Impact Attenuator Systems

1620.01 General
Impact attenuator systems are protective systems that help aid an errant vehicle from impacting an object by either gradually decelerating the vehicle to a stop when hit head-on or by redirecting it away from the feature when struck on the side. These systems are used for rigid objects or other features that cannot be removed, relocated, or made breakaway.

Approved systems shall meet standardized testing defined in the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH) as updated in 2016. In addition, these devices shall have an acceptance letter from FHWA that certifies that the device meets the appropriate crash test criteria and is eligible for federal-aid reimbursement.

1620.02 Design Criteria
The following design criteria apply to new, existing, or reset permanent and temporary impact attenuators. Impact attenuators are placed so that they do not present a feature that requires mitigating in relation to opposing traffic. For median and reversible lane locations, the backup structure or attenuator-to-object connection is designed to help in aiding opposing traffic from being snagged.

Avoid placement of curbs between attenuators and traffic. Refer to the specific attenuator manufacturer’s instructions if considering placement of curbing between an attenuator and the travelled way. It is desirable that existing curbing be removed and the surface smoothed with asphalt or cement concrete pavement before an impact attenuator is installed. However, mountable curbs 4 inches or less in height may be retained depending on the feasibility of removal and as long as the manufacturer’s installation requirements are met.

In general, attenuators are aligned parallel to the roadway.
Consult with the Area Maintenance Superintendent who will be maintaining the system prior to selecting the attenuator systems to include in a construction contract.

1620.03 Selection Considerations
WSDOT classifies impact attenuators as permanent (for final installations that will remain in place) or temporary (for systems that will be in place during work zone traffic control operations and then removed). Some impact attenuator systems can be used in both a temporary capacity and then in a final/permanent installation.

For approved systems to choose from, see the WSDOT Impact Attenuator Design page at www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/PENDING_Impact_Attenuator_Design.docx
Consider that each application is unique when selecting impact attenuators for use in particular applications. This applies to both permanent and temporary installations.

To select an appropriate impact attenuator system, the following factors must be assessed:

- Posted speed
- Operating speed
- Average daily traffic (ADT)
- Repair crew exposure
- Proximity to the roadway
- Anticipated number of yearly impacts
- Available space (length and width)
- Lifecycle Maintenance costs
- Initial cost
- Duration (permanent or temporary use)
- Portion of the impact attenuator that is redirective/gating (see Exhibit 1620-1)
- Width of object to be shielded

Entries on the WSDOT Impact Attenuator Design page indicate whether the system is National Cooperative Highway Research Program (NCHRP) Report 350 or MASH-compliant. If it’s determined that a MASH-compliant system is not available for the specific configuration required, document the selection of an NCHRP 350 system in the DDP.

When selecting the appropriate impact attenuator system, consider the portion that is designed to redirect vehicles during a side impact of the unit, such that fixed objects, either permanent or temporary (such as construction equipment), are not located behind the gating portion of these devices (see Exhibit 1620-1).

**Exhibit 1620-1 Impact Attenuator Distance Beyond Length of Need**

![Exhibit 1620-1 Impact Attenuator Distance Beyond Length of Need](image)

Notes:

[1] Impact attenuator type and manufacturer varies with application. See the Attenuator Selection Template at: [www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/Impact_attenuator_selection_template.xlsx](www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/Impact_attenuator_selection_template.xlsx)

[2] Distance beyond the length of need. This portion is gating.

[3] This portion is redirective (nongating) and can be included as part of the barrier needed to satisfy length of need.

[4] Concrete barrier shown for illustration purposes only. Type of fixed object varies.
Select the system and configuration appropriate for the posted speed. In the interest of a cost-effective design, selecting a system applicable for the posted speed is recommended (although using a system tested for a higher speed is acceptable). Note that attenuators used on highways with posted speeds of 70 mph have additional considerations discussed below. Where there is evidence that the average operating speed of the facility is higher than the posted speed, consider selecting an attenuator system rated at the facility’s operating speed.

Manufacturer’s product information may indicate that a different system is required for speeds of 70 mph or greater. These models are generally referred to as “high speed” or “70 mph” systems. Use of these systems on facilities with 70 mph posted speeds is not required, and selection of a system rated for at least 60 mph will typically be appropriate for most sites on these facilities. For permanent installations where unusual conditions warrant consideration of a high-speed device, these systems are available and may be used with justification. Contact the HQ Design Office for guidance when considering one of these systems.

For information regarding spatial requirements and initial cost information related to impact attenuator systems, see the Attenuator Selection Template at:

www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/Impact_attenuator_selection_template.xlsx

When considering maintenance costs, anticipate the average annual impact rate. If few impacts are anticipated, lower-cost devices might meet the need. (See Chapter 301 for examples of how to determine lifecycle costs for proposed hardware). Attenuators with the lowest initial cost and initial site preparation will have high maintenance costs after each impact. Labor and equipment are needed to clean up the debris and install a new attenuator, as the lowest cost attenuators are typically destroyed after a single impact. Attenuators with higher initial installation cost typically have lower maintenance costs.

In selecting a system, one consideration is the anticipated exposure to traffic that the workers making the repairs may encounter. In areas with high traffic exposure, a low-maintenance system that can be repaired quickly is most desirable. Some systems need nearly total replacement or replacement of critical components (such as cartridges or braking mechanisms) after a head-on impact, while others simply need to be reset.

When a transition to connect with a concrete barrier, fixed object, or beam guardrail is needed, the transition type and connection may need to be specified (see the impact attenuator descriptions accessible through the Attenuator Selection Template at:


In most cases, the transition type and connection required will be a custom design per the manufacturer (these transitions are included in the cost of the impact attenuator). In a few cases, the transition type and connection to use will be as described in Chapter 1610 and the Standard Plans (these transition sections are not included in the cost of the impact attenuator and must be included as a separate bid item in the construction contract).

Consult with the Area Maintenance Superintendent who will be maintaining the systems before finalizing the list of attenuators to be included in the contract.

**1620.03(1) Low-Maintenance Category**

Low maintenance devices have a higher initial cost, requiring substantial site preparation, including a backup or anchor wall in some cases, and cable anchorage at the front of the installation. However, repair costs are very low, with labor typically being the main expense. Maintenance might not be needed after minor side impacts with these systems.
Installation of a low-maintenance device is desirable at locations that meet at least one of the following criteria:

- Sites with an ADT of 25,000 or greater
- Sites with a history/anticipation of more than one impact-per year
- Sites with unusually challenging conditions, such as limitations on repair time, a likelihood of frequent night repairs, or narrow gore locations

Document the decision in the DDP to use any device other than a low-maintenance device at locations meeting at least one of the criteria above.

The HQ Design Office conducts a periodic review of maintenance records to consider which devices should be included in the Low-Maintenance category. For a description of requirements that need to be met in order to be included in the Low-Maintenance category, see:

www.wsdot.wa.gov/publications/fulltext/design/roadsidesafety/low_maint.pdf

1620.03(2) Documenting Attenuator Selection

As the factors discussed previously are analyzed, identify inappropriate systems and eliminate them from further consideration. List the systems that are not eliminated in the contract. When the site conditions vary, it might be necessary to have more than one list of acceptable systems within a contract. Acceptable systems cannot be eliminated without documented justification as to why they should not be used. Also, wording such as “or equivalent” is not to be used when specifying these systems. If it’s determined that MASH-compliant system in not available for a specific configuration, NCHRP 350 systems may be used, with Assistant State Design Engineer approval.

Document attenuator selection using the Attenuator Selection Template found at:

www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/Impact_attenuator_selection_template.xlsx

1620.04 Transportable Attenuators (Truck-Mounted and Trailer-Mounted)

Truck Mounted Attenuators and Trailer-Mounted Attenuators are portable systems mounted on trucks or trailers. They are intended for use in work zones and for temporary applications.

1620.05 Older Systems

Many older systems are in use on Washington State highways and may be left in place or reset with concurrence of the WSDOT Area Maintenance Superintendent who maintains the system. New installations of these systems are not allowed.

For a list of older systems see:

www.wsdot.wa.gov/publications/fulltext/design/ProductFolder/PENDING_Impact_Attenuator_Design.docx

1620.06 Inertial Barrier Systems (Sand Barrels)

Inertial barrel systems (sand barrels) commonly provide advantages in temporary installations where the locations change and there is sufficient space available or in permanent locations where there is a lower risk of collisions and where the debris, from the initial barrier when hit, will have a minimal impact to traffic. Refer to the manufacturer for system dimensions and specifications.
1710 General

The Washington State Department of Transportation (WSDOT) has developed a statewide system of traveler stopping opportunities along Interstate highways and state routes. This system includes safety rest areas (see Exhibit 1710-1), roadside parks, and viewpoints. These services provide universal access for rest, traveler information, and restroom facilities. Benefits include improved safety by reducing driver fatigue and the number of vehicles parked on the shoulders of state routes, refuge from adverse driving conditions, and increased tourism promotion.

Safety rest areas are planned and designed by a multidisciplinary team lead through the Facilities Administrator in the Capital Facilities Office, a branch of Maintenance Operations. (See Section 1710.04 for an expanded discussion on team roles and membership.)

Exhibit 1710-1 WSDOT Safety Rest Area

Photo: Keith Anderson, VERG
1710.02 References

1710.02(1) Federal/State Laws and Codes

23 Code of Federal Regulations (CFR) 1.23, Rights-of-way
23 CFR 635, Construction and Maintenance
23 CFR 752, Landscape and roadside development
23 CFR 771, Environmental impact and related procedures
42 United States Code (USC) Chapter 126, Section 12101 et seq., Americans with Disabilities Act of 1990
20 USC Chapter 6A, Section 107, The Randolph-Sheppard Act
Revised Code of Washington (RCW) 46.17.375, Recreational vehicle sanitary disposal fee
RCW 46.68.170, RV account – Use for sanitary disposal systems
RCW 47.01.460, Adjustments to recreational vehicle fees
RCW 47.06.040, Statewide multimodal transportation plan
RCW 47.28.030, Contracts – State forces
RCW 47.38, Roadside areas – Safety rest areas
RCW 47.39, Scenic and Recreational Highway Act of 1967
RCW 47.42, Scenic Vistas Act
Washington Administrative Code (WAC) 246-290, Group A public water supplies
WAC 468-66, Highway Advertising Control Act

1710.02(2) Design Guidance

As the lead WSDOT organization for SRA project teams, the Capital Facilities Office coordinates design details and standards for SRA-related items.

ADA Accessibility Guidelines for Buildings and Facilities (ADAAG)

Manual on Uniform Traffic Control Devices for Streets and Highways, USDOT, FHWA; as adopted and modified by Chapter 468-95 WAC “Manual on uniform traffic control devices for streets and highways” (MUTCD)
www.wsdot.wa.gov/publications/manuals/mutcd.htm

Highway Runoff Manual, M 31-16, WSDOT
Hydraulics Manual, M 23-03, WSDOT
Plans Preparation Manual, M 22-31, WSDOT
Maintenance Manual, M 51-01, WSDOT
Right of Way Manual, M 26-01, WSDOT
Roadside Manual, M 25-30, WSDOT
Roadside Policy Manual, M3110, WSDOT
Standard Plans for Road, Bridge, and Municipal Construction (Standard Plans), M 22-01, WSDOT
Traffic Manual, M 51-02, WSDOT

WSDOT Design Manual M 22-01.20
Page 1710-2
September 2021
Chapter 1710  Safety Rest Areas

1710.02(3) Supporting Information

Safety Rest Area Strategic Plan, WSDOT Capital Facilities Office wwwi.wsdot.wa.gov/operations/facilities/
Guide for Development of Rest Areas on Major Arterials and Freeways, AASHTO Task Force on Geometric Design
Project Management Online Guide, WSDOT

1710.02(4) Agreements

Interpretive Signs and Markers Agreement – Washington State Parks Commission
(GM 869) 1989 Highways and Local Programs Division
Traveler and Commercial Information Services – Private Vendor (StoreyCo, Inc.)
(AA-1-12097) 2007 Capital Facilities Office
Vending Machines – Department of Services for the Blind (DSB)
(GCA 10377) Capital Facilities Office

1710.03 Definitions

Ancillary Services: Those secondary services, also considered amenities, provided at safety rest areas that include, but are not limited to, vending machines, picnic areas, interpretive signing, telephones, recreational vehicle (RV) sanitary disposal facilities, trails, scenic viewpoints, commercial and public information displays, and visitor information centers.

Recreational Vehicle Account: In 1980 the RV account was established for use by the department of transportation for the construction, maintenance, and operation of recreational vehicle sanitary disposal systems at safety rest areas (RCW 46.68.170). A recreational vehicle sanitary disposal fee is required for registration of a recreational vehicle (RCW 46.17.375). Adjustments to the recreational vehicle fee by the department of transportation may be implemented after consultation with the citizens’ representatives of the recreational vehicle user community (RCW 47.01.460).

Roadside Park: A roadside user facility for safe vehicular parking off the traveled way and separated from the highway by some form of buffer. These sites might be equipped with features or elements such as points of interest, picnic tables, and/or vault toilet buildings. Unlike a safety rest area, a roadside park does not always provide a permanent restroom building.

Safety Rest Area (SRA): A roadside facility equipped with permanent restroom building(s), a parking area, picnic tables, refuse receptacles, illumination, and other ancillary services. SRAs typically include potable water and might include traveler information and telephones.

Safety Rest Area Strategic Plan: Developed in 2008 under a stakeholder-coordinated effort of executive and advisory team members, this plan provides guidance for current and future management of the SRA program.

Traveler Information: Commercial and noncommercial information that informs and orients the traveling public. This includes access information for food, gas, lodging, local attractions, regional tourist attractions, roadway conditions, and construction schedules.

Universal Access: Access for all persons regardless of ability or stature.

Viewpoint: A roadside stopping opportunity with a view of some point of interest or area scenery. This area is not typically separated from the traveled way by some form of highway buffer.
Visitor Information Center (VIC): A staffed or nonstaffed booth or separate building that displays and dispenses free tourist travel maps and brochures. These are typically located at border-entry SRAs to provide travel information to highway users as they enter the state.

1710.04 Safety Rest Area Project Team

The Capital Facilities Office has primary responsibility for program oversight and communication and is the primary point of contact for questions concerning SRAs. Duties include planning and programming for capital Preservation and Improvement projects, maintenance operations oversight and policy development, and project delivery.

Exhibit 1710-2 and Exhibit 1710-3 outline the many disciplines involved with SRA planning, design, construction, and maintenance. The exhibits outline roles during the different phases of SRA management. Services are provided by internal WSDOT staff, other government agencies, and private consultants.

1710.05 Location, Access, and Site Design

1710.05(1) Conformance with the Safety Rest Area Strategic Plan

Regional planners, in coordination with the Capital Facilities Office, will use the Safety Rest Area Strategic Plan as a guide to determine which areas in the state are potential areas of need for a new facility. Verify current locations of SRAs, roadside parks, viewpoints, and undeveloped SRA properties that could be utilized for development of a new SRA. Coordinate all SRA planning and design efforts with the SRA Program located in the Capital Facilities Office.

1710.05(2) Highway Spacing Guidelines

It is preferred to space SRAs and roadside parks approximately every 60 miles on the National Highway System and Scenic Byways. Consider the location of other available public facilities when deciding where to locate an SRA. Other public or private facilities may offer stopping opportunities that could mitigate the need for construction of a new SRA. Reference the SRA Strategic Plan for potential areas of need for new stopping opportunities.
### Exhibit 1710-2 WSDOT’s SRA Project and Programming Roles

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<tr>
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**Note:**

The SRA section in the WSDOT Maintenance Manual provides additional information pertaining to daily operations at the rest areas. Operations policy is outlined for all the ancillary services provided at each rest area site, such as the free coffee program, vending machines, literature distribution and posting, site security, seasonal or temporary closures, and other site activities.
Exhibit 1710-3 Additional Safety Rest Area Resources

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Note:

Recreational Vehicle Citizens Advisory Committee: The department utilizes a volunteer citizen-based group of recreational vehicle users to help define the RV needs at SRAs. This group provides guidance on the expenditure of funds from the RV account and fee adjustments. The fee adjustments must be preceded by an evaluation per RCW 47.01.460.

1710.05(3) Adjacent Land Use

Consult local planning offices for information about zoning and expected development in the area of a proposed site to ensure compatibility with a new safety rest area or roadside park. Acquire a buffer area or scenic easement on adjacent lands, if possible, to protect scenic views and existing vegetation. Incorporate any cultural, historical, or scenic points of interest into the site design to enhance visitor experience and area education. For Interstate safety rest areas, vehicular ingress and egress will be from the main line only.

1710.05(4) Availability of Utilities

Determine the proximity and availability of water, power, and sewer systems prior to site acquisition. Prepare required legal documents such as well agreements, easements, water rights, and acquisition documents. The Capital Facilities Office uses annual traffic data in the area to estimate the number of rest area users and determine the adequacy of potable water supply, power capacity, parking space needs, and sewage disposal system options. New construction should meet the 20-year projected growth rate based on potential traffic increases.
1710.05(5) Level of Development
Roadside facilities have different levels of development and require varying site size and amenity levels. Exhibit 1710-4 shows recommended site sizing and amenities for SRAs, roadside parks, and viewpoints.

1710.05(6) Site Conditions
SRAs need large parcels of land to provide adequate space for parking passenger vehicles and trucks, on-site sewage treatment, and on-site water systems if provided. Any selected site should consider the terrain to allow for safe ingress and egress from the highway. Other considerations are:

- Grades and slopes to accommodate parking, sewage treatment, and the building site.
- High water level, particularly if the site is in a floodplain.
- Soil conditions and soil type for structural designs and the on-site sewage treatment system.
- Vegetation and natural features to understand potential mitigation costs from impacts to existing wetlands or stormwater drainage, etc.
- Prevailing wind direction and typical wind velocities that can affect building siting/design and visitor experience.

1710.05(7) Site Security
Design the facility to maximize line of sight for rest area users. Design vegetation for visibility to avoid hiding places on-site. If electrical power is available on-site, provide lighting around all parking areas, buildings, and other site amenities that are made available to the public.

1710.05(8) Site Sustainability
During site development, adhere to the U.S. Green Building Council’s Leadership in Energy and Environmental Design standards where practicable. Strive for energy efficiency, water conservation, and low operational costs in building designs. Ensure landscaping features will be durable and easy to maintain. Contact the Capital Facilities Office for minimum requirements and standard details.

1710.05(9) Stormwater Management
For stormwater management, particularly in areas covered by the National Pollutant Discharge Elimination System (NPDES) permit, make an effort to minimize the use of storm drainage devices such as catch basins, oil-water separators, and retention vaults. Design the site to accommodate sheet flow off paved surfaces to vegetative areas for on-site infiltration and management of stormwater where practicable. (See the **Highway Runoff Manual** for stormwater design information.)

1710.05(10) Traffic Ingress and Egress
Design connections to the main line highway in accordance with Design Manual chapters in Division 13. Consult with the HQ Access and Hearings Section for establishing new or modifying existing highway access points.
### Exhibit 1710-4 Roadside Facilities Level of Development

<table>
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<tr>
<td>Toilets and hand cleaning</td>
<td>Required</td>
<td>Optional</td>
<td>No</td>
</tr>
<tr>
<td>Portable toilets: vault, chemical, or composting</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>ADAAG code compliance</td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td><strong>Parking and Pavement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impervious</td>
<td>Required</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>Truck parking</td>
<td>Optional</td>
<td>Optional</td>
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</tr>
<tr>
<td>RV parking</td>
<td>Optional</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Site Amenities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian plaza</td>
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</tr>
<tr>
<td>Sidewalks</td>
<td>Optional</td>
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</tr>
<tr>
<td>Picnic tables</td>
<td>Optional</td>
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</tr>
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<tr>
<td>Bicycle access and/or racks</td>
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<tr>
<td>Historical or area information display</td>
<td>Required</td>
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<td><strong>Ancillary Services</strong></td>
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<tr>
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<tr>
<td>Vending machines*</td>
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<tr>
<td>Volunteer refreshment area*</td>
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<tr>
<td>Visitor information booth*</td>
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<tr>
<td>Travel information kiosk*</td>
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<tr>
<td>Interpretive displays, markers, or memorial signs</td>
<td>Optional</td>
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<td><strong>Safety and Security</strong></td>
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<td>Fencing</td>
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<td>Site illumination*</td>
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<tr>
<td>Surveillance cameras*</td>
<td>Optional</td>
<td>No</td>
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</table>

*If provided, electrical power is required.
1710.05(11) ADAAG Compliance

You must comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) for all site components that are made available to the public. Provide at least one accessible route of travel, defined in ADAAG, from the parking area to each on-site amenity or ancillary service.

1710.05(12) Parking Area Design

Consider the parking area layout when generating a site master plan. Include stages of construction if applicable. Provide separate parking areas for trucks/RVs/buses and passenger cars. For new designs, locate large-vehicle parking on the far side of the site away from the highway for improved highway visibility and site security purposes. Provide shade for vehicles where practicable. Exhibit 1710-5 shows an example of a truck parking area layout. AASHTO’s Guide for Development of Rest Areas on Major Arterials and Freeways provides parking area design considerations. Consider areas for snow storage needs. Refer to the Hydraulics Manual for drainage design. Preserve existing landscape features to the greatest extent possible. Design vehicular and pedestrian routes to be safe, simple, direct, and obvious. Meet local building codes and ADAAG requirements for public parking.

1710.05(13) Recreational Vehicle Sanitary Disposal Facilities

Construct RV sanitary disposal facilities (dump stations) only at sites served by municipal sewage disposal systems, or at sites served by sewage lagoons with adequate capacity. On-site septic systems with drainfields are not an option for RV dump stations because of sewage volume, technical/maintenance requirements, and costs. Contact the Capital Facilities Office for details on RV dump station design and operation.

1710.05(14) Walkways

Design walkways for direct pedestrian movement to all facilities and comply with ADAAG requirements. Provide sidewalk width a minimum of 48 inches, which exceeds ADAAG requirements.

1710.05(15) Vegetation

Vegetation enhances the physical environment by providing shade, shelter from wind, visual screening, wildlife habitat, and other benefits. Landscape Architects engaged in the project employ designs that emphasize low-maintenance practices and obstacle-free lawns, and minimize water usage for irrigation and impacts to existing native vegetation where practicable.

1710.05(16) Picnic Tables

Provide one picnic table for every ten passenger car parking stalls, with a minimum of four tables per SRA where practicable. Provide shelters for 50% of the picnic tables on-site. Provide windscreens for picnic tables exposed to frequent high winds. Each SRA is required to provide a minimum of one picnic table that complies with ADAAG requirements. Place picnic tables near walkways but also provide privacy from restroom users.
Exhibit 1710-5 Typical Truck Storage

* If exit ramp is tangent or has curve radii greater than 1,000', this width may be reduced to 14'.

1710.05(17) Recreation Trails

Provide trails or nature walks where practicable. (See Chapter 1515 for more information about shared-use paths.)
1710.05(18) Pet Areas
Provide ADAAG-compliant, well-lit areas for visitors to walk their pets away from kiosks, plaza areas, and moving vehicles. Provide trash receptacles and pet waste bags near pet areas.

1710.05(19) Electric Vehicle Charging Stations
Electric vehicle (EV) charging stations are provided at select sites. One ADAAG-compliant parking stall with an accessible route is required when EV charging stations are installed. Because EV charging is not the primary purpose of SRAs, locate the EV parking stalls at the ends of the passenger vehicle parking area.

1710.05(20) Bicycle Facilities
Provide bicycle racks where this type of active transportation mode is accessible to an SRA. (See Chapter 1520 for more information about roadway bicycle facilities.)

1710.06 Buildings

1710.06(1) Codes

1710.06(2) Americans with Disabilities Act Accessibility Guidelines
You must comply with accessibility guidelines specified in ADAAG for all building components that are available to the public. Design restrooms, ancillary service buildings, picnic benches, and information kiosks to ADAAG standards.

1710.06(3) Restroom Capacity
Provide a male/female restroom stall ratio of 40:60, and one unisex restroom that can be opened to allow for daily cleaning operations where practicable. If the unisex restroom is the only ADAAG-compliant toilet stall on-site, it must remain open at all times. Contact the Capital Facilities Office for restroom standards and to verify the number of stalls that should be provided at each site.

1710.06(4) Building Security
Design rest area buildings to provide a safe, comfortable experience for the traveling public. Avoid building designs with potential hiding places, and ensure adequate building lighting is provided around the perimeter.
**1710.06(5) Building Sustainability**

Buildings and systems are to adhere to the U.S. Green Building Council’s Leadership in Energy and Environmental Design standards where practicable. Design facilities for energy efficiency, water conservation, and low operational costs. Ensure materials are durable and easy to maintain. Contact the Capital Facilities Office for minimum requirements and standard details.

**1710.06(6) Vandalism Mitigation**

Consider vandal-resistant materials as a preferred option for building components such as fixtures, fasteners, and surface coatings.

**Exhibit 1710-6 WSDOT Safety Rest Area Building – Adaptive Reuse Historic Preservation**

![Building Image]

**1710.06(7) Plaza Areas**

Provide paved/concrete plaza areas at all new SRAs, where practicable, to enhance safety, reduce wear and maintenance on heavy-travel areas, and provide unobstructed pedestrian movement. Consider pedestrian movement when designing exterior fixtures such as benches, kiosks, telephones, and vending machines in plaza areas. Avoid creating potential hiding places and ensure appropriate lines of sight for safety.

**1710.06(8) Building Signage**

Ensure building signage meets current standards for rest area signage. Contact the Capital Facilities Office for details.

**1710.06(9) Kiosks**

Install travel information kiosks at all Interstate rest areas and at non-Interstate rest areas as needed. A kiosk is usually equipped with backlit information displays.
1710.06(10) Volunteer Refreshment and Coffee Services

Construct volunteer services buildings at all Interstate rest areas and at non-Interstate rest areas as needed. They can usually be incorporated with the travel information kiosks. Wire, plumb, and heat these buildings to meet building codes as an occupied space. Locate these buildings to give volunteers an unobstructed view of restroom entrances and parking areas if feasible.

1710.06(11) Rehabilitation and Expansion

Minor renovation projects to address specific building and system deficiencies such as roofs, interior fixtures and partitions, wall and floor surfaces, HVAC, electrical, water, and sewer will extend the usefulness of the building and minimize maintenance and operations costs. When major renovations are needed, consider restroom capacity increases to meet current standards based on expected user volumes.

Other facility components that will eventually need rehabilitation are kiosks, irrigation systems, sidewalks, picnic tables, parking areas, and RV dump stations. All projects must meet current ADAAG building and site requirements. Consider efficiency improvements that can be made to reduce operational costs. Coordinate with the Capital Facilities Office for all renovation or expansion projects.

1710.07 Utilities

Contact the region Utilities Office for acquisition of Utility Service Agreements for any utility needs. Coordinate with the Capital Facilities Office for long-term planning considerations. Telephones are provided at most SRAs and must meet ADAAG requirements. Because of the availability of cellular phones, and due to vandalism and other reasons, public telephone service may be cancelled after coordination between the Capital Facilities Office and region Maintenance.

1710.07(1) Power Capacity

A new or upgraded electrical service provided on-site will meet the projected needs of the facility over the next 20 years where practicable. Provide three-phase service where available. Consider building capacity increases, site lighting improvements, electric vehicle charging stations, truck parking electrification, and other potential needs. Contact the Capital Facilities Office for site-specific details or master plans.

1710.07(2) Water & Sewer Systems

Refer to the Hydraulics Manual for information on water and sewage disposal systems, including reservoirs, long-distance pressure sewers, septic tanks, drainfields, and sewage lagoons. Install separate water meters to quantify irrigation, building, RV dump stations, and source water where practicable. Consider maintenance needs for water and sewer system designs. Coordinate with the Capital Facilities Office for all issues related to water and sewer systems at SRAs.

1710.07(3) Stormwater Systems

Stormwater management and treatment systems are to meet the guidelines and requirements of the National Pollutant Discharge Elimination System (NPDES). Ensure runoff from impervious surfaces at SRAs is managed on-site using typical best management practices. Contact the Hydraulics Office for specific design recommendations, and the Maintenance Operations Office for specific site requirements noted in the statewide NPDES permit.
1710.07(4) Future Utilities

Provide sleeves and conduits for future utilities in accordance with the site master plan for water, sewer, power, and telephone. Address site-specific agreements by coordinating with region Maintenance, utility companies, the Capital Facilities Office, and others during site design.

1710.08 Documentation

1710.08(1) Design Documentation Checklist

For the list of documents required to be preserved in the Design Documentation Package and the Project File, see the Design Documentation Checklist: https://wsdot.wa.gov/engineering-standards/design-topics/design-tools-and-support#Tools

Also, coordinate design documentation with the Capital Facilities Office for any SRA design projects.

1710.08(2) Environmental Documentation and Permitting

Coordinate with the appropriate environmental support personnel or region Environmental Office during the planning and design stages of the project to determine what environmental, cultural, or historical documentation will be required. Environmental staff will determine applicable exemptions and required environmental permits for project delivery.

1710.08(3) Permanent Safety Rest Area Closures

Safety rest areas may be closed permanently or relocated. Federal Highways Administration approval is required for any closure or transfer of such facilities to other federal, state, or local agencies. Detailed closure procedures are stated in 23 CFR 752. Coordinate with the Capital Facilities Office for proposal to close any WSDOT SRA.