins outside WSF right of way and terminates at the entrance to the toll plaza.

The exits provide vehicles and other transportation modes a means to leave the WSF terminal. The exits typically reconnect to the access road.

Note that special conditions for access and exits exist at some WSF terminals and should be addressed on a case by case basis. At the Clinton terminal, for example, WSF maintains an interagency agreement with the county which allows use of a county road for terminal pick-up and drop-off.

For additional information, see the following chapters:

| Chapter | Subject |
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| 300 | Accessibility |
| 310 | Security |
| 320 | Environmental Considerations |
| 340 | Civil |
| 350 | Buildings |
| 510 | Toll Plaza |
| 520 | Vehicle Holding and Support Areas |
| 540 | HOV and Transit |
| 570 | Signage and Wayfinding |

500.02 References

Unless otherwise noted, any code, standard, or other publication referenced herein refers to the latest edition of said document.

(1) Federal/State Laws and Codes

[28 CFR Part 35](#) *Nondiscrimination on the Basis of Disability in State and Local Government Services*

[RCW 46.61.165](#), *High-occupancy vehicle lanes*

[RCW 47.24](#) *Jurisdiction, control*

[WAC 468-510-010](#) *High occupancy vehicles (HOVs)*

(2) Design Guidance

[Design Manual](#) M 22-01

[Standard Plans](#) M 21-01

[Traffic Manual](#) M 51-02

(3) Supporting Information

[Manual on Uniform Traffic Control Devices \(MUTCD\)](#), FHWA

<http://mutcd.fhwa.dot.gov/publications/publications.htm>

[A Policy on Geometric Design of Highways and Streets \(Green Book\)](#), AASHTO

500.03 Design Considerations

(1) Accessibility

Wherever pedestrian facilities are intended to be a part of a transportation facility, [28 CFR Part 35](#) requires that those pedestrian facilities meet ADA guidelines. Federal regulations require that all new construction, reconstruction, or alteration of existing transportation facilities be designed and constructed to be accessible and useable by those with disabilities and that existing facilities be retrofitted to be accessible.

Additionally, [49 CFR Part 39](#) prohibits owners and operators of passenger vessels from discriminating against passengers on the basis of disability, requires vessels and related facilities to be accessible, and requires owners and operators of vessels to take steps to accommodate passengers with disabilities.

Design pedestrian facilities to accommodate all types of pedestrians, including children, adults, the elderly, and persons with mobility, sensory, or cognitive disabilities. Refer to [Chapter 300](#) for accessibility requirements.

(2) Security

[Chapter 310](#) includes a general discussion of the United States Coast Guard (USCG) three-tiered system of Maritime Security (MARSEC) levels, vessel security requirements, and additional information pertaining to terminal design. Coordinate with the WSF Company Security Officer (CSO) regarding design issues pertaining to security. In addition, coordinate with the USCG and Maritime Security for all terminals, the United States Customs and Border Protection (USCBP) for international terminals, and the Transportation Security Administration (TSA) for TWIC and SSI.

(3) Environmental Considerations

Refer to [Chapter 320](#) for general environmental requirements and design guidance. Refer to the project NEPA/SEPA documentation for project-specific environmental impacts and mitigation.

(4) Civil

Refer to [Chapter 340](#) for general civil design criteria pertaining to terminal access, approaches and exits. Below are links to relevant sections by topic.

- Channelization: [340.07\(1\)](#)
- Design Vehicles: [340.07\(6\)](#)
- AutoTURN Analyses: [340.07\(7\)](#)
- Paving: [340.08](#)

(5) Railroad Crossings

When a roadway crosses a railroad at grade, design the road grade to prevent low-hung vehicles from damaging the rails or getting hung up on the tracks. The WSDOT [Design Manual Chapter 1350](#) gives guidance on designing roadways at railroad crossings.

At present, the Edmonds terminal is the only WSF terminal that has a railroad crossing at grade.



Railroad Crossing at Edmonds Terminal
Exhibit 500-2

500.04 Vehicle Access Road

The vehicle access road carries terminal traffic up to the WSF terminal property. Coordinate with WSDOT Region staff or the local jurisdiction, as applicable, for any projects that propose improvements outside WSF terminal boundaries as the Region or the local jurisdiction retains authority for changes to channelization, signing, signals, etc.

The Washington State Ferry System is an extension of the state highway system and as such many State Ferry System access roads are designated as state routes (or state route spurs). The state highway system is divided and classified according to the character and volume of traffic carried by the routes and distinguished by specific geometric design criteria.

The functional classifications (from highest to lowest) used on state highways are: principal arterial, minor arterial, and collector. The higher functional classes give more priority to through traffic and less to local access. National highway system (NHS) routes are usually designed to a higher level than non-NHS routes. Refer to [Appendix Q](#) for the state route and functional classifications of existing WSF terminal access roads. [Appendix Q](#) also identifies whether the access road is an NHS or a non-NHS roadway.

Design improvements on state routes in accordance with the WSDOT [Design Manual](#) where applicable as defined by [RCW 47.24](#). When the vehicle access road is a state highway within an incorporated city or town is a portion of a city street, or the access road is a city or county road, develop the design features in cooperation with the local agency. See WSDOT [Design Manual](#) for guidance on geometric design data when a state highway within an incorporated city or town is a portion of a city street. State law provides WSDOT full authority on state routes that are located within limited access and in unincorporated areas. When state routes are within city limits, the authority given to WSDOT will vary according to [RCW 47.24](#). Consult with local city or county staff regarding design requirements when inside city or county limits.

(1) **Right of Way Acquisition**

Access to new terminals and access improvements to existing terminals may require the acquisition of additional right of way or easements. Plans involving property for WSF are prepared by the Headquarters Right of Way Plans Section. Right of way acquisition can be an expensive and time consuming proposition and should be considered only after exploring other options such as obtaining easements. Consider impacts on project cost and project schedule when designing access improvements outside the existing WSF/WSDOT right of way boundaries.

Right of Way Plans are the official state documents used as the basis to acquire real estate and other property rights for roadways. It is the responsibility of the WSDOT Region to prepare plans for the acquisition of right of way, including easements, permits, and any substantiating documentation necessary for completion of the plans. Verification of ownership of existing right of way is also required.

A Sundry Site Plan is used to map property that cannot be shown on a Right of Way Plan such as ferry terminals, wetlands mitigation sites, park and ride lots, stockpile sites, and stormwater retention or other reclamation sites. All WSF terminal property is shown on a Sundry Site Plan.

Both Right of Way Plans and Sundry Site Plans convey legal information regarding property boundaries. Right of Way Plans are typically based on roadway alignments whereas Sundry Site Plans are not based on roadway alignments. Refer to the WSDOT [Plans Preparation Manual](#) for additional information regarding Right of Way and Sundry Site Plans. To obtain title reports or determine if any property acquisition, easements, leases or right of entry agreements may be needed for the project, contact the WSDOT regional and/or headquarters Real Estate group.

(2) **Access Control**

WSDOT controls access to the state's highways (with a few exceptions) in order to preserve the safety and efficiency of these highways as well as the public investment. All Washington State highways are distinguished as being either limited access or managed access highways. Control of access is accomplished by either acquiring rights of access from abutting property owners (limited access control) or by regulating access connections to the highway (managed access control). Until limited access rights have been acquired from abutting property owners, the route is a managed access highway. Managed access permits are issued either by a local authority (city or town) or by WSDOT. Refer to [Chapter 520](#) of the WSDOT [Design Manual](#) for additional information on access control.

Access control along a ferry access route is important in order to limit the ability of ferry users to cut in line at the toll plaza and in ferry holding lanes upstream of the toll plaza. Limit multiple access points in the vicinity of the toll plaza and backup queuing area to the extent feasible. Where local roadways intersect with the designated ferry access road, provide informational and regulatory signage, striping and signals to limit intentional and accidental cutting in the ferry line (see [Section 570.07\(2\)](#) for examples of access control signage).

(3) Access Road Lanes

Extend or modify access from an existing state route to the terminal facility, as required. Access improvements may involve the full extension of an existing highway and/or the design of a frontage road or frontage road improvements. Frontage roads are generally not permanent state facilities. They are usually turned back to the local jurisdiction. Plan and design frontage roads as city streets or county roads in accordance with local design standards. Design roadways on WSDOT right of way in accordance with the WSDOT *Design Manual*. Refer to [Section 430.08](#) for bicycle access requirements.

(a) Number of Lanes

The number of lanes along the access road will vary by terminal location, terminal throughput, and the existing roadway configurations. Where feasible and if ridership warrants, provide access roads with an HOV/priority vehicle bypass lane to allow HOVs and priority vehicles to bypass general holding that may back up onto the access road. Provide through lanes for local traffic where access roads are used by vehicles other than terminal traffic. Consider providing bike lanes adjacent to the roadway.

(b) Lane Widths

Lane widths for the access road are determined by WSDOT and local agency guidelines. Refer to the WSDOT *Design Manual* for basic criteria.

(c) Ferry Queuing Lanes

The vehicle access road serves to provide supplemental queuing in addition to the queuing in the approach zone of the toll plaza. Vehicles will typically queue along the shoulder of the access road during peak demand. The design of overflow ferry holding lanes along the access roadway shoulder (referred to herein as ferry queuing lanes) is not addressed in this manual since they are constructed on property outside WSF terminal boundaries.

[The WSDOT *Design Manual*](#) defines the shoulder width requirements for ferry holding along a roadway. On a state route, the preferred shoulder width is 10 feet but may be reduced to an 8-foot minimum.

The installation of ferry queuing lanes along the access road may be subject to considerations of existing driveways and public intersections that could be affected. In some locations, a traffic and safety study may be necessary to determine the feasibility of lengthening or adding new lanes on the shoulder.

(4) Design Speed

Vehicle access road design speeds will vary depending on the characteristics of the road and the surrounding environment. Refer to [the WSDOT *Design Manual*](#) for information regarding design speed. Take into account vehicle design speed and associated sight distances when designing pedestrian crossings along the access road.

(5) Posted Speed

Design the vehicle access roads so that the posted speed is less than or equal to the design speed. The posted speed of the access road may vary from the posted speed within the terminal area. Refer to [of the WSDOT *Design Manual*](#) and contact the local agency for information regarding posted speed.

(6) Clear Zone/Shy Distance Requirements

For roadways outside WSF terminal boundaries, design clear zone and shy distance requirements in compliance with WSDOT or local agency requirements as appropriate. Refer to [Section 510.05\(4\)](#) for requirements within the terminal boundaries.

(7) Intersections

An intersection may be necessary at the interface between the state highway and a frontage road (state highway spur) or the access road and the toll plaza area to provide for both local and ferry traffic movements. Design intersections and intersection improvements to comply with WSDOT or local agency guidelines and requirements as appropriate. Design intersections to minimize conflicts between pedestrians and vehicles entering/leaving the terminal. Refer to the WSDOT [Design Manual](#) Division 13 for additional design information.

(8) Signalization/Traffic Control

Design traffic control elements of the access road in accordance with standards developed in the WSDOT [Design Manual](#) Division 13 and the *Manual on Uniform Traffic Control Devices (MUTCD)*. Where the exit lanes of a terminal are controlled by a signalized intersection, consider providing traffic control devices, such as loop detectors, to maximize efficiency in offloading vessels. Also consider the addition of pedestrian features, such as push buttons for actuated intersections, to improve traffic flow. New installations of traffic signals outside WSF right of way require approval of a signal permit. Coordinate with the WSDOT Region's traffic staff and local city or county agencies where applicable.

(9) Signage and ITS Features

Incorporate signage and intelligent transportation systems along ferry access routes. Consider providing the following:

- Terminal wayfinding signage
- Highway advisory radio signage
- Ferry wait time signs and electronic message boards
- Ferry holding lane information
- Operational restrictions for ferry traffic
- Reservations system signage

Addition of these features requires coordination with WSDOT Region's staff and/or local city agencies.

Signage informs customers that are unfamiliar with the terminal of ferry procedures and directs them to the correct locations. It also provides users with current information such as wait times, anticipated sailing times, route delays, and route closures. Appropriate use of signage provides for a more user friendly experience of the terminal. Refer to [Section 570.07\(2\)](#) for examples of signage along ferry terminal access routes.

500.05 Vehicle Exits

(1) Exit Lanes

Provide exit lanes that allow traffic to efficiently exit the terminal. Provide two exit lanes from the vessel slips to the vehicle exit point of the terminal. Design the lanes to a minimum width of 11 feet and a desirable width of 12 feet. For exit lanes located on a curve, refer to the WSDOT [Design Manual Chapter 1240](#) for turning roadway widths. Provide dual exits, as necessary, to accommodate terminals serving multiple vessels and routes such as the Seattle Terminal. Dual exits help facilitate operations while multiple slips are occupied by vessels loading or offloading passengers.



Exit Lanes at Seattle Ferry Terminal
Exhibit 500-3

(2) Design Speed

Establish design speed at the desired operating speed. See the [Design Manual M 22-01](#) for further guidance. The design speed determines the geometry of the roadway features to provide for public safety and overall functionality of the terminal.

(3) Posted Speed

The posted speed is required to be the desired operating speed. If the posted speed is less than 20 mph, a speed study justifying the need for the lower speed is required to be enforceable by police. At some terminals, employees request a posted speed below 20 mph for worker safety. The posted speed of the exit lanes may be different inside and outside the terminal boundaries, but it must always remain less than or equal to the design speed. Refer to the [Design Manual M 22-01](#) and contact the local agency for information regarding posted speed.

(4) **Clear Zone**

The clear zone is the area between the edge of the traveled way and any obstruction. Design the exit lanes with a minimum 2-foot shy distance clear zone within the WSF terminal (i.e. on the Sundry Site Plan property). This distance can be reduced to a 1-foot minimum where warranted by site constraints. Document any site constraints that limit the clear zone distance in the clear zone inventory. Design the exit lane clear zone distances per the WSDOT *Design Manual* where they are located on WSDOT right of way.

(5) **Exit Gates**

Consider providing gates at the end of the vehicle exit lanes to prevent vehicles from accessing the terminal at a location other than the toll plaza. Exit gates may be employed for security purposes, revenue control and/or emergency management. Exit gate requirements such as height may vary depending on their intended function. Exit gates are currently only provided at the Anacortes and Seattle terminals. See [Section 500.09](#) for additional gate design requirements.

(6) **Sidewalk and Shoulder Requirements along Exit Lanes**

Consider providing paved shoulders or sidewalks along the exit lanes at WSF terminals. Shoulders and/or sidewalks are not required; however, they can be used by pedestrians and may serve as a pedestrian access route. Although pedestrians are allowed to travel along the shoulder, the shoulder's main functions are to provide an area for disabled vehicles, a recovery area for errant vehicles, and positive drainage away from the roadway. Determine whether the roadway shoulders are of sufficient width and condition to permit travel for pedestrians and to meet ADA standards. Paved shoulders are preferable. A 4-foot wide shoulder is acceptable where pedestrian activity is minimal and where school and other pedestrian generators are not present. Wider shoulders are desirable along high-speed highways, particularly when truck volumes or pedestrian activities are high.

Longitudinal travel along shoulders with cross slopes greater than two percent can be difficult for people with disabilities. If pedestrians will use the shoulder frequently, consider a separate pedestrian access route where larger cross slopes are required. Provide an ADA accessible path where shoulders are intended as the primary access to the terminal by walk-on passengers. Refer to [Chapter 300](#) for additional information.

500.06 HOV and Transit Access

Consider providing the following when designing for HOV and Transit access. Refer to Chapter 740 for additional information on HOV and transit design.

- Queue bypass lanes
- Transit drop-off /turn-around at the passenger terminal building
- Vanpool staging area near the passenger terminal building
- Direct connections to nearby park-and-ride lots and mass-transit facilities
- Circulator shuttle to transit connection areas
- Reservations system requirements

(1) Queue Bypass Lanes

A queue bypass lane allows HOVs to save time by avoiding standard holding lanes. Typical locations for queue bypasses are at signalized intersections, toll plazas or approaches, and locations with isolated main line congestion. In most cases, they are relatively low cost and easily implemented. Where feasible, include HOV bypasses, or make provisions for their future accommodation unless specific location conditions dictate otherwise. Refer to [Chapter 520](#) (Vehicle Holding and Support Areas) and [Chapter 540](#) (HOV and Transit) for additional guidelines on HOV Lanes in the holding areas.

(5) Service Schedule Coordination

Infrequent service at some terminals prevents efficient synchronizing of transit connections to ferry sailings. Coordinate local route departure times and frequencies to maximize terminal functionality.

500.07 Pedestrian Access and Exits

Pedestrian travel is a vital transportation mode. Pedestrian ridership accounts for a significant percentage of vessel passengers at WSF terminals. Designers must be aware of the various physical needs and abilities of pedestrians. The Americans with Disabilities Act of 1990 (ADA) requires that pedestrian facilities be designed and constructed such that they are readily accessible and usable by individuals with disabilities. [Chapter 300](#) provides accessibility criteria for the design of pedestrian facilities that meet state and national standards.

Basic criterion for pedestrian access routes is contained in the WSDOT [Design Manual](#). Reference the [Design Manual](#) for the design of pedestrian access routes at WSF terminals. The [Design Manual](#) includes:

- Basic Criteria for Pedestrian Accessible Routes
- Sidewalks and Shared Use Paths
- Pedestrian Bridges and Crossings

(1) Access from Parking Facilities, Transit, and Commuter Rail

Provide direct, accessible routes for walk-on passengers from offsite parking facilities, transit, commuter rail stations, and other nearby areas of public interest to the passenger terminal building/vessel boarding area. Provide pedestrian bridges and crossings, where feasible, to allow walk-on passengers access without interfering with vehicle access. Minimize at-grade crossings of the entrance and exit lanes. Take into account vehicle design speeds and associated sight distance when designing at-grade pedestrian crossings.

(2) Pedestrian Bridges

Pedestrian bridges are beneficial where at grade crossings would: interfere with ferry operations; provide significant concern for pedestrian safety; or would provide a direct route over a major physical barrier. Consider grade-separated crossings where:

- Natural pedestrian crossings would occur at a location with limited sight distance.
- There are documented collisions or close calls involving pedestrians and vehicles.
- Ferry operations result in moderate-to-high pedestrian demand to cross a major roadway, vehicle access road, or exit lanes with high volumes and/or high speed traffic.
- There is a major physical barrier such as a water body, gulley, etc. which significantly restricts or prohibits an at-grade crossing.



Pedestrian Bridge at Seattle Ferry Terminal
Exhibit 500-4

(3) Signage and Wayfinding

Incorporate wayfinding elements into pedestrian access design per guidelines in [Chapter 570](#). Provide wayfinding to ticketing, loading area, transit, concessions, nearby services, and attractions.

500.08 Bicycle Access and Exits

Provide bicycle access and exit lanes at all new terminals and consider at existing terminals to allow bicycles to access the holding area. Provide, at a minimum, 4-foot wide bike access and exit lanes that are physically separated from motorized traffic including motorcycles. With curb, guardrail or barrier, the minimum bike lane width is 5 feet. Design bicycle access to minimize the conflicts between bicyclists and motorists. Consider bicycle access routes along highways/roadways that lead to the terminal.

500.09 Perimeter Fences and Gates

(1) Security Fencing

Fencing is not required for security purposes at WSF terminals. During MARSEC Level 3 events, terminal agents are required to secure the facilities per USCG requirements. For international terminals (Anacortes and Sidney) contact the local USCBP office to determine project specific requirements for fencing. Design guidelines are contained in *Ferry Terminal Design Standards for Passenger Processing Facilities*, United States Customs and Border Protection.

Fencing, when provided, can assist terminal personnel in meeting this requirement. In general, fencing provides a greater level of security, aids in emergency management and can provide a means for revenue control. Consider providing fencing at terminals where these factors are of concern. Design fencing, at a minimum, per the WSDOT [Design Manual Chapter 560](#) for Type 3 fencing. Fencing may be required to be of custom type depending on intended function.

(2) Revenue Control Fencing

Where feasible, provide fencing for revenue control at terminals collecting tolls for walk-on passengers. Design fencing for revenue control purposes to prevent non-ticketed customers from entering secure areas without passing through a designated access point. Fences shall be plastic coated.

(3) Vehicle Gates

Design vehicle gates to not impede emergency vehicle access to the site. Design gates in accordance with local emergency service requirements and standards of the local agency. Consider accessibility requirements of service vehicles such as garbage and maintenance trucks.

(a) Bail-Out Gates

Consider providing gates at the bail-out lanes as described in [Chapter 510](#). The gates provide a means to prevent vehicles from entering the facility at a location other than the toll plaza.

(b) Exit Lane Gates

Consider providing gates at the end of the exit lanes. The gates can serve to prevent vehicles from entering the holding area without passing through the toll plaza and also for security purposes as noted in the above section. [Exhibit 500-5](#) shows the exit gates at the Seattle Ferry Terminal.



Exit Gates at Seattle Ferry Terminal
Exhibit 500-5

(4) Pedestrian Gates

When fencing is provided around the terminal for revenue control, consider providing pedestrian access gates as shown in [Exhibit 500-6](#). The access gates allow ticketed passengers to enter the terminal area without passing through the terminal building or the toll booths. Provide EFS kiosks at the entrance to the gates to allow passengers to purchase tickets. Refer to [Chapter 300](#) (Accessibility) and [Chapter 400](#) (Passenger Buildings) for additional considerations.



Pedestrian Gates at Seattle Ferry Terminal
Exhibit 500-6

