

WSDOT ADA / 504 Transition Update

Prepared by:

Shawn Murinko, ADA Title II, Section 504/508 Compliance Manager

Allison Spector, WSDOT ADA Coordinator

Sarah Rose, WSDOT ADA Coordinator

The Washington State Department of Transportation (WSDOT) understands the vital role it plays in ensuring tangible and meaningful equitable access for persons with disabilities in their communities, which is integral to our mission to create a multimodal, sustainable transportation system across our state. In accordance with 28 CFR §35.150(d), Title II of the Americans with Disabilities Act (ADA), WSDOT submits this ADA Transition Plan to our state's residents after a public involvement process that emphasized the voices and lived experiences of the disability community. In doing so, WSDOT recognizes that past transportation decisions have had a severe negative ongoing effect on the disability communities' ability to meaningfully and actively participate in all aspects of daily life. As an agency we have a responsibility to dismantle systems that perpetuate this harm.

This ADA Transition Plan update is a living document and provides a programmatic roadmap on how WSDOT will remove accessibility barriers to pedestrian facilities and other elements within WSDOT's control. Further, it addresses all WSDOT-owned facilities, including all facilities within limited access, all facilities within WSDOT public right of way outside of cities, and certain facilities and elements (such as WSDOT-owned pedestrian signals) inside cities with less than 25,000 in population.

This transition plan also reports on the accessibility of facilities and vessels operated by the Washington State Ferries. WSDOT's goal in implementing this transition plan is to become fully compliant with the ADA by providing equitable access for all users of its programs and services, and activities.

In order to ensure success, WSDOT will continue to rely upon and expand partnerships with the disability community and other partners, including cities, counties, and transit districts who share a common interest with our agency in addressing ADA compliance in both the spirit and the letter of the law. WSDOT solicits and welcomes input from individuals affected by the usability of our facilities, and is committed to fulfilling its obligations under the ADA and Sections 504 and 508 of the Rehabilitation Act.

As Secretary of Transportation, I am fully and personally committed to equitable access for people with disabilities in their communities. This is an expectation that is without exception for all persons who work at WSDOT.

A handwritten signature in blue ink, appearing to read "R. Millar", is positioned above the printed name.

Roger Millar, Secretary of Transportation

Title VI Notice to Public

Washington State Department of Transportation policy aims to ensure that no person shall, on the grounds of race, color, national origin, or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his or her Title VI protection has been violated may file a complaint with WSDOT's Office of Equity and Civil Rights (OECR). For additional information regarding Title VI complaint procedures and information regarding our nondiscrimination obligations, please contact the Title VI Coordinator within the Office of Equity and Civil Rights by calling 360-705-7090.

Americans with Disabilities Act (ADA) Information

WSDOT is committed to providing equitable access to its facilities, programs, services, and activities for persons with disabilities. The material contained in this document can be made available in an alternate format by emailing the WSDOT ADA Compliance Team at wsdotada@wsdot.wa.gov or by calling toll-free 855-362-4ADA (4232). Persons who are deaf or hard of hearing may make a request by calling the Washington State Relay at 711.

Washington State Department of Transportation ADA Transition Plan for Title II and Sections 504 and 508 of the Americans with Disabilities Act

Background

Title II of the ADA (28 CFR Part 35) pertains to the programs, activities, and services of state and local governments. Since the ADA was passed in July 1990, WSDOT has proactively addressed Title II requirements associated with transportation projects. This ADA Transition Plan is a requirement under the ADA.

WSDOT created its first ADA Transition Plan in 1995, based upon the standards of the 1991 ADA Accessibility Guidelines. The 1995 ADA Transition Plan addressed barriers associated with WSDOT buildings and its on-site facilities, rest areas, and Ferry operations. However, the 1995 plan did not specifically address the features within WSDOT right of way. WSDOT has taken steps in subsequent years to identify barriers associated with these features within the public right of way. WSDOT's 2017 ADA Transition Plan addresses those features that were not included in the 1995 plan.

This transition plan identifies actions taken and sets forth actions that WSDOT will take over the next several years to remove barriers within the public right of way and all WSDOT-owned facilities identified during WSDOT's continued self-evaluation efforts. WSDOT is committed to achieving substantial ADA compliance, as demonstrated by the comprehensive approach outlined in this plan. This includes WSDOT strategies for public engagement and involvement, detailing agency-wide ADA roles and responsibilities, and WSDOT's plan to identify, prioritize, and address ADA features in agency facilities, public right of way, and the Washington State Ferry system.

Section 504, Rehabilitation Act of 1973 (29 U.S.C. §701)

Section 504 says in pertinent part: No otherwise qualified individual with a disability in the United States shall, solely by reason of his or her disability, be excluded from the participation in, be denied benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. This part applies to each recipient of Federal financial assistance from the Department of Transportation and to each program or activity that receives such assistance.

WSDOT's Strategies for Implementing ADA Compliance

Agency Policy 1069.03 Equitable Access for Persons With Disabilities

Effective July 18, 2024, WSDOT approved Agency Policy [P 1069.03 Equitable Access for Persons With Disabilities](#). The purpose of WSDOT's Agency Policy is to affirm WSDOT's commitment to provide equitable access in its programs, services, and activities for persons with disabilities. The full policy has been placed on WSDOT's ADA webpage and is included in full as an appendix in this updated plan.

Public Notice Requirements

The ADA requires state and local governments to post a public notice about the rights of the public and the responsibility of the government entity under the ADA. WSDOT provides this notice on its website, public meeting notices, employment bulletins, and all other printed materials for public consumption. See the attached Notice under the Americans with Disabilities Act. [ADA Title II Notice](#) (pdf)

Public Involvement

In 2014, WSDOT adopted a new [Strategic Plan](#) (pdf) that placed Community Engagement among the agency's top goals. A Community Engagement Team convened, and in 2015, WSDOT published the "Guiding Principles for Community Engagement." The guiding principles are intended for all WSDOT staff to use during engagement and outreach efforts and include statements such as, "Seek out voices not traditionally heard, including people who are traditionally unable to participate due to age, disability, income, or national origin." WSDOT adopted a new Community Engagement Plan in December 2016, and we are in the process of releasing a 2022 update. A draft of the [2022 Community Engagement Plan](#) (pdf) is available on WSDOT's website. The current plan and its eventual update apply to the entire agency and emphasize working with partners, communities, and individuals. It also includes providing early access to the agency's decision-making process and information in easily understandable and accessible formats.

Public involvement is essential in transportation decision-making. Accordingly, WSDOT sought public input to validate the self-evaluation findings and the content of its transition plan. Public feedback was obtained via public engagement meetings, surveys circulated to interested groups and partners, a comprehensive statewide news release, and a notice on the WSDOT's public website. WSDOT also circulated the transition plan amongst other city and county transportation agencies. [Title II ADA/504 Compliance Manager Contact Information](#)

Title II ADA/504 Compliance Manager

Shawn Murinko
ADA Title II, Sections 504/508 Compliance Manager
310 Maple Park Avenue SE
P.O. Box 47314
Olympia, WA 98504-7314
1-855-362-4232 (toll-free)
wsdotada@wsdot.wa.gov
Fax 360-705-6801

The Title II ADA Compliance Manager and staff are located within the Office of Equity & Civil Rights at WSDOT Headquarters. The Office of Equity and Civil Rights reports directly to the Secretary of Transportation, who is responsible for implementing the agency's ADA Transition Plan. The Title II ADA Compliance Manager is also the agency ADA Coordinator, as required by Federal Regulation.

The Title II ADA Compliance Manager serves as the central reference point for all ADA matters within the agency, including reviewing the maximum extent feasible documentation when alterations cannot be made within ADA specifications. The Title II ADA Compliance Manager serves as the approving authority on behalf of the Secretary for accepting non-compliant ADA improvements to the maximum extent feasible where facilities or elements cannot be constructed or modified to be fully ADA compliant.

Various regional offices and divisions within WSDOT offer ADA training to staff and/or constituents. The WSDOT Title II ADA Compliance Manager contributes to the development of agency-wide ADA training and provides input regarding the content. The Title II ADA Compliance Manager also assists in developing and implementing agency-wide ADA policies and procedures. The regions are expected to include the ADA Compliance Manager when addressing ADA issues, including complaints, and use the Title II ADA Compliance Manager as a resource for interfacing with their local disability advocate groups.

The Title II ADA Compliance Manager and staff serve a central role in receiving, tracking, and resolving public complaints regarding ADA Title II and Sections 504 and 508 of the Rehabilitation Act that may include complaints about accessibility barriers or any other ADA-related issues regarding WSDOT facilities or right of way.

Grievance Procedure

WSDOT's ADA Grievance Procedures are included in this report. The procedures can also be accessed from WSDOT's website. The procedures provide details on how to file and resolve a complaint. [ADA Grievance Procedure \(pdf\)](#)

Complaints and requests for accommodations involving ADA issues within WSDOT are directed to the ADA Compliance manager. Complaints can be accepted in a number of ways, including the [WSDOT ADA mailbox](#) and a toll-free number (1-855-362-4ADA (4232) listed on WSDOT's public website. ADA complaints received by WSDOT regional offices or other divisions of WSDOT, including Public Transportation, Rail, and Washington State Ferries, are forwarded to the ADA Compliance Office in Headquarters for tracking, investigation, and resolution if necessary.

Sub-Recipient Monitoring

As a recipient of federal funds, WSDOT is required to monitor compliance of sub-recipients and, pursuant to the Assurances of Nondiscrimination signed by WSDOT as a condition of receiving those funds, to ensure that funds are not used in a discriminatory manner and that sub-recipients are not deficient and are eligible to receive federal funds.

As part of that monitoring, WSDOT will begin collecting copies of sub-recipient ADA plans and providing feedback based on a rubric that evaluates across seven categories.

The seven categories are as follows:

- I. Official Responsible for Implementation of ADA Transition Plan
- II. Inventory of Barriers
- III. Modification Schedule
- IV. Accessibility Methods
- V. Public Involvement
- VI. ADA Policy Statement
- VII. Complaint/Request/Grievance Process

Each category will be evaluated by three levels of standards, which exceed minimum criteria: acceptable and unacceptable. The standard level for each category is shown in the table below:

Category	Exceeds Minimum Criteria	Acceptable	Unacceptable
Official Responsible for Implementation of ADA Transition Plan	The primary manager, name, title, and role are included along with delegation by agency directory or equivalent; all or other key ADA contacts within the	The primary manager's name, title, and role are included in the plan or website; this may also include delegation by agency	Not included in document or name or title listed, but not both; lacks identification of role.

	organization are named, including titles and roles.	directory or equivalent.	
Inventory of Barriers	Includes results of inventory, assessments and summary of inventory methodology for three or more ADA-related features (best practice minimum - curb ramps, pedestrian signals and sidewalks); or meets criteria for "Acceptable," but includes plan and/or schedule for expanding evaluation to other features or assets	Includes results of inventory and assessments for at least two ADA-related features (best practice minimum - sidewalks and curb ramps or curb ramps and pedestrian signals); may include summary of inventory methodology	Lacks sufficient inventory to evaluate barriers and/or lacks plan to build such data for self-evaluation
Modification Schedule	Plan shows a strong commitment toward upgrading ADA elements identified in the inventory of barriers in the short term (planned capital improvement projects) and a strong commitment over time toward prioritizing curb ramps at walkways serving entities covered by the ADA. 28 CFR 35.150(d)(2) This would also include prioritization information, planning, and investments directed at eliminating other identified barriers over time. 28 CFR 35.150(d)(3). Resources dedicated	Plan shows some commitment toward upgrading ADA elements identified in the inventory of barriers in the short term (planned capital improvement projects) and a recognition of priority of curb ramps at walkways serving entities covered by the ADA. 28 CFR 35.150(d)(2) May include some planning for elimination of other barriers over time. 28 CFR 35.150(d)(3). Resources to eliminate identified	Lacks sufficient commitment to eliminate barriers and/or lacks plan to build a schedule and committed resources

	to eliminate identified ADA deficiencies.	ADA deficiencies may or may not be identified, but may not be dedicated.	
Accessibility Methods	Describe in detail the Methods that will be used to make the facilities accessible. 28 CFR 35.150(d)(3)(ii); standards that will be applied and any modifications/refinements clearly defined (i.e., 2010 ADAAG, 2011 PROWAG)	Describe most of the Methods that will be used to make the facilities accessible. 28 CFR 35.150(d)(3)(ii); primary standards that will be applied clearly identified (i.e., 2010 ADAAG, 2011 PROWAG)	Incomplete description of the Methods that will be used to make the facilities accessible. 28 CFR 35.150(d)(3)(ii); and/or standards that will be applied not clearly identified and/or defined (i.e., 2010 ADAAG, 2011 PROWAG)
Public Involvement	Description of process to allow public to readily access and submit comments for both self-evaluation and transition plan. 28 CFR 35.150(d)(1); 28 CFR 35.105(b). Best practices: a) detailed list of individuals consulted posted conspicuously on website, does not have to be in actual TP, but must be documented and available; b) have both electronic and hard copy notice. 28 CFR 35.105(c)	Description of process to allow public to readily access and submit comments for both self-evaluation and transition plan. 28 CFR 35.150(d)(1); 28 CFR 35.105(b).	Incomplete or unclear process to allow public to readily access and submit comments for both self-evaluation and transition plan.

After an review is finished, a sub-recipient will receive the results of the evaluation and if applicable feedback on how the ADA transition plan can be improved.

Agency Wide ADA Compliance Participation

WSDOT encompasses a number of divisions that have specific duties and responsibilities to further the transportation services delivered by the agency. Each

of these specialized divisions have responsibilities under the ADA. The ADA Compliance manager, Washington State Ferries, Communications Office, Local Programs, Public Transportation Division, and each regional office have staff who are responsible for ensuring ADA compliance within their respective programs.

WSDOT's Headquarters Communication Office

According to Section 35.160(a) of the ADA, "A public entity shall take appropriate steps to ensure the communications with applicants, participants, and members of the public with disabilities are as effective as communications with others."

WSDOT is committed to providing appropriate auxiliary aids and services leading to the provision of effective communication for qualified persons with disabilities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications available to people who have speech, hearing, or vision impairments.

WSDOT's Headquarters Communications Office continues to place greater emphasis on increasing the agency's communication staff's awareness of diversity, equity, and inclusion efforts and providing guidance for meeting Americans with Disabilities Act, Limited English Proficiency, and Title VI requirements.

In October 2023, the Communication's Office will resume hosting its annual communications staff conference, which will be attended by upwards of 80+ agency and consultant communicators. The conference will include a Safe Transportation System for All panel followed by a plenary session with Disability Rights Washington and a workshop following those sessions centered on mobility with the goal of having communications staff learn more about the nexus between transportation, communications, ADA, Complete Streets and lived experience in that space. This is a key focus area to raise awareness of the importance of accessibility in our work and to describe the direction our agency is headed in this agency emphasis area.

Additional staff guidance on communications accessibility is provided in the [WSDOT Communication Manual](#). The online communication manual will provide links to information and best practice resources such as:

- [WSDOT ADA Information](#)
- [Effective Communication Requirements](#)
- [WSDOT Accessibility tools](#)
- [Creating accessible online documents](#)
- [ADA.gov](#)

The communication manual also provides staff information and guidance for using the Department of Enterprise Services' master contracts for obtaining translation and interpreter services. A further update to the manual will focus on the creation of an inclusive language guide for the agency. Development of this statewide agency guide is slated for 2024.

The Communications Office continues to require that news releases announce public

meetings, open houses, or other public events, and all of these must include ADA and Title VI notices. The Communications office is currently reviewing this language with the Office of Equity and Civil Rights to ensure the standards and expectations are clear across all work areas. WSDOT has an editing team to review all agency news releases prior to distribution and ensures this requirement is met.

Graphic Communications

The Graphics Style Guide includes guidance on using ADA and Title VI notices on all public documents. Currently, agency documents are formatted for printing, however, documents could be made available in a plain text format on request. WSDOT's graphic staff is aware of issues related to people who have visual disabilities or are color blind and take colorblindness into consideration when designing public documents. The Graphics Style Guide notes that use of red, blue and green cannot always be avoided, but use of different color values and textures can make materials more readable for those with disabilities and includes a link to the [American Foundation for the Blind](#) (pdf) resources.

The updated [Graphics Style Guide](#) communicates the expectation that folios and other documents are accessible, including the expectation that descriptive alt text for photos and images are used.

Website Communications

WSDOT has [online internal guidance](#) for making webpages accessible. The mandatory use of templates helps ensure agency webpages, such as project information, is accessible.

The agency launched its new website – wsdot.wa.gov – in Nov. 2021. As a result of this project, a significant amount of work was done to ensure the accessibility of the site as well as linked content like our PDFs and other documents. Content managers underwent significant training to learn how to make PDFs and other documents on the website accessible. Work continues to improve our website experience for all users to include an update of our baseline usability study which will include site testing with users with disabilities.

Digital Media Communications

WSDOT launched Android and iPhone mobile apps that are accessible and conducted usability tests of the applications with a staff member who uses an assistive device. Both applications were launched in April 2016.

The Communication Office developed "[Video Standards and Best Practices](#)" (pdf) which addresses closed captioning of agency-produced videos: "Captioning is required of agency-produced videos in order to be compliant with the American Disability Act. Internal videos (like training videos) and uncut footage are an exception."

Correspondence

WSDOT's internal Correspondence Guidelines includes electronic templates for agency letters. As the online templates are updated, we will add tags to the WSDOT logo and address images in the template headers to meet accessibility requirements. We will also develop guidance related to accessibility considerations when corresponding, such as avoiding embedded images, tables and other elements that are not readable to assistive devices.

Local Programs Office

WSDOT Local Programs Office assists customers in the successful delivery of transportation projects by providing educational, technical, and financial support to cities, counties, and other transportation partners such as tribal governments, ports, and transit agencies. WSDOT, through its Local Programs Office, has continued to coordinate with the local city and county agencies and communities to address ADA needs on state highways within their jurisdictions.

Since the inception of its ADA Technical Assistance program, Local Programs has reached approximately 160 cities and counties with classroom training and other technical assistance in the past two years. Going forward, Local Programs projects to reach out to all 39 counties and 281 cities through its email distribution list and Local Technical Assistance Program newsletter to highlight the requirements for ADA self-evaluations and Transition Plans. Staff has also advertised that the office is available to provide technical assistance, especially to non-certification acceptance agencies with fewer than 50 employees.

Local Programs continues to encourage Washington's local public agencies toward compliance with their ADA responsibilities. As noted above, past activities have included ADA training, providing technical assistance and monitoring compliance with ADA requirements on existing federal aid projects. Local Programs anticipates implementing a deadline for certified acceptance agencies to have ADA transition plans in place, beginning three years after the approval of WSDOT's transition plan, in order for those agencies to continue to be eligible for federal highway funding. All other agencies should comply no later than five years following the approval of WSDOT's transition plan in order to continue to remain eligible to receive federal highway funds.

Local Programs has continued to raise the visibility of ADA awareness through periodic updates of its Local Agency Guidelines Manual Chapter 29, as well as incorporating ADA in its funding programs application.

Public Transportation Division

The WSDOT Public Transportation Division is committed to ensuring that no entity shall discriminate against a person with a disability in connection with providing a transportation service as outlined in 49 CFR Part 27, Part 37, and

Part 38. Many of the grants the division awards are specifically geared toward providing access to those who would not otherwise have it.

During site visits with grant recipients, the Public Transportation Division covers a wide variety of ADA topics, including service animals, lift maintenance, securements, communication, complaint processes, ADA paratransit policies, and other ADA topics. Grantees receive at least one policy/documentation review each biennium and an interview every other biennium. Grantees must comply with ADA requirements or risk being found “not in good standing” and have funds withheld.

PTD grant applications require applicants to explain how their proposed vehicle purchases and services will be inclusive and accessible to people with disabilities. Additionally, if PTD were to identify any accessibility gaps that grant funding could help remedy, staff would encourage the grantee to apply for funding. For example, the division has awarded grants to make shelters and buildings more accessible or purchase vehicles.

WSDOT Public Transportation Division staff provide training and technical assistance to grantees on topics related to ADA compliance and accessibility. Transit agencies receive technical assistance because of an audit finding or based on a direct request. Division staff regularly present at transit agencies and conferences. WSDOT division staff also attend the Annual ADA Transit Conference to participate in discussions with grantees and provide the latest technical assistance. At the end of each biennium, PTD examines trends in ADA-related issues or deficiencies and adjusts its technical assistance and subrecipient tools to improve understanding and compliance in those areas.

WSDOT Public Transportation Division occasionally receives complaints and concerns from the public about transportation services. When the division receives a complaint, a WSDOT staff member follows up with the complainant. During that follow-up phone call, the WSDOT staff member collects basic information and helps determine if the complaint is a civil rights complaint or is otherwise within the WSDOT Public Transportation Division’s purview. If the complaint is not within the WSDOT purview, staff will connect the person with someone who can help them.

Complaints involving ADA issues in WSDOT’s purview are forwarded to the ADA Compliance Team at WSDOT Headquarters to be tracked, investigated and resolved. If an ADA complaint is received directly by the Office of Equity and Civil Rights involving a transit provider, PTD staff liaises between OECR and the transit provider to assist with resolution of the complaint.

In addition to collecting complaints that come into the Public Transportation Division, WSDOT also tracks complaints that are reported on a grantees’

quarterly status reports.

PTD utilizes a continuous improvement process to ensure that ADA technical assistance, site visit procedures, and compliance efforts are addressing the needs of our grantees. PTD is in the process of updating our Subrecipient ADA Policy Template, adding resources to assist with ADA monitoring, and improving accessibility of documents and communications.

WSDOT Regional Offices

WSDOT is divided into six geographic regions. Each regional office has staff responsible for providing project and engineering guidance and first responses to questions relating to pedestrian accessibility in design or construction projects within their region. Regional staff may also be involved in project level details, design, construction, and work zone issues. It is the responsibility of the project office, within the region, to develop the solutions and ensure correct implementation of new or updated construction projects. Regional design staff are expected to forward proposed “maximum extent feasible” design changes in the public right of way or facility projects to Headquarters to be reviewed and approved by the assigned Assistant State Design Engineer and the ADA Compliance manager. ADA complaints within the regions are forwarded to the ADA Compliance office for tracking, investigation, and resolution.

Region offices also provide updated information, guidance, and assistance, when needed, to the Local Programs and Maintenance offices. Regional offices also provide a link to local disability advisory groups to facilitate the exchange of information and feedback on project-level issues.

Facilities

WSDOT completed its initial transition plan in 1995 and addressed many ADA deficiencies as a result. Since then, the agency has made significant progress toward making its facilities, programs, and services accessible to people with disabilities. A 2013 progress report recorded completion of all noncompliant issues identified by the initial transition plan assessment. WSDOT continues to evaluate ADA compliance as part of its condition assessment process, which is performed every two years, to identify building and site deficiencies at its facilities.

All WSDOT Safety Rest Areas are ADA accessible. A list of Safety Rest Area locations and amenities is located on the [Safety rest area locations page](#).

All ADA issues that are identified by facilities will be corrected accordingly.

WSDOT’s Plan to Identify and Address ADA Features in Public Rights of Way

Self-Evaluation and Data Collection

WSDOT began a statewide self-evaluation of its public right of way facilities in 2009 to inventory pedestrian facilities. The ADA feature data was stored in the agency's ADA Features Database. The initial phase of field data collection concluded in 2012.

The self-evaluation data collection utilized the State Route Video Log Application, or SRView, to review locations to add to the inventory. The data collected via SRView was identified then inventoried as needing measurement.

Duration	Data Collection Effort	Reliability of Data
2008 – 2009	WSDOT Roadway Features Inventory Process (RFIP) using handheld data collectors and Trimble GPS units for coordinates. Data collection methods were not consistent statewide. The data quality of RFIP is low because of a lack of predetermined data collection requirements, training, and oversight for those completing data collection, and data quality practices.	Low
2011 - 2012	A collaborative effort at HQ Design with IT. IT developed a data model and the data collection teams used handheld devices, capturing data and loading it into a SQL server environment. The effort ended in November 2012 because of a lack of funding: the statewide inventory of a subset of ADA assets was not completed.	Low to medium
2017 to date	Self-assessment worksheets required for all construction and pavement preservation projects completed since January 2017.	Unknown
<u>2022 to date</u>	<u>Statewide data collection via SRView and heads-up digitizing</u>	<u>High</u>

The SRView data was added to the ADA Features Database and presented in the WSDOT self-evaluation data. This data could be queried in various ways to identify problematic locations (e.g., missing ramps, heaved sidewalk panels, objects blocking sidewalk access, etc.).

WSDOT had an initial inventory collection of ADA assets in 2012 with some additional information from self-assessment evaluation forms from construction projects completed since 2018. In early 2018 the Development division asset data manager created a new ADA SQL inventory database that combined all existing WSDOT ADA data into a more suitable format. The SQL data is updated through project post construction reporting data collection. There has also been the

development of a new data collection process, including a new ADA Post Construction Data Collection form.

As WSDOT moves forward with implementing this transition plan, during the scoping and design phase of projects, ADA features evaluated in the field will be collected with the ADA Post Construction form and, as necessary, added to the ADA SQL Features Database.

<https://wsdot.wa.gov/publications/fulltext/forms/224-020.pdf>

WSDOT is currently moving forward with Mobile LiDar Data Collection. Mobile mapping is the process of collecting geospatial data from a mobile vehicle, typically fitted with a range of GNSS, photographic, radar, laser, LiDAR, or any number of remote sensing systems. Such systems are composed of an integrated array of time-synchronized navigation sensors and imaging sensors mounted on a mobile platform. The primary output from such systems includes GIS data, digital maps, and georeferenced images and video. The data collection will provide WSDOT with a comprehensive set of data and a comprehensive tool to QA, QC data and establish ADA priority rankings to improve ADA deliverables and barrier removal prioritization.

In the construction phase, special provisions were developed to require contractors to collect and certify newly constructed ADA feature measurements. These measurements were added to the inventory in the ADA Features Database. The self-evaluation spreadsheet was needs-based. The column “Sched. Fiscal Year” referred to an analysis related to the pavement deterioration models or whether it was part of a section planned for paving in the 15-17, 17-19 or 19-21 biennia. It was intended to provide an estimation of when ADA features might be addressed. Continued analysis will be conducted to identify non-compliant ADA features and when they will be addressed.

ADA features collected include APS signals, crosswalks, bridge end ramps, curb ramps, detectable warning surfaces, driveways, edge protection, handrails, rest areas, pedestrian bridges, shared use pathways, walkways, islands, ADA parking areas, rail crossings, sidewalks, and stairways.

For information to interpret the self-evaluation data, see the [ADA non-compliance codes and ADA Data Dictionary](#) (pdf).

WSDOT is in the process of updating its ADA Improvement schedule which will be included with the finalized version of this update

[2017-2020 ADA Improvement Schedule](#) (pdf)

1.1 Right of Way – Removal of Barriers

Within WSDOT's traditional planned paving projects, curb ramp barriers will be removed, pedestrian push buttons will be made accessible, and sidewalks will be

evaluated for spot improvements. An full inventory listing outlining the location, detailed modification, planning date, and planning level cost estimate is found in the [WSDOT self-evaluation data](#) (xlsx).

A partial summary of the ADA feature inventory is shown in the table below:

ADA Feature	Inventory No.	Planned Estimated Cost
Curb Ramp	3,715	\$36,762,800.00
APS Button	5,938	\$15,130,000.00
Intersection	1,237	\$6,840,000.00
Sidewalk	12,734	\$51,546.08
Other	7,359	\$0.00
Total	30,983	\$58,784,346

WSDOT uses the design standards adopted in the WSDOT Design Policy Manual and the 2005 PROWAG best management practices guidance. Proposed projects in the public rights of way must address ADA compliance as described in the WSDOT Design Manual. Regardless of which public agency has jurisdiction within the right of way, the public agency that is sponsoring the project is responsible for ensuring ADA compliance is addressed on its project.

On all state routes outside of incorporated cities and on those with limited access within incorporated cities, jurisdiction remains with the state unless modified by a maintenance agreement. When project work occurs on a managed access state route inside an incorporated city that has jurisdiction beyond the curbs ([RCW 47.24.020](#)), pedestrian facilities are designed using the city design standards adopted in accordance with [RCW 35.78.030](#) and the 2023 PROWAG in WSDOT's design manual by Fall 2024.

4.3 Prioritized Barrier Removal Plan

In addition to traditional planned paving projects, WSDOT has developed a method for prioritizing barrier removal projects based on public input and consistent with federal requirements ([28 CFR §35.150\(d\)\(2\)](#)) as follows:

Highest Priority

- Priority identified through public input or complaints received, and
- Areas with high concentrations of populations with disabilities (based on Census data),
- Intersections and roadway segments serving facilities including:
 - Government offices
 - Public schools
 - Hospitals, health clinics and health centers
 - Transit Facilities (includes bus stops and transit stations)

Second Highest Priority

- Areas with medium/mid-range concentrations of populations with disabilities (based on Census data),
- Intersections and roadway segments serving facilities including:
 - Public housing
 - Sports arenas
 - Licensing offices
 - Libraries
 - Shopping malls
 - Supermarkets
 - Strip retail centers
 - Other major employment sites

Third Highest Priority

- Areas with lower/low-range concentrations of populations with disabilities based on Census data),
- Intersections and roadway segments serving facilities including:
 - Industrial areas
- Other areas not classified as high or medium priority
 - WSDOT's prioritization methodology and definitions of the terms used in prioritizing barriers for repair can be found in the [Barrier Prioritization Methodology](#) (pdf).

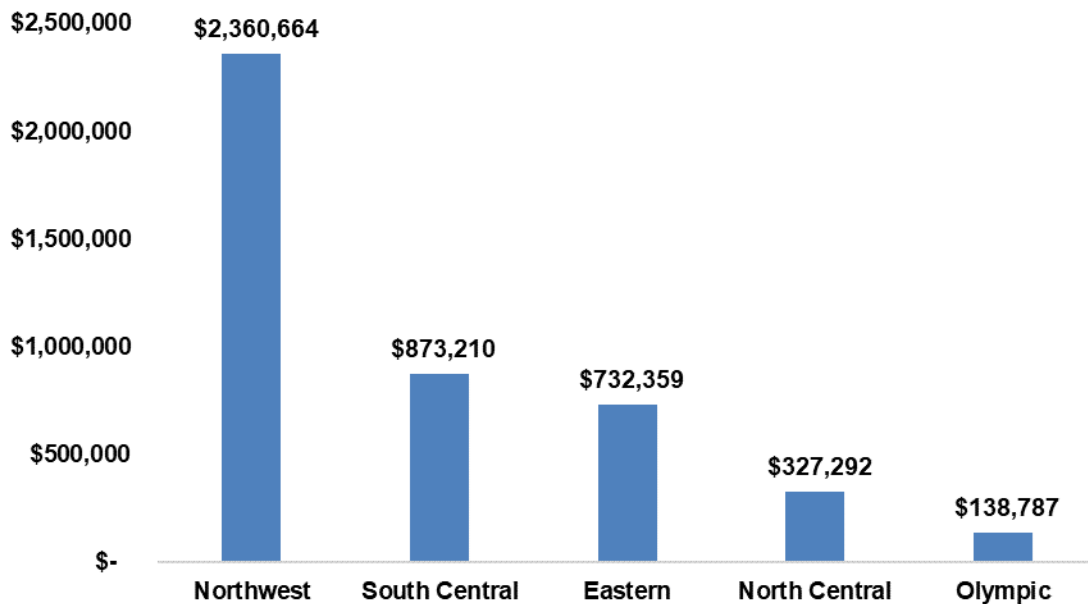
ADA Features will be made accessible in accordance with the [WSDOT Design Manual Policy \(Chapter 1510\)](#) (pdf) which incorporates *2005 Revised Draft Guidelines for Accessible Public Rights-of-way* guidance. For further information regarding WSDOT ADA projects that are planned and programmed, please see the [Statewide Transportation Improvement Program \(STIP\) webpage](#). The STIP documents are updated frequently. If you do not find an area of concern listed in the STIP documents, or require additional assistance that create a more balanced and resilient transportation system.

In 2022, the Washington State Legislature passed [Senate Bill 5974 \(PDF 738KB\)](#), the Move Ahead Washington package. It included a Complete Streets requirement added to [RCW 47.24.060](#), which directs that “in order to improve the safety, mobility and accessibility of state highways, it is the intent of the Legislature that the department must incorporate the principles of complete streets with facilities that provide street access with all users in mind, including pedestrians, bicyclists and public transportation users” for “state transportation projects starting design on or after July 1, 2022 and that are \$500,000 or more.”

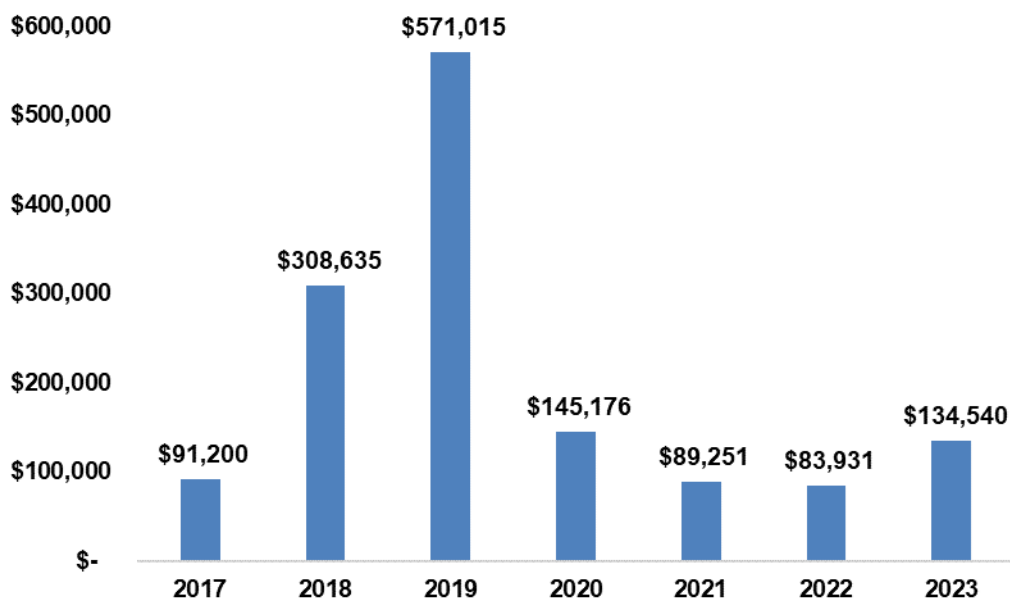
ADA Improvement Data

The charts below show the level of investment and improvements WSDOT has made in its implementation of the ADA transition plan. Overall, significant investment was made for curb ramps and sidewalks with the majority occurring the Southwest and Northwest Regions.

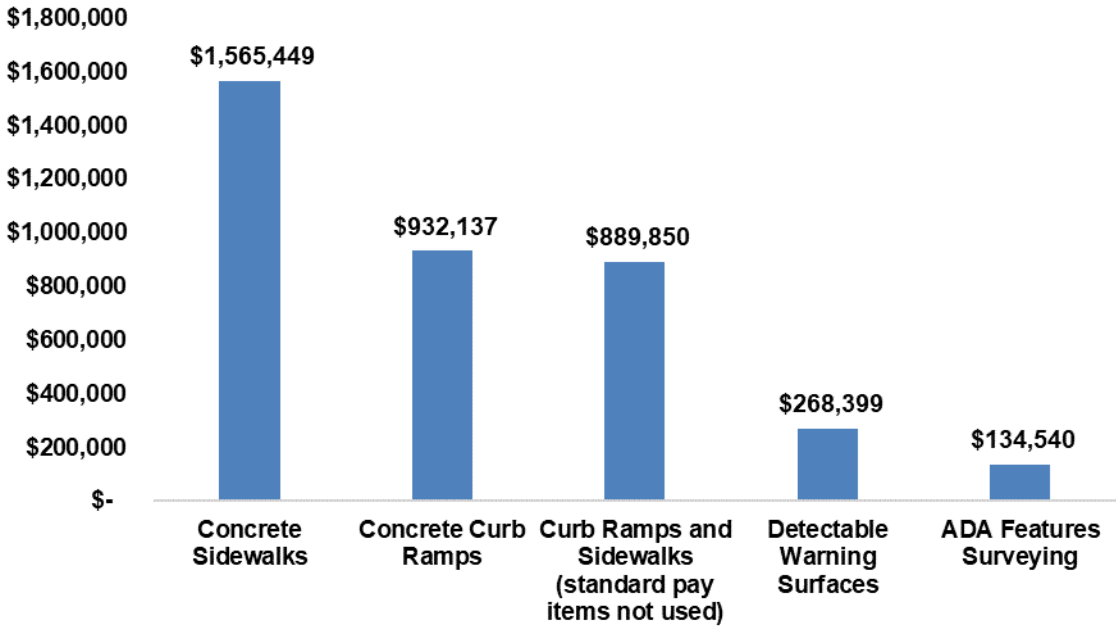
Total Fiscal Year 2023 ADA Investment by Region



Total ADA Surveying Investment by Year



Fiscal Year 2023 ADA Investment by Feature



WSDOT will continue to invest in its regions and work to improve ADA accessibility across the state of Washington.

Transition Plan Details for Washington State Ferries

Washington State Ferries continues its commitment to providing equal access to people with disabilities throughout the fleet and ferry terminals. WSF has one ADA Coordinator who oversees ADA compliance at WSF and serves as a subject matter expert on ADA issues. This position is an External Civil Rights Specialist and reports to WSDOT's Office of Equity and Civil Rights.

WSF Communications

The Communications department updated WSF's website to improve accessibility. Each page has a consistent structure compatible with mobile devices and screen readers. Hundreds of non-ADA-compliant PDFs were removed, and information was relocated. There are now fewer pages of content so it's easier for customers to find information as well as less text on pages so it's easier to read, comprehend, and act. Changes and updates to the website are made by staff within the Communications department, who have been trained in Section 508 compliance.

Prior to the next transition plan update, Communications will work with WSF's ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its programs, services, and activities for all future transition plans. Communications will also work with the ADA Coordinator to update WSF's Graphic Brand Standard & Style Guide and to ensure that the required ADA Notice to Public statements are included on all external communications.

Operations

Operations employees are involved in every aspect of travel on WSF, including selling disability-discounted tickets at the ticket booth, accommodating loading requests for restroom or elevator access, egress space, providing wheelchair assistance, and many other responsibilities.

All deck and terminal employees take extensive training before starting at WSF. This training includes information about the ADA, disability awareness, inclusive language, and how to assist and communicate with passengers with disabilities. This required training ensures that staff provide equal access and effective communication to all customers.

Operations continues to expand training opportunities for its employees and uses customer feedback to make improvements to its processes and procedures. Consistently providing good customer service is a high priority.

Operations has recently ordered manual wheelchairs for all terminals and electric mobility scooters for terminals with overhead walkways. These wheelchairs and scooters replace equipment purchased in 2012 or earlier and will ensure that all terminals are equipped to provide wheelchair or mobility assistance. Going forward, Operations has developed a plan to replace outdated or broken equipment as

needed.

Operations is in the process of developing two different types of cards to communicate information to customers who are d/Deaf and hard of hearing. One is a “Passenger Notice” card that provides information about why a vessel is slowing down or stopping. This card will be used when there is no emergency and no need to evacuate. It explains the various reasons why the vessel may be slowing or stopping, including required United States Coast Guard (USCG) emergency drills for the crew, a memorial service on the vessel, whales in the vicinity, responding to a vessel in distress or investigating an event for the USGC, slowing or stopping for other vessel traffic, or waiting for another ferry to depart the ferry terminal.

The other card is an “Emergency Action” card that will be used when there is an emergency and it is necessary for passengers to evacuate their vehicles. This card has information about proceeding to the Passenger Assembly Station and what to do next.

Operations is currently developing a campaign to bring awareness to the public and to WSF staff about what actions should be taken in the event of an emergency onboard the vessel. Information will be added to the WSF website, and these cards will become part of crew training for emergencies on the vessel. The crew will also have whiteboards available for written communication with d/Deaf and hard of hearing passengers.

Operations will work with the Training department to develop a video that will show what actions will be taken by the crew for d/Deaf and hard of hearing passengers during an emergency. This video will be posted on the WSF website and will also be used in staff training.

Prior to the next transition plan update, Operations will work with WSF’s ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its programs, services, and activities for all future transition plans.

Planning, Customer, and Government Relations

WSF’s Department of Planning, Customer and Government Relations directs the agency’s long- and short-term planning, public engagement, customer communications and work with state and local elected officials, as well as 12 Ferry Advisory Committees. Info and web agents assist customers via phone and email and staff the information booth at Colman Dock. They respond to complaints and forward complaints to appropriate departments for action. Ferry alerts, including alerts about elevator, restroom, and overhead loading outages, are also coordinated through customer communications.

In 2023, PCGR conducted a system-wide passenger demographic study using a travel survey to better understand the needs and travel patterns of customers and people living in ferry served communities. WSF studies changing trends in customer

travel patterns about every 7-10 years, most recently in the 2013 Origin-Destination Study.

PCGR created equitable and inclusive engagement methods and survey tools, including materials in Braille. The survey was available online and at a toll-free phone number for respondents who preferred to take the survey over the phone. The online survey platform included a low-vision mode and supported use with screen-reader technologies. The study included demographic questions about disability to identify what challenges passengers with disabilities face.

There are many ways customers can submit ADA-related complaints about WSF. Complaints can be submitted to the WSDOT ADA Compliance Team, to the WSF ADA Coordinator, or to the WSF Customer Service department in PCGR. To better track complaints received in Customer Service, PCGR will be developing a customer question and complaint tracking system to log concerns from customers with disabilities and monitor how they're addressed.

PCGR will also continue exploring new ways to communicate with WSF's customers with disabilities, including how to provide materials in alternative format now that many WSF materials such as schedules and fares brochures are no longer printed and are available exclusively online.

Prior to the next transition plan update, PCGR will work with WSF's ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its programs, services, and activities for all future transition plans.

Technology Services Division - Ferries

The Technology Services Division (TSD) provides technological support for WSF's Visual Paging System. Specific improvements are listed in the Visual Paging section below.

TSD is currently seeking funding to pilot a mobile device application wayfinding solution to assisting customers in navigating terminals and possibly vessel spaces as well.

The WSDOT Technology Services Division is actively engaging with WSDOT's Office of Equity and Civil Rights and Communications teams to ensure compliance with the U.S. Department of Justice's recently published rule on Web Content and Mobile App Accessibility to strengthen web and mobile application access for people with disabilities. A plan for an assessment of needed modifications and plan of action addressing identified remediation tasks to meet compliance within the prescribed time is being developed with funding for these efforts being sought.

Prior to the next transition plan update, TSD-Ferries will work with WSF's ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its programs, services, and activities for all future transition plans. This

checklist will help identify items in need of assessment or remediation for compliance with the ADA as well as ensuring requirements gathered for new initiatives are ADA compliant.

Terminals

Since the last transition plan update, large-scale multimodal terminal projects were completed for the Seattle Colman Dock and the Mukilteo terminals. The Seattle project involved a new terminal building and enhanced connections to the street-level and multimodal opportunities. The Mukilteo project is a new terminal at a new location that includes an overhead walkway to the vessel passenger deck. Both projects eliminated previous barriers from outdated 1960's-era buildings. Tactile maps with Braille and other tactile information were installed at Mukilteo. Tactile maps for Colman Dock are currently being manufactured and will be installed in the next few months.

Pedestrian sidewalk enhancements at Anacortes began in 2019 and were completed in 2021. In 2023, Fauntleroy received new ADA-compliant passenger turnstiles. WSF also completed a partnership project with San Juan County to add four new accessible parking stalls adjacent to the Orcas Terminal, while completing a similar project at the Tahlequah terminal on Vashon Island, where two stalls were added.

Hearing loop systems were installed at Colman Dock and are located at ticket seller windows and at the information booth. Plans are currently in development to install hearing loop systems at other terminals throughout the system.

In the summer of 2023, Terminal Engineering (TE) management and interns reviewed the following terminals for potential accessibility barriers and provided recommendations on improvements that could be implemented: Seattle, Bainbridge, Mukilteo, Clinton, Anacortes, Vashon, Kingston, Edmonds, Fauntleroy, Mukilteo, and Southworth. Some of the barriers identified have been addressed in the projects described herein, while there remain some that still need to be addressed. The 2023 legislature authorized grant dollars to address ADA deficiencies and needs at terminals in the central Puget Sound. TE expects to complete some projects with that funding.

In the next biennium, 2025-27, major capital improvements are funded and slated to begin design efforts for the following projects:

- A full terminal replacement at Fauntleroy that includes a new terminal building, improved pick-up and drop-off, enhanced multimodal access, and a fully signalized traffic signal.
- A new terminal building and trestle replacement at Southworth, which will improve pick-up, drop-off, and bus access.

- A new overhead passenger loading bridge at Clinton.
- A terminal building replacement at Anacortes that will improve accessibility and pick-up and drop-off.

Prior to the next transition plan update, TE will work with WSF's ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its facilities for all future transition plans.

TE will also work with the Quality Assurance, Sustainability, and Environment department to log and track accessibility complaints to ensure they are resolved in a timely manner.

Vessels

Accessibility standards for WSF-operated vessels are outlined by the proposed Passenger Vessels Accessibility Guidelines Regulations (PVAG). These regulations provide details on how a passenger vessel operator like WSF must provide service to passengers with disabilities. Although no date for final incorporation of PVAG has been specified, WSF follows these guidelines to ensure that ferries will be compliant when PVAG has been adopted.

The following requirements will be incorporated into the new vessel design for the 160-Auto Ferry:

- 10 accessible vehicle spaces on the lower vehicle deck, including two for vans
- An accessible restroom on the vehicle deck and ADA-compliant restrooms on the passenger deck. Restrooms on the passenger deck will have an accessible stall at both ends to ensure an accessible stall remains open when one half of the restroom is closed for cleaning or maintenance.
- 30 wheelchair-accessible spaces in the passenger cabin
- Elevators on both end of the vessel
- Accessible walkways

In 2023, the contractor that provides galley and vending services on the vessels completed an audit of its vending machines and lowered the credit card readers to ensure that at least one vending machine of each type is accessible. Although it is not required for all vending machines to be accessible when there are duplicates of the same machine, the vendor will also be lowering the credit card readers on duplicate machines in a phased approach.

Vessels is currently conducting an audit of all restrooms to identify barriers and will address any issues found in the process.

Prior to the next transition plan update, Vessels will work with WSF's ADA Coordinator to develop a departmental checklist that can be used to conduct a self-evaluation of its facilities for all future transition plans.

Visual Paging

The Visual Paging System, piloted in 2011, provides captioned versions of all audio announcements for passengers who are d/Deaf or hard of hearing. Captions are displayed on monitors located in the passenger cabin of vessels and in the waiting areas of terminals.

All departments at WSF collaborate to provide support for Visual Paging. Employees in the Vessels and Terminals department install equipment on vessels and in terminals. Deck and terminal employees in Operations make audio announcements and activate the captioned messages. Customer Service employees in PCGR and terminal employees in Operations update messaging during service disruptions or other emergent issues. The Technology Services Division manages software agreements and licensing, maintains software and hardware, and responds to outages.

Since the initial deployment of the system, efforts to improve overall function and availability have included:

- Modifying the process for adding and adjusting content to allow customer service and terminal supervisors to update content as alert information develops.
- Migrating the system's application to the cloud to ensure continuity of service and resiliency.
- Life-cycling workstations and large format screens to ensure system availability and reliability.
- Pre-recorded messages synced with text for more precise audio announcements and instructions on vessels and in terminals.

Currently, 13 of 21 vessels and 9 of 20 terminals have Visual Paging.

Extensive training has been given to both licensed and unlicensed deck personnel on how to effectively operate the system. Customer service and terminal employees have also been trained on how to update content in real time.

The next locations to receive updated Visual Paging Systems are Orcas and Friday Harbor.

In April 2024, WSF hired a consultant to evaluate the Visual Paging program. The evaluation began in June 2024 and is expected to be completed by January 2025.

Tasks that will be completed during the evaluation include reviewing and assessing the current technology, identifying relevant emerging technologies, gathering feedback from d/Deaf and hard of hearing communities, conducting peer evaluations and market research, and developing a strategic roadmap for WSF. This strategic roadmap will help WSF prioritize which locations should receive Visual Paging next and may also include additional technological solutions WSF could implement to expand or improve the system.

WSF Departmental Restructuring

In May of 2024, WSF created a new department called Quality Assurance, Sustainability, and Environment (QASE). One of the primary focus areas of this department will be quality assurance and continuous improvement. The department will document, investigate, and resolve non-conformities, accidents, injuries, near misses, and hazardous occurrences. It will also identify opportunities for improvement and noteworthy efforts, which can be generated through internal or external audits or internal or external reporting.

QASE will work with individual departments and with WSF's ADA Coordinator to develop timelines for the creation and implementation of corrective and preventative action plans. Accountability will be maintained by the Director of QASE, who serves as WSF's Designated Person Ashore and chairs a committee of Deputy Designated Persons Ashore from relevant departments. Failure to develop a root cause analysis (where required), develop corrective and preventative action plans, and adhere to established timelines will be elevated to the WSF Executive Team by the QASE Director.

The development of QASE will help WSF better identify and track ADA compliance throughout the system via an automated process that will provide more accountability within each department and ensure that accessibility issues are resolved in a timely manner.

In 2023, the legislature authorized grant dollars for ADA improvements at terminals in the central Puget Sound. WSF is currently in the process of identifying and prioritizing projects to be completed with this funding and will be using some of the funds to complete a full ADA assessment of all terminals and vessels. WSF is also working to obtain other sources of funding to address future accessibility needs and improvements that are outside the central Puget Sound area.

ADA Transition Plan Updates

WSDOT is developing a comprehensive inventory of pedestrian facilities on state routes and within building facilities, including ferry terminals and vessels. WSDOT's

future updates to the ADA Transition Plan for the public rights of way and WSF will include progress updates regarding the plan's data. Status updates will continue to relate to public-use facilities, ferry vessels, and terminals, as well as the submittal of WSDOT's annual Equal Employment Opportunity Assurances report.

As public right-of-way data is prioritized, WSDOT will provide yearly status updates to FHWA in the same manner it does with other iterations of its ADA Transition Plan. These updates will document progress on improving ADA accessibility statewide, including WSDOT's plan for installing accessible pedestrian signal buttons with audible and vibrotactile (vibrating button) indicators, and will outline future improvements to be undertaken.

The construction and improvement schedule may be altered at WSDOT's discretion, based on changes in guidance from the United States Access Board, federal policy, and/or WSDOT policy. WSDOT's former and current transition plans are available to the public through our public website or by request to the ADA Compliance Office.

CONCLUSION

While WSDOT aspires to ensure all of its public right of way and facilities are readily accessible, any entity's facilities are rarely completely accessible without making some ongoing improvements. Therefore, based on the results of the self-evaluation, WSDOT will continue to initiate improvements to the features of its public right of way system, as well as throughout WSF terminals and vessels, using the department's various policies outlined in the Design Manual. The standards are evolving along with applicable regulations as the needs of the community are better understood. These design standards also reference and incorporate industry guidance and best practices established by the American Association of State Highway and Transportation Officials, the [Manual on Uniform Traffic Control Devices](#), the [Public Right of Way Accessibility Guidelines](#), and other applicable guidelines.

Glossary

Accessible: Describes a site, building, facility, or portion thereof that complies with the Americans with Disabilities Act.

Accessible Pedestrian Signal (APS): A communication device located at traffic signals allowing for pedestrian walk phases using non-visual cues such as, audible tones, vibrotactile features or auditory announcements.

Accessible Route: An unobstructed, continuous route for pedestrian travel along a public sidewalk, crosswalk or ramp.

ADA Accessibility Guidelines (ADAAG): Also known as the 2010 ADA Standards for Accessible Design, contains the scoping and technical requirements for accessibility to buildings and facility sites.

Alteration: A change to a facility within the public rights of way which may affect access, circulation or use. See Appendix 6.3 for further explanation and examples of alterations related to resurfacing and maintenance.

Blended Curb Transition: A curb ramp where the sidewalk is blended into or flush with the street.

Civil Rights Act of 1991: To amend the Civil Rights Act of 1964 to strengthen and improve Federal Civil Rights laws, to provide for damages in cases of intentional employment discrimination, to clarify provisions regarding disparate impact actions, and for other purposes.

Code of Federal Regulations (CFR): An annual codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

Cross Slope: The slope that is perpendicular to the direction of travel. (See running slope)

Crosswalk: A designated, marked pedestrian path across a roadway.

Curb: A vertical or rolled transition from the roadway or gutter to the sidewalk or planting strip.

Curb Ramp: A short ramp cutting through a curb or built up to it.

Detectible Warning: A standardized surface feature built in or applied to a walking surface or other elements along a public access path to warn visually impaired persons of a hazard.

Driveway: A vehicular path serving as an access point to public roadway from adjacent properties.

Egress: A continuous and unobstructed way of exit travel from any point in a building or facility to a public way. A means of egress comprises vertical and horizontal travel which may include doorways, corridors or ramps.

Element: An architectural or mechanical component of a facility, space, site or public rights-of-way.

Facility: All or any portion of buildings, structures, site improvements, equipment, roads, walks, passageways, parking lots or other real or personal property located on a public rights-of-way.

Federal Highways Administration (FHWA): Provides stewardship over the construction, maintenance and preservation of the nation's highways, bridges and tunnels.

Grade: The slope that is parallel to the direction of travel expressed as a ratio of rise to run, usually expressed in percent.

Locator Tone: A repeating audio cue which identifies the location of a pedestrian push button.

Parallel Curb Ramp: A system of two sloped ramps that run parallel to the curb line from a common lower landing which is approximately level with the street.

Pedestrian Access Route (PAR): Any walk or path intended for pedestrian movement or activity.

Perpendicular Curb Ramp: A curb ramp with a main slope running perpendicular to the curb line. May include one or more flared side slopes.

Public Rights of way (ROW or R/W): A type of easement granted or reserved over the land for transportation purposes, this can be for highway, public footpath, bike trails or electrical transmission lines.

Ramp: A sloped portion of walkway with a running slope greater than 1:20 or 5 percent.

Running Slope: The slope which is parallel to the direction of travel expressed as a ratio of rise to run, usually expressed in percent.

Sidewalk: The portion within the public rights of way which is improved for use by pedestrians.

Signage: Displayed verbal, symbolic, tactile, and pictorial information.

Street Furniture: Elements in the public rights-of-way which are intended for use by pedestrians such as benches, mailboxes, and other usable equipment.

Tactile: Describes an object which can be perceived using the sense of touch. **TTY (Tele-Typewriter):** A device similar to a typewriter which has a small readout. Employs interactive text based communications through the transmission of coded signals across the standard telephone network. Text telephones are also sometimes referred to as TTD (telecommunication devices for deaf persons) machines, however not common.